



GOVERNMENT OF KERALA

# **ECONOMIC REVIEW**

## **2004**

**STATE PLANNING BOARD**  
**THIRUVANANTHAPURAM**  
**FEBRUARY 2005**



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# CHAPTER - 1

## AN OVERVIEW

### National Economy

The national economy continued to show signs of good performance during the year. Though at the beginning of the financial year inflation threatened to assume serious proportions it has been stabilized and is showing a declining trend reaching 5.42 per cent as on 15th January 2005. The Sensex, which slipped in the post-election reaction, is now very vibrant reaching 6419.09 (as on 28.1.2005) and showing signs of continuing at a higher level.

1.2 In 2003-04 the Indian economy recorded an impressive growth of 8.1 % mainly led by an unusual 9.1% growth in agriculture which recovered from a bad drought in the previous years. Industry and Service sectors also grew by 6.7% and 8.7% respectively.

1.3 The trend is continuing in the current year also with the real GDP growing by 7.4% in the first quarter compared to 5.3% in the same period last year. Significantly all three sectors viz., agriculture, industry and services recorded higher growth of 3.4%, 6.8% and 9.5% compared to the respective growth rates of 0.1%, 6.0% and 7.4% in the corresponding quarter of the previous year.

1.4 Though there was a shortage of about 13% in the Southwest monsoon for the country as a whole, reducing growth of agriculture to negative 0.8%, more than normal post-monsoon rains in October and good North East monsoons could enable agriculture to record reasonable growth. But foodgrain production is predicted to fall by 8.5% to 194 million tonnes.

1.5 The foodstocks of Government, which determine both comfort and safety levels in possible bad times, are above 20 million tonnes; i.e., more than 10% higher than the buffer stock norm of 18.1 million tonnes. Lower stocks than in recent years have contributed to reduction in the carrying costs of food grains, which works out to nearly one-fifth of the food subsidy (and the high production has ensured the revival of the foodgrains market).

1.6 In the industrial sector, it is significant to note that capital goods sector has grown by 14.5% in the first two quarters and electricity by 7.7% during the same period compared to respective figures of 10.0% and 3.0% during the same period last year.

1.7 Macro-economic indicators are by and large positive. The foreign exchange reserves have touched 131.18 billion dollars. The Indian rupee is stable and strong against the dollar. In the balance of payment estimates both the current and capital accounts recorded surpluses of \$ 1.9 billion and \$ 5.6 billion respectively during the first quarter.

1.8 In the third quarter of the year there have been two shocks due to the spurt in petroleum prices and the havoc caused by the Tsunami disaster. But going by indicators, the country seems to have absorbed the shocks quite well without basically upsetting the economy.

1.9 In public finance the revenue deficit was proportionately more than the previous year. However the fiscal deficit was less. The gross tax revenue increased by nearly Rs.18, 500 crore and non-tax revenue practically had no change during the first six months.

1.10 A significant feature indicative of the fiscal confidence is the bold decision to introduce VAT from 1-4-2005, which marks the most fundamental tax reform in independent India.

### Developments in Kerala's Economy.

1.11 The most noteworthy aspect of Kerala's economy in the last decade is the change for better in the growth scenario. In the 1970's Kerala's economy grew at 2.27 %, which further slipped to a low 1.16 % in the 1980's. However, it picked up significantly in the 1990's, and in the last decade and a half it has grown at an average of around 5.8 % which is very close to that of the growth of the national economy. It would appear that the

policy of equitable human development followed by the State did yield positive results albeit with a lag. At the same time it is to be noted that a new level of human development is needed by the State focusing on quality and relevance so that it can translate immediately into jobs and wealth in a fast changing national and global economy. Otherwise there is danger of slippages in the future. Already there is a growing mismatch between the skills and knowledge levels of the products and education and those demanded by the new industry and emerging economy.

1.12 The rates of growth of different sectors of the economy in the last four years are given below:

**Kerala Economy: Sectoral Growth Rates**  
(per cent)

Year	Sectors			
	Primary	Secondary	Tertiary	Overall
2001-02	-0.06	-0.84	2.84	1.50
2002-03 (p)	1.47	5.81	8.55	6.63
2003-04 (q)	-2.01	6.02	8.88	6.31
2004-05(a)	-2.88	5.56	8.76	6.15

p-Provisional Estimate q-Quick Estimate a-Advance Estimate

1.13 The structural transformation of the Kerala economy has been continuing on the same trend heavily biased in favour of the service sector for quite some time now. The agriculture sector whose contribution to the economy was 18.17 % in 2002-03 has come down further to 16.74 % in 2003-04.

1.14 The State income (NDP) at constant prices (1993-94) is estimated at Rs.39,73,699 crore in 2003-04 (Rs. 78,93,313 crore at current prices). As per the latest figures the per capita income at constant prices (1993-94) has increased from Rs. 11,389 in 2002-03 to Rs.12,109 in 2003-04 recording 6.32 % growth. This compares well with the per capita income at the national level which is Rs. 11,684 for 2003-04.

## Agriculture

1.15 The agriculture economy of the State, which is heavily dependent on cash crops continued to improve with the pick up in prices of cash crops especially rubber and coconut. The comparative prices of major cash crops in the last

three years are given below:

(in Rupees)

Crops	2002-03	2003-04	2004-05*
Coconut (1000 Nos)	4756.00	5827.30	5982.27
Rubber (Qtl.)	3919.00	5040.00	5992.00
Pepper (Qtl)	7692.17	6802.46	6903.20
Tea (Kg)	47.21	45.78	44.05
Coffee	28.12	32.29	32.39
Cardamom	561.13	361.02	356.90

\* first quarter

1.16 Thus the price situation has been good for the farmers, though pepper, tea and cardamom fetched price less than what prevailed in 2002-03.

1.17 Diversification of agriculture and introduction of new high value crops have been happening more due to the initiative of progressive farmers. This needs to be accelerated through the intervention of Krishibhavs, which now have sufficient flexibility in preparing local level plans for the Village Panchayats, according to the local need and potential. The extension work needs to be backed by appropriate research regarding multiple cropping in homesteads.

1.18 An Agri Export Zone (AEZ) covering nine districts for the export of vegetables, banana and pineapple has been established. Project report has been prepared for establishing three more Agri Export Zones for spices, flowers and medicinal plants for which Government of India's financial support sought. AEZ is expected to help Kerala's agriculture reposition itself in the new trade regime.

1.19 Kissan Kerala, an innovative joint project implemented by IITMK and the Department of Agriculture applying the Information Communication Technologies has been initiated to disseminate information of regional relevance in agriculture and allied sectors including market information.

1.20 A remarkable development in the last two years, which is now gathering momentum, is lease land farming by Neighbourhood Groups of women below poverty line under Kudumbashree. In a State with small homesteads and a large number of absentee landowners having other occupations, this has come as a big boon benefiting the landless poor as well as the small landowner. What is needed is that the semi-formal system should be given credit as well as technology support without

attempting to construct rigid legal systems around it.

1.21 The livestock economy shows no signs of improvement mainly due to the cost disadvantages vis-à-vis neighbouring States. Milk production declined in 2003-04 by 3.09 lakh tonnes or 12.76% to 21.11 lakh tonnes in 2003-04 from the figure of 24.20 lakh tonnes of the previous year. Egg production declined by 5.2% in 2003-04, to 1277 million from the previous year's figure of 1347 million. Only in the production of poultry meat was there an increase.

1.22 NDDDB has signed an MOU with the State to implement an animal disease control project at a cost of Rs.34.18 crore over a period of five years. A massive vaccination programme against Foot and Mouth disease has been taken up. This addresses the important quality dimensions in Animal Husbandry activities in the State

1.23 But some interesting experiments like spreading the Malabari Goat stock and introducing Boer Goat stock bears some promise. Also linking animal husbandry activities to the micro enterprise initiatives of Kudumbashree could achieve some positive results.

1.24 Marine fish production had only a marginal increase of 5000 tonnes from the figure of 6.03 lakh tonnes in 2002-03. However inland fisheries increased by 4000 tonnes over the 2002-03 catch of 75,000 lakh tonnes. What seems appropriate to Kerala is conservation and upgradation of resources in the marine sector while promoting reservoir and other inland fisheries and even ornamental fisheries. Also as export of fish gives significant income to the State, adherence to international quality standards is becoming a priority policy item.

## Water

1.25 Fortunately the drought of 2003-04 was relieved to a great extent by the improved rainfall in both the south-west monsoon and the north-east monsoon in 2004. This has not only assisted in reviving the agricultural economy but has filled up the electricity producing reservoirs of hydro-electric projects with the result the Kerala State Electricity Board is expected to save considerable amounts through reduced purchase of high cost thermal power.

## Industry

1.26 After 2001-02 industrial growth has shown a marginal decline. During 2002-03 the decline was 1.07% and in 2003-04 it was 0.68%.

1.27 The traditional industries continue to be in a bad shape especially coir and cashew. However, the silver lining is that after a long time viable projects are emerging in these areas. Already major projects have been sanctioned by Government of India for coir (Rs.56.8 crore) and handloom (Rs.15.76 crore). Efforts are needed to reposition the traditional industries linking with the tourism industry as well as with global preference for eco-friendly and ethnic products.

1.28 Information Technology, which took a long time to strike root in the State, now can be said to have reached the blooming stage. It has attracted an investment of Rs 907 crore during 2003-04 and is estimated to have generated 7300 jobs. The recent success of Info Park at Kochi and the prospective Smart City again in Kochi as a tie up with Dubai Company signify the coming of age of IT in the State. Also the expansion of the pioneering e-literacy project Asraya to seven more districts is a significant achievement. However e-governance initiatives are yet to yield final results as also e-education initiatives, though many of them have been under implementation for some years now.

1.29 Recently Special Economic Zone status has been given to the Electronic Park at Kochi and Food Processing Park at Malappuram. The declaration in this year's Trade Policy, of Kannur (for Handloom) and Aroor (for marine products) as towns of export excellence is expected to improve the growth and performance of these towns in their niche industries.

1.30 The most significant achievement in the industrial sector is the fact that Kerala is now be regarded as a viable investment destination thus erasing the negative perception which had driven away investment from the State for more than three decades. In this context the decision of BMW to identify Kochi as a probable location of its factory in India is of significance, symbolic now, but catalytic, once the final decision is made.

## Tourism

1.31 In 2003 the State saw an increase of 26.68 % in the arrival of foreign tourists; during the same period the inflow of domestic tourists also went up by 5.4%. It is calculated that tourism has generated 8 lakh jobs directly and indirectly in the State.

1.32 The focus of tourism is now rightly shifting to quality, which implies that unfair practices and environmentally harmful activities need to be controlled while packaging new products of cultural and nature tourism

## Infrastructure.

1.33 The decision of Government of India to set up the International Container Transshipment Terminal at Vallarpadam and LNG Terminal at Puthu Vypeen has given a boost to job generating and value adding infrastructure in the State. At the same time it has created certain challenges as well. The State needs to plan out the concomitant infrastructure in the Kochi region to get the best value out of these investments as also the industrial corridors that can be developed once the gas supply is available.

1.34 Urban infrastructure will be benefited considerably through the ADB supported Kerala State Urban Development Project to be implemented in the five cities of Kerala from the next year. The recent spurt in infrastructure creation, as part of the Capital City development programme is significant and needs to be developed into a regional development strategy, with appropriate reforms and innovative financing.

1.35 The State's own effort to create international quality infrastructure by setting up a Transshipment hub at Vizhinjam also is nearing fruition. This will be a path breaking one in terms of public-private partnership, which needed a push, in view of the fact that in spite of much potential, public-private partnership has not happened in infrastructure creation but for the Mattancherry Bridge.

1.36 The public utilities of KSEB and KWA continue to be in difficulties though KSEB shows clear signs of improvement. Reforms in KWA are long over due and at least in the case of rural

water supply the proposed MOU with Government of India could improve matters.

## Health and Education.

1.37 The State is still grappling with quality issues and second generation problems. In the matter of health, lifestyle diseases and problems like ageing are new challenges which the public system is not able at present to cope with. The proposed Health Systems Project with World Bank support could be of great use in addressing these issues.

1.38 In the case of education, introduction of new subjects and restructuring of curricula have both been very slow. 'Defreezing' the education system and the technical and vocational training systems is overdue and has to be done urgently to keep up the State's gains in Human Development.

## Poverty Reduction

1.39 Kudumbashree is the flagship programme of poverty reduction which has become a national best practice by providing nearly 2,34,756 self-employment opportunities to women below poverty line. Kudumbashree has succeeded in making a significant dent on poverty in the State. The Community Based Social Security programme for the absolutely poor called 'Asraya', which was piloted last year, has again developed into a very viable model. So much so, it is to be extended all over the State in two years. With the introduction of community based monitoring of poverty through the NHG network of Kudumbashree the quality of implementation of anti-poverty programmes is expected to improve considerably, resulting in better targeting of benefits and higher utilization of assistance.

1.40 Though reasonably balanced development has taken place in all parts of the State, there are still pockets – mostly inhabited by scheduled castes, scheduled tribes and workers of traditional industries – where poverty is concentrated, incomes are low and housing and services are also poor. Special attention needs to be given to such 'pockets' both by the State Government agency and the concerned local Governments.

## Employment

1.41 Though employment through micro enterprises is on the increase, formal sector employment has not improved in the State. The rate of unemployment is 20.97 %. Even the prospects of employment outside would not continue as before unless the State is able to achieve a fundamental shift in the nature of education it imparts. Employability needs to be increased, to start with through last mile training for the already 'qualified' people to bridge the gap between their knowledge and the knowledge required in the job market, followed by realigning the preferential education sector with the requirements of the modern job market.

## Institutional Finance.

1.42 After a long period of stagnation bank finance has started improving. The CD ratio reached 56.0 as of September 2004 which is more than 10 percentage points above the level achieved two years ago. Happily credit flow to agriculture is also on the increase; but most of the credit is for short-term operations and not for capital investment. This is a cause for concern.

## State Finances

1.43 The picture of State finances is given below:

(Amount in Rs. Crore)

Year	Revenue Deficit		Fiscal Deficit	
	Amount	% of GSDP	Amount	% of GSDP
2000-01	3147.06	4.51	3877.80	5.56
2001-02	2605.64	3.28	3269.40	4.12
2002-03	4118.66	4.53	4990.04	5.49
2003-04	3680.30	3.59	5539.05	5.41

1.44 The State's debt as on 31.3.2004 is Rs.37452.21 crore. Though on the face of it the figures do not appear impressive, a lot of cleaning up has been done and discipline brought into the governmental system. The basic principles of

fiscal reform introduced in 2002 – cutting down unnecessary expenditure and increasing revenue mobilization to raise resources for pro-poor development - are all the more relevant now. Unless these principles are meticulously applied to every fiscal decision the danger of sliding back to the anarchic situation of 2001 is very real.

## Decentralisation

1.45 With the implementation of the recommendations of the Second Finance Commission resource flow to local governments has increased considerably especially to take care of critical maintenance requirements. Now the other accepted recommendations of the Finance Commissions need to be operationalized so that the financial base of local governments is considerably strengthened. The institutionalization efforts are continuing even though very slowly. They need to be speeded up so that by the time the newly elected local governments assume office in early October 2005 new systems and procedures would be in place.

## Governance

1.46 The Modernizing Government Programme has taken up an important initiative to improve Service Delivery in public institutions like hospitals, schools, anganwadis, police stations, public offices and so on. The pilot Service Delivery

project is being implemented in 2605 institutions, which are of direct benefit to the ordinary citizen especially the poor. If the public institutions are not conditioned to respond to the needs of the people it would lead to a serious democratic deficit affecting the credibility of public institutions. In this context the Citizen's Charter initiative and the simplification of procedure in matters of interface with the citizen are of special relevance.

## CHAPTER - 2

# STATE FINANCES

### All States: Trend

The fiscal position of the State Governments in India, as indicated by the key deficit indicators, has been under severe stress, especially from the mid 1990's. The GFD/GDP ratio of all States, which was 2.6 per cent in 1995-96 went up to 4.7 per cent in 2002-03 and revenue deficit, which was 0.7 per cent in 1995-96 went up to 2.5 per cent (Table 2.1) in 2003-04.

2.2 1997-98 was the year that many State Governments desire to forget. It was the year of the onset of the fiscal crisis. Unable to withstand the fiscal shock many States embarked on the reform but none has yet fully recovered. While all the State governments accepted the

recommendations of the Eleventh Finance Commission and formulated a Medium Term Fiscal Reform Programme, the question now looms large as to when the stated targets will be achieved.

2.3 The weaknesses in the finances of State governments have arisen in some cases because of adverse reaction from the financial markets in the widening spreads and under-subscription to market loans.

2.4 Growing interest burden, increasing liabilities on salary and pension, rising administrative cost, mounting losses in public sector undertakings, poorly targeted subsidies, inappropriate and

**Table 2.1**  
**Key Fiscal Deficits Of All States**

Year	Gross Fiscal Deficit (GFD)	Revenue Deficit	Primary Deficit
1995-96	31426 (2.6)	8201 (0.7)	9494 (0.8)
1996-97	37251 (2.7)	16114 (1.2)	11675 (0.9)
1997-98	44200 (2.9)	16333 (1.1)	14087 (0.91)
1998-99	74254 (4.2)	43642 (2.5)	38381 (2.2)
1999-00	91480 (4.7)	53797 (2.7)	46309 (2.4)
2000-01	89532 (4.3)	53569 (2.5)	37830 (1.8)
2001-02	95994 (4.2)	59188 (2.6)	33488 (1.5)
2002-03	102123 (4.1)	55111 (2.2)	31981 (1.3)
2003-04 RE	141010 (5.1)	72126 (2.6)	57042 (2.1)

• Figures in brackets are percentages to GDP at current market prices.

Source: State Finances, A study of Budget, 2004-05, RBI, December 2004.

inadequate user charges, declining Central transfers coupled with inadequate buoyancy in revenue receipts are the major problems confronted by the States.

**BOX - 2.1**

In recent years there have been some instances of under subscription to the State government issues despite easy liquidity conditions. This inadequate response on the part of the market participants once again underlined the need for prudent fiscal management at the state level to ensure completion of the approved borrowings of the State government. In this context the persistence of large aggregate borrowings of the Central and the State government continues to be a matter of concern in terms of its possible adverse impact on the desired acceleration in growth that is consistent with stability and also from the point of view of ensuring efficient monetary and debt management.

Source :Mid-Term Review of Annual Monetary and Credit Policy, 2004-05. RBI

2.5 To arrest the above trends many State Governments initiated measures for revenue augmentation, containment of non-essential expenditures, enactment of Fiscal Responsibility and Budget Management legislation, Public Sector Reforms etc. Though the combined fiscal position of the State showed some improvement in 2001-02 and 2002-03, it turned out to be transitory. The GFD of all States declined from 4.7 per cent of GDP in 1999-00 to 4.1 per cent of GDP in 2002-03 and the revenue deficit declined from 2.7 per cent of GDP in 1999-00 to 2.2 per cent of GDP in 2002-03. However, it got reversed in 2003-04. As per the revised estimate for 2003-04, the GFD/GDP ratio is estimated to increase to 5.1 per cent from 4.2 per cent in 2001-02. The bottom line is the fact that reform measures initiated by the States could not be sustained and

therefore the fiscal deficits remain challenging.

**KERALA****Overall fiscal position**

2.6 The fiscal position of Kerala has to be viewed against the backdrop of fiscal position of all States. In 2003-04 the over all fiscal health of the State showed some improvement as is evident from the level of relevant fiscal indicators given in Tables-2.2 and 2.3. The revenue deficit came down from 4118.66 crore (4.53 per cent of GSDP) in 2002-03 to Rs 3680 crore (3.59 per cent of GSDP) in 2003-04. The Gross Fiscal Deficit as a percentage of GSDP also came down from 5.49% in 2002-03 to 5.41% in 2003-04. Primary deficits also witnessed similar trend. The GFD could have been much lower had it not been for Securitization of KSEB's dues to central power utilities.

**BOX - 2.2**

"It is ironic that higher and higher deficits over time have not resulted in increasing the Government's ability to spend where higher expenditure is required, for example, in the maintenance or expansion of public services. Most of the Government expenditure is now committed to servicing past debt or meeting salary and other past commitments. We now have a high fiscal deficit without fiscal empowerment. A wholesale change in the Government's fiscal policy and making it more responsive to changing requirements are now essential".

Sri. Bimal Jalan, former Governor, Reserve Bank of India

Source: India State Fiscal Reforms in India, Progress and Prospects, Nov.10, 2004- Document of the World Bank

However a significantly large proportion of borrowed funds are being utilized for the current revenue expenditure rather than the capital expenditure. The increasing gross fiscal deficit in absolute terms year on year has led to a steady accumulation of debt over the years.

2.7 Balance from the current revenue is showing a secular deterioration, reflecting the widening gap between the revenue receipts and the revenue expenditure. Share of capital outlay on capital receipts, return on investment ratio and asset-liability ratio are also showing a diminishing trend. This trend can be reversed only if fundamental changes are brought about in the structure of the State's finances.

### Pattern of Revenue Receipts

2.8 The revenue receipts of State Government

are from two sources-(i) State's own revenue and (ii) Central transfers. State's own revenue comprise of State's own tax revenue and State's own non-tax revenue. Central transfers comprise of State's share of union taxes and grant-in-aid and other receipts from Central Government for plan and non plan.

2.9 The revenue receipts of the State in 2003-04 increased by Rs.720 crore (11.7 per cent) as against the increase of Rs.1379.13 crore (17.5 per cent) in 2002-03 (Table-2.4).

2.10 During the period 1995-96 to 2002-03 the revenue receipts in the State increased by an annual average growth rate of 10.2 per cent. The component-wise growth rates during this period are: 11.8 per cent by own tax revenue, 4.5 per cent by own non tax revenue and 8.8 per cent by

**Table-2.2**  
**Major Deficit Indicators**

Year	Revenue Deficit		Fiscal Deficit		Primary Deficit	
	Amount	% to GSDP	Amount	% to GSDP	Amount	% to GSDP
1995-96	402.82	1.04	1302.66	3.36	378.5	0.98
1996-97	643.03	1.45	1542.48	3.47	439.07	0.99
1997-98	1122.9	2.27	2413.85	4.88	1127.76	2.28
1998-99	2029.96	3.61	3012.2	5.36	1565.94	2.78
1999-00	3624.21	5.80	4534.56	7.25	2582.29	4.13
2000-01	3147.06	4.51	3877.8	5.56	1620.2	2.32
2001-02	2605.64	3.28	3269.4	4.12	779.93	0.98
2002-03	4118.66	4.53	4990.04	5.49	2043.20	2.25
2003-04	3680.30	3.59	5539.05	5.41	2210.75	2.16

Source: Finance Department, Govt. of Kerala

**Table. 2.3**  
**Financial Indicators for Government of Kerala**

Particulars	1998-99	1999-00	2000-01	2001-02	2002-03
Balance of current Revenue (BCR) (Rs Crore)	-437	-2069	-1704	-1660	-1811
Interest Ratio	0.19	0.24	0.26	0.27	0.28
Capital Outlay/ Capital receipts	0.24	0.14	0.17	0.16	0.15
Return of Investment ratio	0.004	0.006	0.006	0.003	0.005
Outstanding Guarantees/ Rev.Receipt	0.71	1.00	1.09	1.30	1.19
Assets/Liabilities	0.61	352	0.47	0.44	0.4

Source: Finance Department, Govt. of Kerala



Central transfer to the States. The worrisome feature is that growth rate of revenue receipts in the State is far behind that of revenue expenditure which was as high as 14.7 per cent during the same period and is one of the major reasons for the fiscal instability of the State.

### State's Own Tax Revenue

2.11 State's own tax revenue in 2003-04 witnessed a moderate growth of 9.86 per cent as against the growth of 23.3 per cent in 2002-03 (Table. 2.5). The total own tax realised during 2003-04 was Rs.8022.27 crore, out of which, Rs.5991.43 crore (74.68 per cent) was by way of sales tax and Rs.655 crore (8.1 per cent) by way of State excise duties. During the year, all the major sources of own tax revenue witnessed improvement in tax realisation. When sales tax increased by 12.12 per cent over the previous year, fees on stamps and registration increased by 12.96 per cent and motor vehicle tax increased by 14.03 per cent. Since, only 50 per cent of the State's revenue expenditure can be met normally with the State's own revenue, more effective ways of tapping the tax revenue have to be explored, otherwise, the State will be constrained to continue borrowings to meet the revenue expenditure. Since sales tax is the most predominant source of revenue of the State, maximum effort is to be taken to tap the full potential of this vital source

of revenue (or its successor, the VAT). The annual average growth rates of State's own tax revenue during the period from 1995-96 to 2002-03 were 13.1 per cent for sales tax, 7.1 per cent for fees on stamps and registration and 12.8 per cent for motor vehicle tax.

### State's Own Non-tax Revenue

2.12 State's own non-tax revenue constitutes, on an average, only about 9-10 per cent of State's own revenue. In 2003-04, the non-tax mobilization moderately increased by Rs.125 crore (18.3 per cent), from Rs. 681.26 crore in 2002-03 to Rs.806.98 crore in 2003-04 (Table-2.6). The component-wise revenues are shown in the Table. The major component of the non-tax revenue is the revenue from the forests and it constitutes about 20 to 30 per cent of the total non-tax revenue in the State. The annual average growth rate of revenue from forests for the period from 1995-96 to 2002-03 is 0.7 per cent only and further wide fluctuations are witnessed in the year wise revenue. A significant point noted is that the gap between the non-tax revenue realisation and the investment by Government is progressively widening in the State. This aspect needs to be looked into in the larger interests of the State's fiscal stability and rational measures have to be taken for augmentation of non tax revenue to a desired level. Pricing of services

**Table-2.4**  
**Revenue Receipt**

(Rs.in crore)

Year	State's Own Revenue			Share of Central Taxes and Grants	Total Revenue (4+5)	Annual Growth Rate
	State's Own Tax Revenue	State's Own Non Tax Revenue	Total (2+3)			
1	2	3	4	5	6	7
1995-96	3382.68	535.49	3918.17	1505.39	5423.56	
1996-97	3898.5	513.8	4412.3	1732.78	6145.08	13.3
1997-98	4501.05	552.11	5053.16	2065.06	7118.22	15.8
1998-99	4649.56	557.66	5207.22	1990.90	7198.12	1.1
1999-00	5193.5	530.71	5724.21	2217.53	7941.75	10.3
2000-01	5870.26	659.09	6529.35	2201.51	8730.86	9.9
2001-02	5923.42	543.38	6466.8	2589.59	9056.39	3.7
2002-03	7302.55	681.26	7983.81	2653.58	10637.39	17.5
2003-04	8022.27	806.98	8829.25	2986.12	11815.37	11.07
Annual Average Growth Rate (AAGR) (1995-96 to 02-03)	11.8	4.5	11.0	8.8	10.2	

Source: Finance Department, Govt. of Kerala

and rationalization of subsidies may be considered, without affecting the welfare of the common man. Such measures have become inevitable in view of the emphasis that needs to be given for providing better service delivery as increasingly demanded by society.

2.13 Table 2.7 shows a comparative position of non tax revenue in the four neighbouring States during 2001-02. When the non tax revenue realized by Andhra Pradesh, Karnataka and Tamil Nadu are 11.8 per cent, 5.9 per cent and 7.2 per

**Table-2.5**  
**State's Own Tax Revenue**

Year	Rs.in crore							Annual Growth Rate
	Land Revenue	Stamps and Registration fees	State Excise Duties	Sales Tax	Motor Vehicle Tax	Others	Total	
1995-96	23.71	353.79	449.29	2285.96	222.87	47.06	3382.68	
1996-97	22.33	360.30	418.53	2772.28	247.59	77.47	3898.5	15.3
1997-98	23.75	331.36	543.41	3084.09	301.63	216.81	4501.05	15.5
1998-99	32.73	301.15	529.62	3366.62	323.31	96.13	4649.56	3.3
1999-00	34.67	279.65	591.1	3853.54	380.83	53.72	5193.51	11.7
2000-01	39.35	341.1	688.94	4344.33	394.85	61.69	5870.26	13.0
2001-02	34.93	394.28	541.46	4440.85	452.18	59.72	5923.42	0.9
2002-03	38.40	486.53	663.07	5343.15	513.20	253	7302.54	23.3
2003-04	40.58	549.81	655.90	5991.43	585.77	198.78	8022.27	9.86
Growth rate (1995-96 to 02-03)	7.9	5.5	7.1	13.1	12.8		11.9	

Source : Finance Department, Govt. of Kerala

**Table-2.6**  
**STATE'S OWN NON TAX REVENUE**

Year	(Rs.in crore)					Annual Growth Rate
	Forest	Debt Services (Interest)	Social Development Services*	Others	Total	
1995-96	160.77	100.32	96.42	177.98	535.49	
1996-97	162	55.73	86.3	209.77	513.8	-4.1
1997-98	144.91	53.48	106.73	246.99	552.11	7.5
1998-99	121.03	70.96	122.66	243.01	557.66	1.0
1999-00	109.88	37.31	118.41	265.11	530.71	-4.8
2000-01	141.24	36.81	165.02	315.97	659.04	24.2
2001-02	113.7	31.08	135.51	263.09	543.38	-17.5
2002-03	149.58	35.86	185.67	310.15	681.26	25.4
2003-04	187.18	52.42	223.21	321.02	806.98	18.45
Growth rate(1995-96 to 02-03)	0.7	-9.2	11.9	9.1	4.5	

Sources:.. Finance Department, Govt. of Kerala

\* It includes Education, Medical and Public Health, Agriculture, Rural Development, Animal Husbandry, Co-operation, Industries, Community Development, NES etc. and miscellaneous Social Organisations.

**Table -2.7**  
**Comparative position of States' Own Non-Tax Revenue in four neighboring States (2001-02)**

States	(Rs in Crore)			
	Andra Pradesh	Karnataka	Kerala	Tamil Nadu
Non Tax Revenue of State	2917.6	1093.4	543.4	1556.7
Revenue Expenditure (RE)	24726.33	18605.70	11662.03	21556.97
Revenue Receipts (RR)	21845.05	15321.25	9056.39	18818.03
NTR / RE	11.8 %	5.9 %	4.7 %	7.2 %
NTR / RR	13.4 %	7.1 %	6.0 %	8.3 %

Source: State Finances, A Study of Budget, 2003-04, RBI, April, 2004.

cent respectively of their total revenue expenditure, the same realised by Kerala is only 4.7 per cent.

### Central Transfers

2.14 An important factor affecting the State's finances has been the declining trend in the growth of central transfers on year on year basis. Table 2.8 shows the Central transfer to the State during the period from 1995-96 to 2003-04. It can be seen from the Table that transfers are not favorable to the State. Within the period 1995-96 to 2003-04, the Central transfers witnessed decline in 1998-99 and in 2000-01. The total transfer to the State in 2003-04 was Rs.2986.12 crore, out of which, Rs.2078.57 crore was State share in union taxes and Rs.907.61 as grant-in aid and other receipts from Central Government for plan

and non plan purposes. The ratio of Central transfer to GSDP has been coming down steadily. From 5.03% in 1990-91, the ratio came down to 4.3% in 2003-04. The annual average growth rate of the total Central transfer for the period from 1995-96 to 2002-03 was 11.1 per cent.

2.15 Table 2.9 presents a comparative position of Central transfers to the neighbouring States. Kerala's position is at the lowest, both in Central taxes and in grant-in-aids. Andhra Pradesh is at the top followed by Karnataka.

### Eleventh Finance Commission

2.16 The Eleventh Finance Commission's Award was extremely unfavourable to the State. The estimated reduction in transfers for the period 2000-05 as per Eleventh Finance Commission

Table 2.8  
Central Transfers: 1995-96 to 2003-04

(Rs. crore)

Year	Share in Central taxes & duties		Grant-in-aid and other receipts from Centre for plan and non-plan		Total transfers	
	Amount	Annual growth rate	Amount	Annual growth rate	Amount	Annual growth rate
1995-96	1037		468		1505	
1996-97	1243	19.9	490	4.7	1733	15.2
1997-98	1272	2.3	793	61.8	2065	19.2
1998-99	1382	8.6	608	-23.3	1990	-3.6
1999-00	1535	11.1	682	12.2	2217	11.4
2000-01	1586	3.3	616	-9.7	2202	-0.7
2001-02	1614	1.8	975	58.3	2589	17.6
2002-03	1715	6.3	938	-3.8	2653	18.9
2003-04	2078.51	21.16	907.61	-3.39	2986.12	12.55
AAGR (1995-96 to 2002-03)		7.6		14.3		11.1

Source: Finance Dept., Government of Kerala

Table 2.9  
Comparative Position of Central Transfers to Neighbouring States

Rs in Crore

State	2001-02					
	Share of Central Taxes		Grant from the Centre		Total	
	Amount	Percentage	Amount	Percentage	Amount	Percentage
Andhra Pradesh	3048.44	5.8	3315.31	7.7	6363.75	6.7
Karnataka	2924.99	5.6	1751.18	4.1	4676.17	4.9
Kerala	1614.26	3.1	975.33	2.3	2589.59	2.7
Tamil Nadu	2870.07	5.5	1381.54	3.2	4251.61	4.5
All States	52215.30	100	43082.30	100	95297.60	100

Source: State Finances, RBI, April 2004

Award as compared to the previous Commission has been worked out to be Rs.3664 crore (Table-2.10). This is been due to sharply reduced weightage given to population (1971 population) and increased weightage given to various parameters of backwardness. The parameters chosen and the weights assigned to them are: population (10 per cent), income (62.5 per cent), area (7.5 per cent), index of infrastructure (7.5 per cent), tax effort (5 per cent) and fiscal discipline (7.5 per cent).

### Twelfth Finance Commission

2.17 The Twelfth Finance Commission was constituted in November 2002. The State Government has submitted a detailed memorandum to the Commission depicting the fiscal problems being faced by the State, the second generation problems and the inabilities to maintain the services, created over the decades with the State's own effort. Very detailed estimates of the maintenance needs were also given to the Commission

2.18 The State has strongly raised the relevance of "backwardness" being given major weightage by the Finance Commissions when 'backwardness' is being dealt with under the plan in variety of ways. State has pointed out that there are nowadays a large number of Centrally Sponsored Schemes that had removal of backwardness as the main objective. State has also strongly urged that if backwardness is the main criteria for transfer of large funds under the discretion of Government of India under various Centrally Sponsored Schemes, then there is no justification for adopting the same criterion in horizontal devolution by Finance Commission also. Suggestions made by the State were as follows:

- Horizontal Devolution weightage on three criteria- Population 80%, tax effort 10% and fiscal correction 10%.
- To ensure that there is no shortfall in resource flows as compared to Commission estimates, Commission must lay down that in case there is a short fall in actual vertical devolution it should be made good in the form of grant-in-aid by the Centre under Art. 275.
- A three stage application to cover the non plan and plan revenue deficit as given in the Memorandum.
- In addition to adequate provision for maintenance of assets and services special grants for dealing with second generation and special features in the State.
- Future plan assistance should be in the form of grants. Past plan liability with regard to the loans taken from GOI must be written off in respect of States like Kerala which has utilized most of these funds in efforts to reach a high level of human development.
- In future loan portion of Central Assistance for State Plan and negotiated loans could be discontinued and in their place adequate increase in open market borrowing may be allowed within a prudent limit. Correspondingly, borrowing by Centre from open market can be reduced.

2.19 The Twelfth Finance Commission has submitted its recommendations to the President. From news reports appearing in the Press and reports of some leaks on the contents of the recommendations it is seen that the Twelfth Finance Commission has also continued to give a predominant position to backwardness in the weightage formula. If it turns out to be true, then the share of our State in the horizontal devolution

**Table 2.10**  
**Finance Commission Award : Share**

Item	Eleventh Finance Commission	Tenth Finance Commission
Population share	3.490%	3.438%
Share of Taxes	3.057%	3.498%
Share of Grants	1.387%	2.498%
Share of Total transfers	2.832%	3.407%
Estimated reduction in transfers in the EFC, compared to that in TFC	Rs. 3664 crore	

Source : Finance Department, Govt

may not show improvement over the 3.057% of the Eleventh Finance Commission's award. This may be the case for other southern States also.

2.20 What will benefit the State is the reported recommendation on non-plan revenue deficit grants. Also, it is most likely that the recommendation on debt restructuring and partial debt write-off, plan assistance in the form of grants, market borrowings in the place of central loans and back to back arrangements on multilateral assistance etc will be beneficial to us. This is one of the points raised by State in the detailed estimates. A great deal will depend on the quantum of grant recommended.

### Expenditure Pattern

#### The revenue expenditure

2.21 During the period from 1995-96 to 2002-03, when the revenue receipts increased by an annual average growth rate of 10.24 per cent only, the revenue expenditure increased by a higher growth rate of 14.7 per cent. In 2003-04, the revenue expenditure increased by Rs.739.62 crore (9.97%), over 2002-03 (Table 2.11). A disquieting feature noticed is that the share of development expenditure to total revenue expenditure in the State is on decline. The share of development expenditure which was 58.56 per cent of the total revenue expenditure in 1995-96, declined to 51.17 per cent in 2003-04. In

other words, the share of non development expenditure is on increase. When the development revenue expenditure increased by an annual growth rate of 13.82 per cent only, non development revenue expenditure increased by a growth rate of 16.19 per cent during the period from 1995-96 to 2002-03. The higher growth rate in non development expenditure is partially on account of the higher growth rates in debt services and pensions. The trend in major sector-wise expenditures are shown in Table-2.12.

#### Capital Expenditure

2.22 Table 2.13 presents the capital outlays for the period from 1995-96 to 2003-04. The trend shows steep decline over the years. When the total expenditure in the State went up by an annual average growth rate of 13.91 per cent during the period from 1995-96 to 2002-03, capital expenditure increased only at a very slow pace of 3.96 per cent. The ratio of capital expenditure to total expenditure, which was 8.82 per cent in 1995-96 dwindled to 3.96 per cent by 2003-04. This trend adversely affects the development and growth of the state. Despite higher growth in borrowings, the capital expenditure is on decline and this is one of the most disturbing features of the State finances. There is resort to the easiest option for fiscal correction through cuts in capital expenditure as short term measure sacrificing long

**Table 2.11**  
**Trend in Revenue Expenditure**

(Rs. crore)

Year	Total Revenue Expenditure		Development Expenditure		Non Development Expenditure	
	Amount	Annual growth rate	Amount	% to total revenue expenditure.	Amount	% to total revenue expenditure
1995-96	5826.38		3412.16	58.56	2414.22	41.44
1996-97	6788.10	16.51	4047.96	59.6	2740.14	40.4
1997-98	8241.12	21.41	5031.26	31.05	3209.86	38.95
1998-99	9228.08	11.98	5642.03	61.14	3586.05	38.86
1999-00	11565.96	25.33	6510.24	56.29	5055.72	43.71
2000-01	11877.52	2.69	6396.50	53.85	5481.42	46.15
2001-02	11662.03	-1.82	6028.34	51.69	5033.69	48.31
2002-03	14756.05	26.53	8064.80	54.65	6691.25	45.35
2003-04	15495.67	9.97	8023.46	53.97	7472.21	46.03
AAGR 1995-96 to 2002-03	14.67		13.82		16.19	

Source: Budget in Brief, Kerala, 2002-03, 2003-04, 2004-05  
Finance Department Govt. of Kerala

Table 2.12  
TREND IN REVENUE EXPENDITURE

Year	Development Expenditure						Non Development Expenditure					Total Rev.Expr.
	Edn	Health	Agri,AH and Coop	Inds,labour and Empl	Others	Total	Interest payment	pension	Others	Total		
95-96	1435.13	498.62	388.96	157.83	931.62	3412.16	924.16	716.85	773.21	2414.22	5826.38	
96-97	1616.45	535.33	474.75	201.42	1220.01	4047.96	1103.41	753.67	883.06	2740.14	6788.1	
97-98	1761.05	634.12	575.65	214.61	1845.83	5031.26	1286.09	913.02	1010.8	3209.86	8241.12	
98-99	1957.9	694.86	615.43	191.75	2182.09	5642.03	1446.26	1154.32	985.47	3586.05	9228.08	
99-00	2609.49	870.38	643.67	216.87	2169.83	6510.14	1952.27	1808.29	1295.2	5055.72	11565.96	
2000-01	2620.24	837.04	594.69	178.34	2166.19	6396.5	2257.6	1929.48	1294.3	5481.42	11877.92	
2001-02	2471	861.21	487.57	176.36	2032.2	6028.34	2489.47	1837.93	1306.3	5633.69	11662.03	
2002-03	2967.56	954.78	594.5	197.58	3350.38	8064.8	2946.77	2282.9	1462.1	6691.25	14756.05	
2003-04	3123.1	1062.1	647.06	283.05	2909.16	8023.46	3328.29	2408	1736.4	7472.21	15495.67	
GRT (1995-96 to 2002-03)	11.55	10.05	7.3	4.25	22.63	13.82	18.24	19.36	10.05	16.19	14.66	

Source : Finance Department ,Govt of Kerala

term capital formation. There is no gaining the fact that, over the last 10 years, public development outlay has become a residual to other expenditure. The sector-wise trends in capital expenditures are shown in Table-2.14

### Interest, Pension and Salary

2.23 Interest, pension and salary are the major items coming under non development expenditure of the State. The trend in expenditure on these items is shown in Table 2.15. When interest was growing at a rate of 18.4 per cent during the period from 1995-96 to 2002-03, pension was growing at a rate of 19.4 per cent and salary at a rate of 11.4 per cent. The combined growth of these three items during the above period was 16.2 per cent. The total commitment on interest,

pension and salary which was 71.4 per cent of the revenue receipts or 66.4 per cent of revenue expenditure in 1995-96, gradually increased and reached at a level of as high as 99.4 per cent of revenue receipts or 73.1 per cent of revenue expenditure in 2000-01. In 1999-00, the commitment on this account was more heavy i.e. 104 per cent of revenue receipts. This was due to the additional burden, following the pay revision of State employees on par with the Fifth Central Pay revision.

2.24 The Table reveals that the burden of interest and debt services is increasing alarmingly. Within the period of eight years from 1995-96 to 2003-04, interest payments have increased more than three and a half times (362 per cent). State's

**Table 2.13**  
**Trend in capital expenditure**

Year	Capital Expenditure		Total Expenditure		Captl.expr as % to total expr
	Amount	Annual GR	Amount	Annual GR	
1995-96	563.47		6389.85		8.82
1996-97	622.52	10.48	7410.62	15.97	8.40
1997-98	738.87	18.69	8979.96	21.18	8.23
1998-99	651.63	-11.81	9879.71	10.02	6.60
1999-00	648.18	-0.53	12214.14	23.63	5.31
2000-01	577.20	-10.95	12455.11	1.97	4.63
2001-02	558.36	-3.26	12220.38	-1.88	4.57
2002-03	698.66	25.13	15454.71	26.47	4.52
2003-04	639.71	-3.13	16135.38	4.40	4.00
Annual Average Growth Rate (95-96 to 02-03)		3.96		13.91	

Source: Budget in Brief, 2004-05  
Finance Department Govt of Kerala

**Table-2.14**  
**Trend in Capital Expenditure**

Year	(Rs.in crore)					
	Irrigation	Agriculture and allied Services	Industries	Public Works	Others	Total
1995-96	170.34	52.49	91.50	137.05	112.09	563.47
1996-97	187.59	51.14	110.69	155.65	117.46	622.53
1997-98	188.29	53.57	106.11	236.04	154.86	738.87
1998-99	177.76	40.57	80.06	182.68	80.56	651.63
1999-00	169.75	54.67	68.79	241.96	113.01	648.18
2000-01	154.5	36.69	58.2	187.99	139.82	577.2
2001-02	147.21	29.18	30.24	222.14	129.59	558.36
2002-03	132.32	44.95	33.09	287.42	200.88	698.66
2003-04	159	39	31	273	138.71	639.71
AAGR(95-96 to 02-03)	-3.35	1.91	-10.83	14.33	14.34	3.96

Sources: 1. Finance Department, Govt. of Kerala  
2. Budget in Brief, Kerala: 2003-04

undue dependence on short term high cost borrowings and medium term loans to clear the over draft liabilities are the major reasons for this state of affairs. The debt swap scheme of the Govt. of India has not had a major effect. The State was permitted to swap only Rs.344 crore of high cost debt during 2002-03 and in 2003-04 including the swap available under National Savings loan the debt swap would not exceed Rs.1100 crore. Even before the gains from the parametric pension reforms brought in 2002 could be harvested, Government rolled back the parametric changes in 2004. Such a rollback would cost the Government Rs 350 crore per annum as savings foregone. Other States are bringing in the parametric changes taking the cue from Kerala, but the State that effected the parametric changes first has rolled them back. Pension payments are likely to increase further as life expectancy is on the increase.

#### Debt profile

2.25 Table 2.16 reveals the debt position of the State. The three components of debt liabilities are internal debt, small savings / provident fund and loans and advances from the Central Government. Within the period of 1995-96 to 2003-04, the total debt of the State increased more than three and a half times from Rs 10113.54 crore in 1995-96 to Rs 37452.21 crore (up to 31.3.2004). The unbridled growth of debt in this manner is of serious concern.

2.26 Internal debt (market loans) grew faster, with an annual average growth rate of 24.9 per cent and during the period 1995-96 to 2003-04 internal debt increased seven times. The major chunk of the debt liabilities was created by high cost borrowings made for meeting recurring revenue expenditure. The debt -GSDP ratio as well as the per capita liability of the State is much higher than that of neighboring States' and all States' average (Table 2.17). The per capita debt of Kerala, which was Rs.3630 in 1997 increased to Rs. 8342 in 2002(RE). The per capita debt of neighbouring States in 2002(RE) was only Rs. 5100 for Karnataka, Rs. 5443 for Tamil Nadu and Rs.5711 for Andhra Pradesh; all States' average being Rs.5737. So also was the case with Debt-GSDP ratio. When the ratios of neighbouring States ranged between 21 per cent and 26 per cent in 2001-02, that of Kerala was as high as 32 per cent. As per the latest estimate for 2003-04, Kerala's per capita debt will increase to Rs.11736 (2001 census population) and debt/GSDP ratio to 39.9 per cent. The debt profile of the State is shown in Table.2.18. The gross retention (receipt minus disbursement) as well as net retention (gross retention minus interest) attained their peak levels in 1999-00 at Rs.4424.39 crore and Rs.2494.23 crore respectively and there after the gross retention declined to a level of Rs.2946.26 crore and the net retention to a level of Rs.494.89 crore in 2001-02. In 2002-03 the gross retention again went up

**Table 2.15**  
**Trend of Expenditure on Interest, Pension and Salary**

(Rs.crores)

Year	Interest			Pension			Salary			Total		
	Amount	% to rev. recpt.	% to rev. expr	Amount	% to rev. recpt.	% to rev. expr	Amount	% to rev. recpt.	% to rev. expr	Amount	% to rev. recpt.	% to rev. expr
1995-96	924.2	17.0	15.9	716.9	13.2	12.3	2230.4	41.1	38.3	3871.4	71.4	66.4
1996-97	1103.4	18.0	16.3	753.7	12.3	11.1	2616.7	42.6	38.5	4473.7	72.8	65.9
1997-98	1286.1	18.1	15.6	913.0	12.8	11.1	2803.3	39.4	34.0	5002.4	70.3	60.7
1998-99	1446.3	20.1	15.7	1154.3	16.0	12.5	3254.7	45.2	35.3	5855.3	81.3	63.5
1999-00	1952.3	24.6	16.9	1808.3	22.8	15.6	4502.9	56.7	38.9	8263.4	104.1	71.4
2000-01	2257.6	25.9	19.0	1929.5	22.1	16.2	4491.6	51.4	37.8	8678.7	99.4	73.1
2001-02	2489.5	27.5	21.3	1837.9	20.3	15.8	4200.8	46.4	36.0	8528.2	94.2	73.1
2002-03	2946.8	27.7	20.0	2282.9	21.5	15.5	4679.0	44.0	31.7	9908.7	93.2	67.1
2003-04	3328.2	26.6	20.6	2408	18.3	14.1	5067	41.0	31.7	10779.3	85.9	66.4
AAGR(95-96 to 2002-03)	18.4			19.4			11.4			16.2		

Source: Budget in Brief, Kerala  
Finance Department Govt of Kerala



to Rs.4010.89 crore and net retention to Rs.1111.10 crore.

2.27 Even though interest rates have declined over the past 18 months the State's debt stock has continued to rise though marginally.

2.28 The Tenth and Eleventh Finance Commissions' observations on debt profile are given in Box-2.3

#### Contingent Liabilities

2.29 The State has been quite liberal in issuing guarantees for debt taken by the public sector

#### BOX - 2.3

#### The Tenth Finance Commission observed three disturbing features of debt profile –

- i) Diversion of borrowed funds for meeting revenue expenditure.
- ii) Use of borrowed funds in unproductive enterprises or the enterprises which while potentially productive were providing very low or negative returns; and
- iii) No provision for diversion or amortization of funds in respect of government assets making debt a roll over issue.

#### The Eleventh Finance Commission suggested four steps as being desirable for reducing the debt burden (non observation of these would be considered a disturbing trend) of the states –

- i) The incremental revenue receipts should meet the incremental interest burden and the incremental primary expenditure.
- ii) A surplus may be generated on revenue account to meet future payment obligations.
- iii) The surplus should be separately credited in a sinking fund to be exclusively used for the purpose of debt re-payment; and
- iv) State should generate and sustain a balance in their revenue account.

Source: State Finances-A critical Appraisal:  
A Research Paper published by iCISA, Office of C & AG of India.

**Table-2.16**  
**DEBT OF THE STATE**

(Rs.in crore)

Year	Internal Debt	Small Savings provident Fund, Others	Loans and advances from the central Govt.	Total
1995-96	2486.28	3389.01	4238.25	10113.54
1996-97	2970.85	3837.52	4612.54	11420.91
1997-98	3585.12	4292.51	4990.51	12868.14
1998-99	4424.36	5627.78	5648.13	15700.27
1999-00	5735.61	8537.67	5902.79	20176.1
2000-01	7627.34	10189.75	6101.88	23918.97
2001-02	9342.46	11261.65	6346.46	26950.57
2002-03	11747.02	12778.36	6534.88	31060.26
2003-04	17421.02	14403.36	5627.96	37452.21
Growth rate: 95-96 to 02-03	24.91	21.61	6.44	17.53

Sources: Finance Dept., Govt. Kerala

undertakings. The outstanding guarantees of the State Government up to 2002-03 are given in Table-2.19. With in a period of six years the liabilities increased from Rs. 2082.32 crore in 1995-96 to Rs. 12623.38 crore in 2002-03 In the event of default by borrowing units, for which Government is a guarantor, the State will be required to meet the obligations and in such cases contingent liabilities will become a burden of the State. Hence, like some other States, Kerala has also brought a ceiling on Government guarantees by enactment of 'The Kerala Ceiling on Government Guarantees Act, 2003'. As per the ceiling, the outstanding Government guarantees as on the first day of April of any year shall not exceed Rs. 14000 crores.

### Issues and perspectives

2.30 Revenue augmentation and containment of non development expenditure including hiring restraint are the measures that need to be pursued vigorously to facilitate higher development expenditure. Nowhere is hiring restraint more needed than under 'Education', especially the school stage. While the number of students has been falling sharply, due to decline in rate of growth in population, there has been no corresponding reduction in teachers' numbers. This is because the managements appoint the teachers and the Government pays the salaries.. Efforts to bring discipline in this matter have not so far been successful The unique achievements that the State attained in several sectors are getting undermined and the State is facing second generation problems in health, education and social infrastructure for want of adequate resources for their maintenance.

2.31 The State should take spirited measures to augment tax receipts through better tax administration, improved tax compliance and

rationalization of the tax structure. The widening tax exemptions and concessions extended to various sectors need to be subjected to a thorough review for assessing whether they are effective in promoting the desired objectives. Low cost recovery from services is slowing down even a normal inflation indexed growth in non-tax revenue receipts. Cost recovery and public spending bear no positive relation. The poor aggregate cost recovery ratio for the State is on account of the higher share of social services. There is ample scope for increasing non tax revenue in the State through higher user charges, as the rates now prevailing for public services were fixed years back. Loss making public sector units continue to adversely impact both explicitly and implicitly on the state's fiscal position. Returns on investment are abysmally low hurting the State in every Finance Commission awards, since the Commissions follow certain norms as regards minimum returns.

2.32 Faced with the secular deteriorating fiscal position the State has initiated medium term fiscal reforms. Enactment of 'The Kerala Fiscal Responsibility Act, 2003', 'The Kerala Ceiling On Government Guarantee Act, 2003', closure of TP accounts, redeployment and restructuring initiatives for an efficient civil services are some of the components of the reform programme. The Kerala Fiscal Responsibility Act, 2003 mandates lowering of fiscal deficit to 2 per cent of the State's Domestic Product and balancing the revenue budget by March 2007. The key strategies of the Medium Term Fiscal Reforms Programme (MTFRP) are listed below:

- Tax reforms leading to improvement in rate structure, administration and enforcement and improvement of tax to GSDP ratio .
- Rate enhancement and improved monitoring

**Table 2. 17**  
**DEBT POSITION: COMPARISON WITH OTHER STATES**

States	Debt/GSDP Ratio(%)					Per capita Debt (Rupees)					
	1997	98	99	00	01	1997	98	99	00	01	02(RE)
Andhrapradesh	19	21	21	24	26	2303	2722	3223	3882	4724	5711
Karnataka	17	08	18	20	21	2256	2574	3029	3623	4254	5100
Kerala	26	26	28	31	32	3630	4090	4940	6285	7414	8342
Tamil Nadu	16	16	16	19	21	2352	2701	3216	3877	4644	5443
All States	18	18	18	22	24	2543	2944	3522	4257	4996	5737

Source: Budget in Brief (Kerala) : 2004-05

Table 2.18

## Debt Profile of the State (1993-94 to 2002-03)

Item	Year	(Rs in crore)										
		1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	99-2000	2000-01	2001-02	2002-03	
Loans and advances from Government of India	Receipts	595.85	749.42	655.45	539.94	567.15	869.59	1072.97	483.11	780.7	1192.86	
	Disbursements	202.67	137.59	143.25	165.65	189.18	211.96	246.95	284.01	536.12	1004.44	
	Interest	278.16	330.7	418.07	494.16	550.71	606.54	703.74	732.26	778.56	805.02	
Small Savings and Deposits	GROSS RETENTION	393.18	611.83	512.2	374.29	377.97	657.63	826.02	199.1	244.58	188.42	
	NET RETENTION	115.02	281.13	94.13	-119.87	-172.74	51.09	122.28	-533.16	-533.98	-616.6	
	Receipts	1629.29	1880.9	1887.17	1988.28	2396.71	3875.61	6986.41	6200.93	5807.34	8017.01	
State Provident Funds	Disbursements	1504.39	1581.54	1824.76	1809.58	2168.57	2935.66	4981.87	5312.91	4804.94	6738.8	
	Interest	45.79	103.26	64.62	62.46	76.7	78.92	273	357.84	441.64	578.5	
	GROSS RETENTION	124.9	299.36	62.41	178.7	228.14	939.95	2004.54	888.02	1002.4	1278.21	
Internal Debt	NET RETENTION	79.11	196.1	-2.21	116.24	151.44	861.03	1731.54	530.18	560.76	699.71	
	Receipts	692.14	773.16	800.9	880.1	972.17	1128.11	1731.92	1722.63	1268.51	1685.99	
	Disbursements	368.82	428.2	513.36	636.32	779.95	770.01	859.97	1033.71	1284.34	1546.29	
TOTAL DEBT	Interest	174.13	159.33	176.04	214.66	253.69	276.32	364.19	391.02	290.03	375.98	
	GROSS RETENTION	323.32	344.96	287.54	243.78	192.22	358.1	853.95	688.92	-15.83	139.7	
	NET RETENTION	149.19	185.63	111.5	29.12	-61.47	81.78	489.76	297.9	-305.86	-236.28	
TOTAL DEBT	Receipts	1143.35	509.32	427.64	623.01	947.81	3101.91	4858.25	6975.36	7849.7	10518.26	
	Disbursements	1102.81	164.68	20.68	138.44	333.54	2262.67	4118.37	5083.63	6134.59	8113.7	
	Interest	180.9	216.41	253.63	318.08	388.5	465.38	589.23	747.71	941.14	1140.29	
TOTAL DEBT	GROSS RETENTION	40.54	344.64	406.96	484.57	614.27	839.24	739.88	1891.73	1715.11	2404.56	
	NET RETENTION	-140.36	128.23	153.33	166.49	225.77	373.86	150.65	1144.02	773.97	1264.27	
	Receipts	4060.63	3912.8	3771.16	4031.33	4883.84	8975.22	14631.55	15382.03	15076.25	21414.12	
TOTAL DEBT	Disbursements	3178.69	2312.01	2502.05	2749.99	3471.24	6180.3	10207.16	11714.26	12759.99	17403.23	
	Interest	678.98	809.7	912.36	1089.36	1269.6	1427.16	1930.16	2228.83	2451.37	2899.79	
	GROSS RETENTION	881.94	1600.79	1269.11	1281.34	1412.6	2794.92	4424.39	3667.77	2946.26	4010.89	
TOTAL DEBT	202.96	791.09	356.75	191.98	143	1367.76	2494.23	1438.94	494.89	1111.1		

Source: Finance department, Government of Kerala

**Table-2.19**  
**Outstanding Guarantees**

Year	(Rs.in crore)	
	Maximum Amount Guaranteed	Amount Outstanding
1992-93	2732.51	2295.73
1993-94	3680.76	2319.99
1994-95	4407.14	3228.64
1995-96	5167.48	2082.32
1996-97	5867.82	1948.97
1997-98	6656.89	3292.29
1998-99	9078.16	5112.96
99-2000	11431.59	7952.24
2000-01	12797.80	9553.17
2001-02	14122.46	11817.53
2002-03	14922.61	12623.38

Source: Finance Department, Govt. of Kerala

and collection of non tax revenues with gradual phasing out of implicit subsidies.

- Phasing out of non-merit subsidies and better targeting of merit subsidies.
- Compensation of administrative costs and effective economy and austerity measures. Enactment of legislation to promote transparency in Government procurement
- Modernisation of Government Programme (MGP) to improve the service delivery to the people.
- Budgetary controls through online computerized treasury network.
- Computerized work monitoring and payment system for works department to reduce time and cost over-runs.
- Detailed debt profiles to be set up to ensure that debt portfolio leads towards lower cost and long term borrowings. Fiscal sustainability rather than fund availability would determine borrowings.
- Public accounts clean up by closing down inoperative deposit accounts. One time write back of frozen public account liabilities and measures to prevent future build up.
- Budgetary reforms to promote departmental accountability, flexibility and performance.
- Introduction of 'Forward Estimate' concept in Budgets. The objectives of this concept are to have a medium term perspective in fiscal management, to achieve fiscal stability and discipline, and to allocate resources effectively in accordance with the policy of the Government.

2.33 The State can stabilize its debt and achieve zero revenue targets in March 2007 only if sustained cross-sectoral reform effort takes place. Fiscal stabilization depends critically on policy performance. In view of the plan devolution to local bodies in the form of revenue grant and 80% of the plan expenditure is revenue expenditure it may not be possible to reach zero revenue deficit target. Government may have to think of targeting alternative fiscal targets such as fiscal deficit reduction. Pursuing the revenue deficit elimination by 2007 may lead to a lower debt but can result in a limited scope for increased productive expenditures. The recommendations of the Twelfth Finance Commission will be relevant in this context.

2.34 The most important risk is that the reform progress could get stalled due to a variety of reasons. But staying on course in the reform path chosen in 2002 will be critical for meeting the onerous challenge of stabilizing fiscal indicators in the medium-term.

2.35 However, fiscal reforms, to be really sustainable cannot be driven by expert prescriptions. What is required is a socio political consensus emerging from an objective analysis of the present situation and honest appraisal of facts tempered by a strictly pro-poor approach. In the 50's and 60's there was a broad consensus on the type of development, which the State needed focusing on human development and social

security with particular emphasis on equity. Now in the current economic context when the State is faced with second-generation problems what is required is generation of wealth and income and focussed attention on the deserving bottom sections of the population.

2.36 Unfortunately over the years, different interest groups, a large number of them self-centered and rent seeking, have established, a gridlock, which preserves the status quo. Any attempt to change is opposed in all possible ways. Every form of resource mobilization whether it

be taxation or tariff is opposed with the result that public facilities especially in health and education are deteriorating at an alarming pace giving space to largely rent-seeking private participation, mostly unregulated and overpriced.

2.37 In the din and noise and protestations by incumbent interests, the simple question 'who gains and who loses' does not get addressed. Unless this is done, fiscal reforms would be ad hoc and paradoxically, detrimental not only to economic growth and development but will also be harmful to the poor.



## CHAPTER - 3

# INCOME AND POPULATION

### INCOME

#### Global Economy

The global economy has broadened and strengthened faster than expected. The world Economy's robust growth despite soaring oil prices, inflationary pressures worsening war in Iraq, troubles at the United Nations, tensions in Palestine and adverse growth prospects in the poorest countries is significant. The International Monetary Fund (IMF), in its update on the world economy in April 2004, projected world output to grow by 4.6 percent in 2004, which is higher than the earlier projection of 4.1 percent. During 2005, the world output growth is expected to remain strong at 4.4 percent. The growth in volume of world trade is projected to pick up from 4.5 percent in 2003 to 6.8 percent in 2004.

3.2 Though the prospects for growth in global output and trade have brightened, several uncertainties persist. The lack of firmness in global oil price, volatility among major currencies and cyclical factors arising out of a pick-up in economic activity increase the risk of inflation.

3.3 The estimated GDP growth rate of major countries in years 2002 to 2004 and the projection for 2005 are given in Table 3.1. The world level of real GDP growth during the year 2002 was 3.0%; during 2003, 3.9%; 2004, 5.0% (estimated) & 4.3% (projection) in 2005. Among the developed Nations of the world, Singapore had the highest growth rate of real GDP ie 4.4%, followed by both South Korea and Hong

**Table- 3.1**  
**Real GDP Growth Rate of Major Countries**  
(% change over a year ago)

Countries	Real GDP Growth Rate			Projection
	2002	2003	2004	2005
World	3.0	3.9	5.0	4.3
Advanced Economies				
USA	1.9	3.0	4.3	3.5
Japan	-0.3	2.5	4.4	2.3
Germany	0.1	-0.1	2.0	1.8
France	1.1	0.5	2.6	2.3
Italy	0.4	0.3	1.4	1.9
UK	1.8	2.2	3.4	2.5
Canada	3.4	2.0	2.9	3.1
Spain	2.2	2.5	2.6	2.9
Netherland	0.6	-0.9	1.1	1.8
Belgium	0.7	1.1	2.5	2.3
Sweden	2.1	1.6	3.0	2.5
Austria	1.4	0.7	1.6	2.4
Denmark	1.0	0.5	2.1	2.5
Finland	2.3	2.0	2.8	2.6
Greece	3.9	4.3	3.9	3.0
Portugal	0.4	-1.2	1.4	2.2
Switzerland	0.2	-0.5	1.8	2.2
Norway	1.4	0.4	2.7	2.7
Korea South	7.0	3.1	4.6	4.0
Australia	3.8	3.0	3.6	3.4
Taiwan	3.6	3.3	5.6	4.1
Hong Kong	1.9	3.2	7.5	4.0
Singapore	2.2	1.1	8.8	4.4
New Zealand	4.3	3.4	4.2	2.0
Israel	-0.7	1.3	3.6	3.5
Euro area	0.8	0.5	2.2	2.2
Selected Asian Countries				
Indonesia	3.7	4.1	4.8	5.0
Malaysia	4.1	5.3	6.5	6.3
Philippines	4.3	4.7	5.2	4.2
Thailand	5.4	6.8	6.2	6.4
Bangladesh	4.9	5.4	5.5	5.7
INDIA	5.0	7.2	6.4	6.7
Pakistan	4.4	6.2	6.3	6.0
China	8.3	9.1	9.0	7.5
Selected Latin American Countries				
Argentina	-10.9	8.8	7.0	4.0
Brazil	1.9	-0.2	4.0	3.5
Chile	2.2	3.3	4.9	4.7
Colombia	1.6	3.7	4.0	4.0
Ecuador	3.3	2.6	5.4	4.0
Mexico	0.8	1.3	4.0	3.2
Peru	4.9	4.1	4.5	4.5
Uruguay	-11.0	2.5	10.0	3.5

Note: All the data given in the table are sourced from World Economic, Outlook: September 2004, IMF

Kong (4.0%), both USA and Israel (3.5%) during 2004. Among the Asian Countries China achieved 9% real GDP growth rate followed by Malaysia (6.5%), India (6.4%) and Pakistan (6.3%). For Latin American Countries, Venezuela marked 12.1% growth in real GDP followed by Uruguay (10%), Argentina (7%) and Ecuador (5.4%) during 2004.

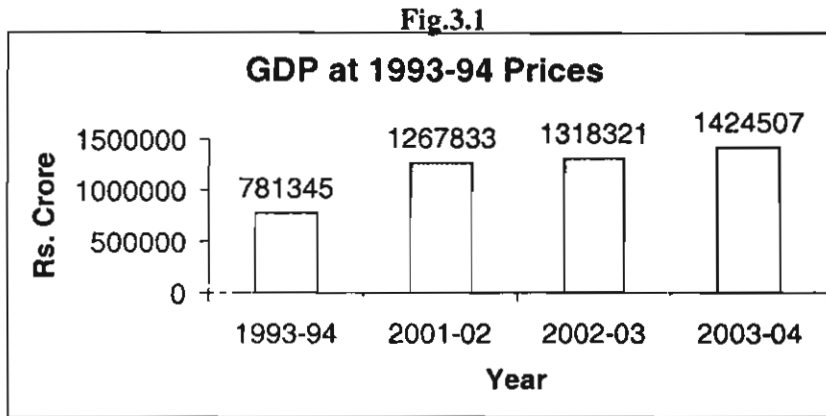
**National Income**

3.4 The economy grew by 7.4 percent in real terms in the first quarter of fiscal 2004-05. This compares well with the 5.3 percent increase in the same quarter a year ago. The economic growth slowed down to 6.6 percent in the second quarter of this fiscal due to a negative growth of 0.8 percent in the farm sector. RBI had scaled up its projection of GDP growth at 7.0%. World Bank has forecast 6.5 percent growth rate for Indian economy for fiscal 2004-05 despite the damage suffered by the country in tsunami tragedy.

3.5 As per the Statistics published by Central Statistical Organisation the Advance Estimate of Gross Domestic Product (GDP) at factor cost at constant (1993-94) prices for the year 2003-04

has been estimated at Rs. 14,24,507 crore, as against the Quick Estimate of Rs. 13,18,321 crore for 2002-03. This shows that the GDP in real terms could grow at a rate of 8.1 percent during 2003-04 compared to the growth rate of 4.0 % during the previous year. At current prices, the Advance Estimate of GDP for 2003-04 is estimated at Rs. 25,16,912 crore as against the Quick Estimate of Rs. 22,49,493 crore for 2002-03 showing an increase of 11.9% during the year 2003-04.

3.6 The Advance Estimate of National Income ( i.e Net National Product at factor cost) at constant prices (1993-94) for 2003-04 is worked out to be Rs. 12,53,732 crore as against the previous year's Quick Estimate of Rs. 11,56,714 crore. In terms of growth rates, the National Income is estimated to rise by 8.4 percent during 2003-04 compared to the growth rate of 3.5 percent during 2002-03. At current prices the Advance Estimate of National Income at factor cost for 2003-04 is estimated at Rs. 22,38,246 crore, compared to the Quick Estimate of Rs. 19,95,229 crore for 2002-03, showing a rise of 12.2 percent during 2003-04.



**Table 3.2**  
National Product, Domestic Product & Per Capita Income at Factor Cost (All India)  
(Rs. Crore)

Sl.No.	Item	At Current Prices		At 1993-94 Prices	
		2002-03@	2003-04*	2002-03@	2003-04*
1	Gross Domestic Product (GDP)	2249493 (7.6)	2516912 (11.9)	1318321 (4.0)	1424507(8.1)
2	Net National Product (NNP) i.e. National Income	1995229 (7.2)	2238246(12.2)	1156714 (3.5)	1253732 (8.4)
3	Per Capita National Income (Rs.)	18912 (5.4)	20860 (10.3)	10964 (1.8)	11684 (6.6)

The figures within parentheses indicate percentage change over the previous year.

@ : Quick Estimates

\* : Advance Estimate

Source: Central Statistical Organisation

**Table 3.3**  
**Sectoral Growth Rates in GDP (All India)**  
**(At Factor Cost by Economic Activity - 2001-02 to 2002-03)**

Sl.No.	Industry	Percentage change over the previous year			
		At Current Prices		At 1993-94 Prices	
		2001-02	2002-03*	2001-02	2002-03*
1	Agriculture, Forestry & Fishing	11.4	-2.3	6.5	-5.2
2	Mining & Quarrying	5.5	28.8	2.2	8.8
3	Manufacturing	6.2	9.6	3.6	6.2
4	Electricity, Gas & Water Supply	3.3	7.0	3.6	3.8
5	Construction	7.0	11.3	3.1	7.3
6	Trade, Hotels, & Restaurant	10.3	7.5	8.7	4.5
7	Transport, Storage & Communication	11.7	10.2	8.6	11.6
8	Financing, Insurance, Real Estate & Business Services	13.1	14.8	4.5	8.8
9	Community, Social & Personal Services	10.1	9.9	5.1	5.8
	<b>Gross Domestic Product at Factor Cost</b>	<b>9.9</b>	<b>7.6</b>	<b>5.8</b>	<b>4.0</b>

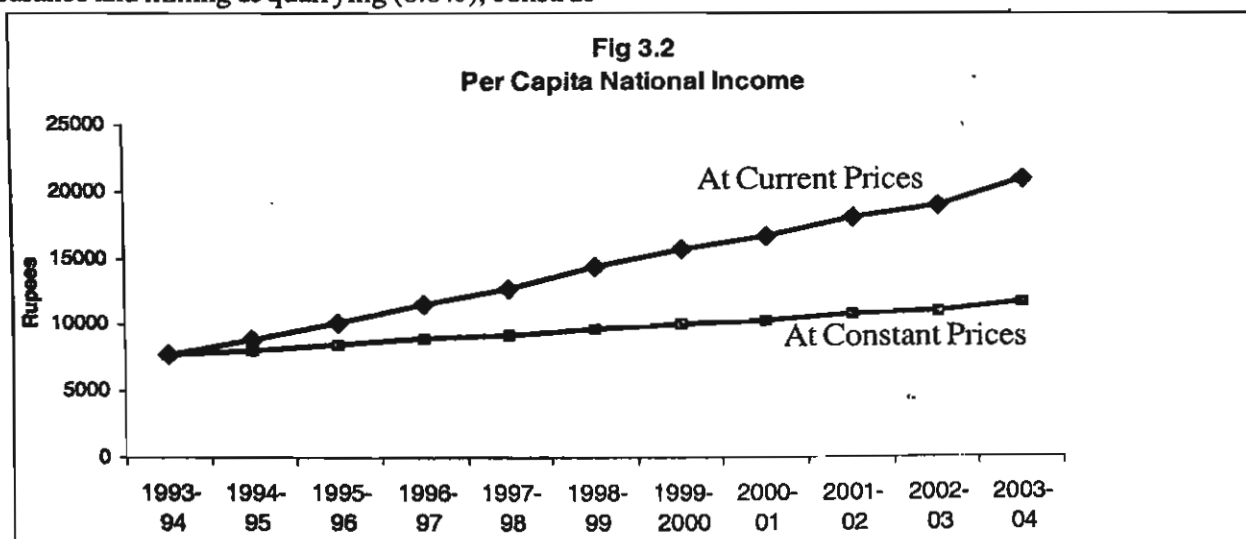
\* : Quick Estimates, Source: Central Statistical Organization

3.7 The overall performance of the economy during the year 2002-03 was positive (4.0%) but not impressive compared to the growth of 5.8 percent in the previous year. The percentage change in the GDP (at factor cost) in different sectors of the economy, which are presented in Table 3.3 reveal negative growth in real terms in agriculture, forestry and fishing (-5.2%) and a meagre growth in electricity, gas and water supply (3.8%) during 2002-03. The growth of 4.0 percent in GDP could be achieved because of high growth in some sectors like transport, storage & communication (11.6%); both financing & insurance and mining & quarrying (8.8%); construc-

tion (7.3%); manufacturing (6.2%); community, social & personal services (5.8%) and trade, hotels & restaurant (4.5%).

#### Per Capita National Income

3.8 The per capita income (per capita net national product at factor cost) in real term, (at 1993-94 prices) during 2003-04 is estimated to attain a level of Rs.11684 as compared to the Quick Estimates for the year 2002-03 of Rs.10964. The rate of growth of per capita income during 2003-04 is 6.6 percent as against the previous year's growth rate of 1.8 percent. At current prices the per capita income during 2003-04 is estimated to





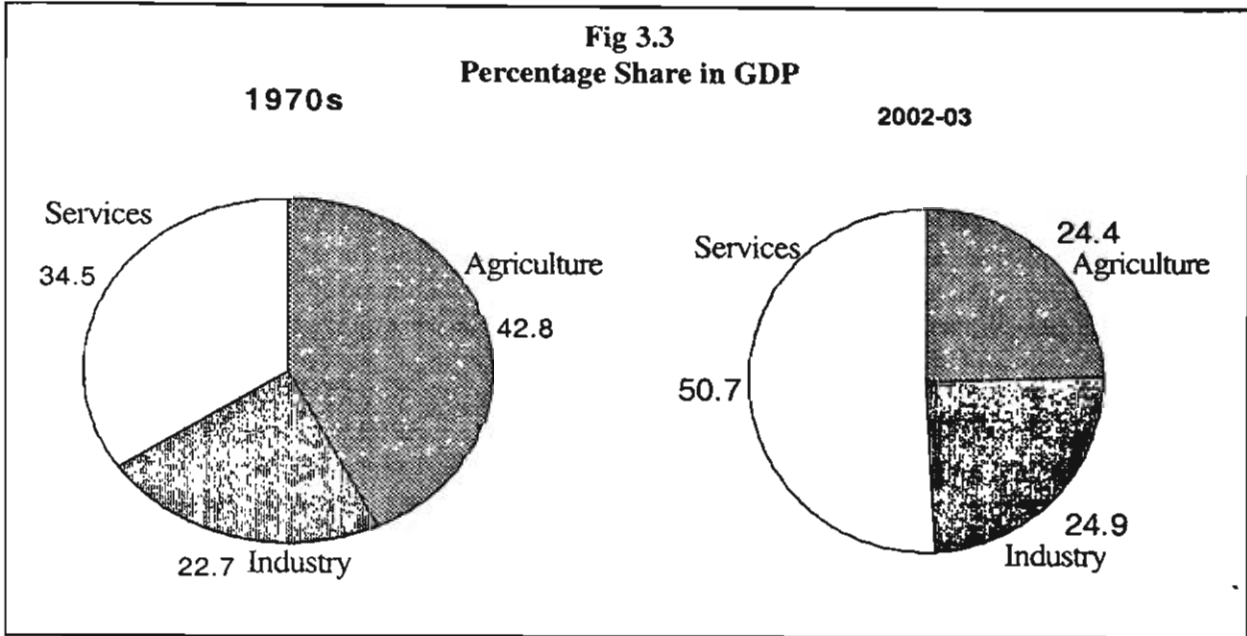
reach a level of Rs. 20860 as compared to the Quick Estimate of Rs. 18912 for the year 2002-03, showing a rise of 10.3 percent.

### Sectoral Distribution of GDP

3.9 During 1970s the contribution from agricultural sector to the GDP was 42.8%, industry sector 22.7% and service sector 34.5%. The analysis of sectoral growth during the last three decades reveals that the contribution of primary

sector is decreasing and that of tertiary sector is increasing. The contribution of secondary sector has nominal variation (See Fig 3.3).

3.10 An analysis of the percentage distribution of GDP during 2002-03 at current prices shows that 22.7 percent of the GDP is from agriculture, forestry and fishing followed by manufacturing (15.6 percent) and community, social & personal



**Table 3.4**

### Gross Domestic Product at Factor Cost by Percentage Distribution (All India)

Sl.No.	Industry of origin	Percentage Distribution of GDP			
		At Current Prices		At 1993-94 Prices	
		2001-02	2002-03*	2001-02	2002-03*
1	Agriculture, Forestry & Fishing	25.0	22.7	24.1	22.0
2	Mining & Quarrying	2.3	2.7	2.3	2.4
<b>Sub Total - Primary</b>		<b>27.3</b>	<b>25.4</b>	<b>26.4</b>	<b>24.4</b>
3	Manufacturing	15.3	15.6	16.9	17.2
4	Electricity, Gas & Water Supply	2.1	2.1	2.4	2.4
5	Construction	5.9	6.2	5.1	5.3
<b>Sub Total - Secondary</b>		<b>23.3</b>	<b>23.9</b>	<b>24.4</b>	<b>24.9</b>
6	Trade, Hotels, & Restaurant	14.3	14.3	15.0	15.1
7	Transport, Storage & Communication	7.6	7.7	8.4	9.0
8	Financing, Insurance, Real Estate & Business Services	12.9	13.8	12.4	13.0
9	Community, Social & Personal Services	14.6	14.9	13.4	13.6
<b>Sub Total - Tertiary</b>		<b>49.4</b>	<b>50.7</b>	<b>49.2</b>	<b>50.7</b>
<b>Gross Domestic Products at Factor Cost</b>		<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

\* : Quick Estimate, Source: Central Statistical Organisation

services (14.9 percent). At constant prices (1993-94) the maximum contribution to GDP during 2002-03 is from agriculture, forestry and fishing (22.0%) followed by manufacturing (17.2%) and trade, hostels & restaurant (15.1%). Sector-wise GDP at current and constant prices is given in Appendices 3.3. and 3.4

**State Income**

3.11 State Income, namely, Net State Domestic Product at factor cost at constant prices (1993-94) is estimated at Rs. 39736.99 crore during 2003-04 as against Rs. 37036.99 crore during 2002-03, registering a growth rate of 7.3 percent. At current prices the state Income is estimated at Rs. 78933.13 crore during 2003-04 as against Rs. 71063.68 crore during 2002-03, recording a growth rate of 11.1% compared to 11.4 percent in 2002-03. (see Table 3.5) The Advance Estimate of State Income during 2004-05 at current prices is Rs. 87313.12 crore and at constant prices Rs. 42756.9 crore.

3.12 The annual average growth rate of State Income during 1970's at current prices was 10.73% and at 1970-71 prices was 2.16 %. During 1980's it was 12.15% at current prices and 3.39 % at 1980-81 prices. The average growth rate during 1990's at current prices was 13.51% and at constant prices was 5.99 %. The computation of state income does not include remittances from outside the state. If remittances from out-

side the state were also added to SDP, the state income would be 20% more than the present SDP. In the following account of percapita state and district income, this fact should be borne in mind

**Per Capita State Income**

3.13 Per capita Net State Domestic Product at current prices increased from Rs.21853 in 2002-03 to Rs.24053 in 2003-04 recording a growth rate of 10.1%. The per capita state income at constant prices (1993-94) during 2003-04 was Rs.12109 compared to Rs.11389 in 2002-03, showing a rise of 6.3%. At the same time the National Percapita Income at constant prices was Rs. 11684 during 2003-04.

**Sectoral Distribution of State Income**

3.14 The contribution from primary, secondary and tertiary sectors to the Net State Domestic Product at constant prices (1993-94) constitutes 17.1 %, 19.3% and 63.6% respectively during 2003-04. At current prices, the primary, secondary and tertiary sectors contribute 16.7%, 22.6% and 60.7% respectively to the Net State Domestic Product during 2003-04. While analyzing the sectoral distribution of state income during the last three years it is seen that the contribution from primary sector is decreasing and tertiary sector increasing. But secondary sector remains almost stagnant. The details of sectoral distribution of state income during the last three years is given in Table 3.6.

**Table 3.5**  
**Net State Domestic Product and Per capita Income of Kerala**

Sl. No	Item	Year			Growth rate	
		2001-02	2002-03 (P)	2003-04 (Q)	2002-03 (P)	2003-04 (Q)
1	Net State Domestic Product(Rs.in crore)	63817.27	71063.68	78933.13	11.4	11.1
	a) At current prices					
	b) At constant prices	34509.35	37036.99	39736.99	7.3	7.3
2	Per Capita Income (In Rs.)					
	a) At current prices	19803	21853	24053	10.4	10.1
	b) At constant prices	10709	11389	12109	6.3	6.3

P: Provisional, Q: Quick Estimate

Source: Department of Economics & Statistics.

Note: In the calculation of State income, the income from remittances is not included. Though exact figures are not available, the estimates vary from 18% 22% of the estimated state income.

Table 3.6  
Sectoral Share of Net State Domestic Product (NSDP) at Factor Cost (Rs. Crore)

Sl.No.	Item	At current Prices						At Constant Prices(93-94)					
		2001-02		2002-03(P)		2003-04(Q)		2001-02		2002-03(P)		2003-04(Q)	
		NSDP	%	NSDP	%	NSDP	%	NSDP	%	NSDP	%	NSDP	%
1	Agriculture Forestry & fishing & mining & quarrying	10264.98	16.1	10407.24	14.6	10382.68	13.1	5311.56	15.4	5380.45	14.6	5164.65	13.0
2	Fishing	2570.62	4.0	2544.25	3.6	2577.53	3.3	1456.16	4.2	1484.50	4.0	1539.10	3.9
3	Quarrying	152.99	0.2	185.23	0.3	226.46	0.3	80.23	0.2	82.48	0.2	87.26	0.2
	<b>Sub-Total Primary</b>	<b>12988.59</b>	<b>20.3</b>	<b>13136.72</b>	<b>18.5</b>	<b>13186.67</b>	<b>16.7</b>	<b>6847.95</b>	<b>19.8</b>	<b>6947.43</b>	<b>18.8</b>	<b>6791.01</b>	<b>17.1</b>
4	Manufacturing	5508.33	8.6	5717.78	8.1	5924.06	7.5	3121.53	9.0	3088.08	8.3	3067.00	7.7
	Electricity, Gas & Water Supply	1512.64	2.4	2011.44	2.8	2602.05	3.3	895.05	2.6	1128.75	3.1	1395.42	3.5
5	Construction	7015.67	11.0	8162.59	11.5	9339.28	11.8	2813.05	8.2	3017.33	8.2	3212.32	8.1
	<b>Sub-Total Secondary</b>	<b>14036.64</b>	<b>22.0</b>	<b>15891.81</b>	<b>22.4</b>	<b>17865.39</b>	<b>22.6</b>	<b>6829.63</b>	<b>19.8</b>	<b>7234.16</b>	<b>19.5</b>	<b>7674.74</b>	<b>19.3</b>
6	Transport Storage & Communication	5086.35	8.0	5966.79	8.4	6990.94	8.9	4016.98	11.7	4753.41	12.8	5684.82	14.3
7	Trade, Hotels & Restaurants	14709.45	23.1	16571.30	23.3	18418.59	23.3	7259.75	21.0	7755.83	20.9	8292.08	20.9
8	Banking, Insurance & Real Estate	7811.7	12.2	8884.43	12.5	10270.64	13.0	4573.62	13.3	4950.64	13.4	5479.68	13.8
9	Public Administration and other services	9184.54	14.4	10612.63	14.9	12200.90	15.5	4981.42	14.4	5395.52	14.6	5814.66	14.6
	<b>Sub-Total-Tertiary</b>	<b>36792.04</b>	<b>57.7</b>	<b>42035.15</b>	<b>59.1</b>	<b>47881.07</b>	<b>60.7</b>	<b>20831.77</b>	<b>60.4</b>	<b>22855.40</b>	<b>61.7</b>	<b>25271.2</b>	<b>63.6</b>
	<b>Total-NSDP</b>	<b>63817.27</b>	<b>100</b>	<b>71063.68</b>	<b>100</b>	<b>78933.13</b>	<b>100</b>	<b>34509.35</b>	<b>100</b>	<b>37036.99</b>	<b>100</b>	<b>39737.0</b>	<b>100</b>

P-Provisional, Q-Quick Estimate  
Source:- Department of Economics & Statistics

**District-wise Income**

3.15 District-wise distribution of Net State Domestic Product at factor cost at current prices shows that Ernakulam District continues to have the highest income of Rs. 9957.15 crore in 2003-04 as against Rs. 8899.04 crore in 2002-03 registering a growth rate of 11.9 %. At constant prices it comes to Rs.4983.37 crore in 2003-04 compared to Rs.4606.15 crore during 2002-03. Thiruvananthapuram District stands second with an income of Rs. 8829.88 crore in 2003-04 at current prices followed by Thrissur (Rs. 7932.79 crore), Kozhikode (Rs. 7318.83 crore), Kollam (Rs. 6358.6 crore) and Malappuram (Rs. 5924.31 crore). The lowest income was recorded in Wayanad district (Rs. 1618.42 crore) in 2003-04 preceded by Kasaragod (Rs. 2722.19 crore) and Pathanamthitta (Rs. 3079.76 crore). The District-wise income and growth rate at current and constant (1993-94) prices is given in Table 3.7.

**District-wise Per Capita Income**

3.16 Among the Districts, Ernakulam stood first with the per capita income of Rs. 31136 at current prices in 2003-04 as against Rs. 28090 in 2002-03 . Idukki District has the second largest

per capita income of Rs. 28181 in 2003-04 followed by Kottayam (Rs 27377), Thiruvananthapuram (Rs.26461), Thrissur (Rs.25933) and Alappuzha (Rs.24969). The lowest per capita income was recorded in Malappuram District (Rs. 15472) in 2003-04 preceded by Wayanad (Rs.19523), Palakkad (Rs.20591) and Kasaragod (Rs.21760) .

3.17 The highest rate of growth of per capita income of 11.2% was recorded in Thiruvananthapuram District in 2003-04 followed by Alappuzha (11%) , Ernakulam(10.8%) and both Thrissur and Kottayam 10.6%. The lowest growth rate was recorded in Idukki district (6.5%) preceded by Wayanad (8.0%), Kasaragod (8.4%) and Malappuram (9.5%). The District-wise per capita income with growth rate is given in Table 3.8.

**District-wise Rate of Growth of Primary, Secondary and Tertiary Sectors**

3.18 At the State level, tertiary sector recorded the highest rate of growth of 13.9% in 2003-04 followed by secondary sector (12.4%) and primary sector with 0.4%.

**Table 3.7**  
**District-wise Distribution of Net State Domestic Product**

(Rs. Crore)

Sl No	District	Net State Domestic Product at Factor Cost				Growth rate (%)	
		At 1993-94 Prices		At Current Prices		At 1993-94 Prices	At Current prices
		2002-03 (P)	2003-04 (Q)	2002-03 (P)	2003-04 (Q)	2003-04	2003-04
1	TVM	4145.51	4497.18	7864.70	8829.88	8.5	12.3
2	KLM	2969.86	3161.20	5756.98	6358.60	6.4	10.5
3	PTA	1517.09	1625.85	2795.90	3079.76	7.2	10.2
4	ALP	2474.49	2659.07	4788.89	5345.92	7.5	11.6
5	KTM	2596.62	2798.48	4908.82	5464.43	7.8	11.3
6	IDI	1614.68	1675.63	3019.94	3229.55	3.8	6.9
7	EKM	4606.15	4983.37	8899.04	9957.15	8.2	11.9
8	TCR	3744.92	4043.88	7116.59	7932.79	8.0	11.5
9	PKD	2631.48	2811.20	5021.96	5559.50	6.8	10.7
10	MLP	2766.45	2976.92	5324.10	5924.31	7.6	11.3
11	KKD	3333.45	3574.55	6567.50	7318.83	7.2	11.4
12	WYD	829.76	896.32	1475.66	1618.42	8.0	9.7
13	KNR	2532.00	2687.78	5042.80	5591.80	6.2	10.9
14	KSD	1274.53	1345.56	2480.80	2722.19	5.6	9.7
	<b>State</b>	<b>37036.99</b>	<b>39736.99</b>	<b>71063.68</b>	<b>78933.13</b>	<b>7.3</b>	<b>11.1</b>

P - Provisional, Q - Quick Estimate, Source: Department of Economics & Statistics

**Table 3.8**  
District-wise Per Capita Income at Current Prices

Sl No	District	2002-03 (P) (Rs.)	Rank	2003-04 (Q) (Rs.)	Rank	Growth rate (%) 2003-04
1	Thiruvananthapuram	23789	4	26461	4	11.2
2	Kollam	21915	9	24031	9	9.7
3	Pathanamthitta	22511	6	24717	7	9.8
4	Alappuzha	22483	7	24969	6	11.1
5	Kottayam	24755	3	27377	3	10.6
6	Idukki	26467	2	28181	2	6.5
7	Ernakulam	28090	1	31136	1	10.8
8	Thrissur	23448	5	25933	5	10.6
9	Palakkad	18774	12	20591	12	9.7
10	Malappuram	14134	14	15472	14	9.5
11	Kozhikode	22323	8	24643	8	10.4
12	Wayanad	18084	13	19523	13	8.0
13	Kannur	20574	10	22657	10	10.1
14	Kasaragod	20071	11	21760	11	8.4
	State	21853	-	24053	-	10.1

P - Provisional, Q - Quick Estimate, Source: Department of Economics & Statistics

3.19 Districts-wise analysis shows that rate of growth of primary sector ranged between -1% and 1.8%, secondary sector between 9.1% and 18.7% and tertiary sector between 13.6% and 14.2%. The highest rate of growth of primary

sector was recorded in Kozhikode District (1.8%), secondary sector in Idukki District (18.7%) and tertiary sector in both Pathanamthitta and Wayanad Districts (14.2%). The District-wise and sectoral details of income and growth rate are presented in Table 3.9.

**Table 3.9**  
District-wise Rate of Growth of Sectoral Income during 2003-04 at current Prices

Sl No	District	Primary		Secondary		Tertiary	
		Income (Rs.crore)	Growth rate (%)	Income (Rs.crore)	Growth rate (%)	Income (Rs.crore)	Growth rate (%)
1	Thiruvananthapuram	1054.04	0.1	1978.30	14.2	5797.54	14.1
2	Kollam	1324.88	1.1	1485.50	11.5	3548.22	13.9
3	Pathanamthitta	757.18	-1.0	525.34	15.0	1797.24	14.2
4	Alappuzha	556.02	1.5	1466.59	10.9	3323.31	13.9
5	Kottayam	930.62	0.1	1049.23	14.1	3484.58	13.9
6	Idukki	1536.93	-1.0	463.56	18.7	1229.06	14.1
7	Ernakulam	1212.52	1.5	2846.07	12.6	5898.56	13.9
8	Thrissur	910.92	0.2	2008.18	11.4	5013.69	13.8
9	Palakkad	957.52	-0.6	1108.34	11.9	3493.64	13.9
10	Malappuram	951.10	0.6	1111.50	12.4	3861.71	13.9
11	Kozhikode	1186.24	1.8	1653.16	12.8	4479.43	13.8
12	Wayanad	426.61	-0.9	160.76	13.2	1031.05	14.2
13	Kannur	826.29	0.9	1345.70	10.9	3419.81	13.6
14	Kasaragod	555.80	0.9	663.16	9.1	1503.23	13.7
	State	13186.67	0.4	17865.39	12.4	47881.07	13.9

Source: Department of Economics & Statistics

## POPULATION

### Demographic Factors

3.20 The population of India as per 2001 Census was 102.7 crore (17% of global population) comprising of 53.13 crore males and 49.57 crore females with a decadal growth rate of 21.34%. The decadal growth rate during 1981-1991 was 23.86%. The demographic trends in Kerala are far more positive in several respects. Kerala's population as per Census 2001 was 318.39 lakh consisting of 154.69 lakh males and 163.70 lakh females with a decadal growth of 9.42% only. Kerala has the lowest population growth rate compared to other States in India. Kerala's share in the population of India is 3.1%. Of the total population of Kerala, 74% live in rural areas. Projected population of Kerala during 2003-04 is 328.16 lakh while that of India is 107.3 crore.

3.21 The average annual growth in population of the state during 1991-2001 was just 0.91 percent against the Indian average of 1.93 percent. The average fertility of Kerala woman is 1.5 children, which is comparable to the rate in most of the advanced countries in the world. In addition to achievements, such as low infant mortality rate and high life expectancy the population growth in the state remains the lowest in the country, high migration of people of the state

to other parts of the world is also a contributing factor.

3.22. An analysis of the decadal growth rate of all India population shows that it increased from the year 1921 to 1981 and since then it started declining gradually. In Kerala the decadal growth rate increased rapidly from the year 1941 to 1971 and from 1971 onwards it started declining sharply. The details on All India and Kerala population from 1901 are given in Table 3.10.

3.23 Among the Districts in Kerala, Malappuram has the highest population of 36.3 lakh followed by Thiruvananthapuram (32.35 lakh) and Ernakulam (30.98 lakh). Wayanad is the least populated district in Kerala with a population of 7.87 lakh preceded by Idukki (11.29 lakh) and Kasaragod (12.03 lakh). Among the districts, Pathanamthitta had the lowest decadal (1991-2001) growth rate of population of 3.72% and Malappuram the highest growth rate of 17.22%.

3.24 The details of State-wise All India Population and District-wise Kerala population are given in Appendices 3.15 and 3.16

### Population Density

3.25 As per 2001 Census, the density of population for India as a whole is 324 persons per sq.

Table 3.10  
Population and Its Growth from 1901 to 2001

Census Year	All India			Decadal Growth Rate	Kerala			Decadal Growth Rate
	Population (In lakhs)				Population (In lakhs)			
	Rural	Urban	Total		Rural	Urban	Total	
1901	2125.4	258.5	2383.9	-	59.4	4.5	63.9	..
1911	2261.5	259.4	2520.9	5.75	66.2	5.3	71.5	11.75
1921	2232.3	280.9	2513.2	-0.31	71.2	6.8	78.0	9.16
1931	2455.2	334.6	2729.8	11.00	85.9	9.2	95.1	21.85
1941	2745.1	441.5	3186.6	14.22	98.3	12.0	110.3	16.04
1951	2986.5	624.4	3610.9	13.31	117.2	18.3	135.5	22.82
1961	3602.9	789.4	4392.3	21.64	143.5	25.5	169.0	24.76
1971	4390.5	1091.1	5481.6	24.80	178.8	34.7	213.5	26.69
1981	5238.7	1594.6	6833.3	24.66	206.8	47.7	254.5	19.24
1991	6286.9	2176.1	8463.0	23.86	214.1	76.8	290.9	14.32
2001	7416.6	2853.6	10270.2	21.34	235.7	82.7	318.4	9.42

km. where as the density of population for Kerala is 819 persons per sq. km. Among the Indian States, Kerala is in third position in respect of density, the first being West Bengal and the second Bihar. In 1881, Kerala's population density was 134 persons per sq. km. During the last 120 years the figure has gone up almost 6 times.

3.26 Among the Districts, Alappuzha has the highest density with 1489 persons per sq. km. closely followed by Thiruvananthapuram District with 1476 persons per sq. km. Idukki District has the lowest density of 252 persons per sq. km. Eight districts have densities higher than the State average and six Districts lower than the State average.

### Sex Ratio

3.27 Kerala has a unique position in regard to sex ratio. In all the Censuses, females outnumbered males in Kerala, which is contrary to All India pattern. The sex-ratio of Kerala has gradually increased from 1004 in 1901 to 1028 in 1951 and then to 1058 in 2001. The 2001 Census shows that the State of Kerala is the only state in India where sex ratio is above the equality ratio and is a 100 year high with 1058 females per 1000 males. District-wise analysis shows that the highest sex-ratio of 1094 is found in Pathanamthitta District and the lowest in Idukki District with 993 females per 1000 males.

### Ageing Population

3.28 The young – old balance of population is shifting throughout the world. The increasing proportion of aged people is accompanied by a falling proportion of young persons. The average annual global growth rate of older population (60 +) is 1.9 percent, which is noticeably higher than that of total population at 1.2 percent (2000-02). The average annual global growth rate of persons aged 80 years and over (3.8 percent) is currently twice as high as the growth rate of the population over 60 years of age (1.9 percent).

3.29 India has the second largest number of elderly persons after China. There were about 43 million elderly, comprising 6.5% of the population in 1981; 57 million or 6.7% of population in 1991. The Planning Commission has projected the number of elderly to be around 113 million accounting for nearly 9% of the population by 2016. The proportion of elderly to the total popu-

lation in rural areas is higher than that in urban areas for the Census years 1981 and 1991, while in rural areas it has shown a decline from 7.23% to 7.04%. All India average annual growth rate of the older population (60+) is 1.5 percent during 2000-02.

3.30 It is a noteworthy feature of Kerala that the percentage of aged population (above 60 years) is increasing fast. During 1961 the aged population constituted only 5.9% of the total population in Kerala. It increased to 6.2% in 1971; 7.5% in 1981. The percentage of aged population to total population of Kerala further increased to 10.6% in 1991 and has been estimated to have reached about 15% in 2001.

3.31 In Kerala the highest percentage of old age population is in Alappuzha followed by Ernakulam, Kottayam, Thrissur and Thiruvananthapuram. The lowest is in Kozhikode and Wayanad Districts.

3.32 The relatively higher proportion of elderly persons in the population has several implications in relation to health needs, work participation rate, dependency rate and pension and social security requirements. Focussed attention needs to be given in the development and other programmes to meet the needs of the elderly.

### Total Workers

3.33 A comparison of the figure of the last four Census shows that though the percentage of total workers has increased, there has been a decline in the percentage of main workers. Simultaneously the percentage of marginal workers has increased considerably, particularly in the last 10 years. The figures also point to the special problem of unemployment of women.

3.34 The Work Participation Rate in India and Kerala during the last three Census may be seen in Table 3.11. This shows that though overall the work participation rate has increased marginally the work participation rate of women has declined particularly in rural areas. In comparison with all India figures in rural areas the work participation of women is far less. Probably this can be attributed to the fact that after education women have withdrawn from manual labour; but have not yet obtained other kinds of job according to their changed preference and expectation.

**Table-3.11**  
**Work Participation Rate in India and Kerala for 1981-2001**

Census Year	India			Kerala		
	Persons	Males	Females	Persons	Males	Females
1	2	3	4	5	6	7
<b>Total</b>						
1981	36.7	52.6	19.7	30.5	44.9	16.6
1991	37.5	51.6	22.3	31.4	47.6	15.9
2001	39.3	51.9	25.7	32.3	50.4	15.3
<b>Rural</b>						
1981	38.8	53.8	23.1	31.3	45.2	17.7
1991	40	52.5	26.7	32.1	47.9	16.9
2001	42	52.4	31	32.6	50.2	15.9
<b>Urban</b>						
1981	30	49.1	8.3	27.4	43.4	11.8
1991	30.2	48.9	9.2	29.6	46.8	13
2001	32.2	50.9	11.6	31.6	50.8	13.5

Source:- Directorate of Census Operations, Kerala

### Birth, Death and Infant Mortality Rate

3.35 The details of Birth Rate, Death Rate and IMR in Kerala are given in Table below.

Year	Birth Rate	Death Rate	Infant Mortality Rate
1998	17.9	6.4	14
2000	18.01	5.42	7.1
2001	17.2	6.4	11
2002	16.9	6.4	10

3.36 In terms of life expectancy at birth, Kerala (more than 70 years in 1991) is at least ten years higher than the all India (close to 60 years). Under five years and infant mortality rates are also one of the lowest in Kerala outperformed by only two states viz., Mizoram and Nagaland.

3.37 Kerala's life expectancy for males was 69.1 and for females 76.1 in 1998. During 2002 it is 70 for males and 73.62 for females.



## CHAPTER - 4

# AGRICULTURE

### Introduction

The recurring occurrence of localised droughts raise concerns of crop failure even in good monsoon years. There is a growing recognition that agriculture is becoming increasingly unstable from the point of view of environmental balance due to natural calamities and trade balance due to global liberalisation and regional trade agreements. Being the major cash crop producing state in the country, Kerala is perhaps the most affected by agriculture related trade policies adopted by Government of India.

4.2 The rise in international prices of some of the commodities since the second half of 2002 onwards was reflected in the domestic prices also. However, long run series of international prices show cyclical movements. The prices have a tendency to rise for 4-5 years and thereafter decline for about same number of years. Such behavior implies that high level of international prices could largely be a part of cyclical behavior. International prices of agricultural commodities are characterised by high volatility, which is the crucial factor for the trade policy and strategy. An appropriate and suitably strengthened mechanism in the state needs to be put in place urgently to influence Trade Policy formulation in the dynamic context.

4.3 The domestic agricultural products have to compete with cheaper imports due to increasing liberalisation of import regulations. Quality standards have several dimensions like adherence to global environmental and health standards and proper certification. A thorough review of adequacy of institutional arrangements in quality control, certification and trading in the agriculture sector should be a state priority to take advantage of global opportunities particularly in spices, marine products, organic agriculture, horticulture products and medicinal plants. The Sanitary and Phytosanitary (SPS) norms are gradually becoming a weapon of trade discrimination.

Greater awareness on quality consciousness across the value chain through appropriate extension and infrastructure support and improved post harvest technology could help increase agricultural exports from the state.

4.4 Stabilisation and augmentation of productivity assume critical importance, given the limited scope for increasing area under cultivation of various crops. There has been a decline in land holding size and increase in costs of production. Increase in production would be possible mainly from improvements in productivity through the use of location specific technology and modernisation of agriculture.

4.5 Agricultural extension is the key to augment productivity of crops to a great extent and extension should begin to broad base its programmes by utilising a farming systems approach, and suitably address marketing and value addition. Wider use of electronic mass media and information technology through optimising the strengths of public-private sectors has to be adopted.

### Agricultural Extension

4.6 It is becoming increasingly evident that public extension alone may not be able to respond to the multifarious demands of farming systems. In response to growing demand for knowledge in intensive agriculture in selected areas, organisations started payment based private extension in the states like Maharashtra, Tamil Nadu, Andhra Pradesh etc. A study was conducted to assess the willingness of farmers to pay for agricultural information nine districts from Maharashtra, Rajasthan and Kerala. In Kerala, 40 per cent of farmers in Kasaragod, 58 per cent in Kottayam and 48 per cent in Thiruvananthapuram were willing to pay for agricultural related information. Major findings of the study are shown in Box-4.1

**BOX-4.1**

**Major findings of a study on willingness to pay for Agricultural Extension Services**

- Out of the selected districts, farmers of Pune stood first in terms of their willingness to pay. On an average 58 per cent farmers in Maharashtra, 39 per cent in Rajasthan and 48 per cent in Kerala were willing to pay for agricultural related information.
- 41 per cent of the farmers in Kerala are highly satisfied with the existing source of information and another 43 per cent is moderately satisfied and 16 per cent is dissatisfied
- Higher the per acre agricultural income, farmers are more willing to pay for agricultural related information in Rajasthan and Kerala.
- In Kerala three categories of information were identified by the farmers for paid services. 37 per cent of farmers are willing to pay for Training programmes on new technologies, 36 per cent on all aspects of growing new crops and 27 per cent on proper plant protection advice.
- **Willingness Conditions in Kerala -**
  - 39% are willing to pay for advice based on field visits
  - 24% if charges are reasonable
  - 21% if firms to be brought under the purview of Consumer Court
  - 16% if the firms to provide receipts for the payment made.
- In all the States farmers expressed willingness to pay for Training programmes and plant protection aspects.
- Demand for paid service is more for horticulture crops. In Kerala 47 per cent are willing to pay for information related to vegetable cultivation, 29 per cent for flower cultivation and 24 per cent for spices.
- Around 30 per cent of the farmers are willing to pay upto Rs. 30. Another 10 per cent are willing to pay even Rs. 100

*ICAR, 2003*

**Homesteads**

4.7 The homesteads in the state are very diverse with respect to the commodities produced, the techniques used and the purpose they serve for households. The constraints and needs of homesteads differ considerably depending on the functions of the homesteads. A differentiated strategy has to be evolved for the development of homesteads of the state. Development of nutrient recommendation for the homestead systems, varietal screening for different shade levels and development of suitable enterprise mix should be given priorities for research and development. The challenges facing the homesteads are shown in Box-4.2.

4.8 The major strength of the diversified mixed cropping pattern traditionally followed in Kerala is the high degree of resilience for meeting the adverse conditions emerging from the loss in

revenue as a result of the fall in prices of agricultural commodities. Fluctuations in the prices of agricultural commodities normally do not adversely affect a cross section of the commodities concurrently and the mixed cropping system thus acts as a cushion for absorbing the shock through cross subsidisation. Diversification of agriculture especially in homesteads needs to encompass subsidiary farm activities such as apiculture, dairy, agroforestry, piggery, fisheries and poultry and appropriate marketing strategies need to be designed to make these products internationally competitive. Diversified agriculture will need much more complex commercial linkages between the farm and the market. The diversification of the farming system also offers opportunities to boost nutritional security of the small holders. The major findings of a study on homestead farming in Kerala are shown in Box-4.3.

## BOX-4.2

**Homesteads - Challenges and Priorities**

Homesteads are widely prevalent in South East Asia, Papua New Guinea, Zambia and Nigeria. Diversity in species and varieties are among the most striking features of homegardens. As many as 240 species have been reported in a single garden. In Sri Lanka it has been calculated that over 80% of the Staples, 60% of the leafy vegetables, 20% of all other vegetables, 80% of fruits and 40% of spices for family use are grown in homesteads. Various studies have projected 9 to 51 per cent of total income emerging from homesteads in Indonesia.

There is little understanding of the cropping systems in which these crops are produced in homesteads. Every effort to improve homegarden productivity must take into account the dynamic nature of homegardens and their adaptation to a changing world. Study of the agronomic aspects of homegardening is still very scanty.

Integrated nutrient management, Soil biology in gardens, integrated pest and disease management, water management and water use efficiencies, optimum annual/perennial crop combinations, integration of animals in gardens are the priorities identified for the development of homegardens. Any homegarden development programme should define its target groups and the probable development of their homegardens in the next decade. Homegardens are not only a low input form of land use, their survival may very well depend on increased but well balanced use of environmentally safe inputs of nutrients.

*FAO, 2003*

## BOX-4.3

**Homestead Farming in Kerala**

- Average size of homestead is less than 0.44 ha. in 70 per cent of the homesteads. Coconut is the base crop in 67 per cent of homesteads.
- In the South Zone, the model developed could generate an additional net income of Rs. 37000 and employment to the tune of 110 man days from 0.4 ha homestead by integrating new crops, poultry, quail, rabbits, goats and ornamental fish culture.
- In the Problem zone the models generated an additional income of Rs. 15000/- and 188 man days of additional employment from an area of 0.7 ha.
- In the Central Zone, an additional income of Rs. 26680 and employment of 102 mandays were generated from a 0.25 ha homestead model and in the north zone, scientific interventions could raise the net farm income from Rs. 21908 to Rs. 53996 from a 0.34 ha. plot. Generated 52 man days of labour.
- The model developed for Andaman & Nicobar group of islands generated an additional income of Rs. 17000 and employment of 139 man days.
- The homesteads were found to be repositories of biodiversity. As much as 130 different species of plants were identified in a 0.4 ha homestead.
- 42 per cent of the homesteads had improved breeds of cow, mainly Jersey. Backyard poultry with less than 10 birds were seen in 71 per cent of the homesteads surveyed. Small scale goat units with one to two females were also common. Apiary in areas of rubber cultivation and sericulture in certain pockets were other income generating activities.
- Majority of the homesteads fall into either overcrowding or under utilisation resulting in low system productivity. The reason for this improper use of the farms were many - like Pest and disease problem affecting the base crop- coconut, unfavorable market conditions, the absence of family labours consequent to the migration of males, the unavailability and high cost of hired labour and lack of government support to the homesteads as ranked by the respondents.

*KAU, 2005*

4.9 It is important to explore frontiers in technology focusing on evolving location specific and economically viable technologies by utilising developments in the field of biotechnology, information technology, crop husbandry and water management. Effective linkages of production system with marketing, agro processing and other value added activities would play an increasingly important role in the diversification of agriculture.

**Agricultural Biotechnology**

4.10 FAO estimates that over the next 30 years, more than three quarters of the growth in crop production that is needed to satisfy the increasing food needs, will have to derive from increase in crop yield. This will only be possible if substantial technological innovations take place. Modern biotechnology tools of recombinant DNA including genetic engineering, offer some opportunities for generating such innovations. In the agricultural arena, biotechnology tools have been used for animal and plant disease diagnostics, for production of recombinant vaccines against animal diseases and for the improvement of livestock and crops. The cultivation of Genetically Modified (GM) crops has grown from two million ha. in 1996 to 68 million ha in 2003, with bulk of the transgenic acreage in three countries, viz., The USA, Canada and Argentina. Global value of GM

crops is estimated to be \$ 4.5 billion.

4.11 India made a significant step earlier this year towards the adoption of biotechnology in agriculture. Genetically altered cotton varieties, which carry the insecticidal protein gene of the soil bacterium, *Bacillus thuringiensis* (Bt) were approved for commercial cultivation and about 40,000 ha has been planted with the new varieties (Bt cotton). While creditable data on the performance of this crop is not yet available, it has been showed that the Bt cotton technology has many advantages like savings in pesticides.

4.12 Responsible use of biotechnology requires an efficient regulatory mechanism. Good set of rules and regulations are in place governing the research and commercialisation of genetically altered organisms. However, the present mechanisms have several deficiencies leading to uncertainties and delays. The development of bio safety is important.

4.13 A task force on Application of Agricultural Biotechnology was constituted by Government of India to formulate a long term policy on Agricultural Biotechnology under the Chairmanship of Prof. M.S. Swaminathan. The task force report was submitted in May 2004. The major recommendations are shown in Box-4.4

**BOX-4.4**

**Major recommendations of the Task force on Agricultural Biotechnology**

1. There is a need for setting up National Biotechnology Regulatory Authority with a Wing for Agricultural Biotechnology. At the State level State Agricultural Biotechnology Regulatory Advisory Board and at the district level with Biotechnology risk assessment and communication Committees to be constituted. At the National level Agricultural Biotechnology Regulatory Authority will be largely concerned with genetically modified crops, animals and fishes resulting from recombinant DNA technology. The State and district level structures should also promote the non-GM application of biotechnology like the manufacture and sale by SHGs on biofertilizers, biopesticides etc. District level committees can promote genome clubs in Schools, Colleges, KVKs and promote genetic literacy in Panchayats. The institutional structure should maintain correlation with National Bio diversity Authority, State Bio diversity Boards and local level Bio diversity Management Committees.
2. Extensive bio safety guidelines should be developed for undertaking of DNA work on transgenic animals including bio safety aspects for consumption.
3. Prioritized targets in crop plants include insect pest resistance, disease tolerance, abiotic stress tolerance (drought, salinity, excessive moisture and water logging), quality improvement, enhancing shelf life, engineering male sterility and development of apomictic hybrids where farmers can save seeds and plant.

- 4 Biotechnology application should be viewed comprehensively. Both of DNA and non DNA application such as fermentation, bio processing, bio pesticides, bio fertilizers, tissue culture, micro propagation and related technological components which are important for Indian Agriculture including animal husbandry and fisheries should be viewed as integral components.
- 5 There should be equal thrust to develop both GM varieties and GM hybrids in priority crops. The varieties in contrast to hybrids are preferred by small farmers because they can save their own farm seeds. In the case of hybrids, introduction of genetic factors for apomixis should be supported for saving crop seeds.
- 6 In fisheries prioritized target traits are auto transgenesis in commercially important species with growth hormone genes, production of pharmaceuticals and fish 'biosensors' for monitoring aquatic pollution.
- 7 Government of India should prepare 'bio security Compact' comprising precise action plans to face invasive Alien species introduced with the import of food grains and seeds, SPS measures to avoid mycotoxins and Salmonella in food, environment and bio safety relating to GMOs and bio ethical consideration in research.
- 8 Areas rich in agro bio diversity should be earmarked as Agro bio diversity sanctuaries similar, to Wild life sanctuaries. In such areas, the cultivation of GM crops should be prohibited.
- 9 The existing extension personnel should be retrained and retooled to equip them to enter the age of functional genomics, proteomics, recombinant DNA technology and Nano biotechnology.
- 10 Farmers should have complete information on the benefits and risks associated with GM Crops. The evaluation procedure should include farmer participatory assessments as in the case of non-GM crop varieties.
- 11 Setting up of venture capital fund to help commercialise research breakthrough in the development of GM crops.
- 12 Establishment of Agri-Biotech Parks.

*Source: Ministry of Agriculture, 2004*

4.14 Adequate bio safety regulations, risk assessment of biotechnology products, mechanism and instruments for monitoring use and compliance are required in order to ensure that biotechnology and its products do not have harmful effects on the environment or people.

4.15 Rapid propagation with tissue culture technology, disease free plantlets, predictability through genetic mapping, reduced pesticide application through induction of disease resistant genes, varieties with higher productivity etc are some of the potential areas of applications of the

technology in the State. Biotechnology provides an opportunity to convert bio resources into economic wealth. There is a need to prioritise and reorient research programmes relating to transgenic research in crops, animals and fishes in order to maximise benefits. Some of the ongoing biotechnological research in Kerala in agriculture are shown in BOX-4.5. Instead of inviting isolated projects at institute level, State level prioritization based on the recommendations of the task force and preparation of impact projects is needed to reap the benefits.

**BOX-4.5**

**Some of the ongoing biotechnological research in Kerala in agriculture**

- Tissue culture of coconut, arecanut, rubber, fruits, species and flowers.
- Virus indexing.
- Induction of diseases/insect tolerance/resistance.
- Tissue culture for rapid multiplication of elite genotypes of coconut.
- Another culture studies in coconut, rubber
- Development of molecular markers to finger print accessions.
- Molecular studies for tagging root wilt resistance genes in coconut
- Production of Somaclonal variants in tuber crops
- Nutrient enhancement in crops like cassava and Sweet potato using protein genes isolated from Amaranthus
- Molecular diagnosis of sweet potato virus diseases
- Development of transgenic cassava resistant to cassava mosaic disease.

**Agricultural Income**

4.16 The trends in agricultural income in Kerala during the last eight years is shown in Table 4.1. Eventhough the sector has recorded positive trend in growth performance in nineties, it has not been consistent. Food crops in general have suffered a set back in area and production despite a sizeable investment. The earlier indication as per the provisional estimate by the Department of Economics and Statistics was that the growth rate in agricultural income would be around -5.54 per

cent in 2002-03. However, the final figures indicated increase of 1.28 per cent in growth. The provisional figure for 2003-04 shows a decline of 4.00 per cent. The dismal performance could be attributed to decline in crop production coupled with low prices of major agricultural commodities. The deficient rainfall especially SW monsoon in 2002 and 2003 also had contributed to the decline in crop production. The contribution of agriculture to State income has been on the decline as the other sectors registered higher rates of growth.

**Table 4.1**

**Growth of Agricultural Income in Kerala (at 1993-94 prices)**

Sl. No.	Year	Agricultural Income (Rs. In Crores)	Rate of change over previous year	Percentage Contribution to State Income
1	1993-94	6256	-	26.23
2	1994-95	6897	10.25	26.62
3	1995-96	6947	0.72	25.78
4	1996-97	7115	2.42	25.39
5	1997-98	6777	-4.75	23.67
6	1998-99	6900	1.81	22.52
7	1999-00	7017	1.70	21.45
8	2000-01	5448	-22.36	16.23
9	2001-02	5312	-2.50	15.39
10	2002-03	5380	1.28	14.53
11	2003-04	5165	-4.00	13.00

*(Source: Directorate of Economics and Statistics)*

**Rainfall**

4.17 The South West monsoon of 2003 was marked by near normal rainfall over the country in general and the total South West rainfall in India was 102 per cent of its long period average. However, in Kerala, the rainfall was only 2369.2 mm in 2003, against the normal of 2953.9 mm. in this period, indicating a deviation of 20 per cent from the normal. Highest deviation from normal was recorded in July and shortage of Southwest Monsoon was to the extent of 24 per cent from the normal (Table-4.2). In Kerala the highest departure from the normal in the last two decades was recorded during the Southwest Monsoon of 2002. This adversely affected agricultural production in the state. However North East Monsoon was above normal (32%) in 2002. The figures are -24 and -4 per cent respectively in 2003. The deviation in rainfall, apart from affecting production and productivity of annual crops, also affects the productivity of perennial crops such

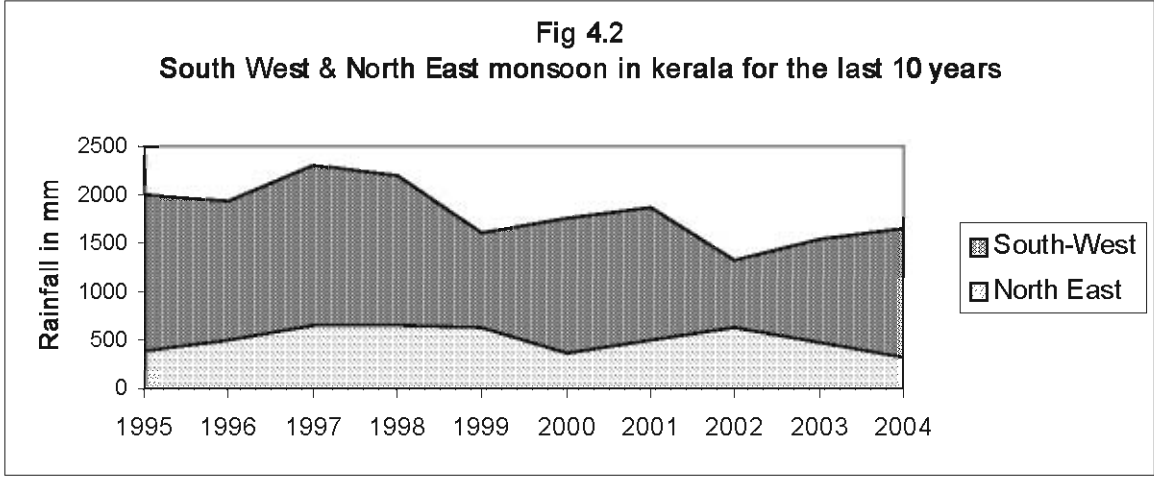
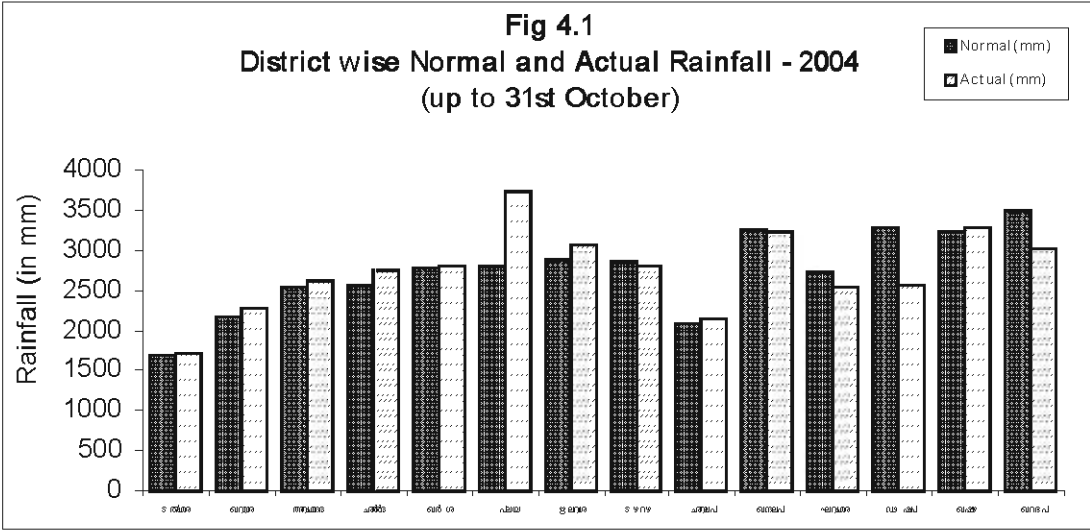
as coconut, rubber and pepper in the long run. Spatial and monthly pattern of rainfall and related data are shown in Appendix 4.3, 4.4. and 4.5. Maximum deviation from the normal was observed in Wayanad (-46%) followed by Kozhikode (-34%) during 2003. During the South West Monsoon of 2003, deficient rainfall was recorded in 10 districts.

4.18 Deficient rainfall was recorded in eight districts during South West Monsoon and five districts during North East monsoon of 2004. Wayanad district alone recorded deficient rainfall to the extent of 35 per cent and 29 per cent respectively during both SW and NE rainfall of 2004. Drought monitoring using remote sensing in selected districts, development of contingency plans and popularization of watershed management through local governments are to be given thrust to minimise the effects of drought.

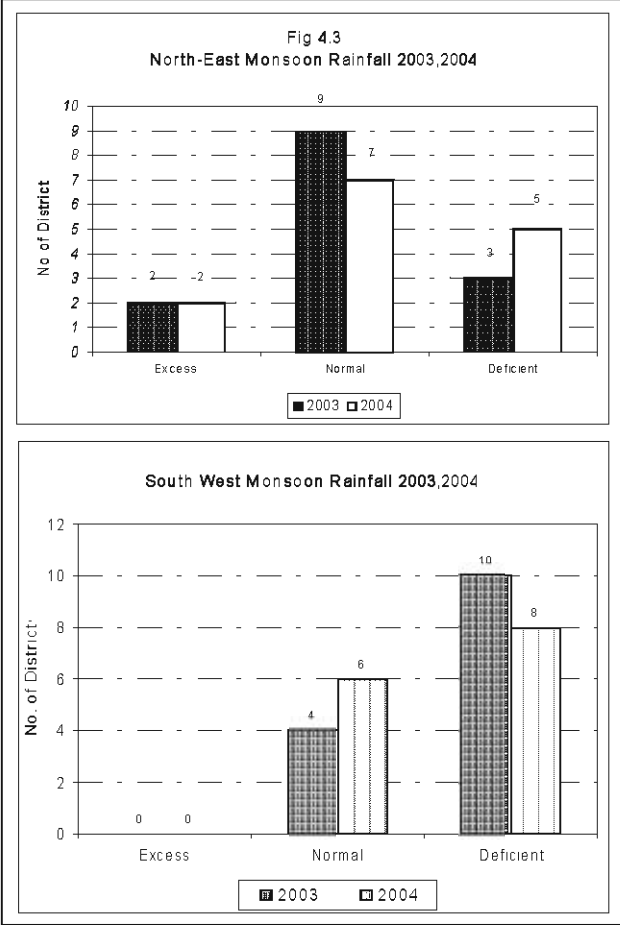
**Table 4.2**  
**Percentage Departure of Rainfall from Normal (1990 to 2004)**

Sl. No.	Year	Annual	South West Monsoon	North East Monsoon
1	1990	-28	-25	-4
2	1991	-39	18	-21
3	1992	-37	15	35
4	1993	-8	-12	32
5	1994	11	15	13
6	1995	-6	-6	-22
7	1996	-13	-8	2
8	1997	3	6	31
9	1998	0	2	30
10	1999	-8	-25	23
11	2000	-21	-18	-27
12	2001	-6	-13	0
13	2002	-14	-33	32
14	2003	-14	-24	5 <sup>4</sup>
15	*2004	1	-19	14

\* Figures up to October 31

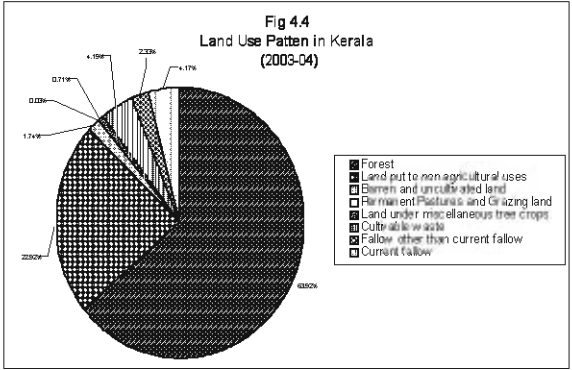






**Land Use**

4.19 Data on land use pattern of Kerala for the year 2003-04 is given in Table 4.3. Out of a total geographical area of 38.85 lakh ha. net sown area is about 56 per cent. Forest occupies around 28 per cent. Agriculture and forest sectors together account for over 84 per cent of the land area (see Fig. 4.4). There was no perceptible improvement in the extent of land use for agriculture. Land under non-agricultural uses was 9.10 percent in 1999-2000 and has increased to 9.98 per cent in 2003-04. There was decline in the area under current fallow (263 ha) and an increase in the area under fallow other than current



**Table 4.3 Land Use Pattern in Kerala**

Sl. No.	Classification of Land	2001-02	2002-03	2003-04	% of Geographical Area	Change in Area between 2002-03 and 2003-04	
						Actual	(in Ha.)
1	Total Geographical Area	3885497	3885497	3885497	-	-	-
2	Forest	1081509	1081509	1081509	27.83	-	-
3	Land put to non agricultural uses	392352	393341	387848	9.98	-5493	-1.40
4	Barren and uncultivated land	29728	29580	29510	0.76	-70	-0.24
5	Permanent Pastures and Grazing land	233	263	447	0.01	184	69.96
6	Land under miscellaneous tree crops	13613	13022	11939	0.31	-1083	-8.32
7	Cultivable waste	63771	69266	70823	1.82	1557	2.25
8	Fallow other than current fallow	34331	39181	39376	1.01	195	0.50
9	Current fallow	79270	70798	70535	1.82	-263	-0.37
10	Net area sown	2190690	2188537	2193510	56.45	4973	0.23
11	Area sown more than once	801562	781847	782892	20.15	1045	0.13
12	Total Cropped area	2992252	2970384	2976402	76.60	6018	0.20
13	Cropping intensity	137	136	136			

(Source: Directorate of Economics and Statistics)

fallow (195 ha), during 2003-04 over 2002-03. The area under cultivable waste also increased by 1557 ha. and barren and uncultivated land declined by 70 ha.

4.20 In the light of the newly prepared Bill on promotion of tree growth in non-forest areas based on the recommendations of Law Reforms Committee, more focussed action plan is needed to promote farm forestry to utilise the homesteads and other available land for the promotion of tree growth.

#### **Trend in Area, Production and Productivity of Crops**

4.21 Data regarding the area, production and productivity of important crops grown in Kerala are shown in Table 4.4 and Appendix 4.6. Out of a gross cropped area of 29.76 lakh ha. in 2003-04, food crops including tapioca occupy only 13.7 per cent. Kerala state which had a low base in food production is facing serious challenges in retaining even this meagre area. Kerala agricultural economy is undergoing structural transformation from the mid seventies by switching over a large proportion of its traditional crop area which was devoted to subsistence crops like rice and tapioca to more remunerative crops like coconut and rubber.

4.22 The area under rice has come down from 3.11 lakh ha. in 2002-03 to 2.87 lakh ha. in 2003-04. In the case of tapioca the area has increased from 1.04 lakh ha. to 1.11 lakh ha during this period. The area under commercial crops in general and rubber in particular has increased considerably during the last two decades. The trend seems to have slowed down recently. During Ninth plan average annual increase in area under rubber was 1951 ha while during 2003-04 area increased by 2355 ha compared

to previous year and the increase was mainly due to upsurge in prices.

4.23 In the case of coconut, area was at its peak during 2000-01. During the year 2003-04 area increased by 7009 ha. over 2002-03. Major commercial crops which had recorded expansion of area during 2003-04 from previous year apart from coconut include cardamom (370 ha), tapioca (7169 ha) and coffee (1571ha). The major crops with considerable loss in area include cashewnut (110 ha) ginger (75 ha) and turmeric (93 ha), pepper (1705 ha), arecanut (4105 ha), tea (124 ha) and banana (3776 ha).

4.24 Crops which have failed to sustain the production level in 2003-04 compared to previous year include rice (-118814 MT), cashewnut (-892 MT), ginger (-2698 MT), turmeric (-285 MT), arecanut (-23530 MT), coconut (-225 m. nuts), Pepper (-10516 MT) Banana (-35427 MT) and Plantains (-20248 MT). Increase in production reported during this period include rubber (60833 MT), Tapioca (90341 MT), Coffee (528 MT), Cardamom (29 MT), and Tea (539 MT)

4.25 The index of area, production, productivity of crops in Kerala for the year 2001-02 to 2003-04 with the base of triennium ending 1993-94 is shown in Appendix-4.7. The index of food grain production declined by 11.71 points and non-food grains increased slightly by 1.57 points. Similarly index of area as well as productivity of foodgrains declined by 4.57 points and 12.27 points respectively. Food grains which include both rice and pulses suffered a severe set back. However non-food grains showed a slight improvement in area, production and productivity and the indices improved by 0.11, 1.57 and 1.42 respectively. The production of plantation crops showed slight improvement during the year by 13.12 points. (Appendix-4.7)

Table 4.4  
Area, Production and Productivity of Principal crops

Sl. No	Crops	Area (ha)		Production (MT)		Productivity (kg./Ha.)	
		2002-03	2003-04	2002-03	2003-04	2002-03	2003-04
1	Rice	310521	287340	688859	570045	2218	1984
2	Pulses	5764	5604	4615	4272	801	762
3	Pepper	208607	206902	67358	56842	323	275
4	Ginger	8998	8923	32412	29714	3602	3330
5	Turmeric	3140	3047	6938	6653	2210	2183
6	Cardamom	41412	41782	8680	8709	210	208
7	Arecanut	97485	93380	107279	83749	1100	897
8	Banana	55668	51892	421809	386382	7577	7446
9	Other Plantains	54811	55258	409282	389034	7467	7040
10	Cashewnut	88548	88438	66087	65195	746	737
11	Tapioca	104179	111348	2413217	2503558	23164	22484
12	Coconut *	899198	906207	5709	5484	6349	6052
13	Coffee	83113	84684	63322	63850	762	754
14	Tea	37068	36944	55348	55887	1493	1513
15	Rubber	476047	476047	594917	655750	1250	1377

\* Production million nuts and Productivity in nuts/ha.

Source: Directorate of Economics and Statistics and UPASI

### Crop wise analysis

#### Rice

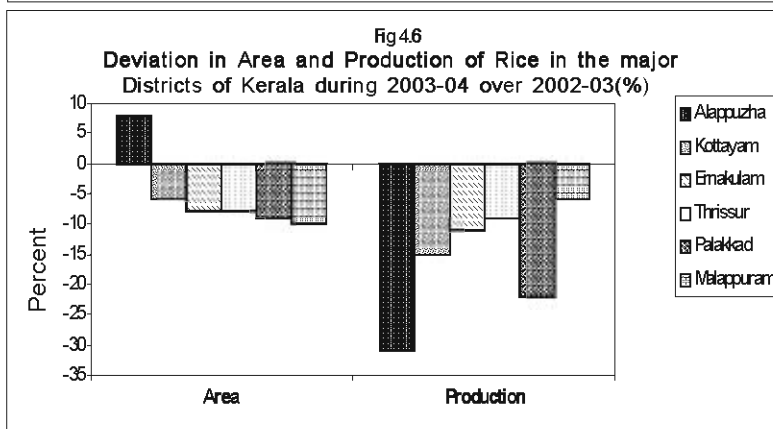
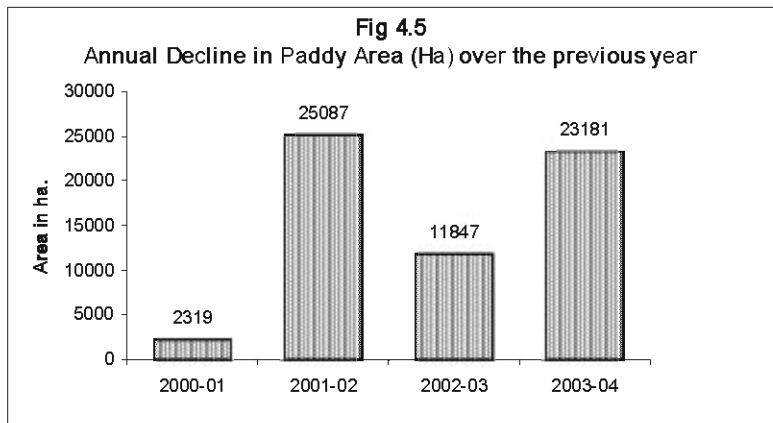
4.26 The area and production of rice which was steadily increasing till the mid seventies had to succumb to economic pressure emanating from other remunerative crops like banana and coconut and the growth of the construction sector. This resulted in the decline of more than 5 lakh ha of area under paddy cultivation during the last two decades. The twenty five year period from the mid seventies witnessed large scale shift in area under the crop. Rice production touched its peak level of around 14 lakh MT in mid seventies with a coverage of 8.81 lakh ha. The gap in meeting

the internal demand of food grains was estimated to be around 50 percent during that period. The increasing cost of cultivation and the disproportionately small rise in price has acted as a deterrent in rice production.

4.27 The average annual decline in area under rice during the Eighth Five year Plan was around 22000 ha, whereas it has come down to an average of 13000 ha. during the Ninth Plan period. During 2003-04, the reduction was to the tune of 23181 ha. from 3.11 lakh ha. in 2002-03 to 2.87 lakh ha and rice production declined from 6.89 lakh MT to 5.70 lakh MT, a reduction of 17 per cent during this period compared to a reduction

of 2.1 per cent in 2002-03 with that of 2001-02. The unprecedented drought in recent years has contributed to this further decline of paddy production. Around 44 per cent of rice production is concentrated in Alappuzha and Palakkad districts. During 2003-04 maximum reduction in rice production was recorded in Alappuzha (-31%) and Palakkad (-22%) compared to previous year mainly due to the severe drought affected in these districts.

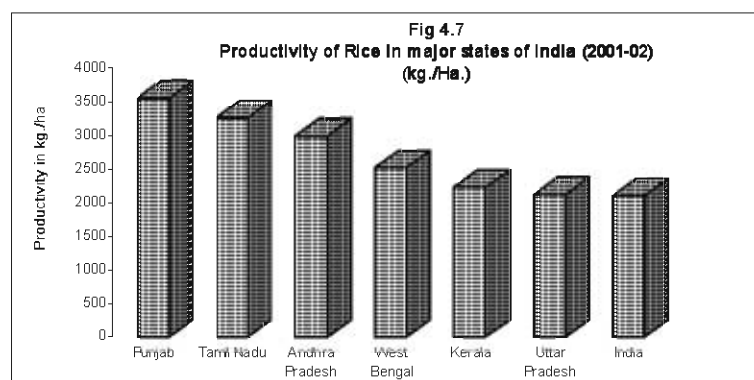
at any cost. The sharp increase in the prices of fertilizers and wages and non-availability of labour in peak seasons in certain locations, the failure of the irrigation system to serve the areas to the extent desired etc. are problems to be tackled to sustain this crop. The future of rice production in the state lies in improving productivity through promotion of high yielding varieties under scientific management in single potential areas. Strengthening of group farming samithies with



the required facilities and gradually raising them to the level of self supporting institutions is perhaps one way to circumvent these problems. However past experience with the group farming programme suggests that neither input subsidies nor infrastructure support *per se* can bring about substantial change in area and production. Instead of pumping in more money by way of additional incentives, appropriate institutional arrangements for organising common services coupled with participatory irrigation management, local water resources development and selective mechanisation could improve the situation. Applied research on emerging technologies and participatory

4.28 The average productivity which was stagnant at around 2.2 MT/ha for the last four years has come down to less than two tones during 2003-04.(Table-4.4). Maximum reduction in productivity during the year to the tune of 36 per cent was recorded in Alappuzha district. Rice productivity at current level is sub optimal. The productivity in major rice producing states are shown in (Fig 4.7). Instead of providing area based subsidies, suitably designed incentive system is essential to promote productivity of rice in the state. The consistent failure of the crop to rise to the expectations has raised series of questions about the policy to sustain rice production

technology development are also equally important. The recommendations of the expert committee constituted by the Government of Kerala have to be seriously considered in promoting rice cultivation in the state.



4.29 Concerted efforts are needed to promote scented rice cultivation in Wayanad, organic rice production in Pokkali lands and medicinal rice in identified potential panchayats with necessary brand promotion and marketing support in association with LSGs. Adequate processing

**High Yielding Varieties**

4.31 The coverage with high yielding varieties is given season wise in Appendix.4.9 In spite of sharp decline in the area under rice, the coverage under high yielding varieties remains steady and is increasing. The coverage which was stagnating

**Table 4.5**  
Area, Production and Productivity of Rice in Kerala and India

	Year	Area (000' ha.)		Production (000'MT)		Productivity (kg./ha.)	
		Kerala	India	Kerala	India	Kerala	India
1	1999-00	350	44972	771	89680	2203	1994
2	2000-01	347	44710	751	84980	2162	1901
3	2001-02	322	44620	704	93080	2182	2086
4	2002-03	311	40410	689	75720	2218	1874
5	2003-04	287	42410*	570	87000*	1984	2051*

• Provisional

facilities have to be established before launching a major project for the development of scented rice in Wayanad district. Value added products from medicinal rice could also be promoted on SHG basis in collaboration with ayurvedic industry.

**Season wise performance**

4.30 Season wise data on the performance of rice during the last three years is shown in Appendix 4.8 Data shows decline in area in all three seasons with relatively less reduction in Mundakan season. There was nine per cent reduction in area during Virippu season in 2003-04 compared to previous year and nine per cent reduction in Punja season. Area under Virippu is gradually shrinking and about 45000 ha out of double cropped land are remaining fallow during Virippu season. Group farming samithies should concentrate their efforts in such areas with a view to bringing such areas under double cropping. Mundakan season accounts for highest share in production with 46 per cent followed by 39 per cent in Virippu and 15 per cent in Punja season. The productivity recorded in Punja is the highest with 2238 kg. per ha. which is 18 per cent lower than that in 2002-03. The effect of drought could be attributed for the decline in productivity of rice in Mundakan and Punja seasons during 2003-04.

in the range of 1.65 to 1.77 lakh ha during the last decade, has registered marked improvement in the last five years. However during 2003-04, a slight reduction of 4.9 per cent in area compared to previous year was recorded. This is part of larger reduction in area under rice in 2003-04 (17%). It increased from 1.77 lakh ha in 1998-99 to 2.38 lakh ha in 2003-04. Maximum high yielding variety coverage was in Punja season with 98 percent. followed by Virippu (90%) Mundakan (74%)and overall coverage was 83 percent. (Appendix-4.9). The average productivity of high yielding varieties during 2003-04 was 2050 kg/ha. The productivity of high yielding varieties recorded 12 per cent decline during the year.

4.32 Eventhough Mundakan season accounts for the largest share in coverage of area under rice its share in high yielding varieties is lower compared to Virippu season. This is mainly because of inadequate research support to evolve varieties with multiple disease resistance suitable for cultivation in different localities in Kerala during Mundakan season.

**Coconut**

4.33 Coconut is cultivated in 12.8 million hectares world wide with a production of 10.9 million tonnes of copra equivalent. Coconut is

grown in over 93 countries. Indonesia is the largest producer (27%) followed by Philippines (23%) and India's share in world production is 22 per cent, fourth being Sri Lanka with 5 per cent share. Countries of the Asia-Pacific region produce 86 per cent of the coconut in the world. The major producers and exporters of copra in the world are Philippines, Indonesia and Sri Lanka. Although the share of India in world production of coconut is 22 per cent, the production of milling copra is around 12 per cent of the world output, while Philippines accounts for 42 per cent and Indonesia 24 per cent.

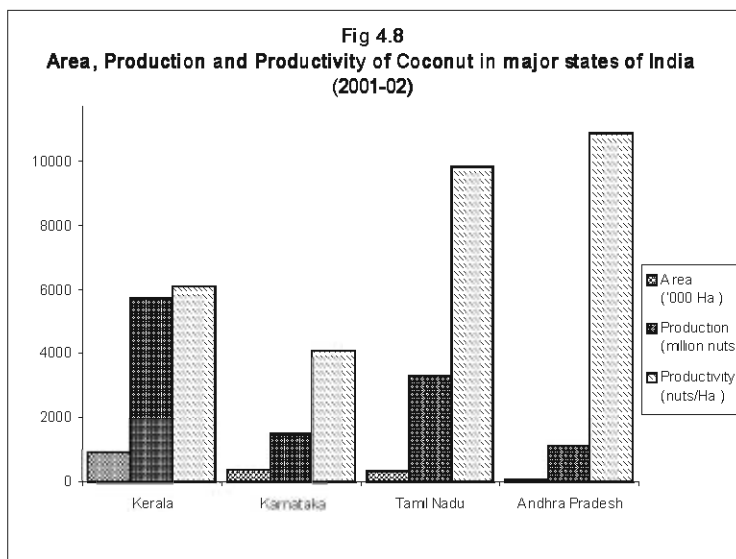
4.34 In India, coconut is grown in an area of 1.87 million ha, producing 11986 million nuts with a per hectare productivity of 6422 nuts. (Table 4.6) Kerala's share in area as well as production of coconut in the country is declining over a period. The share of area declined from 56 per cent in 1991-92 to 48 per cent in 2002-03 with a corresponding decline in share of production from 46 per cent to 48 per cent, while share of area in Karnataka and Tamil Nadu together increased from 29 per cent in 1992-93 to 38 per cent in 2001-02.

monsoon of 2002 and 2003 could perhaps be the factors responsible for the decline in production. The average productivity has also slightly declined in 2003-04 by 4.7 per cent to 6052 nuts/ha compared to 2002-03. (Table 4.6) The productivity levels in Kerala are also lower than other major producing states.

4.36 Apart from sizeable percentage of senile and unproductive palms and the higher incidence of root wilt affected palms, the share of younger non-bearing palms is around 25 per cent as reported in the survey of Department of Economics and Statistics. Over population of palms in holdings (231 Nos. per ha) is another reason for low productivity of palms.

4.37 Though India is among the leading producers of coconut in the world, its relative share in the international trade of value added products is insignificant as compared to other major producing countries like Philippines, Indonesia and Sri Lanka. The value of coconut products exported from the Philippines was US\$ 1028 million, followed by Indonesia (US\$ 525 million) and Sri Lanka US \$ 121 million) in 2001. Apart from the traditional products, technologies are available with different institutions for

desiccated coconut, coconut cream, spray dried milk powder, pastured tender coconut water etc. More concerted efforts are needed to promote value addition in coconut. Promotion of Hitech ventures in cooperative sector as well as micro enterprises offer scope in the state.



4.35 With a coverage of 9 lakh ha, coconut occupies 41 per cent of the net cropped area and provides livelihood to over 3.5 million families in Kerala. Production increased by 4.2 per cent in 2002-03 compared to the previous year and declined by 3.9 per cent in 2003-04 compared to previous year. The widespread attack of Mandari pest and the consecutive droughts during SW

4.38 However it should be recognised that mere diversification and value addition will not make the Indian coconut economy internationally competitive, unless the cost of production of coconut is contained and brought down in real

terms over time. For this the primary task is to raise the yield of coconuts. In a survey conducted by CPCRI, it was revealed that basin opening and application of organic manures are widely adopted while plant protection, spacing for optimum plant density and cultivation of high yielding varieties were the items with low level of adoption. The present level of adoption suggests the need for further intervention to

enhance technology adoption. Generation of technologies for different agro ecologic situations may improve the level of adoption. Integrated farming system with due emphasis on multi tier cropping systems needs to be promoted in different agro ecological situations.

interests of pepper farmers of the State. The Indo Sri Lankan Free Trade Agreement allowing free import of pepper has to be modified to safeguard the interests of Kerala farmers.

Table 4.6  
Area, Production and Productivity of Coconut in Kerala and India

Sl. No	Year	Area (000 Ha.)		Production (Million Nuts)		Productivity (Nuts/ha.)	
		Kerala	India	Kerala	India	Kerala	India
1	1999-00	925	1768	5680	12129	6140	6860
2	2000-01	926	1840	5536	12597	5980	6847
3	2001-02	906	1890	5479	12822	6049	6776
4	2002-03	899	1870 (p)	5709	11986 (p)	6349	6422 (p)
5	2003-04	906	-	5484	-	6052	-

P Provisional

Source: Directorate of Economics and Statistics

### Pepper

4.39 Vietnam is the largest producer with a share of 26 per cent followed by Indonesia (21%) and India (20%) in 2003. India became the third largest producer from the first position in 2002. A 19 per cent decline in production was recorded in India while 13 per cent increased in Vietnam. World pepper production had registered a four per cent decline during 2003. In 1991, Vietnam was in seventh position with a share of just 3.8 per cent of world production. There is concurrent increase in area, production and productivity in Vietnam over the period and productivity in Vietnam is around 1.3 MT /ha.

4.40 The state continues to enjoy a near monopoly in area and production of pepper, accounting for 95 per cent each in the country. The productivity achieved its peak level of 376 kg. per ha during 1998-99. The productivity of pepper recorded during 2003-04 was only 275 kg. per ha. The production declined from 67358 MT during 2002-03 to 56842 MT in 2003-04. Pepper produced in Kerala fetches a premium price in international market in view of its intrinsic quality. However consequent to the liberalisation of imports, there are reports of low quality pepper arriving from other producing countries. The import of pepper has increased from 4028 MT in 2000-01 to 15750 MT in 2002-03 affecting the

4.41 India could export 42806 MT of pepper in 1999-00, which declined to 21609 MT in 2002-03. Export performance dissipated further and quantum of exports declined to 16700 MT in 2003-04. The value realization was also lower at Rs. 143.51 crores compared to Rs. 178.88 crores in 2002-03 and unit value realization increased from Rs. 82.78 per kg to Rs. 85.93 per kg. in the corresponding period. USA is the major export market for India accounting for 45 per cent followed by Canada (11%) in 2002-03. Vietnam is the leading exporter with 35 per cent followed by Brazil with 16 per cent, Indonesia 10 per cent and India 10 per cent. Vietnam exports around 91 per cent of its production, while Indian exports account for only 27 per cent of its production.

4.42 Government of India could build in adequate safety mechanism and monitoring system to see that the issue of certification of origin and the condition relating to origin of the goods are not violated. A quantitative limit has to be prescribed in respect of import under the concessional duty route similar to the one fixed for tea under the same agreement. Similarly in respect of import for re-export of pepper which enjoys duty free status, a minimum value addition needs to be prescribed.

4.43 Price of pepper moved consistently upwards from early nineties and reached a peak level in 1999-00 with Rs. 215 per kg. Since then declined to Rs. 174 per kg. in 2000-01, further down to Rs. 80 per kg. in 2001-02 and slightly improved to Rs. 88/kg. in 2002-03 and declined to Rs. 74/kg. in 2003-04. Pepper prices continued its declining trend since 2000.

4.44 The state has to bestow specialised attention for upgrading the productivity through an organised replanting programme. The productivity in India is the lowest among the major producing countries. It is the highest in Thailand with 4.3 MT/ha. followed by Malaysia with 2 MT/ha in 2001. Application of soil conditioners, plant nutrients including micronutrients and biofertilizers under a framework of yield targeting in combination with plant growth promoting bacteria and Trichoderma as demonstrated by Indian Institute of Spices Research (IISR) could be adopted for enhancing productivity of pepper. The varietal selection and improvement through genetic upgradation is also important for stabilizing and retaining its lead share in global trade.

4.45 The quality issues reported in consignments exported from India include presence of pesticide residues, mycotoxins and microbial contaminations. In the liberalised policy regime, exporters with the status of trading house, star trading house or with in process quality control system can export spices without preshipment inspection and certification. Quality control is very important in the post WTO context to retain the

market share and the SPS norms are gradually becoming a weapon to discriminate trade, and the role of Spices Board assumes crucial, in enforcing quality control norms. Spices Board may take further initiatives to fix maximum pesticide residue limits at the Codex level.

4.46 The pattern of global demand for the crop is undergoing changes. The consumer preference is for value added form of pepper such as white pepper, pepper in brine, oleoresin etc. Kerala could not take full advantage of the emerging opportunities for want of raw material of desired quality.

4.47 Emerging trends and market potential indicate that both supply and demand for organic spices are growing throughout the world. India has developed the national standards for organic production and prescribed the guidelines for production of organic spices. Accreditation criteria for inspection and certification agencies are stipulated. Production programmes for promotion of organic spices in collaboration with Spices Board can go a long way in exploiting the world organic spice market. A major portion of Wayanad and Idukki could be brought under organic production of pepper.

**Cashew**

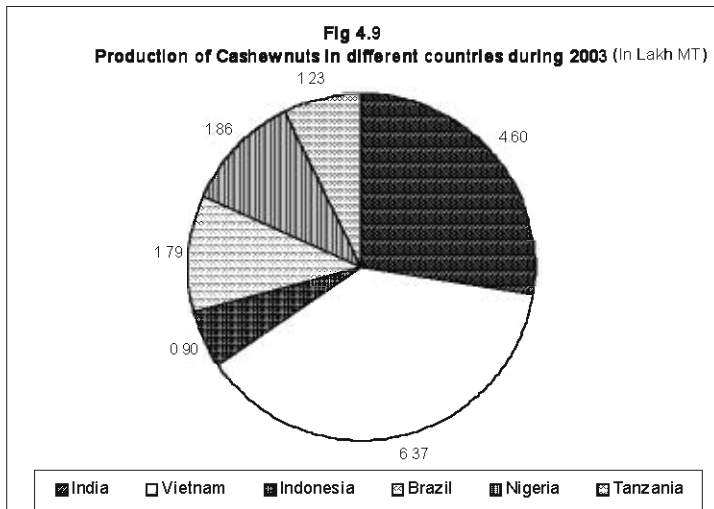
4.48 India is the 2<sup>nd</sup> largest producer and exporter of cashew in the world. India's share in world production is 23 per cent with a production of 4.6 lakh MT in 2003. (Table 4.7)

**Table 4.7:**  
**Production of Cashewnuts**  
**in different Countries during 2003**

Sl.No	Country	Production (in Lakh MT)
1.	India	4.60
2.	Vietnam	6.37
3.	Indonesia	0.90
4.	Brazil	1.79
5.	Nigeria	1.86
6.	Tanzania	1.23
7.	Others	3.58
	<b>World</b>	<b>20.33</b>

Source: FAO





4.49 Area under the crop in Kerala, has been declining steadily from 1.25 lakh ha. in 1988-89 to 0.88 lakh ha. in 2003-04 and the production declined from 1.08 lakh MT to 0.65 lakh MT during the period. The share of Kerala in the area under cashew in the country has come down from 23 per cent in 1987-88 to 11 percent in 2002-03 and the corresponding decline in share of production from 31 per cent to 13 per cent. Area and production are increasing steadily in other producing states in the country. Maharashtra is the leading producer with 22.43 percent share in production during 2003-04, whose share was only 10 per cent in 1990-91.

4.51 India exported cashew kernels worth Rs. 1804.43 crore during 2003-04 and imported raw nuts worth Rs. 1400.90 crore resulting in a net foreign exchange earning of Rs. 410.56 crore indicating 42 per cent decline in value terms compared to 2002-03. Three per cent decline in quantity of cashew kernels exported and 13 per cent increase in the quantity of raw nuts imported resulted in shrinking net value realisation from cashew export. U.S.A. is the major

export market with 48 per cent export share followed by Netherlands (12%). The unit export price of cashew kernels went down during the year 2003-04 by 3.59 per cent compared to 2002-03. The total raw nuts imported into India during 2003-04 was 4.52 lakh MT. Around 18.45 per cent of total raw nuts imported is from ivory cost followed by Tanzania (17.84%). Indonesia has emerged as another supplier of raw cashew nuts with a share of 9.98 per cent of total imports. Out of imported nuts 65 per cent of imported raw nuts is bought to Kerala during 2003-04 which

Table 4.8

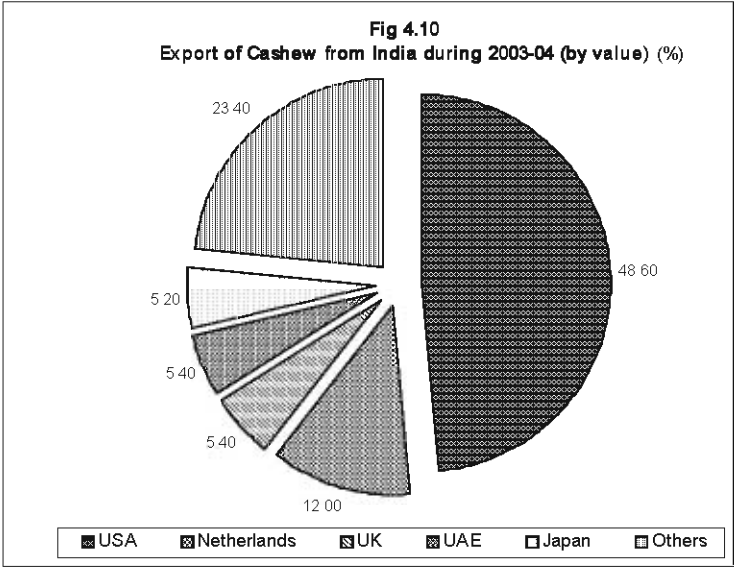
Area, Production and Productivity of Cashew in Kerala and India

Sl. No	Year	Area (000'Ha.)		Production (000'MT)		Productivity (kg./ha.)	
		Kerala	India	Kerala	India	Kerala	India
1	1999-00	89.4	686	65.5	520	733	758
2	2000-01	92.1	720	66.2	450	718	625
3	2001-02	89.7	750	65.8	470	734	710
4	2001-03	88.5	770	66.1	500	746	760
5	2003-04	88.4	-	65.2	535	737	-

(Source: Directorate of Economics and Statistics and Directorate of Cashewnut)

4.50 In spite of operating special schemes for expansion of area under cashew, the coverage has been steadily declining during the last two decades. The decline in area from 1980-81 to 2003-04 was to the tune of 52832 ha. Productivity of the crop, which was around 900 kg. per ha. during late eighties has also started declining from 1995-96 onwards, reaching 562 kg. per ha. during 1998-99 which improved to 734 kg. per ha. during 2001-02 ( Table 4.4). and to 737 kg/ha during 2003-04.

was 46 per cent in 1998-99. Cashew processing industry is finding it extremely difficult even to maintain the present level of capacity utilization because of the lower availability of local raw cashew nuts. Concerted efforts are needed to nurture this crop in the state with programmes to promote high density planting with high yielding cashew grafts. The decision of Government to include cashew in the list of plantation crops will help in area expansion under this crop.



**Organic Agriculture**

4.52 The size of global organic market is estimated at US\$25-30 billion. The most important organic product groups in the EU market are vegetables, fruit, potatoes, beverages, spices, milk products and cereals. While the demand for organic foods is increasing, supply continues to lag behind. Around 70 percent of organic food sold in the UK is imported. The shortfall in supplies of organic products against growing demand in OECD countries provides opportunities for developing country exporters. There are particular opportunities for tea, coffee, cocoa, spices, tropical fruits, meat and dairy products. Organic produce imported by the EU originates from atleast 60 countries. In 2000, agricultural land under certified organic agriculture averaged 2.4 percent of total agricultural land in Western Europe, 1.7 percent in Australia, 0.25 per cent in Canada and 0.22 per cent in US. In most developing countries, agricultural land reported under organic agriculture is minimal and less than 0.5 per cent of agricultural lands. UK has increased budget of the organic farming scheme to support conversion of organic agriculture to 20 million pounds per year. With 3 million ha, Argentina accounts for more than 90 per cent of certified organic land in Latin American countries and has the second largest area of organically managed land in the world after Australia. The organic food sales in Germany is 3-4 per cent of total sales while organic milk have covered 10per cent market share. Organic coffee which accounts for 0.2 per cent of world coffee consumption, accounts for 5 per cent of US coffee market.

4.53 However, developing countries face a number of obstacles in trying to penetrate these markets. The most talked about problem facing exporters is the need for Certification and accreditation. Certification is costly where international agencies are involved and few developing countries have established their non accredited agencies. Argentina has made enormous efforts into this area. A multitude of difficult national standards in importing countries and lack of transparency constitute a practical barrier. The size of the price premium varies between countries,

level of market development and product, but a premium of 20-30% is common. Now organic agriculture is moving into the economic main stream and many large food companies are developing organic products as an element of their business. A portion of the price premium alone are reaching to farmers, but the down stream supply chain typically accounts for a large share of higher price.

4.54 The efforts of IFOAM and Codex Alimentarius commission to harmonize the international guidelines and Certification have been laudable. A Survey by the international Accreditation assistance shows that 56 countries are at some stage of regulating the organic sectors, 32 countries have fully implemented regulation and 15 countries have draft guidelines.

4.55 Kerala could exploit the growing international markets especially in pepper, tea, coffee etc. Detailed action plan to promote organic agriculture in collaboration with Commodity Boards and Non-Governmental organizations would help in exploiting the emerging international markets. It should be ensured that the price benefits of the premium reach the farmers so that they are motivated to take to organic farming.

**Plantation crops**

4.56 Plantation crops in general are either export oriented or import substituting and therefore assume special significance from the national point of view. It is estimated that nearly 14 lakh families are dependent on the plantation sector

for livelihood. Each of the four plantation crops of South India has its distinct characteristics and economic problems. Consequent to the removal of quantitative restrictions on import, plantation crops in general are facing the threat of low quality imports.

4.57 Kerala has a substantial share in the four plantation crops of rubber, tea, coffee and cardamom. These four crops together occupy 6.40 lakh ha, accounting for 29 per cent of the net cropped area in the state and 42 per cent of the area under these crops in the country. Kerala's share in the national production of rubber is 92 per cent, cardamom 73 per cent, coffee 24 per cent and tea 7 per cent.

### Rubber

4.58 Global production recorded 8 million tonnes in 2003, which was about 9 percent higher than the record production of 7.34 million tonnes in 2002. Production in Thailand, the world's largest producer, reached another new record of 2.87 million tonnes after reaching 2.62 million tonnes in 2002, reflecting about 13 percent rise in output. Higher prices have been the major factor to induce intensive tapping. The two leading producers, Thailand and Indonesia continue to dominate the market, accounting for 36 and 23 per cent each, followed by Malaysia and India with 12 and 9 per cent. After declining for several years in the late 1990s, production in Malaysia recovered to reach nearly 1 million tonnes in 2003, about 28 percent higher than that in 1999. The higher price of natural rubber resulted in a shift in the comparative advantage of rubber production against other crops, in particular palm oil, which attracted small holders to revive rubber tapping. Indonesia also experienced a significant increase in production in the past few years. In 2003, total output reached 1.79 million tonnes, which was 10 percent more than in 2002. Production growth in Vietnam has apparently slowed down after expanding rapidly in the late 1990s. It reached 384 000 tonnes in 2003 only 3 percent more than the previous year. Production remained static in Sri Lanka, as higher production costs compared with those of other rubber producing countries deterred increases in production. Notable growth in production occurred in Brazil and India, largely driven by increases in domestic demand for vehicles. In 2003, production in Brazil increased

by 6 percent to reach 94 000 tonnes while India increased its production by more than 10 percent. Although demand has increased significantly over the past few years, China has not experienced any significant increase in production given the limited land area allocated to rubber production. World natural rubber production in 2004 is expected to continue to increase to reach 8.4 million tonnes, a rise of 5 percent. Developments in the first half of 2004 suggest that production in most major producing countries would remain around 2003 levels. The most significant increase was expected to be from Malaysia, where production in 2004 is expected to reach 1.24 million tonnes, about 25 percent higher than in 2003.

4.59 Consumption of natural rubber was around 7.88 million tonnes in 2003, about 5 percent higher than the level of the previous year but nearly 18 per cent higher than in 1999. Nearly half the natural rubber used globally is for tyre production. Higher demand for motor vehicles, and hence for tyres, stimulated by the stronger economic growth in several key markets, especially in China and Asian countries, together with the spike of oil prices which resulted in higher price for synthetic rubber, contributed to the stronger demand for natural rubber. China continued to experience strong growth over the past few years. In 2003, natural rubber consumption in China reached nearly 1.49 million tonnes, 14 per cent more than the previous year and nearly 74 percent higher than in 1999. Other major consuming countries, including India, Japan, the Republic of Korea and Malaysia, also registered increased consumption in 2003. North America (the United States and Canada), has seen consumption range between 1.13 and 1.20 million tonnes for the past few years largely to supply its mature automobile markets.

4.60 China became the world's largest natural rubber importer in 2003, importing 1.2 million tonnes, nearly 26 percent more than in 2002. This increase was fuelled by ongoing growth in demand for automobiles coupled with stagnation in domestic natural rubber production. China's net imports increased by 428000 tonnes between the average of 1999-2001 and 2003, 60 percent of the global increase in this period. Brazil also experienced high growth in imports over the past few years. In 2003, its imports reached 162 000 tonnes, about 13 percent more than the previous

year and 33 percent more than the average of 1999-2001. Most other major importers such as the United States, Japan and EU have seen little change in their imports since 2001.

4.61 India is the fourth largest producer of natural rubber with a share of nine per cent in the world after Thailand and Indonesia and Malaysia. The production of natural rubber in the country was 7.12 lakh MT in 2003-04, registering a 9.6 per cent growth compared to the previous year while it was 2.9 per cent growth over the previous year during 2002-03. India is at the same time the fourth largest consumer of natural rubber after China, USA and Japan. The annual growth rate in production in 2001-02 was the lowest (0.08 %) after 1982-83 while annual growth rate of consumption was the lowest in 2000-01 after 1980-81, which recovered to 1.07 per cent in 2001-02 and to 3.5 per cent in 2003-04. Indian industry comprising 29 tyre manufacturing units and 250 medium scale and 5500 small scale units in the organised sector offers 35,000 diversified products, but over 95 per cent of the industry is outside Kerala. The long experience in the manufacture of such a large number of diversified products and the low cost man power available have to be considered as the relative advantages the country possesses on the promotion of rubber based industries for export purposes and steps should be taken to attract such units to Kerala.

4.62 Kerala accounts for 83 percent of the area under rubber in the country. The coverage under the crop in 2003-04 was 4.78 lakh ha, higher by 2355 ha. over the previous year. The production of natural rubber in Kerala during the year was 6.56 lakh tonnes. The increase in production registered during the year was 10.2 per cent over the previous year. Being predominantly a small holder plantation crop in Kerala, the size of a small rubber holding is as low as 0.50 ha. The increasing trend in productivity continued during 2003-04. It was 1190 kg. per ha in 1998-99, which rose to 1371 kg. during 2003-04. In terms of tapping area, productivity recorded was 1635 kg. per ha during the year 2002-03.

4.63 Even though the domestic prices of natural rubber were more or less comparable to international prices during 2003-04 (See Appendix-4.17 and Appendix-4.18) the industrial sector still resorts to imports in bulk quantities since the import duty is only 25 per cent. The total quantity imported was 26229 MT in 2002-03 which increased to 44199 MT in 2003-04. The annual average growth of the domestic natural rubber industry for the period 1996-97 to 2003-04, showed an annual average increase of 3.3 per cent in production where as consumption had increased at 3.1 per cent per annum while import of natural rubber increased by 10.6 per cent.

Table 4.9

Consumption of Rubber during 2002-03 and 2003-04

Sl. No	Item	Consumption (in MT)		Growth %
		2002-03	2003-04	
	<b>Natural Rubber</b>			
1	Auto Tyres and Tubes	353032	378185	7.1
2	Others	342393	341415	-0.3
	<b>Total NR</b>	<b>695425</b>	<b>719600</b>	<b>3.5</b>
	<b>Synthetic Rubber (SR)</b>			
3	Auto Tyres and Tubes	107483	119367	11.1
4	Others	87367	90823	4.0
	<b>Total SR</b>	<b>194850</b>	<b>210190</b>	<b>7.9</b>
	<b>NR and SR</b>			
5	Auto Tyres and Tubes	460515	497552	8.0
6	Others	429760	432238	0.6
	<b>Total of NR and SR</b>	<b>890275</b>	<b>929790</b>	<b>4.4</b>

4.64 The higher prices in the international market is reflected in the domestic market also. The average price of RSS4 in the domestic market at Kottayam was Rs. 39.19 per kg. in 2002-03 which increased to Rs. 50.40 in 2003-04. The international price of RSS3, equivalent of RSS4 of India, increased from Rs. 41.11 to Rs. 52.78 in the corresponding period. The price of RSS 4 in Kottayam reached Rs.65.60 during July 2004 and then declined to Rs.52.77 in October 2004. The Indian price (RSS4) which was higher than the international price till June 2003 started moving below the international price during the remaining months of the year owing to the sharp increase in the international price.

4.65 World rubber prices should continue to show some strength in the near future largely due to the high oil price and continuing global economic growth. If global economic growth, especially in developed countries such as the EU, Japan and the United States and large developing countries such as China and India continues at the current pace, further price strengthening could be expected. It would, however, be limited in the long run by the good potential to increase supply by more intensive tapping and by increasing yield in the major producing countries. It was estimated that global consumption in 2004 would be slightly higher than in 2003 largely due to higher economic growth rate in both developed and developing countries. However, the magnitude of the growth in rubber consumption depends considerably on the growth in China.

### Coffee

4.66 The estimated production of 2004-05 is 7.1 million tonnes recording an increase of 10 per cent. The reason for increased crop is due to increase in expected production in Brazil by 33 per cent, followed by 12 per cent increase in India. There was substantial reduction of crop in 2003-04 in Brazil by 38 percent, due to unfavorable weather conditions. India is the sixth largest producer of coffee in the world with a share of 4.1 per cent. The top producers being Brazil (28%), Vietnam (20%) and Columbia (10%), during 2003. The share of Robusta production increased from 53.7 per cent in 1995-96 to 62.9 per cent in 2002-03 indicating a 6.1 per cent annual growth while Arabica production remained more or less static.

4.67 The area under coffee in Kerala was 0.847 lakh ha out of 3.55 lakh ha in the country during 2003-04, which works out to 24 per cent. The share of Kerala in production is 23.60 per cent during 2003-04. Major variety grown in Kerala is Robusta with a share of 95 per cent in planted area. Production of coffee during the year was only 0.64 lakh MT against 2.71 lakh MT for the country. Productivity of the crop in Kerala (754 kg/ha) is lower than the national level of 761 kg./ha. Area under coffee registered substantial increase during the last two decades with an annual growth rate of over 2 per cent. The increase in production recorded during the period was much higher and registered an annual average growth rate of nearly nine per cent. Coffee provides opportunities for livelihood to nearly one lakh families including agricultural labourers. In Kerala, coffee is also one of the small holder plantation crops with nearly 76,000 holdings coming under the category with an average size of 1.1 ha. Consumption of coffee has remained more or less static at around 55,000 tonnes for the past one and half decades till 1999 and then slightly improved to 70,000 tonnes in 2003.

4.68 Coffee is a highly export dependent crop and more than 80 per cent of domestic production is exported. The unit value realization has declined drastically from Rs. 95.37 per kg. in 1997-98 to Rs. 50.71 per kg. in 2002-03 which again slightly declined to Rs. 49.78 per kg in 2003-04. The quantity of coffee exported from India increased in 2003-04 to 2.32 lakh tonnes from 2.07 lakh tonnes in 2002-03. Increasing stocks in consuming countries more than offset the contraction in stocks of producing countries in 2002. Coffee stocks declined in producing and consuming countries by 4 per cent in 2002 and already there is a decline of 24 per cent in stocks in producing countries during 2003-04.

4.69 World coffee prices had fallen to the lowest level since 1973 in nominal terms. The fall in Robusta prices has been particularly pronounced and it declined from 67.53 US cents per lb in 1999 to 27.30 cents in 2001. However since October 2002 ICO indicator prices showed an increasing trend and reached 38.39 cents in 2003. During the latter half of 2004 it again declined slightly to 32 cents in October 2004.

4.70 The pilot project of Coffee Board on price insurance under implementation in collaboration with the World Bank's commodity group could be one of the effective interventions in the liberalized economy.

**Tea**

4.71 World tea production increased at an annual growth rate of 2.8 per cent between 1970 and 2000 expanding from 1.27 million MT to 2.91 million MT. During the period 1997 to 2003, the annual growth rate of world production was 1.75 per cent while the world consumption was 1.31 per cent. The gap had increased from 5 million kg. to 97 million kgs. during the period resulting in price crisis. Most of the growth was due to the increase in productivity rather than expansion in area. Estimates indicate that world tea production in 2003 reached 3.1 million MT showing 1.3 per cent increase over the previous year. Black tea accounts for more than 70 per cent of world tea production and 22 per cent by green tea. India is the leading producer and accounts for 28 per cent of global production followed by China with 25 per cent production. All the major producing countries realized increased output in 2003 except Sri Lanka and Indonesia largely as a result of favourable climate. The output in India is estimated to have increased by 3.7 per cent in 2003 to 857M. kgs.

declined slightly to seven per cent in 2003 from eight per cent in the previous year. Tea plantations owned by big companies employ a labour force of over 84,000 in the organised sector. There is fluctuation in production and it ranged from 64.8 M. kgs. in 1995-96, reaching to 69.1 M.kgs. in 2000-01 which declined to 65.8 M kgs. in 2002-03.

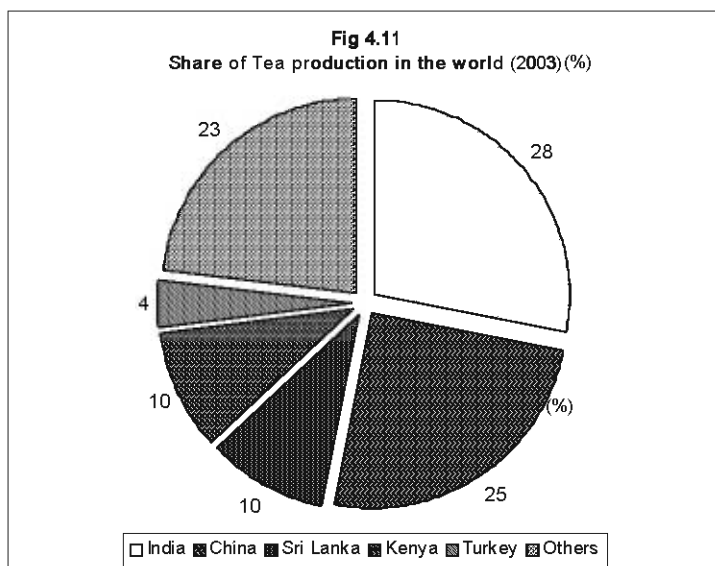
4.73 After the removal of quantitative restrictions in April 2001, one of the major threats faced by the tea industry is the increased import of inferior quality teas into India particularly from Indonesia resulting in further depression in prices. Imports increased from 13.4 M. kg. in 2000 to 16.6 M. kg. in 2001 and further increased to 22 Mkg. in 2002. However during 2003 the import declined substantially to 6.8 M. kgs. The maximum quantity of tea was imported from Indonesia (34%), followed by Kenya (18%) and Vietnam (16%). The unit value of imported tea was the lowest from Vietnam (Rs. 32/kg) while the average being Rs. 63/kg. However import from Vietnam has declined substantially in 2003 from 12025MT. to 1107MT. The disturbing fact is that most of the countries are exporting to India at low prices.

4.74 The average auction prices for 1999 at Kochi was Rs. 62 per kg. which declined to Rs. 47 per kg. in 2002. The price of tea in south India during January-July 2004 has slightly improved to Rs. 43.83 per kg from the Rs.42.44 during the corresponding period during 2003. The FAO composite price averaged US\$ 1.48 / kg. during 2002, being 6 per cent lower compared to 2001 level. The price fall is because of increase in supply as well as due to large carry over stocks. Prices of tea were buoyant during 1998 but started declining from 1999.

4.75 On the types of tea imported by major countries the orthodox tea accounted for 51 per cent and CTC accounted for 39 per cent and the rest by green tea and others. The CTC market is shrinking. In South India orthodox tea production had declined

from 94 per cent in 1961 to 25 per cent in 1991 and to 16 per cent in 2003. There is a need to correct this, especially in the context of the global demand for orthodox teas.

4.76 The Indian Bank Association has introduced financial rehabilitation package for tea



4.72 A declining trend in production in the State was observed for the last three years from 68.9 m. kgs. in 2000 to 56.6 m. kg. in 2003. Against the total area of 5.11lakh ha under tea in the country Kerala accounts for only 0.37 lakh ha. In respect of production the share of Kerala

sector with effect from February 2004. The South Indian Tea industry has not taken full advantage of the scheme.

4.77 A separate fund for modernization, development and rehabilitation of the tea plantation sector was created in 2003 by abolition of the excise duty of Re 1/kg on tea and its replacement by an additional excise duty of Re 1/kg by way of surcharge. The fund would be used for revival and rehabilitation of closed tea gardens and assistance for encouraging production of orthodox tea for export.

### Cardamom

4.78 The total production from India and Guatemala was estimated at 22500 MT in 2002. The production in Guatemala improved by 14.4 per cent in 2002 over the previous year while it declined by 21 per cent in India and estimated at 9000 MT in 2002. On an average, Guatemala exported around 73 per cent of its production, whereas India's share of export in total production is only 8 per cent.

4.79 Productivity which was more or less stagnant around 50 kg./ha. in the 1980s has improved to the level of around 203 kg. per ha by 2001 but declined to 208 kg/ha in 2003-04. Kerala was lagging behind the national level till 1992-93 but has improved its position by raising its productivity from 50 kg. to 203 kg. per ha over the last five years. Consequently, the share of Kerala in production at the All India level also increased from 28 per cent to 75 per cent in 2003-04. While area under cardamom in the country has declined from 0.96 lakh ha to 0.73 lakh ha. in the period. In Kerala it has come down from 65,000 ha to 41782 ha. On the export front cardamom has been facing competition from Guatemala although the quality of Guatemala cardamom is inferior. The country could tide over the challenge by expanding domestic market through market promotion. The average auction price during 2000-01 was Rs. 570 per kg. which improved to Rs. 622.96 in 2001-02 and declined to Rs. 561.13 in 2002-03 and further declined to Rs. 361.02 in 2003-04. The Indian export of cardamom has increased from early nineties and reached a peak level of 1545 MT in 2000-01 and then declined by more than 50 percent in 2003-04 to reach 690 MT. The unit price realised

increased steadily to Rs. 690 per kg. in 2002-03 from Rs. 548 per kg. in 2000-01. It declined to Rs. 370 per kg. in April-May 2004. However the market for cardamom is largely domestic as could be seen from the declining share of exports and the share of exports is only 6 per cent of the production.

### Price Stabilisation Fund Scheme

4.80 Price Stabilisation Fund Scheme was launched by the Government of India in April 2003. The scheme is being operationalised through the Price Stabilisation Fund Trust, New Delhi. The Price Spectrum Band for the year 2003 has been finalized by the Trust. The scheme was launched by the Department of Commerce, GOI with a view to providing sustained long term support to the small growers of Tea, Coffee, Rubber and Tobacco. The scheme provides Rs. 1000/- as financial assistance to enrolled growers in the event of price decline below the Price Spectrum band. The Price Spectrum band is estimated on the basis of international price of each commodity. Except for international price for coffee, which is based on futures prices, international price for other commodities would be with reference to auction prices. Seven years moving average is calculated on the basis of international price of seven calendar years. The Price Spectrum band means plus or minus 20 per cent of seven years moving average of international price. If average domestic price is within the price spectrum band, the year would be categorized as normal year.

4.81 During 2003-04, Rs. 200.00 crores and during 2004-05 Rs. 232.88 crores have been made to the PSF Corpus fund by GOI and the entry fee deposit of members were Rs. 1.16 crores and Rs. 0.28 crores respectively. At the end of March 2004, 1643 coffee growers, 11 tea growers and 14358 rubber growers were enrolled from Kerala against a total of 26327 numbers in the country. Of the total, 65 per cent is enrolled from Kerala.

4.82 At present growers upto 4 ha are eligible for support. However instead of fixing a fixed amount of Rs. 1000, different slab system could be tried out. GOI have appointed a committee to review the scheme as it has not helped the vast majorities of cultivators.

**Medicinal Plants**

4.83 The world trade in medicinal and aromatic plants is currently valued at US \$ 60 billion and India accounts for a negligible share valued at about US \$ 100 million only where as China accounts for about 40 per cent of world trade. One of the major benefits of globalisation has been the growing awareness about herbal and aromatic plants. Global market for medicinal plants has been growing at a healthy 7 per cent annually. Now the potential for exploitation of this market has been recognized

4.84 USA is the single largest export destination for Indian medicinal plants/products accounting for almost 50 per cent of total exports. Country's exports to individual EU member countries are small, but as a region, the EU represents a sizeable market for India. India's over all export performance with respect to the US market has been encouraging since 1998. India's share in US imports of pharmaceutical preparations was less than 20% of that of China in 1998, but by the year 2002, its export has increased five-fold to become almost at par with China.

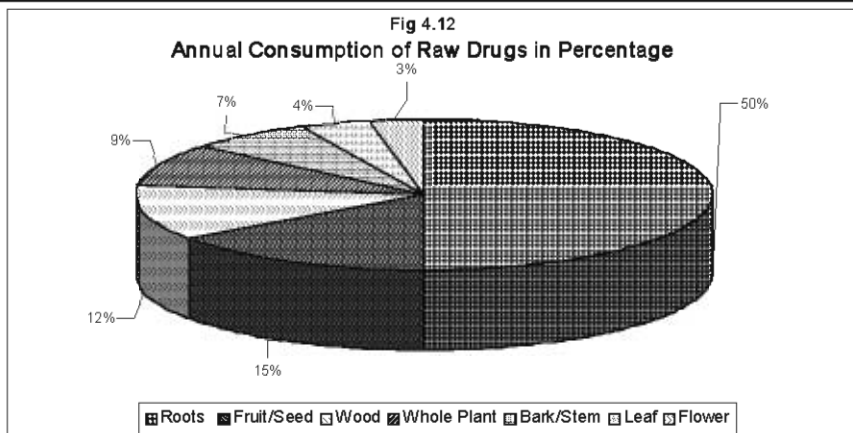
4.85 At the national level, the National Medicinal Plants Board has prioritized 32 medicinal plants for development. The Board has formulated schemes and guidelines for financial assistance in different areas of medicinal plants sector covered under promotional and commercial schemes applicable both for government and non government organisations.

4.86 The annual consumption of raw drugs is about 25,000 MT. A market analysis of major medicinal plants in Kerala is given in Table: 4.10

4.87 Though the industry is in need of large quantity of raw materials, large scale commercial cultivation is yet to catch up. Now only about 7% of raw materials is obtained from cultivated sources. Almost 70% of the collections of medicinal plants involve destructive harvesting. Pharmaceutical companies are also responsible for inefficient, imperfect, informal and opportunistic marketing of medicinal plants. Out of the annual consumption of raw drugs, 50% are from roots, followed by fruit/seed (15%), wood (12%), whole plant (9%), bark/stem (7%) leaf (4%) and flower (3%) as depicted in Fig: 4.12

**Table: 4.10**  
**Market Analysis of major Medicinal Plants in Kerala**

Name of the Plant	Common Name in Malayalam	Quantity Demanded (estimate) Tonnes	Compound growth rate (%)	Coefficient of variation (%)	Price elasticity of demand (%)	Scarcity ratio
Sida spp	Kurunthotty	908	9.2	29.87	0.54	2.79
Tinospora cordifolia	Chittamnuth	282	5.7	20.76	0.35	0.00
Terminalia chibula	Kadukka	164	6.8	29.89	3.31	-3.20
Withania somnifera	Amukkaram	149	6.3	12.93	0.6	-4.02
Adhatoda sp	Adalotakam	141	5.3	29.33	1.46	-1.60
Cedrus deodara	Devaharam	138	8.8	27.00	1.98	-3.80
Cyperus rotundus	Muthanga	131	9.12	13.48	2.23	-0.59
Woodfordia fruticosa	Thathiri	123	8.47	22.15	0.42	-5.16
Boerhavia diffusa	Thauthama	100	4.19	8.62	0.33	6.82
Aegle marmelos	Koovalam	87	9.31	28.15	0.98	0.49





4.88 Destructive harvesting practices have led to the depletion of certain wild growing plants. The private cultivation is mainly confined to annuals only. Widely used medicinal trees like *Saraca Asoca*, *Aegle marmelose*, *Pterocarpus santalinus*, *Orxylum indicum*, *Salacia oblonga*, *Garcinia gummigutta*, *Terminaliz arjuna*, *Santalum album*, *Symplococos racemosa* etc. are in the Red Listed Category. Though the long gestations period for tree crops make it unattractive to individual farmers, large scale tree cultivation must be made sustainable for the survival of Ayurveda industry in its present status. High yielding fast growing species have to be identified through intensive research. Introduction of techniques to encourage growth of roots, thick foliage etc. have to be tried through appropriate soil conditioning.

Feasibility of harvesting roots by rotation through trench methods may also be explored.

4.89 The Government of Kerala, considering the market demand and global opportunities on medicinal herbs has now decided to establish an Agri Eport Zone (AEZ) in the state for promotion of exports of herbs and its preparations/herbal medicines, with a total project cost of Rs.26.2415 crore. The AEZ in the State would cover a contiguous area in the Western Ghats of Kerala, over nine districts viz. Wayanad, Malappuram, Palakkad, Thrissur, Ernakulam, Idukki, Pathanamthitta, Kollam and Thiruvananthapuram. The major activities proposed in the project are given in Box: 4.6

#### BOX-4.6

#### Activities proposed under the Agri-Export Zones (AEZ) on Medicinal Plants in Kerala

The AEZ for medicinal plants in Kerala aims to enhance the total export by 65 percent in 5 years. To achieve the export potential, the following major activities are proposed.

- Training and education of persons/groups engaged in collection of medicinal plants from wild sources with the involvement of NGOs and other social/environmental development organisations.
- Conservation of medicinal plants by adopting replantation
- *In situ* conservation through herbal gardens
- Promotion of area expansion under cultivation by extension services and free distribution of planting materials
- Formation of co-operatives for farmer mobilisation
- Establishing nursery centres for meeting the growing demand of planting materials
- Establishing laboratories for quality testing
- Establishing collection centres/pack houses and processing units for value added products
- Adoption and implementation of quality systems as per international standards like Codex, etc.
- Development of data bank and information centre
- Export promotion and marketing through brand equity
- Research and Development for good organic packages, etc

*(Source: Project Report on AEZ, Department of Agriculture)*

4.90 Coordination of agencies involved in the promotion of medicinal plants in the state like forest Department and Agricultural department is needed. Instead of promoting individual plants, a product oriented approach by promoting the group of plants needed for various products would be better from the commercial angle.

4.91 Quality control is critical in this business. The herbal and medicinal market in India is still unorganised but has great potential if made systematic and organised. Along with export market, domestic market also could be exploited.

**Energy use in Agriculture**

4.92 The supply of electric power to agricultural consumers is often regarded as the root of the crisis of the power sector in India. The tariffs changed to agriculture are estimated to represent a fraction of the increasing cost of power supply and in some states it is free of change.

4.93 The power sector exerts a critical influence on the performance of the agricultural sector as it affects farmer access to and use of power for a variety of agricultural operations, but most importantly for pumping groundwater for irrigation purposes.

4.94 The per cent share of consumption for agricultural purposes is the lowest in Kerala at 2 per cent. Annually about Rs. 3.00 crore is the budgeted amount for free supply of electricity to the farmers in the State. The assistance is provided for all crops upto 2 ha. The total number

of beneficiaries is 2.11 lakh with a maximum number of 0.95 lakh in Trissur district followed by 0.23 lakh in Ernakulam. However the reported pending payment to the State Electricity Board excluding the budgeted amount of 2004-05 is to the tune of Rs. 39.61 crores.

**Table - 4.11**  
**Consumption of Electricity for**  
**Agricultural Purposes - 2001-02**

(Million KWH)

States	Consumption for Agricultural purpose	% share of consumption for Agricultural purposes
Andhra Pradesh	12828.92	40.75
Karnataka	7541.34	38.01
Kerala	187.48	2.17
Tamil Nadu	9622.46	26.79
All India	81673.39	25.33

Source: Ministry of Agriculture, 2004

**Women in Agriculture**

4.95 Extension and training support has been viewed as the central focus of the policy approach for women in agriculture. A recent study examining the impact of Training of Farm Women in Agriculture (TWA) in Gujarat and Andhra Pradesh suggest tangible results in terms of increased yield, reduced pest attacks and improved quality of crops besides increased participation in decision making and self-confidence among women. The major observations in the study are given in the Box-4.7

**BOX-4.7**

**Major achievements of the 'Training of Women Farmers in Agriculture' programme in Gujarat and Andhra Pradesh:**

- About 40-45 per cent of the trained women practiced some of the improved practices
- The women farmers who had never visited the block officers, FTCs, line departments etc. have started visiting them for equipping themselves with better services and technical guidance
- The women have developed confidence and self-esteem as they participate in *krishi melas* along with the men farmers. They often are seen occupying the front row seats and interacting with men farmers, scientists, officials with great confidence. Sometimes, they even come out with new ideas and learning and share them with the men farmers
- The women farmers also win prizes in the quiz competition held in *melas*
- The WF are practicing the skills which are relevant to them
- They have started using nutrients like zinc, sulphur, iron which they never used before attending the training
- They have started spreading the technical skills and knowledge to other WF in their village as well as in the surrounding areas
- The trained WF are using hybrid and improved varieties of wheat, castor, cotton groundnut etc.

Source: 'State of Indian Farmer', millenium study, Ministry of Agriculture, GoI, 2004

4.96 With the growing feminisation of farm labour due to more rural to urban migration, women are forced to carry our work previously done by men. In one hectare farm in one year, in the Himalayan regions of India, bullocks contribute one thousand hours, men give a thousand hours and women spend three thousand five hundred hours. It is still an underestimate of their actual share in women’s employment and wages in

agriculture. The real issues pertaining to the quality of their work and their status as workers are yet to be addressed. A micro level study conducted as part of the Kerala Research Programme on Local Development, reveals that the better social development indicators in the State are not necessarily indicative of the social status of women workers in Kerala. The salient findings of the study are shown in Box-4.8.

**BOX-4.8**

**Salient findings of the study under Kerala Research Programme on Local Level Development on “Women workers in Agriculture: Gender discrimination Work conditions and Health status”.**

The study has been conducted in Kudumba Panchayat in Palakkad district during 2000-01. Base-line survey followed by in-depth survey on selected households have revealed the following.

- Majority of agricultural labour force is constituted by the lowest sections of the social order and they live in appallingly poor conditions with high levels of illiteracy
- More that 57 percent of the sample households rely on public sources and nearly 36 percent depends on neighbor’s well for drinking water
- The small size of the landholdings, lack of common grazing lands, shortage of water, fodder and other difficulties in providing adequate care, make dairy or poultry farming nearly impossible for poor agricultural labour households
- An overwhelming proportion of the agricultural workers under study (66 percent) were illiterate. Agricultural works remain largely the major occupation of the scheduled caste women, irrespective of their educational levels and age
- Employment opportunities are diminishing quite rapidly due to change in land use and cropping patterns associated with commercialisation of agriculture. On an average, a woman gets three and half months of work in a year, with an average annual income of Rs.5250/- only.
- The number of full work days available during the previous crop season ranged for 10-100. More than 11 percent of the women workers did not get even a single day’s full time work during the previous season.
- Tedious manual activities such as transplanting of seedling, weeding, harvesting, transporting harvest, threshing, drying of hay etc were seen mainly done by women, leaving behind only mechanical operations such as making of field boundaries and setting up of field barriers to the male worker.
- Gender discrimination in wage rates makes women’s position more vulnerable.
- In addition to attending paid work, women perform an overwhelming proportion of the various items of the unremunerated domestic work.
- Majority of the women workers have developed some degree of indifference in the recent years to trade union activities.

*(Source: Discussion Paper Series, KRPLLD, 2004)*

4.97 A major initiative in terms of capacity building and mainstreaming of women in agricultural activities is to involve them in the on-farm participatory research for agricultural technology. Guided by these considerations, the ICAR had undertaken special schemes for designing and disseminating appropriate farm implements, which can reduce drudgery. More recently, women have also been involved in on-farm research experiments, conservation of biodiversity and promotion of sustainable farm practices, most of them being carried out by NGOs. M.S. Swaminathan Foundation has taken up an initiative for developing ‘Eco-villages’ by involving women as key actors.

4.98 The future growth of agriculture depends significantly on the sub sectors where women have a larger presence, such as in horticulture, livestock and fisheries. Conscious efforts are to be made to recognize and consolidate the rightful share of women in these sub sectors. Structural and institutional reforms are needed to recognize that women are stakeholders.

4.99 The State Department of Agriculture has been implementing the “Women in Agriculture Programme’ under Macro management Scheme in the districts of Alappuzha, Kollam, Pathanamthitta Thrissur, Wayanad, Malappuram

and Kannur. The activities include promotion of micro enterprises such as agro-processing, tissue culture hardening units, vegetable cultivation, Vanilla cultivation, nursery for fruits and ornamental plants, medicinal plants, mushroom cultivation, vermi compost production, jasmine, anthurium and banana cultivation and bee keeping. The programme provide adequate organisational and financial support to women groups to make them ‘Self Help Groups’ and provide technical training in agriculture and allied areas and in increasing managerial, organisational, entrepreneurial and decision making skills. The scheme is now proposed to all the districts other than Palakkad. The 100 per cent central sector scheme on women in Agriculture is now in the 3<sup>rd</sup> phase of implementation in Palakkad District..

4.100 ‘Harithashree’, the lease land farming promoted by the State Poverty Eradication Mission, Kerala, through ‘Kudumbasree’, has helped women farmers to stay on in agriculture for their livelihood. The number of Grama Panchayats involved in the programme has increased to 712, with 91 more Grama Panchayats got involved, compared to the previous year. There are about 20394 NHGs and 244198 families presently involved in the ‘Harithashree’ programme covering an area of 17575.29 ha. The details are given in Table: 4.12

Table: 4.12

**District wise Details of Farming undertaken by Kudumbasree**

Sl. No.	Name of District	No. of GPs	No. of NHGs	No. of Families	Area in Ha.
1	Thiruvananthapuram	54	649	7668	217.98
2	Kollam	52	520	10225	245.75
3	Pathanamthitta	28	727	16300	4919.00
4	Alappuzha	64	3028	38626	1661.88
5	Kottayam	44	680	7609	324.85
6	Idukki	49	5536	58541	2719.80
7	Ernakulam	75	3085	29057	2466.00
8	Thrissur	84	674	7335	345.00
9	Palakkad	42	926	16215	371.37
10	Malappuram	37	74	2072	145.16
11	Kozhikode	57	943	9230	319.17
12	Wayanad	25	737	10593	2902.00
13	Kannur	64	1797	22020	611.00
14	Kasaragod	37	1018	8707	326.33
	<b>Total</b>	<b>712</b>	<b>20394</b>	<b>244198</b>	<b>17575.29</b>

4.101 Paddy, Tapioca, other tuber crops, vegetables etc. are the major crops cultivated under lease land farming. Certain innovative groups are experimenting fewer other crops such as water melon in Pathanamthitta district and Basumathi rice in Wayanad district. Many Grama panchayats are also promoting organic farming through their women groups.

**Crop Development Programme - Review of Annual Plan 2003-04 : Crop Husbandry**

4.102 During the Annual plan 2003-04 an amount of Rs. 9610.01 lakhs was provided to crop husbandry which include Rs. 15.00 lakhs for partially aided schemes and Rs. 5495.01 lakhs under 100 per cent Centrally sponsored including MOU schemes. The State sector schemes incurred an expenditure of Rs. 6367.21 lakh (66.26 per cent.)

than 2.8 tonnes per ha. Revitalisation of group farming samithies in predominant rice growing areas like Palakkad, Thrissur, Ernakulam and Alappuzha, assistance to paddy development agencies and assistance to seed development agencies were continued under State plan for attaining the targeted level of rice production and productivity. During the year 2003-04, it was targeted to introduce revitalisation activities in 0.75 lakh ha and attained progress in 0.68 lakh ha.

4.105 Major items implemented for rice development through MOU schemes were seed production programme, cultivation of HYV, green manure seed, scented rice development etc. During the year seed production programme was implemented in 3192 ha. against the target of 3500 ha. cultivation of HYV seed production achieved 2211 MT against the target of 6000 MT and green

**Table 4.13:  
Financial Performance of Crop Husbandry during 2003-04**

(Rs. in Lakhs)				
Sl.No.	Item	Outlay	Expenditure	% of Expend. to outlay
1.	State Plan Schemes	4100.00	3350.33	81.72
2.	Partially Assisted Central schemes	15.00	5.90	39.33
3.	100% Centrally Sponsored Schemes including MOU	5495.01	3011.00	54.79
<b>Total</b>		<b>9610.01</b>	<b>6367.23</b>	<b>66.26</b>

4.103 Specific strategies are formulated for different crops during Tenth Plan. A number of programmes were implemented for the development of agriculture during the year 2003-04. Major crop wise achievements made during the period is furnished below.

**Rice**

4.104 Rice development activities in the State were carried through State schemes and Centrally sponsored schemes. The ultimate objective of rice development programme during the Tenth Plan period is to sustain rice cultivation in 4 lakh ha and to augment the average productivity to more

manure seed production achieved 77.93 MT against the target of 100 MT.

**Coconut Development**

4.106 During the year 1182 ha. was brought under integrated pest management against the target of 1236 ha. Under integrated nutrient management programme fertilizer was applied to 33.14 lakh palms against the target of 64 lakhs and 716 pump sets were distributed and 313 wells were constructed for irrigating coconut palms during the year.

4.107 As per the Centrally sponsored scheme the Coconut Development Board provides assistance for production and distribution of quality hybrid coconut seedlings. During the year 0.46 lakh coconut hybrid seedlings were produced and distributed against the target of 0.94 lakh seedlings.

**Pepper**

4.108 Pepper development programme include production and distribution of pepper cuttings, area expansion, rehabilitation of old pepper gardens, promotion of organic pepper, integrated pest management for pepper and promotion of soil conservation measures. During the year 48.10 lakh pepper cuttings were produced and distributed, Pepper rehabilitation was introduced in 4142 ha. Promotion of organic pepper was introduced in 1564 ha and IPM demonstration was done in 323 ha. Along with pepper other spices such as ginger, turmeric, chillies and tree spices also received support during this period.

**Vegetable development**

4.110 Vegetable promotion programmes are implemented through State and Centrally sponsored schemes which include promotion of commercial cultivation, seed multiplication programme, providing irrigation facilities, promoting vegetable cultivation in educational and public institutions, infrastructure support for marketing etc.

4.111 During the year 2003-04, 978 ha was brought under vegetable cultivation through ‘Haritha Sanghom’, 500 of vegetable gardens were established in educational institutions through State schemes. Under Centrally sponsored scheme 194 ha. was brought under cool season vegetable cultivation. Financial assistance was given for promoting vegetable cultivation in 655 ha. during 2003-04. Vegetable development programme received priority in local level planning of panchayats also.

**Table 4.14:  
Major Scheme wise Expenditure during 2003-04**

(Rs. in Lakhs)

Sl.No	Schemes	Expenditure
1.	Rice development	1072.36
2.	Coconut development	1001.03
3.	Pepper development	385.51
4.	Cashew development	124.03
5.	Vegetable and Fruit Production Council	195.50
6.	Vegetable development	229.82
7.	Fruit development	96.48
8.	Women development	47.51
9.	AEZ	287.00

**Cashew**

4.109 In the case of cashew development, rehabilitation, plant protection and establishment of cashew nurseries were given importance during the Annual plan 2003-04. Through Centrally Sponsored programme an area of 985 ha was brought under rehabilitation programme against the annual target of 5500 ha. Plant protection measures were implemented in 355 ha.

**Vegetable and Fruit Promotion Council’s Programme**

4.112 Vegetable and Fruit Production Council, Keralam, was also involved in the implementation of vegetable and Fruit Promotion Programme. It is the successor organisation of Kerala Horticulture Development Programme. The

programme has been initiated to improve the livelihood security and thereby enhance and sustain the income of fruit and vegetable farmers of Kerala. KHDP has successfully implemented the programme in seven districts and the same model has been extended to Kollam, Alappuzha, Pathanathitta, Wayanad, Idukki and Kannur during the first three years of Tenth five year plan. The programme covers production, formation of SHGs, credit management and marketing.

4.113 During the year Rs. 378.4 lakh was disbursed as crop loan to 1768 farmers. An area of 6522 ha and 5885 ha were brought under vegetables and banana respectively.

### Fruit development

4.114 The agro climatic endowments and topographical features of Kerala offers excellent prospects for fruit production. The total area under fruit crops in Kerala comes to 3.2 lakh ha. Tenth plan gave thrust on the production and distribution of sufficient quantity of planting materials, improving the productivity by replanting with superior varieties, commercial cultivation of fruits like Pineapple, Pappaya and Mango in well established pockets, training to farmers and post harvest handling of fruits etc.

4.115 Through Centrally Sponsored programme Banana cultivation was done in 360.0 ha against the target of 600 ha, pineapple and other fruits in 120 ha against 100 ha and mango and papaya in 30.35 ha. during the year 2003-04.

### Supplies and Services

4.116 The State has a strong network for supplies and services. This include Krishi Bhavans in all the Grama panchayats for transfer of technology and organising agricultural services. Planting material delivery system has been developed which includes 33 state seed farms, 10 district farms, 10 special farms and 8 coconut nurseries. The paddy seed farms and the District Agricultural Farms are under the control of the

District Panchayats for facilitating appropriate seed planning at the grass root level. In spite of such elaborate progeny support, supply of quality seeds of paddy and other seasonal crops remain as a weak link in the production front.

4.117 During 2001-02, the consumption of fertilisers increased from 1.73 lakh tonnes from the previous year to 1.77 lakh tonnes and by 2002-03 increased to 2.05 lakh tonnes. The trend of fertilizer consumption shows fluctuations and it reached a peak level during 1997-98 and reached lowest level during 2000-01. The per hectare consumption is the lowest during 2000-01 at 58 kg/ha. (see Appendix 4.20). The State average is lower than the national average (86 kg.). The necessary steps are to be taken to reverse the situation so as to augment the productivity of major crops..

4.118 In plant protection, the strategy was one of need-based adoption of chemical control. The mite attack on coconut which emerged as a very serious threat for coconut warranted chemical intervention. With the active involvement of the local bodies, state government organised massive control programme for coconut mite and the menace could be contained to a great extent. However, a long term solution lies in evolving biological control measures. Selected indicators of progress are given in Appendix 4.21.

### Laboratories in Agriculture

4.119 Agricultural department is having a number of laboratories under its control. Altogether 48 laboratories including mobile soil testing laboratories, parasite breeding stations are functioning under the department. A number of problems are reported about the functioning of the laboratories like inadequate training for the staff in reputed institutions, insufficient supply of chemicals, absence of proper supply management, lack of qualified staff etc. An action plan has to be prepared for the proper use of the infrastructure created by the department. This should form as the base for the modernisation of

agriculture in the state. Restructuring of administrative set up also to be considered.

### Kissan Kerala

4.120 Kissan Kerala, a television based agricultural information dissemination system has been initiated in the state. The objective of the project is to disseminate information of regional relevance regarding best farming practices, soil and water conservation, forecast and precaution on pest and disease incidence, weather and market information etc in an interactive mode.

### Agricultural Insurance

4.121 A survey conducted by FAO in the early 1990s revealed that various types of crop insurance programmes are present in more than 140 countries. Low insurance penetration despite high premium subsidies, mostly captured by large farmers, poor financial performance with claims consisting exceeding to premiums, inappropriate pricing methodologies are few of the key endemic problems that plague national insurance programmes worldwide.

4.122 Two crop insurance schemes are currently in operation in the State, viz., The State Crop Insurance Scheme and The National Agricultural Insurance Scheme. The State Crop Insurance Scheme, being implemented since 1995, provides insurance cover to 24 major crops against crop loss due to natural calamities like drought, storm, cyclone, flood, landslip, forest fire, sea erosion, earth quake and lightning. The National Agricultural Insurance Scheme (NAIS), was introduced from 1999-2000, replacing the Comprehensive Crop Insurance Scheme (CCIS) which was in operation since 1985. NAIS is implemented in the State through the GIC of India, and provides insurance cover to Paddy, Banana, Tapioca, Pineapple, Ginger and Turmeric against risks such as natural fire and lightning, storm, hailstorm, cyclone, typhoon, tempest, hurricane, tornado, flood, inundation and land slide, drought, dry spells, pests and diseases. Small and marginal farmers are eligible for 50 per cent subsidy on premium, which is equally shared by the State

and Central Governments. The scheme is being implemented in 23 States and 2 Union Territories.

4.123 The State Crop Insurance Scheme, has so far enrolled 124315 farmers. Out of this 54255 farmers have benefitted, with a total sanctioned relief assistance of Rs. 1149.00 lakhs, against the collected premium of Rs. 310.16 lakhs. This has necessitated to seek alternatives for making the Crop Insurance Fund, self-sustainable. It is also required to include more perennial crops like, Coconut, Rubber, Pepper etc. in the National Agricultural Insurance Scheme, and withdraw these crops from the State Insurance Scheme. An amount of Rs.75.00 lakhs, provided under the State budget has been credited to the Crop Insurance Fund during 2004-05

4.124 The NAIS implementation since Rabi, 1999 has made an enrollment of 1,61,309 farmers till Rabi, 2004 and 35704 farmers have so far made claims, amounting to Rs.1252.96 lakhs. Since the insurance charges being Rs. 342.66 lakhs only, the claim ratio comes to about 349 per cent. The perennial crops are not included in this scheme.

### Weather based insurance

4.125 Recently Private insurers have executed Pilot projects to sell rainfall insurance to farmers as a substitute for or complement to Crop insurance provided by government. ICICI Lombard has designed rainfall insurance policies with support from the World Bank and IFC. The pilot project was carried out in Andhra Pradesh through a Local Area Bank. The pilot scheme was launched in June 2003 for the kharif season of 2003-04. The insurance policy makes payment if the cumulative rainfall during the season falls below the historical average. This is implemented through a rainfall index. The Agriculture Insurance Company of India is planning the introduction of Varsha Bhima as Pilot project in about 25 rain gauge stations across four states.

4.126 The State has to generate reliable rainfall data from different locations within the districts to address variations in microclimates. Satellite based automatic weather stations could be established on a pilot basis in selected districts.



**BOX-4.9**

**Weather based insurance**

Weather based index insurance is a relatively new insurance instrument whose payments are based on the occurrence of a weather event, rather than on actual crop losses. In the case of drought, insurance contracts would be written against severe rainfall shortfalls (Say 30% or more below normal) measured at agreed regional weather station. The insurance would be sold in standard units and all buyers would pay the same premium and would receive the same indemnity payment per unit of insurance if the pre defined rain shortfall happens.

There are yet only few applications of weather based index insurance in the World. There is an insurance plan in Canada in the province of Ontario that uses rainfall indices and another one in Alberta for maize that uses temperature - heat units. One insurance Company in Argentina is offering a rainfall insurance producing co-operative. There is strong positive correlation between rainfall and milk yields.

There are certain challenges in developing weather insurance, particularly in developing countries. First there is a need for reliable historic data that would allow accurate pricing of the insurance. Automated weather stations and increasingly remote sensing could reduce the risk of tampering with weather observations at local weather stations. Farmers may face basis risk. That is if rainfall at the weather station is not highly correlated with rainfall at the individual farms. This may be a problem in areas with diverse microclimates. World Bank is examining ways to facilitate the use of weather insurance markets by developing countries. The IFC of the World Bank Group is working toward developing weather indices in developing countries. Results from the World Bank Project study indicate that local rainfall observations and yields showed a correlation of around 60-90% in parts of Mexico, Morocco and Tunisia.

*World Bank, 2004*

Simultaneously meteorological studies also to be initiated to analyse the rainfall yield relationship in various crops.

**Agricultural Research and Education**

4.127 The Kerala Agricultural University is the principal institution in the state providing human resources and technology required for the sustainable development of agriculture, encompassing all production activities based on land and water, including crop production, animal husbandry, forestry and fisheries. The University fulfils its obligations and commitments through a network of 36 big and small campuses spread through out the state consisting of ten colleges, six regional agricultural research stations, twenty six research stations, five Krishi Vigyan Kendras (KVK) and three centres of advanced studies. The Central Training Institute, the Centre of Excellence in Training for Plantation Crops and the Communication Centre support the training

and research activities. The University has a strong technical manpower consisting of 1,000 academics and over 800 technical staff.

4.128 Research initiatives undertaken in the university are focussed on increasing the productivity of crops, livestock and fish currently raised in the state through manipulation of the genetic base; improvements in the management practices; control and management of pests; diseases and parasites; increasing the efficiency of the bio-physical and human resources, and inputs used in production; the introduction of new crops, animals, and machines; evaluating and designing policies, programmers, institutions and infrastructure; and analysis and appraisal of the value systems and gender equation which are conducive or inhibitory to the adoption of technologies and innovations evolved through research. The research support for the sustainable

development of the agriculture sector of the state is rendered in a partnership mode in close association with the research institutions managed by ICAR, Commodity Boards and Departments of the State and Central Government. Over 700 research projects are currently in operation, under the different research faculties of the University.

4.129 The extension network, for the transfer of latest technological innovations of the University is operationalised through the Agricultural Technology Information Centre (ATIC), University Communication Centre, KAU Press, Central Training Institute and the Centre of Excellence for Training in Plantation Crops. Extension activities are also taken up through the 10 teaching institutions, 6 zonal research stations and 26 other research stations of the University. The ATIC envisages to provide a single window delivery system for products and technologies developed by the University, to strengthen farm advisory services, to provide a mechanism for feedback and to function as a repository of agricultural information. During the financial year 2003-04, the transactions through ATIC has exceeded one crore. The communication centre, apart from its farm advisory services and media publications, is instrumental in bringing out the 2 research journals and publication of many books and periodicals. The KVKs located in the major-agro-ecological zones of the state cater to the specific technology and socio-economic requirements of the respective regions.

4.130 A number of research stations were established under the KAU decades back and a restructuring of the stations with changes in

mandate as well as incorporation of new courses in agricultural education are needed if they have to play any useful role in the changed and changing agricultural scenario.

4.131 A number of research institutions funded both by Government of Kerala as well as Government of India are located in the state. The contributions made by these institutions over a period of time are substantial. However in the changing scenario of post WTO context and shrinking financial support to these institutions a consortium approach has to be adopted for the identification of research problems and recommendations especially in farming systems research. Institutional synergies in transfer of technologies also have to be implemented for realising the maximum benefits to the farmers.

#### Seed Authority

4.132 The National Seeds Policy 2002 provides the framework for growth of the seed sector. It seeks to provide the farmers with a wide range of superior quality seeds and planting materials. As a part of TRIPS Agreement, the protection of plant varieties and Farmers Rights Act 2003 was enacted to protect the intellectual property rights of plant breeders and to stimulate investments in R&D for the development of new plant varieties. The Act involves setting up of an Authority for implementing the provisions of the Act. Necessary rules and regulations under the Act have been notified. A draft Seeds Bill 2004 has been formulated to replace the Seeds Act, 1966. The Bill provides for compulsory registration of seeds. The salient features of the Bill are shown in Box-4.10

**BOX-4.10**

**The Seeds Bill, 2004**

- To provide for regulating the quality of seeds for sale, import and export and to facilitate production and supply of quality seeds
- Government of India shall constitute a Central Seed Committee for implementing the Act. The authority shall advise the GOI and State governments in matters related to seed programming and Planning, Seed development and production, export and import of seeds, registration, certification and seed testing.
- Every State government shall establish a State Seed Committee to advise on registration of regional or local seeds, registration of seed producing units, , seed processing units, seed dealers and horticulture nurseries. In each district, a list of seed dealers, seed producers, seed processing units and horticulture nurseries to be maintained.
- National Register of Seeds shall be maintained. Registration shall be valid for 15 years for annuals and biennials and 18 years of perennials. Transgenic varieties to be registered after obtaining clearance as required under EPA, 1986.
- Every seed producing and processing units shall furnish periodic returns to the Seed Certification Agency.
- The Central Committee in consultation with the State Government establish a State Seed Certification Agency.
- The Central Government establish a Central Seed testing laboratory and State Government establish one or more State seed testing laboratories. Seed analysis and seed inspectors to be appointed.
- All import and export of seeds to be regulated as per the existing provisions and as per the advises of the Committee.
- The Committee in consultation with State committees accredit organisation/individuals/ to carry out Certification
- If registered seed fails to provide the expected performance under given conditions, the farmer may claim compensation from the producer, distributor or vendor under the Consumer Protection Act 1986.

*Ministry of Agriculture, 2004*

4.133 The Kerala State Seed Development Authority was established in June 2000 with its Headquarters at Thrissur. The objective of the Authority is to make available seeds and planting materials in time to the farmers. APC is the Chairman of the governing body of the authority. At present the functioning of the authority is limited to activities related to Paddy Seed alone. The seed authority has to be strengthened suitably so as to evolve a seed plan for other crops also. Paddy seeds distributed during 2003-04 under general sale are shown in Table-4.15

**Table: 4.15**

**Paddy Seeds distributed during 2003-04**

Sl.No.	Variety	Qty.(Kg.)
1.	Kairaly	37550
2.	Red Triveni	71910
3.	Harsha	14790
4.	Aiswarya	80640
5.	Kanchana	278100
6.	Jyothi	539490
7.	<b>Total</b>	<b>1022480</b>

4.134 During 2003-04, 2,392.35 MT. seeds were procured and 3390.56 MT were distributed under drought relief programme including the carry over stock. Registered seed growers programmes was implemented in six districts achieving an area of 3207.3 ha. in three seasons against a target of 3550 ha.

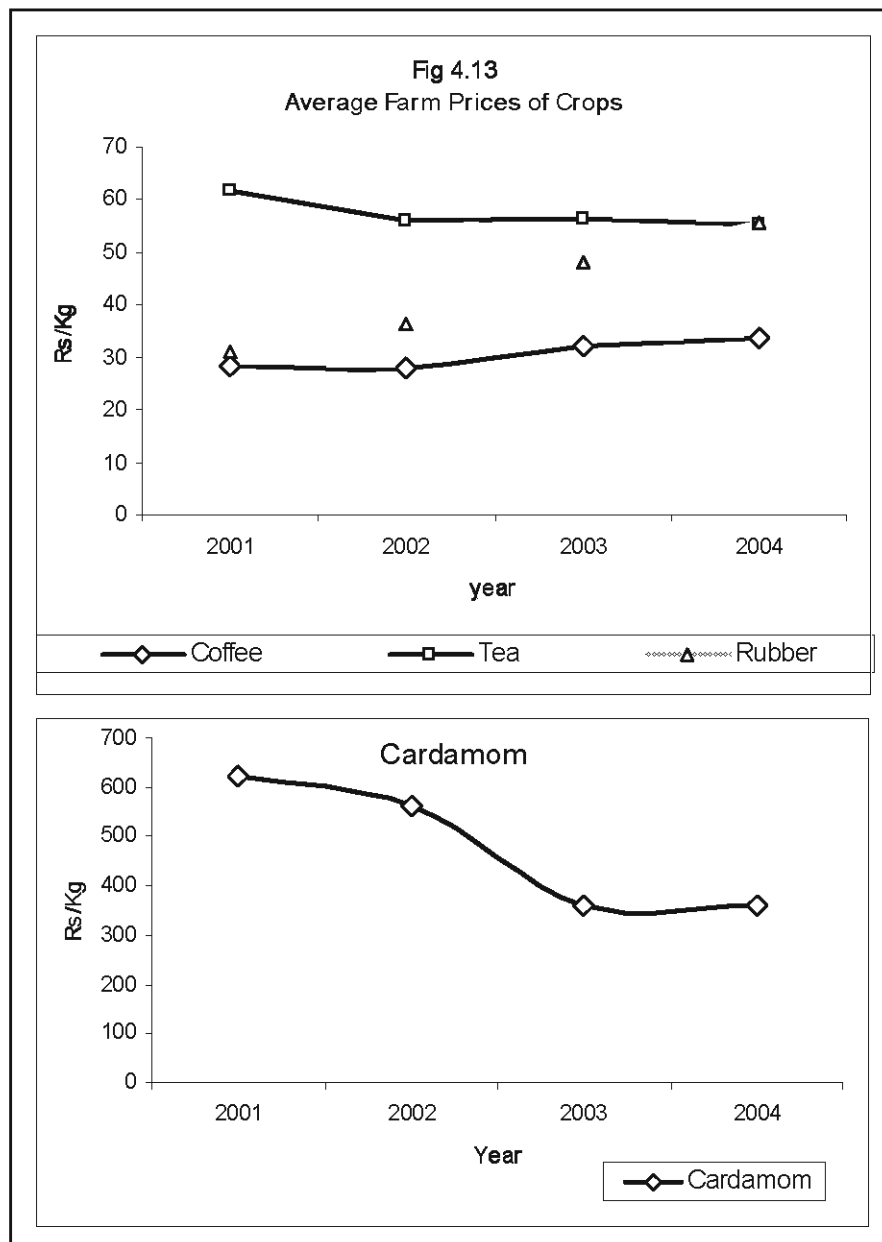
**Farm Commodity Price**

4.135 Data on average farm price of principal crops grown in Kerala are shown in Table 4.16. The table shows increase in 2003-04 compared to previous year in respect of most of the commodities, namely paddy (7%), coconut (23%), ginger (117%) and banana (20%). Decline was reported to tapioca (-1.18%) and Pepper (-12%). Global agricultural prices have also indicated a recovery path from the later half of 2002. Data on month-wise prices of the commodities during 2003-04 are shown in Appendix 4.25

Table 4.16

Average Farm Price of Important Agricultural Commodities

Year	Paddy (qtl.)	Coconut with husk (in 00' nos.)	Arecanut (00' nos.)	Cashewnut (qtl.)	Banana (00' nos.)	Tapioca (qtl.)	Ginger dry (qtl.)	Pepper (qtl.)	Rubber (qtl)
2000-01	646.36	281.43	41.88	2368.81	1042.51	397.24	4809.33	12401.24	3036
2001-02	600.27	340.64	32.81	2569.33	949.51	321.01	3041.72	6745.43	3228
2002-03	649.76	475.63	32.11	2730.30	971.34	394.01	3304.66	7692.17	3919
2003-04	694.69	582.73	34.62	2831.75	1167.00	389.36	7175.13	6802.46	5040
% change in 2003-04 over 2002-03	6.91	22.52	7.82	3.72	20.14	-1.18	117.12	-11.57	28.6



The prices of plantation crops for the last three years are shown in Fig. 4.13

4.136 The recent study conducted in 2004 by Purdue University (USA) on major commodities in Kerala explained the dynamics of integration of domestic market with the world market. The study pertains to the last three decades beginning from 1970 which was divided into pre reform and post reform period. The entire period of analysis revealed that highest level of market integration was in the case of pepper, followed by rubber and coffee. With reforms the extent of market integration got accentuated as is evident from the increase in the value of the estimated coefficient.

The study examined four crops in Kerala using co-integration and error correction models. The post reform period varied from one crop to another as the reform measures were initiated at different time points in different crops. In the case of rubber long run elasticity coefficient was high as compared to the short run which implies that supply conditions are more relevant than demand conditions. The study showed increased transmission of world prices to domestic markets leading to increased market integration. The major findings are shown in Box-4.11.

#### BOX-4.11

#### Major findings of a Study on Prices of Perennial Crops in Kerala

##### Coffee

➤ The estimated short run elasticity coefficient of Arabica Coffee is 0.54 and that of robusta 0.58 in the post reform period (1996-2002) as compared to 0.22 and 0.17 respectively for pre reform period. This shows that integration of coffee market with that of world market increased substantially in the post liberalization period. Three fold increase in elasticity coefficient was observed. The short run transmission of price changes in the World market substantially influenced the current period price of the commodity in the domestic market. The improvement in market integration is mainly attributed to substantial improvement in short run elasticity rather than long run indicating substantial influence in liberalization of coffee market by the world coffee market.

##### Pepper

The results of the empirical analysis of co integration between prices of pepper in Cochin and New York market, shows that markets were integrated even in the pre reform period. The estimates of short run and long run elasticity in the pre reform period were 0.46 and -0.13 respectively. The short run elasticity indicates that immediate transmission of world price change to the domestic market in the pre reform period itself. In the post reform period, the estimated short run elasticity coefficient is 0.88, indicating further increase in transmission of world prices to domestic markets. The estimate of long run elasticity or the speed of convergence in the post reform period (-0.24) implies that effectiveness of reform measures on the extent of integration of black pepper in domestic market and New York market. The extent of integration has increased with liberalization and the importance was mainly on account of short run transmission rather than the effect of long run cointegration.

##### Cardamom

The Cardamom market during the pre reform period behaved differently as compared to other crops studied. The result showed existence of market integration in the pre reform period. Short and long elasticities were not statistically significant. The estimation of both long run (-0.36) and short run coefficient (0.64) are found to be highly significant leading to the conclusion that the reform measures seems to have had the effect of making the domestic market highly integrated with the world market.

##### Rubber

The price of rubber in Kottayam market and Kuala Lumpur market has been integrated. The estimated short run and long run elasticity were 0.37 and -0.42 respectively. Even if the domestic price is above the price in Kuala Lumpur, two price series converge at the rate of 42 per cent every year. Moreover the high value of short run elasticity coefficient implies that any change in price of rubber in Kuala Lumpur market would be reflected immediately on the price of rubber in Kottayam.

Domestic and World Prices of all the four crops are co integrated for the whole period of analysis

*Purdue University, 2004*

## Agricultural Marketing

4.137 An efficient agricultural marketing system is indispensable for the overall development of the economy. In the changing scenario, the nature of marketing support required for safeguarding the interest of the small and marginal farmers is different. In an increasingly globalised market arising out of trade liberalisation, *inter alia* through WTO Agreement, impact on Kerala agriculture needs to be analysed in the context of both exports from Kerala and imports into Kerala especially spices and plantation crops.

4.138 Government of India has recognised the importance of streamlining agriculture marketing in the wake of the World Trade Agreement (WTA). The removal of QRs on imports has several adverse implications for the sustainability of cash crops of Kerala. In the liberalised context, marketing and marketing studies assume paramount importance in future agricultural development of the state.

4.139 With the issue of notification dated 1.4.2003, Futures Trading is not prohibited in any commodity. Futures Trading can be conducted in any commodity subject to the approval and recognition of the Government of India. 91 commodities are in the regulated list.

4.140 Futures trading is taking place in 78 commodities through 25 exchanges/associations. In principle approval was given to another three exchanges includes for Tea also.

4.141 In enhancing the institutional capability for futures trading the idea of setting up of National Commodity Exchanges has been pursued since 1999. Three such exchanges viz., National Multi Commodity Exchange of India Ltd, Ahmedabad, National Commodity and Derivatives Exchange, Mumbai and Multi Commodity Exchange, Mumbai have become operational. While the NMCE Ahmedabad commenced futures trading in November 2002, MCD and NCDEX Mumbai commenced operation in October/December 2003 respectively.

4.142 The Government has proposed to initiate steps to integrate commodities markets and securities markets. A working group has submitted its report to Government indicating the

convergence of securities and commodities derivatives markets and their regulatory system.

4.143 There are at present 22 exchanges in the country. International futures market in pepper and castor oil were developed by upgrading the existing exchanges at Kochi and Mumbai. A multi commodity Nationwide exchange has also been started in Ahmedabad.

4.144 Indian Commodity futures markets are still at a nascent stage. They are dispersed and fragmented with small turnover and catering to separate trading commodities in different regions. Apart from physical infrastructural constraints such as limited online trading, online surveillance and monitoring, the non availability of a fool proof legal system of contracts relating to the warehouse receipt system is impeding the development of futures markets in India. Furthermore, the hawala markets, which have been operating since decades, trade 20-30 times the volume of official with low transaction costs and hence attract many speculators and small hedgers. Efforts are being made to bring informal forward trading into the ambit of the Forward Markets Commission to ensure their orderly integration with the formal marketing structure. Effective co-ordination and interface between the exchanges, banks and the warehousing agencies is crucial in evolving the necessary framework for a mature warehousing system based on legally enforceable contracts and supporting transferability and negotiability.

4.145 As proposed in the National Agricultural Policy, 2000, more agro commodities are being identified and added to the list of permitted commodities for futures trading.

4.146 The overall level of trading in all exchanges is indeed marginal compared to the production levels and value added remains abysmally low. In order to succeed in futures market, quality certification and related procedures along with availability of quality warehouses, transparency and professionalism are essential. Professional methods have to be followed in predicting prices of futures for which marketing wing of department of Agriculture should be strengthened with specialists, to facilitate dissemination of information which may form as a base in price fixation. Conventional practices may lead to exploitation also.

### Agri Export Zone

4.147 The EXIM Policy 2001 introduced the concept of Agri Export Zones to give primacy to promotion of agricultural exports and effect a reorganisation of export efforts on the basis of specific products and specific geographical areas. Till December 2003, the Central Government has sanctioned and notified 48 AEZs in 17 states. These 48 AEZs will entail an estimated investment of around Rs. 1142.53 crore, out of which around Rs. 333.68 crore will flow from various central government agencies, Rs. 168.61 crore from State Governments and Rs. 640.24 crore from Private sector. The projected export from these AEZs is Rs. 3000 crore during the next five years. The measures envisaged to promote exports from such zones include financial assistance by dovetailing and extending existing financial assistance to various agricultural export related activities and fiscal incentives. The Agri Export Zone covering nine districts from Thiruvananthapuram to Palakkad was established. The commodities identified for export are vegetables, banana, pineapple and banana chips. Considering the relative advantage for Kerala, steps are to be taken to establish separate Agri Export Zones for spices and medicinal plants in association with Commodity Boards and other agencies involved in the production and marketing of these commodities. Private investment is the crucial factor determining the level of exports and

measures need to be taken to tolerate maximum such investment.

### Agriculture Supply Chain Management

4.148 Trade liberation and increasing consumer demanded in developed countries offer attractive opportunities for agricultural exporters from developing countries. International market standards are stringent and consumers demand safe food. The supply chain management assumes critical in realising the objectives of AEZ projects. A range of supply chain management tools have been developed over the past decade. The development of supply chains requires knowledge and expertise about chains and within chains.

4.149 Through supply chains, producers in developing countries can assess market information to market their produce. Developing cross border supply chains is complex. The advantages of supply chain management are numerous like the reduction of product losses, increase in sales, reduction of transaction costs, a better control of product quality and safety and the dissemination of technology, capital and knowledge among the chain partners. Supply chain management tools have been developed and implemented throughout the chain to guarantee optimal chain performance. some international experiences are shown in Box-4.12

**BOX-4.12**

#### Agri supply Chain Management: Some international Experience

##### 1. Fresh food supply chain in Thailand

In 1996 the Thani Central Retail Corporation started to operate more than 30 supermarkets for quality fresh food. In 1998 a supply chain project was initiated to provide high quality, safe, fresh produce with reliable availability at affordable prices to consumers. The outputs include establishment of the fresh distribution centre, provision of training to quality control managers, development of a value chain analysis model, reduction of the lead time from farm to fork, reduction of post harvest and shrinking losses and introduction of standardised crates.

##### 2. South Africa - The Netherlands' Fresh Fruit Supply Chain

South Africa's fresh fruit industry has experienced tough times recently due to the deregulation of the export system.. Competition increased and prices dropped. This promoted the stake holders to undertake a feasibility study on optimisation of the cold fruit supply chain between South Africa and the Netherlands, a major trading partner. The study was conducted with farmers, fruit co-operatives, private companies and knowledge institutes from both countries.

It found that lack of accurate information on logistics flows and quality aspects of the fruit was problem common among all the chain partners from farmer to retailer. To address this problem, the partners initiated the information system development project to enable them to monitor product flow from country of origin to market.

The outputs include collection of data to extend the Agri information system for each of the three chains, modeling of a supply chain information system, improving information exchange between chain partners, suggestions for farmer level improvements concerning harvest and post harvest activities, improvements in quality control practices, standardization, government level investments in infrastructure (Packing houses, transport etc), quality control and research facilities.

### 3. The Ghanaian Processed Fruit supply chain

A Company was formed in 1997 and started to produce processed tropical fruits for the international market in Ghana. Shortly thereafter the Company initiated a supply chain management project aimed at improving the quality of its processed fruit. The result of the analysis was to move some processing activities to Ghana. The move brought more value added activities to the country, quality of the produce also improved. The output of the analysis include implementation of code of practice for all chain partners, development of a trusted third party certification scheme, signed agreements of fruit suppliers on farm audits and approved pesticides for each crop, training on HACCP principle and development of a quality manual for certification.

*Source: World Bank 2002*

4.150 Best practices from other regions on agri supply chain management can provide inputs into best approaches for solving particular problems for capitalizing the new opportunities. A pilot project on agri supply chain management needs to be initiated immediately, considering the investments proposed for establishing three AEZs in the state.

#### Outlook

##### Tea

4.151 In 2004-05, the auction average price is expected to rise by nine per cent to 166 cents. The upturn reflects a reduced harvest in India and increased imports to Pakistan, Afghanistan and in particular Iraq. The recovery in tea prices is expected to extend into 2005 with improved demand from middle East and Russia, a result of higher oil export revenues and income. The price upswing is also consistent with the expected cycling pattern of production with respect to plantings. The long term outlook to prices is less favourable. The declining trend in global consumption growth and continuation of growth in output is expected to result in over supply conditions in general.

##### Coffee

4.152 Global coffee production for the season 2004-05 is expected to reach 117.7 million bags arising that weather condition in Brazil is normal. World Coffee production fell to 107 million 60 Kgs. bags in 2003-04 almost 16 million kg. lower than the 2002-03 crop. Coffee consumption is expected to register a modest increase of about 2 per cent during 2004 and 2005. Most of the increase is expected in the form of speciality and instant coffee. The scope for further increase in coffee prices for even sustaining the current price level is limited. Although arabica prices have weakened recently, they are expected to average \$ 1.65/kg. during 2004-05 but are expected to decline to \$ 1.59/kg. during 2005-06. Robusta prices are expected to average \$ 0.84/kg. during 2004 and are likely to experience a noticeable increase in 2005-06.

##### Rubber

4.153 International rubber prices are expected to average \$ 1.28/kg. during 2004-05, but are expected to decline to \$ 1.15/kg. during 2005-06 as the growth in demand for tires is expected to soften, especially in China. A major uncertainty however is the price of crude oil. If current high oil prices persist, then the costs of production of synthetic rubber will increase and consumer may partially switch over to natural rubber.



## Livestock Sub Sector

The livestock sub sector has emerged as one of the key components of agricultural growth in developing countries in recent years. An analysis of trends over the last two decades indicates that growth in poultry and milk production has far exceeded the growth in cereal production mainly due to rapid urbanisation, population growth, rise in levels of income and falling prices of livestock products. The projections suggest that the demand led livestock growth is expected to continue and by 2020, over 60 per cent of meat and 50 per cent of milk will be produced in the developing countries. China and India are likely to emerge as the primary producers of meat and milk respectively.

4.155 The Indian livestock system is the endeavor of small holders and it is a centuries old tradition. As a result of gradual transition from subsistence to market system, the economic dimensions of livestock keeping have assumed increasing significance in house hold behaviour. Over 70 percentage of the rural households in

India depend on livestock farming for supplementary income. The sector is highly gender sensitive and over 90 per cent of activities related to care and management of livestock are carried out by family's women folk.

4.156 However, employment has been going down as in the case of agriculture sector as a whole. As per NSS reports of the sectoral growth in employment at all India level, the contribution of livestock sector declined from 4.45 per cent in 1983 to 2.52 per cent in 1999-00 and at rural level from 4.88 per cent to 2.90 per cent. During the period, the number of persons employed in the sector at all India level declined from 11973 to 8475 and at rural level from 10436 to 7567

4.157 In Kerala majority of livestock owning farmers are either small and marginal or even land less. In view of its suitability for combining with crop sub sector and sustainability as a household enterprise with the active involvement of women, it is emerging as a very popular supplementary avocation in the small farms. The observations of a study on homesteads are shown in Box 4.13

**BOX-4.13**

**Livestock in Homesteads of Kerala**

- 42 per cent of Homestead had improved breeds of Cow mainly Jersey
- Small scale goat units are common
- Backyard poultry with less than 10 birds in 71 per cent of Homesteads
- Pig rearing is rare
- Duck rearing was in problem zone (Alappuzha, Ernakulam) where back waters are common
- Out of 300 Homesteads selected for intervention by the multi disciplinary team, the following subsidiary enterprises were introduced:

Goat Rearing	-	3 Homesteads
Rabbit rearing	-	2 Homesteads
Backyard Poultry	-	40 Homesteads
Japanese Quail	-	10 Homesteads

*KAU, 2005*

4.158 Regarding breeding support, out of 3002 artificial insemination centers 2538 have been established by the Animal Husbandry Department, 11 by Dairy Development department, 211 by Voluntary Agencies and 185 by APCOS. The embryo transfer technology introduced in the recent past is yet another step towards livestock development. Of the total adult female cattle population in the State 83.4 per cent is cross bred and if the cattle in milk is taken into consideration, it will increase to 85 per cent and this was made possible by the Indo-Swiss Project and the expanded health care facilities and veterinary services.

4.159 Though livestock sub sector makes significant contribution to the State's economy, it is facing serious constraints due to inadequate fodder base as a result of sharp and continuous decline in the area under livestock-supporting seasonal crops especially paddy and the limited scope for fodder cultivation in the State. The biggest challenge faced by the State in the livestock sector is the threat of foot and mouth disease because of large scale inflow of cattle from the adjoining states.

4.160 Tenth Plan strategy of Kerala is framed in consonance with the national strategy with due adaptation to the Kerala context giving due importance for Upgradation of standards of veterinary institutions and services, establishment of disease free zones, extending health cover and stock upgradation and increasing production through scientific and better management. Enhancing fodder availability and fodder seed/planting material, promotion of farming system approach, development of micro enterprises for poverty reduction are also given importance.

#### Trend in Livestock Population

4.161 As per the report of FAO, the World's livestock population in 2000 comprised of 1350 millions of cattle, 165 millions of buffaloes, 1058 million sheep, 720 million goats and 908 million pigs. During 2000 the poultry population was estimated at 14.4 million and duck population 0.9 million. An analysis of the figures from 1990 to 2000 reveals that over the period a continuous declining trend was noticed in sheep population alone. Over 1992, the world's cattle population increased by 5.36 per cent during 2000. During

the same period buffalo population increased by 11.86 per cent, goat population by 24 per cent and pig by 5.01 per cent and sheep population declined by 6.66 per cent.

4.162 As per the provisional figures of 2003 livestock census, India has 187.38 million cattle which is about 15 per cent of the world cattle population. Out of the 187.38 million cattle, 22.63 million were crossbred, which is 12.07 per cent of the total cattle population. Between 1997 and 2003, crossbred population increased by 12.6 per cent. The states of Tamilnadu, Maharashtra, Kerala, Uttar Pradesh, Karnataka and Punjab account for about 60 per cent of the crossbred cattle population. The country has 96.62 million buffalo population, which is about 56 per cent of the world buffalo population. Between 1997 and 2003, the buffalo population increased by 7.5 per cent. In spite of India's position as highest producer of milk, productivity per animal is very poor. It is only 987 Kgs/lactation as compared to the world average of 2038 Kgs/lactation. This is mainly due to poor level of nutrition as well as low genetic potential for milk production and health care.

4.163 The trend in livestock population of India and Kerala has been examined on the basis of quinquennial livestock Census data. A Comparison of data from 1987 to 2003 (Prov.) is given in Appendix 4.24. All types of livestock have been showing a declining trend in Kerala after 1996, while in India (1992 onwards) cattle population alone is declining. This may be due to the preference of people for high yielding cross bred varieties. To add to the remarkable status India has in the world cattle and buffalo population there are 181.88 million small ruminants in the country in 2003 consisting of 61.78 million sheep and 120.10 million goat. In terms of population India ranks second in world in goats and third in sheep. More than 70 per cent of them are reared by small/marginal farmers and land less labourers. Contribution of sub sector to the economy is estimated at Rs.2400 Crores per annum. The pig population increased from 13.29 million in 1997 to 14.14 million in 2002-03 with an annual growth rate of 1.25 per cent. and during 1951 – 2003 period it increased from 4.40 million to 14.14 million registering a growth of 219 per cent.

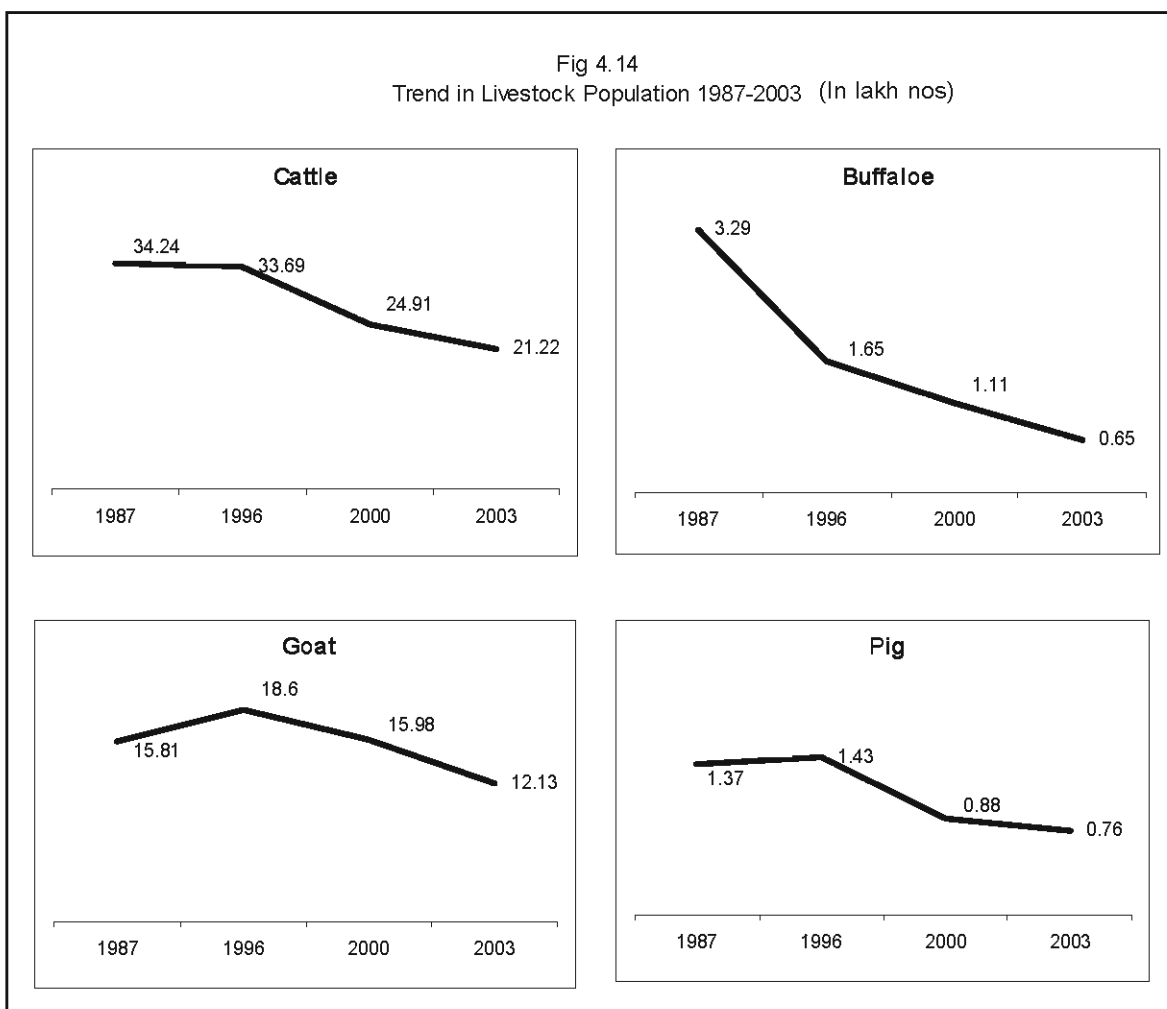
4.164 In Kerala, nearly 94 per cent of the

livestock population is concentrated in rural areas, 80 per cent of the livestock farmers are marginal farmers and agricultural labourers. Women constitute 60 per cent of the workforce in this sector. Most of the cattle holdings are one cow farms. Nearly 65 per cent of the meat required is met from animals of neighbouring States.

4.165 The last two Census periods witnessed a drastic decline in the livestock and poultry population in the State. Trend in livestock population during 1987-2003 is shown in Fig 4.14.

4.167 As per 2003 figures, Kerala's share in all India cattle population is 1.13 per cent. Buffalo population accounts only for 0.07 per cent, goats 1.01 per cent and pigs 0.54 per cent. The distribution trend of livestock and poultry during 1966 – 2003 is presented in the Appendix 4.25. Livestock and Poultry Population in Kerala during last 3 Census are given in Table 4.17.

4.168 According to 2003 livestock census figures the cattle population in the State was 21.22



4.166 It is assumed that the factors attributed to the decline are scarcity of cheap and quality fodder, rapid increase in the price of feed and feed ingredients, inflow of cheap and low quality livestock products from neighbouring states, indiscriminate slaughter of animals, under exploitation of production potential of animals, non availability of good germplasm and threat from contagious diseases like FMD etc.

lakhs of which 17.35 lakhs were crossbred (ie., 81.8% of the total cattle population) (See Appendix 4..23). Trend in crossbred and indigenous cattle population is given in Fig. 4.15

4.169 Concerted efforts are to be undertaken for implementing buffalo development programme. KLD Board has been producing frozen buffalo semen and the same is made

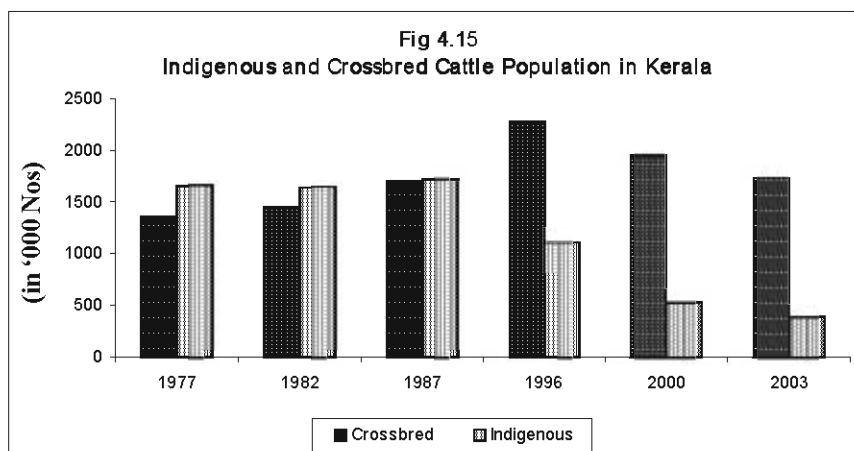
Table- 4.17

**Livestock and Poultry Population in Kerala during last 3 Census  
(Lakh Nos)**

Species	1996	2000	2003
Cattle	33.96	24.91	21.22
Buffalo	3.29	1.10	0.65
Goat	18.61	15.98	12.13
Pig	1.43	0.88	0.76
Poultry	295.25	169.08	131.89
Duck	11.87	10.43	6.61

available through AI units for artificial insemination. Goat population is also on the decline mainly due to indiscriminate slaughter, shrinking of grazing lands and urbanisation.

availability of fodder in the country project an alarming gap between demand and supply. The National Commission on Agriculture (1976) estimated the demand of fodder in the country for the year 2000 AD at 256.8 million ton dry fodder and 575 million ton green fodder. The



future scenario of demand and supply position as shown in Tenth Plan Working Group Report of the Planning Commission on Animal Husbandry and dairying reveals a huge deficit in green fodder in the country. The available fodder can

4.170 Even though some efforts were made by KLD board and MPI to foster swine industry, it could not attain any fruitful results.

meet the demand of only 46.7 percent of the total livestock. The deficit in 2000 in green and dry fodder in the country was 61.10 per cent and 21.93 per cent respectively.

4.171 The spatial distribution of the different categories of livestock in Kerala shows a regional pattern. While dairy activity is popular in almost all districts, poultry rearing is concentrated in Idukki and Pathanamthitta, goats in Malappuram and duck in Alappuzha and Kottayam districts. The emerging trend also reveals a shift in the population of dairy cattle from the coastal districts to midland and high land regions.

**Demand and Supply of Fodder**

**Weak Feed and Fodder Base**

4.173 Likely future scenario of demand and supply position in relation to forages in the country is given in Table-4.18. It reveals a huge deficit in green fodder in the country.

4.172 Most of the reports regarding the

4.174 Projected gap between demand and supply of green and dry fodder presents a challenge for fodder production in the coming years. The situation appears grim in case of green

**Table – 4.18**  
**Supply and Demand of Green and Dry Fodder Estimated – 1995 to 2025**  
 (in million MT )

Sl.No.	Year	Supply		Demand		Deficit as % of Demand	
		Green	Dry	Green	Dry	Green	Dry
1	1995	379.3	421	947	526	59.95	19.95
2	2000	384.5	428	988	549	61.10	21.93
3	2005	389.9	443	1025	569	61.96	22.08
4	2010	395.2	451	1061	589	62.76	23.46
5	2015	400.6	466	1097	609	63.50	23.56
6	2020	405.9	473	1134	630	64.21	24.81
7	2025	411.3	488	1170	650	64.87	24.92

Source: Study Report of KLDB

fodder. Focussed strategies and concerted efforts are the need of the hour to face this challenge.

4.175 With the shift in cropping pattern of Kerala, the area under rice has come down by 50 per cent over the last two decades leading to drastic reduction in the availability of straw for feeding cattle. It is estimated that the state produces only 60 per cent of the roughage requirement for cattle in Kerala. Total dry matter available in the State as per KLD Board study report is only 16.76 lakh MT during 2002-03. Availability of dry matter in Kerala for the period 1997-98 to 2002-03 is given in Table 4.19

**Table - 4.19**  
**Details of Dry Matter Availability in Kerala**

Sl. No.	Year	(in lakh MT)						
		Paddy Straw	Cultivated Fodder	Sugarcane Top	Pineapple Waste	Tapioca Leaf and Stem	Others	Total
1	1997-98	11.46	0.498	0.1641	0.3778	3.69	2	18.1899
2	1998-99	10.9	0.6948	0.2028	0.3778	3.95	2	18.1254
3	1999-00	11.55	0.6528	0.1734	0.4986	3.4	2	18.2748
4	2000-01	11.26	0.6522	0.101	0.5394	3.49	2	18.0426
5	2001-02	10.55	0.659	0.9801	0.5045	3.38	2	18.0736
6	2002-03	9.4	0.4866	0.9366	0.5781	3.36	2	16.7613

4.176 Regarding the cattle feed concentrate, State does not produce even half the requirement. Now KCMF and Kerala Feeds Ltd., are taking conscious steps for facing this challenge. Cheap and quality feed and fodder are scarce in Kerala. Shift to animal unfriendly cropping pattern, increased labour cost, scarcity of input for cattle feed etc., are forcing the cattle sector of Kerala to heavily depend on “imported cattle feed”.

4.177 Kerala farmers have adjusted to the situation by restricting the number of cattle and that too by preferring high yielding cross breeds. This is evident from the steady increase in the proportion of crossbred animals, which Kerala could achieve during the last three decades. The proportion of crossbred female cattle population which stood at 50.5 per cent during 1977 increased to 82 percentage during 2003(see Appendix 4.23). There is a drastic reduction in other categories of livestock such as bullocks, indigenous female cattle, male calves etc. ( Appendix 4.28 & 4.29). The recent trend reveals that the farmers are

reluctant to maintain even high yielding crossbred cows during their dry period.

**Trend in Production of Major Livestock Products**

4.178 As per CSO estimates the value of output from livestock sector to Indian economy during 2001-02 contributes Rs.150240 crores., which is about 23.65 percentage of the value of output

of Rs.635395 crores from agriculture and allied Sectors. The contribution of this Sector to GDP during 1999-00 was 5.5 percent. A comparison of contribution of livestock sub sector to GDP over the period 1980-81 to 1999-00 shows steady increase from Rs. 59 billion to 984 billion. On percentage terms its share in total GDP increased from 4.82 per cent in 1980-81 to 6.85 per cent in 1992-93 and then declined to 5.51 per cent by 1999-00.

4.179 Other than milk, meat, egg etc., it also provides raw material/by products such as hides and skins, blood, bone, fat etc. During 2001-02, the contribution of milk alone was Rs. 103804 crores. The value of output from meat group at current price was Rs.4438 crores during 2001-02 compared to Rs.2834 crores during 1995-96 ( an increase of 71%).

4.180 As per a study conducted by NDDB, based on milk production in 1999, of the total milk produced 45 percent is consumed as liquid milk followed by ghee (28 %) butter and Khoa (6 %), dahi (7 %) and milk powder (2.6%). In general the monthly private consumption expenditure on milk and milk products is next to cereals and is rising steadily over years. Milk and milk products are both income and price elastic in India (more so in rural) and the demand elasticity estimates of the Indian dairy industry for milk and milk products combined are 1.65 in rural and 1.15 in urban India (Datta and Ganguly 2002). Expenditure elasticity of demand for milk and milk products for lower income class is considerably greater. Therefore rising income will maintain a

robust demand growth in the dairy sector. Demand forecasts based on differential growth rates of GDP up to 2020 are given in Table 4.20

**Table 4.20**  
**Demand forecasts for milk 2000-2020**  
**(million tonnes)**

GDP growth%	2000	2010	2020
4	72.40	95.60	126
5	75.30 <sup>&lt;sup&gt;&gt;2</sup>	103.70	142.70
7	81.30	122.00	182.80

Source: Study, NDDB

4.181 Trends in requirement and availability of major livestock products in Kerala are given in Table 4.21. The per capita availability of milk based on production during 2003-04 was only 176gm/day compared to 205g/day during the previous year. Compared to this all India availability of milk is 228g/day during 2002-03. In the case of egg, the internal production is sufficient to meet only 29 per cent of the requirement. The state is largely dependent on external sources for maintaining the supply of meat. The internal availability is more or less around 15 gm per capita per day.

**Table 4.21**  
**Requirement and Availability (based on internal production) of Livestock Products in Kerala**

Sl. No.	Year	Milk (Lakh MT)		Egg (Million Nos.)		Meat ('000 MT)	
		Requirement	Availability	Requirement	Availability	Requirement	Availability*
1	1981	18.62	9.82	2952	1618	177	50.81
2	1991	21.24	17.85	3471	1710	208	120.65
3	2001	23.20	27.18	4230	2002	249	172.80
4	2002**	23.74	24.19	4301	1347	253	181.02
5	2003**	24.16	21.11	4395	1277	260	182.32

Source: Animal Husbandry Department

\*including unauthorised sector \*\* Provisional based on projected population figures

4.182 The average annual growth rates of milk and egg production in Kerala & India for the period from 1950-51 to 2001-02 are given in Table -4.22

4.183 Government of India's efforts to increase

**Table 4.22**  
**Average Annual Growth Rate of Milk & Egg Production**  
 (Per cent)

Sl.No.	Year	Milk		Egg	
		Kerala	India	Kerala	India
1	1950-51 to 1960-61	2.50	1.64	NA	4.63
2	1960-61 to 1970-71	2.52	1.15	NA	7.91
3	1970-71 to 1980-81	12.52	4.51	NA	3.79
4	1980-81 to 1990-91	6.41	5.50	4.89	7.70
5	1990-91 to 2000-01	4.24	4.16	2.75	4.59
6	1996-97 to 2001-02	3.78	4.37	(-) 0.22	4.09

the productivity of livestock resulted in significant increase in milk production to the level 84.8 million tonnes at the end of 2001-02 (terminal year of 9<sup>th</sup> Plan) compared to 17 million tonnes in 1950-51. As per the estimates India's milk production reached 91.1 million tonnes during 2003-04. Even though India is the largest milk producer in the world the per capita availability of milk is low at 228g/day and is below the world average of 285gm/day. It is because the production/animal in India is very poor. It is only 987 kg/lactation compared to the world's average of 2038kg/lactation. This is mainly due to poor level of nutrition, health care as well as low genetic potential for milk production.

4.184 There are significant inter state differences in productivity of cows and buffaloes. The milk yields of indigenous cows were highest in Gujarat (7.5 kg. per day), followed by Punjab (7.4 kg. per day) and Maharashtra (6.6 kg. per day). the average yield of buffaloes was highest in Punjab (5.7 kg. per day). In general, the milk yields of both cows and buffaloes were lowest in Orissa.

4.185 In spite of a shrinking fodder base, the dairy sector in Kerala could maintain a growth rate of 4.24 per cent in the early 1990 s, compared to India (4.16 %). But during the Ninth Plan period (1996-97 - 2001-02) it came down to 3.78 per cent while that of India increased to 4.37 per cent. Despite considerable increase in the proportion of high yielding crossbred cattle, average milk yield per animal per day remains low at 6 litres compared to its potential of 8-10

litres. However, the average productivity attained by Kerala is higher than the national average (2.78 litres) and has been increasing. Index of milk production of Kerala and India from 1984-85 to 2003-04 is given in Appendix-4.33. Trend in Year-wise milk production for the period from 1996-97 to 2003-04 is given in fig.4.16

4.186 Regarding the per capita availability of milk based on 2001-02 figures Karnataka ranks first with an availability of 296 gm/day and Kerala ranks second with 234 gm/day. Andhra Pradesh has the lowest figure of 186 gm/day. (See Appendix-4.31)

4.187 The total milk production of the State declined from 27.18 lakh tonnes to 24.20 lakh tonnes in 2002-03 showing a decline of 10.96 percent and to 21.11 lakh tonnes in 2003-04 with a further decline of 12.76 per cent compared to previous year. At the same time at national level the milk production increased by 2.95 per cent during 2002-03 and 4.35 per cent during 2003-04. Kerala's contribution to national milk production which stagnated around 3.25 per cent during 1993-94 to 2001-02 declined to 2.8 per cent during 2002-03 and 2.3 per cent during 2003-04.

#### Egg and Meat

4.188 In a country like India where the average level of nutrition is very low chicken and eggs which are not expensive can contribute considerably towards improving diet as a source of animal protein. As per estimates available, the per capita availability of egg is very low at 41 eggs/year and poultry meat is 0.9 kg/year against

the world average of 147 eggs and 11 kg poultry meat /year. The Government of India has set a target for achieving production over 52 billion eggs by 2011-12, at a growth rate of 4.3 percent.

4.189 Poultry farming for egg production relying on purchased feed is uneconomic in Kerala. Poultry rearing on commercial lines is therefore largely confined to broiler production. The egg production which reached 2054 million in 1999-2000 is now showing declining tendency and in 2003-04 it reached a lower level of 1277 million recording a drastic fall of 37.83per cent. The per capita availability of egg based on production during 2002-03 is 42/ year and during 2003-04 it further declined to 39/year. The average annual growth rate of egg production was even negative (-) 0.22 per cent in Kerala during 1996-2002 period while that of India was 4.09 per cent (See Table – 4.22). Index of egg production of Kerala

and India over the years 1984-85 to 2003-04 is given in Appendix 4.33. Trend in egg production during the period from 1996-97 to 2003-04 is given Fig 4.16

4.190 Of the total egg production, the higher contribution is of desi fowls 717 million (56 per cent). Contribution of improved fowls is only 36 per cent and duck 8 per cent. At the same time the yield per layer per annum (estimated) for desi fowls is only 120 Nos but for improved fowls is 226 per annum. This points to the necessity of propagation and promotion of rearing of improved fowls in the State for increasing egg production.

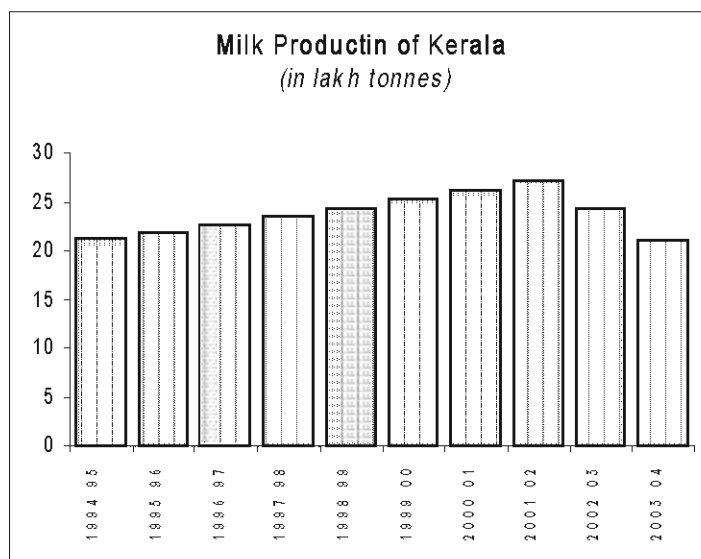
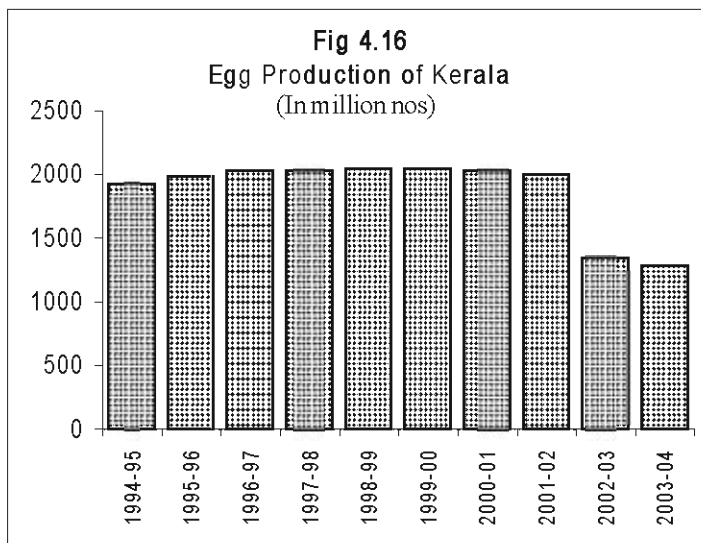
4.191 As per the Sample Survey report of AH Department during 2002-03, 2003-04 560 million eggs and in 2003-04, 662 million eggs were imported from neighbouring states increasing the per capita availability to 59/year.

**Table 4.23**  
**Year-wise Estimate of Milk, Egg and Meat production**

Year	Milk Production ( lakh tonnes)				% contribution of Kerala	Egg Production ( million numbers)				% contribution of Kerala	Kerala	
	India	% change over previous year	Kerala	% change over previous year		India	% change over previous year	Kerala	% change over previous year		Poultry Meat ( tonnes)	Meat other than Poultry Meat ( tonnes)@
(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1993-94	606	-	20.01	-	3.3	24167	-	1844	-	7.3	28000	101223
1994-95	638	5.28	21.18	5.84	3.3	25975	7.40	1916	3.90	7.2	30000	103551
1995-96	663	3.91	21.92	3.49	3.3	27284	5.03	1987	3.70	7.3	32000	105933
1996-97	683	3.02	22.58	3.01	3.3	27492	0.76	2024	1.86	7.4	34000	108336
1997-98	705	3.22	23.43	3.76	3.3	28400	3.30	2033	0.44	7.2	31688	114306
1998-99	752	6.67	24.20	3.29	3.2	29476	3.79	2044	0.54	6.9	32480	117840
1999-00	781	3.86	25.25	4.34	3.2	30449	3.30	2054	0.48	6.7	33204	121875
2000-01	810	3.71	26.05	3.17	3.2	36633	20.31	2034	-0.97	5.6	41515	122808
2001-02	848	4.69	27.18	4.34	3.2	39100	6.73	2002	-1.57	5.1	47693	125100
2002-03	873	2.95	24.20	-10.96	2.8	40300	3.07	1347	-32.7	3.3	52611	125130
2003-04	911	4.35	21.11	-12.76	2.3	43100	6.94	1277	-5.20	3.0	39327	142992

Source: Economic Survey and Department of Animal Husbandry  
 Figures relating to India for 2002-03 is provisional and 2003-04 is Anticipated  
 @ including unauthorised sector





**Meat Products of India Limited**

4.192 Meat Products of India Ltd, Koothattukulam was registered in 1973 under Indian Companies Act(1956) with the objective of establishing an export oriented buffalo meat processing unit with an authorised capital of Rs.300.00 lakhs and paid up capital Rs.180.00 lakhs. Its’ installed capacity is 300 MT/annum. At present the Company is producing meat products derived from pork, cattle buffalo, poultry, rabbit, quail etc. and produces feed for the poultry and pig farms of AH dept. Recently, the Company developed a pet food, ‘Meat Ind’s Dog Chow’. During 2003-04, the Company procured 212 MT of live pork worth Rs.63.39 lakhs and 89 MT of broiler birds worth Rs.27.00 Lakhs from farmers at remunerative prices and sold 316 MT of meat products and 1700 piglets. It also produced 1435

MT and sold 1153 MT of livestock feed.

**Poultry Rearing and Kerala State Poultry Development Corporation**

4.193 Kerala State Poultry Development Corporation was established in 1989 to give special attention for the revival of poultry farming. The Corporation had built up a broiler breeding farm and hatchery at Kudappanakunnu in Thiruvananthapuram District with a total investment of Rs.5.95 crore. The Corporation has partially commissioned a project to rear 15,000 parent stock with a target of 25,000 and to hatch 28 lakh day-old chicks with a target of 58 lakh by utilising financial assistance from the State Government and commercial banks. Now the Corporation is producing and supplying 45000 day old chicks per week for distributing to the farmers.

**1. Backyard Poultry Rearing**

4.194 Backyard poultry system has good potential in the state. As per the information available 8-10 lakh chicks are being introduced every year in the State. Animal Husbandry Department and KSPDC are involved in this activity. Apart from this few NGOs and private farms are also involved. It has been estimated that around 1 lakh families are benefitted and around 10000-15000 direct employment opportunities generated.

4.195 During 2003-04, KSPDC distributed about 6 lakh chicks(30 to 40 days old) to the farmers of the State.

**II. Broiler Production**

4.196 There is steady increase in the broiler production and demand for the chicken meat in the State. The total broiler chicken production in the state is around 36000-42000 MT/year. Nearly 10-15 Private hatcheries, working as satellite hatcheries also contribute to this local production of chicks and chicken meat. Approximately 40000-50000 direct employment is generated through broiler production.

4.197 Apart from this around 30000-40000 MT of chicken meat which includes broilers, layer chicks, broiler and layer parent culls etc. is being imported from neighbouring states.

**Poultry Feed**

4.198 There is need of broiler feed to the extent of 2000-3000 MT per month which is being catered to by 6-7 private feed manufactures. Average price of the feed is Rs. 10000/- to Rs. 11000/- per MT.

**Meat production**

4.199 India is endowed with more than 11% of worlds’ livestock population comprising variety of meat animals such as buffaloes, goat, sheep, pigs, cattle and poultry, The per capita animal protein availability is about 10 gm against world average of 25gm. The minimum requirement targeted is 20gm per capita/day of animal protein of which 4gm will come from meat. The estimated demand for meat would be 7.7 million tonnes against the present production of 5.7 million tonnes. Meat

production in Kerala comprises of beef, mutton, pork and broiler chicken. Out of this, beef is almost entirely from the culled animals brought from the neighbouring states. The rearing of goat and pig is concentrated in selected pockets. As in the case of poultry, meat production under stall-fed condition in general is not economical in Kerala. However, there is scope for fostering this activity in selected areas largely by utilising the bio wastes available.

4.200 In Kerala beef is the cheapest meat costing only 50 per cent of the prices elsewhere. This is because of the migration of large number of cattle and buffalo from the neighbouring states for slaughter. As per the study by the Swiss Agency for Development and Co-operation (1998) the number of animals migrating to Kerala is of the order of 11 lakh per annum.

4.201 There are 774 authorised slaughter houses in the State as on 2003-04 Category wise number of animals slaughtered and quantity of meat produced during 2001-02 to 2003-04 are given in Table 4.24

**Table 4.24**  
**Meat Production under Authorised Sector in Kerala**

Sl No	Category	Period	Numbers (000’ Nos)	Qty. of meat produced (MT)
1	Cattle	2001-02	483.29	24278
		2002-03	524.25	25897
		2003-04	598.30	29864
2	Buffalo	2001-02	180.30	10394
		2002-03	151.53	8637
		2003-04	162.99	8620
3	Goat	2001-02	553.56	5202
		2002-03	665.74	6276
		2003-04	748.92	6696
4	Pig	2001-02	40.70	1830
		2002-03	44.50	1994
		2003-04	53.14	2484
	<b>Total(1-4)</b>	<b>2001-02</b>	<b>1257.85</b>	<b>41710</b>
		<b>2002-03</b>	<b>1386.02</b>	<b>42804</b>
		<b>2003-04</b>	<b>1563.35</b>	<b>47664</b>
5	a)Spent Chicken	2001-02	18525.00	17228
		2002-03	15064.50	13859
	b)Broiler Chicken	2001-02	23841.70	30465
		2002-03	26176.90	38752
	Chicken-Total *	<b>2001-02</b>	<b>42366.70</b>	<b>47693</b>
		<b>2002-03</b>	<b>41241.40</b>	<b>52611</b>
		<b>2003-04</b>	<b>28091.00</b>	<b>39327</b>

Source: Integrated Sample Survey for Estimation of Production of Milk, Meat & Egg

\* data for spent chicken was not collected

4.202 Compared to previous year's meat production under authorised sector, share of beef increased from 60% to 63%, buffalo meat declined from 20 per cent to 18 per cent, mutton to 14 per cent from 15 per cent, and pork remained at 5 per cent

4.203 Details of meat production in the unauthorised sector is not available. It is estimated that about 2/3<sup>rd</sup> of the meat production in the State is from unauthorised sector.

4.204 The production of poultry meat including broilers is on the increase till 2002-03. It reached 52611 MT in 2002-03 as against 42693 MT in 2001-02 recording an increase of 23%. As per sample survey, the poultry meat production during 2003-04 is 39327 M/T. Data of spent chicken meat was not collected during 2003-04 and if this is also taken into consideration (nearly 15 per cent), the decline in meat production compared to previous year is 12.06 per cent. The outbreak of bird flu in other countries also had an adverse impact on the consumption of poultry meat and thereby affected production. Details of milk, egg and meat production are furnished in Table 4.23.

**Import and export of Milk and Milk products**  
4.204 The Export of Milk Products Rules (Quality control, Inspection and Monitoring) 2000

processing establishments, storage and transportation. As at the end of March 2003, 38 establishments had obtained certification from the authority for undertaking exports.

4.206 GOI have amended the Livestock Importation Act, 1898 under which import of all livestock products are allowed against Sanitary Import Permits(SIP) which are issued after conducting risk analysis with regard to the disease status of the exporting country in accordance to the International Scientific Principles and Guidelines of OIE.

4.207 Number of SIPs issued are 218 during 2001, 1002 in 2002, 1514 in 2003 and 327 in 2004 (up to March).

4.208 Details of exports and imports of milk and milk products from India are given in Table - 4.25.

4.209 During 2002-03 India exported livestock, poultry and related products worth Rs.4226 crores of which leather sector contributed Rs.2470 crores. (58 per cent). It is estimated that sheep and goat meat export is registering a growth of 5 per cent. These formed 4.9 per cent in quantity terms and 9.7 per cent in value terms of total meat exports.

**Table – 4.25**  
**Export and Import of Dairy Products**

Sl.No.	Category	2000-01	2001-02
	Exports ('000 MT)		
1	Skimmed Milk Powder	7.3	14.4
2	Whole Milk Powder	1.5	2.1
3	Other Milk Powder	1.0	1.5
4	Butter	0.1	0.2
5	Butter oil/melted butter	1.0	1.5
6	Imports ('000 MT)	0	0.6
7	Skimmed milk Powder	0	0.6
8	Butter oil	1	3.2

Source: NDDB, 2003

sets out the requirements related to quality of milk products destined for export and mechanisms to ensure pre shipment inspection as well as approval of establishment for export. Quality requirements include animal health at farm level and hygiene requirements at farm, collection centre,

4.210 During 2003-04 it was estimated that 25.80 lakh eggs, 41.886 MT of meat and 2006 Kg., of butter were exported from Kerala against 14.74 lakh eggs, 28.734 MT of meat and 2114 kg butter during 2002-03.

4.211 With the establishment of the WTO, the global trade in the food sector is increasingly being governed by quality and safety aspects. There is a likelihood that countries may impose standards and regulations not only for protection of consumers but also as non-tariff trade barriers. Under the Sanitary and Phyto Sanitary Agreement (SPS), developed countries are imposing stringent standards.

4.212 It is essential to strengthen the animal health and product certification laboratories in the state not only to provide certification but also to ensure quality of raw materials across value chains.

### Animal Health Care

#### Indian Scenario

4.213 With the introduction of extensive cross breeding programmes and improvement of quality of cross bred cattle, the susceptibility of these to various diseases including exotic diseases has increased. In order to reduce morbidity and mortality, efforts are being made by the State/UT Governments to provide better health care. For it, a network of 26,540 polyclinics/hospitals/dispensaries and 25430 veterinary aid centres (including stockmen centres/mobile dispensaries), supported by about 250 disease diagnostic laboratories are functioning in the country. These institutions employ some 36000 professional staff and over 70000 para veterinarians. For the production of vaccines, there are 26 veterinary vaccine production units. The primary emphasis is on clinical services and as a result, endemic diseases such as Foot and Mouth Diseases (FMD) are still prevalent in India. The limited emphasis on preventive services contributes to India's inability to eradicate animal disease epidemics, which limits the country's competitive advantage

in the global market place. Due to the prevalence of some diseases, the Sanitary and Phyto Sanitary regulations of many OECD countries deny entry of Indian livestock products.

4.214 The efforts of States/UTs for preventing/controlling of various animal diseases are being supplemented by way of providing central assistance during the Tenth Five Year Plan through the following components of the scheme on "Livestock Health and Disease Control":

- (i) Assistance to States for Control of Animal diseases (ASCAD)
- (ii) National Project on Rinderpest Eradication (NPRE) and
- (iii) Foot and Mouth Disease Control Programme (FMD-CP)

#### Kerala

4.215 At the end of Ninth Plan period all but 23 village panchayats in the State had a veterinary institution (hospital/dispensary). There is a strong network for veterinary health care now in the State comprising 200 Veterinary hospitals, 938 veterinary dispensaries and 14 District Veterinary Centres and other related health care institutions.

4.216 The state is implementing a programme for Foot and Mouth disease control with the assistance of Government of India. Also Brucellosis has now emerged as a new threat to the livestock wealth of the State. Helminthiasis control also needs attention. Worms and other internal parasites cause considerable economic loss to the farmers. Data regarding outbreaks, attacks and deaths of major contagious diseases of animals in Kerala for the period from 1993 to 2002 are given in Table 4.26

**Table 4.26**  
**Outbreaks, Attacks and Deaths due to Major Contagious Diseases**

(Unit in Nos)

Sl. No.	Disease	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
1	<b>Anthrax</b>										
	Outbreaks	3	4	0	0	0	11	10	0	2	3
	Attacks	4	52	0	0	0	463	463	0	6	4
	Deaths	4	3	0	0	0	22	21	0	5	4
2	<b>Black Quarter</b>										
	Outbreaks	2	5	3	3	1	2	0	0	1	1
	Attacks	24	124	300	3	1	2	0	0	1	1
	Deaths	22	5	22	3	1	1	0	0	1	1
3	<b>Haemorrhagic Septicemia</b>										
	Outbreaks	4	9	3	8	4	9	9	2	4	8
	Attacks	265	123	5	29	308	121	56	27	170	23
	Deaths	214	38	5	10	22	10	64	0	31	12
4	<b>Foot &amp; Mouth Disease</b>										
	Outbreaks	149	481	159	79	232	475	804	48	49	470
	Attacks	3072	8713	3714	2253	189	14214	19205	212	1026	9918
	Deaths	241	164	31	17	6753	0	1178	0	344	814
5	<b>Rinderpest</b>										
	Outbreaks	2	2	0	0	0	0	0	0	0	0
	Attacks	15	19	0	0	0	0	0	0	0	0
	Deaths	13	4	0	0	0	0	0	0	0	0

Source: Animal Disease Surveillance Programme 1998 and A H Dept.

4.217 Even though vaccinations were carried out, frequent outbreaks were reported which lead to production loss to farmers. During 2002-03, 470 Foot and Mouth disease outbreaks, 9918 attacks and 814 deaths were reported.

4.218 A project for the creation of disease free zone with assistance from NDDDB has already been launched in the State. The State has already eradicated the dreadful disease of Rinderpest and the reports of major diseases like Anthrax, Black Quarter and Hemorrhagic Septicemia are very rare.

**Production of Vaccine in Veterinary Biological Institute, Palode**

4.219 The Veterinary Biological Institute, Palode is the sole agency engaged in the production and distribution of animal vaccine in the State. The following viral vaccines viz. ,Ranikhet Disease Vaccine (K), (Freeze Dried Komorov Strain),Ranikhet Disease Vaccine (F),Fowl Pox Vaccine,Freeze dried Duck Plague vaccine,Tissue culture Rinderpest Vaccine and Bacterial Vaccines viz.,Haemorrhagic Septicemia broth Vaccine, Haemorrhagic Septicemia oil adjuvant Vaccine, Black Quarter Vaccine and Anthrax Spore vaccine are manufactured here. The production details are shown in Table 4.27

**Table 4.27**  
**Production of Vaccine by Veterinary Biological Institute (1999-00 to 2004-05)**  
 (lakh doses)

Sl. No.	Name of Vaccine	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05*
1	RDVK	13.32	21.02	26.65	54.45	120.06	32.71
2	RDVF	20.66	5.13	12.87	17.61	31.16	14.37
3	FPV	8.66	1.00	3.12	0.45	0.20	5.08
4	DPV	12.97	9.11	11.46	10.64	28.25	11.87
5	HS Oil adjuvant	0.33	0.39	0.13	0.41	1.14	2.11
6	HS Broth	0.76	0.73	0.73	0.67	2.67	7.81
7	BQ	0.84	0.47	0.59	0.67	1.39	1.49
8	Anthrax	0.57	0.43	0.84	0.28	0.14	0.45
9	FMD Vaccine**	NA	2.19	8.30	12.15	NA	NA

Source: Animal Husbandry Department \* till December 2004  
 \*\*Supply from Other Sources

4.220 Apart from the production of vaccines, the institute is engaged in the manufacture of diagnostic reagents and other animal health products. During 2004, they produced and distributed California Mastitis Reagent, Salmonella Pullorum Antigen, Brucella Abortus coloured antigen. Also developed oil adjuvant duck pasteurilla vaccine and combined oil adjuvant vaccine for HS and BQ.

4.221 Compared to previous year poultry vaccine production during 2003-04 increased by 116 per cent to 179.67 lakh doses and live stock vaccine increased by 163 per cent to 5.34 lakh doses. Number of vaccinations done during the year was 44.14 lakh for livestock and 45.54 lakh doses for poultry recording an increase of 264 per cent and 42.58 per cent respectively.. Details are given in Appendix 4.34. Modernisation and upgradation of the Institute to produce vaccines according to GMP standards is essential to face the challenges in animal health in the State.

**Breeding Support**

4.222 Regarding breeding infrastructure, India is the largest in the world with 64 frozen semen bull stations and more than 54000 AI Centres. AI conducted increased from 20 million in 1999-00 to 28 million Nos. in 2003-04. Due to poor quality semen produced by most of the semen stations in the country, the conception rate ranges from 20 per cent to 45 per cent only where as in the developed countries the rate is more than 50 per cent.

4.223 By the end of 2000 there were about 4.2 AI Centres/10000 breedable bovines in the country with Kerala appearing on the top of the list with 10.3 AI Centres and comparable figures of Gujarat and Rajasthan were 7.2 and 2.4 respectively. Total artificial inseminations done in Kerala during 1999-04 was 30 lakh.(as per NABARD Report)

4.224 Kerala Livestock Development Board (KLDB) is involved in the production and distribution of frozen semen and maintains three bull stations at Mattupetty, Dhoni and Kulathupuzha for the production of crossbred and purebred cattle and buffalo bulls. Compared to 2001-02, when semen production was 28.94 lakh doses, it declined by 16 per cent to 24.33 lakh doses (nearly 8.4 per cent of all India Production) during 2003-04. During the period while distribution of semen inside the State remained more or less stagnant, distribution outside the State declined by 77 per cent from 5.5 lakh doses to 1.24 lakh doses. Details are furnished in Appendix 4.35

4.225 The number of AI centres under Animal Husbandry Department increased from 2505 in 2001-02 to 2523 in 2002-03 and to 2538 in 2003-04. Along with 464 centres operated by other agencies the total number of AI centres operational is 3002. ( Appendix-4.36).

4.226 The number of inseminations done during 2003-04 was 12.31 lakhs and calvings recorded was 3.54 lakh. This is against 4.02 lakh calvings

recorded out of 13.69 lakh AI during 2002-03. The average number of insemination done by one centre declined from 543 in 2002-03 to 485 in 2003-04. The average number of inseminations needed for producing one calf is four which remained stagnant over the last seven years, is showing signs of improvement by declining to three during 2002-03 and 2003-04 (Table 4.28).

4.229 Another notable achievement of KLD Board is the introduction of Boer goats which are considered superior to any other goats for meat production. The breed is known for rapid weight gain and heavy muscling and has high fertility. Boers typically give birth to twins. Crosses of local goats with Boer goats have proved to be a

**Table – 4.28**  
**Number of Artificial Inseminations Conducted and recorded Calving**

Sl.No.	Year	No. of artificial Insemination Centres	No. of Artificial Inseminations done	No of AI Done Per centre	Recorded Calving	No of inseminations per calving
1	2	3	4	5	6	7
1	1993-94	2037	1353058	664	299358	5
2	1994-95	2097	1464941	698	306975	5
3	1995-96	2298	1240116	540	323958	4
4	1996-97	2293	1151189	502	332962	4
5	1997-98	2393	1259419	526	327365	4
6	1998-99	2408	1251119	520	313859	4
7	1999-00	2440	1391495	570	348834	4
8	2000-01	2537	1371655	542	360645	4
9	2001-02	2505	1248996	499	332967	4
10	2002-03	2523	1369112	543	402173	3
	2003-04	2538	1231407	485	353764	3

4.227 Apart from the frozen semen technology, KLD Board is also engaged in research and development activities like progeny testing, embryo transfer, production of liquid nitrogen, fodder seed and training programmes. The Board has an embryo transfer centre at Mattupetty, a goat farm at Dhoni for production of frozen semen and kids, a pig breeding centre at Puthur etc. During the year, the Board has produced 256 Malabari kids, 8508 piglets, collected 38 embryos and trained 1502 personnel. Other activities of the Board are given in Appendix 4.37

4.228 Under herd book scheme implemented by KLD Board the female progeny born to the test bulls are identified and recorded. They are followed up at half yearly intervals by way of girth measurements. A total of 106113 animals have so far been identified and registered under the programme. During 2003-04 against the target of registering 5000 calves, 3520 calves were registered under the programme. The Scheme covers a breedable population of about 60000 cross bred females spread around 83 AI Centres.

suitable genotype for the goat production system. Further studies are needed to assess the field performance.

4.230 During 2004 KLD Board has launched a project for conservation of dissemination of Malabari Germ plasm aiming at genetic improvement of goat herd of the State.

**Cattle Feed**

4.231 As per available estimates the potential daily requirement for concentrated cattle feed in Kerala has been estimated at 5372 MT. At present the State has three cattle feed plants functioning at Pattanakkad (300 MT/day capacity) and Malampuzha (200MT /day capacity) and a custom packing arrangement at Erode are under KCMMF and Kerala Feeds Ltd. Kallettumkara (500 MT/day) operating under a separate management. The production of two Cattle Feed Units under KCMMF and Kerala Feeds Ltd. is insufficient to meet the internal demand.

4.232 Due to the heavy demand of the pellet feed from farmers a custom packing arrangement

has been setup at Erode and about 1000MT/ Month of Cattle Feed is being catered from here. The project to augment the capacity of Malampuzha plant from 200 MT to 300 MT and to introduce pelletization facility was approved by NDDDB and the implementation of project is in progress. Process upgradation, automation and modernisation projects of Pattanacaud Plant are in progress. During 2003-04, the two plants and custom packing operations under KCMMF produced and sold 1.07 lakh MT of cattle feed. Of the total sales, nearly 73 percent is to APCOs and 9 per cent is to government and Farms. Also a mineral mixture plant was set up at Cattle Feed Plant, Malampuzha with technical support from NDDDB and was commissioned in 2003. The mineral supplement produced is marketed as feed supplement under the brand name "Milmamin".

4.233 Production and sales details of the above cattle feed plants are given in Table 4.29

**Table 4.29.**  
**Production and Sales of Cattle Feed**  
(in lakh MT)

Factory	Production				Sales			
	2000-01	2001-02	2002-03	2003-04	2000-01	2001-02	2002-03	2003-04
Pattanacaud (KCMMF)	0.71				0.67	0.71	0.68	0.64
Malampuzha (KCMMF)	0.55	1.17	1.08	1.07	0.57	0.45	0.40	0.33
Erode CPA	-	-	-	-				0.10
Kerala Feeds Ltd.	0.72	0.82	1.06	1.16	0.71	0.83	1.07	1.16
Total	1.98	1.99	2.15	2.23	1.95	1.99	2.15	2.23

4.234 The production of cattle feed by Kerala Feeds Ltd., increased from 1.06 lakh MT in 2002-03 to 1.16 lakh MT in 2003-04 showing a growth of 9.15 percent and sales from 1.07 lakh MT to 1.16 lakh MT showing a growth of 8.13 percent. The KFL have received ISO 9001:2000 quality system certification and is the only cattle feed manufacturing facility in India which has received the above certification. The Company has a good marketing network which includes 400 dealers and 450 Co-operatives. KFL has also launched a mineral food supplement during March 2004 under the brand name "Keramin"

**Better Management of Young Calves**

4.235 Bringing down the age at first calving and reduction in the inter calving period of cross-breds

have been recognized as the most effective measures for augmenting milk production. With this objective, a 'calf rearing programme by subsidising cattle feed for rearing cattle up to 32 months along with health cover and insurance has been under implementation from Eighth Plan. It has helped in reducing the age at maturity and inter calving period and improving milk production. During 2002-03, 6700 calves and during 2003-04, 23683 Calves (the highest achievement during 1998 - 04 ) enrolled under the Programme. Details are furnished in Table 4.30.

4.236 A study, "Evaluation of Status of Production Performance of Crossbred Cows in Selected Districts of Kerala", conducted in three districts of Kerala by KLD Board, identified a trend in peak yield to increase with percentage of enrollment. According to the study enrolment

under the scheme ensures a better calf hood and heifer management resulting better yielding cows.

**Table 4.30.**  
**Year-wise Details of Calves Enrolled under Special Livestock Breeding Programme**

Sl.No.	Year	No. of calves enrolled under SLBP
1	1997-98	30000
2	1998-99	10000
3	1999-00	8917
4	2000-01	7339
5	2001-02	4485
6	2002-03	6700
7	2003-04	23683
8	2004-05*	5000

Source: Animal Husbandry Department  
\* Till October 2004



### Kamadhenu Insurance Scheme

4.237 The Animal Husbandry Department in collaboration with United Insurance Company has formulated a Kamadhenu Insurance Scheme to insure the family of the farmers and their crossbred milch cows. The scheme is under implementation from 1998-99 onwards with the target of covering 400 crossbred cows per panchayat. The number of cows insured during 2002-03 was 6245 and during 2003-04 was 5058. An amount of Rs.13.27 lakhs on medical reimbursement, Rs. 9.90 lakhs on accident death claim and Rs. 45.34 lakhs towards cattle insurance was distributed during 2003-04. Details of number of farmers insured, amount of premium remitted and claims settled are given in Table 4.31. The Scheme couldn't be implemented to the desired level during 2003-04 due to disagreement between the Company and the government regarding the terms and conditions of the scheme.

milk 2.6 per cent, fowl-white egg 6.6 per cent, fowl- brown egg 8.2 percent and duck egg 10.9 per cent. On the input side, highest increase over 2002-03 was in the case of coconut cake i.e., 23.7 per cent an all time increase over 7 years, fodder by 15.6 per cent, ground nut cake by 12.42 per cent and gingely oil cake by 9.09 per cent.

### Dairy Development

4.239 Dairy industry in India has made significant progress from 8<sup>th</sup> plan onwards. Today, India is the largest producer of milk in the world. The milk production in the country has risen to 84.8 million tons during 2001-02 from 17.17 million tons in 1950-51 and is expected to reach 91.1 million tons in 2003-04. A substantial increase in the per capita availability of milk and attainment of near self sufficiency in milk and milk products has been achieved mainly on account of the tremendous amount of marketing support and technical inputs

**Table 4.31**  
**Kamadhenu Insurance Scheme**  
**Progress of Implementation**

SLN o.	Year	Progress of Implementation			Claims settled ( cum )					
		No. of cows insured	No. of farmers insured	Amount of premium (Rs. lakh)	Cattle Insurance		Accident death		Medical Re-imbursment	
					No.	Amount (Rs. lakh)	No.	Amount (Rs. lakh)	No.	Amount (Rs. lakh)
1	1998-99	42583	69003	339.99	NA	NA	NA	NA	NA	NA
2	1999-00	37008	61288	277.24	NA	NA	NA	NA	NA	NA
3	2000-01	28677	45607	160.25	754	52.86	16	12.36	781	12.20
4	2001-02	3037	3796	70.62	1009	70.55	16	8.41	761	20.32
5	2002-03*	6245	8838	58.25	875	73.58	52	5.60	746	25.55
6	2003-04*	5058	8220	34.76	475	45.34	139	9.90	295	13.27

Source: Animal Husbandry Department

\* Provisional

### Prices

4.238 Average price of important inputs and products of livestock sector for the last seven years is presented in Appendix 4.38. Compared to 2002-03 there was an increase in the price of all products other than broiler during 2003-04. The highest increase was in the case of mutton (12.17%). During the year, price of cow milk recorded a increase of 2.3 per cent and buffalo

provided and the infrastructure developed in the country through the cooperative network. More than 50 per cent of the milk in the country is produced by small and marginal farmers and landless labourers, producing about one to three litres of milk per day.

4.240 1971 was the turning point in India's dairy sector since it was the launching year of Operation Flood Programme with the assistance

of World Food Programme by providing assistance in the form of skimmed milk powder and butter oil. This programme was implemented in three phases -1971-81, 1981-87 and 1987-1996. By the end of third phase, about 72,700 dairy cooperative societies with 93 million farmer members were organised. In OF areas, the country has at present about 1 lakh organized primary village dairy cooperatives with an aggregate membership of 1.1 crore producers. These primaries are federated into 170 district cooperative milk unions and further to state cooperative dairy federations. The dairy cooperative network collects about 170 lakh kg milk per day (LKPD) and pays an aggregate amount of about Rs.7000 crores to the milk producers in an year. These cooperatives form part of the National Milk Grid which today links the milk producers through out India with consumers over 700 towns and cities, bridging the gap between the seasonal and regional variation in the availability of milk while at the same time ensuring a remunerative price to the producers and a reasonable price for quality milk and milk products to the consumers. For the five years ending March, 2003, the average milk procurement by dairy cooperatives grew at 7.3 percent whereas the marketing of milk by cooperatives grew at 3.2 per cent.

4.241 The responsibility for carrying on developmental activities in the Operation Flood areas have been entrusted to National Dairy Development Board, established by an Act.

4.242 As per the NDDB Annual Report, 2003-04, the number of Dairy Co-operatives under organised sector in India is nearly 1.09 Lakhs of which the southern area accounts for 0.25 Lakhs (23%). During the period 1980-81 to 2003-04 strength of Societies increased by 8 fold at all India level, while in southern region the increase was 6 fold, in northern region by 14 fold, eastern region by 13 fold and in western region by nearly 6 fold. In Kerala the increase from 1990-91 to

2003-04 was 3 fold ( Appendix 4.39).

4.243 In Kerala there are 3243 dairy co-operatives including 2341 Anand pattern societies functioning under KCMMF. It is also significant that while at the national level milk procurement of Dairy Co-operatives rose by 2.9 percent, in Kerala there has been an increase of 7 percent on account of increase in local sale by Primary dairy Co-operatives and their ability to make better payments to its members.

4.244 Besides the societies functioning under the Co-operative Sector, 4 Societies viz., Malanadu, Nirmalgram, PDDP, Perambra and PDDP, Kalady are working under Charitable Institutions.

4.245 Realising the importance of fodder development in optimising economic return from the dairy activity, the KLD Board and Dairy Development department have taken up fodder development as an important activity right from the beginning. KLD Board produced 10.80 MT of fodder seeds during 2003-04 against 13.51 MT of seeds during 2002-03. The quantity of seeds supplied by KLD Board during the period is 15.65 against 12.57 during 2002-03 (see Table 4.32).

4.246 The Dairy Development Department is implementing a fodder cultivation promotion programme using root slips/stem cuttings of high yielding perennial fodder varieties like Hybrid Napier and Guinea which is widely acceptable by farmers. During the year, Dairy Development Department procured and supplied only 4.80 MT of fodder seeds against 51.30 MT during 2001-02 and 60 MT fodder seeds during 2002-03. The Department also supplied 282.5 lakh root slips/stem cuttings during 2003-04 against 160 lakh during the previous year. The total area covered under fodder cultivation is 3210.50 ha. against 2800 ha during the previous year ( Table 4.33). The area brought under fodder cultivation during April to December 2004 is approximately 1875 ha.

**Table – 4.32**  
**Production and Sale of fodder seeds by KLD Board**

Sl.No.	Year	Quantity of Seeds Produced (MT)	Quantity of Seeds Supplied* (MT)
1	1996-97	28.42	29.35
2	1997-98	31.64	28.96
3	1998-99	26.50	30.48
4	1999-00	30.21	28.36
5	2000-01	16.20	35.09
6	2001-02	15.98	20.68
7	2002-03	13.51	12.57
8	2003-04	10.80	15.65

Source: KLD Board Annual Reports

\* Including sales to outside agencies and used for KLDB programme

**Table 4.33**  
**Procurement & Supply of Fodder seeds / Root Slips and Area Covered under Fodder Cultivation**

Sl.No.	Year	Procurement of seeds	Total quantity of seeds supplied to farmers	Area covered	Fodder root slips/stem cuttings supplied	Area covered	Total area covered under fodder cultivation
		( in MT )	( in MT )	( in Ha )	( in lakh )	( in Ha )	( in Ha )
1	1996-97	196.49	196.49	5932	546	2182	8114
2	1997-98	310.45	310.45	9326	200	799	10125
3	1998-99	307.40	307.40	9026	250	1000	10026
4	1999-00	91.00	91.00	3560	460	1840	5400
5	2000-01	72.80	72.80	2820	400	2000	4820
6	2001-02	51.30	51.30	2315	400	2000	4315
7	2002-03	60.00	60.00	2000	160	800	2800
8	2003-04	4.80	4.48	1798	282.5	1412.5	3210.5
9	2004 *	Nil	Nil	Nil	375	1875	1875

Source: Dairy Development Department

\* as on December 2004

### Milk Marketing

4.247 With the advent of Operation Flood Programme, under the aegis of the KCMMP, a well established system for regular procurement of milk from farmers and distribution to regular consumers became a reality. It has helped in ensuring better returns to the dairy farmers. With the implementation of North Kerala Dairy project supported by Swiss Development Agency, the entire state is under the network of Anand pattern dairy co-operatives (APCOs). As on Sept 2004, the federation was operating through 2577 APCOs with a total membership of 7.28 lakh. It also represents 10 dairies handling 9.96 lakh litres

of milk/day, 14 chilling plants, two cattle feed plants, a milk powder plant, an established training centre and 8000 distribution outlets. Of the total APCOs registered, only 2341 are functional. The average milk procured per day by APCOs during the year was 7.05 lakh litres against the previous year average of 6.72 lakh litres. The procurement /day/society is 301 litres. The performance of KCMMP is presented in Appendix 4.40.

4.248 In Kerala, where the production of milk is concentrated in the small farm sector and ultimate supply is dependent on seasonal factors, maintaining uninterrupted supply particularly during lean period is very difficult. The federation

is thus forced to import milk from the neighbouring States. The periods August-September and January-May are considered to be lean periods when the internal supplies used to shrink. To bridge the supply demand gap and to cater the demand for making value added products they have to rely on outside States. The total import during 2003-04 was 604 lakh litres against 230 lakh litres during 2002-03. Season-wise milk production in Kerala is given in Table 4.34. The

of sales by KCMMF from 2001-02 to 2003-04 is given in Appendix 4.45. Among the products, sale of milk, ghee ('milma ghee' and 'Samrudhi Ghee'), ice cream, sambharam, curd and Milma Plus recorded a steady increase. The sale of Milma Plus in disposable glass bottles created good response and chocolate flavor was the most in demand and sale increased from 0.23 lakh bottles in 2001-02 to 11.08 lakh bottles in 2002-03 and to 7.56 lakh bottles in 2003-04. The sale of

**Table 4.34**  
**Season wise Estimated Production of Milk**

(Lakh MT )

Sl.No.	Year	Summer		Rainy		Winter		Total
		Quantity	% to total	Quantity	% to total	Quantity	% to total	
1	1996-97	7.49	33.17	7.71	34.15	7.38	32.68	22.58
2	1997-98	7.81	33.33	7.94	33.89	7.68	32.78	23.43
3	1998-99	8.14	33.64	8.26	34.13	7.80	32.23	24.20
4	1999-00	7.83	31.01	9.48	37.54	7.94	31.43	25.25
5	2000-01	8.21	31.52	9.39	36.05	8.45	32.43	26.05
6	2001-02	8.43	31.02	9.74	35.84	9.01	33.14	27.18
7	2002-03	7.77	32.12	8.59	35.51	7.83	32.37	24.19
8	2003-04	6.88	32.59	7.46	35.34	6.77	32.07	21.11

Source: Integrated Sample Survey

procurement of milk by KCMMF stood at 2484, 2412 and 2121 lakh litres respectively against the sale of 2080, 2479 and 2650 lakh litres during 2001, 2002 and 2003. Procurement and sale of milk by KCMMF stood at 1611 and 2098 lakh litres respectively as on Sept 2004. Data on procurement and sale of milk by different dairies of KCMMF during 2001 to 2004 is presented in Appendix 4.41.

4.249 The veterinary services rendered by KCMMF are noteworthy. They have a well established Veterinary Wing at Thiruvananthapuram and Ernakulam Regional Milk Unions. During 2004 (as on Sept 2004), services were provided through 12 regular and 39 emergency routes and 0.36 lakh animals were treated. KCMMF has sold 0.84 lakh MT of cattle feed during 2004 (as on Sept 2004). It also produced 1883 MT of ghee and sold 1710 MTs of ghee during the year. Year wise details for the period from 1997 to 2004 are furnished in Appendix 4.40.

4.250 Besides milk, a variety of milk products are manufactured by KCMMF. A comparison

Sambharam also increased from 15.331 lakh litres in 2001-02 to 72.99 lakh litres in 2003-04. During 2003-04 Central Products Dairy maintained ISO 9002 Certification for all its products and switched over to the 2000 version.

4.251 Production of quality products and marketing them outside the State are essential for further growth of the industry in Kerala. However, the experiment of starting a joint venture for this purpose with NDDDB's Mother Dairy, New Delhi did not take off for a variety of reasons.

**Annual Plan 2003 -04 : A Review**

4.252 The total outlay approved for the livestock sub sector under Annual Plan (2003-04) was Rs.44.99 crores. This included Rs.43 crores for Animal Husbandry and Rs.1.99 crores for Dairy Development (Table - 4.35). Against this actual expenditure in AH sub sector amounts to Rs.22.61 crores (52.60 %) and Dairy Development sub sector amounts to Rs.1.84 crores (92.50%). The short fall in Animal Husbandry sector was due to less expenditure

**Table-4.35**  
**Financial Performance of Livestock sub Sector during Annual Plan 2003-04**  
 (Rs. in lakhs)

Sl. No	Sub Sector	Approved Outlay	Expenditure	Expenditure as % to total outlay
1	Animal Husbandry	4300	2261	52.60
2	Dairy Development	199	184	92.50
<b>Total :Livestock sub sector</b>		<b>4499</b>	<b>2445</b>	<b>54.35</b>

**Table: 4. 36**  
**Outlays and Expenditure for Major Schemes under Annual Plan 2003-04**  
 (Rs. lakhs)

Sl. No.	Name of Scheme	Approved Outlay	Actual expenditure
1	Strengthening of Veterinary Service	1755	484.07
2	Expansion of Cross Breeding facilities	650	620.29
3	Special Livestock Breeding Programme	739	612.08
4	Assistance to Public Sector undertaking viz., KLD Board, KCMMF, KSPDC and MPI	250	-
5	Commercial Fodder Production Programme	170	170
<b>Total</b>		<b>3564</b>	<b>1886.44</b>

incurred on Veterinary Services (only 27.6 %). During the year, an amount of Rs. 337 lakhs was also invested against an outlay of Rs.434 lakhs as central share of Centrally Sponsored Schemes in the Sub Sector .

4.253 Also substantial outlay have been earmarked by the local governments for livestock development. During the year Rs. 22.89 crores was earmarked in the sub sector by the local governments.

#### FISHERIES DEVELOPMENT

Around 60 per cent of the major fish resources in the world are mature and these resources are in urgent need of conservation. FAO has concluded that 44 per cent of the stocks for which formal assessments are available are intensively or fully exploited, 16 per cent were over fished, 6 per cent of the known stocks were

in need of urgent management. Demersal high value species were overfished and that a reduction of at least 30 per cent of fishing effort was required to rebuild the resources.

#### Comprehensive Marine Fishing Policy

4.255 A Comprehensive Marine Fishing Policy has been formulated by Government of India in November 2004. The marine fishing policy announced in the past focused only on the development of the deep sea sector, leaving aside similar issues pertaining to the coastal sector to the respective marine states. However in the present policy the government seeks to bring the traditional and coastal fisherman also into the focus to achieve harmonized development of marine fishing both in the territorial and extra territorial waters of the country. The salient features of the policy are shown in Box-4.14

## BOX-4.14

## Salient Features of the Marine Fishing Policy

- ◆ Harvesting of marine fish resources is categorised into Subsistence, Small scale and industrial fishing. Protection and encouragement of subsistence level fisherman, technology transfer to small scale sector and infrastructure support to industrial sector would be promoted.
- ◆ There would be exclusive area in terms of depth and or distance earmarked for non-mechanised traditional crafts. Demarcation of the area for traditional motorised and small scale mechanised vessels is in the purview of coastal states.
- ◆ The principle of code of conduct for Responsible Fishing operations would be incorporated into every component activity.
- ◆ Implementation of international quality regimes for food safety would be carried out through the nodal agency.
- ◆ Hygiene in fishing harbour/pre processing and processing centres would be streamlined through legislation.
- ◆ MFRAs of coastal states to be reviewed and a fresh model bill on coastal fisheries development and management would be prepared.
- ◆ There will be closed season on both the coasts, the duration of which would be decided by a designated Authority.
- ◆ There should be ban on all types of destructive fishing.
- ◆ Resource enhancement programme would be taken up. Open sea cage culture would be promoted to rear commercially important species.
- ◆ Co-operative movement of fishermen would be strengthened.
- ◆ Artisanal fisheries deploying OBMS and small mechanised boats upto 12 m would be treated at par with agriculture.
- ◆ Contribution towards insurance coverage and saving cum relief scheme would be restricted to the fishermen who do not own a boat.
- ◆ Fishermen housing scheme of various descriptions would be verified and implemented through a national agency.
- ◆ Programmes to improve safety at sea and also to have a early weather warning system would be chalked out.
- ◆ Coastal area protection through mangrove planting to be promoted.
- ◆ The Zonation under CRZ would be reviewed.
- ◆ A Master Plan for the development of infrastructure for the next ten years would be drawn up.

*Ministry of Agriculture, 2004*

4.256 The state government also formulated a fisheries policy in 2004 covering all the areas related to the development of fisheries in the state. Some of the salient features of the policy are shown in Box-4.15. It is intended to integrate various agencies working in the fisheries sub sector, promotion of inland fisheries, resource

conservation measures, sea safety, welfare programmes for traditional fishermen, promotion of export, upgradation of infrastructure and implementation of quality control programmes across value chain are visualized in the policy document.

#### BOX-4.15

##### Some of the salient features of the Kerala Fisheries Policy 2004

- Continuation of implementation for monsoon trawling for the conservation of marine fish resources. Appropriate conservation measures would be designed for implementation.
- Group farming concept would be promoted through cooperatives for the development of inland fisheries. In order to increase production of fish in the state, deep sea fishing and inland fishing would be promoted mainly through traditional fishermen.
- Implementation of Protected fisheries zone, legal measure to protect fishery resources from pollution, gene pool protection. development of coastal fisheries development and management programmes, protection of mangrove forests, participatory resource enhancement programme through local self governments, regulation of destructive nets, steps for implementing ban on fishing by foreign vessels in territorial sea with the support of GOI etc are envisaged.
- Compulsory registration for crafts, prevention of unauthorised fishing, overfishing and destructive fishing and develop package programme for registered fishing, declaration of fishing zone, measures to reduce the number of motorized boats in coastal sea and strict enforcement of KMFR Act
- Promotion of inland fisheries
- Preparation of master plan for development of aquaculture in Kerala
- Establishment of quality control laboratories
- Modernisation of fishing markets, promotion of activities of cooperatives in marketing, implementation of right for first sale, promotion of value added export without affecting the domestic industry
- Promotion of social security measures for traditional fishermen.
- Implementation of coastal family health care programme, community health care, total housing programme, special projects for supply of drinking water, education programmes
- Implementation of anti sea erosion projects
- Implementation of quality control across value chain, establishment of Export oriented units
- Promotion of ornamental fisheries, Establishment of more Matsyabhavans
- Integration of various agencies in the fisheries sub sector like FFDA, BFFDA and ADAK are proposed to be implemented and ADAK would be entrusted with the task of coordinating the inland fisheries development programmes
- Promotion of fisheries development programmes through local self governments
- Implementation of micro credit programmes
- Implementation of various sea safety and rescue operations
- Development of selected infrastructure facilities through private participation

4.257 In the marine sector, organising resource conservation measures under a participatory approach combined with regulatory measures has been given the major thrust, as part of the implementation of the strategy and to oversee the conservation measures.

4.258 The state has all the requisite natural endowments for building a strong and vibrant fisheries economy in tune with the national strategy. They include a stretch of coastal belt extending over 590 km. and an extensive inland waterspread of around 4 lakh hectares. The exclusive economic zone (sea spread upto 200 metres) lying adjacent to Kerala coast is spread over 36000 square kilometres which is almost equivalent to the land area of the state.

4.259 The state is endowed with rich inland water bodies consisting of 44 rivers (having an area of 0.85lakh ha) 30 major reservoirs (0.30 lakh ha) fresh water ponds and tanks (0.25 lakh ha) 45 backwater and extensive brackish water area (2.43lakh ha). But the inland fish production accounts for only about 11.50% of the total production. Eventhough the state is endowed with extensive waterspreads offering tremendous potential for the development of inland fisheries, this opportunity has not been tapped to the desired extent.

4.260 There are 222 fishing villages in the marine and 113 fishing villages in the inland sector,

where fishing and related activities provide livelihood to a vast majority of the population. The estimated fisher folk population in Kerala during 2003-04 was 10.95 lakh, which included 8.43 lakh in marine and 2.52 lakh in the inland sector. The number of active fishermen during the period was 2.20 lakh which comprises of 1.79 lakh in marine and 0.41 lakh in inland sector. Alappuzha district is in the first place in the number of fisher folk with a population of 1.85 lakh followed by Thiruvananthapuram (1.79 lakh). The district-wise details of fisher folk population are presented in Appendix 4.46.

#### Resource Potential

4.261 The 200 mile Indian EEZ covers an area of nearly 2.02 million sq.kms. with an estimated harvestible potential of 3.93 million tonnes per annum. Of this, nearly 50% is reported to be available in in-shore waters and the balance in the offshore and deep sea areas. Installation of Fish Finder, Global Positioning System, Radio Telephone and Fish hold has induced mechanised vessels to extend their activity to offshore regions. The Government of India constituted a Working Group to revalidate the potential yield estimates of marine fishery resources made in 1991 and to estimate the additional harvestible yield that could be obtained on a sustainable basis for different depth zones/region of the Indian EEZ. The Salient findings of the Working group report are shown in Box-4.16.

#### BOX-4.16

##### Salient findings of the working group on fishing resources

- ◆ The total potential yield of the marine fishing resources of the Indian EEZ is revalidated as 39,34,417 MT constituting 20,17,072 tonnes of demersal, 1673545 tonnes of Pelagic and 243800 tonnes of oceanic resources.
- ◆ A disturbing trend seen is the substantial reduction of some of the important conventional resources namely, elasmobranchs (-97000 t), Catfishes (-72000 t), Other Clupeoidea (-33000 t) ribbon fishes (-17000 t) and Carangids (-209000 t). Research be directed towards such species in order to develop strategies for reviving and managing the resources.
- ◆ Since collection of data on marine fish resources including population characteristics is a continuous process, the present coverage of catch and effort statistics, adopted by the CMFRI to be strengthened to make it to a 5% coverage and the states adopt the same methodology for a 5% coverage.
- ◆ Short terms forecasts based on Satellite imageries help in minimising searching time and institutional capabilities to be developed.
- ◆ Steps taken for formulation of natural and state level regulation and legislation in Maritime fisheries should conform to the objectives of the code of conduct for Responsible Fisheries.

*Ministry of Agriculture, GOI*



4.262 Although the total potential available for inland fish production in the State has not been quantified precisely, it can be roughly projected at 1.5 to 2.0 lakh tonnes. Past performance of the sector reveals that the state could tap only around 50 percent of the total fisheries potential. In the marine sector, the activity is largely concentrated in the inshore areas without any serious effort for tapping the potential available in the off shore and deep sea areas. Against the maximum sustainable yield of 5.7 lakh tonnes, the fish landing from the inshore area is around 6.0 lakh tonnes thus leading to a resource depletion crisis. Marine resource potential is shown in the Table-4.37. The species wise marine fisheries potential estimated in the depth range of 0-50 m. in the state is shown in Table-4.38

**Species-wise Composition of Fish Landing**

4.263 The marine fish landings in India during 2002 have been estimated at 2.64 million tones. An increasing trend was noticed in the landings of shark , oil sardine, Bombay duck,ribbon fishes, carangide, seer fishes, tunas, penaeid prawns and cephalopods. Landings of petches and non penaeid prawns declined.

4.264 Although the fish catches from the Kerala coast include more than 300 different species, the commercially important number about forty only. The high value species among the fish catches are still few, prominent among them are seer fish, pomfret and prawn. Ribbonfishes are also now a target group and nearly 60-70 percent

**Table: 4.37**  
**Marine Resource Potential in Kerala and India**

(Lakh tonnes)

Sl.No	Area	Demersal Resources		Pelagic Resources		Total
		0-50 m Depth	Beyond 50m Depth	0-50 m Depth	Beyond 50m Depth	
1	India	10.36	6.49	11.74	7.42	26.01
2	S.W.C. of India	3.60	1.12	5.89	2.49	13.2
3	Kerala	2.29	0.56	3.42	1.24	7.50

Source: Fisheries Survey of India.

**Table - 4.38**

**Estimated Annual Catchable Potential**  
**in 0-50 m depth in Kerala**

Sl.No.	Category	Potential (Tonnes)
1	Oil Sardines	111274
2	Other Sardines	12637
3	Pomfrets	2226
4	Mackerels	48686
5	Ribbon fishes	18580
6	Penaeid Prawns	64482
7	Cephalopods	18852
8	Others	294580
9	<b>Total</b>	<b>571317</b>

Source: CMFRI, Department of Fisheries.

of the landings in frozen form are exported to China, Japan and other South East Asian countries. The quantity of these high value species in the total catch ultimately decides the income of the fishermen. Unfortunately the share of these high value varieties in the total marine fish catch has been remaining stagnant. The annual potential of prawn is estimated at 64482 tonnes while the average catch during 2003-04 was 53361 tonnes. The catch of oil sardine, the most important variety consumed mainly by the poorer sections of the society exceeded the potential in recent years. The species wise landings are shown in Appendix: 4.47.

### Fishing Crafts

4.265 There was enormous increase in the number of fishing crafts operating in Kerala during the last decade. The total number of mechanised and non-mechanised crafts has increased from 34007 in 1988-89 to 55501 in 2003-04. The increase was mainly in the case of motorised crafts which rose from 9914 to 29395. The department has initiated a detailed survey of fishing crafts in the state. The published figures on the number of crafts from different sources are slightly different.

4.266 However the permissible limits as estimated by Kalawar Committee in 1985 were 20,000 non-motorised crafts, 2960 Motorised crafts and 1145 mechanised boats. The enormous increase in the number of crafts does not appear to have helped in boosting the marine fish production proportionately. With the increase in the number of mechanised crafts the share of traditional crafts in the total fish landings has considerably eroded over the years. Kerala coastal waters had been witnessing continuous confrontation between traditional fishermen and trawler operators. Active fishing with synthetic fibres, propulsion with outboard motors and modification of craft and gears including indigenization of fishing techniques such as mini purse seine and mini trawling have contributed to over fishing. Increase in fishing by the mechanised sector which has led to large scale destruction of egg bearing and juvenile fishes. The Salient findings of a study on over fishing and loss due to juvenile fishing are shown in Box-4.17

#### BOX-4.17

##### Economic loss due to over fishing

- ◆ The economic loss due to over fishing estimated in terms of the Net present value of MSY for 30 years was Rs. 160.6 crores for catfishes, Rs. 458.5 crores for classmobranchs and Rs. 3.9 crore for goat fishes.
- ◆ Among the different centres the highest economic loss due to juvenile fishing was at Neendakara harbour followed by Cochin and Munambham Fishing Harbours.

*Source: CMFRI, 2002-03*

4.267 The state has enacted the Kerala Marine Fishing Regulation Act for enforcing strict regulatory measures for restricting the number of crafts and their operational areas and monsoon trawling has been banned as a conservative measure. The ban on monsoon trawling has been in force from 1989 onwards.

4.268 In 1998, 55737 fishing gears were in use, of which trawl nets (9261) and gill nets (36552) accounted for more than two-third and the rest being ring seine (2277), boat seine (2394) shore seine (1115), hooks line (4295) and others (25). Although the recommended number of ring seines is 300, there are about 2227 ring seines in operation in the state. The proliferation of the mechanised boats and trawlers along the coastal line of the State and the indiscriminate use of gears and nets in violation of the Marine Fisheries Regulation Act need effective regulatory measures.

#### BOX-4.18

##### Findings of a study in Fuel Utilization Pattern

- ◆ A study conducted by CIFT on fuel utilisation pattern estimated the fuel consumption by mechanised crafts operated at Cochin region during 2002-03 at 37482 KL and for Kerala as a whole at 97204 KL.
- ◆ The fuel consumption per trip was between 1200 and 1400 litres depending on the duration of operation.
- ◆ The average number of fishing days per trip was 6.5 and average number of days/year was 248.

*Source: CIFT 2003*

**Trend in Production**

4.269 The global pattern of fish production owes much to the activities of China, which accounts for 32 per cent of world production. India is the fourth largest fish producing country next to China, Peru and Japan accounting for more than 4 per cent of the total world fish production in terms of catch volume. High fish prices have led to an increase in fishing efforts in Asian fishing countries.

4.270 In 2001, India's total production was 5.65 million metric tonnes of which nearly half was from Marine Fisheries (about 44 species) and the other half from inland fisheries (Indian carp followed by cat fish)

4.271 The marine fish production in Kerala is stagnant and seems to have achieved a saturation level whereas the inland fish production showed signs of improvement from 1999-00 followed by

slight decline. During 2003-04, marine production increased to 6.08 lakh tonnes from 6.03 lakh tonnes in 2002-03 and inland fish production to 0.79 lakh tonnes from 0.75 lakh tonnes. (Table - 4.39) & (Fig 4.17)

**Aquaculture**

4.272 India is the fourth largest producer of shrimp through aquaculture. Aquaculture of shrimp in India has made an impact as a commercial venture in recent times, and contributes substantially to the export of the country. The share of aquaculture shrimp in the total shrimp exports has grown from 33 per cent in 1988-89 in quantitative terms to 60 per cent in 2002-03 and 49 per cent and 82 per cent respectively in value terms.

4.273 The potential area suitable for brackish shrimp aquaculture has been estimated at 1.2 million ha, but only 1.56 lakh ha. alone was utilised for shrimp culture. Out of this nearly 50,000 ha.

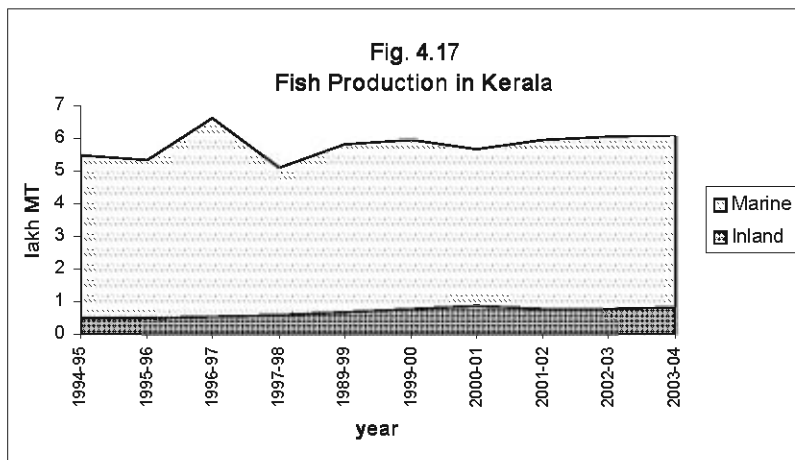
are under traditional culture with an average yield of 300 kg./ha per year and the remaining area under extensive farming with an average production of 750 to 1500 kg/ha per year. In addition, 35870T of fresh water prawn (scampi) is produced from an area of 41870 ha. of inland freshwater area. Around 49 per cent of total area under culture is coming in the size

class of 0-2 ha, 22 per cent in 2-5 ha, 13 per cent in 5-10 ha and 16 per cent above 10 ha size. State wise details of shrimp and scampi culture are shown in Tables 4.40 and 4.41. Kerala accounts for 5.7 per cent and 0.66 per cent of aquaculture production of shrimp and scampi respectively during 2003-04. The lowest productivity for shrimp culture was recorded for Kerala.

**Table -4.39**  
**Fish Production in Kerala during the last 6 years**

Year	Marine	Inland	Total
1998-99	5.82	0.66	6.48
1999-00	5.94	0.74	6.68
2000-01	5.67	0.85	6.52
2001-02	5.94	0.78	6.72
2002-03	6.03	0.75	6.78
2003-04	6.08	0.79	6.87

(lakh tonnes)



**Table :4.40**  
**State wise details on Shrimp culture during 2003-04**

Sl. No.,	State	Area under Culture (ha)	Production (MT)	Productivity (Mt/ha. Yr)
1.	West Bengal	49925	29714	0.60
2.	Orissa	12116	12390	1.02
3.	Andhra Pradesh	69638	53124	0.76
4.	Tamil Nadu	3214	6070	1.89
5.	Kerala	14029	6461	0.46
6.	Karnataka	3085	1830	0.59
7.	Goa	963	700	0.73
8.	Maharashtra	615	981	1.60
9.	Gujarat	1013	1510	1.49
	<b>Total</b>	<b>154600</b>	<b>112780</b>	<b>0.73</b>

**Table :4.41**  
**State wise details on Scampi culture during 2003-04**

Sl. No.,	State	Area under Culture (ha)	Production (MT)	Productivity (Mt/ha. Yr)
1.	West Bengal	4550	2435	0.55
2.	Orissa	470	450	0.96
3.	Andhra Pradesh	27286	32085	1.18
4.	Tamil Nadu	159	133	0.84
5.	Kerala	886	238	0.27
6.	Karnataka	206	113	0.55
7.	Goa	0	0	0
8.	Maharashtra	6981	306	0.04
9.	Gujarat	1430	106	0.07
0	<b>Total</b>	<b>41870</b>	<b>35870</b>	<b>0.86</b>

### Reservoir Fisheries

4.274 Under the Pilot project assisted by Germany, culture fisheries was taken up in Kerala on an organised scale during Eighth Five Year Plan. Although the module developed is worth emulating in all the reservoirs, it is adopted only in 10 reservoirs with an area of 5743 ha. There are 30 reservoirs with waterspread area of 43,000 ha. in the state suitable for taking up fish culture.

4.275 During 2003-04, a total of 7.04 lakh catla, 9.94 lakh rohu, 6.93 lakh of mrigal and 8.51 lakh of Labea were stocked in these reservoirs. Total catch recorded was 195.77 tonnes valued at Rs. 78.06 lakhs. The average productivity is 34.09. (Table 4.42)

4.276 The Indo-German Project has estimated

an annual potential fish supply of 850 tonnes from the five reservoirs and 1700 tonnes from all reservoirs of Kerala. The present production from the ten reservoirs is very low and the average yield range from 4.30 kg/ha in Walayar reservoir to 304 kg/ha tonnes in Meenkara in 2003-04. The low productivity in most reservoirs can be attributed to undesirable species mix as revealed in studies and fast growing species do not get the desired level of representation.

4.277 Reservoirs offer good potential for fisheries development in the state and forms one of the most important inland fishery resources. Detailed action plan has to be prepared to exploit the potential with the involvement of SHGs.

**Table: 4. 42**  
**Reservoirs in Kerala with average fish productivity (2003-04)**

Sl. No.	Name of Reservoir	Area (ha)	Production (Kg)	Productivity (Kg/ha)
1.	Pothundy Reservoir	363	9616	26.49
2.	Mangalam Reservoir	393	40189	102.26
3.	Walayar Reservoir	289	1244	4.30
4.	Kanhirapuzha Reservoir	512	6787	13.26
5.	Chulliar Reservoir	159	12274	77.19
6.	Meenkara Reservoir	259	78679	303.78
7.	Malampuzha Reservoir	2313	-	-
8.	Peechi Reservoir	1200	12642	10.54
9.	Vazhani Reservoir	255	34334	134.64
10	Peruvannamo zhi	-	-	-
	<b>Total</b>	<b>5743</b>	<b>195765</b>	<b>34.09</b>

### Ornamental Fisheries

4.278 Annual world export in ornamental fisheries is around US \$200 million. Asia supplies more than 50 per cent of world supply of ornamental fisheries. New players like Czech Republic and Malaysia are now emerging as suppliers. The major importers are US (28%), Japan (14%), Germany (9%), France (8%) and UK (8%). In value terms fresh water species account for 90 per cent of trade. The state has good potential to exploit the ornamental trade both in the domestic and export markets.

### Demand and Supply Projections of fish in India

4.279 A study was conducted to project the supply, demand and export of fish by species group in India and generated the projections for 2015. The major findings are shown in Box-4.19.

### Export

4.280 The total value of marine products export from the country was Rs. 6091.95 crores during 2003-04 indicating a decline of 11.83 per cent in rupee realization and 6.61 per cent in US \$ realization compared to 2002-03.

4.281 The marine products export from the state during 2003-04 was 76627 MT valued at Rs. 1099.13 crores constituting 19 per cent in terms of volume and 18 per cent in terms of value to

### BOX-4.19

#### Major Findings of a study conducted to project supply, demand and export of Fish by Species Group in India

1. Aquaculture fish supply elasticity were estimated to be 1.56 for Indian Major carps, 1.72 for other fresh water fish and 0.73 for shrimp with respect to own fish price. The effect of input prices to fish supply were negative and inelastic. In case of marine fish, the own fish price elasticity were found to be highly inelastic for all the fish species ranging from 0.28 to 0.50
2. The share of IMC in total fish production will increase to 30 per cent in 2015 from 25 per cent in 2000 and of other fresh water fish to 22 per cent from 19 per cent. The share of pelagic, dimersal and mollusks will decline from 24 to 20 per cent, 11 to 9 per cent and 9 to 7 per cent respectively during this period.
3. Domestic demand of fish is likely to grow at an annual rate of 2.4 per cent between 2000 and 2015. Highest growth in demand is projected for IMC (3.9 %).

ICAR, 2004

Indian marine products export. The export of marine products from the state during the year declined by 6 per cent in quantity terms while in value terms increased by 12 per cent in rupee terms and 8 per cent in dollar terms compared to

the previous year. In spite of muddy moldy smell issue in Japan and anti dumping petition filed against Indian Exporters in USA, the foreign exchange earnings from the State has increased.

4.282 The major export item is frozen shrimp which constitutes 54 per cent in value term of total export from the State during 2003-04 while at national level the corresponding share is 66 per cent. But the declining export share of frozen shrimp from the State is a cause for concern and it declined by 1.88 per cent in quantity terms and 1.15 per cent in value terms over the previous year while at the national level it increased by 11 per cent in value terms in 2002-03.

4.283 The State's share in all India exports has been declining in recent years. The share declined from 27 per cent in quantity terms in 1999-00 to 19 percent in 2003-04 and the share in value declined to 18 per cent from 22 per cent. However during 2003-04, a slight improvement was recorded compared to the previous year. (Table 4.43). European Union continues to be the major market for the marine products exported from Kerala with a share of 48 per cent in value during 2003-04 followed by Japan (19%) relegating USA to the third position (13%). (Fig. 4.18) During 2002-03, USA was in the second position while during 2001-02, USA was again in the third position.

4.284 There was a declining trend in exports due to the adverse market situation prevailing in major markets like USA, Japan and European Union. The Antidumping procedure initiated by the US government affected the Indian shrimp exports to USA from February 2004 onwards. The US department of Commerce has imposed a final antidumping duty of an average of 9.45 per cent on shrimp imports from India (Box 4.20). The final ruling of the International Trade Commission was released in January 2005 confirming the antidumping for imports of non canned shrimp and prawns from Brazil, China, Ecuador, India, Thailand and Vietnam.

**BOX-4.20**

**Antidumping case : USA - South East Asia, South Asia and South America**

There is a new antidumping threat that may have a major impact on developing country sea food producers. This is the challenge made by US Gulf of Mexico Shrimp fishermen that a number of developing countries are dumping farmed shrimp in the USA market. The challengers are the Southern Shrimp Alliance (SSA) who fish the Gulf from the South Eastern States of the USA. Their petition to the US International Trade Commission names six developing countries who are significant low cost shrimp producers proposing that duties between 30% and 267% be levied on imports.

**Antidumping tariff levels suggested by the SSA.**

Brazil	- 40-72%
China	- 119-267%
Ecuador	- 104-207%
India	- 102-130 %
Thailand	- 57%
Vietnam	- 30-99%

These countries produce 75 percent of the global total of farmed shrimp and 26% of all global shrimp supplies. If duties of these levels were to be applied, it would effectively close the USA market for many of these producers. US domestic industry provides only 12% of the total US supply and this comes from a heavily exploited wild fishery. The USA will then inevitably be hugely dependent upon shrimp imports irrespective of this action.

In December 2004, US Commerce department imposed antidumping tariffs on Shrimps imported from the four countries ranging from 9.69% to 67.8% for Brazil, 2.35% to 4.48% for Ecuador, 5.02% - 13.4% for India and 5.79% - 6.82% for Thailand.

**Table -4.43**  
Export of Marine Products from Kerala  
vis-a-vis India

Q: Quantity in Metric Tonnes  
V: Value in Rs. crore

Year		India	Kerala	Share of Kerala (%)
1998-99	Q	302934	70641	23
	V	4627	817	18
1999-00	Q	343031	92148	27
	V	5117	1148	22
2000-01	Q	440473	88852	20
	V	6444	1046	16
2001-02	Q	424470	72756	17
	V	5957	951	16
2002-03	Q	467297	81393	17
	V	6881	1046	15
2003-04	Q	412017	76627	19
	V	6881	1099	15

Source: MPEDA

4.285 Kerala is exporting a major share to EU market. The average unit value of export from India to different countries is shown in Table 4.44. The EU market does not play a dominant role in fixing tropical shrimp prices, rather followed the price trend set by Japan.

4.286 In the EU, the appreciation of Euro vis-a-vis the dollar effectively reduced import prices for shrimp and prices normally are quoted in dollar terms. The depreciation of dollar was a moderating influence on upward price trends in European sea food markets, during 2004.

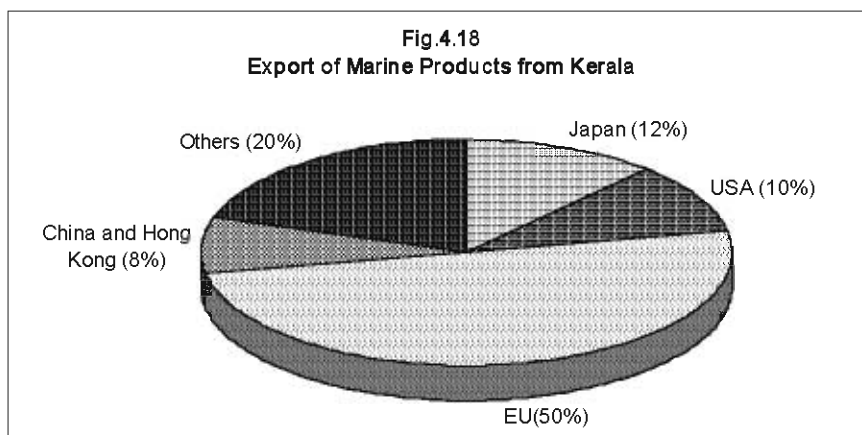
**Table: 4.44**  
Average Unit Value Realisation of Frozen Shrimp exported from India  
for the period from 1997-98 to 2001-02

(Value in Rs. /Kg.)

Sl No	Countries	Years				
		1997-98	1998-99	1999-00	2000-01	2001-02
1.	Japan	356.73	416.65	390.87	470.49	389.38
2.	USA	232.17	238.78	283.82	378.79	360.15
3.	UK	205.74	231.06	250.71	290.90	296.59
4.	China	213.39	216.80	275.85	251.86	221.62
5.	France	155.86	196.97	223.10	257.23	287.33
6.	Germany	221.64	231.95	275.29	286.46	309.88
7.	Kuwait	242.94	-	-	644.06	-
8.	Saudi Arabia	150.82	-	-	169.30	171.66

under the World Trade Agreement stipulates maximum permissible chemicals residue, and other standards. The state has to move towards international standards of product hygiene in order to retain the market share in future. A large number of countries now have specific Hazard

Analysis and Critical Control Point (HACCP) based regulations regarding the safety of fish products. USA was the first to adopt the HACCP based regulation of fish and fish products. All developed countries and a large number of developing countries have already shifted to HACCP based systems.



4.289 Variations in quality standards requirements among importing countries pose the biggest problem. Histamine in Canned Sardine is a good example.

While the US allows for 50 ppm or less, it is as high as 150 ppm for EU. More advanced technologies such as the Zero tolerance residue are employed by EU. In addition to HACCP scheme, new requirements are also introduced like the residue monitoring requirements and heavy metal contamination monitoring in EU.

4.290 The quality control programmes across the value chain have to be strictly enforced to retain the export market share from the state. The Sanitary and Phytosanitary Agreement seems to threaten the sea food exports in the absence of stringent quality control systems. An action plan has to be prepared for the upgradation of quality control infrastructure. Awareness programmes about the quality standards in other countries and its implications for export from Kerala also have to be organised.

**Major developmental Programmes**

4.291 The major developmental programmes implemented during the Plan period include, inland fisheries development, development of Fishing harbours and landing centres and programmes ensuring social and livelihood security of fishermen population. The developmental programmes undertaken in the marine sector include modernisation of country crafts, popularisation of new generation crafts and distribution of suitable components of fishing gear.

**Outlay and expenditure for 2003-04**

4.292 The outlay and expenditure for various schemes implemented in the fisheries sub sector are shown in Table-4.45

**1. FFDA and BFFDA**

4.293 The Fish Farmers’ Development Agencies are functioning in all the districts for

**Table : 4.45**  
**Outlay and Expenditure for 2003-04**

(Rs. lakhs)

Plan	BE	Expenditure
State Plan	2100	1716.92
Centrally Sponsored	1250	1363.73

promoting aquaculture. The FFDA’s have established six fish seed farms. They have enrolled farmers, surveyed 9093 ha water area and organised fish culture in 1550 ha. in 2003-04. During the year 2825 farmers were benefited and fish production was 3146 tonnes from these activities. Also 1062 fishermen were financed during the year. However the development efforts initiated under FFDA’s are yet to make any perceptible impact on the development of inland fisheries. The first FFDA was established in Palakkad district in 1976. Originally it was started as a 50% Centrally sponsored scheme and later in 2000-01 it was converted as a 75% Centrally Sponsored scheme. But there was no release of funds from Government of India from 1998-99 onwards. In some of the districts the functioning is inadequate and further strengthening is needed. During 2003-04 the expenditure was Rs. 25 lakh out of the BE of Rs. 25 lakh (100%)

4.294 Brackish Water Fish/Prawn Farmers’ Development Agencies are functioning in six districts. An area of 455 ha. has been brought under Prawn culture through the promotional programmes implemented during 2003-04. During the year, 387 farmers were benefited. Also 455 farmers were trained. There is 100% achievement with an expenditure of Rs. 45 lakh during the year.

4.295 Multiple agencies are involved in the promotion of aquaculture in the state, working for similar objectives and functional integration is needed to exploit the institutional synergies to maximise output from the sub sector.

**2.(a) Integrated Development of aquaculture in Kuttanand**

4.296 The project envisages augmentation of fish/prawn production by introducing eco friendly



culture and ranching practices in greater Kuttanad region covering 408.29 ha. of waterlogged areas during 2003-04 with the participation of local bodies, utilising an amount of Rs. 85.90 lakhs out of an allotment of Rs. 100 lakhs.

**2.(b) Integrated Development of Pokkali fields**

4.297 An amount of Rs. 90.02 lakhs is utilised from an allotment of Rs. 90 lakhs for the Integrated Development of Pokkali Fields for incurring shrimp production and 2626136 numbers of seeds are stocked.

**3. Fishing Harbours and Landing Centres**

4.298 Vizhinjam, Neendakara, Thankassery, Munambam, Puthiyappa, Mopla Bay and Chombal- have been completed and commissioned. The progress of work in respect

assistance has already been exhausted and the construction is progressing with State Government share. The revised estimates of most of the harbours are pending with Government of India.

4.299 Work on Muthalapozhy, Ponnani, Thottappally and Kayamkulam are progressing. The total revenue collected during 2003-04 was Rs. 252.77 lakhs, out of which Neendakara contributed Rs. 114.75 lakhs about 50 per cent (Appendix 4.52).

4.300 There are 10 landing centres for mechanised boats and 15 for traditional fishermen. Out of the fish landing centres for traditional

**Table -4. 46**  
**Fishing Harbours in Kerala**

(Rs. lakhs)

Sl. No.	Name of Fishing Harbour	Total estimated cost (Rs. in Lakhs)		Year of starting	Expenditure upto March 2004
		Original	Revised		
1.	Vizhinjam	704.00	1583.00 *	1987	1501.988
2.	Muthalappozhi	1366.00	-	2000	495.822
3.	Thankasseri	1980.50	4385.50 *	1991	4041.401
4.	Neendakara	585.00	622	1982	821.989
5.	Kayamkulam	624.60	1770.00	1994	971.425
6.	Munambam	1167.20	1895.80 *	1988	1784.811
7.	Puthaiappa	527.00	962.50	1988	1185.112
8.	Chombal	556.00	975.00	1992	898.301
9.	Mopla Bay	564.00	816.00	1992	1055.048
10.	Ponnani	2759.40	-	2001	471.306
11.	Thalai	1370.00	1980 *	-	47.266
12.	Thottappally	1458.30	-	2004	

Source: Harbour Engineering Department

\* Revised Estimates submitted to Government for sanction

of the ongoing Harbours and landing centres is given in Appendix.4.51 and Table 4.46. All the harbours are constructed with 50% Central assistance. The three projects Thankassery, Munambam and Neendakara, the central

fishermen, eight have been completed. Work on Pollathai is progressing. Two centres at Poovar in Thiruvananthapuram and Kanjanhad at Kasargod could not be commenced due to the non availability of land and resistance from local

people. Proposed centre at Vizhinjam North has been abandoned and the one proposed at Quilon was dropped in view of the development of Thankassery Port.

4.301 The construction of fishing harbours and landing centres has to be done on a strict project mode with different methods of financing and participation. a prioritized action plan has to be prepared for the completion of all long pending infrastructure projects.

#### 4. Social Security and livelihood support to fishermen Community

4.302 A number of programmes are under implementation for providing social security and livelihood support to the fishermen community. They include saving-cum-relief scheme, NFWF housing, HUDCO assisted housing, DANIDA model sanitation, Group insurance to fishermen etc. The major highlights are given in Appendix-4.49

4.303 Under NFWF assisted housing scheme, under the Model villages development Programme, 8729 houses were constructed spending Rs. 35.02 crores during Ninth Plan. During the first two years of Tenth Five year plan, 1945 houses were constructed spending Rs. 777.88 lakhs. All active fishermen are covered under group accident insurance scheme. About 2.2 lakh fishermen were insured under the scheme. Assistance is provided to accidental death/missing of fishermen while fishing, permanent and total disability and partial disability. During 2003-04 Group accident claims were availed by 138 fishermen.

4.304 The Kerala Fishermen Welfare Fund Board is the implementing agency for welfare and relief schemes to the fishermen in the state. The Board has 220279 registered contributing fisher folk and 43075 registered contributory allied workers. Besides there are 27488 fishermen and widow pensioners and 642 allied workers pensioners. Details are shown in Appendix. 4.50

4.305 The saving cum relief scheme is for providing assistance to fishermen during lean period by mobilizing their savings during the peak season. This is a 50% CSS and during 2003-04, 1.16 lakh beneficiaries were assisted and the total expenditure was Rs. 6.54 crores.

## CO-OPERATION

The Co-operative Sector in India has emerged as one of the largest in the world with more than 5.45 lakh societies of various types with a membership of more than 23.62 crore as on 31<sup>st</sup> March 2002.

4.307 As co-operative movement is a people's movement, the restrictions imposed by government has affected the health of the sector. The Planning Commission constituted the Bhabha Perakash Committee towards the end of 1980s. The Report of the Committee (1991) is a landmark in co-operative reforms. Based on the report, Government of India has circulated to state governments suggestions for effecting necessary changes in the Co-operative Laws. The Law Reforms Committee in Kerala constituted under the chairmanship of the Law Minister has proposed the detailed draft of the Kerala Self-Reliant Co-operative Bill - 2002 which is under the consideration of the Government. Early enactment of the law will help to reform and revitalize the co-operative sector in the state.

4.308 In Kerala the co-operative movement had spread its wings in almost all walks of life. The spread and growth of co-operatives in different sectors were nurtured under development plans with government initiative and government finance. As stated above, this has had its negative aspects also. There are 12457 co-operatives under the Registrar of Co-operative Societies and 9342 co-operatives under other functional registrars like Director of Industries and Commerce, Director of Handloom, Director, Coir Development, Secretary, Khadi and Village Industries Board, Director of Fisheries and Director of Dairy Development. Out of the 12457, only 10236 are functional, 1671 are dormant and 550 are under liquidation. The total number of co-operatives are classified into nine categories and is given in Table-4.47

4.309 With large expansion of co-operatives in almost all the sectors, signs of structural and performance weaknesses and regional imbalances have become apparent. The reasons for such weaknesses could be attributed to the large percentage of dormant membership, heavy dependence on government assistance, political interference, lack of professional management, overdues etc. Concrete steps are necessary to revitalise the cooperatives to make them vibrant,

**Table: 4.47**  
**Co-operatives under the control of Registrar of Co-operative Societies**

Sl. No.	Type of Societies	Total No.	Functional No.
1	Credit Co-operatives	1730	1668
2	Marketing Co-operatives	543	315
3	Consumer Co-operatives	4757	4197
4	Processing Co-operatives	8	5
5	Housing Co-operatives	369	294
6	SC/ST Co-operatives	797	575
7	Health Societies	172	94
8	Women Co-operatives	796	640
9	Other Co-operatives (miscellaneous)	3285	2448
	<b>Total</b>	<b>12457</b>	<b>10236</b>

democratic organisations with professional management and economic viability. In an increasingly competitive environment, cooperatives will cease to exist unless these can be ensured.

India constituted a Task force in 2004 under the Chairmanship of Prof. A Vaidyanathan to formulate a practical and implementable plan of action to rejuvenate the rural co-operative credit structure. The report was submitted on 30<sup>th</sup> December 2004. The major recommendations of the report are shown in Box-4.21

4.310 The Finance Ministry, Government of

**BOX-4.21**

**Major Recommendations of Task Force Report on  
 Revival of Co-operative Credit Institutions**

- ◆ Special financial assistance to wipe out accumulated losses and strengthen its capital base
- ◆ Institutional restructuring to make for democratic, autonomous and self reliant institutions.
- ◆ Radical changes in the legal framework to empower the RBI to take actions directly
- ◆ Qualitative improvement of personnel in all tiers and at all levels.
- ◆ Reengineering must cover all the tiers of the Co-operative credit structure. It meant include assistance for restoring the PACS to acceptable levels of financial health. Recapitalisation be limited to institutions that conform to the standards of eligibility.
- ◆ The accumulated losses of the CCS units, must be estimated afresh and in a transparent manner, by specially designated auditors.
- ◆ In view of the huge rates of default characterizing the CCS, it was recommended to bring all tiers of the CCS, under the Risk Weighted Asset Ration framework. All CCS units (PACs, DCCBs, SCBs) be initially supported with external resources wherever needed to achieve a minimum CRAR of 7%.
- ◆ In order to reduce governmental control over co-operatives, CC institutions shall return the equity received from the State governments over time. Soft loan support be provided to institutions that do not have the where withal to return state government equity.
- ◆ There is a need to standardize the training programmes and curricula across the country. A joint group be set up under the Chairmanship of NABARD to operationalise this.
- ◆ NABARD may be entrusted with the responsibility of implementing the recommendations of the report. Task force estimates a support of Rs. 360 crore to NABARD over a period

( Cont.....)

**BOX-4.21**

of 5 years to implement the technical assistance component. Total commitment for implementing the package is estimated at Rs. 10,839 crores with a share of 53% by GOI, 31% by States and 16% by CCS units. Apart from this Task force recommends a contingency amount of Rs. 4000 crores to implement the financial package. The sharing formula purposed is :

PACS - Government of India to bear for losses arising out of all the credit business of PACs. State Government to bear the losses on account of non-credit business of PACs.

DCBs - Accumulated losses from the loans for agriculture including the direct losses to individuals and units other than PACs would be borne by GOI. DCCBs would have to bear the losses arised out of any other loans. The accumulated losses from the loans of DCCBs to other co-operatives should be covered by the State governments. Similar method is proposed by SCBs.

- ◆ The criteria recommended for identifying institutions requiring resource support are PACs
  - Gross interest margin  $\geq 50\%$  of operating expenses and recovery  $\geq 50\%$  of demand

DCCBS - Positive net worth and those with negative net worth with deposit erosion of less than 25%

SCBS - Positive net worth and those with negative net worth with deposit erosion of less than 25%

- ◆ The Quantum of assistance be based on audited balance sheet as at the end of March 2004.
- ◆ At the end of March 2004, State Governments had extended guarantee to the extent of Rs. 4495 crores in favor of DCCBs and SCBS for the loans issued by them. Guarantee aggregating Rs. 827 crores and Rs. 337 crores had been involved by the borrowing agencies. Considering the financial problem, of the State Governments, soft loans be extended to tate governments to pay these amount the cooperatives.
- ◆ Reforms - State Governments to make legislative amendments to enable RBI to exercise its regulating powers under the BR Act directly and not through Registrar of Co-operatives. Rural financial cooperatives should be dealt with as a distinct and separate class and recommends incorporation of a separate chapter in the extant co-operative Societies Act for the cooperative banks. A Model Bill also was proposed by the Task Force. State Government should agree to make a formal commitment to make specialized changes in their legal and administrative framework relating to the functioning of co-operatives. Release of funds will be linked to the progress to the following steps like retirement of contribution by State Government in such credit societies, reconstitution of elected Board of management, inclusion of Professionals as CEOs as per the qualifications prescribed by RBI, abolishing the cadre system of all employees, and operational freedom for CEOs
- ◆ All thrift and credit co-operatives be requested to increase owned capital to ensure a minimum of 7% CRAR.

*Ministry of Finance, GoI, 2004*

4.311 In deciding on the Report of the Task force, the question of Central and State Powers, the need for RBI Control etc. will come up for discussion. It is to be hoped that the issues will be settled in the larger interests of healthy and viable growth of cooperative credit structure.

### Health Co-operatives

4.312 A United Nations Global Survey on Co-operative enterprises in the health and social care sectors found that co-operative health services operate in more than 50 developed and developing countries. In many industrialized countries health co-operatives came into existence as an alternative mechanism for the delivery of health services. Health co-operatives continued to grow in Japan as a response to the inadequacy of public as well as private for profit services. Italy has the most advanced and extensive co-operatives. In US and Canada also health co-operatives cater to a significant share of population. Health co-operatives exist in several developing countries such as Bolivia, Brazil, India, Panama, Philippines, South Africa, Sri Lanka and Tanzania. In Sri Lanka and India, the government financially supports the co-operatives.

4.313 In the developed countries health care co-operatives are expanding rapidly to take care of elderly people. There are about 40 care co-operatives in UK and the sector is expanding rapidly. In Japan 30,000 care helpers have been trained.

4.314 Kerala is one of the few states where medical co-operatives have been set up in large numbers under government patronage. The medical co-operatives developed during the early 1970s.

4.315 The salient observations of a study conducted by the Centre of Social medicine and Community health of JNU and published in the Croatian Medical Journal are shown in Box-4.22. In the coming years, of market oriented health sector reforms the role of professionally run medical Co-operatives assume greater importance in the State to enhance access by the poor.

#### BOX-4.22

#### Salient Observations of a study by Centre of Social Medicine and Community Health, JNU

- ◆ The decline of the medical co-operatives in Kerala started in the 1980s, after the coverage of Public sector health services, coupled with private sector coverage.
- ◆ Out of 8 cooperative dispensaries, 4 were functioning sub optimally due to lack of working capital and of committed staff.
- ◆ Employees perceived service conditions as unsatisfactory
- ◆ Most of the co-operatives lacked the decision making power due to over politization.
- ◆ Physicians and other technical staff were under represented in the governing body.
- ◆ Out of 77 Co-operative hospitals, 57 are functioning at an optimal level. These are profit oriented with sufficiently large catchment areas, and can afford high tech diagnostic and therapeutic facilities. They can even moderate the exploitation practices of the private hospitals.

*(Croatian Medical Journal, 2003 44 (5))*

#### Support by NCDC

4.316 NCDC has emerged as a developmental financing institution for the co-operative sector in the country. The major objective of the Corporation is to promote strengthen and develop institutions of farmers co-operatives for incurring production and productivity and instituting post harvest facilities for augmenting income. The Corporation's focus is on the programmes of agricultural inputs for production, processing, storage and marketing of agricultural produce and supply of consumer goods. In the non-farm sector, the Corporation's endeavor is to equip co-operatives with facilities to promote income generating activities with special focus on weaker sections of the community and rural poor such as handloom, sericulture, poultry, fisheries etc.

4.317 As on March 2004, the Corporation has disbursed an amount of Rs. 641.06 crores comprising Rs. 612.90 crores as loan and Rs. 28.16 crores as subsidy to the Government of Kerala for various co-operative development programmes. This amounts to 8.33 per cent of the total amount released in the country. The major thrust areas of NCDC finance in Kerala are agro-

processing, agricultural marketing, integrated co-operative development projects focussing on micro level co-operatives, consumer, storage programmes, weaker section programmes covering fisheries, SC/ST Co-operatives, Coir etc. The amount released by NCDC from 1962-63 onwards is given in Table -4.48

**Table 4.48**  
**Year wise release of NCDC loans with interest rates**  
*(Rs. Crores)*

Year	Release of fund	Inte rest rate (%)
1962-63 to 92-93	122.08	
1993-94 to 98-99	195.47	
1999-00	56.07	13.75
2000-01	69.04	13.75
2001-02	51.64	13 – 12.25
2002-03	50.18	11.50 – 10.5
2003-04	96.58	7-9
<b>Total</b>	<b>641.06</b>	

4.318 The total amount disbursed in 2004 was Rs. 96.58 crores, out of which Rs. 63.77 crore (66%) was availed by the Co-operative department. In the disbursement, major share (Rs.16.10 crore) was for ICDP, followed by co-operatives of weaker sections like fisheries, handloom, coir, SC/ST co-operatives (Rs.15.21 crore), agro processing co-operatives (Rs.13.84 crore) and so on. The activity-wise and year-wise sanction and release of assistance from NCDC in 2002-03 and 03-04 are furnished in Appendix. 4.53 . and Appendix. 4.54

**Primary Agricultural Credit Societies (PACS)**

4.319 Kerala has an elaborate and efficient rural credit structure administered by 1655 Primary Agricultural Credit Societies (PACS) and 44 affiliated Primary Co-operative Agriculture and Rural Development Banks supported by the Central and Apex Co-operative banks. As on March 2004, there were 1655 PACS out of which 1600 are functional 26 are dormant and 29 are under liquidation. The 1600 PACS are functioning with a total membership of 2.30 crores, paid up share capital of Rs. 409.44 crores and reserves of Rs. 569.87crores. Out of 1600 functional PACS, 884 societies were on loss and 703 were on profit and 13 nos. without loss or profit.

4.320 The performance of the co-operatives during the year under report was encouraging. The total loan disbursed in 2003-04 was Rs.8984.90 crores against that of Rs.8750 crores in 2002-03. The disbursement for short and long term loans declined whereas the medium term loan increased. Out of total loan disbursement 65 per cent was for short term, 32 per cent for

medium term and 4 percent for long-term purposes. The disbursement for agricultural purposes decreased substantially both in absolute and in percentage terms. In percentage terms, the short-term loan for agri purpose has decreased by 49 per cent and long term loan by 32 per cent over the previous year. Increase in the

disbursement for non agricultural purposes indicates that the co-operatives are deviating from their prime objective and are looking for new areas for the growth of their business.

4.321 Even though the co-operatives are disbursing loans other than agricultural purposes for making good margin for their business, a good number of societies are working on loss. Out of the 1600 PACS, which are

functional, 884 are on loss (55%), the loss amount being Rs.399.40 crores.

4.322 The credit operations of the Primary Agricultural Credit Societies indicate that, during the year under report, the average membership increased from 13882 to 14420, deposits from Rs.536.00 lakhs to Rs.579.00 lakhs, working capital to Rs.773.00 lakhs from Rs.653.00 lakhs, the average deposit per member to Rs.4012.00 from Rs.3870.00 . The increase in the average deposit per member and per society shows the strength of the movement. The percentage of borrowing members to total members declined which indicates that the deposits have not been deployed in a profitable manner. The recovery performance at the ground level was also not encouraging. The percentage of overdue to demand and overdue to outstanding stood at 34.8 per cent and 28.75 per cent respectively during the year under report where as the position in the previous year was 25.36 per cent in both the cases. Selected indicators and credit operations of PACS are given in Appendix 4.55 and Appendix 4.56.

4.323 A Working group was constituted by Government of Kerala to consider in detail issues and to suggest appropriate course of action covering strengthening of the cooperative credit system to enhance the flow of credit to agriculture, streamlining the implementation of the RIDF/ AICF and strengthening the coordination between NABARD and State government. The major recommendations of the working group pertaining to strengthening of the cooperative credit system to enhance the flow of credit to agriculture are given in Box-4.23.

**BOX-4.23**

**Issues and major recommendations of the Working Group for strengthening of the cooperative credit system to enhance the flow of credit to agriculture**

Issues identified	Recommendations
<p>1. Decline in Agricultural lending</p> <p>The average lending by the cooperatives to the agriculture sector was as low as 23 percent in 2003-04. The co-operatives are not finding it profitable to invest their high cost of funds in the agriculture sector.</p>	<ol style="list-style-type: none"> <li>1. Co-operatives should adopt cost saving measures such as rationalization of interest rate on deposits, curtail of operating expenses.</li> <li>2. Scale of finance for various crops should be fixed realistically. The scale should be indicative only.</li> <li>3. All eligible borrowers of PACs must be issued Kissan Credit Cards.</li> <li>4. State Government should provide all supporting measures such as creation of marketing infrastructure, price support, timely supply of seeds etc.</li> </ol>
<p>2. Decline in recovery rate and spiraling of Non-performing Assets (NPAs)</p>	<ol style="list-style-type: none"> <li>(i) Improve the quality of lending &amp; strengthen the post disbursement supervision by the three tier credit structure.</li> <li>(ii) Government machinery should support banks in recovery by authorising the bank officers also to exercise powers of sale officers for the purpose of recovery of bank dues.</li> <li>(iii) Introduction of computerised information system linking all co-operative banks.</li> </ol>
<p>3. Increase in loss-making co-operatives</p>	<ol style="list-style-type: none"> <li>(i) The banks/PACs should be given the freedom to decide the interest rates on deposits/loans keeping in perspective their viability, affordability and profitability.</li> <li>(ii) Evolve suitable norms for share capital infusion in co-operatives by the State government.</li> <li>(iii) Enforcing &amp; conducting of financial audit by Chartered Accountants.</li> <li>(iv) A diagnostic study by an external agency must be made mandatory for all DCBS &amp; PACS which are making losses for more than two years.</li> </ol>
<p>4. High cost of management</p>	<ol style="list-style-type: none"> <li>(i) The cost of management in the co-operatives should be brought to a level of one to two percent of working funds over the next five years.</li> <li>(ii) The volume of business and productivity of staff have to be increased.</li> <li>(iii) Redeployment of additional staff, liquidation of unviable PACS, increasing the coverage of active members, enroll new members, diversify the loan portfolio, closing of the unviable branches etc. should be made</li> </ol>
<p>5. Reorganization of PACS</p>	<ol style="list-style-type: none"> <li>(i) PACS should be reorganized in the ratio of not more than one PACS for one Panchayat. The unviable PACS may be amalgamated/liquidated in a phased manner.</li> <li>(ii) The DCBS should have administrative control over all PACS and should be fully responsible for monitoring their operation.</li> </ol>
<p>6. Declining 'active membership' of co-operatives</p>	<ol style="list-style-type: none"> <li>(i) More active members may be brought into co-operative fold.</li> <li>(ii) Steps may be taken to improve client services and simplify loan procedures to enhance the share of borrowing members in the co-operative structure.</li> </ol>

**One Time Settlement Scheme (OTS)**

4.324 The One Time Settlement Scheme was implemented for the first time in the co-operative sector with a view to reducing the overdue position of the co-operative institutions and extend some relief to the loanees who could not repay the loan in time due to drought/flood and consequent loss of agricultural products. The scheme was implemented in all the credit co-operative institutions. The benefit so far covered 4.61 lakh people. The scheme was extended to 31st March 2005. The societies were able to collect Rs. 954.67 crore of overdue amount under the scheme so far. The scheme has helped in reducing the overdues as well as NPAs of credit societies.

Under the Scheme ‘assistance to PACS’ share was given to 26 societies. So far, 10708 groups have been formed under 613 PACS. Out of them, 5341 groups are functioning with profit and 2043 groups are running with loss.

4.327 During 2003-04, seven Processing and Marketing Societies were assisted by way of share capital and loan. Financial assistance was availed from NCDC for promoting processing cooperatives. An amount of Rs.193.46 lakhs was spent on state share for availing the NCDC assistance. HOPCO, Pala Marketing Co-operative Society and Meenachal Rubber Markets, Kannur Cattlefeed Co-operative Society and Agreen Co, Mullankolly Vanitha Mutipurpose Co-operative Society etc. are the main processing units assisted under the scheme during 2003-04.

**A Brief Review of Plan Schemes 2003-04**

4.325 The budget provision for the year 2003-04 was Rs.15.00 crore and the expenditure was Rs.10.50 crores. Sub sector wise financial achievement during 2003-04 is shown in Table-4.49

4.328 Financial assistance was provided to State Co-operative union by way of grant –in-aid for running Co-operative Training Centre and implementing schemes relating to co-operative education, training, research and for conducting examination. There are 9 co-operative training centres functioning under the control of State Co-operative Union. 4 of them are exclusively for SC/ST candidates. Two advanced management institutes of co-operatives ie. ICM, Thiruvananthapuram, ICM Kannur are under the control of National Council for Co-operative Training, New Delhi. During 2003-04 an amount of Rs. 49.99 lakhs expended out of Rs.

**Table:4.49**  
**Financial Achievement during 2003-04**  
*(Rs. lakhs)*

Sl. No	Sub Sector	Financial Achievement
1	Credit Co-operatives	84.57
2	Processing Co-operatives	193.46
3	Consumer Co-operatives	78.15
4	Housing Co-operatives	100.00
5	Research, Education and Training	49.99
6	Administrative Reforms	163.76
7	Modernisation and Administrative Reforms	11.12
8	Other Co-operatives	369.00
	<b>Total</b>	<b>1050.05</b>

4.326 In order to strengthen the co-operative base through commercial operations 43 per cent of the total outlay (Rs.650.00 lakhs ) was earmarked for rehabilitation programme and expansion and diversification of activities of co-operatives. Expenditure to the tune of Rs.325.00 lakhs had been incurred for providing assistance to the Co-operative Hospital Complex, Kannur.

50.00 lakhs for imparting training. For the modernization and computerisation of Co-operative Department, Rs.11.12 lakhs has been spent. Government have sanctioned share capital contribution of Rs. 100.00 lakhs to Primary Housing Co-operatives during 2003-04.

4.329 In the State PACs are also involved in the promotion of Self Help Group (SHGs) scheme



for ensuring agriculture production and thereby providing employment and livelihood to poor farmers and artisans. 10,708 groups have been so far formed under selected 613 PACS. The main crops cultivated by the groups are paddy, vegetables, banana, tapioca etc. Poultry farming, dairy farming, pig farming, goat farming etc. have also been done under this scheme.

4.330 An important scheme implemented in the Consumer sector was 'Neethi Stores' and 'Neethi Medical Stores'. Both are running under the auspices of Kerala State Co-operative Consumer Federation. In the State, 901 Neethi Stores and 135 Neethi medical stores are functioning and 17 Neethi Stores are run directly by the Federation and the remaining stores are run by the PACS.

**Deposit Mobilisation Campaign by Co-operative Societies**

4.331 Deposit Mobilisation campaigns by co-operative credit institutions continued during the year under report also. During 2003-04, against the target of Rs.450.00 crore the co-operatives mobilised Rs. 920.00 crore. The achievement being 204 per cent.

4.332 Year wise target and achievement is given in Table 4.50

Chethuthozhilali Co-operative Societies etc. are some of the Co-operative Societies which are organised for the purpose of employment generation. There are also Social Welfare Co-operative Societies, Cultural Co-operative Societies, Farming Co-operative Societies, Leprosy Patient Co-operative Societies, Matsya Thozhilali Co-operative Societies, Photographers Co-operative Societies, Tailors Co-operative Societies etc. Government extend financial assistance to these societies by way of share capital contribution, grant, loan and subsidy. During 2003-04 assistance was given to 75 societies. An amount of Rs.44.00 lakhs has been given as assistance to the miscellaneous co-operatives during 2003-04.

**Agricultural Marketing Co-operatives**

4.334 Kerala's agricultural economy is dominated by cash crops like Rubber, Coconut, Arecanut, Spices etc. which are largely concentrated in the small farm sector and marketing support for the products is highly essential. In the liberalised economy the challenges in the marketing front has to be addressed through organised institutional support and the role of marketing cooperatives are important to address the new challenges.

**Table-4.50**  
**Targets and Achievements of Deposit Mobilisation Programme of Co-operatives in Kerala**

*(Rs. in Crores)*

Year	Target	Achievement	Achievement (%)
2000	200.00	775.78	387.89
2001	200.00	1026.86	513.43
2002	200.00	853.20	426.66
2003	400.00	909.61	226.00
2004	450.00	920.00	204.44

**Miscellaneous types of Co-operatives**

4.333 Miscellaneous types of co-operatives has been organised in the state mainly for the purpose or generating employment opportunities to the unemployed youth and the weaker sections. Co-operative Hospital and Dispensaries, Education Co-operatives, Vanitha Co-operative Societies, Motor Transport, Autorikshaw and Taxi Drivers Co-operative Societies, Tailors Co-operative Societies, Washermen Co-operative Societies,

**Central Arecanut and Cocoa Marketing and Processing Co-operative Limited (CAMPCO)**

4.335 Central Arecanut and Cocoa Marketing and Processing Co-operative Ltd. (CAMPCO) is a joint venture of the Governments of Kerala and Karnataka, registered under the Multi State Co-operative Societies Act of 1984. The area of operation of this co-operatives extends to the

entire states of Kerala and Karnataka. However the marketing of Arecanaut, Cocoa and their products cover the whole country. CAMPCO has 118 procurement centres and 13 sales depots all over India. In order to increase local consumption of cocoa based products CAMPCO has a chocolate manufacturing unit at Puttur, 50 kms. from Mangalore. A new Research and Development wing has also been opened to study pricing. During 2003-04, the procurement and sale of arecanut was 43877 tonnes and 43860 tonnes valued at Rs 291.46 crores and Rs.304.83 crores respectively. In the case of purchase of cocoa also, there was a slight increase in the purchase of wet beans and dry beans compared to the last year. Operations of CAMPCO is given in Appendix-4.57.

#### **Kerala State Co-operative Consumer Federation (Consumer Fed.)**

4.336 Kerala State Co-operative Consumer Federation Ltd. is the apex institution of consumer co-operatives in the state. It started to function in 1965 with 57 member societies. The main objective of the federation is to save the public from the exploitation of middlemen. The Federation has implemented many of the government sponsored welfare schemes like Neethi Medical Stores, Neethi Gas, Neethi Stores etc. The sales turnover of the Federation during 2003-4 was Rs.331.00 crores against that of Rs.306.00 crores during the previous year. The Federation is working on profit for the last few years but the profit earned is not sufficient to wipeout the accumulated loss of the previous years.

#### **Kerala State Rubber Marketing Federation Limited (Rubber mark)**

4.337 The federation was established in 1971, with 37 co-operative rubber marketing societies and Rubber Board and Government of Kerala as members. The activities of the Federation includes marketing and export of natural rubber, distribution of fertilizers and Agriculture inputs, and processing of natural rubber Product manufacturing etc. The pfederation has procured 77447 tonnes of rubber valued Rs.300.00 crores through different procurement channels during 2003-04. The total sales volume for the year was 75672 tonnes valued at Rs. 285.00 crores.

#### **Integrated Co-operative Development Project (ICDP)**

4.338 Integrated Co-operative Development Project (ICDP) focuses on over all development of selected districts through co-operative efforts in the area of agriculture and allied sectors with the financial assistance of NCDC. ICDP covers all the districts in the state by providing financial assistance to PACS, PAMS, SC/ST co-operatives for infrastructural facilities such as godown, retail outlet, cash counters, iron safe, strong room, furniture etc. Information Technology has received a big boost under the project through computerisation of societies. As on March 2004, NCDC sanctioned a total sum of Rs. 148.43 crores comprising Rs. 136.97 crores as term loan and Rs. 11.46 crores as subsidy for the implementation of ICDP in 14 districts. ICDP have already been implemented in 6 districts. Kannur, Malappuram, Kasaragod districts got extended the implementation period upto 31.3.05.

#### **Co-operative Academy of Professional Education – CAPE**

4.339 The prime objective of setting up of the Academy was to establish new institutions for professional education under Co-operative sector in the State. Under this Academy, a Co-operative Medical College at Kochi and Five Engineering Colleges at Vadakara, Thrikkaripur, Thalassery, Perumon and Kidangoor were established. The construction of main buildings for the five Engineering Colleges and Medical college is in progress. Essential items of machinery, equipment and material required for establishing various laboratories and workshops were installed in respective institutions.

#### **Kerala State Co-operative Employees Welfare Board**

4.340 Government of Kerala has constituted a welfare fund for the employees of co-operative societies including commission agents/salesman in the co-operative institutions. The main objective of the Welfare Board is to raise and administer funds for the welfare of the members of co-operative employees and to alleviate the distress of employees and their dependents. Till march 2003-04, 35263 employees from 4485 co-operative societies were admitted as the members of

Welfare Board. As on March 2004, an amount of Rs.16.41 crores was available under the welfare fund after the total disbursement of Rs.3.25 crores for various welfare activities.

**Swarozgar Credit Card Scheme**

4.341 NABARD in consultation with Government of India and RBI formulated the Swarozgar Credit Card (SCC) scheme for the benefit of small borrowers to take care of their investment and working capital requirement in the non farm and service sectors both in rural and urban areas. The scheme was circulated among commercial banks by RBI and to Co-operative banks and RRBs by NABARD in September 2003. As on 31<sup>st</sup> March 2004, 106 RRBs, 20 commercial banks and 21 co-operative banks had introduced the scheme and issued 28,925 cards involving credit limit of Rs. 64.26 crores.

**Co-operative Development Fund**

4.342 NABARD constituted a Co-operative Development Fund during 1992-93 with the objective of supporting various developmental initiatives of co-operative credit institutions to improve their functioning by way of grants or loans depending upon the purpose. This fund augmented every year through contribution from NABARD's profits. The various activities assisted are training of personnel of co-operative banks, computersiation, establishment of business development cells, cost towards publicity of KCC scheme and other activities.

**Kissan Credit Cards (KCC)**

4.343 Kissan Credit Card scheme was

introduced in 1998-99 as an innovative scheme for issuing short term loan for seasonal agricultural operations to farmers in a flexible and cost effective manner. Banks were advised to intensify plans for issuing Kissan Credit Cards (KCCs) to all eligible borrowers by March 2004 to enable them to purchase agricultural inputs and draw cash for production needs. A total of 4.14 crores KCCs were issued up to March 31<sup>st</sup> 2004 in the country against 3.13 crores in 2003 March. A personal insurance package to the Kissan Credit Card holders was continued in the Union Budget and to cover them against accidental death or permanent disability up to a maximum amount of Rs. 50,000/- and Rs.25,000/- respectively. The premium burden for this is shared by the card issuing institutions and the KCC holders in the ratio of 2:1. It was operationalised in July 2001.

4.344 Agency-wise and Statewise KCC issued upto June 2004 in the country are given in Table - 4.51

4.345 In order to generate greater awareness

**Table: 4.51**  
Agency-wise and State - wise, Kissan Credit Cards Issued upto 30 June 2004

	( lakhs)			
Southern States	Co-operative Banks	Regional Rural Banks	Commercial Bank	Total
Andhra Pradesh	34.35 (13.82)	7.71 (18.91)	18.60 (17.99)	60.66 (15.45)
Karnataka	11.25 (4.50)	4.62 (11.33)	8.54 (8.26)	24.41 (6.22)
Kerala	6.36 (2.56)	2.22 (5.45)	5.98 (5.78)	14.56 (3.71)
Madhya Pradesh	21.30 (8.57)	1.55 (3.80)	3.97 (3.84)	26.82 (6.83)
Maharashtra	30.03 (12.08)	0.94 (2.31)	7.03 (6.8)	38.00 (9.68)
Tamil Nadu	13.00 (5.23)	0.97 (2.38)	11.04 (10.68)	25.01 (6.37)
<b>All India</b>	<b>248.57</b>	<b>40.77</b>	<b>103.38</b>	<b>392.72</b>

Source: Credit Division, Ministry of Agriculture, New Delhi.

about the scheme and to ensure coverage of all eligible farmers NABARD has taken certain initiatives such as conduct of orientation and training programmes for Bankers, educating and guiding farmers on the effective use of KCC facility, using postal media for publicity through 10 lakh Meghdoot Post Cards in rural areas and extending financial support to co-operatives and RRB's for various publicity measures.

4.346 The RBI commissioned a study by the National Council for applied Economic Research (NCAER) for conducting a National Impact Assessment Survey to assess the weaknesses of the KCC scheme and to offer suggestions to make it more effective in providing adequate and timely credit to agriculture. The Survey was carried out in 11 representative states, covering a sample of

4337 KCC holders, 865 non holders of KCC and 433 bank branches.

4.347 The major findings are given in Box. 4.24 In Kerala, the Kissan Credit Card system has been introduced through PACS and 5 lakh cards have been issued so far and a credit limit to the tune of Rs. 800.94 crores have been issued.

**BOX-4.24**

**National Impact Assessment Survey of KCC**

**Advantages derived from the scheme**

- ◆ Augmentation in flow of credit to the agriculture sector
- ◆ About 6% decrease in cost of borrowings for farmers
- ◆ Cost of borrowings of KCC holders from formal sources about 3% lower than those for non KCC holders.
- ◆ Significant drop in the number of borrowers depending exclusively on informal sources for this short term credit needs.
- ◆ Reduction in cost of borrowings from informal sources by about 3%
- ◆ Significant savings in time spent in taking short term agricultural loans
- ◆ Decline in cost of delivering credit due to simplification in procedures.

**Scope for fine tuning**

- ◆ Banks still impose too many undue restrictions on the issues of KCCs.
- ◆ Cardholders are unable to use KCCs in branches other than the ones issuing them due to the instructions imposed by banks.
- ◆ Generally, there are no incentives/rewards for timely payments.
- ◆ Credit limits sanctioned by banks are largely inadequate.
- ◆ Awareness/implementation level in respect of the Personal Accident Insurance is quite low.

*Source: RBI Annual Report.*

## CHAPTER 5

# WATER RESOURCES

Water has been a key issue on the domestic and international agenda for the last 30 years starting with the 1<sup>st</sup> International Conference on water in 1977. The total water resources in the world are estimated in the order of 43750 km<sup>3</sup>/year. At the continental level, America has the largest share of the world's total freshwater resources with 45 per cent, followed by Asia with 28 per cent, Europe with 15.5 per cent and Africa with 9 per cent.

5.2 Nine countries are the world giants in terms of internal water resources accounting for 58 per cent of the world's natural fresh water (Table - 5.1). India has the ninth place in terms of internal water resources. Thirty three countries depend on other countries for over 50 per cent of their renewable water resources.

**Table -5.1:**

**Total internal water resources of selected countries**

Country	Total Internal water resources: (km <sup>3</sup> /year)
Brazil	5418
Russian Federation	4313
Canada	2850
Indonesia	2838
China, Mainland	2812
Colombia	2112
United States of America	2000
Peru	1616
India	1261

Source: FAO, 2003

5.3 As far as the use of fresh water in the world is concerned, the major share (71%) is consumed for agriculture followed by industry (20%) and domestic (10%). In the case of low income countries, the percentage share for agriculture is 90 where as in the high income countries, the share is comparatively less (42%). In India the major share of fresh water withdrawal

is for irrigation (92%) and in Kerala the share for agriculture is 71 per cent.

5.4 The fresh water availability of Kerala according to the available estimates (1974) is 77.35 Billion Cubic Meters including re-generated flow from ground water. Nearly 40 percent of available water resources is lost as run off. The utilisable resources as per the assessment is around 42 BCM whereas the requirement for water for various purposes like irrigation, domestic and saline water intrusion etc. is reckoned at 49.70 BCM. (The purpose-wise annual fresh water withdrawals is shown in Table 5.2.)

5.5 Water sector has undergone basic changes in recent years due to perceived scarcity.

While focus in the past was mainly on investment in physical structures, recent developments are associated to a great extent with improved management, conservation and institutional changes. "Optimal sustainable development, maintenance of quality and efficient use of country's water resources to match the growing demands on the precious natural resource with active involvement of all stake holders in order to achieve accelerated, equitable economic development of the country" is the vision for integrated water resources

development and management.

5.6 The pattern of demand for water in Kerala is undergoing gradual but continuous change towards increasing pressure for drinking and other household and commercial needs relative to the demand for irrigation which is also declining towards less water demanding perennial crops in lieu of seasonal food crops.

Table 5.2.

## Purpose-wise Annual Fresh Water Withdrawals

Sl. No	Country/Catgory	Annual Fresh Water Withdrawals (%)		
		Agriculture	Industry	Domestic
1	World	71	20	10
2	India	92	3	4
3.	Low income countries	90	5	5
4.	Middle income countries	74	17	9
5.	High income countries	42	42	16
6	Kerala	71	11*	18

(Source : World Development Indicators 2003, Water Resources of Kerala, (PWD)1974

## Global Water outlook

5.7 Demand for the world's increasingly scarce water supply is rising rapidly, challenging its availability for food production and poultry global food security at risk. Agriculture is competing with industrial, household and environmental uses for water supply. Even as demand for water by all users grows, ground water is being depleted, other water ecosystems are becoming polluted

and degraded, and developing new sources of water is getting more costly. Based on a global model of supply and demand for food and water, the global water outlook report shows that if current water policies continue, farmers will find it difficult to meet the World's food needs. Herder hit will be the world's poorest people. The salient findings of the global water outlook 2025 are shown in Box-5.1.

## BOX-5.1

## Global Water Outlook 2025

- ◆ Globally withdrawals for domestic and industrial uses quadrupled between 1950 and 1995 compared with agricultural uses for which withdrawals slightly more than doubled.
- ◆ By 2025 water withdrawal for most uses (domestic, industrial and livestock) is projected to increase by atleast 50 percent from 3906 cubic kilometres in 1995. This will limit irrigation water withdrawal which will increase by only 4 percent constraining food production in turn.
- ◆ If the current trend continues, (Scenario I) the global water withdrawals in 2025 are projected to increase by 22 percent above 1995 levels to 4772 km<sup>3</sup>. Projected withdrawals in developing countries will increase by 27% over the 30 years period, while developed country withdrawals will increase by 11 percent. Use of irrigation water is projected to rise under more slowly than other sectors.
- ◆ Potential irrigation demand will increase 12 per cent in developing countries while it will actually decline in developed countries by 1.5 per cent.
- ◆ In the crisis situation (Scenario II), the developed World will pay the highest price and total global water consumption will be 261 km<sup>3</sup> higher than the 1<sup>st</sup> scenario of normal use by 13 per cent. The average cereal yield will be 6 per cent lower than scenario I due to unreliable water supply.
- ◆ In the sustainable water scenario (Scenario III), governments will transfer water rights and the responsibility for operation and management of irrigation systems to communities and water user associations, farmers will increase their onfarm investment in irrigation and water management technology, river basin organisation will be established in many water scarce basins and many planned storage projects will be cancelled due to high costs including environmental costs. World consumes less water but reaps greater benefits than under Scenario I, and total global water consumption would be 20 per cent lower than under Scenario I (-408 km<sup>3</sup>)

IFPRI, IWMI 2002

## Water Resources in the Country

5.8 India, which has 17 percent of the world's population, has only 2.45 percent of world's land resources and 4 percent of the world's fresh water resources. The water resources are unevenly distributed in time and space. In the prevailing Monsoon hydrometeorology, about 85 percent of annual precipitation takes place in four months June to September of the South West Monsoon. A major part of the South West Monsoon precipitation is concentrated in two of the four months with down pour accounting for almost half of its occurring in isolated spells of various durations aggregating to about 15 hours. Since most rainfall occurs only during 3 to 4 months of the year, assured water supply to agriculture, industries and drinking purposes is a challenge. It is estimated that only 70 percent of the people in urban areas have access to basic sanitation services. A large number of rural habitations remain without any identified source of safe drinking water. The rising consumption will aggregate the water scarcity further. The total consumption in India is expected to rise by 20-40 percent over the next 20 years. The projected consumption of water for different categories of use is given in **Table: 5.3**

**Table- 5.3:**  
**Projected Water Consumption**

Purpose	1997-98	2020 BAU
Irrigation	560	640
Domestic	30	50
Industries	30	57
Power	9	28

Source: Report of the Committee on India Vision 2020, Pfg Commission, GOI  
BAU: Business as Usual

5.9 Agriculture accounts for 89 percent of the total water consumption and domestic consumption accounts for 4.8 per cent. Subsidised or free supply of power and water has resulted in over exploitation and inefficient use of water in agriculture, leading to water-logging and salinity on 5.76 million hectares. Tremendous wastage occurs as a result of evapostranspiration, distribution loses, seepage through unlined channels and excess application. Canal-irrigation efficiency in India is estimated at around 35 to 40 per cent, which is below international standards. Government policies need to be revised to provide

incentives for efficient use of water, including appropriate water pricing and more effective institutional mechanisms for water management.

5.10 The annual precipitation including snowfall is estimated to be of the order of 4000 cu km. The resources potential of the country which occurs as natural run off in the rivers is about 1869 cu km; as per the basin-wise estimates of Central Water Commission, considering both ground water and surface water as one system. Due to various constraints in the topography, even distribution of resources over space and time, it has been estimated that only about 1122 cu km of the average run off of 1869 cu km is utilisable. The percapita availability of water is reducing progressively owing to increasing population. In 1999, the national average percapita availability in India was around 2200 cubic meter per year, which has gone down to 1829 cu m in 2001. With the projected population it may go down to 1340 and 1140 cubic meter by the year 2025 and 2050 respectively. According to the international agencies, any basin having per capita availability less than 1700 cubic metre is categorised as water stressed and less than 1000 cubic metre as water scarce. According to these norms six river basins of the country have already fallen into water scarce category, and five more to become water scarce in 2025 and by 2050. Only three to four basins would be water sufficient. Hence management of water becomes a challenge. Redistribution of water through inter linking of rivers, desalination of water and rainwater harvesting should be taken up on priority basis. About 97 percent of the world's water were present in oceans and seas and therefore, there is an urgent need to desalinise water for public use. As water could not be manufactured, conservation and management of water is the only way out for the growing demands.

5.11 Integrated management of water resource assumes importance and should be based on the treatment of water as an integral part of the eco-system and as a natural resource whose quality and quantity determines the nature of its utilisation. Water use, in turn, has its impact on water quality and therefore utilisation of water has to be so managed as not to contribute to the deterioration of water quality.

5.12 Conjunctive use of ground water and surface water resources needs to be planned in the irrigation projects from the beginning. There is a need to take effective steps for improving water use efficiency through renovation and modernisation of existing systems.

5.13 Water resources development is to be seen not merely as a single-sector-end objective, but as a prime mover in developing larger systems with multiple linkages. This calls for a well-set out multidisciplinary research and development agenda covering not only technological issues but also issues of social, economic, legal and environmental concerns. A trained, motivated manpower being the backbone of any development activity, in the water resources sector also, there is need for human resource development. The kind of approach suggested required multi-level training of personnel involved in the sector to undertake the challenging task ahead.

**BOX-5.2****National Water Resources at a Glance:**

- Annual Precipitation (Including snow fall) 4000 BCM.
- Average Annual Potential flow in Rivers 1869 BCM.
- Per Capita Water Availability (2001) 1829 Cu.m.
- Estimated Utilizable Water Resources 1122 BCM.
- (i) Surface Water Resources 690 BCM.
- (ii) Ground Water Resources 432 BCM.

5.14 The water resources potential of the river basins of India is given in Appendix-5.1

**Pricing of Water**

5.15 The costs of providing irrigation water include a fixed cost of operation and maintenance and a variable cost, which depends on the quantity of water supplied. In addition, there is a capital cost of constructing a water project. There are many pricing systems used for recovering some or all of these costs. In most countries, the revenue receipts fall far short of the costs of

supplying irrigation to users and often do not attempt to recover the initial capital costs. Recovery of operation and maintenance costs range from a low of 20-30% in India and Pakistan to a high of close to 75 per cent in Madagascar.

5.16 Water Pricing Systems can also work as an incentive for water users to adopt water conserving technologies, or to alter the amount of land under cultivation. A volume fee provides an incentive to limit water use, while a per ha. fee provides an incentive to cultivate agricultural land more intensively. Many systems combine these, for example, charging a per hectare fee for access to water and then reduced volumetric fee for water delivered. This is the type of pricing system used in Brazil for irrigation water. Irrigation water is mostly metered in Brazil and the irrigation land requires that the price of irrigation water be the sum of two charges. The first charge is annexed per hectare and is designed to repay the capital costs of the project. These are calculated using a 50 year repayment period and a subsidised interest rate. The other charge is volumetric fee, and is designed to repay the operation and maintenance costs of the water project. However in practice, the revenues have failed to cover the costs of water projects.

5.17 Developing countries use a per hectare water fee. Pakistan uses per area pricing. In Pakistan water charges are levied on a per unit area basis and varies across region, crop and season. However the variation across crops is not related to either the water requirement or the profitability of the crop. Other countries such as Egypt and Indonesia don't charge farmers anything for the water they use but require farmers to maintain and operate the irrigation canal system.

5.18 A study in 1996 reported that in India from 1983-86, the estimated working expenses of major water projects was 2.2 times the gross revenue collected from the water users ( Saleth, 1996). Using 1987 data, another study of six Asian countries showed that the irrigation charges



as a percentage of total cost ranged from 1.0 per cent to 22.5 per cent.

5.19 Water rates should be such as to convey the scarcity value of the resource to users and to foster motivation for economy in water-use. They should be adequate to cover the annual maintenance and operation charges and a part of the fixed costs. Efforts should be made to reach this idea over a period, while ensuring the assured and timely supplies of irrigation water. The water rates for surface water and ground water should be rationalised with due regard to the interests of small and marginal farmers. There are wide variations in water rate structures across the states. In some states the irrigation charges vary from project to project, type of system, type of crops etc. According to the report of the Committee on Pricing of Irrigation water of the Planning Commission of 1992, water rates are a form of user charge and hence the users of public irrigation must meet the cost of the services. The water rates are levied for its proper and beneficial

use. The water rates are not uniform in all the states/Union Territories in the country. No water rate is levied for agricultural purposes in most of the North Eastern states. The existing water rates in the major states of the country is given in Table: 5.4

5.20 The expenditure on Irrigation are dominated by maintenance and administrative costs. The proportion of working expenses on administrative cost have been continuously increasing while the share of repair and maintenance showed a declining trend. Though latest information on these breakups of expenditure are not available, an observation of budgetary data is presented in Table 5.5. The share of direction and administration in working expenses has gone up considerably. On the other hand the share of expenditures on repairs and maintenance in the total working expenses has gone down. Therefore, revising water rates so as to recover the maintenance cost has to be carefully examined and recurring expenditure need to be properly audited and scrutinised.

**Table -5.4:**  
**Canal Water Rates for Irrigation in Major States**

States	Rate (Rs./ha)		Few Crops Specific Rates (Rs./ha)			Year in which Rates Revised Last
	Minimum	Maximum	Paddy	Wheat	Sugarcane	
Andhra Pradesh	99	370	222		370	1986
Bihar	30	158	89	51	158	1983
Gujarat	40	830	110	110	830	1681
Haryana	20	99	74	62	99	1975
Karnataka	37	556	99	54	556	1985
Maharashtra	100	1750	100	200	1750	1990
Madhya Pradesh	99	741	198	247	741	1992
Orissa	6	185	40	32	100	1981
Punjab	14	82	49	29	82	1974
Rajasthan	20	180	99	74	143	1982
Tamil Nadu	6	65	49		49	1962
Uttar Pradesh	15	410	143	143	237	1983
West Bengal	37	124	37	49	124	1977

Source: Government of India, 'Pricing of water in public system in India' CWC, 1993

**Table - 5.5**  
**Working Expenses of Certain Major Projects**

(Rs. in lakhs)

Name of Project	1999-00			2000-01			2001-02			2002-03		
	Establis hment	Work	Total	Establis hment	Work	Total	Establis hment	Work	Total	Establis hment	Work	Total
1	2	3	4	5	6	7	8	9	10	11	12	13
Malampuzha	121.36	111.93	233.29	122.29	89.34	211.63	96.05	45.69	141.74	130.79	301.03	431.82
Mangalam	15.80	18.03	33.83	16.15	4.96	21.11	12.69	11.15	23.84	20.44	59.83	80.27
Walayar	23.99	23.09	47.08	24.52	27.37	51.89	18.44	6.74	25.18	33.21	98.34	131.55
Kanjirapuzha	215.59	404.36	619.95	220.90	246.12	467.02	204.57	846.67	1051.24	212.16	313.20	525.36
Pazhassi	180.91	882.09	1063.00	162.27	11.21	173.48	177.58	926.89	1104.47	149.50	56.22	205.72
Pothundy		24.63	24.63		22.34	22.34		32.78	32.78		36.34	36.34
Chitturpuzha	65.65	31.04	96.69	67.07	19.71	86.78	62.92	45.99	108.91		65.63	
Pamba		45.08	45.08	0.36	52.74	53.10		28.58	28.58		88.47	88.47
Kuttiyady	12.59	16.44	29.03	21.09	2.24	23.33	6.82	47.78	54.60	0.81	66.78	67.59
Kallada	1439.92	1191.38	2631.30	1424.84	1572.16	2997.00	1158.30	1632.70	2791.00	960.28	338.05	1298.33

5.21 In Kerala, the water rates now collected are based on the estimates of 1974. The rates are very low compared to the costs of maintenance of major irrigation projects. The WRD has a proposal to revise the water rates. The water rates existing and proposed are given in Table - 5.6.

**Table : 5.6**  
**Water Rates in Kerala**

Item	Rate/ha (Rs.)	
	Existing	Proposed
Single crop land	37	250
Double crop land	62	400
Three crop land	99	550
Other lands	62	550

5.22 So far as irrigation projects in the public sector are concerned, user charges of water for irrigation constitutes the major portion of gross receipts from them. The various committees/groups constituted for suggesting ways and means to improve financial performance of projects have emphatically recommended for restructuring of irrigation water rates in the country. Costs including establishment and works and receipts of certain major Projects during the last five years are given in Table-5.7. From the table it is seen that the receipt is below 30% of the cost in most of the projects. During 2002-03 receipts ranged from 1.20 per cent of total cost for Pampa irrigation project to 12.40 per cent for Chittoorpuzha project. The share has come down during 2002-03 for all projects except Kanjirappuzha, Pazhassi and Pothundi. The water rates now levied from the projects has to be increased so as to cover the operational cost of the projects.

5.23 The major findings of a study conducted by the Kerala Agricultural University on Pricing of irrigation water using the concept of Willingness to Pay (WTP) in Peechi Irrigation Project (PIP) are shown in Box- 5.3. WTP is used to measure by creating a hypothetical market like situation and elicit consumers preference for the service. WTP is considered the best indicator of service demand as corresponds to the users' affordability and levels of services preferred.

5.24 In another study conducted in 2000, again in Peechi Irrigation project, the average Willingness to pay by farmers in head, middle and tail region were Rs. 107, Rs. 127 and Rs. 162 per ha respectively.

#### Participatory Irrigation Management (PIM)

5.25 As a part of Tenth Plan strategy it is proposed to introduce PIM in selected projects. Government of Kerala has initiated two Pilot studies in Neyyar and Malampuzha to operationalise the modalities of implementation of PIM. Water Users' Associations will be formed for the O & M of the branch canals and distributories. The programme envisaged is to transfer the O & M of one branch canal each at Olathanni branch in Neyyar irrigation project with a total length of 6.4 km and an area of 501ha. with garden land crops and Kuthannur branch canal of Malampuzha project with a length of 14.63 km and 1669 ha. with rice crop are selected for implementing PIM. The duration of the programme is one year. The activities will be carried out in 5 different phases. The physical progress so far achieved includes formation

Table -5.7:  
Cost and Receipts of Certain Major Projects

Name of Project	1998-99		1999-00		2000-01		2001-02		2002-03	
	Cost	Receipt	Cost	Receipt	Cost	Receipt	Cost	Receipt	Cost	Receipt
Malampuzha	201.47	59.93	233.29	38.05	211.63	47.06	141.74	25.29	431.82	42.16
		(29.75)		(16.31)		(22.24)		(17.84)		(9.76)
Mangalam	40.58	3.67	33.83	4.10	21.11	2.94	23.84	3.29	80.27	3.53
		(6.04)		(12.12)		(13.93)		(13.80)		(4.40)
Walayar	59.91	3.32	47.08	3.46	51.89	14.72	25.18	6.99	131.55	2.65
		(5.54)		(7.35)		(28.37)		(27.76)		(2.01)
Kanjirapuzha	839.63	1.12	619.95	1.32	467.02	29.65	1051.24	0.60	525.36	24.90
		(0.13)		(0.21)		(6.35)		(0.06)		(4.74)
Pazhassi	1356.10	8.50	1063.00	13.69	173.48	17.46	1104.47	17.15	205.72	13.67
		(0.63)		(1.29)		(10.06)		(1.55)		(6.64)
Pothundy	28.42	3.49	24.63		22.34	2.56	32.78	3.00	36.34	3.61
		(12.28)				(11.46)		(9.15)		(9.93)
Chitturpuzha	80.32	5.89	93.96	6.24	19.67	10.47	45.98	6.84	65.63	8.14
		(7.33)		(6.24)		(53.23)		(14.88)		(12.40)
Pampba	83.16	3.48	45.08	0.77	53.10	0.45	28.58	0.71	88.47	1.06
		(4.18)		(1.71)		(0.85)		(2.48)		(1.20)
Kuttiyady	22.99	1.83	16.44	2.06	2.24	1.69	47.78	1.96	48.91	1.82
		(7.96)		(12.53)		(75.45)		(4.10)		(3.72)
<b>Total</b>	<b>2712.58</b>	<b>91.23</b>	<b>2177.26</b>	<b>69.69</b>	<b>1022.48</b>	<b>127</b>	<b>2501.59</b>	<b>65.83</b>	<b>1614.07</b>	<b>101.54</b>
		<b>(3.36)</b>		<b>(3.20)</b>		<b>(12.42)</b>		<b>(2.63)</b>		<b>(6.29)</b>

## BOX-5.3

## Pricing of Irrigation Water in Kerala with special reference to Environmental Management

The study was undertaken to assess the value of irrigation water as a basis for pricing of irrigation water in Kerala for the viable performance of major irrigation projects. Data were collected from PIP covering head, mid and tail regions of LBC and RBC.

- Majority of the respondents (84%) was ready to pay, though the extent of payment and conditions varied.
- More than seventy per cent were ready to effect 25 per cent higher than existing rates of Rs. 62 ha if the supply is satisfactory. 9% alone expressed payment in the existing condition. All of them in the head region.
- People in other regions, were ready to pay higher even upto Rs. 153/ ha under satisfactory condition of supply.

Willing to pay in the present condition - 8.61%

Willing to pay in a better condition - 91.39%

Willing to pay upto 25% higher than existing rates - 71.06%

Willing to pay upto 50% higher than existing rates - 18.42%,

Willing to pay upto 100% higher than existing rates - 7.89%

Willing to pay upto 150% higher than existing rates - 2.63%

*Kerala Agricultural University*

of 2 outlet based Water User Associations and one branch canal based WUA in Malampuzha and 15 other WUAs and one branch canal based WUA in Neyyar. Ayacut maps and list of ayacutdars were made. PRAs are now being held for identifying and prioritising rehabilitation works needed in the filed channels and branch canals.

## Rain water Harvesting

5.26 Kerala has two predominant rainy seasons caused by Southwest and Northeast Monsoon. On an average, the state receives 3000

mm of rains, of which 60 per cent is obtained during Southwest Monsoon, 25 per cent during the Northeast Monsoon and 15 per cent during summer months. The high variations in spatial and temporal rainfall add to the complexity of the problems associated with water management faced by the State. State losses about 40 per cent of the rainwater through runoff. Hence rainwater harvesting assumes importance in our state.

5.27 In order to promote rainwater harvesting, Government of India advised the State Governments to provide certain provision in

building rules, pertaining to incorporation of rooftop rainwater harvesting arrangements in buildings. The Government of Kerala has amended the Kerala Municipality Building Rules, 1999 in 2004 to incorporate provision for rooftop rainwater harvesting. The government also launched a

state-wide awareness building and rain-water harvesting in public buildings, institutions and households.

5.28 The salient features of the Kerala Municipality Building Rules, 1999 (amended) are given in Box. 5.4:

#### BOX-5.4

#### Salient features of the Kerala Municipality Building Rules, 1999 (Amended in 2004)

1. The roof top rainwater harvesting arrangements shall be provided as an integral part of all new building constructions such as (i) residential buildings (with floor area of 100 sqm. or more and plot area of 200 sqm. or more). Special residential buildings, educational, medical/hospital, assembly, office/business buildings and industrial buildings. The floor area to be considered shall be the total floor area in all floors.
2. The minimum capacity of the storage tank of the roof water harvesting arrangement is 25 litres/sqm. for residential and special residential buildings and for other type of buildings, the capacity insisted is 50 litres/sqm.
3. The municipality shall enforce workable artificial ground water recharging arrangements as an integral part of all new building constructions through collection of roof top rainwater.
4. Wherever roof top rainwater harvesting arrangements are provided, additional arrangements for carrying the spill over water from storage tank to recharge well or percolation pit need to be provided.
5. The owner(s)/occupier(s) shall maintain the rooftop rainwater harvesting arrangements and artificial groundwater recharge arrangements in healthy working conditions.
6. The municipality may in exceptional cases such as water logging or impermeable subsoil conditions to considerable depths, except construction from the mandatory ground water recharging arrangements.

#### Live Storage Capacities of Irrigation Reservoirs

5.29 There are 18 dams intended for irrigation. Out of this 13 have storages and 5 are barrages.

The live storage position of the reservoirs during the beginning and end of the monsoon period during 2003-04 & 04-05 is given in Table: 5.8

**Table 5.8**  
**Storage Levels of Completed Projects in Kerala**

Name of Reservoir	01.06.2003	01.10.2003	01.01.2004	01.06.2004	01.10.2004	01.01.2005
	Storage (Mm 3)	Storage (Mm 3)	Storage (Mm 3)	Storage (Mm 3)	Storage (Mm 3)	Storage (Mm 3)
Malam puzha	13.946	46.118	22.459	26.445	180.450	81.954
Neyyar	28.100	7.415	80.452	56.271	103.106	85.592
Kallada	96.800	241.550	387.600	177.400	417.250	408.8
Kanhirapuzha	19.818	57.414	50.604	25.414	60.214	48.101
Kuttiyadi	53.662	83.580	107.415	70.348	105.686	108.962
Pothundy	1.869	26.165	12.516	3.889	40.522	19.996
Mangalam	1.589	23.461	9.191	5.632	24.811	8.342
Vazhani	0.280	6.720	1.200	1.150	15.530	9.17
Peechi	4.940	36.420	27.200	5.819	73.306	41.309
Walayar	1.617	1.567	1.716	1.562	7.473	1.718
Meenkara	1.161	1.033	2.048	1.076	8.467	4.814
Chulliyar	1.344	0.920	1.090	1.004	11.723	4.997
Chimoni	67.952	120.150	113.320	35.819	140.100	147.400
<b>Total</b>	<b>293.078</b>	<b>652.513</b>	<b>816.810</b>	<b>411.829</b>	<b>1188.638</b>	<b>971.155</b>

Source: Department of Water Resources

5.30 Even though there is considerable increase in the rainfall during 2004, the rise in the water level of the various reservoirs in the state is not very high. In the beginning of the Monsoon (during the current year) the total storage was 412 Mm<sup>3</sup> and at the end of the monsoon the level of the storage was 971.155 Mm<sup>3</sup>. This is against the level of storage of 293.078 Mm<sup>3</sup> at the beginning of the Monsoon and 816.811 Mm<sup>3</sup> at the end of the monsoon period during the previous year. The current year's storage of 971.155 Mm<sup>3</sup> is greater than the ten year average of 857.04 Mm<sup>3</sup> on the date. The storage capacities of reservoirs are deteriorating due to silting in reservoirs. Sedimentation or silt removal need be done periodically for the proper upkeep of the reservoirs.

### Dam Safety

5.31 Safety of the existing dams is one of the items in the National Water Policy. Almost all of the 18 dams in the State were completed in the 1950's and are constructed of masonry/earth or a combination of both. Excessive seepage/leakage, mal functioning of gates etc. caused distressed conditions as noticed by the State level Dam Safety Committee. Besides this, the storage capacity of the reservoir gets depleted due to excessive siltation. If these problems are not attended properly, it can cause downstream damages. Hence rehabilitation of the dams are essential. As per the Dam Safety Act-2000 every State having a significant number of dams shall constitute a body called 'Dam Safety Organisation (DSO). Accordingly in Kerala also constituted a 'Dam Safety Organisation'. The main responsibilities of the Dam Safety Organisation are:

- (i) Monitoring the post and pre-monsoon inspections of dams and maintenance and surveillance and safety activities of the dam.
- (ii) Hydrological review to check the adequacy of design flood, preparation of emergency action plan, prioritization of dam for rehabilitation purposes, interaction with the Dam Safety Organisation of the Central Water Commission, conducting structural analysis, and checking the safety of dams once in 10 years.

5.32 During 2003-04, Dam Safety Organisation along with Dam Safety Committee

inspected the dams in Neyyar, Malampuzha, Chimmomy, Vazhani, Kanjhirappuzha, Siruvani, Kallada and Peechi.

5.33 As part of the newly enacted 'Kerala Irrigation and Water Conservation Act' a Dam Safety Authority has been recommended for the purpose of surveillance, inspection and advice on maintenance of dams situated within the territory of the state.

### Investment in Irrigation

5.34 Keeping in line with the national approach, Kerala also relied upon surface water irrigation system operating gravitational force for distribution. A major chunk of the outlay on water resources sector was earmarked for Major & Medium Irrigation. Out of a cumulative investment of Rs.3402.06 crores made as on 03/04, Rs.2321.00 crores (68%) was for major and medium irrigation.

5.35 A financial appraisal of the mid term of the Tenth Plan indicates that the approved outlay for the sector during the Tenth Plan period is Rs. 930 crores which includes Rs. 600 crores (64.52%) for major and medium irrigation, Rs. 205 crores (22.04%) for minor irrigation, Rs. 75 crores for command area and local water resources development, Rs. 50 crores (5.38%) for flood control and anti-sea erosion works. This is against the outlay of Rs. 1028 crores and an expenditure of Rs. 1078.43 crores during the Ninth Plan period. The percentage share of outlay during Tenth Plan is 3.88% against that of 6.38 % in the Ninth Plan. The reduction is mainly due to the transfer of minor irrigation schemes to local governments, reduction in number of major projects and assistance from XIth Finance Commission Award for Anti-sea erosion.

5.36 During the first three years of the plan period, an amount of Rs. 435.95 crores have been budgeted and the expenditure for the first two years Rs. 312.66 crores. Over and above the State plan outlay, a substantial amount has been invested for minor irrigation and flood management from the local governments component of the Tenth Five Year Plan. For the first two years of the Tenth Plan an outlay of Rs. 76.90 crores has been budgeted for these two sectors.

5.37 Sub sector wise financial performance is given in Table 5.9.

**Table –5.9**  
**Sub Sector-wise Financial Performance during 2002-05**

(Rs. Crores)

Sectors	Tenth Plan	Annual Plan 2002-03		Annual Plan 2003-04		Annual Plan 2004-05		BE 2002-05
		Outlay	Expdr.	Outlay	Expdr.	Outlay	Anti. Expdr.	
Major and Medium Irrigation	600	110	114.50	110	110.93	113.85	113.85	333.85
Minor Irrigation								
Ground Water Development	50.00	9.00	9.05	9.00	9.60	9.00	9.00	27
Surface Water Development	155.00	15.00	18.65	2.50	19.64	4.10	4.10	21.6
Sub Total	205.00	24.00	27.70	11.50	29.24	13.10	13.10	48.60
Command Area Development								
Command Area Development Programme	65.00	10.00	9.63	10.00	7.38	6.85	6.85	26.85
Local Level Water Resources and PIM	10.00	2.00	-	1.50		1.65	1.65	5.15
Sub Total	75.00	12.00	9.63	11.50	7.38	8.50	8.50	32
Flood Control & Anti Sea Erosion	50.00	6.00	13.69	8.00	9.51	7.50	7.50	21.50
<b>Grand Total</b>	<b>930</b>	<b>152</b>	<b>155.6</b>	<b>141</b>	<b>157.06</b>	<b>142.95</b>	<b>142.95</b>	<b>435.95</b>

5.38 Public investment in irrigation has fallen significantly over successive Plan periods. This is largely due to resource constraints faced by governments both at the Centre and the States. However, resources are not the only problem. Potential irrigation projects are located in areas which are either more difficult or environmentally more sensitive which makes it difficult to implement irrigation projects. The Tenth Plan aims at a major revival of public investment in irrigation capacity and water management. The Accelerated Irrigation Benefit Programme (AIBP) launched in 1996-97 for the expeditious completion of approved ongoing major and medium irrigation projects is a potentially important instrument for providing resources to state governments to complete ongoing irrigation schemes. Allocations under this programme have been massively increased. The state wise details of release from 1996-97 to 2003-04 is given in Appendix- 5.2.

5.39 Upto 2003-04, Government of India had sanctioned Rs.14670.00 crores to various states. The assistance sanctioned to Gujarat was Rs.3622.42 crores (24.68 %), Karnataka Rs.1954.22 crores (13.31 %), Uttar Pradesh Rs.1788.37 (12.19%), Madhya Pradesh 1505.00 crores (10.25 %)& Andhra Pradesh Rs. 869.00 crores (5.9 %) and Kerala Rs.89.09 crores (0.61 %).

5.40 Central assistance is given under the programme in the form of loan and is provided to those projects which have investment clearance by Planning Commission. The pattern of assistance was on a 50:50 basis up to 1999-2000 and later it was revised in the ratio of 2:1 (Central and State). The pattern of assistance was modified from 01/04/2004. In the modified pattern the central share will be 70% loan and 30% grant for general category states and 10% loan and 90% grant for special category states for projects under Fast Track Programme.

5.41 In Kerala, Kallada and Muvattupuzha Projects were assisted under the AIBP and the assistance received so far is Rs. 32.51 crores and Rs.56.58 crores respectively. The assistance was availed based on individual selected components of public works identified under each project.

#### Physical Performance

5.42 The ultimate irrigation potential of the state as per the earlier assessment is 25 lakhs ha. (gross) covering 16 lakhs through major and medium irrigation projects and 9 lakhs through minor irrigation schemes. Against this, as per the statistics of the Directorate of Economics and Statistics the state could achieve only 4.27 lakh ha. (gross) The share of major and medium projects was about 49 per cent.

5.43 The target set for the realisation of additional irrigation potential during Tenth Plan was 1.40 lakh hectares (gross) comprising of 0.90 lakh hectares under major irrigation and 0.50 lakh hectares under minor irrigation. The cumulative target for the first 3 years was 0.75 lakh hectares, which includes 0.45 lakh hectares under major and 0.30 lakh hectares under minor irrigation. The actual achievement for the first two years aggregates to 0.26 lakh hectares. The physical targets and achievements under Irrigation during the first three years of the Tenth Plan period is given in Table-5.10.

**Table - 5.10**  
Physical Targets and Achievements under Irrigation during the first 3 years of the Tenth Plan period.

Sl. No.	Sector	Unit	Cumulative coverage up the end of 9 <sup>th</sup> Plan	Tenth Plan Target	2002-05 Target	Actual Achievement 2002-04
1.	Major & Medium	'000ha gross	225	90	45	16
2.	Minor	'000 ha gross	207	50	30	10.38
	<b>Total</b>		<b>427</b>	<b>140</b>	<b>75</b>	<b>26.38</b>

#### Review of Major Projects

5.44 At the beginning of the Tenth Plan there were 18 completed projects and 7 ongoing projects which were in different stages of implementation. The strategy adopted for major

programme (iii) reinvestigation of projects which are in the initial stages of investigation, (iv) optimum utilisation of the potential already created through proper maintenance and (v) Introduction of Participatory Irrigation Management (PIM).

5.45 As part of the strategy of time bound completion of major projects 6 projects were targeted for completion. Out of this, 5 projects were targeted for completion by 2004-05. Higher outlays were provided for these projects for speedy completion. Moreover, assistance from AIBP and RIDF were availed for two projects, Muvattupuzha (AIBP) and Thrithala (RIDF) for expediting the works.

5.46 The overall performance of the major and medium irrigation sector during 2003-04 was not encouraging. Additional irrigation facility could be extended only in Muvattupuzha project. The

additional area brought under irrigation by the project is only 8606 ha. (gross) The cumulative area brought under irrigation through major and medium irrigation projects is 2.38 lakh hectares. (gross). The details of the progress of implementation of ongoing projects as on 3/2004 is given in Table- 5.11.

**Table - 5.11**  
Project-wise Details of Ongoing Projects

(Rs. lakhs)

Name of Project	Year of starting	Original estimate	Revised estimate	Year of revision	Cost escalation (%)	Expenditure upto March 2004	Target area to be irrigated		Physical achievement as on 3/03	
							Net	Gross	Net	Gross
2	3	4	5	6	7	8	9	10	11	12
Muvattupuzha	1974	2086	51500	1999	2368	45670	17737	34737	11585	22706
Idamalayar	1981	1785	41200	1999	2208	14522	14394	29036	-	-
Kuriyarkutty-Karappara	1987	1036	15830	1999	1427	2101	17488	34976	-	-
Karapuzha	1979	760	25300	1999	3228	20206	5221	8721	-	-
Banasurasagar	1979	800	5000	1999	525	1234	2800	4740	-	-
Chamravattom	1985	1327	12000	1999	804	1261	3106	9659	-	-
Thrithala	1998	1900	2660	1999	40	2032	1303	3997	-	-

Source : Department of Water Resources

and medium irrigation was (i) time bound completion of ongoing projects which are in an advanced stage of completion (ii) continuing the programme of revamping and consolidation of old generation projects through a modernization

5.47 As part of implementing the policy on long pending infrastructure projects, one of the initiatives of the 'Modernizing Government Programmes', action has been initiated to identify long pending infrastructure projects and to prepare a plan recommending speedy completion of on

going projects /termination of projects which are unproductive. Based on the results of the initiative, projects which seem beneficial, will be completed in a fast track method. Accordingly 4 projects Karapuzha, Banasurasagar, Muvattupuzha and Idamalyar were selected for review by a multidisciplinary team constituted for the purpose. The team after reviewing the present status by

field verification chalked out future course of action for the completion of the two projects Banasurasagar and Karapuzha project. The preparation of the reports of the other two projects are progressing.

5.48 Findings of the Multi disciplinary team on Karapuzha & Banasurasagar irrigation projects are given in Box. 5.5

#### BOX-5.5

#### Findings of the Multi disciplinary team

##### Karapuzha

- ◆ Nearly 85% of the headwork and 90% of the main canal are completed
- ◆ Land acquisition

Land acquisition of about 120 hectares for branches and distributories are pending.

- ◆ Rehabilitation of evicted tribal people.

Rehabilitation of project affected tribal people from the catchment area is pending.

- ◆ Design issues

Most of the design works of various components of the project are done by IDRDB. The delay in finalising the design of the irrigation structures had delayed the project execution.

- ◆ Prioritised action Plan

Phase I -

Headworks

Project is targetted for full commissioning by December 2006. The activities required for full commissioning are plugging of the river sluice and raising /deviating the road in the submersible position of the reservoir, completion of the model studies conducted by KERI, Peechi and the finalisation of the design by the IRDB, erection of radial shutters, service gates, emergency gate, catwalk etc. completion of the balance length of Irrigation conduit, construction of the aqueduct for a length of 280 M. etc.

Padinjareveedu Branch Canal - Completion of work from 0 m to 8.94 m.

- ◆ LBC

Land acquisition and construction of 6 distributories.

- ◆ In RBC, construction of aqueduct from 5.49 Km. to 5.77 Km. and sluices, forming Kariambady Branch from Ch. 4.10 km. to 7.95 km. Kolliyil branch from Ch. 1.945 Km. to 2.995 Km. and providing shutter arrangements for Head sluice for Kariambady & Kolliyil Branch.

Phase - II

Head works

River training counter fort, retaining wall from 300 m to 620 m, formation of belt road, construction of boundary wall, construction of dam top road and electrification and rehabilitation of 84 Adivasi families.

Phase III

Kolliyil branch - completion of the remaining work of the Kolliyil branch from Ch. 8.095 km. to 20,000 km. and Pallikkunnu distributory.

Works in Phase-III will be carried out after partial commissioning.

- ◆ Frequent transfer of project officials affect the execution of the project.



- ◆ Cropping pattern in the ayacut had changed with high value crops occupying a significant area, replacing paddy. Hence urgent steps are needed to investigate the canal system for arriving at proper design of Canals and their structures and detailed cost estimates.

#### **Banasurasagar**

- Construction of main canal is completed.
- Out of the 11 distributories from the branch canals and two distributories from the main canal, survey and investigation work were completed only in 10 distributories.
- Rehabilitation of all the project affected tribal people from the catchment area had already been taken up. However, nearly 25 families in the submergence area are now cutoff from the neighboring villages and town due to dam construction.
- For the completion of the project land acquisition to the tune of Rs.948.10 lakhs (80 ha.) and cost of construction of Rs.5123.84 lakhs is needed
- Change in design

The cropping pattern had changed with high valued crops occupying a significant area replacing paddy. Hence the design of the alignment of the canals has to be changed. Field investigations are necessary for identifying the proper design of the canals & structures and detailed cost estimates. This has to be expedited for making the design change.

#### **Irrigation Status**

5.49 The source-wise and crop-wise area irrigated as on March 2004 is given Tables: 5.12 and 5.13

irrigated during 2003-04 has declined to 3.81 lakh ha. from 3.93 lakh ha. in the previous year. Only 17.36 per cent of the net cropped area is under irrigation. The major source of irrigation is wells,

**Table 5.12**  
**Net Area Irrigated (Source wise)**

<i>(in Ha.)</i>				
<b>Source</b>	<b>2000-01</b>	<b>2001-02</b>	<b>2002-03</b>	<b>2003-04 *</b>
2	3	4	5	6
Government canals	100926	95270	101139	94859
Private canals	4041	4413	4272	5754
Tanks	49972	49945	66729	47856
Wells	115703	86297	117490	109360
Other sources	110399	110788	103541	123469
Total	381041	377162	393171	381298
Area irrigated more than once in a year	76824	55055		782892
Gross irrigated area	457865	432217	447490	426765
Net area irrigated to net area Sown(%)	17.27	17.20	17.83	17.36
Gross irrigated area to gross cropped area (%)	15.15	14.44	14.77	14.35
Irrigated area under paddy to total irrigated area	45.44	42.57	41.16	40.00

\* Provisional

Source: Directorate of Economics & Statistics

5.50 As per the assessment of the Directorate of Economics and Statistics the net irrigated area in the state as on 3/04, was 3.81 lakh ha. and the gross area irrigated is 4.27 lakh ha. Compared to the last year a slight decline of 3.14% is noted in the area irrigated in 2003-04. The net area

which contribute 29 per cent followed by government canals 24.87 per cent, tanks 12.55 per cent and private canals 1.50 per cent. In the source wise irrigation, the contribution of private wells predominates. The area benefitted by lift irrigation schemes has declined to 0.07 lakh ha. from 0.27 lakh ha. in 2003-04.

**Table 5.13**  
**Gross Area Irrigated (Crop-wise)**

Crops	(in ha.)			
	2000-01	2001-02	2002-03	2003-04*
2	3	4	5	6
Paddy	208047	183992	183703	169829
Tubers	979	972	1008	1020
Vegetables	8529	8972	9786	9657
Coconut	165957	158050	163550	159113
Areca nut	30501	31467	34205	32990
Nutmeg/clove	2466	2170	2948	2884
Other Spices and condiments	3074	3109	3212	3245
Banana	19448	24372	29209	28100
Betel leaves	990	944	990	947
Sugarcane	3367	3267	3426	3567
Others	14507	14569	15373	15413
<b>Total</b>	<b>457865</b>	<b>432217</b>	<b>447490</b>	<b>426765</b>

visional

ce: Directorate of Economics & Statistic

5.51 Among the crops, paddy continued to be the major crop supported by irrigation. It accounted for about 40 per cent followed by coconut (37%) areca nut (8%) banana (7%) and vegetables (2.3%). Though rice is the major crop supported by irrigation, it could only support 59 per cent of the total area under the crop. Similarly irrigation could be provided to 17 per cent of the total area under coconut, 35 per cent of the area under areca nut and 54 per cent of the area under banana. Compared to last year the area irrigated under all crops has been decreased.

#### Minor Irrigation

5.52 Kerala has a wide network of rivers and rivulets and springs spread over the entire cropped area. Minor irrigation sector received considerable boost during the Ninth Plan period consequent to the enhanced flow of funds from the grant in aid of the local bodies as well as on account of special support received from the external agencies like European Economic Community, Dutch Government, assistance under RIDF of NABARD. With the introduction of decentralised planning, all minor irrigation works (having cultivable command area up to 2000 ha.) were vested with the Panchayat Raj Institutions (PRIs). But by the enactment of the new Act 'Kerala Irrigation and Water Management Act 2003' the definition of minor irrigation has been changed and works benefiting an area less than 15 ha. only come under the category of minor irrigation and are vested with PRIs. All other works having cultivable command area greater than 15 ha. have been taken over by the Water Resources Department as medium irrigation. The major works implemented under surface

water are minor irrigation Class – I & II and Lift irrigation schemes. Construction of check dams, Vented cross bars, weirs, tanks etc are the various works executed under minor irrigation Class-I & II.

5.53 An amount of Rs. 56.94 crores have been expended for implementing minor irrigation schemes during the first two years of the Tenth

Plan. Besides this, an amount of Rs. 76.90 crores have been budgeted for implementing minor irrigation schemes by local governments during the first two years of the Tenth Plan. The additional area brought by implementing medium irrigation schemes aggregates 10380 hectares including ground water schemes.

5.54 During the year under review (2003-04) the Department has invested Rs.19.647 crores for implementing surface water minor irrigation schemes. The additional area reported to be brought under irrigation during 2003-04 was 4886 ha. Compared to the last year, an increase of 40 per cent has been reported.

5.55 The local governments are also investing a substantial amount for minor irrigation works. During 2003-04 an amount of Rs.36.83 crores has been budgeted for minor irrigation schemes by them, the major works being check dams, weirs, cross bars etc.

#### Local Water Resources

5.56 Local water resource development and management would be an important element of the strategy of meeting the water needs of the future particularly in water-scarce regions. There is a need to lay emphasis on local water planning, water harvesting at micro level and integrated water shed development. Lakes are the largest fresh water storages and from the time immemorial serve the human beings in non-raining season for all its water needs. Due to excessive withdrawal of water in command and

disposal of high nutrient content and polluted water from the catchment the very sustainability of lakes has become questionable. National Lake Conservation Programme to arrest further degradation of lakes and to review the water body to acceptable environmental standards to that water can be utilised for various purposes needs to be strengthened. Enlarged programmes of lake and wetland conservation need to be initiated and streamlined.

5.57 An investigation by CWRDM has identified 910 ponds and tanks in Kerala with a minimum of 0.5 ha. water spread area. About 50% of the water bodies call for rejuvenation. There has been a trend to reclaim these water bodies for construction purposes. There are more than 20 artificial reservoirs and less than half of a dozen fresh water lakes in the state having good quality of water. There are perennial springs, the quality of these springs are found to be good.

5.58 Since tank irrigation has been traditionally operated and managed by the user groups, their first-hand knowledge and experience about the tank are more than that of outside experts. Many studies have noted that the poor participation of farmers in the operation and management as well as lack of institutional support to farmers' participation are among the

main reasons for the decline of tank irrigation. Giving enough power to panchayats to exercise control over tanks will certainly help to improve the position. Modernisation of the existing tanks is also needed for better utilisation.

5.59 In order to promote the development of local water resources, particularly tank irrigation, Government of India has introduced a scheme 'restoration of water bodies' (renovation of tanks/ponds) with 75% central assistance under Command Area Development Programme. The implementation of the programme is on the anvil.

5.60 In order to have sustainability of water resources it is imperative to make use of traditional knowledge wherever possible. For this, CWRDM has conducted a study to document and utilise the indigenous technology knowledge on water management in Kerala. The study was conducted in 7 districts, Kasaragod, Thrissur, Thiruvananthapuram, Wayanad, Palakkad, Kottayam & Ernakulam representing 8 agro-climatic zones of Kerala. The information on identification/location of the ground water resources, development of water resources, water harvesting and conservation. Water diversion, irrigation, agronomic conservation practices were collected. The result of the study is given in Box-5.6

#### BOX-5.6

### Indigenous Technical Knowledge on Water Management in Kerala

#### 1. Identification/location of ground water resources.

- Location of the well is mainly north-east direction. The location of well is sited using Y shaped stem of Tamarind, forked stem of Neem, Kadlaavanaku, Pala, Vetti, Eala are used for locating the spring head of construction of wells.
- The natural existence of plants like Njaval, Palakappayyani, Neermaruthu, Paarakam, Athi, Kadamba, Kanjiram, Punna, Kanikonna, Elengi, Pullani, Koli, Manjapavatta, Arayaal and Peraal are the biological indicators of existence of ground water.

#### 2. Development of water resources

- Kenis – shallow wells in Wayanad. The material used for construction is Panamkutty. The water in the Kennis are of good quality.
- Valkinar is a special type of well with a slopping walkway up to the water table on one side of the well. These wells are usually dug for irrigation purposes

#### 3. Ponds and Tanks

**Mathakkom** – traditional rainwater harvesting structures in Kasaragod. The water from surangams also collected in the Mathakkams act as percolation tanks.

**Surangams** – tunnels dug through laterite hill slopes from the periphery of which water seeps out by gravity. Surangams are used mainly for domestic and irrigation purposes.

**Springs -**

Natural freshwater sources –mostly found in the high range district of Wayanad and in the Attappady block of Palakkad district.

**4. Water Harvesting and Conservation Structures****Different types of Checkdams**

- (i) **Kattas** – Temporary check dams in Kasaragod
- (ii) **Anicut** – a type of check dam in Palakkad district constructed across rivers or streams using stone boulders and a material called ‘Kara’ and ‘Soorki’.
- (iii) **Sub-surface check dams** – In this type of dams water is drained from the aquifer through a gravel portion along the dam to a series of large diameter collector wells and used for irrigation.

**Chirakkanadm** – Commonly known as ‘Thalakkulam’, from which water is let into the paddy fields in the downstream as and when required.

**5. Water Diversion Methods**

**Mathavus** are control structures constructed at the downstream side of a farm pond/tank (yeri) seen in Palakkad district.

**Mathum Poottum** is a water controlling system installed in a *chira* to deliver water according to requirement.

**Pulikannu** is also a water controlling system.

**Kalpathi** is a water diversion and conveyance structure present in Wayanad district. It is made out of granite stone.

**Irrigation**

**Kaalathekku (Kavala Kinar)** – collects and store rainwater

**Round Kavala** – it is a type of Kavalakinar.

**Etham or Thulan** – is a water-lifting device used to irrigate coconut and arecanut plantations, vegetables and sometimes, paddy fields also.

**Thekkukotta or Kayattukotta** – is a conical shaped basket-like vessel used for lifting water from shallow ponds or channels.

**Veth** – is an effective and simple traditional irrigation method used to lift water from shallow ponds streams or channels to fields.

**Kaipola** – is a water-lifting device similar to *veth*. It is used to irrigate betel leaves and banana from small water pits and channels.

**Kakkotta** – is used for carrying water from the *Valkinar* for irrigating betel leaves.

**Chakkram (Chakkram and Ara)**- is used to drain the fields. *Chakkram and Ara* are two integral parts.

**Petti and Para** – is a system of low head, high discharge pumping to dewater the *padashekharm* in the Kuttanad-Kole wetland area.

**Veeshu maram** – is a method used for cleaning the wide wells using bullocks.

**Pitcher irrigation** – is an indigenous drip irrigation method.

**Akampadam** – is a small pit made in the middle of paddy fields under the cultivation of pea, gram, etc. Water from that pit is used to irrigate pea and gram.

**Splash irrigation** – is done for plantation crops, mainly arecanut, in Kasaragod district in areas where water cannot be diverted.

- CWRDM, 2004

5.61 Renovation of local water resources in the State must start with a clear recognition of the fact that government cannot undertake the repair and maintenance of all structures. Years of disrepair and lack of proactive management have hit the overall productivity and efficiency of local water harvesting structures. The strategy of water shed development has to be popularised further which will effectively contribute to the revival of local level traditional water harvesting structures. Micro watershed development provides a medium for revival and integration of local water resources. Action research could be initiated in the state in the first phase to rehabilitate the local water resource structures in a participatory mode. A Master Plan needs to be prepared for the revival and rehabilitation of local water resources in the state, incorporated in the five year and annual plans of State and local governments and implemented with the participation of the beneficiaries.

#### Ground Water Development

5.62 The contribution of ground water in the total irrigation potential of the country has been estimated as 47 per cent. Although ground water is annually replenishable resource, its availability is non-uniform in space and time. Hence, precise estimation of ground water resource and irrigation potential is a pre-requisite for planning its development. The scientific assessment of the ground water resources of India has been made by the Central Ground Water Board in collaboration with concerned State Departments in 1997. Total ground water resource of the country has been estimated at 432 BCM. The availability of renewable ground water resource for irrigation has been computed at 360.9 BCM. Nearly one third of the available replenishable groundwater resources (150 BCM) is utilized. Out of 7063 blocks in the country only 599 blocks (8.5%) are designated as dark (over exploited). The majority of dark blocks are located in the North & South of the country (32% & 34%) respectively. Stage of ground water development in the country is about 32%.

5.63 The CGWB has prepared a 'Water Map' for the entire country. The map contains information on water regions, quality and depth of water and even excessive contamination. The

map will also indicate the various kinds of rocks in different areas, fresh water supply and high concentration of fluoride, nitrate and iron content in water. In Kerala, groundwater occurs under phreatic, semi-confined and confined conditions. The groundwater resources are largely concentrated in the sedimentary aquifers of the coastal regions. The groundwater resources are tapped mainly for drinking and irrigation purposes. The state has a replenishable groundwater resource of 6840 million cubic meters. The net groundwater availability is 6229 million cubic meters. The gross groundwater draft is 2693 million cubic meters and the net groundwater available for future use is 3536 million cubic meters.

5.64 A district-wise analysis of ground water resources of Kerala shows that Palakkad has the higher potential for ground water recharge (12%) followed by Thrissur (11%), Ernakulam (9%), Kannur (8%), Kottayam (7%) and Alleppey (6.8%). Thiruvananthapuram has the lowest (4%) potential for ground water recharge. The stage of development of groundwater is the highest in Kasargod district (71%) and the lowest is in Wayanad (22%). The overall stage of development in the State is 43% which is greater than the national level. The ground water resources of Kerala as on 31.3.1999 is given in Appendix.5.4.

5.65 Monitoring and preservation of groundwater is an important aspect, which requires serious attention. Factors like over exploitation of groundwater, the deep infiltration of surface water from irrigated fields using chemical fertilizers and pesticides, infiltration of saline soils, effluents from industries affect the quality of ground water. The State Ground Water Department is monitoring 440 piezometres and 303 observation dugwell stations across the state in different terrains under hydrology project. Monthly observed data for all the stations are analyzed and trend analysis reports were prepared. It is observed that 81 piezometres and 59 dug wells are showing falling trend when analyzed for pre monsoon and post monsoon seasons. This indicates that either overdraft or insufficient recharge is affecting these areas. These areas need special attention in the context of ground water recharge.

5.66 Artificial recharge and rainwater harvesting are the best-suited and cheapest methods to overcome this situation. A scheme for the construction of artificial recharge structures was introduced in the state with financial assistance from Government of India. Sub surface dams and dykes are the main structures built for the artificial recharge of ground water. Hydrogeologically suitable sites for sub-surface dams were located and works are in progress. For the rest of places detailed hydrogeological investigation are underway for the construction of suitable recharge structures. The sources of pollution have to be properly surveyed and identified. The Central Ground Water Board's Pollution Cell has undertaken studies to find out the ways and means to check the effect and spreading of pollution.

5.67 As per the latest groundwater estimation carried out by the Central Groundwater Board, Government of India and Groundwater Department, Government of Kerala based on Groundwater Estimation Committee norms, 15 blocks of the State fall under overexploited, critical and semi critical categories and 33 blocks show more than 70% development. Blocks were categorised based on the stage of development and long term trend of groundwater levels during pre and post Monsoon seasons.

5.68 A comparative study conducted with respect to water levels during the post monsoon months of 2001 and 2002 indicated that an average of 20 to 25% depletion in rainfall during the year has resulted in a drastic fall of water level in majority of observation stations indicating a severe drought situation in Kerala. On an average 65% of the observation stations spread all over Kerala is showing a decline in water level

5.69 The systematic approach to the management of ground water requires a sustainable legal framework. Government of India has also pointed out the necessity of legislation by the State Governments for the regulation of ground water exploitation. In this circumstance, in order to regulate the over exploitation of groundwater resources Government of Kerala have brought in a law The Kerala Ground Water (Control and Regulation) Act 2002 which envisages conservation of ground water and regulation and control of its use.

5.70 The Act has to be implemented by an authority named 'State Ground Water Authority' consisting of 13 members and the Secretary (WRD) as the Chairman and Director, GWD as the Secretary.

5.71 The State Ground Water Department is the nodal agency assigned with the responsibility of ground water development and utilisation. The main activities of GWD is to locate potential ground water resources for construction of ground water structures like open wells, bore-wells, tube wells and artificial structures like subsurface dykes and check dams. Technical guidance were given to local bodies for siting and construction of drilled wells and for the implementation of rainwater harvesting.

5.72 During the period under report (2003-04), an amount of Rs.29.24 crores has been invested for minor irrigation out of which the share of ground water development was Rs.9.60 crores ie. 39%

5.73 During 2003-04 the Department has imparted technical assistance to identify sites for 882 open wells, 5423 drilled wells and constructed 934 drilled wells. The additional area reported to be brought under irrigation was 2637 ha. Training was imparted to 41 personnel and analysed 2545 water samples, prepared 5 Ground water prospect maps from satellite imagery of Kerala under Rajiv Gandhi National Drinking Water Mission and developed new methodology for the detection of Fluoride content in drinking water, with the assistance of CCCM of BARC, Hyderabad. Under Rajiv Gandhi National Drinking Water Mission scheme, 36 bore wells were drilled in the non-covered/partially covered habitats. The IInd Phase of the National Hydrology Project has been initiated during the period under report. The financial and physical achievements of the first Phase of the project is given in Appendix-5.6 & 5.7.

### Flood Management

5.74 India is prone to natural disasters. Due to its locational and geographical features, it is vulnerable to a number of natural hazards like cyclones, droughts, floods, earthquakes, fires, land slides & avalanches.

5.75 Natural disasters result in heavy economic losses, apart from the loss of human life and the hardship inflicted on the survivors.



Land use Board to find out the causes and intensity of flood. The study has been initiated in 3 basins viz., Neyyar, Pamba and Achancoil which are vulnerable to flood. The study in Neyyar basin has been completed and that in other basins are progressing. Traditional ways of construction of retaining walls, embankments, lay out of field channels etc. are followed even now for flood protection.

5.80 At the State level during the year under report, an amount of Rs 3.16 crores has been spent for protection of an area of 969 ha. of land from the ravages of flood. The cumulative area brought under flood control was 59657 ha. as on 3/2004.

#### Coastal Zone Management

5.81 Coastal erosion is a serious problem affecting the sea coast of Kerala. Kerala has a long coastal stretch of 590 kms. and more than half of it is subjected to sea erosion. Unlike other parts in the country, Kerala seacoast is thickly populated and as a result the loss due to sea erosion is relatively very high.

5.82 Construction of sea walls continued to be the sole intervention for coastal zone protection. In the area of protection sea shore, modern technologies like geo textiles, polyethylene fabrics/sheets, nourishment of foreshore with biomaterials, etc. are emerging. During 2003-04 an amount of Rs.6.35 crores has been spent to construct 1.13 km. of new sea wall and for reformation works in 0.73 km. Out of the total coastal stretch of 590 kms, about 385.16 Kms was protected by constructing new sea walls and reformed 112.909 Km. of old sea walls spending an amount of Rs. 275.17 crores upto 31.3.2004. The Eleventh Finance Commission has provided Rs.50.00 crores for anti sea erosion works for constructing 15.89 km of new seawall and reformation of 20.14 km. for the period 2000-05. Out of this, 12.09 km of new sea wall was constructed and reformed 21.83 km. of old sea walls as on 31.03.2004 spending Rs.38.00 crores.

The physical and financial achievement under flood management and coastal zone management during 2003-04 are given in Table-5.15

**Table: 5.15**  
**Financial and Physical Progress of Flood Management and Coastal Zone Management Programmes during 2003-04**

Sl No	Item	Financial Achievement	Physical Achievement	(Rs. lakhs)
				Cumulative Physical achievement as on 3/2003
1	Flood Management	316.53	969 ha.	59657 ha.
2	Anti-Sea Erosion Works	634.59	1.13 km.	385.16 km.
	a) New sea-wall constructed			
	b) Reformation of old & damaged sea-wall		0.73	112.909 km

Source: Water Resources Department

5.83 The havoc caused by the tsunami towards the end of December 2004, has brought to focus the stable question of implementation of the coastal zone regulations, safe methods of rehabilitation, use of methods other than sea-wall for protection, as for example, promoting vegetation, mangroves, sand management etc.

#### Command Area Development

5.84 The Command Area Development Programme was launched with the main objective of improving the utilisation of the irrigation potential created for optimising agricultural production and productivity from the irrigated areas by integrating various activities related to irrigated agriculture.

5.85 The main activities of Command Area Development Authority include construction of field channels, field drains, enforcement of warabandhi and reclamation of water logged areas. The Command Area Development (CAD) activities were carried out in the 16 completed irrigation projects, namely Malampuzha, Mangalam, Pothundy, Walayar, Cheerakuzhy, Vazhani, Peechi, Chalakudy, Neyyar, Gayathri, Pamba, Periyarvalley, Chithurpuzha, Kuttiyadi, Pazhassi and Kanhirapuzha with a total ayacut of 2.03 lakh ha. CADA programmes are implemented with financial assistance from CADA Agricultural activities like large scale demonstrations, adaptive trials, training to farmers, soil conservation, land leveling and shaping and formation of beneficiary activities are nearing completion in the first 12 projects. Government of India has withdrawn the central assistance of onfarm development works except reclamation scheme in the 12 projects with effect from 31.03-2003.



5.86 Based on the recommendations of the Working Group of the Planning Commission on “Command Area Development Programme” and “Private Sector And Beneficiaries participation in Irrigation Water Management” and the views expressed by the State Governments the existing CAD Programme has been restructured and renamed as “Command Area Development and Water Management Programme”. The

restructured programme retains the components of the existing scheme which have been found to be beneficial to the farmers, include a few new components considered necessary for correction of deficiencies in the irrigation system and delete those components which have lost their utility overtime. The details of the components under the restructured programme are shown in Box: 5.7

**BOX-5.7**

**Components of restructured CAD Programmes**

- ◆ Survey, planning and designing of On Farm Development (OFD) works;
- ◆ Construction of field channels, now with a minimum of 10% beneficiary contribution;
- ◆ Full package OFD works including construction of field channels, realignment of field boundaries, land leveling and shaping also with a minimum of 10% beneficiary contribution;
- ◆ Warabandi (to be continued without central assistance);
- ◆ Construction of field drains, intermediate and link drains for letting out surplus water;
- ◆ Reclamation of waterlogged areas of irrigated commands using conventional techniques and including bio-drainage wherever applicable, now with a minimum of 10% beneficiary contribution;
- ◆ Software components such as training of farmers and field functionaries & officials, adaptive trials & demonstrations, action research for Participatory Irrigation Management, seminars/ Conferences/workshops, monitoring and evaluation of the programme etc. through Water and Land Management Institutes (WALMI) and other institutions with hundred percent funding from Government of India;
- ◆ Institutional support to Water Users’ Associations;
- ◆ Establishment cost – 20% of OFD works
- ◆ R & D Activities, including training of senior level officers, conferences, workshops, seminars etc. arranged directly by the Ministry;
- ◆ Correction of system deficiencies above the outlet up to distributaries of 4.25 Cumec (150 Cusec capacity);
- ◆ Renovation of de-silting of existing irrigation tanks including the irrigation system and control structures within the designated irrigation commands with a minimum of 10% beneficiary contribution as maintenance fund, the interest from which has to be used for maintenance in future;
- ◆ Use of location specific bio-drainage techniques to supplement conventional techniques for reclamation of waterlogged areas.
- ◆ The restructured programs came into force from 1<sup>st</sup> April 2004 onwards.

5.87 Government of India had directed to restructure the CAD programme from the 3<sup>rd</sup> year of the Tenth Plan onwards in the ongoing four projects namely Pamba, Periyarvalley, Kanhirapuzha and Pazhassi. Detailed project reports for these projects for the restructured CADWM activities were submitted to Government of India for approval. Finalisation of the detailed project reports of Kallada and

Muvattupuzha projects are nearing completion. As part of reform initiative in the new CADWM programme new components like renovation of tanks and system correction are included.

5.88 Proposals for restoration of tanks of Palakkad and Pathanamthitta district are under the consideration of Government of India.

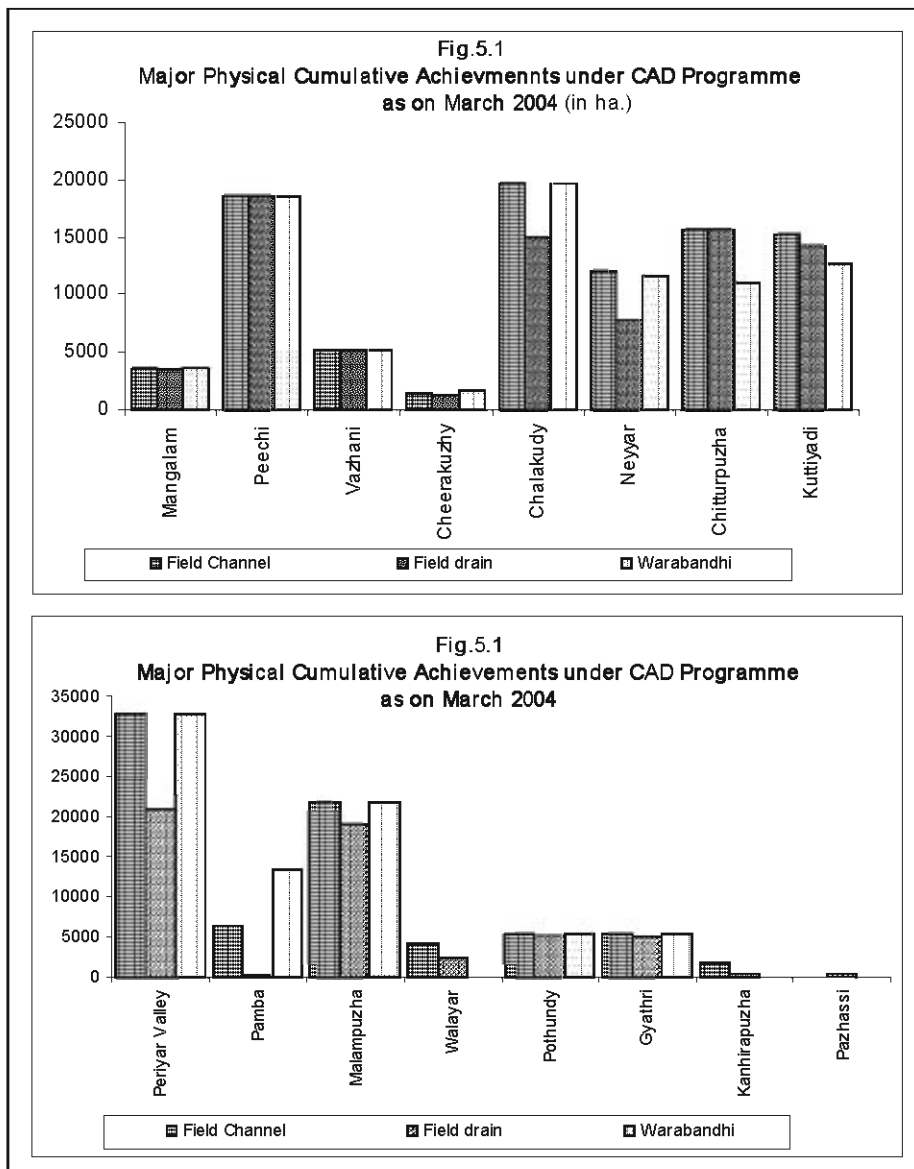
5.89 All the CADA works are executed through registered Karshaka Samithies (BFAs). Most of the samithies have not renewed their registration and hence the farmers have to be motivated for the renewal of registration.

5.90 Physical achievements of the existing CADA programme during 2003-04 are given in Appendix: 5.8

5.91 The progress during 2003-04 was not at all encouraging. The achievement recorded during 2003-04, include construction of field channels in 2171 ha; drains to benefit 8368 ha. conducted large

scale demonstration in 1994 ha; adaptive trials in 122 ha; 64 training programmes, bench mark and evaluation studies in 1692 ha. The work on reclamation of water logged areas were done in 4409 ha. disbursed subsidies to 456 small and marginal farmers; conducted detailed survey in 1320 ha., and four evaluation reports were also published. The major physical cumulative achievements are given in Appendix. 5.9. The cumulative achievement of the main activities of CAD programmes of all projects are represented in Fig.5.1

**Major Physical Cumulative Achievements under CAD Programme as on March 2004**



## Drinking Water Supply.

### Coverage.

5.92 In Kerala 80% urban and 60% rural people have been covered by piped water supply by 2003-04. The over all water supply coverage is 65.2% as against 64% during 2002-03. The rural-urban coverage during 2002-03 was 58.6% and 79.2%, respectively. During 2003-04 additional population covered with protected water supply was 3.73 lakhs.

**Table-5.17**

**Distribution of Households by source of Drinking Water NFHS-2**

Sl. No.	Source	Rural (%)	Urban (%)	Total (%)
1	Piped	11.4	37.6	17.7
2	Hand pump	2.2	2.2	2.2
3	Well	83.6	60.0	77.9
4	Surface water	1.1	0.0	0.8
5	Others	1.7	0.2	1.4
	Total	100.0	100.0	100.0

Source: National Family Health Survey India 1998-99.

5.93 District-wise overall coverage of drinking water vary from a high level of 89.9% in Ernakulam to a low level of 48.9% in Kozhikode. In rural coverage also Ernakulam stands top with 91.3% and Kozhikode is at the bottom with 34.4%. Urban coverage is highest in Kottayam district with 97.6% and lowest in Wayanad with 50.1%. District-wise rural-urban population covered by piped water supply as on 1.4.2004 is given in Appendix.5.10.

5.94 Drinking water coverage measured from supply side and demand side give different coverage data. Supply side coverage is based on the capacity of the water supply system while the demand side coverage is based on actual consumption from potable source. Demand side data on distribution of house holds by sources of drinking water in 2001 census and NFHS-2 are given in Tables 5.16 and 5.17.

5.95 There is large rural – urban difference in sources of drinking water. For instance, as per NFHS-2, households covered with piped drinking water is 38% in urban areas but only 11% in rural areas. But according to census 2001, 40% of urban and 14% of rural area is covered by pipe water. Again as per census 2001, in Kerala, 71.6% households have drinking water within premises, 16.4% have drinking water near premises and 12% households have drinking water away from premises.

5.96 As per NFHS-2 (1998-99) ninety percent of households either have a source of drinking water in their residence/yard or can collect drinking water in less than 15 minutes. Similarly significant proportion of households purify drinking water by some method (71% in urban areas and 58% in rural areas) and the most common method is boiling.

**Table-5.16**

**Distribution of Households by source of Drinking Water in Kerala – Census 2001.**

Sl. No.	Source	Rural (%)	Urban (%)	Total (%)
1	Tap	13.9	39.9	20.4
2	Hand pump	1.1	1.0	1.1
3	Tube well	1.8	2.0	1.9
4	Well	77.2	56.0	71.9
5	Others	6.0	1.1	4.7
	Total	100.0	100.0	100.0

Source: Census of India 2001.

### Habitation-wise status of Water Supply.

5.97 According to a survey by the Rajiv Gandhi National Drinking Water Mission in 1992, out of 9776 habitations in Kerala, 2289 habitations were non-

covered, 7422 were partially covered and 52 were fully covered with drinking water. Also 13 habitations were in inaccessible forest areas and not covered with drinking water. In 2004, there are no non-covered habitations. Habitation-wise status of water supply coverage for the last five years is given in Table.5.18

**Table-5.18**  
**Habitation-wise status of Water Supply Coverage.**

Year	Fully covered	Partially covered	Non covered	Forest Area
1999-2000	1994	6927	842	13
2000-01	1994	6964	805	13
2001-02	2091	6889	783	13
2002-03	2091	7444	228	13
2003-04	2112	7651	0	13

Source: Kerala Water Authority.

5.98 Though coverage of water supply has been extended to all habitations by 2004, in 7651 habitations, water supplied is less than the stipulated norm of 40 lpcd, Table.5.19. shows the supply level of water per day.

**Table-5.19**

**Habitation-wise Water Supply level as on 1.4.2004.**

Quantity of Supply	Habitation (Nos.)
Below 10 lpcd	1835
Between 10 lpcd and 20 lpcd	2975
Between 20 lpcd and 30 lpcd	2040
Between 30 lpcd and 40 lpcd	801
Above 40 lpcd	2112
<b>Sub Total</b>	<b>9763</b>
Non covered, Forest Area	13
<b>Total</b>	<b>9776</b>

Source: Kerala Water Authority.

#### Water Supply Schemes in Operation.

5.99 Kerala Water Authority has 1855 water supply schemes in operation as on 1.4.2004. It consists of 59 Urban Schemes, 909 Rural Multi Panchayat schemes and 887 Rural Single Panchayat Schemes. During 2003-04, 4 major schemes (1 Urban and 3 Rural) have been commissioned. District-wise details of water

supply schemes in operation are given in Appendix.5.11.

#### Service Connections and Street Taps.

5.100 Kerala Water Authority has 9.35 lakh service connections and 1.80 lakh street taps as on 1.4.2004. This is against 8.71 lakh connections

and 1.72 lakh street taps as on 1.4.2003. It shows that 0.64 service connections and 0.08 lakhs street taps were provided newly during 2003-04. Similarly out of the total service connections, 8.64 lakh (92.4%) are domestic and out

of the total street taps 75.8% are in rural areas. Category-wise water connections as on 1.4.2004 is given in Table.5.20. and District-wise details are given in Appendix.5.12.

**Table-5.20**

**Service Connections and Street Taps by Kerala Water Authority as on 1.4.2004.**

Sl. No.	Category	Number
1	Service Connections	
	(i) Domestic	864262
	(ii) Non Domestic	70019
	(iii) Industrial	841
	<b>Total:</b>	<b>935122</b>
2	Street Taps	
	(i) Rural	136616
	(ii) Urban	43552
	<b>Total</b>	<b>180168</b>

### Water Tariff and Revenue.

5.101 Water Tariff rate in Kerala was revised last in 1999 and it is shown in Appendix.5.13. Total revenue collected from water charges during 2003-04 is Rs.115.68 crores as against Rs.105.78 crores during 2002-03. Out of the total revenue collected during 2003-04, 71.8% was from service connections and 28.2% was from street taps. Similarly Rs.74 crores (64%) was from Urban Schemes and Rs. 41.7 Crores (36%) was from rural schemes. Within rural schemes Rs.25.3 crores was from multi panchayat schemes and Rs.16.4 crores was from single panchayat schemes. Details of income from water charges from 1999-2000 onwards are given in Appendix.5.14.

5.102 There are about 9.5 lakh consumers. In four city Corporations and eight major Municipalities, water billing and revenue collection has been computerised. As a result consumers covered by computer billing is 65 percent. Bi-monthly billing has been implemented in 3 city Corporations and the target is to extend to eight major municipalities during 2005-06. Similarly computerised network system interconnecting all the eight revenue collection centres under P.H. Division Thiruvananthapuram and Government agency 'FRIENDS' is targeted for 2005-06.

### Arrears of Water Charges.

5.103 Arrears of water charge is a major problem of the Kerala Water Authority. As on 1.4.2004, dues from various category of consumers amount to Rs.410.82 crore. Out of it 62% is from local governments. Table.5.21 shows category-wise arrears of water charges.

Table-5.21

Category-wise Arrears of Water Charge (as on 1.4.2004)

Sl. No.	Consumer Category	Amount (Rs. in crores)	Percentage
1	Domestic	49.03	11.93
2	Non-Domestic	91.53	22.28
3	Industrial	15.35	3.74
4	Panchayat	125.43	30.53
5	Municipality	69.25	16.86
6	Corporation	60.23	14.66
	<b>Total</b>	<b>410.82</b>	<b>100.00</b>

### Plan and Non-Plan Expenditure of Kerala Water Authority.

5.104 Total expenditure of Kerala Water Authority was Rs.420.15 crores during 2003-04. Out of it Rs. 140.58 crore (33.5%) was under plan and Rs.279.57 crore (66.5%) was under non-plan. Under non-plan 38% is spent for salary and establishment, 30% for power, 12% for operation and maintenance and 12% for interest on loans. Category-wise expenditure of Kerala Water Authority is given in Table.5.22

Table-5.22

Plan and Non-plan Expenditure (2001-02 to 2003-04)

Sl. No.	Category	Expenditure (Rs. crores)		
		2001-02	2002-03	2003-04
	<b>A. Plan</b>			
1	State Plan	39.65	51.06	51.63
2	ARP Schemes	42.33	43.32	41.97
3	LIC/HUDCO Aided Schemes	41.40	37.06	33.61
4	Others (AUWSP/PMGY)	--	14.16	13.37
	<b>Sub Total</b>	<b>123.38</b>	<b>145.60</b>	<b>140.58</b>
	<b>B. Non-Plan</b>			
1	Salary & Establishment	95.61	102.59	105.51
2	Power Charges	74.38	81.00	84.00
3	Operation & Maintenance	31.07	31.31	32.85
4	Repayment of Loans	20.26	9.29	18.58
5	Interest on Loans	35.67	35.21	32.90
6	Others	6.49	5.66	5.73
	<b>Sub Total</b>	<b>263.48</b>	<b>265.06</b>	<b>279.57</b>
	<b>Total (A+B)</b>	<b>386.86</b>	<b>410.66</b>	<b>420.15</b>

5.105 Non-plan grant from Government and water charges are the revenue of the KWA for meeting the operation and maintenance costs. These costs are going up due to increase in salary, pension, material costs and electricity cost. Repayment of HUDCO and LIC loans and interest also increase liability. There has been no increase in water rate since 1999 while electricity charge has been increased three times. More over, KWA is classified with industries by KSEB. KWA has somewhat improved revenue collection from Rs.78 crores in 1999-2000 to Rs.115 crores in 2003-04 but a great deal more remains to be done. Even now, Authority is unable to pay electricity charge to KSEB. Accumulated dues come to Rs.196.90 crores as on 30.9.2004. Receipts of KWA from various sources from 1999-2000 to 2003-04 are given in Appendix.5.15

5.106 Due to inadequacy of fund, operation and maintenance is poor and it ultimately result to breakdown and distribution loss. Several old water supply schemes need replacement of pipelines, motor pumps and improvement to treatment plants and electrical installation. There are 30 years old pumping mains and pipe lines which need replacement to protect road surface and control distribution loss. About 40 percent water produced is lost in distribution due to old and damaged pipes.

5.107 Increase in maintenance and operation costs, and high distribution loss increase the revenue deficit of KWA. The Revenue deficit of KWA since 1999-2000 is shown in Table below.

**Table-5.23**

**Revenue Deficit of KWA**

Year	Revenue Deficit (Rs.crores)
1999-2000	92.83
2000-01	109.80
2001-02	116.13
2002-03	106.39
2003-04	120.27

5.108 Revision of tariff rate and increase in non-plan grant are only short-term relief measures. What KWA needs is long term sustainable measures to overcome the crisis as recommended by the detailed study made by the Planning Board in 2002 and accepted by the Government. An MoU was to be signed between the government department concerned and KWA, but this has not been done so far. The measures to be taken include (i) identify the projects nearing completion and prioritise and commission these projects in as short a time as possible to avoid further cost over runs. (ii) Detect non metered supply and initiate appropriate measures to collect water charge, starting with all urban areas (iii) intensify arrear revenue collection including revenue from LSGS (iv) complete the transfer process of single panchayat KWA schemes to LSGs (which was ordered for about four years ago) (v) prioritise old major water supply schemes and effect needed replacement. (vi) Intensify reform measures and improve management system and control expenditure. (vii) Increase in tariff rate and non plan grant to bridge the deficit, if any on the basis of improvement of performance and MoU.

5.109 In addition to state plan schemes, Kerala Water Authority implements several other schemes such as centrally sponsored ARWSP/ AUWSP, LIC, HUDCO and NABARD assisted schemes as also externally assisted projects. Under all these categories together there are 1609 ongoing water supply schemes which consists of 1555 rural and 51 urban. District-wise and category-wise details are given in Appendix 5.16..

**Externally Aided JBIC Assisted Kerala Water Supply Project.**

5.110 A package of five Water Supply schemes was approved for loan assistance by the Overseas Economic Co-operation Fund (OECF) of Japan (now the Japan Bank for International Co-operation). The project objectives are (i) augment and rehabilitate two Urban Water Supply Schemes in Kozhikode and Thiruvananthapuram and (ii) construct water supply systems for three rural regions (a) Pattuvam (b) Cherthala and (c) Meenad. The project when completed will ensure drinking water to 43 lakh people. The project originally envisaged to commence in 1997 started finally only in 2003.

5.111 The total estimated cost of the project is Rs. 1787.45crore. Out of it external assistance is Rs. 1519.38 crore and state share is at Rs. 268.07 crore. The revised year of completion is 2007. During 2004-05 an amount of Rs. 150 crore is provided. Government of Kerala have appointed the consultant, 95% of the required land has been acquired, surveys required for detailed engineering reports commenced, 90% of the detailed engineering design completed and preparation of tender documents have been completed. Government of Kerala has established a fast track project implementation mechanism to speed up various approvals and remove bottlenecks with a view to completing the project in the scheduled time by August 2007.

**AUWSP Schemes**

5.112 To provide safe and adequate drinking watery supply in census towns having population less than 20,000. Government of India introduced the Accelerated Urban Water Supply Programme (AUWSP) in 1993-94. Government of India grant is 50% of the original estimated cost and state government has to met the remaining 50% including excess cost if any. And the benefited community has to meet O&M of the project.

### Accelerated Rural Water Supply Programme (ARWSP)

5.113 Under ARWSP 108 schemes are in progress. These schemes are designed with a percapita demand of 40 lpcd and implemented with 100% assistance from Government of India. But excess over the estimated cost has to be met by the state government. There are such 21 ongoing schemes to be completed with state funds. The number of schemes for which the state has to take on responsibility has increased due to non-completion within the period of three years (as required under the scheme) and cost over-runs.

5.114 Similarly for providing protected water supply to rural schools Government of India provide 50% of the cost under ARWSP and 50% has to be met under state plan. 749 schemes have been sanctioned and 136 schools have been provided with water supply by August, 2004. Remaining works are in progress.

### LIC and HUDCO Aided Water Supply Schemes.

5.115 There are 40 Urban Water Supply Schemes in various stages of implementation taken up with the aid of LIC and HUDCO. Out of it, ten schemes are proposed to be commissioned during 2004-05. LIC provides 40% and HUDCO provides 85% of the estimated project cost as loan and the balance amount has to be met by State Government. Total government contribution for LIC/HUDCO aided water supply schemes is estimated at Rs. 30 crore.

5.116 HUDCO has so far provided loan for 18 schemes and out of these, 13 have been commissioned. Total loan sanctioned for these schemes is Rs.157.27 crores and out of it Rs.119.71 crore has been released. Outstanding loan to HUDCO in 2003-04 is Rs.51.31 crore.

5.117 LIC also provides loan for Rural Water Supply Schemes equal to 40% of the estimated cost. There are such 78 LIC aided schemes under various stages of implementation. Out of it one scheme was completed during 2003-04 and 10 are targeted for completion during 2004-05

itself. Since 1967-68 rural and urban water supply schemes were taken up with LIC loan. An amount of Rs.319.57 crores has so far been received as loan from LIC and 280 water supply schemes have been completed. Out standing loan to LIC by 2003-04 end is Rs.220.48 crores. In view of the revenue deficit, increasing portion of LIC loan in a year has to be adjusted against the instalment due for repayment, sharply reducing the funds available for schemes under implementation.

### Kerala Rural Water Supply and Sanitation Project (Jalanidhi)

5.118 The Kerala Rural Water Supply and Sanitation Project has been designed based on the principles of the National Rural Water Supply Policy Reforms. The specific development objectives of the project are to:

1. Demonstrate the viability of cost recovery and institutional reforms by developing, testing and implementing the new decentralised service delivery model on a pilot basis and
2. Build the state's capacity for improved sector management in order to scale up the new decentralised service delivery model statewide.

5.119 Govt. of Kerala has created an autonomous institution, the Kerala Rural Water Supply and Sanitation Agency (KRWSA) to implement this project. Originally the project was introduced in the four districts of Kerala, Thrissur, Malappuram, Palakkad and Kozhikode. The project period is for six years from 2001. The total estimated cost of the project was Rs. 451 crore which was later down sized to Rs. 392 crore during the Mid Term Review. The project is expected to cover over 15 lakh people in 99 selected Grama Panchayats (GPs) of the four project districts. District-wise coverage of panchayats is given in Table.5.24.

Table-5.24

## District-wise coverage of Panchayats

Sl. No	District	Total GPs in the District (Nos)	GPs covered by the Project	%
1	2	3	4	5
1	Thrissur	92	16	17
2	Malappuram	100	34	34
3	Palakkad	90	24	27
4	Kozhikkode	77	25	32
	<b>Total</b>	<b>359</b>	<b>99</b>	<b>28</b>

5.120 Panchayats under the project are selected in batches of approximately 15-20. Each batch has a project cycle of 27 months divided in to four phases. 3 months for pre-planning, 12 months for planning, 8 months for implementation and 4 months for post implementation.

5.121 The project tries to ensure sustainability through integrating relevant components with in the project framework itself. Four major components are;

- i) Institutional strengthening
- ii) Community Development and Infrastructure Building
- iii) State Sector Development
- iv) National Sector Development

## Present Status

5.122 Jananidhi Project is now in the fourth year of implementation and has worked with four batches of G.Ps. The project covered 5 GPs in the first batch, 25GPs with 26 projects in the second batch, 29 GPs with 33 projects in the third batch and 19GPs with 22 projects in the fourth batch. Thus 78 GPs are covered with 86 projects by fourth year, which is 78% of the end target of the project. Moreover, project is covering 8 out of the 9 Tribal projects targeted.

5.123 Batch I has completed its exit and Batch II will exit by the end of 2004-05. Batch III is in its implementation phase and will exit by mid 2005. But Batch IV is in its early planning phase. The coverage of BPL household is 44% in Batch-I, 65% in Batch- II and 47% in Batch- III.

5.124 There are already 788 functional water supply schemes covering 41859 households with the community bearing 100% of the

operation and maintenance expense. At an average monthly amount of Rs. 39 per household, the community is paying a total amount of Rs.1.97 crore annually towards the operation and maintenance of these water supply schemes. Physical achievements in major components of the project are given in Table.5.25

Table-5.25

## Physical Targets and Achievements as on 31-8-2004.

Sl. No	Major components	Unit	Target as on 31-8-04	Achievement as on 31-8-04	% of Achievement to target
1	2	3	4	5	6
i)	1	Water Supply Schemes taken up	Nos. 1993	1733	87
	2	Water Supply Schemes functional	Nos. 1993	767	38
ii)	3	Latrins (new + conversion of unsanitary latrines)	Nos. 34167	46192	135
iii)	4	Environment Management works (soak pits + compost pits)	Nos. 15185	32691	215
iv)	5	Drainage	K.M 101	22.30	22

5.125 There are now 2347 Beneficiary Groups (BGs). Of these 133 are in Batch I, 820 in Batch II, 1078 in Batch III and 316 in Batch IV. Similarly 815 water supply schemes are functional. Under sanitation 355354 latrines have been constructed and 13719 unsanitary latrines converted.

5.126 Project spent Rs. 114.71 crores by September end 2004 which is 70% of the target till date. Component-wise expenditure as on 31-10-2004 is given in Table.5.26



**Table-5.26**  
**Expenditure as on 31-10-2004.**

Sl.No	Components	Expenditure (Rs. crores)
1	Operational Expenses	12.01
2	Sanitation and Hygiene Promotion	0.85
3	Capacity Building	1.52
4	Grama Panchayat Strengthening	3.26
5	Payment to support organisation	13.94
6	Women development Initiatives	1.01
7	<b>Construction of physical schemes</b>	
	i)Water supply schemes	64.03
	ii)Latrine	16.66
	iii)Drainage	1.66
	iv)Environmental Management schemes	2.51
	v)Ground water Management schemes	0.75
8	Tribal Development Programme	1.23
9	State Sector Development Programme	0.21
10	Rain Water Harvesting	0.59
	<b>Total</b>	<b>120.23</b>

i) Demand driven and community participation approach

ii) Panchayats/ Communities to plan, implement, operate, maintain and manage all drinking water schemes.

iii) Partial capital cost sharing by the communities.

iv) Full operation and maintenance by the users/panchayat.

5.130 It is envisaged that gradually the entire rural water supply sector will switch over to the Swajaldhara model. As part of reform initiative Government Of Kerala

had already taken action to hand over all the single Panchayat rural water supply schemes maintained by KWA to local bodies. KWA has handed over 163 such schemes to Panchayats.

5.127 Government of Kerala has adopted this approach and has approved the scaling up of this project to all fourteen districts of Kerala.

#### Reform Initiatives in the Rural Drinking Water Supply Sector

5.128 Government of India initiated a reform process in rural water supply sector in 1999 to gradually replace the government oriented, centralised and supply driven programme by people-oriented, decentralised, demand –driven and community based programmes. This reform initiative was implemented in 67 selected pilot districts across the country. Kollam and Kasaragod districts of Kerala are included in the selected pilot districts. Besides KWA is implementing community based Mini Water Supply Schemes as part of reform initiatives.

5.129 With the experience gained from the pilot districts, the reform initiatives are scaled up by the introduction of the programme called 'SWAJALDHARA' in December 2002 to cover the entire country. Swajaldhara scheme is implemented in the state by District Water and Sanitation Mission and the main elements of the programme are:

5.131 To institutionalize the reform agenda throughout the country the RGNDWM proposes to execute an MoU with each state government. The MoU will provide the frame work for all funding arrangements with government of India and also with external support agencies. Action had been initiated by the state government for finalising the MoU.

#### Local Government Institutions and Drinking Water Supply

5.132 Under Panchayathi Raj Act 1994/ Nagarapalika Act 1994, Local Government Institutions actively involve in providing drinking water to people. During 2003-04, all Local Government Institutions in Kerala together have set apart Rs. 4512 lakhs for drinking water. Under drinking water supply Local Government implement activities like source development, construction of source, water quality

improvement, extension of pipe line, development of existing drinking water projects, digging of new wells and renovation of old wells. During 2004-05, Local Governments have set apart Rs. 4680 lakhs for drinking water projects and out of it, Rs. 4361 lakhs have been set apart by three tier Panchayats and Rs. 319 lakhs by Urban Local Governments. Out of the total outlay for drinking water, Grama Panchayats' share is Rs. 3008 lakhs (64%) followed by Rs. 770 lakhs (16%) by District panchayats. Table-5.27 shows tier-wise outlay earmarked for drinking water projects during 2003-04.

5.133 Details of achievement under water supply, available for 2002-03 shows that Local Governments have taken up 9798 drinking water projects benefiting 1.81 lakhs people during 2002-03. Similarly 4816 projects have been implemented with beneficiary contribution. During 2002-03, 9764 new public water taps were installed and water tap connections were provided to 8133 households. To provide drinking water, 9894 wells were digged and 899 were renovated.

**Table-5. 27**  
**Local Government Institutions and outlay for**  
**Drinking Water Supply (2004-05)**

Sl.No.	LSGs	Outlay (Rs.lakhs)
1	District Panchayat	770
2	Block Panchayat	583
3	Grama Panchayat	3008
	<b>Sub Total</b>	<b>4361</b>
4	Municipalities	258
5	Corporation	61
	<b>Sub Total</b>	<b>319</b>
	<b>Grand Total</b>	<b>4680</b>

## CHAPTER - 6

# ENVIRONMENT

The World Bank conducted a study in 1995 on valuing the economy wide cost of environmental degradation in India. The average values for the estimated environmental impacts by sectors are health impact of water pollution (\$ 5710 million) or 59% of total), agricultural output loss due to soil degradation (\$ 1942 million or 20%), health impact of air pollution (\$ 1310 million or 14%), loss of livestock carrying capacity due to range land degradation (\$328 million or 3%), cost of

deforestation (\$ 214 million or 2%) and loss of international tourism (\$ 213 million or 2%). In many developing countries the costs of environmental degradation have been estimated at 4 to 8 per cent of GDP annually.

6.2 A draft Environment Policy has been published by the Ministry of Environment and Forests in 2004. The salient features of the draft Policy are shown in BOX-6.1

### BOX-6.1

#### National Environment Policy – 2004 (Draft) *(Strategies and Action Plans)*

##### Regulatory Reforms:

The existing legislative frame work would be revisited to develop synergies among relevant statutes and to institutionalize an integrated environment management system. Regional and cumulative environmental impact assessments would be institutionalized and clustering of industries would be encouraged. The Integrated Coastal Zone Management (ICZM) plans would ensure participation of local communities both in plan formulation and implementation. National Bio-safety guidelines and Bio-safety operations manual will be reviewed to ensure that development of biotechnology does not lead to adverse impacts. Environmentally sensitive zones with 'in comparable value' would be provided with legal status and area development plans would be formulated with the participation of local communities and local institutions. Community based organisations would be provided with legal standing for the monitoring of environmental compliance. To promote use of economic principles in environmental decision-making, natural resource accounting by the central statistical organisation will be strengthened.

##### Enhancing and Conserving Environmental Resources:

- To reduce the menace of land degradation, R&D for adoption of sustainable land use practices would be supported and reclamation of waste land and degraded forest land through multi stakeholder partnerships would be promoted.
- The present forest and tree cover of 23% will be enhanced to 33% by 2012, through afforestation of degraded forest land, waste lands and tree cover on private or revenue land and by means of multi stakeholder partnerships and universalization of the Joint Forest Management (JFM) system throughout the country.
- Traditional rights of forest dwelling tribes would be legally recognized, to secure their livelihoods, reduce possibilities of conflicts and to provide long term incentives to the tribals to conserve the forests.
- For wild life conservation, the Protected Area Network in the country will be expanded. Multi stakeholder partnerships would be formulated for enhancement of wildlife habitat in conservation reserves and community reserves and site specific eco-development programmes would be promoted.

- Measures for protecting biodiversity hotspots will be strengthened. Ex-situ conservation of genetic resources in designated gene banks will be enhanced and an internationally recognized system of legally enforceable sui-generis intellectual property rights will be adopted, for the resources as well as for ethno-biology knowledge.
- For water conservation, efficient water use techniques such as sprinkler or drip irrigation will be promoted. Water harvesting in new constructions in urban areas as well as design techniques for road surfaces and infrastructure would be mandated. Impacts of the policy of electricity tariff and pricing of diesel on ground water table would be reviewed.
- For wetland conservation, a legally enforceable mechanism for identified, valuable wetlands would be set up, a national inventory of such wetlands would be developed and Eco-tourism strategies would be formulated.
- For abating air pollution, use of improved fuel wood stoves and solar cookers will be accelerated, monitoring of emissions standards will be strengthened through community participation, a national strategy for low pollution mass urban transport system would be formulated and reclamation of waste lands by energy plantations would be promoted.
- To abate water pollution, public-private partnership models of effluent and sewage treatment plants will be piloted, capacities for spatial planning among the state and local governments would be enhanced and R&D in developing low cost technologies for sewage treatment will be promoted. It is also proposed to take explicit account of groundwater pollution in pricing policies of agricultural inputs especially pesticides.
- To abate soil pollution, local bodies will be strengthened for segregation, recycling and reuse of municipal solid wastes and for recycle, reuse and environmentally benign disposal of plastic wastes. Public-private partnerships for operationalizing secure land fills and incineration for toxic and hazardous wastes will also be developed.
- To abate noise pollution, noise emission norms appropriate to various activities will be developed and distinct ambient noise standards to different environments will be formulated.

#### **Environmental Standards, Management Systems, Certification and Clean Technologies**

Permanent machinery comprising of experts to review notified ambient and emission standards will be setup. Monitoring mechanism will be strengthened through participation of local communities and public-private partnerships. Industry associations will be encouraged for adopting ISO 14000 and purchase preference for ISO 14000 goods and services for government procurement will be encouraged. To promote clean technology adoption, a mechanism to network technology research institutions for co-operation in R&D would be setup.

#### **Environmental Awareness and Partnership building**

A strategy for strengthening the environment content in the curricula of formal education and for enhancing environmental awareness among the general public would be adopted. On line public access to monitoring information and archival data would be enhanced. Various partnerships such as public-community, Public-private, public-community-private, public-voluntary organisations, public-private-voluntary organisations etc. would be realized.

*Source: Ministry of Environment and Forests, GoI, 2004.*

6.3 The draft is a significant step forward, though many aspects of the Policy need to be made clearer. Environmentalists are generally of the opinion that the draft is inadequate to enable governments and society to meet the challenge of rapid deterioration.

**Wet land Conservation**

6.4 Wet lands are rich in floral and faunal biodiversity and they harbour a large number of endangered and threatened species. Conservation of wetlands was initiated in 1987 in India with the objective of assessment of wet land resources, identification of wetlands of national importance, promotion of R&D activities and formulation and implementation of Management Action Plans (MAP) of the identified wetlands. The notified wet lands in the country are shown in the Appendix 6.1

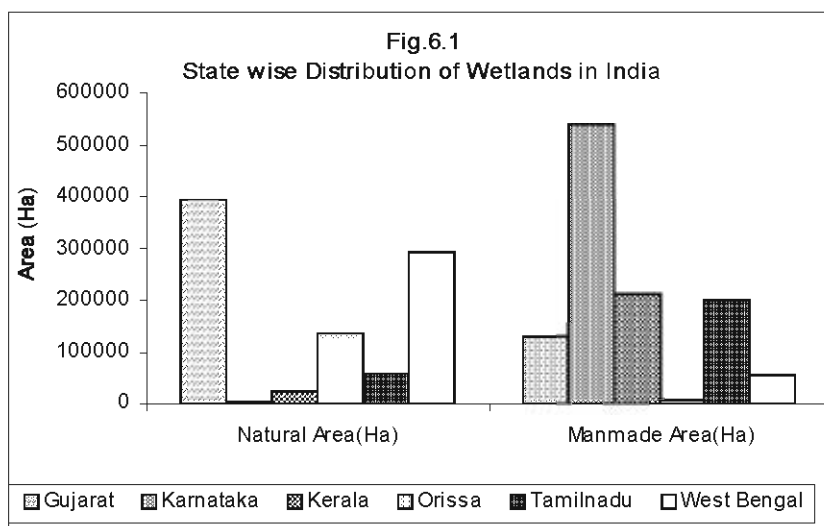
6.5 The total wetland area of the country is about 4.1 million hectares. Wetlands are distributed in different geographical regions. MoEF has prepared a Directory of Wetlands covering 2107 natural and 62253 man made wetlands occupying an area of 4.1 million hectares and information on the status of 183 wetlands of national/international importance was prepared. There are 32 natural and 2121 man made wet lands in the State.

6.6 The changes in the natural landscape through resource extraction, conversion for crop production, urbanisation, altered water balance and hydrological regimes have influenced the state of wetlands in the state. Wetlands have a fragile ecosystems and they require more concerted attention than to rivers and stream basins. Various ecological problems occur in wetlands such as eutrophication, contamination by toxic chemicals, accelerated sedimentation, excessive water diversion, fish resource depletion, encroachment and habitat alteration.

6.7 India is a signatory of the Ramsar Convention, which calls for the conservation of the ecosystems while ensuring benefits to the local communities. The features of use include assessment of wetland resources, developing wetland policy, inventory, capacity building, conservation of wetland sites and research. The real cause appears to be the complexities of implementation of the 'total protection' approach to wetlands, which is the standard norm for terrestrial protected areas. The National Committee on Wetlands and State Committees have a major role to play to protect wetlands in association with line departments, NGOs and PRIs, with appropriate co-ordination mechanism. A state level steering committee has been constituted. Sasthamcottah, Vembanad and Astamudi are the notified wet lands under Ramsar convention.

The salient features of the Ramsar sites of our State are given in BOX-6.2

6.8 Even though MAPs have been prepared, the implementation is quite weak and the state could not even get the full sanctioned amount from Government of India. Kerala State Council for Science Technology and Environment has taken up



## BOX-6.2

## Salient Features of Ramsar sites of Kerala

## Ashtamudi Lake (Ramsar Site No. 1204)

Ashtamudi, one of the largest wetland ecosystems in Kerala has been designated as a Ramsar site in November 2002. This estuarine system is a palm-shaped water body with eight prominent arms, adjoining the Kollam town.

- ◆ It is the second largest wetland in the state and deepest among all the estuaries of Kerala, with a maximum depth of 6.4 m. at confluence zone.
- ◆ Around 43 species of marshy and mangrove associates are present in this ecosystem, which include true mangroves. *Avicennia*, *Sonneratia*, *Bruguiera gymnorhiza* and *Sonneratia caseolaris*.
- ◆ It also supports some endangered species such as *Syzygium traenorum* and *Calamus rotang*, according to the Red Data Book of Indian Plants.
- ◆ The lake supports 57 species of avifauna, of which 6 are migratory and 51 resident species. More than 20000 waterfowl visit the lake annually.
- ◆ It supports 97 species of fishes, of which 42 are typically marine, 3 estuarine, 9 estuarine revere and 15 marine-estuarine and unique copeped species. It is also a congenial habitat for all species of penaeid and palaemon prawns, edible crabs, black clams and a variety of fish.
- ◆ The major environmental threats to the ecosystem are (i) pollution from oil spills of thousands of fishing boats (ii) pollution from industries such as aluminium and ceramics (iii) disposal of huge quantities of untreated sewage from Kollam city, direct disposal of human excreta from hanging latrines. (iv) serious degradations to the natural habitat including reclamation of the estuary.

## Sasthamkotta Lake (Ramsar Site No. 1212)

Placed at the elevation of 33 m above MSL, the Sasthamkotta Lake, the largest freshwater lake in Kerala (373 ha), has been designated as Ramsar site in November, 2002. The lake with a capacity to hold 22390 million litres of water, is surrounded by hills on all sides except south, where a bund has been constructed separating the lake from neighbouring rice fields.

- ◆ The water in the lake is special in that it does not contain common salt or other minerals and metals
- ◆ Vegetation is very scant, floating and rooted plants are negligible. Phytoplankton is scarce and primary productivity is low. The insectivorous plant *Drosera* Sp is found in the eastern shore of the lake.
- ◆ It supports 27 species of fresh water fish including Pearl spt and Catfish and 2 genera of prawns. The lake abounds in 21 species of herring and sardines of the family *Cupeidae*. The most common fish in the lake is *Callichrous bimaculatus* and *Wallago attu*. Bonnet monkeys frequent the banks. Teals are the notable migratory birds.

- ◆ The major threats to this fresh water ecosystem are (i) filling up of parts of lake for cultivation, (ii) dumping of agricultural and domestic wastes from the surrounding areas and (iii) reclamation of the land for agriculture along with banks and adjacent areas causing soil erosion.

#### Vembanadu Kole Wetland (Ramsar Site No. 1214)

Vembanadu kole wetland has been designated as a Ramsar Site in November 2002. Characterised by a continuous chain of lagoons or backwaters, 96 km long, it is one of the largest estuarine systems in Kerala.

- ◆ The site has got prominent biodiversity value owing to abundant mangrove vegetates at Kumarakom, Vypeen, Kannamali and Chettuva and abundant resident and migratory waterfowl. The rare flora species are *Excoecaria Agallocha*, and *Bruguiera Sexcangula*. The endangered waterfowl species are Spotbilled Pelican Oriental Darter, Water Cock and Blackbill Tern.

- ◆ The wetland ecosystem suffers threat out of land reclamation for agriculture and plantations, pollution due to industrial effluents, agrochemical, sewage etc. over exploitation of limeshell fishery and disturbance to the natural facility for breeding and migration of species due to reclamation and bunding activities in the river mouth.

*Source: WWF, India*

projects for Wetland Management in the state of Kerala. Accordingly, a wetland conservation and management programme is being executed for the Sasthamcotta and Ashtamudi wetland system. A management action plan was formulated and implementation of the same was being done by the District Collector, Kollam. However the progress of implementation is very slow.

6.9 State has to prepare action plan for wetlands project implementation. Immediate steps should be taken to protect them by changing their legal status to that of a protected category. Peoples' participation is an important component of all the wetlands identified for conservation and management. Participatory methods are to be adopted with the involvement of PRIs, NGOs and local communities in the co-management of wetlands. The need for a proper management of existing wetlands should be a priority of the state.

#### Mangroves and Sacred Groves

6.10 The World wide mangrove area is estimated at not less than 1,70,000 sq.km. and there are some 60 species of trees and shrubs that are exclusive to the mangrove habitat. Mangroves suggest genetically diverse

communities of terrestrial and aquatic fauna and flora.

6.11 Mangroves forests serve as a link between terrestrial and marine ecosystem. Mangrove swamps in India are seriously endangered ecosystem. On the recommendation of National Committee on Mangroves, 32 mangroves areas in the country have been identified for intensive conservation and management. For sustained improvement and ecologically sustainable utilisation of coastal mangrove forest resources, it is essential to conserve the existing genetic wealth of mangroves as well as the genetic diversity prevailing within them. The distribution of mangroves in different states is shown in the Appendix 6.2

6.12 Mangroves are characteristic wetland biotic formation confined to traditional zones of land and the fresh water and marine aquatic ecosystems. In Kerala, mangroves are distributed along the fringes of backwaters and estuaries that are inter tidal zones of the Lakshadweep Sea. Mangrove formations are confined to mainly Kasaragod, Kannur, Kozhikode, Malappuram, Ernakulam, Kottayam, Alappuzha, Kollam and

Thiruvananthapuram Districts in scattered bits (Table 6.1).

6.13 Potential areas stand fragmented and actual area is estimated to be less than 50 km<sup>2</sup> which only is the remnants of about 700 km<sup>2</sup> of mangroves which reportedly existed in Kerala earlier. The development of timber industry especially plywood, alternative land use and the establishment of fishing ports are the major reported sources for the degradation of the mangroves of Kerala. The mangroves are considered potential fish production sites providing breeding and nursery grounds for fishes and prawn. Moreover mangroves have innate potential to bind toxic chemicals and pollutants. Herons, storks, raptors and owls use mangroves as resting sites.

6.14 Under the Important Bird Area programme (IBA), the Bombay Natural History society has prioritised the list of IBAs in Kerala. Apart from the forest areas, only Kole wetlands in Thrissur and Malappuram districts are included in this list. The areas selected under the IBAs should be given more thrust in birds conservation programmes. Even though the mangrove area in the state is insignificant compared to national coverage, the shrinking area has to be protected.

**Table-6.1**  
**Mangroves in Kerala**

District	Site	Area km <sup>2</sup>
Ernakulam	Ernakulam & Mattancheri Channels (Thompumpadi-Murukkunpadam)	1.69
Ernakulam	Ernakulam & Mattancheri Channels	0.08
Kozhikode	Chittari Puzha & Anela Puzha (Mangad-Kollam)	0.34
Kannur	Dharmadam-Edakkad	0.26
Kannur	Dharmadam Puzha & Anjarakandi Puzha	2.46
Kannur	Valapattanam estuary (Valapattanam-Narat)	0.99
Kannur	Rampapuram Puzha	1.14
Kannur	Pazhayangadi estuary (Pattavam Kuppam)	4.62

Source: ENVIS, KSCSTE

6.15 There are 14 true mangrove species in Kerala, mostly belonging to Aegiceras, Avicenia, Brugiera, Ceriops, Kandelia and Rhizophora, whereas mangroves associated species are quite diverse and many of them are also common in the terrestrial habitats also. Suitable interventions in the co-system, like assisted natural regeneration and artificial regeneration are therefore needed urgently.

6.16 Action plan for the conservation of mangroves and strategy for its implementation to

ensure community participation in conservation has to be prepared.

**BOX-6.3**

**Mangroves: Areas of Ecological Importance in the Kerala coast**

The Institute for Coastal Management has identified and demarcated ecologically important areas in the cost line of Kerala, all owing to the unique mangrove ecosystem.

In Ernakulam District, Ernakulam channel and Arabian Sea surround the mangrove area. Patches of mangroves are distributed near Puthuvaipu, Azhikkal, Vypin and Vallarpadam regions. It covers an area of 1.77km<sup>2</sup>.

In Kozhikode District, Patches of mangroves are scattered near Kuthirakkada area where Anela and Chittari rivers meet it covers an area of 0.34km<sup>2</sup>.

In Kannur District, Patches of mangrove species are distributed near Melur and Dharmapatnam Island, which is surrounded by Dharmadam estuary. Similarly, Valapattanam and Pazhayangadi areas have patches of mangroves, where Valapattanam estuary and Pazhayangadi estuary surround those mangroves respectively. In Kannur district total mangrove area had been estimated to be as 9.47km<sup>2</sup>.

6.17 Sacred groves have been reported from Afro-Asian Countries like Ghana, Nigeria, Turkey and Syria etc. They are found in abundance in eastern and western parts of India and are known by various names, viz. Kavuvu

(Malayalam) Sarppakkavu (Tamil), Pavithravana (Kannada) Devarais (Marathi), Orans (Rajasthani) etc. and have extent varying from about 10 sq. kms to a million sq. kms.

6.18 The state of Kerala from time immemorial has nurtured a very religious and aesthetic line of protection of sacred groves, which was intermingled with social ways and worship. Such sacred groves are to be protected from the angle of bio diversity also and the existing sacred groves are the only islands of conservation amidst vast stretches of degraded ecosystems apart from the forests.



**Bio - diversity Conservation**

6.19 In the last half of the century, the rich biological resources of the Asia Pacific region have been increasingly exploited both for international trade and to sustain the regions growing population. Overall habitat losses have been acute in India, China, Vietnam and Thailand. The rise of monoculture at the expense of local and wild varieties has resulted in the loss of genetic diversity. In Indonesia, around 1500 varieties of rice disappeared during the period 1975-90. Coastal biological resources have been depleted by excessive and unsustainable fishing activities. Pollution from shipping in particular and from and discharge of toxic wastes has adversely affected the marine environment. South East Asia has also experienced among the highest rates of destruction of coral reef and mangrove habitats in the world.

6.20 The developing countries in the tropical and sub-tropical regions are the richest, in terms of bio-diversity, but now worst affected with bio diversity loss. India, one of the 12 mega – diversity countries of the world is in the forefront of the global bio-diversity crisis. India stands seventh in the World as far as the number of species contributed to agriculture and animal husbandry is concerned. The Convention on Biological Diversity, the adoption of TRIPS, and an increasing trend towards privatisation of agricultural research have necessitated a new and complex policy environment for bio-diversity conservation.

6.21 A National Biodiversity Authority has been set up at Chennai under the Biological Diversity Act 2002. The Act also provides for establishment of State level Biodiversity Management Committees. Detailed rules under the Act have been notified in April 2004. (Box-6.4)

**BOX-6.4**

**Biological Diversity Rules, 2004**

- ◆ National Biodiversity Authority, State level Biodiversity Boards and Biodiversity Management Committees at local body level have to be constituted. Chairperson of the Authority shall be appointed by the Central Government. The Authority shall meet at least four times in a year.
- ◆ The Authority may constitute any number of Committees
- ◆ The Authority may lay down the procedures and guidelines to govern the activities, advise the Central Government on any matter concerning conservation of biodiversity, co-ordinate the activities of the state Biodiversity Boards, provide technical assistance and guidance to the State Biodiversity Boards, Commission study, collect and publish technical and statistical data, manually, capacity building, create documentation system for biological resources, recommend benefit sharing fee, addressing legal issues on IPR etc.
- ◆ Procedure for access to biological resources and associated traditional knowledge
  - Any persons seeking approval of the Authority for access to biological resources and associated knowledge for research or for commercial utilisation shall make an application in Form I, and the authority after consultation with the concerned local bodies dispose off the application.
  - Procedure for seeking approval for transferring results of research and procedure for seeking approval before applying for intellectual property protection are clearly specified.
  - Criteria for equitable benefit sharing
  - The authority shall formulate the guidelines and describe the benefit sharing formula. The formula shall be determined on a case by case basis. The quantum of benefits shall be mutually agreed upon between the person applying for such approval and the Authority in consultation with the local bodies and benefit claimers decide the use.
  - Every local body shall constitute a Biodiversity Management Committee (BMC) within its area of jurisdiction, with a Chairperson and not more than six members nominated by the local body. The main function of BMC is to prepare People’s Biodiversity Registers in consultation with the local people.

*Ministry of Environment & Forests*

## Bio-Diversity Challenge in Kerala

6.22 Kerala represents an epitome of the bio-diversity profile of the Western Ghats in India. The state is endowed with diverse types of eco systems, each supporting unique assemblage of biological communities, with an impressive array of species and genetic diversity. The state contains 95 per cent of the flowering plants and 90 per cent of the vertebrate fauna of the Western Ghats.

6.23 The major obstacles to the conservation of bio-diversity are under valuation of living natural resources, ruthless exploitation of biological and genetic resources for profit, poor knowledge of species and eco-systems, insufficiency in using applied management practices, narrow focus of attention by conservationists and insufficient funding to institutions engaged in bio-diversity conservation.

6.24 At the present rate, the state of Kerala would have a population of 60 million by 2030. By that tune  $\frac{1}{3}$  of bio-diversity would be extinct or they would remain in isolated refugia of non-viable population which may enter into the vortex of extinction. During the 20<sup>th</sup> century, at least 50 plant species have become extinct in the country. Three species of birds – The *Himalayan Mountain Quail*, *Forest Spotted Owlet* and *Pink headed Duck* have become extinct. 69 bird species have been categorised as extinct. *Indian Cheetah* and *Lesser one horned Rhinoceros* are the mammals which are extinct. *Malabar Civet* is on the threshold of extinction and 173 species have been listed as threatened. Among flowering plants, about 1500 species come under threatened categories.

6.25 One of the challenges of bio-diversity conservation is to locate areas of high concentration of endemic species so that critical endemic plant site can get priority for

conservation. Nearly 23 per cent of the total endemic flora species are in Kerala. Out of the 1272 such species, 102 species occur exclusively in Kerala. The 5 endemic genera exclusively occurring in Kerala are *Chandrasekhararia* (Kannur), *Haplothismia* (Parambikulam hills), *Limnopoia* (Marshy wet lands of Northern Kerala), *Kanjarum* (Silent valley and Palakkad regions) and *Silent valleya* (Silent valley and other areas of Palakkad). There are 3 hotspots of endemic centres in Kerala – Agasthyamala, Anamalai High Ranges and Silent Valley – Wayanad. The details are given in Appendix: 6.3

6.26 Since Kerala has the highest population density, it is prudent on the part of the local institutions/ panchayats to ensure conservation and management of protected areas with the active participation of people right at the grass root level. The preparation of biodiversity registers at Panchayat level needs to be given top priority

### Bio-diversity Conservation and Panchayat Raj Institutions

6.27 With the active involvement of people, local self-governments can take up bio diversity conservation programmes. The state or centrally owned R&D institutions such as CESS, TBGRI, KFRI, CWRDM, NBPGR, NRCS can share their expertise to the local bodies in preparing and implementing various bio-diversity based, location specific projects. The NGOs working for grass root level conservation and development in Kerala can also play an important role in promoting the formulation and implementation of bio-diversity – based plans and programmes. The Biodiversity registers prepared by some of the Panchayats could be popularised for adoption by more local governments in the State. The methodology adopted by the Kalliassery Panchayat is shown in BOX-6.5

#### BOX-6.5

#### Biological Diversity of Kalliassery Panchayat

##### (Methodology adopted for survey and inventory preparation)

Under the Kerala Research Programme on Local Level Development, biodiversity studies were conducted in Kallisseri Panchayat in Kannur District in 2000. The major features of the methodology adopted for this study were the following.

- ◆ The project was done on a participatory manner. There has been constant interaction with Grama panchayat governing committee members and panchayat and ward level development committees.
- ◆ Thirty members including four women were selected from various wards of the panchayat and were given training at IRTC, Palakkad for a period of 3 days. These volunteers assisted the research assistants in carrying field studies.
- ◆ A one-day workshop was conducted on indigenous knowledge in which farmers, masons, blacksmiths, carpenters and weavers participated.
- ◆ Meetings of the traditional health practitioners were held to elicit information regarding uses of medicinal plants and other species.
- ◆ The study sites are investigated as a landscape composed of different individual elements like coconut plantations and paddy fields. The maps prepared for landscape elements, cultivations etc. by the Resource Mapping Programme was made use of
- ◆ Landscape ecological approach was adopted for survey, vegetation studies were conducted in all landscape elements (LSE). For vegetation studies, Multiple Stage sampling method was adopted with quadrates of different sizes for different plant classes. The study area comprised of areas with different degrees of disturbances. In all these areas separate transects were laid and sampling done along this transects. Emphasis was given for medicinal plant and wild relatives of cultivated plants (WRCP).
- ◆ For information regarding agriculture, Padasekhara Samithy members were interviewed.
- ◆ The following data were selected for animal sampling.  
(a) Smaller mammals (b) Birds (c) Reptiles (d) Amphibians (e) Fishers  
(f) Butterflies (g) Crabs
- ◆ Apart from quadrate study, animals were sampled opportunistically in their preferred habitats. Among plants survey of Angiosperms, Gymnosperms and Ferns were done.
- ◆ Ward development committee members helped in interviewing fishermen, experts in folk arts etc.
- ◆ Local people were interviewed to document their knowledge of occurrence and uses of various plants and animal species. Emphasis was given to the status of once highly utilised plant species and also to the causes for their destruction (as expressed by the old generation).
- ◆ Elder people were interviewed to document the change that has undergone in the landscape elements during the past 50 years consequent to the changes in the pattern of land holdings and also due to the developmental activities.
- ◆ Study of sacred groves in the Panchayat was done and an inventory of the plants and animals occurring there was made.
- ◆ School children were involved in collecting information regarding food habits, games and health practices of yester years.
- ◆ This information was compiled to obtain a picture of the ongoing changes in biodiversity, the forces responsible for such changes and also the reaction of the local communities to these changes.
- ◆ The floristic and faunistic surveys and documentation of indigenous knowledge and other aspects of the project were carried out in a participatory manner.

*Source: Discussion Paper Series, KRPLLD, 2004*

**Land degradation**

6.28 Of the World's 1.9 billion hectares of land affected by soil degradation during the last 45 years the largest area (around 550 million ha) is in the Asia Pacific region. This constitutes about 19 percent of the regions total vegetated land.

6.29 According to the latest estimates, about 187.8 million ha (57% of land area) has been degraded in the country. Out of total estimated degraded land of the country, about 162.4 million ha is due to displacement of soil material by water and wind and 21.7 m ha. is due to insitu processes as salinity and water logging. The remaining 4 m ha. is affected by the depletion of nutrients. Soil erosion accounts for 87 per cent of the total degraded land in India. Non adoption of proper soil and water conservation measures, in proper crop rotation and extension of cultivation on to lands of high natural hazards are some of the important reasons contributing to soil erosion.

6.30 The annual loss of soil accounts to nearly 5 billion tonnes, of which 3.2 billion tonnes (64%) is contributed by highly eroded to very severely eroded areas such as Shiwalik hills, the Western Ghats, black and red soil areas and the north Eastern states. In more than three quarters of the area that suffers from soil erosion, productivity is lowered by 5 per cent to more than 50 per cent. Of the annual loss nearly 29 per cent is permanently lost to the sea, about 10 per cent is deposited in reservoirs thereby decreasing their storage capacity by 2 per cent annually and the remaining 61 per cent is merely displaced.

6.31 It is estimated that on an average annual rate of soil loss is at 16.35 tonnes/ha ICAR has initiated the preparation of soil erosion maps of different states using the Universal Soil loss equation. Soil nutrient mining results in serious soil health and ecological problems, which needs urgent attention. Double and municipal water, sledges, pesticides, industrial water etc. need to be used with utmost care to avoid the possibility of pollution by the soil through heavy metals.

6.32 High erosion rates have resulted in the sedimentation of river banks, siltation of drainage

channels, irrigation canals and reservoirs. The storage capacity of may reservoirs has been reduced drastically due to accelerated erosion. The Ganga and Brahmaputra carry the maximum sediment load, about 586 and 470 million tonnes respectively every year.

6.33 Land degradation in the State varies in nature and magnitude. The degraded land in the state is shown in Table.6.2 Around 10 lakh ha is prone to moderate to severe soil erosion in the state. The indiscriminate and unscientific soil and water management have made a major portion of land to be erosion prone. The undulating topography with high intensity of rainfall cause the high rate of soil erosion.

**Table 6.2  
Land Degradation in Kerala**

Sl.No.	Category	Area (Lakh Ha)
1	Soil erosion – Moderate to severe	9.52
2	Control water logging and salinity	0.76
3	Degraded forest	1.98
4	Semi stream bank erosion	1.00
5	Land slides	1.00
6	Sea erosion	0.50
7	Total	14.76

6.34 The siltation rate of reservoirs in India has been estimated to be much higher than the values assumed at the time of designing. Against the designed rates of siltation (tonnes/ha/year) of 0.29 (Nizamsagar) to 4.29 (Ramganga), the actual siltation rates varying from 6.57 (Nizamsagar) to 17.3 (Ramganga). The annual sediment load flow into many reservoirs range from 0.6 to 122.7 ha - m/10,000ha. The results of sedimentation surveys in some of the reservoirs in the state showed that the reduction in capacity of various reservoirs ranged from 4.18 per cent in Pamba to 30.9 percent in Anayirankal reservoir.

**Salinisation**

6.35 Salt affected soils are widespread in the Arid, semi-arial and sub humid zones of the Indo-gangetic Plain. About 7 m ha. is salt affected, of which 2.5 m ha. represent the alkali soil in the Indo gangetic plain. According to FAO, the loss in crop production due to salinity in India accounts to 6.2 million tonnes.

6.36 Based on the location, extent and intensity of salinity, 3 types of saline soils are recognized in

Kerala. They are : (1) Pokkali lands, known after the Pokkali cultivation; (2) Oorumundakan lands, known after the long duration variety of rice grown there and (3) Kaipad lands. The different types of saline land together constitute an area of about 30,000 ha.

6.37 These areas are cropped with paddy once in a year from June-July to October-November, when the salinity level in the surface soils is brought below the critical level by Monsoon showers. However, when salinity is partially washed off by rain water and fresh water from rivers, the inherent acidity of these soils become more dominant. Reclamation of saline soils involve leaching and drainage. Traditional agricultural practices are followed in these lands. focussed action Plan has to be prepared to utilise the land on sustainable basis for crop production.

### Mining and Quarrying

6.38 The various mining/quarrying activities include sand mining from the river channels and over bank areas, soil quarrying, hard rock mining, laterite mining, brick clay mining etc.

6.39 Unlike the rivers of our neighbouring states, the rivers of Kerala are too small in their size and resource capability. Sand mining changes the physical characteristics of the river basin, disturbs the closely linked flora and fauna and alters the hydrology and soil structure. Due to the non-availability of sand in the river channel, now the attention has been shifted to the riverbanks and flood plains. This results in slumping/caving and widening of river banks, increase the percentage of fine particles in the fluvial environment, decline in water table and saline water intrusion in to the wells of adjacent areas . Flood plain mining in the paddy fields after removing the top clay layer will have a direct bearing on the local hydrological regime and ground water movements. Studies show that about 168 MT of sand is being mined per day from 8 Panchayats in the Neyyar river basin, involved in flood plain mining. There are about 320 sand mining locations in the Periyar river basin in the central Kerala with a total of 39 local bodies involved in sand mining, to mine about 8372 M<sup>3</sup> (2093 truck loads) each day. At this present rate of mining, the entire sand resource in the Periyar River would be exhausted within a decade, apart from other environmental implications. A study by CESS reveals that many of the fish fauna as well as other aquatic organisms of Ithikkara river

is under threat due to loss of habitat, feeding and breeding grounds, decline of food, aggravated salt water ingress etc. resulted out of indiscriminate sand mining. The details of river sand mining from various river basins of the Greater Cochin region are given in Appendix-6.4.

6.40 The soil quarrying, mainly done for construction sector and paddy land reclamation, degrades the soil with loss of nutrients, microorganisms. Now clay mining in paddy fields is taking place at an alarming rate, mainly for brick making. A survey on the Neyyar basin shows that 20 per cent of the paddy fields have been altered for clay mining. Apart from the land degradation problems, clay mining also leads to lowering of ground water level.

6.41 Hard rock mining is also another environmental issue in many parts of the state. Since the hard rocks are not a renewable resource, its uncontrolled quarrying may end up in irreversible changes in the environment.

### Coastal Zone

6.42 The Government of India notification in 1991 declared 500m of land from the High Tide Line as a Coastal Regulation Zone (CRZ) on the coasts of seas, estuaries and backwaters. The State Coastal Zone Management Plan has set the regulation zone to 100 m or wherever the width of the kayal is less than 100m, a distance equal to its width. Activities such as starting of new industries, dumping of wastes, reclamation etc. are prohibited. Construction of bridges is permissible. Environmentally sensitive areas like mangrove ecosystem, fish spawning and breeding areas are protected by prohibiting all types of construction activities.

6.43 Kerala State Coastal Zone Management Authority (KCZMA) has been constituted in January 2002 for a period of three years under the Chairmanship of Chairman, State Council for Science and Technology with nine members. The authority has the powers to examine the proposals for changes or modifications in classification of coastal regulation zone areas and in the coastal zone management Plan and making specific recommendation to the National Coastal Zone Management Authority. The KCZMA examines application for development projects in the coastal areas and issue clearances for the deserving cases based on the CRZ Act 1991 and its subsequent modifications. It also deals alleged violations of

the provisions of the Act and making specific recommendations to the National Coastal Zone Management Authority, Govt. of India.

6.44 The Ministry of Environment and Forests has appointed an expert committee headed by Dr. M.S. Swaminathan in June 2004 to review the CRZ notifications in the light of the findings and the recommendations of previous committees, judicial pronouncements, representatives from various interest groups. The committee has also been asked to look whether the regulatory frame work was in consistence with the scientific principles of coastal zone management.

6.45 On the whole, Coastal Zone Management has been very weak and ineffective so far due to high density of population along the coastline, economic activities and so on. The unprecedented

#### BOX-6.6

##### Coastal Erosion in Kerala

Coastal erosion is a major problem confronting Kerala. Erosion occurs along this coast as either as a long-term shoreline retreat or a short-term cyclic shoreline oscillation, involving alternating erosion and accretion. In most of the cases short-term cyclic erosion is superimposed on long-term changes. Kerala's coastal zone being a very thickly populated region, even short-term shoreline oscillations with no net erosion can be detrimental. It is equally important to note that there are areas of continuous accretion along the coast also.

PWD has earlier estimated that 320 km of Kerala's coastline is undergoing erosion. A later assessment of PWD indicated that 470 km area are vulnerable to erosion. However, a study carried out by CESS has shown that only 150 km are undergoing severe erosion (including those protected by seawalls) and about 110 km are consistently accreting.

Seawalls are the major protection measures adopted along this coast. Groynes and groyne-seawall combinations were tried along certain parts of the coast during the early years of coastal protection. However, seawalls are the only coastal protective structures adopted since 1964. Seawalls constructed along the monsoon berm providing a frontal beach have been found to be more successful. Failures of seawalls have also been reported from certain coasts. There is an urgent need for evolving cost-effective and efficient protection of the entire coast, which calls for location-specific investigations on coastal erosion

*Source: ENVIS Centre, KSCSTE*

Tsunami tragedy of December 26, 2004 has brought home the need for urgent attention to this important matter.

##### Water Quality

6.46 Water quality has been steadily degraded by a combination of factors, including saline intrusion, sewage and industrial effluents, and urban and agricultural run off. Biochemical Oxygen Demand (BOD) in Asian rivers is 1.4 times the World average and 1.5 times OECD levels. Dirty water and poor sanitation causes more than 500,000 infant deaths a year in the Asia-Pacific region.

6.47 High fluoride concentration in ground water beyond the permissible limit of 1.5 ppm has come to stay as a major issue affecting a large segment of rural population to the tune of 25 million spread over more than 200 districts in 17 states in the country. The population at risk is estimated at around 66 million, Hand pump attached defluoridisation and iron removal plants have failed due to inappropriate technology, unsuited to community perception and community involvement. Statewise water quality status is shown in Appendix -6.5

6.48 Over the last decade industrial waste and municipal waste have emerged as the leading causes of pollution of surface and ground water.

##### Ground Water Quality

6.49 The presence of fluoride in ground water in concentrations above permissible limits (1.5 mg/l) is reported in certain pockets of Attappady and Chittoor area of Palakkad and Alappuzha districts. The ground water quality issues are shown in BOX-6.7. Earlier study conducted in the area in 1985-88 also showed fluoride concentration in the range of 0.32 to 2.62 mg/l in deep tube wells which indicate stable presence of fluoride in ground water. The studies conducted by State Ground water department also confirmed the presence of high fluoride in Ground water. Apart from regular monitoring, minimisation of fluoride by mixing low fluoride water with high fluoride water from water supply wells, use of PVC pipes, to avoid corrosion and technologies developed by NEERI etc. could be followed in the region. The legal framework for regulatory withdrawals of ground water is now in place. The frequency of monitoring and number of monitoring stations also is not representative of the quality of water body specifically in the non-monsoon period.

## BOX-6.7

**Groundwater Quality issues in Kerala**

Increasing demand for water to meet drinking domestic, agricultural and industrial needs due to high population pressure, unpotability of water along the large number of back waters and the near absence of perennial fresh water bodies along the coastal stretch have resulted in a large dependence on ground water in the State. The groundwater quality problems of Kerala are associated with human interference, mineralogical origin, industrial effluents, municipal landfills and burial grounds etc.

**Human Interference:-**

It mainly leads to bacteriological contamination. Open character of the wells, conventional maintenance habits, use of buckets and rope to draw the water, kitchen waste and pit latrines with average family load factor (5 members) at a distance of less than 5 m from wells etc are some of the factors contributing to bacteriological contamination.

**Mineralogical Origin:-**

Contaminated ground water in the midland region is generally found to have high iron, chloride and abnormal values of pH and total dissolved solids. Quality issues due to high fluoride content are reported in Palakkad and Alappuzha districts. Fluoride contents of 1.5 to 2.6 mg/ltr (permissible limit according to Bureau of Indian Standards is only 1 mg/ltr) is observed from the deeper aquifers tapping Warklali formations in Alappuzha town. Fluoride content higher than 1 mg/ltr is reported from eleven KWA wells pumping drinking water to Alappuzha municipality. Three deep wells in Palakkad district in Chittoor taluk and few wells in Kanjikode are found to contain fluoride concentration greater than 1mg/ltr.

Coastal wells of Kerala have the water quality problems due to salinity, low pH, hardness and iron content. Iron content is a major problem in the laterite regions of the state

**Industrial Effluents:-**

Ground water contamination due to industrial pollution is reported from places of Cochin (eastern parts of Alwaye), Palakkad and some parts of Kollam, Kozhikode and Kannur. High deviation from standard was noticed in respect of Chloride, Iron, Lead Copper and Manganese in the water samples from Kochi. In Kannur higher deviations were found for total hardness and Sulphate content.

**Municipal land fills and Burial grounds:-**

Municipal and industrial land fills operating in various parts of Kerala is causing great concern to the quality of ground water, due to the potential impact of leachate generated within the landfill. Analyses of samples collected near a municipal solid waste site in Kozhikode indicated that 80% of the samples are bacteriological contaminated with coliform densities as high as  $11 \times 10^5$ . Other pollutants are Nitrate, Chloride etc. which exceeded the permissible limit in most of the samples. The pollution was observed up to a distance of 300 m.

The results of the analyses of groundwater samples near the burial ground indicated that pH, Nitrate, Calcium, total hardness and coliforms are present in excess concentration. Samples collected from burial ground in Cochin Corporation area contained Calcium and total hardness at concentration higher than the permissible limit prescribed by Bureau of Indian Standards. Out of 15 samples collected, 5 wells were found to be bacteriologically contaminated. All the samples were hard to very hard. Nitrate and Phosphate were found to be at high concentration. Nitrate-Nitrogen as high as 26.8 mg/ltr. and Phosphate concentration of 0.55 mg/ltr were detected in the wells of Cochin and Pathanamthitta areas.

*Source: Freshwater resources of Kerala, KSCSCTE – 2004*

### Surface Water quality

6.50 Water in various stretches of rivers like Periyar, Chaliyar and Bharathapuzha are polluted with various contaminants of domestic, agricultural and industrial origin. While colour and relatively high Biological Oxygen Demand (BOD) are the reported problems in Chaliyar, traces of mineral oil and organic chlorine Pesticides and salinity on the stream side are the problem of Bharathapuzha.

6.51 The Central Pollution Control Board has been monitoring water quality in collaboration with State Pollution Control Boards at 507 locations. Water quality monitoring results indicate that organic and bacterial contamination still continue to be critical sources of pollution in Indian aquatic resources. The unsystematic use of fertilisers coupled with improper waste management has affected the ground water quality in many parts of the country. Also recorded high concentration of heavy metals, fluoride and nitrates at different locations around the country.

6.52 Under the National River Action Plan, certain structures of major rivers with high or intermediate levels of pollution were identified by the CPCB. Pampa action plan is also included under the project. However the completion of the action plan is very slow. To focus on urban lakes, the National Lake Conservation Plan was initiated.

### Industrial effluents

6.53 A number of industries situated on the banks of rivers and backwaters discharge their effluents into the wet land system. These effluents contain a large number of toxic ingredients such as acids, alkalies, heavy metals, suspended solids and a number of other chemicals. Among various industrial pollutants, heavy metals require special considerations due to their non degradable nature. Analysis of particulate metal content indicates high concentration of Zinc, Chromium etc due to industrial pollution in Kochi backwaters. Details of industries in Periyar river basin is shown in the

#### BOX-6.8

#### Industrial Effluents and Air Pollution

The studies carried out so far indicate that 90% of the air pollution in Kerala is due to chemical industries. In chemical industries, most of the air pollution problems are due to sulphuric acid plants of huge capacities and caustic soda plants like The Travancore-Cochin Chemical Ltd" Udyogamandal (Ernakulam zone). Some of the huge Sulphuric Acid Plants in Kerala are Gwalior Rayons (Calicut zone), Travancore Rayons and FACT (Ernakulam zone) and Travancore Titanium Products (Trivandrum zone). Out of these, the plants, FACT and Travancore Titanium Products are of huge capacities which are becoming a menace to air pollution problem. Cochin Refineries (Ernakulam zone) is another major air polluting source. Other sulphuric acid plants of smaller capacities are also emitting gases which may not create much of a problem. Similarly chlorine and hydrogen vent through stack from Travancore-Cochin Chemicals and other chemical industries and major textile mills create air pollution problem. Hydrogen sulphide which is one of the harmful pollutants is produced in industries engaged in the manufacture of viscose rayons and pulp mills. It is noticed that smoke, dust and SO<sub>2</sub> are the most common pollutants emanating from all the industrial zones in Kerala of which SO<sub>2</sub> is considered as most harmful. Apart from these, acid mist, organic vapour, NO<sub>2</sub> and Cl<sub>2</sub> are also found to be common pollutants but to a lesser extent. Certain zones contribute to all types of pollutants of which special mention must be made of Ernakulam zone where maximum number of chemical industries are located. With 16 out of 23 major chemical industries located in Ernakulam zone, the major amount of pollutants in quantity and type emanate from this zone. Of these industries, Cochin Refineries, FACT, Trivandrum-Cochin Chemicals, Travancore Rayons are industries responsible for pollution.

*Source: Kerala State Pollution Control Board.*



Appendix 6.6 Highest concentration of heavy metals in sediments was observed during pre monsoon. Chromium content was higher in Ashtamudi and Vembanad and mercury content was high in Vembanad.

**Air Pollution**

6.54 The extent of air pollution varies considerably across Asia. The major causes of increasing air pollution are increasing energy demand and consumption, the use of poor quality fuels such as coal with high sulphur content, inefficient methods of energy production and use, increasing number of vehicles, traffic congestion,

**Table 6.3**

**Carbon dioxide Emission in Different Countries**

Sl.No.	Country	Carbon dioxide emission/capita (MT)	
		1990	1999
1	India	0.8	1.1
2	China	2.1	2.3
3	Malaysia	3	5.4
4	Philippines	0.7	1.0
5	Sri Lanka	0.2	0.5
6	Thailand	1.7	3.3
7	UK	9.9	9.2
8	USA	19.3	19.7
9	Vietnam	0.3	0.6
10	Japan	8.7	9.1
11	Indonesia	0.9	1.2

Source : World Development Indicators 2003

poor automobile and road conditions, use of leaded fuel, resulting in emission of sulphur dioxide, nitrogen oxides, suspended particulate matter, lead, carbon monoxide. Forest fires also contribute to the air pollution. Per capita emission of Carbon dioxide is little more than half the world average in Asia. In 1990, China and Japan became the first and second largest Carbon dioxide emitters in Asia which is 15 per cent of the level in OECD countries. The per capita carbon dioxide emission in various countries is shown in Table-6.3.

**Green House Gas Emission**

6.55 Carbon dioxide emission largely a by product of energy production and use account for the largest share of greenhouse gases which are associated with global warming. Kyoto protocol marks the first international attempt to place

legally binding limits on green house gas emissions from developed countries. In addition to carbon dioxide, the primary green house gas emissions from developed countries. In addition to carbon dioxide, the primary green house gas, the protocol focuses on five other green house gases are targeted for reduction. Developed countries are the major contributors of green house gas emissions. The average per capita emission of carbon dioxide in India is 1.1MT, while it was 19.7 MT in USA and 18.2 MT in Australia in 1999.

6.56 Action Plan is needed on mitigation and control of air pollution and GHG emission in urban cities through reducing traffic congestion, proper land use planning and switching over to cleaner fuels like CNG. Development of institutional, technical and human capabilities to monitor air pollution and GHG emission, promotion of public awareness of air pollution are

needed.

**Kyoto Protocol**

6.57 The first report of Scientists through the Intergovernmental panel on climate change (IPCC) in 1990 indicated a likely rise of global temperatures and its potentially serious consequences. This led most participants at the 1992 Earth Summit to sign the United Nations Framework Convention on climate change by which they undertook to reduce their emissions of the main green house gas, carbon dioxide to 1990 levels by 2000. However by 1995 it became evident that few countries alone had managed to reduce their emissions. This failure and the need for legally binding emissions targets for green house gases (GHG) and timetables for achieving the targets leading to the Kyoto Protocol signed

in December 1997. Under Kyoto Protocol 39 industrial countries committed themselves to reduce their total emissions of six green house gases by 5.2 per cent below 1990 levels between 2008 and 2012. The protocol sets different emissions reduction targets for different countries to achieve this overall target. Accordingly the reduction targets for the European Union, the United States and Japan are 8 per cent, 7 per cent and 6 per cent respectively. The Protocol permits a number of other countries to increase their emission over the period. The protocol does not commit developing countries to any specific reduction targets.

6.58 However a major unresolved issue impeding the progress of the Protocol toward becoming a legal agreement is US participation. Since US is the largest producer of green house gases it is highly unlikely that without US participation, the protocol will not come into force.

6.59 To reduce compliance costs for all parties and in particular to provide incentives for US participation, the protocol allows the use of several flexible mechanisms like trading CO<sub>2</sub> emission permits across countries, joint implementation projects and clean Development mechanism whereby the industrial countries can invest in emissions saving projects in the developing countries and obtain certified emissions reduction to offset against their own reduction obligations.

6.60 It is estimated that India emitted 908 million tonnes of CO<sub>2</sub> in 1998 four per cent of the World's total. India is the sixth largest emitter of CO<sub>2</sub>. However per capita emission of CO<sub>2</sub> are 1.1 MT per annum, well below the world average of 3.87 MT per annum. the rate of growth of GHG emission in India is 4.6 per cent annually compared to two per cent world average.

#### Clean Development Mechanism

6.61 A Working Group has been constituted for formulation of Action Plan for Capacity Building for the Clean Development Mechanism in India under the Chairmanship of Dr. R. Mandal,

Adviser, Planning Commission in 2003. Major recommendations of the Working Group are shown in BOX-6.9

6.62 The Clean Development Mechanism (CDM) is a flexible arrangement under the Kyoto Protocol for international co-operation in reducing Green House Gas emission. GHG mitigation projects in developing countries can generate Carbon Credits which are in demand in industrialised countries for meeting their Kyoto emission reduction targets. CDM is a market based mechanism driven by the price of the Certified Emission Reduction.

#### BOX-6.9

##### Major recommendations of the Working Group constituted for preparing Action Plan for Capacity Building for the Clean Development Mechanism in India

- Establish a Designated National Authority (DNA) which shall provide the legal teeth to the operationalisation.
- CDM approval criteria - The aspects to be looked into are projects involving CDM and subsidies, technology transfer and FDI under the overall national priorities contributing to the development of the Country.
- A CDM fund to be established. Projects generating Certified Emission Reductions (CER) upto Rs. 50,000 per annum will be exempted from any processing fees and others would be charged @ 1% of the CER in excess of Rs. 50,000/-.
- There is a need for aggressive international marketing and domestic capacity building to attract maximum CDM investments to the country.
- Govt. departments can play significant role as facilitators and enablers for the CDM projects, in their respective sectors.
- CDM investors guide to be prepared.

*Planning Commission, 2004*

**Bio-Fuel**

6.63 The gases emitted by petrol and diesel driven vehicles have an adverse effect on the environment and human health. There is universal acceptance of the need for reducing such emissions. The rationale of taking up a major programme for the production of bio-fuels for blending with gasoline and diesel in our country emanates from a variety of factors. First, there is no alternative to the petroleum based fuels i.e., motor spirit or gasoline and High Speed Diesel (HSD) for the transport sector which is the major consumer of petroleum products. Secondly, Bio-fuels are environmentally superior fuels and their use becomes compelling if the prescribed emission norms are to be achieved. Thirdly, there is need to meet the global environmental concern about climate change.

6.64 Traffic planning and management assume importance in reducing pollution. Greater promotion of and use of alternative fuels cleaner technologies such as CNG, LPG, curbing fuel adulteration, fiscal incentives for pollution prevention and control measures, appropriate siting of industries, strengthening of emission standards, replacement of two stroke engines, awareness programmes, appropriate design of green belt are needed. An effective environment management plan should be devised covering regulation, capacity building, environment strategy by involving NGOs, PRIs, line departments and private sector.

**Biomass availability in India**

6.65 In India about 46 per cent total energy consumption is estimated to be met from various biomass resources i.e. agricultural residues, animal dung, forest wastes, firewood etc. More than 500 million tonnes of crop residues are produced

every year, a large portion of which is either wasted or used inefficiently. The State wise biomass potential is shown in Table 6.4.

**Table -6.4**  
**Biomass Power Potential (MW)**

Sl.No	States	Potential
1.	Andhra Pradesh	200
2.	Gujarat	200
3.	Karnataka	300
4.	Maharashtra	1000
5.	Punjab	150
6.	Uttar Pradesh	1000
7.	Others	300
	<b>Total</b>	<b>3500</b>

Source: TERI Energy Data Directory and Yearbook, 2002-03

6.66 A three pronged approach looking at biomass conservation, biomass generation and efficient conversion of biomass to bio fuels is needed to improve the availability of energy in the country. Gaseous fuels like biogas or liquid fuels such as ethanol, methanol have the potential to meet the potential to meet a large portion of our energy budget, leading to cleaner environment.

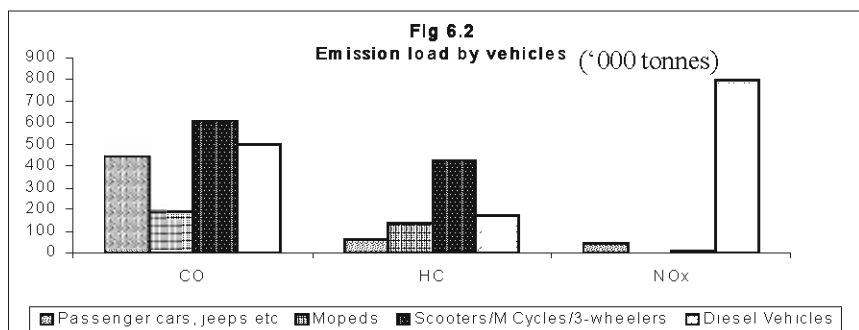
**Vehicular Pollution**

6.67 The emission load by vehicle type for all India covering passenger cars, jeeps, mopeds, scooter etc are shown in Table 6.5 and Fig 6.2.

**Table - 6.5**  
**Emission load by vehicle type, all India, 1992-93 ('000 tonnes)**

Category	CO	HC	NO2	Total
Passenger cars, jeeps, etc.	441.5	60.6	41.1	543.2
Mopeds	188.2	134.6	1.6	324.4
Scooters/M. Cycle/3-Wheelers	608.4	426.2	5.7	1040.3
<b>Diesel vehicles</b>	<b>496.7</b>	<b>172.8</b>	<b>799.0</b>	<b>1468.5</b>
<b>Total</b>	<b>1734.8</b>	<b>794.1</b>	<b>847.4</b>	<b>3376.3</b>

Source: Indian Institute of Petroleum (1994), Quoted in UNEP 1999



6.68 The proportion of vehicular emission in selected cities and regions are given in Table 6.6. In India, the quantum of vehicular pollutants emitted is highest in Delhi followed by Mumbai, Bangalore, Calcutta and Ahmedabad. Carbon monoxide and hydrocarbon account for 64 per cent and 23 per cent respectively, of the total

emitter load due to vehicles in all these cities considered together. Given the increased usage of diesel it becomes necessary to reduce its sulphur content. Fuel quality specification have been laid down by the BIS for gasoline and diesel for the period 2000-2005.

Table -6.6  
Proportion of emissions due to vehicles in selected cities and regions  
(Percentage)

City/region	Carbon monoxide	Volatile organic compounds	Oxides of nitrogen	Sulphur dioxide	Particles
Beijing	39	75	46	n.a	n.a
Budapest	81	75	57	12	n.a
Cochin	70	95	77	n.a.	n.a.
Colombo	100	100	82	94	88
New Delhi	90	85	59	13	37
Kathmandu	n.a.	n.a.	n.a.	3	12
Mexico City	100	54	70	27	4
Economic Co-operation and Development	70	31	52	4	14
Santiago	92	81	82	25	10
Sao Paulo	97	89	96	86	42

Sources : Environmental Statistics, 2002

#### Auto fuel Policy

6.69 A Committee was constituted on 13<sup>th</sup> September 2001 under the Chairmanship of Dr. R.A. Mashelkar, DG, CSIR to recommend an Auto Fuel Policy for the country including major cities. The major recommendations of the committee are shown in Box-6.10

#### BOX-6.10

##### Major recommendations of the committee regarding Auto Fuel Policy

- ◆ Bharat Stage II emission norms to be implemented from 1<sup>st</sup> April 2005 and Euro III equivalent emission norms from 1<sup>st</sup> April 2010 for new vehicles. The requirement of investments to reach vehicular technology and fuel quality of Euro III equivalent levels throughout the country is estimated in the range of Rs. 50,000 to Rs. 60,000 crores.
- ◆ The use of CNGs/LPGs for automotive purposes should be encouraged in the cities affected by high vehicular pollution.
- ◆ Development of alternative fuels like fuel cells, hydrogen and battery powered vehicles should be accelerated.
- ◆ The development of technologies for producing ethanol and biofuels can play a major role in commercialisation of bio fuel vehicles in the country.
- ◆ For reducing pollution from in use vehicles, new PUC checking system for all categories of vehicles to be put in place by 1<sup>st</sup> April 2005, and inspection and maintenance system for all categories of vehicles form 1<sup>st</sup> April 2010.
- ◆ The existing authorities responsible for enforcing automobile emission norms and fuel quality standards should be brought under a single new authority, namely, the National Automobile and Pollution and Fuel Authority.
- ◆ Declaration of fuel economy standards by automobile manufacturers should be made mandatory.

GOI, 2004.

6.70 The high influx of population to urban areas, increase in consumption patterns and unplanned urban and industrial development have led to the problem of air pollution. Air pollution is widespread in urban areas where vehicles are the major contributors - Road based passenger transport has recorded high growth since 1980-81 in the country. The slow growth of road infrastructure and high growth of transport performance and number of vehicles implies that Indian roads are reaching a saturation point in utilising the existing capacities.

6.71 A recent study showed that pollution is concentrated among a few industrial sub sectors and that a sector's contribution to pollution is often disproportionate to its contribution to industrial

output. Petroleum refineries, textiles, pulp and paper and industrial chemicals produce 27 per cent of the industrial output in the country, but contributes 87 per cent of sulphur emissions and 70 per cent of nitrogen emission from the industrial sector. Likewise, iron and steel and non-metallic mineral products, produce about 16 per cent of the industrial output, but account for 55 per cent of the particulate emission.

6.72 Environmental concerns have assumed significance in the recent years. Commensurate with industrial expansion, a strong regulatory mechanism is required to ensure minimum environmental standards. Pollution control efforts in 17 high polluting industries in various states is shown in Table 6.7. Out of the total 2,155 large

**Table-6.7**  
State wise Summary Status in 17 Categories of highly polluting Industries

Sl. No.	State/UTs	Total No. of Units	Status (No. of Units)		
			Closed	Compliant	Defaulters
1.	Andhra Pradesh	26	29	240	0
2	Arunachal Pradesh	00	00	00	00
3	Assam	16	03	12	01
4	Bihar	40	19	27	00
5	Chandigarh	25	02	21	02
6	Goa	08	00	08	00
7	Gujarat	283	10	272	01
8	Haryana	107	24	69	14
9	Himachal Pradesh	11	00	11	00
10	Jammu & Kashmir	10	03	07	00
11	Jharkand	21	03	16	02
12	Karnataka	116	17	99	00
<b>13</b>	<b>Kerala</b>	<b>43</b>	<b>6</b>	<b>37</b>	<b>00</b>
14	Madhya Pradesh	78	15	61	02
15	Maharashtra	392	26	356	10
16	Manipur	0	0	0	0
17	Meghalaya	01	0	01	0
18	Mizoram	00	00	00	00
19	Nagaland	00	00	00	00
20	Orissa	29	03	21	05
21	Punjab	72	09	60	03
22	Rajasthan	108	08	96	04
23	Sikkim	01	00	01	00
24	Tamil Nadu	156	02	154	00
25	Tripura	00	00	00	00
26	Andaman & Nicobar	00	00	00	00
27	Chandigarh	01	00	01	00
28	Daman & Diu, Ddra & Nagar	00	00	00	00
29	Delhi	05	01	04	0
30	Lakshadweep	00	00	00	00
31	Pondicherry	08	01	07	00
32	Uttaranchal	20	00	20	00
33	Uttar Pradesh	263	27	232	04
34	West Bengal	66	17	44	05
	<b>Total</b>	<b>2155</b>	<b>225</b>	<b>1877</b>	<b>53</b>

and medium industrial units identified in the 17 categories of highly polluting industries in the country, 1,877 industrial units have installed the requisite pollution control equipments, 225 units have closed down and the remaining 53 units have yet to install the necessary pollution control facilities. Legal action has been taken against all defaulting industrial units. In Kerala out of 43 units, 6 are closed and 37 are having adequate facilities to comply with the standards

Source: Ministry of Environment and Forests

## Disaster Management

6.73 Disaster loss is on the rise with unprecedented consequences for lives, livelihoods and development gains. This is compounded by growing vulnerability resulting from unplanned urbanization, development within high risk zones, environmental degradation climate change as well as the impact of epidemics points to a future where disaster could increasingly threaten the world's economy. In the past two decades, on an average more than 200 million people have been affected every year by disasters.

6.74 Disaster risk arises when hydro meteorological, geological and other hazards interact with physical, social, economic and environmental vulnerabilities. Events of hydro meteorological origin constitute majority of disasters. Despite the growing understanding and acceptance of the importance of disaster risk reduction and increased disaster response capacities, disasters and in particular the management and reduction of work continue to pose a global challenge.

6.75 The Yokohama strategy for a safer world adopted in 1994 provides landmark guidance on reducing disaster risk and the impacts of natural disasters. The review of progress made in implementing the Yokohama strategy stresses the importance of disaster risk reduction being underpinned by a more proactive approach to informing, motivating and involving people in all aspects of disaster risk reduction in their own local communities.

6.76 The draft programme outcome document of World Conference on Disaster reduction during January 18-22, 2005 in Japan organised by UN is shown in BOX-6.11. This document is the result of negotiations in the drafting committee that took place in Geneva until 14 December 2004.

### BOX-6.11

#### Draft Programme outcome document of World Conference on Disaster Reduction Framework for action 2005-2015

- An integrated multi hazard approach to risk reduction should be factored into policies, planning and programming related to sustainable development and into Post disaster relief, rehabilitation and recovery activities.
- Both communities and local authorities to be empowered to manage and reduce disaster risk by having access to the necessary information, resources and authority to implement actions for disaster risk reduction.
- There is a need to enhance international and regional co-operation and assistance in the field of disaster risk reduction.
- Priorities identified
  - Ensure that risk reduction is a national and local priority with a strong institutional basis for implementation
  - Identify, assess and monitor disaster risks and enhance early warning.
  - Use knowledge, innovation and education to build a culture of safety and resilience at all levels
  - Reduce the underlying risk factors
  - Strengthening disaster preparedness for effective response.

Source : UN, 2004

6.77 India has been traditionally vulnerable to natural disasters on account of its unique geo climatic conditions. Floods, droughts, cyclone, earthquakes and landslides have been a recurrent phenomena. About 60 per cent of landmasses is prone to earthquakes of various intensities, over 40 million hectares is prone to floods, about 8 per cent of the

total area is prone to cyclones and 68 per cent of the area is susceptible to drought. In the decade 1990-00, an average of about 4344 people lost their lives and about 30 million people were affected by disasters every year.

6.78 Disaster management occupies an important place in the country's policy framework as it is the poor and the under privileged who are worst affected. Institutional mechanism, disaster prevention strategy, early warning system, disaster investigation, preparedness and human resource development should be part of the Policy.

6.79 A National Policy on disaster management has been drafted and is in the process of consultation. The broad features of the policy on disaster management are shown in Box-6.12

#### BOX-6.12

##### Features of the draft National Disaster Management Policy

- A holistic and proactive approach towards prevention, mitigation and preparedness will be adopted for disaster management.
- Each ministry/department of Central and State governments will set apart Plan funds for specific schemes addressing vulnerability reduction and preparedness.
- Each Project in a hazard prone area will have mitigation as an essential term of reference.
- Community involvement and awareness generation to be incorporated.
- Institutional structures will be built up and appropriate training imparted.
- Standard operating procedures and disaster management plans at State and district levels as well as by relevant Central government departments for handling specific disasters will be laid down.
- Construction designs must correspond to the requirements.
- All lifeline buildings in Seismic Zones, 111, IV, and V - hospitals, railway station, airports, bus stands etc. need to be evaluated.
- The existing relief codes in the States will be revised to develop them into disaster management codes

*Government of India, 2004*

6.80 The States have also been advised to formulate State Disaster Management Policies with the broad objectives to minimise the loss of lives and social, private and community assets and contribute to sustainable development. The tsunami of December 26, 2004 was one of the worst disasters in history. According to the United States Geological Survey, is the fourth largest earthquake in the world since 1900 and the largest since the 1964 earthquake in Alaska.

6.81 In the World Conference on Disaster reduction held in Kobe, Japan (January 2005) it was decided to establish a tsunami warning system by 2006 for the Indian Ocean under the leadership of U.N. The intergovernmental Oceanographic Commission of UNESCO which co-ordinates the tsunami early warning system in the pacific will take the lead in co-ordinating the technology.

6.82 In the recent tsunami, lagoons salt marshes, wide river mouths, estuaries etc. have reportedly enabled to reduce damage to urban landscapes by absorbing/retaining sea water that flooded inland areas. The tsunami incident warrants a relook at the coastal zone management plans, legal framework, livelihood security of people in the coastal area, and sustainable environmental management of the State. The State has already taken a number of steps like constitution of a high level committee to suggest policy options and strategies, preparation of a draft bill for disaster management and establishment of a separate department for disaster management.

6.83 The States of Gujarat and Madhya Pradesh have State policies for Disaster Management. All states have been advised to enact Disaster Management Acts. Gujarat and Bihar have already enacted such a law. These acts provide for adequate powers for authorities coordinating mitigation, preparedness and response as well as for mitigation/preventive measures required to be undertaken. State Governments have also been advised to convert their relief codes into Disaster Management Codes.

##### Ambient Air Quality

6.84 The annual average minimum and maximum Suspended Particulate Matter

concentration in residential areas of various cities ranged from 60  $\mu\text{g}/\text{m}^3$  at Bangalore during 1991 to 521  $\mu\text{g}/\text{m}^3$  at Patna during 1995, while in Industrial areas the annual average ranged between 53  $\mu\text{g}/\text{m}^3$  in Chennai during 1992 and 640  $\mu\text{g}/\text{m}^3$  in Calcutta during 1993. The mean average value of SPM for nine years (1990 to 1998) ranged between 99  $\text{Mg}/\text{m}^3$  and 390  $\mu\text{g}/\text{m}^3$  in residential areas and between 125  $\mu\text{g}/\text{m}^3$  and 457  $\mu\text{g}/\text{m}^3$  in industrial areas indicating that the annual average limit of suspended particulate matter for residential areas (140  $\mu\text{g}/\text{m}^3$ ) and for industrial areas (360  $\mu\text{g}/\text{m}^3$ ) had been frequently violated in most cities. Low values have been recorded in Chennai, Bangalore and Hyderabad.

6.85 Monitoring of ambient air quality is considered to be a vital component in the Environmental Impact Assessment. The Central Pollution control Board has established a national Ambient Air Quality Monitoring Net work (NAMP) in collaboration with the State Pollution Control Boards, comprising of 290 stations in 92 cities/towns, to collect, compile and disseminate information on air quality.

6.86 The Kerala State Pollution Control Board (KSPCB) monitors the ambient air quality at 11 stations in the state. The KSPCB also has 2 mobile sampling units. The relative air quality situations at four major locations in the state are given in Table-6.8.

#### BOX-6.13

##### Salient Features of Air Quality Degradation in Kerala

- Emissions and Noise from vehicles and industries are the prominent factors responsible for deterioration of air quality in the state.
- Vehicular exhausts and noise are the single biggest contributor to air quality degradation in the state
- The number of vehicles on the roads in Kerala has increased more than 20 times since 1975. When the total length of the carriage way is only 21347 km it has over 25 lakhs licensed vehicles on the road. Personal transport vehicles constitute 72% of the total vehicles in the state and 77.5% of the personal vehicles are scooter and motor cycles.
- Vehicular exhaust and noise are severe in the three major cities of Kerala namely, Thiruvananthapuram, Kochi and Kozhikode.
- Development of road infrastructure in the state is far below the pace with which the number of vehicles on the road increases, which results in traffic congestion and increased air quality deterioration
- The ambient air quality monitoring at different commercial locations in the state reveals that Suspended Particulate Matter (SPM & RSPM) levels generally exceed the standard value (200 and 100  $\text{mg}/\text{M}^3$ , 24 hour value) at all stations
- Levels of Sulphur dioxide ( $\text{SO}_2$ ) and Oxides of Nitrogen (NO) are within allowable levels (both 80  $\text{mg}/\text{M}^3$ , 24 hour value)
- Noise due to traffic, along all the major carriage ways in the state is much higher than the limit set for commercial areas (65dB(A), Leq)
- Air quality degradation from industrial emissions is more prominent around Kochi, with most of the large and medium industries in the state concentrated there. Kanjikode in Palakkad is also with higher air pollution potential, with many medium scale electric furnace based industries located there. A large number of SSI units, mainly metal crushers are also becoming prominent source of air pollution.
- 70% of the additional power generation capacity created since 1997-98 is from thermal power plants which use fossil fuel for the generation of electricity. Due to erratic power supply, industries run captive power plants and commercial establishments use portable generators. This increased dependence on fossil fuel has adversely affected the air quality
- Though urbanization in the state has shown only a slow pace compared to other states, its growth is rapid for Thiruvananthapuram, Kochi and Kozhikode (34,48 and 38% respectively) and thus lead to air quality degradation by way of crowding and traffic congestion. Increased use of energy and transport along with inadequate disposal of waste had compounded the  $\text{C}_3$  problems.
- Unrestrained use of loud speakers and bursting of crackers is a major source of noise in the community, contributing to air quality degradation.

Source: ENVIS Centre, KSCSTE



**Table 6.8.**  
**Air Quality Levels in Selected Locations in Kerala**

Pollution Standards	Annual Mean Concentration Range ( $\mu$ g/m <sup>3</sup> )					
	SO <sub>2</sub>		NO <sub>2</sub>		SPM	
	Industrial	Residential	Industrial	Residential	Industrial	Residential
Low (L)	-0-40	0-30	0-40	0-30	0-190	0-70
Moderate (M)	40-80	30-60	40-80	30-60	180-360	70-140
High (H)	80-120	60-90	80-120	60-90	360-540	140-210
Critical © Pollution level	>120	>90	>120	>90	>540	>210
Kochi	L	L	L	L	L	H
Kottayam	L	L	L	L	L	L
Kozhikode	L	L	L	L	L	M
Thiruvananthapuram	L	L	L	L	L	M

Source : CPCB

6.87 The Ministry of Environment and Forest, Government of India has identified Kochi as one of the areas with very high pollution potential.

**Air Pollution and Health Impact**

6.88 A world bank study conducted in 1995 quantified health impacts of air pollution to the tune of \$ 1310 million or 14% of total economy wide environmental cost of environmental degradation. Using air monitoring data collected by NEERI and CPCB it took into account the health impacts in 36 Indian cities in respect of SO<sub>2</sub>, NO<sub>2</sub>, SPM and lead.

6.89 The air is highly polluted in terms of suspended particulate matter in most cities. This has led to a great incidence of associated health effects. Recent epidemiological studies have shown that smoke and dust particles, especially smaller particles below 10 microns in diameter and in particular the finest particles below 2.5 micron in diameter significantly affect human health.

6.90 As per a study report, respiratory infectious diseases contribute to 11 per cent of the total burden of diseases, while cerebro vascular disease (2.1%), ischemic heart disease (2,8%) and pulmonary obstruction (0.6%) are much lower. The prevalence of Cancer is about 4.1 per cent amongst all the diseases indicating that the effects of air pollution are visualised on the urban population.

6.91 Higher prevalence of diseases correlated with the higher environmental pollution in Eloor in Cochin is reported. In a recent study conducted by the National Institute of Environmental health in Association with (RCC), in Thiruvananthapuram in industrial, residential and coastal zones of Thiruvananthapuram has shown that in industrial zone, air pollution related respiratory problem is of a high order (BOX 6.14). In the commercial zone, Cardiac and Vector burn diseases related to environmental hazards like waste water and Stagnation, dust and solid waste problems are high and in residential areas diseases like breast cancer, cardiac problems and obesity related to their dietary habits are reported to dominate.

## BOX-6.14

**Major findings of the study in Thiruvananthapuram City**

A study conducted in Thiruvananthapuram city in three zones, Residential Zone (Perurkada) Commercial Zone (Chalai) and Industrial Zone (Veli) by a questionnaire method.

- ◆ People in the industrial zone showed respiratory problems, watery discharge from eyes, skin problems and increased incidence of oral cancer compared to other two areas. 8.3% increase in respiratory disease compared to other areas are reported (29%), gastric problem (11%), Skin problem (10%), eye problem (20%) Cardiac problem (18%), Others (12%)
- ◆ In Commercial Zone, diseases prevalence is as follows - respiratory diseases account for 24%, gastric problems 10%, Skin problem (8%), eye problem (20%), cardiac problem (30%) Other (8%). Dust and solid waste are severe problems.
- ◆ In Residential areas Diseases like Cardiac problems, obesity and breast cancer are common which have a close relationship with dietary habits. Dust and solid waste problems are not severe as Commercial area and almost all people are burning the garbage composed of Plastic, garden litter, etc. The burning produce Dioxin like compounds which are hazardous to health. The chronic exposure may hasten the onset of adult diabetes in susceptible individuals. Respiratory diseases (19%), gastric problem (13%), Skin problems (9%), eye problem (22%), Cardiac problem (16%) others (21%)

*National Institute of Environmental Health in association with RCC in Thiruvananthapuram*

6.92 India has adopted the Air (Prevention and control of Pollution) Act 1981 and also adopted the Male declaration on control and prevention of air pollution and its likely transboundary effects for South Asia in April 1998.

6.93 Guidelines for siting industries are prescribed so that the possible adverse effects on the environment and quality of life can be minimised. EIA is mandatory for 29 specific activities/projects and also for some of the activities to be taken up in identified areas such as the coastal zone. The carrying capacity based regional planning studies has to be extended to more areas. The CPCB has laid down the maximum permissible limits for different pollutants for many categories of industries that contribute to air pollution. The standards have been notified by MOE under the Environment (Protection) Act 1986. Submission of an environmental statement by polluting units to the State Pollution Control Board concerned has been made mandatory under the Act.

6.94 In order to delineate the areas that are suitable for industrial siting, district wise zoning atlas project has been taken up by the CPCB and industrial zones are identified based on the sensitivity and pollution receiving potential of the district.

#### **Activities of State Council for Science , Technology and Environment**

6.95 The Kerala State Council for Science, Technology and Environment (STEC), has been playing a catalytic role in applying Science and Technology for the developmental process of the State. Implementation of national Green Corps (NGC) a programme under the Ministry of Environment and Forests, Government of India is being co-ordinated by STEC, through a network of eco clubs established in 1400 schools in the State. A National Environmental Awareness Campaign was also co-ordinated by STEC, STEC has already established an Environmental information system. The preparation of State of Environment Report (SOE) has been initiated. The findings of the preliminary report are shown in BOX-6.15

## BOX-6.15

**Salient features of the draft State of Environment Report of Kerala**

The Council has for the first time taken up a project on preparation of a comprehensive State of Environment Report for Kerala. It has identified seven separate subjects involving experts belonging to different departments and has brought out the report.

**1. Air Quality and Noise Pollution :** Vehicular emission and noise from the vehicles are severe in the three major cities of Kerala, viz., Thiruvananthapuram, Kochi and Kozhikode. The pollution from industries are mainly contributed by the four major industrial areas of the state, three in Ernakulam (Eloor, Ambalamughal and Udyogamandal) and one in Kanjikode at Palakkad. The Kerala State Pollution Control Board (KSPCB) has brought out 592 large/medium and 2700 SSI units under the consent regime of Air (Prevention & Control of Pollution) Act. It has reported that SPM and RSPM levels exceed the ambient air quality standards. However, SO<sub>2</sub> & NO<sub>2</sub> levels are within the standard levels.

**2. Climatic Changes and Ozone Depletion :** The study of the average annual mean maximum and minimum temperatures in Kerala from 1961 to 2003 carried out confirmed the rising trend of maximum, minimum and average temperatures of the order of respectively 0.8°C, 0.2°C and 0.5°C.

On an average, nearly, 7.5 million households in Kerala use 37.5 million kg of firewood. The total consumption of all petroleum products during 2003-04 in Kerala was 3,087,589 tons. Methane emission from various sources when converted to equivalent CO<sub>2</sub> in terms of global warming potential accounts for about 16% and Nitrous Oxide contributes another 2% which together contributes more than 93% of the warming potential of the green house gas emissions from Kerala.

**3. Water Resources :** The projected water requirement for irrigation by the year 2021 AD is about 2890 mm<sup>3</sup> for paddy as well as 50% of the future garden land crops. The total identified hydropower potential for Kerala is about 5000 MW with a line storage capacity of 3536mm<sup>3</sup>. The projected water requirement in the year 2021 in the industrial sector is at 4270 mm<sup>3</sup>. The present estimated drinking water demand is at 645 million litres/day and the annual domestic requirement is at 3230 mm<sup>3</sup>. The estimated groundwater balance is about 5590 mm<sup>3</sup>. Apart from the above, Kerala has 995 tanks and ponds having more than 15000mm<sup>3</sup>

Low pH, high iron etc., are common in well waters in the laterite covered midland areas. Fluoride has been reported from certain parts of Palakkad and Alleppey districts.

**4. Marine and Coastal Environment :** It is estimated that about one million m<sup>3</sup> of sewage is generated per day in the coastal areas and about 30000m<sup>3</sup> of this reaches the surface water bodies. Petroleum hydrocarbon (PHC) remains within the permissible limit, but estuaries show an increasing trend over the years. Higher level of heavy metal concentration is seen in Cochin backwaters irrespective of seasons due to industrial effluents. The count of coliforms and faecal coliforms along the estuaries and most of the nearshore waters are well above the bacterial standard for marine bathing suggested by WHO. The count of *Vibrio cholera* like organisms has showed considerable increase over the years.

**5. Solid, Hazardous and Biomedical Wastes :** The total quantity of hazardous waste generated and handled in the state is about 82724 tons/year. The quantity of recyclable hazardous waste is 10725 tons/year, incinerable hazardous waste 2596 tons/year and for land disposal is 60538 ton/year. About 1.5 lakhs ton/day of solid waste is being generated from the hospitals and other health care establishments. The quantity of garbage generated in the state is about 6000 tons/day. There are 600 incinerators installed in health care institutions in the state.

**6. Nature and Biodiversity :** The Western Ghat region is one of the 24 biodiversity hot spots in the whole world. The state contains more than 4500 species of flowering plants. There are 102 species of mammals, 476 species of birds, 169 species of reptiles, 89 species of amphibians and 202 species of fresh water fishes were reported from Kerala.

Source : STEC. State of Environment Report, Kerala (2005)

## BOX-6.16

## Environment Information System of Kerala

*(ENVIS, Kerala)*

The Environmental Information System (ENVIS) was originally established in 1982 as a plan programme by the Government. The focus of ENVIS since inception has been on providing environmental information to decision makers, policy planners, scientists/engineers, research workers etc. all over the country.

With environmental science developed into a broad ranging, multi-disciplinary subject, ENVIS also developed itself with a network of such participating institutions/organisations to provide a comprehensive information system on environment.

ENVIS due to its comprehensive network has been designed as the national Focal Point (NFP) for INFOTERRA, a global environmental information network of the United National Environment Programme (UNEP). It has also been designated as the Regional Service Centre (RSC) of INFOTERRA of UNEP for the South Asia Sub-Region countries.

A large number of nodes known as ENVIS Centres have been established in the network and they have been assigned with various responsibilities to achieve long term and short term objectives.

**ENVIS has started implementing the World Bank assisted Environment Management Capacity Building Technical Assistance Project (EMCBTAP) since, January 2002, aimed at broadening the ambit of ENVIS to include varying subject areas, themes, local conditions, issues, informations/data needs of the country pertaining to environment and planned to be achieved through enlargement of participatory organisations/institutions and through introduction of modern means of Information and Communication Technologies (ICTs).**

ENVIS India is in the process of establishing 85 ENVIS nodes by introducing organisations, institutions, universities and government departments working in diverse areas of environment and has already established 81 centres which include 30 government departments, 36 institutions and 15 NGOs. These nodes are supposed to create websites of specific environment related subject areas.

An ENVIS node has been established in Kerala at the Kerala State Council of Science, Technology and Environment. The KSCSTE will release 'State of Environment Report Kerala' soon.

*Source: KSCSTE*

## State Pollution Control Board

6.96 The Planning commission has conducted a study about the state pollution control boards and the major findings and recommendations are shown in BOX 6.17.

## BOX-6.17

**Findings and Recommendations of a study on State Pollution Control Boards**

- ◆ Scientific studies on the level of non-industrial level of pollution in the country as a whole is not available. It is suggested to prepare a State of Environment Report for each state.
- ◆ There is a mismatch in the classification of industrial heads made by CPCB and Annual Survey of industries. A study to be conducted to know the extent to which industries have not been inventoried by SPCBs.
- ◆ The percentage of expenditure for environmental awareness is negligible. Institutional arrangements to be made for creating environmental awareness.
- ◆ A multidisciplinary approach to solving problems of pollution may have to be adopted by inducting professionals from health and environmental economics.
- ◆ Staffing pattern of some SPCBs is highly skewed with domination of non-technical staff. CPCB may lay down a broad norm for an appropriate ratio between technical and non-technical staff.
- ◆ The norms and procedures laid down for supervision of polluting industries should be reviewed. A minimum frequency of monitoring should be laid down on a bench mark.
- ◆ Functional autonomy be given to SPCBs
- ◆ Basic information available for controlling pollution in some SPCBs is inadequate - CPCB should undertake a study of the statewise regional pollution control requirements.
- ◆ SPCBs of North East, Jammu & Kashmir, Himachal Pradesh, Kerala, Goa and Rajasthan are not having large own resources.
- ◆ The expenditure on research should be increased.
- ◆ CPCB may evolve a consent fee structure valid for all SPCBs.
- ◆ Shortcomings with the NAAQM and WQM monitoring can to a great extent be attributed to the insufficient financial provision for these activities. The annual per sample norm for NAAQM and per sample norm for WQM should be revised by the MoEF.
- ◆ SPCBs in their present form are functioning as industrial pollution control boards. In almost all states, the vehicular pollution is mostly outside the purview of SPCBs. It is suggested that concurrent jurisdiction in penal action on erring vehicles be vested with the SPCBs. There is no transparency in pollution control administration institutions. Local Community action groups are to be created to take community action.

*Source: Planning Commission.*

**Environmental regulations**

6.97 India is having a comprehensive environmental legislation regarding pollution control. There is a spot of environmental legislature starting from early 1970, viz. Wildlife Protection Act (1974), Water Cess Act (1977), Forest Conservation Act (1980), The Air (Prevention and Control of Pollution Act (1981), Environment (protection) Act (1986) Water (Prevention and Control of Pollution) Cess Act (1988) and Public Liability Insurance Act (1991). The water (Prevention and Control of Pollution) Act and the Air (Prevention and Control of

Pollution) Act are now referred to as Water Act and Air Act.

6.98 The Air Act, Water Act and the Environment (Protection) Act, set the national standards for air and water quality. The actual standards are laid down by the CPCB (1995), in consultation with institutions such as National Environmental Engineering Research Institute (NEERI), in Nagpur. The standards termed 'Minimum National Standards' (MINAS) are designed for the country as whole, although individual states have the option of making them more stringent.

6.99 In addition, the EPA of 1986 gives powers to the Central Government to pursue any means deemed necessary to protect and improve the quality of the environment, including co-ordination of the activities of the various state governments.

6.100 India currently has relatively weak institutions and infrastructure and the master planning approach was not able to curtail congestion, pollution, marginalisation of the poor and other serious environmental situations. Added to this is the lack of co-ordination between different agencies responsible for various urban tasks within a city. Sewage, drainage and solid waste services are often the responsibility of different agencies. The poor revenue situation of urban local bodies has contributed to the failure in urban planning. Eventhough a number of environmental Acts and rules are in force, the enforcement levels are relative unsatisfactory. An overview of the environmental legislation and executing authorities are given in Appendix-6.8.

### State Environment Policy

6.101 Institutions involved with environmental governance and protection are to be strengthened in the state. The State Council for Science and Technology and Environment and Kerala State Pollution Control Board are the leading agencies in the state in the environment sub sector. However environment warrants a multi agency involvement. More co ordination with implementing agencies as well as linkage with local governments would go a long way in achieving the desired results. An integrated environmental management system is required to be established in the State, in order to protect the environmental resources and to implement better pollution control, setting up of an appropriate legal, institutional and administrative framework equipped with all required powers skills and operation is the first requirement for developing state wide environment management. Evidently, functional co-ordination between different agencies responsible for various tasks is essentially required.

6.102 State environmental action plan needs to be prepared in a time bound manner for implementation in collaboration with LSGs, NGOs and Private sector. The initiative taken by KSTEC to prepare the State of Environment report would help in developing the action plan.

6.103 Even though environmental education is included as part of school curriculum, more topics related to the State have to be included.

Environmental education has also to be made a compulsory topic in teacher training programmes. Environmental journalism is also needs strengthening to be given much focus in media coverage.

6.104 The Environmental Information System Network (ENVIS) is a notable example of the collection, collation and dissemination of environmental data and information. The recent initiative of the State council for Science technology and Environment to establish an ENVIS centre is a step in the right direction.

6.105 Regular publication of environmental indicators such as water and air quality levels and environmental information bulletins are essential for building a sustainable environmental framework .

6.106 Incentives and disincentives are to be used as economic instruments to promote environment conservation and efficient resource use. Incentives are mostly taxation oriented and disincentives are based largely on polluter pays principle.

6.107 A major set of challenges arise from emerging biodiversity loss. Preparation of People's bio diversity registers and documentation of indigenous traditional knowledge should be given top priority.

6.108 Environmentally sensitive zones requiring special conservation efforts in the state to be identified and legal status has to be given for conservation. Area development plans prepared on a scientific basis with adequate participation by the local communities and LSGs will help in sustainable conservation.

6.109 There is a need to ensure that CRZ regulations are firmly founded on scientific principles in order to ensure effective protection. Development of feasible models of Public-Private Partnerships including NGOs to leverage, resources of private sector in operating infrastructure for monitoring of environmental compliance seems to be essential to safeguard the environment. Protection of areas of high endemism of genetic resources to be strengthened. State has to prepare an environment policy on the backdrop of the national policy, considering the wider ramifications of the sub sector.

## SOIL AND WATER CONSERVATION

NGOs and government development agencies have implemented watershed management projects for the last three decades with the aim of increasing agricultural productivity and reducing poverty. Many of the watershed management projects throughout the world have not taken into account land use capability. They have centred on activities mostly at plot level and do not add upto transformation at catchment level. Additionally they have been top down and have not accommodated the interests of resource users. A major question is how to select watershed management sites and activities. The suggestions by Overseas Development Institute in the context of developing countries seem relevant for adoption (Box 6.18).

6.111 Due to the very steep terrain characteristics with alternative hills and valleys coupled with very high rainfall spread over two monsoons, the extent of soil erosion is severe in Kerala. It is estimated that out of 22.4 lakh ha of cultivated land in the state, around 9 lakh ha. is prone to soil erosion. The conservation measures will be effective only if they are organised on a watershed basis. In view of the predominance of relatively small sized holdings, massive interventions on a contiguous area basis are essential with the support of local governments. During Tenth plan period, it is proposed to implement soil conservation activities in 1.32 lakh ha. of land with an outlay of Rs. 12103 lakh against Ninth Plan target of 95974 ha and Rs. 5331 lakh.

### BOX-6.18

#### Improving Watershed management in developing countries - a framework for prioritising sites and practices

- Most of the watershed projects implemented in the past 25 years in developing countries have tried to combine poverty alleviation and resource conservation goals, but neither of these goals has been satisfactorily accomplished.
- Working with the poor has been commonly used as a criterion for selecting watershed management activities and sites. However it has not been a very useful guide for choosing sites and activities.
- A poverty alleviation approach tends to foster focussing on individual farmers' plots as the main planning units rather than on the whole catchment area. Assigning disproportionately higher priority to some watershed management threats may not be most important from an overall watershed management perspective.
- To have effective watershed management, it is critical to explicitly adopt a conservation approach.
- Concentration on contiguous sites defined by the threats to the landscape, chances of success and cost effectiveness of the investment, where landscape and economic improvement will be self evident.
- Include all stakeholders in watershed management rather than only the poor farmers in the target areas as is the current practice among most development organisations.
- Select preventive rather than curative activities and base them on land use capability and income generating potential for maximum cost effectiveness.
- Treat farmers as informed clients to whom development organisations are accountable and who are capable of deciding what is good for them in the light of their resources, priorities and values.

*ODI.*

6.112 With the substantial assistance rendered by NABARD under RIDF and the inclusion of a good number of projects as part of local plans, soil and water conservation activities in the State received an impetus during Ninth and Tenth Five Year Plan. The main works included are construction of stone pitched contour bunds, farm ponds, water harvesting structures, retaining walls, check dams etc. The cumulative coverage under soil conservation at the end of Ninth Five Year Plan was 2.40 lakh ha. During the first two years of the Tenth Plan periods an area of 14000 ha. was treated through State Plan schemes.

6.113 The achievement of soil and water conservation programmes during 2003-04 is given in Table -6.9

**Table-6.9**  
**Achievement of Soil and Water Conservation Programmes during 2003-04**

Name of Scheme	Achievement	
	Financial (Rs. lakhs)	Physical (ha.)
State Plan		
i) RIDF	924.83	6025
ii) Other State Plan schemes	28.57	230
Centrally Sponsored Scheme		
i) NWDPR	138.32	43123 Beneficiaries
ii) River valley project - Kabini	192.76	3313
<b>Total:</b>	<b>1284.48</b>	

6.114. The projects under RIDF I and RIDF II and RIDF III were completed. Under RIDF IV & V, there were no schemes for soil conservation department. The department is now implementing RIDF VI, VII & VIII schemes. Under RIDF VI, 20 projects were sanctioned with an outlay of Rs. 1021.87 lakhs and 40 watersheds were sanctioned under RIDF VII with an outlay of Rs. 1779.32 lakhs covering an area of 13694 ha. Similarly under RIDF VIII, 12 schemes were sanctioned with a financial outlay of Rs. 647 lakhs. Projects in Phase VI, VII and VIII are in progress. During the period under report, 6025

ha. was benefited with an expenditure of Rs.924.83 lakhs. Details of RIDF projects are given in Table-6.10

6.115. Other important state sector schemes implemented during 2003-04 were the protection of catchment of reservoirs and stabilisation of land slide areas.

6.116. Under the protection of catchment of reservoirs of water supply schemes, soil and water conservation measures were done in 150 ha area of Aruvikkara and Sasthamcotta catchment. For implementing the scheme an amount of Rs. 17 lakh was expended. Under stabilisation of landslide area project, scientific soil and water conservation measures were undertaken in 80 ha area in the selected districts for preventing occurrence of landslides with an expenditure of Rs. 9.93 lakhs

6.117. The National Watershed Development Project for Rainfed Areas (NWDPR) is a Centrally Sponsored Scheme started in 1990-91. Under the programme, schemes are implemented directly by watershed communities. As per the revised NWDPR guideline issued

by Government of India, 30 sub watersheds have been identified in the State during Tenth Plan period with an effective area of 72032 ha. The District Watershed Committee and Watershed Development Team were constituted and Project Implementing Agencies and Nodal Agencies were identified in all districts. During 2003-04. An amount of Rs.138.31 lakhs was spent for imparting training to 43123 personnel.

6.118. Kabini River valley project - is a centrally sponsored inter state project of Kerala and

**Table -6.10**  
**RIDF assisted Soil and Water Conservation Programmes**

RIDF Phase	Period	No. of Watershed			Project cost (Rs. lakhs)	Project Area (Ha)	Cumulative Achievement	
		Sanctioned	dropped	Completed /ongoing			Physical (Ha)	Financial (Rs. lakhs)
RIDF I	1995-97	40	3	37	1013.20	5902	5718	996.09
RIDF II	1996-99	32	6	26	1292.99	8725	7859	1087.45
RIDF III	1998-02	40	3	37	2161.50	13423	10890	1845.07
RIDF VI	2000-03	20	-	20	1021.87	6220	3703.21	814.27
RIDF VII	2002-04	40	-	40	1779.32	13694	9966.45	1456.54
RIDF VIII	2002-05	12	-	12	647.40	5175	1935.50	320.72



Karnataka started in the year 1998 being implemented in the catchment of Kabini river which originates from Kerala State. The major portion of the catchment of Kabini is spread over Wayanad district. An integrated watershed management approach is being adopted in this project. Total catchment area of Kabini is 1.635 lakh ha of which 1.05 lakh ha needs soil and water conservation measures. An amount of Rs.192.76 lakh has been spent upto 3/2004 for covering an area of 5984ha. Though the implementation of the project has been beneficial to the Scheduled Tribe and Scheduled Caste families in Wayanad district, the progress of the project by and large was slow.

6.119. Many states have taken up development of degraded areas under the watershed approach on a mission mode. The new paradigm of 'watershed plus' recognises the need to involve the community as a necessary condition for the sustainability of watershed programmes. The programme seeks to ensure convergence of all other programmes that promote economic activities and generate increased employment opportunities. Conscious efforts to promote non farm employment and increased land access for the land less as well as promotion of Self Help Groups form a part of the new approach.

6.120. The involvement of PRIs and local people in planning and implementation of watershed programmes determines to a great extent the success of the programmes. A common approach in tune with the guidelines issued for implementation of Watershed Programmes through Western Ghats Development Programme needs to be adopted for all Watershed Programmes implemented in the State. The success hinges on the extent of securing the participation of the local community to take care of resource management.

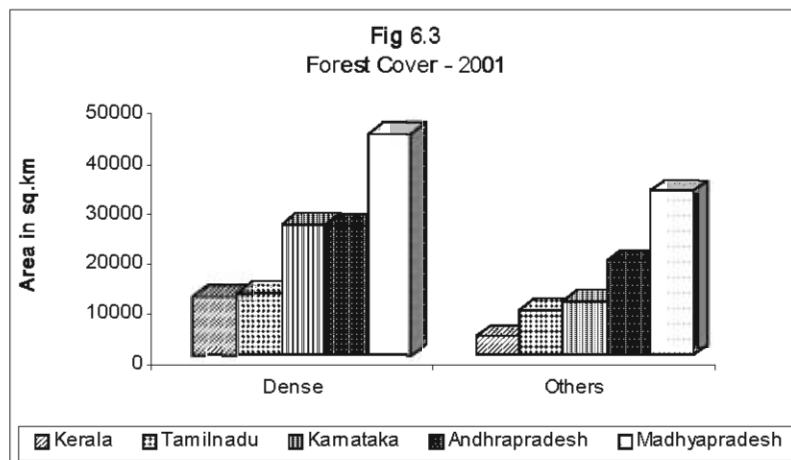
6.121. The Western Ghats Region of Kerala comprises of 31 taluks covering around 72 per cent of the geographical area and around 50 per cent of the population in the State. Out of the total length of 1600 Kms. of hill ranges under Western Ghats, about 450 kms. is in Kerala covering 28 per cent of the geographical area of the region. This programme aims at the ecological and

economic improvement of the area and living conditions of the local people. As a part of Tenth Five Year Plan strategy, detailed guidelines were formulated to integrate WGDP with the decentralised planning process. The sectoral plans under this programme are to be designed based on a sub plan approach aiming at the integrated development of the region on a watershed basis.

6.122 The major schemes implemented under WGDP include forestry, village and small scale industries, horticulture, soil conservation, minor irrigation, dairy development, agriculture etc. During 2003-04 Rs.13.13 crores has been spent and out of this Rs.7.5 crores was utilized for 41 watersheds in the state. Physical and financial achievements of WGDP for Natural Resource Management for 2003-04 are shown in Appendix-6.9.

**FORESTRY AND WILD LIFE**

The forest cover in the country according to 1999 assessment was 637293 sq.km. while the 2001 assessment showed an increase of 6 per cent. Among the states highest net increase of 5237 sq. km. was observed in Kerala. Forest cover assessed in 2001 consists of all lands with more than 1 ha having tree canopy density of more than 10 per cent interpreted from satellite data, irrespective of tree species. Eventhough higher tree cover were reported in 2001, direct comparison with 1999 assessment would be invalid since 1:50000 scale digital interpretation was adopted in 2001 while 1: 250,000 visual interpretation in 1999. Technical factors as well as changes in the ground have contributed to the changes. The forest cover of the state as per the 2001 assessment of FSI was 15560 sq.km. (dense forest 11772 sq.km. and open forest 3788 sq.km). (Fig.6.3)



6.124 The forest covers 28.98 per cent of Geographical area in Kerala and the strategies for the development of forests envisages maintenance of environmental stability through preservation and reduction of degradation of forest, conservation of Bio-diversity, increasing productivity of forests and developing Participatory Forest Management and technology improvement.

6.125 Kerala ranks 14<sup>th</sup> among all the States/ Union Territories in respect of percentage of geographical area under forest cover. Madhya Pradesh with 77265 sq.km. has the maximum area under forest cover followed by Arunachal Pradesh (68045 Sq.km.) and Chattisgarh (56448 sq.km).

6.126 The estimated Forest area (provisional) in Kerala is 11265.135 sq.km.. This includes 9284.857 sq.km. of reserve forests, 141.801 sq.kms. of proposed reserves and 1834.48 sq.km. of vested forests. Out of the total of 11265.135 kms. the effective forest area in Kerala is only 9400 sq.kms. (Divisionwise details of forest cover are given in Appendix 6-10.

6.127 In Kerala forests fall in two bio-geographic provinces of Western Ghats and the West Coast, and are rich in bio-diversity and vital for environmental protection and considered to be a repository of rare and endangered flora and fauna. The forest area in Kerala (11265.135 sq.km.) is higher than the national average of

19.5%. As per the assessment of Forest Survey of India (2001) the area under forest in the State is higher than the effective forest cover as assessed by the Forest Department.

6.128 The nature of forests in Kerala shows wide variation among the categories ranging from tropical wet evergreen to tropical dry deciduous forests. The area under different types of forest is shown in Table 6. 11. Tropical evergreen and tropical moist deciduous forests account for 79 per cent. The coverage of the plantation forestry is to the extent of 19 per cent.

6.129 Out of total area, 1.88 lakh ha. is degraded with crown density below 40 per cent. Afforestation of the degraded forests is one of the thrust areas for forestry development, supported under various programmes which include compensatory afforestation and general forestry. Afforestation of degraded forests has been carried out in 8719 ha. under various programmes up to 2002-03.

6.130 Forest plantation constitutes the major source of raw materials to the forest based industries. The total area covered by forest plantation of various species is about 1.81 lakh ha., which has remained more or less stagnant during the last three years. Teak is the major species planted (40.14 %) followed by mixed plantation (35.57%) and Eucalyptus (11.75 %) (See Appendix 6.11)

**Table 6.11**  
**Types of Forests in Kerala**

Sl. No.	Forest Type	Area (Sq.km.)	% of Total area
1	Tropical Wet Evergreen and semi evergreen Forests	3299	35.10
2	Tropical Moist Deciduous Forests	4100	43.62
3	Tropical Dry Deciduous Forests	100	1.06
4	Mountain Sub Tropical Temperate shoals	70	0.74
5	Plantation	1810	19.26
6	Grass land	21	0.22
<b>Total</b>		<b>9400</b>	<b>100</b>

Source : Department of Forest

**BOX-6.19**

**Economic value of various kinds of Forests**

- ◆ Forest (teak, sal forests etc with crown density < 40% for the purpose of timber range from Rs. 2701 to Rs. 2970 per hectare being the value of annual flow of goods and services. (Value of Plantation/single species)
- ◆ In the case of multispecies plantation/open forests (crown density 10-40%) for timber and NTFP it ranges from Rs. 3239 to 12227 ha.
- ◆ For dense forests (crown density 7.40%) for the purpose of NTFP + Ecological functions + Carbon store range from Rs. 21287 to Rs. 32295 ha.
- ◆ For protected area for the purpose of Eco tourism, ecological functions and Carbon Store it ranges from Rs. 21425 to Rs. 340444/ha.

*Source: Manoharan, 2000 quoted by Planning Commission.*

6.131 Major forest produce includes timber, reeds, Bamboo and firewood. Their total production shows a declining trend from 1993-94 onwards. Reeds and bamboos show sharp decline in supplies during the period while the extraction of timber is on the increase. The quantity of timber produced in 2003-04 was 62637 cum. The number of bamboos and reeds produced was 189.06 lakhs. These are species which can be promoted under farm forestry with peoples participation. The trend in production of forest produces during the last eight years is shown in Appendix 6.12

**Agro Forestry**

6.132 Indian forest productivity at 0.7 m<sup>3</sup> of wood per year per hectare is one of the world's lowest. There is a growing demand supply gap and agro forestry assumes significance in this regard. (Table-6.12)

**Table-6.12**  
**Total Projected demand of raw wood by different industries**  
(in million cubic meters)

	<b>2005</b>	<b>2010</b>
Paper & Paper Board	8.96	15.40
Newsprint	2.56	3.42
Constructions	19.40	22.10
Packaging	5.54	6.40
Plywood	14.00	17.96
Match box	2.60	3.00
<b>Total</b>	<b>73.91</b>	<b>94.89</b>

*Source: Ministry of Environment & Forest*

6.133 The National Forestry Action Plan projects the annual requirement of timber for household sector in the country at 66.6 million cubic meters (cum) in the year 2006 and the total

timber requirement at 81.8 million cubic meters. Against the demand, production from forests has been estimated at 29 million m<sup>3</sup> in 2006. The homestead mixed gardens is a basic agro ecosystem in Kerala. A wide spectrum of trees and shrubs, more than 127 species, are reported in the Kerala homestead gardens. Most of these species are under exploited. Available micro level studies indicate that standing stock of commercial timber from the Kerala homesteads is between 6.6 and 50.8 m<sup>3</sup> per hectare. Bio diversity of Kerala homestead gardens has declined drastically due to commercialization. In order to conserve and improve on-farm genetic diversity and to enhance timer productivity from the traditional land use systems, concerted efforts are necessary especially for evolving technology packages on tree management and production and distribution of quality planting materials. The provisions in the Kerala Preservation of Trees Act 1986 impose

restriction on harvesting of ten species from the private fields. Based on the proposal of the Law reforms committee, a new bill on promotion of Tree growth in Private lands has been prepared for facilitating tree growth in private lands.

6.134 Farm forestry does not adequately figure in the local plans of the panchayats. Dearth of adequate planting materials of the desired species is a major constraint for popularising the activity in rural areas. Panchayats can render the required

support for organising nurseries with people's participation. Planting of trees in homesteads and public places could be promoted by the Grama panchayats by involving farmers and NGOs. However sustainability has to be ensured through participatory management.

6.135 The Tenth Five Year Plan has proposed raising the forest and tree cover for the country to 25 per cent in 2007 and 33 per cent by 2012. There has been increasing realization that forests provide numerous benefits to mankind including improvement of quality of environment. In the year 2001, the total forest cover had increased by 38245 sq.km.s. as compared to 1999. The corresponding increase in the State was 5237 sq.kms. This would mean bringing additional area under forest and tree cover to the extent of over 14 million hectares by 2007 and another 26 million hectares by 2012.

#### Trees outside Forests

6.136 The World has billions of trees that are not included in the Forest Resource Assessment 2000 definition of forest and other wooded land. Trees outside Forest (TOF) include trees in cities, on farms, along roads, and in many other locations. Trees outside the forest are an important source of non-wood forest products. In Kerala a study estimated that out of the total annual production of 14.6 million cubic meters of wood in the state, about 83 per cent was from homesteads, 10 per cent from estates and seven per cent from forests (quoted by FAO)

6.137 The Ministry of Environment and Forests has constituted the National Forest Commission on 7.2.2003 for a period of two years to review the working of Forests and Wildlife sector covering existing policy and legal framework, current status of forest administration, policy option for sustainable forest and wildlife management, biodiversity conservation, and establishing partnership and interface between forestry management and local communities including tribals.

#### Participatory Forest Management (PFM)

6.138 Joint Forest Management was introduced in India with the proclamation of National Forest Policy 1988. However, through a resolution in

1990, the scheme was actually introduced in all the states in India. In Kerala it is known as Participatory Forest Management.

6.139 Under the scheme, the forest dependant communities are given rights to collect lops and of branches, non-timber forest produces etc. The Kerala Forest Department has taken initiative and the lead role in calling for people's participation in forest management and Participatory Forest Management was implemented. The Kerala Forest Department started PFM in selected villages along the forest fringes and within the reserves as a part of Kerala Forestry Project. Joint Forest Management seeks to develop healthy partnership between local community institutions and state forest departments. Kerala Forest Department is implementing PFM through Vanasamrakshana Samithies (VSS).

6.140 Joint Forest Management (JFM) programme was pursued vigorously as the result of the National Forest Policy 1988, and the Joint Forest Management resolution in 1990 has now been adopted in all 28 states. Around 84632 JFM Committees have been formed and 17.33 million ha. forest area have been brought under JFM programme. About 85.28 lakhs families are involved in JFM programme in various states all over the country. In Kerala 323 PFM Committees have been formed and 1.71 lakhs ha. forest area have been brought under PFM. About 41000 families including 3828 SC's and 11371 ST's are involved in PFM programme in various forest divisions of Kerala.

#### Vanasamrakshana Samithies (VSS)

6.141 VSS is empowered to function through registration with Forest Department to manage and protect forests, based on the micro plan approved by the Conservator of Forests. Financial assistance is provided to these samithies through Forest Development Agencies. Forest Development Agencies (FDAs) are confederations of VSS. The execution, monitoring and evaluation of the micro plans is vested with the samithies. Upto December 2004 about 330 VSS have been registered. In order to assess the strength and weakness as well as to identify the conditions for success of the VSS an evaluation study was conducted. Major findings, suggestions of the study as shown in Box. 6.20

## BOX-6.20

**Major Finding of the study on VSS and Suggestions**

- ◆ VSSs are successful in places where community leadership is effective and officers are keenly involved. It has helped to bring institutional issues like permission to cut trees planted in their own settlement to the table. Forest fire occurrence, reportedly reduced.
- ◆ A well integrated strategy is to be formulated for the success of PFM. High level inter-sectoral co-ordination between Government and Department is required in dealing with protection of forest. The VSS and NGOs played active role to assist the Forest Department in PFM activities in the initial stages only.
- ◆ Forest Department may maintain effective and cordial relationship with VSS. Change in the attitude from policing to that of a people friendly approach is required on the part of the department.
- ◆ There is a need for coordination and implementation of departmental programmes through VSS. Timely payments for the completed work is essential to gain the confidence of VSS.
- ◆ Strategies for linking micro plans of VSS with decentralised planning of the Panchayat Raj institutions may be explored.
- ◆ Repeated training is suggested for creating greater awareness of PFM. VSS should resist the entry of outsiders in tribal settlements. The Forest department may extend their co-operation for establishing check post to prevent intrusion of the forest boundary.
- ◆ VSS is encouraged to take up income generating activities and to create awareness and confidence among women in forest settlements. Scientific skills may be imparted to them for running nursery, garbling fruit trees, upgrading the designs of finished products.
- ◆ The traditional knowledge of the forest dependent community may be tapped and scientifically used for bio diversity conservation, regeneration, making of herbal medicines and other bi-products.
- ◆ Government may take necessary steps to give permission to cut trees planted by the members of the settlement.

*Source: State Planning Board*

**Forest Development Agencies (FDAs)**

6.142 Government of Kerala constituted the FDA's in each forest division in 2002-03, with a view to guiding the activities of the VSS. The Conservator of Forest is the Chairman and Divisional Forest Officer is the Chief Executive of a FDA. The Presidents of all the VSS in the division as well as district level officers related to Forestry are the members. FDA acts as the Apex body of VSSs in a Division and receives funds from Government of India directly. The Government have so far been constituted 33 FDA's in the state. Government of India sanctioned Rs. 105.50 lakhs for six FDAs during 2002-03 and another 149.00 lakhs for four more FDAs during 2003-04. The amount is for artificial regeneration, bamboo and cane plantations,

medicinal plants and regeneration of perennial shrubs of medicinal value, pasture development etc. The total amount expected to flow to the above 10 FDA's for the Tenth Plan comes to Rs. 32.77 crores.

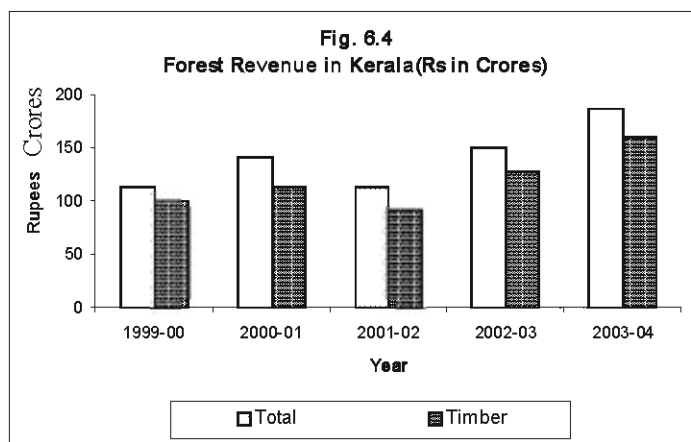
**Diversion of forest land for non-forestry purposes**

6.143 Till March 2004, Ministry of Environment and Forests received 14621 proposals from the states/union territories for getting approval under the Forest Conservation Act 1980 for diversion of forest land for non-forestry purposes, and 9435 proposals were approved. The area diverted at the national level during 2003 was 42730 ha with a cumulative figure of 921760 ha, since 1980.

From Kerala 183 proposals were approved. The statewise details are shown in Appendix-6.13

### Forest Revenue

6.144 The Revenue from the forestry sector by way of sale of timber and other forest products comes to Rs. 187.18 crores in 2003-04 as against Rs. 149.57 crores in 2002-03. The State Government have modified the policy of supplying raw materials to M/s. Hindustan Newsprint Ltd at reduced rates. There will be an annual increase in the price of forest produce supplied to them at 20 per cent per annum. The increase in revenue attainable through this measure is of the order of Rs. 10.00 crores per annum. The changes in the forest revenue for the last five years are shown in Fig. 6.4 and Appendix 6.14.



### Wild life and Biosphere Reserve

6.145 The Wild life area covered by two National Parks, twelve Wildlife Sanctuaries and one Biosphere Reserve coming under the category of protected areas in Kerala works out to 2395.40 sq.kms. It is 21 per cent of the total area under forest and 6 per cent of the total geographical area, which is higher than the national average of 5 per cent. Details are given in Table 6.13. Protected area are managed now as showcases of bio diversity with predominance for large animals in habitat management, Participatory Management based on the principles of eco-development has been initiated and this strategy has resulted in the co-operation of the neighborhood communities and forest dependent communities. During the year 2003-04, an amount of Rs. 1550.14 lakhs was earmarked under various schemes for protected areas management including bio diversity conservation. Out of which Rs. 1058.20 lakhs were utilised under various schemes.

6.146 Biosphere Reserves are terrestrial and coastal ecosystems which are internationally recognised within the framework of UNESCO's Man and Biosphere programme. In the country, 13 Reserves have been set up and in 2001, UNESCO approved designating the Sunderban (West Bengal) and Gulf of Mannar Reserves. As a result three Biosphere Reserves from India are now included in the International Net Work, the third being Nilgiri (Kerala, Karnataka and Tamil Nadu) which was designated earlier. Agasthyamala Hills in Kerala comprising an area of 1701 sq.km. has been designated as 13<sup>th</sup> Biosphere Reserve in 2001. Detailed action plans will facilitate attraction of additional funding for these sites for long term conservation and sustainable utilisation of resources.

6.147 The first National Wildlife Action Plan of 1983 has been revised and the new wild life Action Plan (2002-2016) has been adopted at the national level. The plan outlines the strategies, action points and priority projects for conservation of wild fauna and flora in the country. A systematic management of Protected Area is most important from ecological, environmental and socio economic point of view. The implementation of Management Action Plans prepared under the Kerala forestry Project is of special priority.

Table 6.13

Sanctuaries, National Parks, Biosphere Reserves and other Protected Areas in Kerala

Name of NP/WLS/BR	Area in Sq. KM.	Year of formation
Periyar WLS	777.00	1950
Neyyar WLS	128.00	1958
Peechi - Vazhani WLS	125.00	1958
Parambikulam WLS	285.00	1973
Wayanad WLS	344.44	1973
Eravikulam WLS	97.00	1978
Idukki WLS	70.00	1976
Thattekkad BS	25.00	1983
Peppara WLS	53.00	1983
Cimmony WLS	85.00	1984
Chinnar WLS	90.44	1984
Shendurney WLS	171.00	1984
Aralam WLS	55.00	1984
Silent Valley NP	89.52	1984
Nilgiri Biosphere Reserve	1455.40	1986
Agasthyavanam Biological Park	30.00	1992
Anamudi NP	7.50	2003
Mathikettan NP	12.82	2003
Pampadum NP	1.32	2003
<b>Total</b>	<b>3902.44</b>	

Total Protected area - 2,395.40 Sq.km.  
Source : Department of Forest

## General Forestry

6.148 Under General forestry various schemes implemented during the period include management of natural forests with an expenditure of Rs. 3.64 crores, improving productivity of plantations with Rs.0.74 crores, strengthening of infrastructure facilities with Rs.2.03 crores, strengthening bio-diversity conservation and management of protected area with Rs. 4.81 crores. The scheme on Management of Non-Wood Forest Produce with Rs.0.74 crores. The World Bank aided Kerala Forestry Project was started in 1998 and cumulative expenditure up to 03/2004 was Rs.165.42 crores.

6.149 Survey and demarcation of forest boundaries is one of the activities taken up under General forestry. Out of an estimated boundary of 11220 kms, 2193 kms were demarcated during Ninth Plan. The activities for boundary protection during 2003-04 include survey of forest boundaries covering 9145 cairns and reconstruction of 551 cairns. Fire protection work is another important work done during the year 2003-04. The coverage under this activity during the year include fire line (2057 kms. The cultural operations include special tending (90 ha.). Other activities are maintenance of roads (151.km.) construction of buildings (14 nos), improvement of existing of buildings (85 nos.) maintenance of industrial plantations (823 ha.). Under the scheme "Hard wood" species raised 1120 ha. and in "industrial Raw Materials" 2096 ha. were the achievement during the year 2003-04.

## Management of Non-Wood Forest Produce

6.150 The NWFPs including medicinal plants is being given a major thrust because of their importance around the world. Eventhough, their monetary value has been estimated, it is certain that their values are far above the values of wood products. The main objectives are conservation and improvement of the NWFPs including medicinal plants, increasing the production and replenishing the stock of NWFPs and medicinal plants and providing additional income to the tribal and the rural poor living in and around forests. The productivity and management of NWFPs are to be improved through sustainable and scientific management by adopting improved methods of harvesting processing, and value addition and marketing.

6.151 The DANIDA assisted programme of

Medicinal Plants Conservation and strengthening the medicinal plants resources in the southern states of Kerala, Karnataka, Tamil Nadu and Andra Pradesh was started during 1993 through the NGO, Foundation for Revitalization of Local Health Traditions, Bangalore. In Kerala nine Medicinal Plants Conservation Areas for in situ conservation of medicinal plants were established. Also four MPCAs in Kerala are maintained by TBGRI, Peerumedu Development Society, Centre for Indian Medicinal Heritage and Wayanad Social Service Society. Out of the 100 RET plants available in South India, 76 plants are being protected and propagated in the MPCA network.

6.152 In addition to the protection and conservation measures taken by the department, these activities are be strengthened by executing the same through actual consumer groups themselves. For this purpose VSS were formed. The collection of NWFPs is entrusted with these user groups and they undertake collection.

6.153 During the year 2003-04, Rs. 110 lakhs have been earmarked for management of medicinal plants and the expenditure was 74.13. In addition to State Plan support, some specific projects are being supported by the National Medicinal Plants Board.

6.154 In order to meet the growing demand of plant based medicines in the national and international market, it is essential to grow medicinal plants in degraded forests also. During Tenth Plan, it is proposed to establish 200 Vanaspati vans covering over 1 million ha. of degraded forests in the country. Eventhough Kerala prepared a project few years back, funding could not be mobilised.

## Compensatory Afforestation Scheme

6.155 The Compensatory afforestation project was sanctioned at an estimated cost of Rs.113.00 crores to be implemented within a period of 10 years starting from 1993-94. The objective of the scheme is the afforestation of 57,176 ha. of forestland in lieu of 28588 ha. lost by way of encroachment prior to 01.01.1977 which is a pre-condition for obtaining Government of India clearance for issuing patta to the encroached land.

6.156 Seedlings of various species were distributed to various NGOs during 2003-04 for tree planting in the premises of schools, colleges and also along the sides of National Highways and State Highways with active participation of the Department of Education, PWD and Grama

Panchayats and to plant trees. During the year 49,103 ha of land has been afforested and the actual expenditure comes to Rs. 838.03 lakhs.

### **Kerala Forest Development Corporation**

6.157 KFDC is a public sector undertaking with shares owned by Government of India and Government of Kerala. The jurisdiction of the Corporation covers forest areas situated in 7 revenue districts and 10 territorial forests. The total area of 10717 ha. (8006.86 ha of tree plantations and 2710.13ha. under cash crop) is under 9 divisions and 26 sub units and trees like Eucalyptus, Acacia, Teak, Albizea, Manjium etc. and cash crops like Cardamom, Coffee, Tea, Pepper etc. are cultivated. The Corporation has an authorised share capital of Rs. 10.00 crores, of which paid up share capital is Rs. 7.88 crores.

6.158 The activities undertaken during 2003-04 include 742 ha. plywood plantations and 65 ha. softwood plantations utilising Rs. 264 lakhs. KFDC entered into an agreement with M/s. Hindustan Newsprint Limited for the supply of 15000 MT of pulpwood during 2003-04 at subsidised rates and supplied 14565 MT against the above allotment. Eco-Tourism activities being carried out at Gavi and Munnar Divisions make a profit of Rs. 6.00 lakhs during the year. During the year 2003-04, KFDC received a profit of Rs. 52.00 lakhs from Cardamom cultivation. Vanilla was also cultivated in 7.5 ha in Gavi, Munnar and Nenmara Divisions. Under Participatory Forest Management, 8 VSSs were formed to carry out protection of the Plantations.

### **Kerala Forestry Project**

6.159 The World Bank aided Kerala Forestry Project was under implementation from 1998 and completed in December 2003. The original project cost was Rs. 182.39 crores. During 2001, mid term review of the project the outlay was revised to Rs. 166 crores. The cumulative expenditure upto March 2004 was Rs. 167.42 crores. The project had three components; viz., strengthening sector management and biodiversity conservation. During 2003-04, 1061 Ha. degraded forest was regenerated, reeds and bamboos were regenerated in 645 Ha, pulpwood planted in 988 Ha. and teak planted in 543 ha. (Appendix-6.17)

### **Sanjeevanivanam (National Medicinal Plants Board Assisted Scheme)**

6.160 This is a new scheme implemented for the creation of awareness among the stake holders

through appropriate extension activities including training, extension, marketing and documentation sanctioned by the NMPB for Rs. 25 lakhs for 3 years starting from 2002-03.

### **Project Elephant**

6.161 The scheme is for protection of elephants and their habitat and corridors. The elephants in the forests are protected from poaching and their habitats are improved with fire protection and planting fodder species. For the benefit of public electric fences and elephant proof trenches are created and compensation is paid for the damages caused to their person and property. Public awareness programmes are conducted and mahouts are trained for better handling the elephants in captivity. The activities are executed as per the specific work programme approved by the Government of India. During the Tenth Plan a total outlay of Rs. 1000.00 lakhs was provided for the scheme. Out of this an amount of Rs. 222.09 lakhs was expended. "Kerala Captive Elephants (Management and maintenance) Rules 2003" have been formulated for the welfare of elephants of private persons, as a reform initiative.

### **Eco-development under Global Environmental facility**

6.162 This is a special eco-development programme implemented in Periyar Tiger Reserve with the assistance from Global Environmental facility. The project was completed as on 30<sup>th</sup> June 2004. This scheme was for the overall development of the Periyar Tiger Area including the people staying in and around the sanctuary area. A total outlay of Rs. 1058.50 lakhs was provided, out of this an amount of Rs. 596.35 lakhs was expended.

### **Periyar Tiger Reserve**

6.163 The Periyar Wild life sanctuary was constituted in 1950 and was brought under project Tiger in 1978 as Periyar Tiger Reserve and 36 Tigers were reported. The Periyar Tiger Reserve also falls in the Periyar Elephant Reserve. The types of forest includes evergreen forests, grass land and moist deciduous forests. During the 10<sup>th</sup> Plan a total outlay of Rs. 450.00 lakhs has been provided for the scheme. Out of this an amount of Rs. 238.56 lakhs was expended for the construction of check dams, formation of water holes, eradication of weeds, planting bamboos and other protection works/awareness camps.



ENVIRONMENTAL SANITATION

Sanitation Coverage

Kerala has the highest coverage of individual household latrines in India. Analysis of sanitation coverage data for the country from various sources shows that despite the acceleration of coverage under the Eighth Plan, only between 18 to 19 per cent of all rural households have a toilet. However there has been increase in coverage from around 10 per cent in 1990. At the same time, between 75 to 81 per cent of all urban households in India have toilets, an increase from the 1990 figures of around 64 per cent. National Family Health Survey data on toilet facilities shows that the proportion of households having access to toilet facilities in larger and more populated states was much lower than the national average. These include Andhra Pradesh, Bihar, Madhya Pradesh, Orissa, Rajasthan, Tamil Nadu and Uttar Pradesh. Among the smaller states only Himachal Pradesh followed this pattern. In case of Kerala, the proportion of household with access to household toilet facilities at 84 per cent was much above the national average of 36 per cent.

6.165 An analysis of rural home toilets used based on household data from the 2001 Census for major Indian states shows the level of disparity and it range from as high as 81 per cent in Kerala and 60 per cent in Assam to as low as nine percent in Madhya Pradesh and eight percent in Orissa.

6.166 The coverage is lower in households below poverty line and other sanitation conditions such as solid and liquid waste disposal, drainage, and community sanitation are very poor. This situation is a burden particularly on the women. The percentage of households with access to sanitation facilities according to different estimates is given in Table-6.14.

**Table 6.14**  
Household Sanitary Latrines: Access to Sanitation Facilities

Time Line	1991 <sup>(1)</sup>	1995 <sup>(2)</sup>	2001 <sup>(3)</sup>
Rural households with toilet (%)	44	73.4	81.3
Urban households with toilets (%)	73	90.0	92.0

Source:- (1) Census of India, 1991, ISSO 1995, (3) Census of India 2001

6.167 According to 2001 Census the total coverage of households in the State with latrines is 84 per cent. That is, out of the 65.95 lakh households in the State 55.40 lakhs have sanitary latrine facilities. Though the urban coverage (92%) is higher than the coverage for rural areas (81.3%), the decadal rate of coverage is higher in the latter case. In absolute numbers 9.93 lakh households in the rural areas and 1.32 lakh households in the urban areas still do not have individual household sanitary latrine. There is a possibility that the present data on households with sanitary latrines may include those households with the type of latrines which are unhygienic and unacceptable on health grounds. For example, on the banks of West coast canal and in Kuttanad, there are canal latrines with no substructure to prevent excreta from falling in to water. Thus a re-look at the present data on household latrines in the State is necessary. It is possible that the number of households having safe latrines is less than the reported figure of 55.50 lakhs.

**Table 6.15**

Type of Latrine within the House

Type	Total	%	Rural	%	Urban	%
Pit latrine	815221	12.4	631664	12.8	183557	11.1
Water Closet	4299445	65.2	3063983	62.0	1235462	74.8
Other latrine	426102	6.5	324374	6.6	101728	6.2
No latrine	1054438	16.0	922529	18.7	131909	8.0
<b>Total</b>	<b>6595206</b>	<b>100.0</b>	<b>4942550</b>	<b>100.0</b>	<b>1652656</b>	<b>100.0</b>

Source: Census of India, 2001

Community Perceptions

6.168 The baseline survey for the formulation of the Netherlands Assisted Programme (NAP II) done in three districts established that the priority service need of the people is for improved water supply with household sanitation coming next.

6.169 The NAP Report also shows that for household sanitation, latrines are the priority preference with bathing places and household wastewater drainage following. The Development Reports of the Grama Panchayats, which they prepared for the People's Campaign for the Ninth Plan, reveal that inadequacy of sanitation coverage is an acute problem for women in

particular, especially for those living in the coastal areas where density of population is high and public space scarce and in colonies inhabited by the poor.

6.170 Two independent studies conducted by Rajeev Gandhi National Drinking Water Mission (RGNDWM) and NAP II reiterate that there is a perceived need among womenfolk for sanitary latrines, mostly in the interests of privacy and convenience though they are also aware of the health linkages of sanitary practices. The Knowledge, Attitude and Practice (KAP) survey conducted by Indian Institute of Mass Communication in 1996-97 in Thiruvananthapuram, Alappuzha and Malappuram districts shows that people are willing to spend up to Rs.3000/- for construction of household latrines. ( Table 6.16)

**Table 6.16**  
**Need Felt For Latrine**  
**(in %)**

Sl. No.	Variables	Kerala
01.	<b>Reasons for Need</b>	
	1. Better Health	32
	2. Privacy	31
	3. Convenience	46
	4. Old Age	1
02.	<b>Reason for Not Having Latrines:</b>	
	1. Can't Afford	95
	2. Non Availability of Materials	0
	3. No Knowledge of Details	2
	4. No subsidy	5
	5. Problem of Smell & Disposal	1
03.	<b>Willingness to Spend</b>	
	1. Up to Rs. 500/-	23
	2. Rs. 500 – 1000/-	14
	3. Rs. 1000 – 3000/-	10
	4. Rs. 3000/- +	1

Source: *Water and Sanitation Base line survey Report, 1998*  
*Indian Institute of Mass Communication and Rajiv Gandhi National Drinking Water Mission*

**Local Government Initiative**

6.171 Sanitation is one of the subjects that has been transferred to the local governments at the cutting edge level, as part of the decentralization process. This has paved the way for improving the level of community participation in sanitation related services.

6.172 In the Ninth Plan about 300 Grama

Panchayats gave top priority to sanitation and 50 of them achieved the goal of more than 95 per cent coverage of the household sanitary latrines. During the Ninth Plan about 5.71 lakhs household sanitary latrines were constructed under decentralized plan which is much more than the total achievement in the past 15 years through different governmental programmes. During the first two years of the Tenth Five Year Plan, another 1.75 lakh was constructed ( Table 6.17).

**Table-6.17**  
**No. of Household Latrines constructed by Local Governments during Xth Plan**

Year	GP	SCP	TSP	EFC	Total
2002-03	56468	8946	1609	9335	76439
2003-04	130525	21883	2262	20019	174689

Source : *State Planning Board*  
Abbreviations : GP : *General Plan*, SCP : *Special Component Plan*  
TSP: *Tribal Sub Plan*, EFC: *Eleventh Finance Commission*

**Total Sanitation Campaign (TSC)**

6.173 The government sponsored sanitation programmes of the nineties could not make the desired increase in the coverage of families with sanitary latrines. The major reasons contributing to this predicament were heavy reliance on subsidy, overemphasis on target and hardware, inadequate participation of stakeholders, low importance given to IEC, and limited technology options. It was in this context that the Centrally Sponsored Total Sanitation Campaign (TSC) was introduced with focus on IEC, Human Resource Development and Capacity Building. The programme is currently being implemented in 350 districts of the country and plans to cover all 594 districts by the end of Tenth Five Year Plan. The rural areas of Kollam and Kasaragod were identified in 2001 for TSC implementation. Subsequently all other districts have also been taken up under TSC. The project cost, government share, community contribution and component activities of TSC Projects are given in Appendix-6.20

6.174 TSC has the objective of generating felt demand for sanitation facilities through IEC, accelerating sanitation coverage propagating cost effective and appropriate technologies in sanitation,

reducing incidence of water and sanitation related diseases and improving the general quality of life in rural areas. Strategies of TSC are Project mode of implementation, Community led, people centred approach, Demand Responsive Approach, Alternate Delivery Mechanism, Scaling down of subsidy, Menu of technologies to meet customer preferences, and Intensive IEC

**School Sanitation**

6.175 Conceptually school sanitation recognizes the potentialities of the child as a change agent more respective to new ideas. The present status of schools with sanitation and drinking water facilities is given in Table 6.18

**BOX-6.21**

**School Sanitation - The Mysore experience**

A Special Sanitation programme for Schools under the support of UNICEF began in Mysore district in 1991, with 20 Schools. In 2003, it covered 1474 schools in Mysore, Tumkur, Mandya, Bangalore etc.

The Strategic focus of the project was to continue technology with human resource development and develop a suitable approach that had children's participation at the core. Emphasis was placed on transformation that brought a vivid change, thereby enthusing children, teachers, parents communities and local authorities into further action. Also central to the project was the development of quality standards that would enable sustained replication.

*Government of India, 2003*

**Table - 6.18**  
**District wise Details of Government Schools having Drinking Water / latrines/urinal Facilities in Kerala 2003-04**

Sl. No	District	No. of Govt. Schools				No. of Schools having							
		LP	UP	HS	Total	Drinking Water				Urinals/Latrines			
						LP	U.P	H.S	Total	LP	U.P	H.S	Total
1	2	3	4	5	6	7	8	9	10	11	12	13	
1.	Thiruvananthapuram	299	98	121	518	283	93	121	497	276	89	12	486
2.	Kollam	268	62	75	405	226	55	73	354	210	51	74	335
3.	Pathanamthitta	166	43	48	257	164	42	48	254	160	43	48	251
4.	Alappuzha	193	67	58	318	182	59	46	287	180	64	42	286
5.	Kottayam	169	67	59	295	164	66	58	288	153	59	59	274
6.	Idukki	85	40	56	181	76	37	50	163	77	38	45	160
7.	Ernakulam	126	91	87	360	174	85	87	346	159	82	84	325
8.	Thrissur	115	55	80	250	101	52	71	224	105	50	80	235
9.	Palakkad	198	63	59	320	153	52	45	250	139	48	58	245
10.	Malappuram	349	113	82	544	304	110	75	489	275	103	77	455
11.	Kozhikode	181	74	69	324	168	70	61	299	150	67	61	278
12.	Wayanad	91	34	40	165	64	29	38	131	66	34	40	140
13.	Kannur	114	77	83	274	98	71	76	245	101	73	73	247
14.	Kasaragod	141	72	74	287	103	49	56	208	123	66	67	256
	<b>Total</b>	<b>2551</b>	<b>956</b>	<b>991</b>	<b>4498</b>	<b>2260</b>	<b>870</b>	<b>905</b>	<b>4035</b> <b>(89.71%)</b>	<b>217</b> <b>4</b>	<b>86</b> <b>7</b>	<b>92</b> <b>9</b>	<b>3970</b> <b>(88.26%)</b>

Source: Directorate of Public Instructions, Thiruvananthapuram

**NGO Participation**

6.176 The TSC and Sarva Siksha Abhiyan (S.S.A) have provision for construction of school toilet. This apart, hygiene education is also an integral component of school sanitation for which school health clubs are formed.

6.177 Many NGOs are active in the promotion of household latrines. Socio Economic Unit Foundation (SEUF) which was set up in 1987-88 has played a major role in the sector. The Sanitation programme of SEUF has a strategy of construction along with education programme

which addresses issues of construction of latrines, community motivation and participation, and education/ communication for improved sanitation and sustainability. SEUF has introduced a novel project in training women in masonry and utilizing their services in the construction of sanitary latrines. Centre of Science and Technology for Rural Development (COSTFORD), Peerumedu Development Society (PDS), Pazhakulam Social Service Society (PASS) and Centre for Environment and Development (CED) are some of the other NGOs which are working in the sector.

#### Bilateral Programmes

6.178 In 1987 the Danish and the Dutch governments started supporting a sanitation programme with several components, namely, household latrines, school sanitation, school health club, drainage and well chlorination. UNICEF initiated CDD WATSAN (Control of Diarrhoeal Diseases Water and Sanitation) project in Alappuzha in 1994. Subsequently in 2001 UNICEF activities were extended to Kollam, Kottayam, Malappuram, Wayanad and Kasaragod districts. The major component activities of UNICEF Co-operation Plan were School Sanitation, Alternate Delivery System, Innovative Health Promotion, Water Quality Monitoring, Roof Top Water Harvesting, Spring Based Water Supply and Lady Mason Training. UNICEF initiative of working in partnership with Government Departments, Local Governments NGOs and communities was a crucial trend setter. This partnership went beyond funds management to sharing of ideas, and joint action. Popularising Baby Friendly Toilets (BFT) in pre schools and anganwadies was a UNICEF supported innovation. During 1998-2000 the Netherlands Government Supported the IEC activities of NIRMAL-2000, a project aimed at achieving total household sanitary latrine coverage in Kottayam District. The Netherlands' support was given to activities relating to capacity building, monitoring and documentation, school sanitation and staff cost of District level Technical Support Group whereas hardware cost was shared between Government of India and Government of Kerala. In 2000, a World Bank

supported Rs. 451 Crore Water Supply and Sanitation Project was launched in Thrissur, Palakkad, Malappuram and Kozhikode districts. 80 Grama Panchayats from within the above four districts have been identified for project implementation.

#### Urban Programmes

6.179 A Centrally Sponsored Scheme for Low Cost Sanitation and Liberation of Scavengers was launched in the urban areas in 1980-81. The main objective of the scheme is to convert existing dry latrines in to low cost pour flush latrines and to provide alternate employment to the liberated scavengers. The funding pattern is shown in Table-6. 19.

**Table-6. 19**  
**Funding Pattern**

Category	( per cent)		
	Subsidy	Loan	Beneficiary
EWS	45	50	5
LIG	25	60	15
MIG&HIG	Nil	75	25

6.180 The subsidy at the rate indicated in the table is borne by Central Government. The guidelines permit state government to subsidise loan component and/beneficiary share. From 1989 onwards the scheme is implemented with HUDCO assistance.

6.181 The National Slum Development Programme (NSDP) was launched in 1997-98. The implementation of the scheme is through Kudumbasree. The urban local government are free to earmark funds for the construction of sanitary latrine with a unit cost of Rs. 2,000/-. The scheme is exclusively meant for BPL families. Under the Kerala Development Programme also urban local governments set apart plan funds from the service sector for construction of sanitary latrines for the BPL families. The unit cost of individual household sanitary latrine is Rs. 2,000/-.

#### Gender Issues

6.182 The growing emphasis on gender and development (GAD) issues has helped in mainstreaming women's perspectives in sanitation projects. The SHG movement which began in the mid-nineties also represents a powerful

potential for poor women's participation in WATSAN Sector. The recent projects in sanitation sector perceive a clear shift in women's role as domestic level sanitation and hygiene manager to an active participant contributing significantly to the efficiency and effectiveness of project implementation. Analysis of the Local Government managed projects would also reveal that women are no longer seen as clients of the system but as agents of change. (eg. Alappad Panchayat where situation analysis of women preceded programme designing and implementation). These initiatives have proven that incorporating women's perspective could change priorities and implementation dynamics. The empowerment of women needs to be viewed as a potentially powerful instrument to resolve some of the complex issues in the sector.

#### **Kerala Total Sanitation and Health Mission (KTSHM)**

6.183 In 1998 three Centrally Sponsored IEC projects were launched in Thiruvananthapuram, Alappuzha and Malappuram districts. These projects focused on social marketing for promotion of sanitation and sanitary aspects of water supply. A State level IEC Cell headed by a Consultant was set up in the Rural Development Department in 1998. In the year 2000, the Kerala Total Sanitation and Health Mission was set up as an autonomous agency, and the IEC Cell was merged with the Mission. The Mission has the mandate for developing conceptual framework, formulating programme strategies, providing expert consultancy and building sector related capacities of local governments. The Mission has expertise in strategy setting, model building and capacity building in WATSAN Sector.

#### **Solid Waste Management**

6.184 Any waste other than human night soil and sullage is called solid waste. It is a mixture of organic and inorganic waste materials produced from domestic or commercial activities which has lost its value in the eye of the first owner. Municipal Solid Wastes (Management and Handling) Rules, 2000 define solid waste as commercial and residential wastes generated

either in solid or semi solid form, excluding industrial hazardous wastes, but including treated biomedical wastes.

6.185 The Supreme Court of India in the judgment in a Public Interest Litigation (Writ Petition No.888 of 1996) constituted an eight member Committee with Shri. Asim Burman as Chairman to look into all aspects of Solid Waste Management in Class I cities in the country. The Committee submitted an Interim Report in June, 1998 recommending (i) actions to be taken by urban local governments and (ii) support measures to be extended by Central and State Governments. The Committee submitted its final Report in March, 1999 recommending simple technologies, easily achievable standards and a liberal timeframe. The Supreme Court accepted the report of the Committee and issued directives to the Central and State Governments to take steps to implement the recommendations.

6.186 In the light of the Supreme Court Judgment, Government of India notified comprehensive rules for Municipal Solid Waste Management. As per Supreme Court directive local governments having a population above one million are required to set up waste processing and disposal facilities by 31/12/2003 or earlier.

6.187 Urban solid waste is presently being disposed of unscientifically by dumping it in disposal yards. Such operation of open dumping results in unpleasant odour and air pollution; generation of leachate polluting ground water and surface water; and fly and mosquito breeding. In order to find a lasting solution to the problem of solid waste management, government launched the Clean Kerala Programme in 2003 for which it has set up the Clean Kerala Mission. The Mission has the responsibility of capacity building of local governments in the preparation and implementation of solid waste management plan. The objective of "Clean Kerala" is to strengthen the managerial capacity and responsibility of the community and local governments in planning, implementation and maintenance of solid waste management facilities and services and to help local governments establish socially acceptable, operationally sustainable and financially viable

Solid Waste Management facilities and services.

6.188 At present, the quality of services related to solid waste collection and disposal is extremely poor. There is an urgent need to streamline solid waste management systems, including collection and transportation, and more significantly waste treatment and disposal systems. It is estimated that only about 50% of the 2500 tonnes of waste generated per day is collected for disposal. Every day a quantity of about 1200 tonnes of waste is left to decompose on road margins, drains, canals, water bodies and open space. Such a situation provides ideal breeding ground for pathogens and disease causers. Even more serious is the problem of ground water pollution due to leachate from disposal sites. Wind blown debris and burning of wastes invariably cause air pollution. There is a sharp increase in the presence of substances like plastics which are difficult to degrade or break down, in the waste stream. Bio medical waste has been a growing concern because of the emergence of diseases like AIDS and Hepatitis.

6.189 Domestic waste constitutes 28% of solid waste and consists of food waste and other discarded materials. Trade and institutional waste also forms bulk of the solid waste whereas construction and demolition waste accounts for 6%. (See Table 6.20)

**Table-6. 20**  
**Rate and Type of Waste**

Sl. No.	Type	%
1.	Household Waste	28
2.	Shops/Markets/Hotels slaughter houses	44
3.	Brick, oil, concrete	6
4.	Sullage	4
5.	Street sweepings	10
6.	Others	8

Source: Hand Book on Water and Sanitation, 2002.  
State Planning Board

6.190 An analysis of the composition of solid wastes shows that it contains 68% biodegradable wastes (see Table 6.21). The remaining 32% consist of non-bio degradable components like plastic, bottles, metal parts, rubber, construction materials etc. Among these, items like paper, plastics, glass and metal pieces can be recycled or reused. There are a large number of rag pickers in the informal sector who collect recyclable materials from households, streets, bins and disposal sites.

**Table-6. 21**  
**Composition of Solid Waste**

Sl. No.	Component	Percentage
1.	Biodegradable	68
2.	Cloth, Timber	20
3.	Plastic, rubber, glass metal	7
4.	Brick etc.	5

Source: Handbook on Water and Sanitation, 2002  
State Planning Board

6.191 In the present solid waste management systems, little attention is given to proper equipment design. Open, bottomless community bins, box type carts and non tipping trucks are still being used necessitating open storage and multiple handling of waste. The most critical deficiency is that proper disposal sites have not been identified by most of the urban local governments. Those who have their own sites are yet to develop the site for sanitary land fill.

6.192 The total amount of solid waste collected and the collection efficiencies in major cities are shown in Table-6.22. In Kochi and Calicut, the collection efficiency is less than the national average of 60 per cent.

**Table -6.22**  
**Total amount of Solid Waste Collected and the**  
**Collection Efficiency in Some towns/Cities in India**

Sl.No	Town	Solid Waste (Tonnes)		Collection Efficiency % age
		Generated	Collected	
1	2	4	5	6
1.	Mumbai	3200	3100	96.9
2.	Chennai	1819	1637	90.0
3.	Bangalore	1800	1225	68.1
4.	Ahmedabad	1200	1080	90.0
5.	Kanpur	2142	1500	70.0
6.	Pune	1000	700	70.0
7.	Lucknow	600	500	83.3
	<b>Total</b>	<b>11761</b>	<b>9742</b>	<b>82.8</b>
1.	Coimbatore	175	113	64.6
2.	Madurai	310	160	51.6
3.	Indore	120	100	83.3
4.	Baroda	321	193	60.1
<b>5.</b>	<b>Cochin</b>	<b>230</b>	<b>120</b>	<b>52.2</b>
6.	Bhopal	321	300	93.5
7.	Tiruchi	130	60	46.2
8.	Calicut	200	75	37.5
9.	Meerut	120	70	58.3
10.	Hubli-Dharwad	75	60	80.0
<b>11.</b>	<b>Trivandrum</b>	<b>120</b>	<b>75</b>	<b>62.5</b>
12.	Salem	130	25	19.2
13.	Mysore	204	122	59.8
14.	Thane	350	200	57.1
15.	Jamnagar	149	89	59.7
16.	Gulbarga	10	8	80.0
17.	Sambalpur	60	36	60.0
	<b>Total</b>	<b>3025</b>	<b>1806</b>	<b>59.7</b>

Source: Environmental Statistics, 2002.

**BOX-6.22**

**Major findings of a study in Thiruvananthapuram Corporation**

- ◆ 290-300 tonnes of solid water are generated/day.
- ◆ Out of 300 tonnes, 181 tonnes are from households
- ◆ Water by soaps and chemical establishments 13-15 tonnes/daily
- ◆ Hotels and restaurants generate 30 tonnes and markets produce 40 tonnes
- ◆ Hospitals and clinical laboratories, 2-3 tonnes/daily

KRPLLD, 2004

## Technology

6.193 The carbon-nitrogen ratio of solid wastes in Kerala (20:1-30:1) is most suitable for composting. Due to low calorific value of solid wastes (1100 Kilo Calorie/Kilogram) and high moisture content due to prolonged monsoon season, it is not practicable to adopt thermal process in Kerala. Therefore the most suitable method of disposal of solid waste that can be adopted in the State is aerobic composting. For centralized composting the simplest system is windrow composting, and for decentralized treatment at household level and in residential colonies vermi-composting is suitable. For a quantity up to 50 MT, manual composting is sufficient and, for wastes exceeding a quantity of 50 MT mechanized windrow composting can be recommended.

6.194 In windrow composting plant each day's wastes are heaped in a windrow of 1.5 m height. After 21 days, compost is extracted by crushing and sieving process. Thereafter compost is kept for 30 days in a maturation yard for stabilization. Capital cost for establishing a 50 MT windrow compost plant will come to Rs.60 lakhs. The annual operation and maintenance cost will be Rs.45 lakhs. The sale of compost at the bare minimum price of Rs.1.50 per kg would fetch annually an amount of Rs. 67 lakhs.

6.195 Vermi composting method can be practiced in households, offices and other institutions. For home composting a container of a size of 90 cm diameter and 45 cm depth can be made use of. Initially a layer of soil and cow dung slurry will be made. On the top of this, domestic organic waste will be spread along with earth worms as a subsequent layer. Water should be sprinkled occasionally. 25 days wastes generated by a family of 5 members can be processed in such a container.

### BOX-6.23

**Vermi-composting unit at Paravur Municipality in Ernakulam District**  
(Set up with the assistance of Peerumedu Development Society)

Paravur Municipality in Ernakulam District of Kerala State has a population of 27904 people (1991 census) and estimated generation of solid waste is 7.0 tons/day of which around 60% waste is collected and transported. The earlier practice was crude dumping of the waste in one hectare land owned by the Municipality. In 1998, Municipality decided to process the organic fraction in the same site to mitigate the environmental problems. A project for composting the market waste by open pit method was formulated but the programme had to be discontinued due to processing difficulties of un-segregated waste, water accumulation in pits during rains and poor quality of compost. The present Vermicomposting unit was then set up with the assistance of Peerumedu Development Society (An NGO experienced in Vermicomposting). The Plant currently has 15 composting beds (7.5 x 1.2 x 0.3 m) with a roof covering (40 x 5.7 m shed) to protect the beds from sun and rain. Bed is prepared by digging 30 cm. below ground level and spreading or lining the pit with a layer of coconut fibre followed by a layer of cow dung slurry. Approximately 3000 earthworms of "Eisenia foetida" species and of average 7 cm size/pit is spread evenly over this. The waste is fed to the bed prepared in alternate layers of waste and cow dung slurry. One pit is enough to accept one ton of waste/day for one week. The pits are covered with wet jute bag (available plenty in waste) to prevent the top layer from getting dried. After 60 days the matured pits are opened and there after broken down, sieved manually and worms separated. The current production of vermin compost is 300 kgs/day and is sold at Rs. 4.50/kg. Bulk selling above 1000 kgs. are at Rs. 4.00/kg only. Worms are sold at Rs. 0.50/worm. Though the plant capacity is 2 tons/day, the current operation is one ton/day only. The Municipality is earning about 1.2 lakh/annum. The Plant is managed by Municipal Health department. One lady supervisor and 3 women workers are engaged.

Source :Clean Kerala Mission



## Issues

6.196 The key issues related to the different component activities of solid waste management as perceived in the Clean Kerala initiative are given below.

- The rather positive aspect that more than two-third the work is bio-degradable is not made use of in deciding on methods of disposal.
- The process of segregation and storage of waste at source is generally absent. This has resulted in a disorganized and ad hoc primary collection system
- Inadequately equipped primary collection points have necessitated waste dumping along roadsides and open space.
- Multiple handling of waste in different stages and irregular street sweeping have resulted in inefficient waste transfer and littering.
- Inappropriately designed street cleaning implements and primary collection vehicles have contributed to system inefficiency
- Several open grounds are used as secondary collection points. This practice has led to creation of leachate and contamination of groundwater
- Uncovered transportation of waste in tractors and conventional trucks has resulted in littering en route the disposal site.
- Inadequate and ill designed vehicles, under-utilisation of existing vehicles due to frequent break-downs coupled with delay in repairs have added to inefficiency.
- Crude waste dumping in land fill site has provided breeding ground for pests and rodents apart from ground water contamination.
- Poor civic sense
- Weak institutional structure and inadequate technical skills and expertise
- Low priority of solid waste management and insufficient funds allocation for meeting capital and operating cost.

## Strategic Consideration

“Clean Kerala” has taken in to consideration the following factors in upgrading solid waste management system.

Awareness of citizens’ role (environmental and local communities)

- Waste has to be segregated and stored at the source of generation
- Waste should not be allowed to reach the ground at any level of storage, collection and transport
- Equipment and vehicles will have to be designed in such away as to avoid manual handling
- Resource recovery by composting the organic fraction
- Informal sector may be supported in its efforts to salvage the recyclable fraction
- Non-biodegradable inerts and rejects must be land filled and that too in properly located secured site adopting environmentally acceptable procedures
- Training and capacitation of all solid waste management personnel, elected functionaries and the CDS system
- Developing MIS for effective monitoring
- IEC and awareness building for community participation
- Campaign mode of implementation

## Cost Implications

6.197 The capital and O&M costs of introducing solid waste management system for a municipality of 1 lakh population are separately worked out and given in Appendix-21 and Appendix-6.22 respectively.

6.198 The total capital cost in setting up an integrated solid waste management system in an urban local government with 1 lakh population would be about Rs.180 lakhs. The urban local governments in the State can be categorized into four on the basis of population for the purpose of computing the total rough cost estimate of introducing solid waste management systems.

**Table – 6.23**  
**All Urban Local Governments: Total Capital Cost**

Sl No	Population	No. of ULGs	Cost of SWM (Rs. in lakhs)
01.	> 2 lakhs @ Rs. 300 lakhs	5	1500
02.	1-2 lakhs @ Rs. 180 lakhs	2	360
03	50000 – 1 lakh @ 135 lakhs	21	2835
04	25000 – 50000 @ Rs. 68 lakhs	30	2040
	<b>Total</b>	<b>58</b>	<b>6735</b>

6.199 Accordingly, the rough cost estimation of installing solid waste management systems (excluding land cost) in all the urban local governments in the State will work out to Rs.6735 lakhs.

6.200 A rough estimation of the own revenue available with urban local governments is given in (Appendix -6.23).

6.201 At present urban local governments spend 20-30% of their revenue for solid waste management. It is possible for the KUDFC to arrange loan, the principal of which can be repaid from plan funds and interest from own revenue. For the upkeep and maintenance of solid waste management system a fund could be set up at municipal level with resources flowing in from municipal funds, user charges, penalties imposed, sales proceeds of compost etc.

#### Availability of Land

6.202 The land availability for setting up municipal solid waste processing plant and developing sanitary land fills is also poor. The

**Table -6.24**  
**Details of land availability in Urban Local Bodies**

Land Availability	No. of Urban local bodies
No. of ULB with more than 5 acre	12
No. of ULB with 2-5 acre	25
No. of ULB with 1-2 acre	11
No. of ULB with less than 1 acre	6
No. of ULB without land	4

details of land availability are shown in Table-6.24

6.203 The Municipalities which do not have land for setting up solid waste management facility are Neyyattinkara, Varkala, Chertala and

Perumbavoor. Technical support is essential to the ULBs for remediation and environmental upgradation of available land so as to utilise optimally. Clean Kerala Mission has evolved a strategy to implement model integrated waste management system in selected municipalities activities of Clean Kerala.

#### **BOX-6.24**

#### **Clean Kerala Business - A Kudumbasree initiative for Door-to-Door collection of Solid waste in Thiruvananthapuram Corporation**

Two of the major gaps in solid waste management at Thiruvananthapuram Corporation are lack of primary collection and source segregation. Seeing this as a potential opportunity for developing micro enterprise units, Kudumbasree, the State Poverty Eradication Mission, formed five units in five wards of Thiruvananthapuram Corporation namely, Medical College-East, Medical College-West, Gowreesapattom, Fort and PTP Nagar as a pilot project. Each micro enterprise unit was formed by 15 women under the centrally sponsored urban poverty eradication programme namely SJSRY at a total project cost of Rs. 4.5 lakh each. Each unit was provided with three tipper auto rickshaw at a total cost of Rs. 3.9 lakh and working capital of Rs. 60,000/- for items such as uniform, hand glove etc. the project fund was mobilized through a one-time grant of Rs. 1 lakh from the Corporation. Rs. 2.025 lakh loan from the bank, Rs. 22,500/- as beneficiary contribution and Rs. 1.25 lakh as SJSRY linked subsidy. The project was launched in March 2003 and benefits about 75 women, who earn a per capital monthly income varying from Rs. 3000-6000. This income is after meeting all the expenditure for carrying out the door to door collection of waste and transferring it to the waste transportation system of the Corporation and repayment towards the bank loan at the rate of Rs. 5000/- per month. Finding it as a sustainable micro enterprise venture, 14 more Urban Local Bodies are now replicating the project.

*Source: Clean Kerala Mission*

### Information Education and Communication (IEC)

6.204 Solid Waste Management is an activity in which public participation is the key to success. It is not the technology alone, but public attitude and behaviour and the efficiency and effectiveness of the systems and practices also that determine the success of a solid waste management system. A system demanding segregation and storage of waste at source would require a very high degree of human behaviour change. Hence IEC will focus on:

- Reduce, Reuse Recycle and Recover – Rs. 4
- No waste on ground
- Segregation and storage at source
- Waste processing and disposal at local level
- Willingness to pay for services
- Reaching out to the people – develop methodology for community mobilization and participation
- Making community aware of the health risks emanating from the present system and the need for upgradation
- Zero waste concept
- Participation of community in deciding options

### Rural Scenario

6.205 Solid Waste Management Systems are practically non-existent in the Panchayats. This is inspite of the fact that the State is a rural – urban continuum with high density of population. The average per capita, per day, waste generation in rural areas is estimated to be around 210 gm. In the context of the high density of population of Kerala Panchayats, this is poised to become a serious health and environmental problem in the near future. As solid waste management is an important obligatory function of the local governments, there is an urgency to build up capacities of grama panchayats in this relatively complex sector. The rural local governments would need policy support, institutional support and technical support in strengthening their internal capabilities in this sector.

6.206 It is also possible to introduce “zero Waste” concept in the rural sector with the aid of well designed IEC packages. At any rate, the approach to solid waste management systems and practices in rural areas should necessarily be based upon centralized planning and co-ordination with decentralized implementation.

6.207 As part of environmental building activity, Clean Kerala Week was observed in July 2003 during with mosquito and rodent control activities were taken up across the state to curb epidemics. In order to bring the students to the Clean Kerala Project campaign, a pledge on ‘Clean Kerala – Beautiful Kerala’ – by all school children was organised and the students were given information material for motivating further activities. Eco clubs were started in 1400 schools. The mission had started a project for implementing model integrated Waste Management System incorporating the components of street seeking, segregated storage, source collection etc. in 14 municipalities. Orientation and training have been extended to the elected representatives and officials of these municipalities. The total cost of the projects of the 14 municipalities comes to Rs.1749 lakhs.

### Bio Medical Waste

6.208 Treatment and disposal of bio-medical wastes generated from hospitals should be done as per the Bio-medical Waste (Management and Handling) Rules, 1998. It is the responsibility of waste generator to treat and dispose of the bio-medical waste. Whereas local governments have to assist the hospitals, if they come forward for establishment of a Common Treatment Facility, by identifying suitable land, it is the responsibility of the local bodies to treat and dispose the non-biomedical waste (general waste) and treated bio-medical waste generated in the healthcare institutions. The Kerala State Pollution Control Board (PCB) is the prescribed authority to implement Bio-Medical Waste (Management and Handling) Rules in the state.

6.209 As per 1991 Census, Kerala has the highest density of hospitals in India.

**Table-6. 25**  
**Waste Generated from Hospitals**  
(MT/day)

Sl.No	Waste Generated	Quantity
1.	Bio-medical Waste Generated	30 T
2.	General Waste Generated	170 T

Source: State Pollution Control Board, 1998

6.210 It is roughly estimated that the solid and liquid waste generation per hospital bed is 1.3 to 2.0 kg and 450 litres respectively. About 85% waste generated in hospitals is general waste and can be handled as other solid wastes. The remaining 15% constitutes infectious and toxic wastes. (See Table 6.26) More often than not, the general wastes in hospitals and bio medical wastes are allowed to mix thereby rendering the general waste also toxic and hazardous.

**Table –6.26**  
**Type of Waste (%)**

1	Infections Waste	10
2	Toxic Waste	5
3.	General Waste	85

Source: State Pollution Control Board

6.211 As per rules, Bio medical waste is to be collected in four different coloured bags. Human body parts and others are to be collected in yellow colored bags and should be incinerated. Disposable items like IV sets, Blood and Urine bags are to be collected in red coloured bags and should be autoclaved for disinfection. Needles, syringes and other sharps are to be collected in blue colored bags and after autoclaving/chemical treatment should be cut into small pieces. Discarded medicine, incinerator ash, chemical waste etc. can be collected in black colored bags and should be disposed of in secured landfill site.

6.212 Minimum required facilities to be installed in a hospital for biomedical waste treatment include one Incinerator, one Autoclave and one Shredder. According to a rough cost estimate each hospital may have to make a capital

**BOX-6.25**

**Biomedical Waste Management Study in Kollam district**

Five health care facilities were selected, two in urban area, one in rural area, one government hospital and one dental clinic. The Waste generation in each of these health care facilities were studied and data collected. Separate colored containers and bags required as per the biomedical waste management Rules were provided to each hospital. Health care workers were trained to segregate the wastes.

**Waste generated**

- ◆ Total Waste produced in hospital per day - 1800 kg.
- ◆ Wastes from Dental clinics and labs - 200 kg.
- ◆ Total - 2000 kg
- ◆ Waste for incineration - 1600 kg.
- ◆ Waste for Autoclaving - 400 kg.
- ◆ Average biomedical waste per bed is 180 gs.
- ◆ Dental facilities produce about 650 gms. of probably infectious wastes per day.
- ◆ Recommended common waste treatment facility in the district. Initial investment cost would be Rs. 1.50 crores.
- ◆ Infectious Waste produced accounts to about 30% of the total wastes.

Source :IMA, Thiruvananthapuram.

investment of Rs.10 lakhs for acquiring these facilities. Therefore, installation of Common Treatment Facility for a given consortium of hospitals appears to be a more viable option. In a 5,000 bedded hospital, 7.5 MT of waste is generated per day. Out of this 1.25 MT would be bio-medical waste. The estimated capital cost for establishing a common treatment facility for bio medical waste generated from 5,000 hospital beds is given in (Appendix 6.24) The annual O&M cost will come to Rs. 30 lakhs.

## Hazardous Waste

6.213 The Table shows the state wise status of hazardous waste generated and in total around 7.2 million tonnes of hazardous waste is generated in the country of which 1.4 million tonnes is recyclable and 5.2 million tonnes destroyed for disposal on land.

Status of hazardous waste generation in India and Kerala is shown in Fig. 6.5. There are 323 hazardous waste recycling units in the country, of which 303 units are indigenous raw material while 20 depend on imported recyclable wastes. In Kerala 151 units are identified as hazardous waste generating units with a production of incinerable wastes of 5069 tonnes per annum (Table 6.27).

6.214 Improper storage, handling,

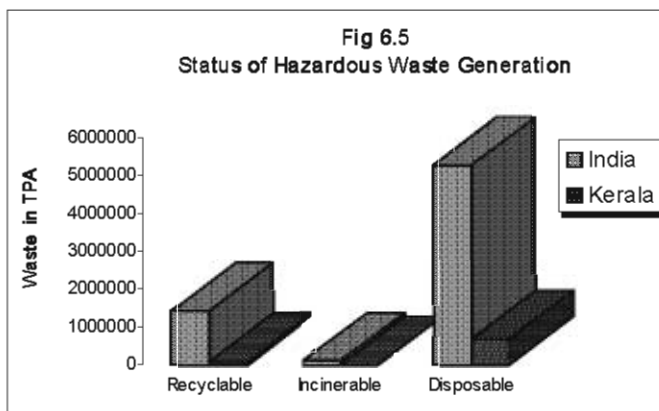


Table -6.27  
Status of hazardous waste generation

Sl. No	State	No. of Units Generating HW	Quantity of Waste Generated (Waste Type) TPA			
			Recyclable	Incinerable	Disposable	Total *
1.	Andhra Pradesh	501	61820	5425	43853	111098
2.	Assam	18	-	-	166008	166008
3.	Bihar	42	2151	75	24351	26577
4.	Chandigarh	47	-	-	305	305
5.	Delhi	-	-	-	-	59423
6.	Goa	25	873	2000	3725	8742
7.	Gujarat	2984	26000	19953	150062	430030
8.	Haryana	309	-	-	31046	32559
9.	Himachal Pradesh	116	-	63	2096	2159
10.	Karnataka	454	47330	3328	52585	103243
11.	<b>Kerala</b>	151	84932	5069	690014	780015
12.	Maharashtra	3953	847436	5012	1155398	200784
13.	Madhya Pradesh	183	89593	1309	107767	198669
14.	Orissa	163	2841	-	338303	341144
15.	Jammu & Kashmir	57	-	-	-	1221
16.	Pondicherry	15	8730	120	43	8893
17.	Punjab	700	9348	1128	12233	22745
18.	Rajasthan	306	9487	19866	2242683	227203
19.	Tamil Nadu	1100	193507	4699	196002	401073
20.	Uttar Pradesh	1020	-	-	-	140146
21.	West Bengal	440	45233	50894	33699	129826
	<b>TOTAL</b>	<b>12584</b>	<b>1429281</b>	<b>118941</b>	<b>5250173</b>	<b>7243750</b>

\* Total of recyclable, incinerable and disposable will not add up due to waste sold or otherwise disposed.

transportation, treatment and disposal of hazardous waste results in adverse impacts on ecosystems and the human environment. Heavy metals and certain organic compounds are phytotoxic and at relatively low levels can adversely affect soil productivity for extended periods. The Government of India has promulgated the Hazardous waste (Management and Handling) Rules in 1989 under the aegis of EPACT of 1986. The Rules provides for the control of generation, collection, treatment, transport, import, storage and disposal of listed wastes. The rules are implemented through SCBs.

6.215 India is also a signatory of the Basel Convention, 1989 on the control of Transboundary movement of Hazardous wastes and their disposal.

In order to control the movement of Basel Wastes, the export and import of Cyanide wastes and Mercury and Arsenic bearing wastes has been banned from December 1996. Amendments to HWR 1989 are introduced in 2000 and 2002, widening the definition of hazardous waste and harmonising the hazardous waste list with that of Basel Convention.

6.216 There is a need to constantly update the hazardous waste inventory by the SPCB.

**Liquid Waste Management**

6.217 Stagnant pools of waste water around houses, water sources, streets and in clogged drains are a health hazard. They smell foul, provide breeding place for mosquitoes and contaminate the drinking water sources. Household waste water which is commonly called sullage is generated in the toilets, the bath rooms, and the kitchen. Though harmless at the point of generation, its accumulation and stagnation will lead to unhygienic condition mainly due to putrefaction of the organic contents. Soakage pit is the most inexpensive and easiest method of sullage disposal. Community perception of sullage disposal and the prevailing practices are given in Table 6.28. Though there is a general awareness about the harmful effects of waste water, 48 percent of households let waste water stagnate in their backyards.

**Table –6.28  
Disposal of Waste Water**

Sl. No.	Variables	Kerala (in %)
01.	<b>Disposal</b>	
	I. Soak Pit	6
	II. Open Pit	13
	III. On the street	4
	IV. In Backyard	48
	V. In Drain Connected with Main	2
	VI. In Drain Ending in Open	4
02.	<b>Perception About Safe method of Disposal of Waste Water:</b>	
	I. Kitchen Garden	27
	II. Soak Pit	15
	III. Open Pit	17
	IV. Drain	18
	V. Do Not Know	6
03.	<b>Stagnant Water Causes:</b>	
	I. Spreads Disease	35
	II. Causes Inconvenience	3
	III. Smells Bad	13
	IV. Breeds Mosquitoes	65

Source : Water and Sanitation Base line survey Report 1998  
 Indian Institute of Mass Communication and Rajiv Gandhi  
 Drinking Water Mission

6.218 In the absence of proper drainage facilities waste water from market places, slaughter houses, poultry farms, fish markets, hotels and garbage dumps finds its way to natural water bodies. Inadequate drainage provision causes storm water to ultimately find its way to low lying areas leading to water stagnation.

6.219 At present there is no proper waste water disposal systems in panchayats. But in towns and cities at least partial and rudimentary attempts have been made for liquid waste management. All the city corporations have a system of drainage channels which drain both waste water and storm water. 23 per cent of the households in Thiruvananthapuram city and 15 per cent houses in Kochi Corporation have access to common sewage collection system.

**Safe Handling of Drinking Water**

6.220 There is always a possibility of drinking water getting polluted at collection, transport or storage points. Observations show repeated hand contact with drinking water during collection, transportation, storage, serving and consumption, and this is an active route of contamination.

6.221 Generally people consider the water they use for drinking and cooking as clean and safe. For a vast majority of people safe water is that which “looks clean”. “Tastes good” was considered an attribute of safe water by 20% “Water free from germs” is considered safe only by 30% of the respondents. (Table –6. 29)

**Table – 6.29**  
**Perception about the quality of water used**  
 (Multiple Response)

Sl. No	Variables	(in %)
		Kerala
1.	<b>Drinking Water:</b>	
	I. Clean	95
	II. Safe	92
2.	<b>Cooking Water:</b>	
	I. Clean	95
	II. Safe	92
3.	<b>Attributes of Safe Water:</b>	
	I. Looks Clean	60
	II. Tastes Good	20
	III. Free from Germs	30
	IV. Cooks Food Well	4

Source : *Water and Sanitation Base line survey Report*  
 Indian Institute of Mass Communication and,  
 Drinking Water Mission

6.222 The practice of cleaning and covering the vessels used for water storage has a direct bearing on health. For cleaning, people use water (5%) and ash and water (18%). Covering of vessel is a common practice (79%) ( Table 6.30).

**Table – 6.30**  
**Storage of Water**  
 (Multiple Response)

Sl. No	Variables	(in %)
		Kerala
1.	<b>Cleaning of Vessel:</b>	
	I. Water	5
	II. Water & Ash	18
	III. Water & Soap	0
2.	<b>Covering of Vessel:</b>	
	I. Always	79
	II. Mostly	14
	III. Sometimes	1
3.	<b>Purification:</b>	
	I. Cloth filter	7
	II. Chlorine	5
	III. Candle filter	0
	IV. Boiling	84
	V. Alum	0
	VI. Seeds	2

Source: *Water and Sanitation Base line survey Re,*  
 Indian Institute of Mass Communication and Ra  
 Gandhi Drinking Water Mission

6.223 Massive extension in supply of safe drinking water cannot make an appreciable impact on the health of the poor people without improved hygiene behaviour .This can be overcome only with hygiene awareness promotion based on location specific water handling practices, including the need for keeping the water source neat and clean.

6.224 The local governments have a key role in this regard. They can seek support of PHCs and Kerala Water Authority, and Kerala Rural Water Supply Agency in the Jalanidhi Project areas.

**Home Sanitation and Food Hygiene**

6.225 Kerala houses bear a ‘visible cleanliness’ within the household. Traditionally cooking, eating and sleeping areas are kept clean but the surroundings are often made dirty by waste water and garbage generated by the household. The fact that almost no-cost simple sanitation measures like household soakage pit and garbage pit are not universally practiced reflects lack of public awareness of such simple interventions. The initiatives taken by Pilicode Panchayat in Kasaragod district and Mattathur panchayat in Thrissur district prove that local governments can bring about positive changes in household sanitation.

6.226 Prevention of food borne diseases is a major sanitation concern. Many of the reported cases of food borne illnesses are caused by bacteria. Improper storage of food; improper washing of hands and finger nails; cross contamination; improperly cleaned eating and cooking utensils, work areas and equipments; and contamination through flies, cockroaches and other pests are the major routes of food contamination. The local governments have an enabling role in promoting food hygiene awareness with the support of Health Staff and C.D.S. System.

**Personal Hygiene**

6.227 Personal hygiene encompasses all the acquired individual attributes that are necessary for a healthy life. Conventionally, personal hygiene focuses on safeguarding physical health alone and will comprise of three factors, namely, (i) body hygiene, (ii) clothe hygiene and (iii) health habits and attitudes. The activities associated with personal hygiene include rectal cleaning after defecation, washing hands, brushing teeth, clipping nails, bathing, using clean clothes particularly under garments, genital cleaning, menstrual hygiene etc. It is also important to do away with unhygienic habits like picking nose, spitting indiscriminately, coughing and sneezing without covering the mouth etc. Epidemiological investigations have shown that even in the absence of latrines, diarrhoeal morbidity can be reduced with the adoption of improved hygiene behaviour. Personal hygiene practices are in a

way the starting points of altering negative behaviours in other domains of sanitation. The RGNDWM studied hand washing practices before eating and feeding the child and after defecation. Hand washing before eating and after defecation is almost universal.

6.228 The national average is 87 per cent who use water only for hand washing in case of eating, 65 per cent in case of child feeding. Water and Soap is used by more than 10 per cent in Haryana, Himachal Pradesh, Goa, Kerala, Manipur, Meghalaya and Sikkim. In Kerala 83 per cent used water before eating, 44 per cent before feeding child and 48 per cent after defecation.

6.229 Personal hygiene education needs to start from the family. A multi-pronged IEC strategy is needed to enter into this private space without being intrusive. It is ideal to target children in this regard. Anganwadi sanitation and school sanitation also assume significance and local governments will have a critical role to play as facilitator and catalyst.

### Community Environmental Sanitation

6.230 One of the factors that has contributed to Kerala's growing environmental sanitation problems is its high density of population. Lack of basic amenities compel people to resort to insanitary practices. The matter has been further aggravated by inadequate garbage disposal and drainage. The high population density, burgeoning consumerism and increased demands on civic facilities tell upon the bearing capacity of Kerala's already fragile environment. This is particularly true of the coastal area, which is characterized by high water table and high population density. Community latrine system is comparatively rare in Kerala. It would be necessary to propagate community latrines as one of the effective options. Community toilet can also serve the floating population in markets, bus stand and other public places. Major deficiencies in the existing community latrine system are (i) lack of cleanliness and poor up-keep, (ii) inadequate water supply and lighting, (iii) inappropriate location (iv) insecurity (especially for women) and (v) poor operation and maintenance. Before deciding on community latrine, it would be necessary to undertake a community preference assessment to reveal effective demand for such a service. One of the component activities of TSC is construction of sanitary complexes for women by providing total facilities for water supply, bathing, defecation and

washing in places where adequate space is not available within households and workplaces.

6.231 Solid and liquid wastes originating from public places, markets, institutions, work places, public streets, agricultural fields, bus stands, pilgrim centres etc. lead to community environmental sanitation problems.

6.232 Most of the canals and rivers flowing through the urban areas have become dysfunctional dumping space of the leftovers of hotels and slaughterhouses, carcass and heaps of plastic wastes which make them very unhygienic. The indiscriminate use of chemical fertilizers and pesticides has become a matter of serious concern.

### Towards a Sanitation Policy

6.233 The prevailing state of affairs calls for a comprehensive approach to tackle the drinking water and environmental sanitation problems. Nevertheless a vast majority of the prevailing sanitation problems can be resolved without any costly installations. The most critical factor in this direction would be inculcating proper attitudes, habits and civic sense in the community. The local governments will need to ally with the other key players in the sector in their efforts in making the environment clean. A clean environment will be a generic indicator of the hygienic practices of people living in it and of good governance as well. An immediate restoration of a 'clean Kerala' is a *sin qua non* for preventing outbreak of communicable diseases, maintaining the high health status and well-being of the people and even from an economic point of view for higher productivity and retaining the attraction of tourists.

6.234 Sanitation policies are critical to create an enabling environment to encourage increased access to sanitation. National policies can serve as a key stimulus for local action. Increasingly sanitation is being seen as a major issue in environmental protection. India has made a shift from a target driven approach to demand driven approach in water supply and sanitation with the introduction of sector reforms for the drinking water sector and TSC for the sanitation sub sector in 1999. However it does not have a National Sanitation Policy. Sanitation still tends to be clubbed with water supply. The scale and scope of the TSC has demonstrated the need for a separate national policy related to sanitation and hygiene. Kerala can take a lead in formulating a state specific sanitation policy.



CHAPTER 7

ENERGY DEVELOPMENT

The growth of electricity generated at national level from 1997-98 to 2003-04 is shown in figure 7.1. The over all generation from hydel, thermal and nuclear in public utilities in the country reached 558.1 billion units in 2003-04. Over all shortage of power for the year 2003-04 fell to 7.1 per cent from 8.8 percent in 2002-03. The shortage at the time of peak demand is estimated to be 11.2 per cent, which is less than that in the previous year by one per cent. The Plant load factor of Thermal / utilities during the period is found to be 72.71 percent as against a target of 72 percent. The hydro thermal mix in 2003-04 is 26.33: 73.67 as can be seen in figure 7.2.

7.2 The target for capacity addition in the Tenth Plan is 41110 MW comprising of 14393 MW hydro, 25417 MW thermal and 1300 MW nuclear. The target for 2003-04 was 5202.34 MW where as the achievement was only 76 per cent (3951.62 MW). Share of Kerala in the total installed capacity of power generation in the country is only 2.33 percent .

Power System in Kerala

7.3 The Kerala power system includes 18 hydel stations, two captive power plants, two thermal stations, three IPPs, five major inter state transmission lines, one 400 KV sub station and two 220 KV substations with the inter connecting grid. The growth of power system in Kerala can be seen in Table 7.1.

Generation

7.4 Power generation in Kerala is characterized by its hydel resource, the only local resource endowment. Hence the performance of KSEB bears a direct relationship with the quantum of rainfall received. The share of hydel energy per day in normal rain fall is 18.77 MU on an average, while the overall daily demand is 35 MU. Any shortfall in rain fall necessitates drawing of costly thermal power. Average/daily generation from January 2004 to June 2004 came down drastically to 11.4 MU due to decrease in rainfall resulting in a shortfall of 1113 MU in this period. This resulted in drawing of thermal power incurring an additional expenditure of Rs. 282 crores. Installed capacity increased from 2601.62 MW as on 31.3.2003 to 2615.71 MW as on 31.3.2004. The hydro thermal mix came down to 31.44:68.54 in 2003-04 as against 38.28:61.7 in previous year.

7.5 The changes in hydro-thermal mix in the power sector since 1998-99 is given in Table 7.2.

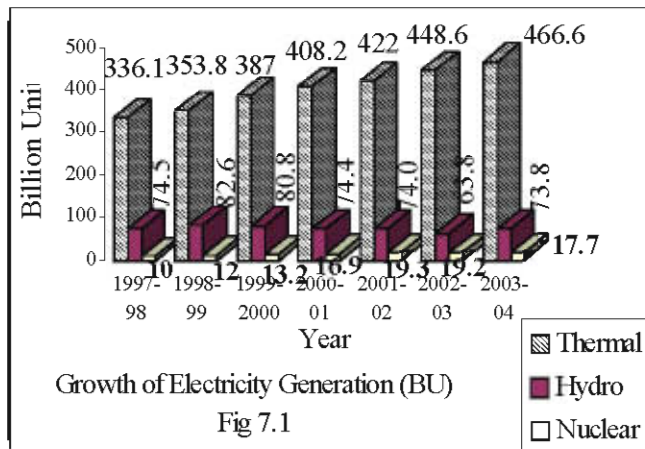


Fig 7.1

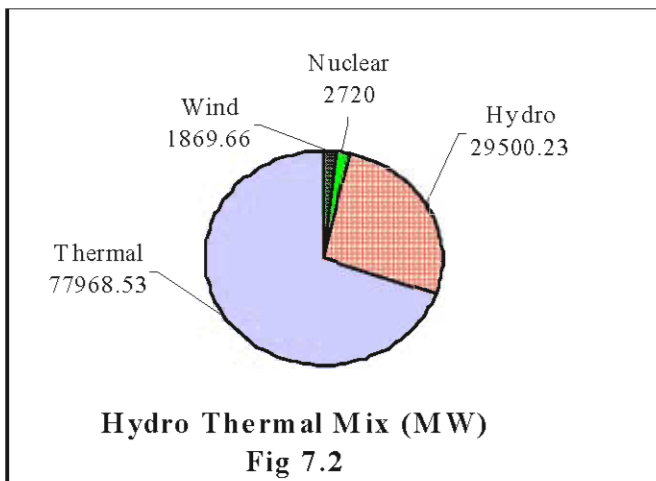


Fig 7.2

**Table 7.1**  
**Growth of Power System in Kerala**

Particulars	1951	1961	1980	1995	2000	2001	2002	2003	2004
Installed Capacity MW	37.5	132.5	1011.5	1491.5	2350.68	2420.68	2601.62	2601.62	2615.71
Annual Sales MU	140	517.2	4318.2	7027.69	9812.88	10319	8667.32	8752.07	8910.84
Per Capita Consumption Kwh	13	30	96	231	300.54	311.67	395	392	386
EHT lines Circuit KM	910.7	1900	4404.5	6106.21	7598.97	8955.18	9091.13	9065.91	9256.12
EHTS/S(Nos)	12	22	85	157	178	190	194	198	205
HT lines Circuit KM	1067	5449.4	13348	24509	28672	30035.7	30971.2	32054.42	33280.22
LT lines Circuit KM	992	8889.2	47606	125390	180499	187170	191931	196974	201637
Distribution Transformers (Nos)	324	2898	10821	22478	29551	31329	32585	33455	34758
Annual Revenue in Rs. crores	0.584	3.117	91.249	625.194	1669.24	1811.13	1946	*3722.530	*4068.91

Source:KSEB

\*Provisional

**Table 7.2**  
**Hydro – Thermal Mix**

Year	Hydel (MU)	Thermal (MU)	Import (MU)	Total (MU)	Hydel (%)	Thermal+ Import (%)
1998-99	7348.68	493.23	3115.00	10958	67.06	32.93
1999-00	7074.10	1829.43	3047.00	11952.50	59.19	40.80
2000-01	6221.71	2871.31	3414.97	12510.60	49.73	50.25
2001-02	6784.58	2074.32	3979.07	12842.00	52.83	47.14
2002-03	4866.14	3224.56	4619.00	12712.10	38.28	61.70
2003-04*	3951.47	2727.88	5886.85	12568.70	31.44	68.54

Source:KSEB

\*Provisional

7.6 The projects commissioned during the year 2003-04 are shown in Table 7.3

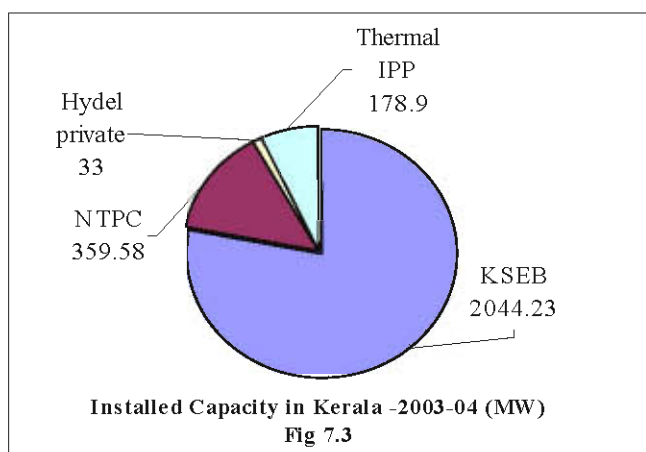
7.7 Out of the total installed capacity of 2615.71 MW in the State, the Kerala State Electricity

**Table :7.3**  
**Projects Commissioned in 2003-04**

Sl.No	Name of Projects	Capacity
1	Chempukkadavu I	2.7 MW
2	chempukkadavu II	3.75 MW
3	Urumi I	3.75 MW
4	Urumi II	2.4 MW
5	Vadakkepuzha Diversion	12 Mu

Source:KSEB

Board holds 2044.23 MW. The distribution of the capacity based on the nature of source is given in Figure 7.3.



7.8 Generation of power by KSEB from its plants in 2003-04 stood at 4488.06MU, out of which, 87.14% came from hydel sources. The power availability during the year 2003-04 is given in Table 7.4. Kerala has not purchased power from NTPC since June 2004 due to improved rainfall. It is expected to commission Malankara (10.5MW) and Kuttiadi augmentation (223 MU) before the onset of the south-west monsoon.

7.9 As regards new projects, Athirappally could not be implemented for want of environmental clearance from Govt of India.

Table 7.4  
Energy availability in the State during 2002-03&2003-04

Sl.No	Source	2002-2003	2003-04
1	Generation (in Million KWH)		
a	Hydel	4844.03	3910.68
b	Thermal (BDPP + KDPP)	674.81	574.89
c	Wind Farm	2.44	2.49
	Total- 1	5521.28	4488.06
2	Power Purchases (in million KWH)		
a	NTPC (Kayamkulam)	1857.53	1034
b	NTPC (Ramagundam)	2191.73	2271.22
c	Neyveli Lignite Corporation	1216.47	1348.11
d	Western Region	12.28	
e	Madras Atomic Power Project	93.02	80.13
f	Eastern Region	808.66	467.52
g	Maniyar	23.36	
h	Kaiga	376.73	373.6
i	BSES	305.80	992.21
j	Kuthungal	23.60	
k	KPCL, Kasargode	147.65	77.23
l	PTC Power	30.48	71.2
m	UI Units	219.78	682.15
n	GEL		12.03
o	Talchar Stage II	11.64	605.06
	Total of (2)	7330.80	8015.41
3	Total(1+2)	12852.08	12503.47
4a	Less-Bilateral Exchange		
b	Less losses in MU		174.5
c	Auxiliary Consumption	45.53	48.1
	Total of (4)		222.6
5	Net Availability in MKwh(3-4)	12806.55	12280.87

source :kSEB

**BOX 7.1****Kayamkulam Plant's Capacity to go up to 2300 MW**

The second stage expansion project at a total investment of Rs 6000 crores will pave the way for the switch over of the unit from a Naphtha – based unit to a LNG based project. NTPC is in the process of finalizing the bids for the supply of LNG to its Kayamkulam Unit. NTPC unit at Kayamkulam has a capacity of 350 MW at present. With reduced demand for thermal power, Kerala was taking only 50% of the power while the remaining was being sold to Tamilnadu. Since June, 2004 the Kayamkulam Unit has stopped generating power as there are no takers.

**Table 7.5**  
**On going hydel projects**

Project	Install ed Capacity	Energy Potential
Malankara HGP	10.5 MW	65 mu
Kuttiadi Augmentation Scheme	-	223 mu
Additional Centre share	200 MW	1400 mu
Total by 2007	210.5 MW	1688 mu
Lower Meenmutti	3.5 MW	10.14 mu
Kuttiadi Additional Extension	100 MW	240 mu
Kuttiadi tail race	3.75	15 mu
Nariamangalam Extension	25 MW	58.26 mu
Pallivasal Extension	60 MW	132 mu
Kuttiadi Diversion	-	37 mu
Total by 2012	192.25 MW	492 mu

Source: K S E B

**Imports and Exports.**

7.10 Based on Availability Based Tariff (ABT) regime which was introduced in the southern states from 1-1-2003 improved grid discipline in the region during the period has helped KSEB in availing cheap power, thereby easing the power position of the State as well as the financial position of KSEB. KSEB has been able to exploit the system by drawing cheap power at low rates and export any surplus power available during low frequency conditions based on hydro power availability.

7.11 During 2003-04 Board has drawn 771.5MU and exported 110.5MU utilising favourable conditions as Unscheduled Interchange(UI), while adhering strictly to merit order despatch principles. The net drawal is 661MU at a daily average of 1.81MU. During 2004-05 the UI export so far( up to 30-11-2004) is 137.14 MU and drawal is 306.13

MU. The net drawal during 2004-05 is 168.99MU at a daily average of 0.69MU.

**Transmission**

7.12 Transmission Infrastructure facility was substantially modified and strengthened during 2003- 04 as can be seen in Table 7.6.

7.13 In the load despatch station, real time data from the generating stations and sub stations are obtained through Power Line Carriers Communication(PLCC) Network. Depending on the load condition, generators in various power stations are synchronized and loaded to meet the varying load requirements. Unified Load Despatch and Communication System is implemented in the State also as part of the National Policy for Unified Load Despatching and the formation of National Grid and National Load Despatch Station.

Table 7. 6.  
Transmission Infrastructure Commissioned -2003-04&2004-05

Capacity	Sub Stations (Nos)		Transmission Lines(Nos)	
	2003-04	2004-05 (Up to 31-8-2004)	2003-04	2004-05(Up to (31-8-2004)
1	2	3	4	5
220 KV	1	-	1	-
110 KV	6	2	7	2
66 KV	3	-	3	-
33 KV	7	3	8	3

Source: K S E B

### Distribution

7.14 KSEB is the sole distributor of the Electrical Energy for the State of Kerala except Thrissur Corporation and Munnar where the distribution is managed by licensees. In Thrissur the City Corporation and in Munnar, M/s Tata Tea Limited are the licensees. The KSEB distribution system consists of 30,296 circuit kms of 11 KV lines, 1,89,309 circuit kms of LT lines and 31,579 Distribution Transformers.

7.15 The number of consumers recorded an increase of 4.4 percent from 6947803 as on 31-3-2003 to 7253866 as on 31-3-2004.

7.16 Revenue collection increased from Rs.2480.69 crores in 2002-03 to Rs. 2756.83 crores in 2003-04 with an increase of 11.13 percent.

7.17 As of now 4.74 lakh applications for power connection are pending with KSEB. A scheme is

being prepared to provide 5 lakh more connections covering the balance of pending applications and two lakh new applications expected during the period.

7.18 As part of loss reduction measures, 866936 faulty energy meters were replaced during 2003-04 and 236994 in 2004-05 (up to 30-11-2004).

7.19 Schemes to improve the quality of power supply in Trivandrum and Kochi at a cost of Rs. 163 crores and Rs. 200 crores respectively have been chalked out. The Board is to vigorously pursue power theft cases against high tension consumers. Achievement during 2003-04 & 2004-05 in the field of distribution sector in Kerala can be seen in Table.7.7.

7.20 Out of new service connections effected

Table 7.7  
Distribution -2003-04&2004-05

Particulars	Achievement	
	2003-2004	2004-05(Up to 31-8-2004)
No. of service connections	391815	152132
11 KV lines (km)	1269.10	249.22
LT Lines (Km)	4429.23	2087.159
Distribution Transformers (nos)	1063	398
Street Lights (nos)	34383	20313

Source: K S E B

during 2003-04, 77.25% falls in the cross subsidy receiving category, only 22.7% falls in the cross subsidy paying category of commercial and LT industrial consumers.

#### Cost of Power

7.21 KSEB now spends more than Rs. 4.00 per unit for power from thermal projects. The average cost of power comes to Rs. 3.30 per unit. But, it sells power at an average rate of Rs. 2.34 per unit.

#### Tariff

7.22 The price differential in retail tariff is 795 ps/unit, in the extreme case. While agriculture consumers are charged at 65 ps/unit, high and commercial consumers are charged at 825 ps/unit and non-domestic consumers in LTVI(c) category at 860 ps/unit. Similarly average rate for domestic consumption remains at 176 ps/unit, whereas average per unit cost is 359 ps and average tariff is 309 ps/unit.

#### Demand

7.23 Today, about 20 per cent of the demand in the State is for lighting. The Board's difficulties in managing peak loads in the evenings also arises out of this.

#### Sponsored Works

7.24 KSEB has recently made rapid progress in executing the works entrusted by Local Governments under decentralised planning. Details of works completed during 2003-04 and that up to October 2004 are seen in Table 7.8

7.25 Details of schemes undertaken by KSEB under M P's Local Area Development Scheme (MPLADS) and Special Development Fund for MLAs (SDF) upto 31.8.2004 can be seen in the Table.7.9.

#### Accelerated Power Development and Reforms Programme (APDRP)

7.26 Government of India approved a scheme called 'APDRP' in March 2003 to accelerate

**Table 7.8**  
**Works under Kerala Development Plan**

Years	Area	No. of works completed
2003-04	South	746
	Central	655
	North	265
	Total	1666
2004-05 (Up to October 2004)	South	29
	Central	41
	North	6
	Total	76

Source: K S E B

**Table 7.9**  
**Works under MP LADS / SDF for MLAs**

Years	Area	No. of completed works	
		MP LADS	SDF for MLAs
As on 31.8.2004	South	171	113
	Central	68	55
	North	96	109
	Total	335	277

Source: K S E B

transmission and distribution sector reforms. The main objectives of the programme are :

- Reduce Aggregate Technical & Commercial (AT&C) losses to 15%
- Bring about commercial viability in the power sector
- Reduce outages and interruptions
- Increase consumer satisfaction

7.27 The schemes undertaken under APDRP are

- (a) renovation and modernisation of sub-stations,
- (b) strengthening transmission lines,
- (c) installation of distribution transformers, feeders, energy meters,
- (d) strengthening of High Voltage Distribution System (HVDS),
- (e) implementing Consumer Indexing and computerised billing.

7.28 An upto date status of fund released/utilised is shown in Table.7.10.

7.29 In Kerala, KSEB has undertaken schemes under APDRP covering circle schemes and town schemes. The works of three circle schemes and seven town schemes are almost complete. Now Board has taken up new 26 town schemes costing Rs. 123.91 crores under APDRP.

#### Critical Issues faced by the Sector:

7.30 Power Sector has been confronting some sensitive issues. Major problems are:

- Delay in taking up Hydel Projects for want of clearance from competent agencies.
- Difficulties in land acquisition and right of way for transmission works due to the peculiar nature of population distribution and thick vegetation.
- Large revenue gap and heavy interest

burden

- Increasing domestic consumption and decreasing HT&EHT consumption-
- Domestic consumption increased from 32.74 per cent in 1994-95 to 43.34 percent in 2003-04. Industrial HT and EHT consumption decreased from 36.96% to 32.92% during the same period
- Drawing huge quantity of thermal power in years of low rainfall;
- The loss due to additional purchase of costly power during 2002-03 and 2003-04 was about Rs 720 crores per year.
- Huge deficit resulting in reduced capacity to undertake capital expenditure and additional borrowing.
- Due to high cost, Brahmapuram and Nallalam power stations could not be utilised on a continuous basis.
- With the ever increasing price of crude oil in the international market, the variable cost of power generated by IPPs in Kerala viz BSES, KPCL and the NTPC has become prohibitively costly. With Naptha price above Rs. 20,000/M.T, the variable cost of power from NTPC and BSES power stations comes to above Rs 4 per unit. While complying to merit order despatch principles, power from these stations could hardly be utilised, especially in the scenario of better hydel resources and availability of cheap power from eastern region and UI power during off peak hours. These stations remained grossly under utilised during the period.

#### Power Sector Reforms

7.31 A study on man power as well as skill requirements arriving at work norms, job specification etc in the reformed context is being conducted through the Administrative Staff

**Table 7.10**  
APDRP status in Southern States as on 31.3.2004

(Rs. crores)

Sl. No.	State	Project Outlay	Total Released 2002-03 & 2003-04	Total utilisation upto March 2004
1	Kerala	350.35	104.66	145.07
2	Tamil Nadu	968.17	344.16	251.10
3	Andhra Pradesh	1511.40	566.76	402.30
4	Karnataka	1161.19	435.45	249.45

Source : Annual Report 2003-04, Ministry of Power, Govt of India .

College of India (ASCI), Hyderabad. The work study is not yet completed.

7.32 Primarily the restructuring of the distribution sector becomes all the more important and significant as this sector is dealing directly with the beneficiaries/customers. The formation of Generation, Transmission and Distribution functions in to separate profit centres is still pending. The state government have meanwhile made it clear that it is not proposed to disengage as of the functions of KSEB.

**The reform measures initiated or continued in 2003-04 include**

- Acceleration of electrification programme to cover all the house holds by 2007@ providing 4 lakh service connections per year.
- Reduction in T&D loss –
- T&D loss brought down to 26.07% in July 2004.
- R & M works in Pallivasal, Sengulam and Panniar projects have been completed.
- Out of the target of installing 8775 nos of 9 KVAR distribution transformers capacitors ,only 2708 were installed.

- Computerisation of Billing, Collection and Accounting in Towns have been effected.
- Issue on constitution of District Level Committee for Resource Planning monitoring of distribution reforms and rural electrification has been presented to the Government of Kerala
- Action for reducing expenditure and increase in revenue has been expedited.
- Power theft detection activities intensified.
- Introduced ABT in Southern Region and Kerala have been strictly following rigid regulations.

Works entrusted to Consultants appointed for availing ADB loan towards the Power sector reforms and strengthening of the system are in progress.

**Financial Performance of KSEB**

7.33 Performance of KSEB in 2002-03 and for 2003-04 is given in Table 7.11.

7.34 Expenses were reduced mainly on capital expenditure and interest on capital. Meanwhile employee cost steeply increased in 2003-04. Moreover, Kerala State Electricity Regulatory Commission (KSERC) has directed Kerala State

**Table 7.11**  
**Receipts&Expenditure(KSEB's figures)**

(Rs.Crores)

Sl. No.	Particulars	2002-03 (Actual)	2003-04 (Provisional)
1	Statutory Supply	80.78	91.82
2	Total Expenditure	3641.75	3977.09
	Generation of Power	166.23	143.70
	Purchase of Power	1872.08	1887.70
	Interest	597.88	622.85
	Depreciation	27710	326.19
	Employee Cost	670.83	788.31
	Repairs and Maintenance	60.64	63.79
	Administration and General Expenses	51.80	84.74
	Other Expenses	164.42	247.56
	Less : Expenses capitalised	118.15	109.05
	Less : Interest capitalised	101.08	78.11
3.	Less Non Tariff Income	226.27	304.26
4	Annual Revenue Requirement (1+2+3)	3496.26	3764.26
5	Less: Revenue from Tariff	2480.69	2756.83
6	Revenue Gap (5-4)	1015.57	1007.43

Source: K S E B



Electricity Board (KSEB) to manage with the existing power tariff structure during this financial year. Earlier, KSEB, in its petition submitted to the KSERC, had estimated that it would be requiring an additional sum of Rs. 854 crores during 2004-05. On processing the petition, KSERC ordered that the gap could be narrowed down to Rs. 296 crores by improving its collection efficiency and ensuring that the consumers who had fallen into arrears on the settlement of their electricity bills are brought up to date with their payments. KSEB had also informed that its collection efficiency was between 90 and 92 per cent.

7.35 The KSEB's projection was that it would require Rs. 3766.72 crores to meet all its expenses during 2004-05. The KSERC made reductions in the projected expenses under several heads like interest charges, employee cost, other expenses, etc. The lower expenses allowed and the higher income calculated by the KSERC would bring down the revenue gap of the KSEB to Rs. 296 crores as against Rs. 854 crores given in the petition.

#### Power Consumption and Revenue Realisation

7.36 Consumption in domestic sector increased from 43.42% in 2002-03 to 44.93% in 2003-04 registering a growth of 1.51%. Consumption share in the other category of consumers also increased except for HT&EHT category in 2003-04. Category wise details during 2003-04 are given in Table 7.12.

#### Kerala State Electricity Regulatory Commission (KSERC)

7.37 KSERC issued orders on Aggregate Revenue Requirement (ARR) and Expected Revenue Requirement (ERR) for the year 2004-05 in April 2004. The Commission approved an ARR of Rs. 3492.46 crores and the total revenue receipts of Rs. 3196 crores for the year 2004-05.

7.38 Major points in the directives issued by the Commission are as follows:

1. To complete the computerisation of billing activity at the earliest.
2. To regulate hydro generation on the basis of annual, monthly, fortnightly and daily schedules. These schedules are to be updated and the revised on daily and fortnightly basis depending on the changes in the Hydro availability. The schedules for power generation from the Diesel Plants of K S E B and power purchase from external sources are required to be co-ordinated with the schedules for hydro generation and the power generation from Diesel Plants and power purchase from external sources should be regulated strictly on merit order basis. The schedules should also be formalized and reviewed at various levels in KSEB through appropriate Management Information System.
3. To take immediate action to correct the discrepancies in the accounts and provide a correct picture regarding the current level of demand and collection.
4. The current level collection efficiency stood at 90-92 percent and the gap is mainly due to the non payment of dues by the Government Departments including K W A .The commission urged upon the Board to take up

Table 7.12  
Power Consumption and Revenue Collected during 2003-04

Sl. No.	Category	% of consumers to total	consumption as % to total	Revenue as % to total
1	Domestic	78.79	44.93	25.52
2	Commercial LT+HT	14.22	13.28	20.99
3	Industrial LT	1.47	8.422	11.08
4	Industrial HT & EHT	0.022	25.053	37.93
5	Others	5.498	8.315	4.48
	Total	100	100	100

Source: K S E B

- the matter with the govt. for releasing all outstanding and current dues by the Government departments without fail.
5. To report the position of the programme regarding replacement of faulty meters and to proceed with the work of replacement of faulty meters on a continuous basis.
  6. To revise the white paper by incorporating a concrete and time bound action plan for improving collection efficiency and swapping of all high interest loans and also directed to submit the revised white paper to the commission at the earliest.
  7. To furnish the details of the continuing and new work programme and the details of physical and financial progress of each item of work along with the reasons for slippage with reference to the targets.
  8. To furnish a report on computerisation of the inventory and disposal of unwanted stores
  9. To prepare a detailed work programme for R & M works during the year 2004-05, corresponding to the approved outlay of Rs. 66.70 crores and submit to the Commission at the earliest.
  10. The Commission suggested that the Board should submit the investment plan including the details of the projects completed / spillover and new projects well in advance .

7.39 The KSEB has submitted the ARR and ERC for 2005-06 and the orders on ARR and ERC are to be issued very soon.

#### National Electricity Policy (NEP)

7.40 The Electricity Act 2003 empowered the Central Government to prepare a National Electricity Policy (NEP) in consultation with the State Government and the Central Electricity Authority (CEA) to provide power for all by 2012, completing rural electrification for providing electricity access to all house holds within the next five years, supply of reliable and quality power, increase the per capita consumption of power and protect consumers' interest. Broad features of the draft NEP are indicated below.

#### -Power Generation

7.41 The NEP outlines a strategy for meeting the target of addition in capacity of one lakh Mega Watts(MW). It proposes debt financing of longer tenure for hydro projects to have an additional production capacity of 50000 MW. As regard to Nuclear Power, the objective is to achieve 20,000 MW of installed capacity in 2020.

#### -Transmission

7.42 NEP envisages that the Central Government would facilitate the development of a national grid for inter state transmission.

**Table 7.13**  
**Overall Position Regarding Aggregate Revenue Requirement For 2004-05**

(Rs. crores)

Item	As per ARR of KSEB	As approved by KSERC
Return / Surplus (a)	155.30	105.00
Total expenditure (b)	3766.72	3387.46
Power generation	148.99	100.53
Power purchase	1729.74	1605.00
Interest charges	723.30	618.30
Depreciation	382.27	382.27
Employee Cost	736.64	718.47
Repair & Maintenance	85.25	66.70
Administration & General	69.80	68.68
Other Expenses	130.00	50.00
Less : Expenses capitalized	123.53	123.53
Less : Interest capitalised	115.73	98.96
<b>ARR (a+b)</b>	<b>3922.02</b>	<b>3492.46</b>

source:KSERC

**-Distribution**

7.43 Robust competition in the Electricity market depends on open access and multiple licenses in the same area of supply. The liabilities of State Electricity Boards.(SEBs). need to be restricted for ensuring financial viability and sustainability. Other focus areas include upgradation and augmentation of the distribution network, energy audit, time bound programme for reduction of technical and commercial losses and implementation of Information Technology (IT) based system to reduce T& D losses.

7.44 The other areas of focus in NEP are rural electrification, creation of a power exchange for marketing electricity, energy conservation and regulation of quality of power to protect consumer interests.

7.45 There are major differences of opinion on the draft NEP. However, it is essential to arrive at early decisions if investment in the sector is to increase sharply to meet the needs of a fast growing energy.

**Non Conventional Energy Programme**

7.46 The search for alternative fuels that would ensure sustainable development on the one hand and energy security on the other began in the 1970s itself. Consequently new and renewable sources of energy have emerged as an option.

7.47 India has a policy frame work in place to tap the potential for renewable energy such as solar, wind, biomass, small hydro etc irrespective of capacity

7.48 Renewable sources of energy presently contribute about 4800 MW, which represents over 4.5% of the total installed capacity. Wind power contributes about 2483 MW, while biomass and co-generation account for 613 MW and the share of small hydropower is 1603 MW. Agency for Non-Conventional Energy and Rural Technology(ANERT) is the nodal agency of the Ministry of Non Conventional Energy Sources (MNES), Government of India for the State of Kerala.

**Table 7.14**  
**Status of Renewable Energy Programmes 2003-04**

Category	Kerala	All India
1. Wind Mills (Nos)		
a) Sanctioned	95	1174
b) Installed	79	945
2. Aero generators and Hybrid systems (KW)		
a) Sanctioned	8	484.65
b) Installed	8	369.86
3. Identified SHP Projects up to 25 MW capacity		
a) No. of projects	198	4233
b) Total capacity	466.85	10324.37
4. SHP projects set up and under construction.		
a. Projects setup	14	495
i. Number	84.62	1603.32
ii. Capacity		
b. On going	6	170
i. Number	60.4	569.26
ii. Capacity		

Source: Annual Report 2003-04, MNES, Govt of India

### Renewable Energy Programmes in Kerala

7.49 The status of renewable energy programmes at the national and state levels is given in Table 7.14

#### Wind Energy Programme

7.50 Wind Power has emerged as the most promising source among all other Renewable Energy Sources for Power generation and is one of the most cost effective options for grid connected power generation. Wind farms are becoming popular all over the world. Pasavaikumbe in Kasaragod district and Kalyanathandu in Idukki district are the two sites identified for study under the National Wind Energy Resource Assessment. The programme is to be implemented jointly by ANERT and Centre for Wind Energy Technology (C-WET), Chennai.

7.51 As per the wind energy policy guideline, ANERT will provide necessary power evacuation facilities for the wind farm (25 MW) being established at Ramakkalmedu area in 135 ha of land. It is estimated that 100 MW Wind Energy Potential is available at Ramakkalmedu area.

#### Solar Photovoltaic Programme (SPV)

7.52 Solar Photovoltaic Technology helps to directly convert sunlight into electricity. SPV systems are an option for meeting electrical energy needs of remote areas where grid electricity has not yet reached

7.53 In the country the number of remote and unelectrified villages identified so far stands at 24,500 where as the number of remote colonies in Kerala is 302

7.54 The projects under SPV include Solar Village Electrification, line interactive PV rooftop systems in government offices and hospitals, stand alone power plants on roof top of residential buildings and grid interactive PV power plants in autonomous and private institutions.

7.55 As part of Remote Village Electrification Programme, a survey was carried out with the help of IREP offices. It is estimated that more than 1500 hamlets are still remaining unelectrified/partially electrified.

#### Solar Thermal Energy Programme (STEP)

7.56 STEP Envisages the promotion of use of Solar heat energy to meet the various thermal needs. The most popular solar thermal devices are Solar Water Heating Systems. (SWHS), Solar cookers, Solar Dryers, Solar Stills etc. These devices help to save considerable amount of fuel used for heating.

#### Bio Energy Programme

7.57 Bio Energy Programme includes biogas programme, biomass gasification programme, alternate fuels and waste to energy programme. ANERT is implementing the National Biogas programme of the MNES since 1999-2000 by installing Community, Institutional and nightsoil based bio gas plants ranging from capacities of 15 m<sup>3</sup> to 35 m<sup>3</sup> for the production of bio gas from the bio degradable waste like animal waste, kitchen waste etc. National Biomass resource assessment survey was conducted in all districts of the state to assess the availability of biomass for conversion in to energy. ANERT has installed so far 64 biogas plants with MNES assistance. But MNES has stopped financial support to this programme recently.

7.58 Biomass gasifiers are designed to generate heat or electricity by using bio fuel materials like coconut shell, wood chips, rice husk, rubber wood waste, bamboo waste, saw dust etc. MNES is supporting the programme with different subsidy levels. Action is initiated to undertake few pilot projects for conversion of oil fired boilers into biomass gas firing.

#### Rural Energy Programme

7.59 ANERT has initiated steps to reorient the rural energy programme. Major activities taken up under IREP for effecting the reorientation are the following.

- 1 Selection of deserving village clusters and preparation of micro level energy plans for each selected village cluster.
- 2 Preparation of District level and State level Energy plan and up dating these plans on annual basis
- 3 Implementation of Model Integrated Rural Energy Projects in selected Village clusters.

**Table 7.15**  
District wise list of village clusters selected for the implementation of the odified IREP scheme in Kerala.

Sl.No	District	Name of clusters
1	Thiruvananthapuram	Vithura
2	Kollam	Aryancavu
3	Pathanamthitta	Perinadu
4	Alappuzha	Purakkad
5	Kottayam	Aymanam
6	Idukki	Kanjikuzhi
7	Ernakulam	Kuttampuzha
8	Thrissur	Panamchery – Peechi
9	Palakkad	Sholayur
10	Malappuram	Chaliyar
11	Kozhikode	Koodaranji
12	Wayanad	Thondaranad
13	Kannur	Payyavur
14	Kasaragod	Panathadi

source :ANERT

#### Small Micro – Hydel Programme

7.60 The United Nations Industrial Development Organisation ( UNIDO) has established its first Regional Centre for small hydro power in Thiruvananthapuram. The first off – grid 100 kw micro hydel power project was commissioned in Mankulam in Idukki district. This micro hydel power project consists of two units of 50 Kw turbine generators of which one unit of 50 Kw turbine generator was sponsored by UNIDO and the other by the Village Panchayat. In order to avoid T & D Losses, 11 KV line was drawn by the Panchayat from the power house to Mankulam with a transformer at Mankulam town for efficient distribution work with the technical support of Energy Management Centre (EMC) . The electricity generated from the Mankulam micro hydel project is distributed to the residents of Mankulam Town area and Pambumkayam.

#### Small Hydel Project(SHP) Cell

7.61 Government of Kerala has constituted a special SHP Cell in EMC for allotment of small hydro projects, inviting tenders, processing tenders etc. Out of 61 projects identified for private participation. 30 projects having DPR/DIR were offered for private investment. After completing

the formalities of bidding, 5 small hydro projects were allotted to two bidders under captive power projects on BOOT basis and 8 projects to 4 bidders under Independent Power Producer category on BOOT basis

#### Standards and Statutes

7.62 The Electrical Inspectorate Department formed in 1968 enforces statutes and standards. The Department has Offices in all districts. Also, there is a Meter Testing and Standards Laboratory at Thiruvananthapuram. Regional Testing Centres are attached to the district offices in Thiruvananthapuram, Ernakulam, Thrissur and Kozhikode. The

duties and functions of the department include the following.

- To ensure standard and quality of electrical installations and thereby ensure safety and efficiency in the generation, transmission and distribution and use of electricity
- To give approval for electrification of Extra High Tension installations, buildings and cinema theatres
- To issue prior sanction for installations like X-rays, Lifts, Neon-signs and Generators
- To conduct periodical inspection of all electrical installations except those supplied at Low Voltage, as prescribed by the Government
- To investigate electrical accidents and submit reports to the Government enumerating the causes and suggestions to avoid recurrence.

7.63 The Chief Electrical inspector is the “Appropriate Authority” to implement the provisions of the Quality Control Orders (Sec. 14 of BIS Act 1986 and Sec. 3 of Essential Commodities Act 1955).

## CHAPTER 8

# INDUSTRY AND MINING

The Industrial Policy 2003, IT policy, Labour Policy, Bio Technology Policy, proposed Export Policy, conduct of B2B, GIM etc. are all efforts made by the State Government to make it an investor friendly one.

### Industrial Growth

8.2 Quick estimates show a negative growth in 2003-04, but a recovery compared to 2002-03. Growth of manufacturing sector (NSDP) of Kerala for the years from 1998-99 to 2004-05 is given in the Table 8.1 and Figure 8.1.

### Index of Industrial Production

8.3 The general Index of Industrial Production in Kerala declined from 302.29 in 2001-02 to 267.35

in 2002-03. Negative growth was recorded in several items such as cotton textile, wool, silk, manmade fabrics, chemical products, non-metallic mineral products, basic metals, alloys industries, machinery and other manufacturing industries. For all other items positive growth was recorded.

### Industrial Exports

8.4 Performance in the industrial exports recorded a positive growth of around nine per cent in 2003-04 as can be seen from Figure 8.2

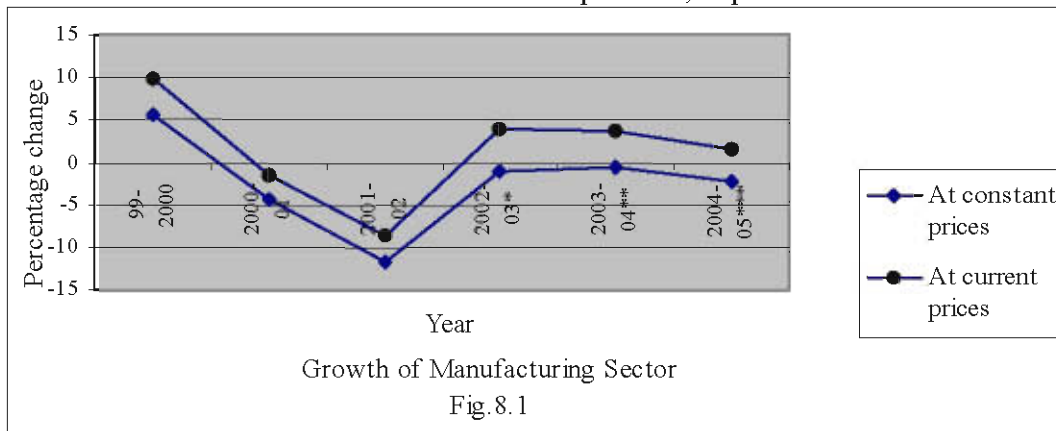
8.5 Details of major commodities exported from Kerala in 2002-03 and 2003-04 are given in the Table 8.2.

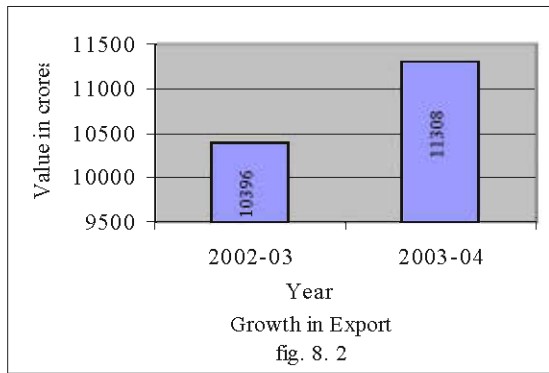
**Table 8.1**  
**Growth of Manufacturing Sector in Kerala (NSDP)**  
Base year 1993-94 (Rs. lakh)

Year	Percentage Change over years			
	At constant prices		At current prices	
	Actual	Percentage	Actual	Percentage
1998-99	350458	..	558175	..
99-2000	369687	5.49	612334	9.70
2000-01	353129	-4.48	603075	-1.51
2001-02	312153	-11.6	550833	-8.66
2002-03*	308808	-1.07	571778	3.80
2003-04**	306700	-0.68	592406	3.61
2004-05***	299847	-2.23	601584	1.55

\*Provisional, \*\* Quick Estimate, \*\*\* Advance Estimates

Source: Economics and Statistics Department, Tvpm.





8.6 Percentage contributions of different commodities to industrial exports (Value and quantity) are given in Fig. 8.3 and Fig. 8.4.

### Working Factories and Employment

8.7 The number of working factories recorded a marginal increase of 0.62 per cent from 18262 in 2002 to 18376 in 2003. Even though increase was

from both public and private companies, major share was from private companies (111 companies out of 114). The total number of workers employed in the working factories increased from 408813 in 2002 to 411749 in 2003 showing only a marginal increase of 2936 ie about 0.5% which was much better than that of the increase in 2002 from 2001. Of the total 411749 workers, 316169 workers are in private and only 95580 are in public companies. In the public companies the increase of workers was very negligible, i.e. only 27 workers

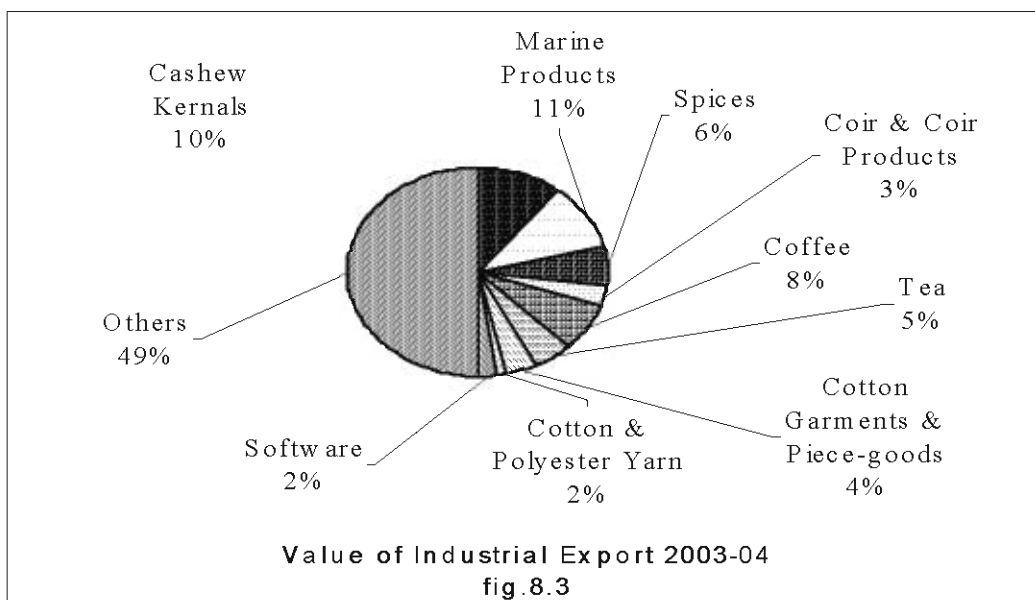
8.8 The growth of working factories during the last ten years is shown in the Fig. 8.5.

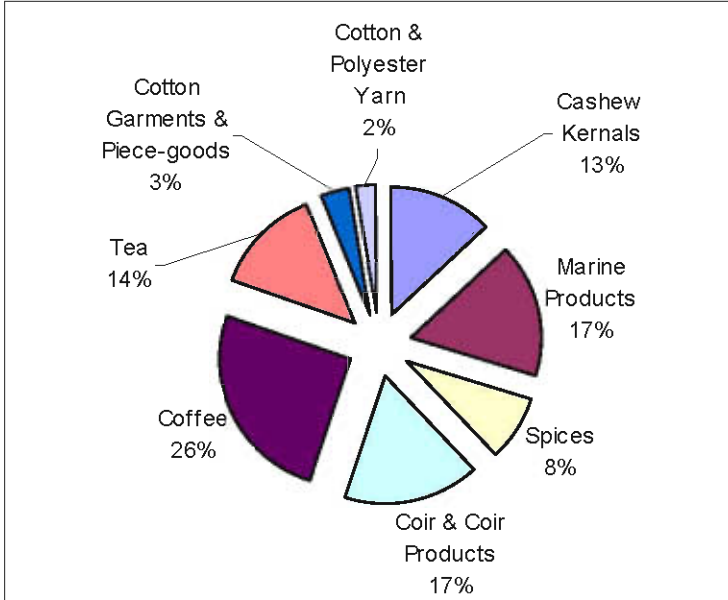
8.9 While analysing the increase in the district-wise distribution of factories, it is seen that

**Table 8.2**  
**Industrial Exports**

Item	2002-03		2003-04	
	Quantity (MTs)	Value (Rs. Crores)	Quantity (MTs)	Value (Rs. Crores)
Cashew Kernals	66859	1217	67821	1192
Marine Products	77851	995	87508	1205
Spices	55750	620	44386	660
Coir & Coir Products	76850	321	87091	357
Coffee	126900	735	132247	865
Tea	53071	351	73802	518
Cotton Garments & Piece-goods	21198	498	17660	433
Cotton & Polyester Yarn	12520	205	12379	182
Software	..	400	..	240
Others	..	5054	..	5656

Source: Kerexil, Thiruvananthapuram





**Fig 8.4**  
Industrial Export 2003-04 (Quantity)

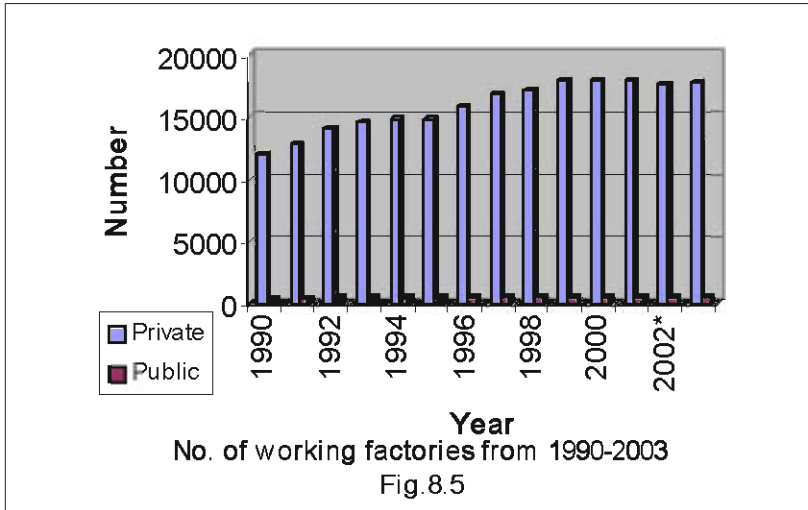


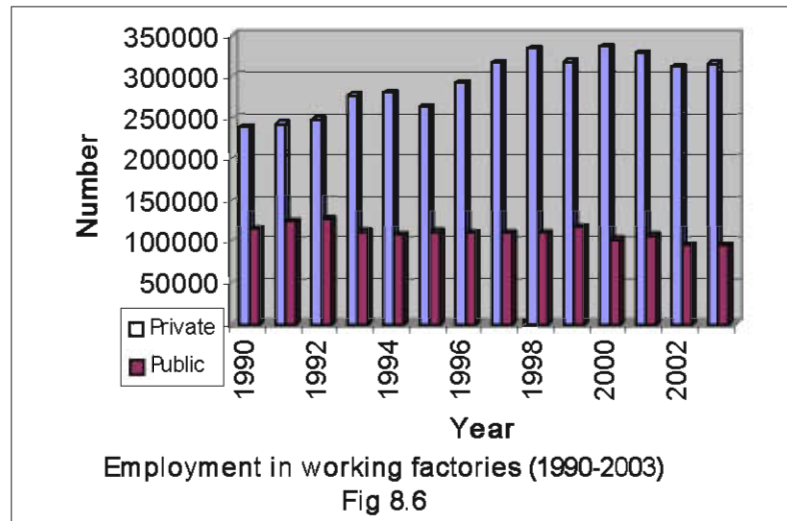
Fig.8.5

marginal increase was recorded in ten districts and it remained the same in Pathanamthitta, Palakkad, Wayanad and Kasaragod, unlike the declining trend in the years 2001 & 2002. As in previous years Ernakulam district has the largest number of factories, due to the conglomeration of major industrial units in the district. Ernakulam district had 2961 working factories followed by Thrissur (2527), Kollam (1928) and Palakkad (1893). Wayanad (134) district remained at the lowest rank followed by Kasaragod (260), and Idukki (339), in spite of the initiatives being taken by the Government for these industrially

backward districts.

8.10 Even though there is an increase in the number of working factories in Ernakulam district the number of workers decreased in 2003 followed by Thrissur, Palakkad, Kozhikode and Wayanad. In Kasaragod the number of workers remained stagnant while in all other districts it increased marginally. The highest growth is recorded in Pathanamthitta followed by Malappuram. The growth of employees in working factories in Kerala is given in Fig. 8.6.





### Industrial Disputes

8.11 The number of strikes and lockouts both at national and state level is on the decrease, which is an indication of the emergence of an investor friendly climate. A comparative statement of the strikes and lockouts and mandays lost in India and Kerala is given in Table 8.3.

### Central Sector Investment

8.12 Share of Kerala in central sector investment decreased from 2.81 per cent in 2002 to 2.77 per cent in 2003, placing it in the 14<sup>th</sup> position among states (Appendix 8.6). Maharashtra stood first in getting the central sector investment followed by Andhra Pradesh, Tamil Nadu, Uttar Pradesh and Orissa.

### Foreign Investment

8.13 Foreign Investment at the national level – both direct and portfolio – rose to an all-time high

in 2003-04, amounting to 3.0 per cent of GDP and 25.5 per cent of merchandise exports. Net investment by foreign institutional investors rebounded from depressed levels in the preceding year to record an unprecedented surge during 2003-04.

8.14 Although Mauritius continues to be the single largest source of FDI into India, its relative significance has been declining. FDI from Mauritius declined sharply during the last two years, constituting 26.1 per cent of total FDI flow to India in 2003-04 as against 32.2 per cent in 2002-03 and as much as 62.3 per cent in 2001-02. The bulk of FDI was channelised into services, computers (hardware and software) and Engineering industries.

8.15 The sectoral pattern of FDI inflows to India shows that flows into the engineering sector have

**Table 8.3**  
**Industrial Strikes & Lockout**

Year	Strikes				Lockout			
	India		Kerala		India		Kerala	
	No.	Mandays Lost (Million)	No.	Mandays Lost (Million)	No.	Mandays Lost (Million)	No.	Mandays Lost (Million)
1999	540	10.62	28	1.51	387	16.16	45	0.81
2000	426	11.96	21	0.28	345	16.80	40	0.00
2001	372	5.56	9	0.39	302	18.20	38	1.40
2002	295	9.66	7	6.40	284	16.92	49	1.77
2003	244	2.00	22	0.09	245	20.00	35	1.80

Source: Labour Bureau, GOI, Labour Commissioner, GOK

remained stable, largely in consonance with buoyancy in export growth in that sector. Empirical studies in the Indian context suggest a lagged feedback effect from export growth to FDI. On the other hand FDI inflows into the software sector continued to exhibit a downward trend despite the robust export performance of the software sector. This suggests that FDI is complementary rather than substitutive in sectors where domestic entrepreneurship and production have acquired an international competitiveness. FDI inflows into the services sector declined to US \$ 431 million from a peak of US \$ 1,128 million in 2001-02, in spite of high growth in services domestically and sustained exports of professional and commercial services.

8.16 Important features of FDI Policy of Government of India are given in Box 8.1. The FDI Policy is constantly evolving.

**BOX-8.1****FDI Policy in India**

- FDI upto 100% under Automatic Route except activities requiring compulsory licensing
- Investor having joint venture in same or allied field
- Limits specifically imposed under sectoral policies
- National treatment to investments
- Foreign technology collaboration also encouraged
- Royalty up to prescribed limits can be paid under automatic route
- No limits on period of royalty payment under automatic route

**State-wise Distribution of FDI Approvals**

8.17 The choice of location of projects depends on the commercial judgement of investors based on factors such as market size and growth potential, availability of skilled manpower, availability and reliability of infrastructure facilities fiscal and other incentives provided by State Government. The Central Government supplements the efforts of the State Governments by providing fiscal incentives for investments in core and infrastructure sectors as also high priority industries such as IT and through specific schemes. Maharashtra, Delhi, Tamilnadu, Karnataka, Gujarat, Andra Pradesh, Madhya Pradesh, West Bengal, Orissa and Uttar Pradesh accounted for a major portion of FDI investment approvals during 1991 - 2004. Kerala could not attain a position in the picture, as its share is very nominal.

**Joint Stock Companies**

8.18 As on 31.3.2004 12965 Joint Stock Companies consisting of 1437 public limited and 11528 private limited companies existed in the State. In the year 2003-04, 944 companies comprising 909 private and 35 public limited companies were newly registered. Sixty five joint stock companies were wound up/ dissolved / amalgamated and ten companies were transferred to other States in the year. Thirteen companies were converted from public to private and

**BOX-8.2****Italian Fashion City at Kochi**

A group of Italian Textile manufacturers have expressed their interest to start their units at Kochi. Fil Manmade Fibre Group, a leading textile manufacturer in Italy is expected to start spinning and weaving mills at Kochi. The facility is proposed to be established in the land being acquired by KINFRA. The State Government through KSIDC has assured participation in these ventures. This will result in an investment of Rs. 450 crores, providing employment opportunities to 4000 persons. In the proposed Fashion City, 30 garment-making units are to be established and other supplementary facilities created.

11 from private to public. The total number of government companies registered remained at 111, comprising of 60 private and 51 public limited companies.

#### State Level Public Sector Enterprises

8.19 Kerala has the largest number of State Level Public Sector Enterprises in India (113 out of

1071) providing employment to 115697 persons. An abstract of the various parameters of the SLPEs is given in Table 8.4.

8.20 Operational performance of different individual SLPEs under Industries Department during 2003-04 is given in Table 8.5.

**Table 8.4**  
**Abstract of SLPEs as on 31.3.2004**

Item	Development & Infrastructure	Traditional, Welfare, Plant & Agro	Utilities	Manufacturing & Others	Total
No. of Companies	17	30	6	60	113
No. of Employees	5942	29849	55568	24338	115697
Capital (Rs. Crores)	704	416	3521	540	5181
Loan from Govt (Rs. Crores)	173	156	1598	1013	2940
Other Loans (Rs. Crores)	2677	176	6995	171	10019
Total Investment (Rs. Crores)	3505	903	12000	1712	18120
Working Capital from Banks (Rs. Crores)	1	106	193	326	626
Income (Rs. Crores)	500	231	3527	2592	6850
Profit / Loss (Rs. Crores)	38	(-6)	(-181)	(-70)	(-219)
Loss making Units (Nos)	8	20	4	47	79
Cumulative Loss (Rs. Crores)	189	420	2283	1347	4239

Source: RIAB, TvpM

**Table 8. 5**  
**Performance of PSUs under Industries Department during 2003-04**  
 (Provisional figures) (Rs. Lakhs)

Sl. No.	Company	Turnover		Profit	
		2002-03	2003-04	2002-03	2003-04
1	The Kerala Minerals and Metals Ltd.	29605	30175	9403	5341
2	Kerala State Industrial Development Corporation	3052	2602	914	1388
3	Travancore Titanium Products Ltd.	6802	13070	9	958
4	Transformers and Electricals Kerala Ltd.	8291	10260	130	520
5	Kerala State Industrial Enterprises Ltd.	661	738	224	264
6	Malabar Cements Ltd.	10946	13805	-1151	203
7	Kerala Automobiles Ltd.	4567	4410	271	185
8	Travancore- Cochin Chemical Ltd.	8491	10831	-692	179
9	Steel and Industrial Forgings	1759	2357	77	98
10	Kerala Clays & Ceramic Products Ltd.	370	370	86	91
11	Travancore Sugars & Chemicals Ltd.	199	493	-83	85
12	Kerala Hi-tech Industries Ltd.	897	1112	-73	72
13	Forest Industries (Travancore) Ltd.	389	590	6	23
14	Foam Mattings (India) Ltd.	526	578	-11	5
15	Keltron Electro Ceramics Ltd.	379	301	1	2
16	The Metal Industries	237	212	-10	-13
17	Kerala Artisans Dev. Corpn. Ltd.	38	68	-6	-13
18	KELPALM	7	3	-48	-18
19	Keltron Magnetics Ltd.	256	295	-41	-31
20	Keltron Resistors Ltd.	154	100	-25	-43
21	The Kerala State Coir Corporation Ltd.	439	236	-62	-68
22	The Kerala Ceramics Ltd.	666	606	-69	-70
23	CAPEX	400	616	-150	-89
24	Kerala Garments Ltd.	55	57	-110	-91
25	Keltron Component Complex Ltd.	3014	3091	-348	-99
26	Keltron Counters Ltd.	191	156	-440	-143
27	The Alleppey Co-operative Spinning Mills Ltd.	623	612	-133	-144
28	Handicrafts Development Corporation (Kerala) Ltd.	1068	947	-125	-171
29	Kerala Small Industries Development Corporation Ltd.	2915	3993	-260	-186
30	Keltron Crystals Ltd.	85	108	-173	-191
31	The Malappuram Co-operative Spinning Mills Ltd.	2004	2171	-121	-220
32	Sitaram Textiles Ltd.	393	588	-255	-230
33	United Electricals Industries Ltd.	1232	996	-151	-246
34	The Travancore Cements Ltd.	2936	2417	-224	-253
35	The Quilon Co-operative Spinning Mills Ltd.	1047	822	-226	-290

Continued...

36	Kerala State Bamboo Corporation Ltd.	996	893	-113	-294
37	Steel Complex Ltd.	1734	686	-281	-297
38	Autokast Ltd.	921	1076	-1080	-316
39	The Trichur Co-operative Spinning Mills Ltd.	1271	1232	-253	-337
40	HANTEX	1808	1623	-250	-346
41	Kerala State Handloom Development Corporation Ltd.	1302	1218	-449	-386
42	Steel Industrials Kerala Ltd.	1980	1512	-618	-530
43	Kerala State Drugs & Pharmaceuticals Ltd.	473	136	-808	-600
44	Kerala Electrical & Allied Engineering Company Ltd.	4931	5390	-331	-628
45	Kerala State Textile Corporation Ltd.	4315	3327	-571	-693
46	Traco Cable Company Ltd.	2964	2872	-862	-948
47	The Kerala State Cashew Development Corporation Ltd.	165	1222	-1427	-1782
48	Kerala State Electronic Development Corporation Ltd.	6906	8349	-4939	-4490
49	COIRFED	2126	1749	-630	
	<b>Total</b>	<b>126586</b>	<b>141071</b>	<b>-6478</b>	<b>-4842</b>

Source: RIAB, TvpM

#### SLPE Reforms in Kerala

8.21 The Enterprises Reforms Committee (ERC) constituted for evolving suitable reform measures on a case to case basis has forwarded recommendations in respect of 45 SLPEs.

8.22 Progress in reform measures is given in Box 8.3.

8.23 Details of VRS implemented in PSUs under Industries Department are given in Table 8.6.

#### BOX-8.3

##### Snap shot of current status of SLPE Reforms

- No. of SLPEs in which ERC has forwarded recommendations 45
  - No. of SLPEs in which Government have taken decisions based on the recommendations of ERC and SPB 30
  - No. of SLPEs of which ERC recommendations are being processed by the Government 15
  - No. of further SLPEs of which restructuring proposals will be considered by ERC in 2004 8
  - Units being closed down based on Government decision 8
  - Number of SLPEs advertised for expression of interest through ICICI – KINFRA and IDBI 6
  - No. of SLPEs closed down in the past 9
  - No. of personnel brought under VRS in SLPEs since 1996 4719
- (Rs. 116 Crores)

**Table 8. 6**  
**Implementation of VRS in PSUs**

Sl. No.	Name of Company	Year	No. of Employees	Amount (Rs. Lakhs)
1	Autokast Ltd, Alappuzha	2003	100	302.71
2	Keltron Counters Ltd.	2003	138	744.49
3	Kerala Ceramics Ltd.	2003	89	222.00
4	Trivandrum Spinning Mills Ltd.	2003	238	396.47
5	Keltron Rectifiers Ltd.	2003	99	377.11
6	United Electrical Industries Ltd	2003	123	331.28
7	Kerala Soaps & Oils Ltd	2003	58	132.00
8	Kerala Construction Components Ltd	2003	105	164.08
9	Astral Watches Ltd	2003	44	77.40
10	Metropolitan Engineering Company Ltd	2003	119	345.14
11	The Travancore Cochin Chemicals Ltd, Kochi	2003	38	194.00
12	Sitaram Textiles Ltd, Thrissur	2004	96	191.69
13	Scooters Kerala Ltd, Alappuzha	2004	48	101.18
14	Kerala Garments Limited	2004	147	171.96
15	Kerala State Textile Corporation Ltd, Thiruvananthapuram	2004	207	487.59
16	The Travancore Sugars and Chemicals Ltd.	2004	50	163.00
17	Travancore Plywood Industries Ltd.	2004	255	650.65
18	Kerala Electrical and Allied Engineering Co. Ltd, Kochi	2004	202	883.00
19	Transformers and Electricals Kerala Ltd.	2004	17	75.00
20	Steel Complex Ltd.	2004	175	392.00
	<b>Total</b>		<b>2348</b>	<b>6402.75</b>

Source: RIAB, Tvpm

8.24 A committee of the State Cabinet with Industries, Finance, Agriculture, Power and Labour Ministers has been constituted for studying the problems and issues of PSUs and to prepare an approach paper for the restructuring of PSUs.

8.25 Details of assistance offered to PSUs through Kerala Industrial Revitalisation Fund Board (KIRFB) for restructuring purposes are furnished in Table 8.7.

#### Industrial Promotion

8.26 Government of Kerala assists industrial units by providing financial assistance, infrastructure and training/consultancy services. Important agencies/ departments engaged in the industrial promotion in the State include

- Kerala State Industrial Development Corporation

- Kerala Financial Corporation
- Small Industries Development Bank of India
- Kerala Industrial Infrastructure Development Corporation
- Directorate of Industries and Commerce
- Small Industries Development Corporation
- Small Industries Service Institute
- Kerala Industrial and Technical Consultancy Organisation
- Centre for Management Development

#### Industrial Financing

8.27 KSIDC has consciously decided to focus on its role as a facilitator rather than a lending agency in view of the fact that alternate and cheaper sources of credit are available for projects from other financial institutions.

**Table 8.7**  
**Assistance by KIRFB**

(Rs lakhs)

Sl. No.	Company	Amount Released	Amount Outstanding as on 30-11-2004		
			Principal	Interest	Total
<b>Long Term Loans</b>					
1	Cannanore Co-operative Spinning Mills Ltd.	125	144	43	187
2	Kerala Construction Components Ltd.	60	66	33	99
3	Kerala Garments Ltd.	167	163	100	263
4	Kerala State Electronic Development Corporation Ltd.	3068	3213	608	3821
5	Kerala State Textile Corporation Ltd.	573	659	319	978
6	The Kerala Ceramics Ltd.	75	82	37	119
7	Traco Cables Ltd.	1500	1007	417	1424
8	Travancore- Cochin Chemical Ltd.	4706	4655	...	4655
9	Trichur Co-operative Spinning Mills Ltd.	410	463	150	613
	<b>Total</b>	<b>10684</b>	<b>10452</b>	<b>1707</b>	<b>12159</b>
<b>Short Term Loans</b>					
1	Autokast Ltd.	580	552	6	558
2	Keltron Component Complex Ltd.	730	730	72	802
3	Keltron Counters Ltd.	397	158	26	184
4	Kerala Electrical & Allied Engineering Company Ltd.	1627	451	71	522
5	Kerala State Detergents & Chemicals Ltd.	88	59	23	82
6	Kerala State Drugs & Pharmaceuticals Ltd.	330	329	131	460
7	Kerala State Electronic Development Corporation Ltd.	10062	2247	8	2255
8	Kerala State Palmyirah Workers welfare	10	10	...	10
9	Kerala State Textile Corporation Ltd.	200	200	73	273
10	QETCOS	35	30	0	30
11	Scooters Kerala Ltd	59	59	10	69
12	Steel and Industrial Kerala Ltd.	750	750	292	1042
13	The Metal Industries	16	8	0	8
14	The Metropolitan Engineering Company Ltd	20	20	11	31
15	Transformers and Electricals Kerala Ltd.	1500	1500	977	2477
	<b>Total</b>	<b>16404</b>	<b>7103</b>	<b>1700</b>	<b>8803</b>
	<b>GRAND TOTAL</b>	<b>27088</b>	<b>17555</b>	<b>3407</b>	<b>20962</b>

\* Principal outstanding of long term loans includes moratorium interest also.

Source: KIRFB - RIAB

## BOX-8.4

**Performance of KSIDC 2003-04**

Gross financial sanction (Rs. crores)	44.00
Projects completed (Nos.)	19
Project cost (Rs. crores)	74.00
Employment generated (Nos)	899
MoU signed (Nos)	5
Estimated cost (Rs. crores)	6626.00
Projects under various stages of implementations-	30
Project cost (Rs. crores)	728.00
Employment potential (Nos)	4063
Loan recovery - total overdue (Rs. crores)	382.00
Amount recovered (Rs. crores)	62.00
Operating Profit (Rs. crores)	8.00

8.28 As regards projects of the Global Investors' Meet of January 2003, five projects with a total investment of Rs. 77.25 crores have been commissioned and another nine projects with an investment of Rs. 142 crores are in progress. There are 19 other projects under various stages of implementation, entailing an investment of Rs. 599.50 crores. The first phase of Kochi Refinery Expansion Project for Rs. 300 crores is under implementation. The German automobile giant Bavarian Motor Works (BMW) has shown keen interest in setting up an automobile assembly plant in Kerala. The Gas Authority of India Ltd. (GAIL) has signed an MoU with KSIDC to study the feasibility of implementing a petrochemical project in Kasaragod. GAIL has signed a Gas cooperation Agreement for laying pipeline from Kochi to Kayamkulam and from Kochi to Kasaragod to

carry the gas from the proposed LNG terminal at Kochi.

8.29 For the SSI segment KFC sanctioned an amount of Rs. 6477 lakh for 320 projects and for non-SSI segment Rs. 10481 lakh for 261 projects. Total sanction amounted to Rs. 16958 lakh in 2003-04. The capital adequacy ratio as on 31.3.2004 was 15.20% and the Corporation could meet the stipulation of CAR. The performance of KFC in terms of general parameters is given in Box 8.5.

8.30 Small Industries Development Bank of India (SIDBI) disbursed an amount of Rs 133 crores, in the year 2003-04, which is 38 per cent less than that in the previous year. Kerala's share corresponded to three per cent of the total disbursement. One of the major initiatives relating

## BOX-8.5

**Kerala Financial Corporation 2003-04**

• Sanction	-	Rs. 16858 lakhs
• Disbursement	-	Rs. 11902 "
• Recovery	-	Rs. 27284 "
• Total income	-	Rs. 12040 "
• Operating Profit	-	Rs. 953 "
Net Profit	-	Rs. 181 "



to the Small and Medium Enterprise sector in 2003-04 has been the setting up of a SME Fund of Rs. 10000 crore by SIDBI.

8.31 The flow of credit from the commercial banking sector to SSI sector showed a marginal increase of Rs56 crores during 2003-04 and reached Rs. 2617 crores. The percentage share of SSI sector in the total bank credit is showing a declining trend during the last five years and reached a low level of eight per cent during 2003-04. The status of flow of credit to various sectors is given in Appendix.

#### Industrial Infrastructure

8.32 The Infrastructure facilities offered in the States include Industrial Parks, Industrial Estates, development areas / plots, special economic zones etc. The present focus is on the development of state-of-the-art infrastructure to attract more investment.

#### Industrial Parks

8.33 KINFRA, the Industrial catalyst of the State, has been following a conscious effort of industrial development specifically aimed at the economic development of the industrially backward regions

of the State. The Corporation has been setting up Industrial parks, townships, Zones, etc. which provide all facilities required by entrepreneurs for starting an industry.

8.34 KINFRA has completed establishment of six parks in 2003-04 and three are nearing completion.

8.35 Details of land allotment, investment and employment in Kinfra Parks as on 31-3-2004 are given in Table 8. 8.

#### Export Infrastructure

8.36 'Assistance to States for Developing Export Infrastructure and Allied Activities (ASIDE)' is a Government of India scheme intended towards the development of export infrastructure. KINFRA is the nodal agency in the State for co-ordinating the activities under ASIDE in the State. Government of Kerala has received Rs. 11.00 crores and Rs. 12.00 crores during 2002-03 and 2003-04 respectively for ASIDE projects and for the current year the outlay is Rs. 9.30 crores. The projects taken up under ASIDE scheme in the State are given in the Box 8. 7.

#### BOX- 8.6

#### KINFRA Parks

##### a. Completed during 2003-04

- Approach road to KEPIP, Ernakulam
- KINFRA Small Industries Park Ernakulam & Wayanad
- Rubber Park, Ernakulam
- Seafood Park, Aroor
- KINFRA Electronics Park at Malappuram

##### b. Nearing completion

- KINFRA Small Industries Park, Koratty
- Food Infrastructure facilities at KSIP, Mazhuvannoor
- Pre-processing centre cum cold storage at KSIP, Kalpatta

##### c. On the anvil

- Biotechnology Park, Kochi
- KINFRA Small Industries park, Pathanamthitta
- Herbal Village, Wayanad
- IIDC for Food processing and Biotech Industries, Adoor
- International Centre for Animation Films, Kazhakoottam
- Textile Centre Infrastructure Development Scheme (TC IDS)

**Table 8. 8**  
**Land Allotment, Investment and Employment in Kinfra Parks**

Sl. No.	Park	Area allotted (Acres)	Investment (Rs. Lakhs)	Employment (Nos.)
1	Kinfra Small Industries Park, Thumba	20.84	2732.95	967
2	Kinfra International Apparel Park, Thumba	7.00	600.00	1900
3.	Kinfra Film and Video Park, Kazhakkootam	13.23	1422.50	198
4.	Kinfra Export Promotion Industrial Park, Kochi	57.74	15864.00	3095
5.	Kinfra IT and Electronic Park, Kochi	59.13	1595.00	1549
6.	Kinfra Small Industries Park, Mazhuvannur	6.70	739.82	392
7.	Kinfra Food Processing Park, Kakkancherry	13.73	2563.60	333
8.	Kinfra Small Industries Park, Thalassery	13.39	3650.38	592
9.	Kinfra Small Industries Park, Seethangoli	8.80	1179.17	353
10.	Kinfra Site, Palakkad	79.40	2000.00	200
11.	Kinfra IT and Electronic Park, Malappuram	27.50	79.50	128
12.	Kinfra Small Industries Park, Koratty	8.70	1327.90	223
	Total	316.16	33754.77	9930

Source: Kinfra

**BOX-8.7**

**ASIDE Projects**

- Setting up 30 pre-processing centres in major fish processing regions in Kerala
- Upgradation of laboratory of MPEDA for anti – biotic Assay in seafood
- Upgradation of infrastructure facilities at Cochin Fisheries Harbour
- Upgradation of Munambaum Fisheries Harbour
- Setting up of Modern Testing Laboratory at Aroor
- Expansion of Air Cargo Complex Building at Thiruvananthapuram Airport area
- Setting up of laboratory at Kollam
- Installation of Electronic weigh Bridge at Cochin Port Trust premises
- Water Supply project at Techno Industrial Park at Kakkaenchery, Malappuram
- International Animation zone at Film & Video Park

8.37 Government of India have announced the Apparel Park Expansion Scheme (APES) with the objective of increasing the garment export turnover to 25 million dollars by 2010. The expansion of Kinfra Apparel Parks, Thiruvananthapuram was also considered by Government of India to boost the exports of garments from the State. As per the scheme the implementing agency is eligible for assistance up to Rs. 70 crores. So far KINFRA have incurred an expenditure of Rs. 348.78 lakhs for apparel parks and received Rs. 178.89 lakhs as reimbursement from Government of India.

#### **Textile Centre Infrastructure Development Scheme (TCID)**

8.38 Ministry of Textiles, Government of India have announced a scheme viz, Textile Centre Infrastructure Development Scheme (TCIDS). Kannur is one of the potential centres to be developed under the TCIDS. Kinfra has submitted a proposal for setting up an Apparel park at Kannur at a total cost of Rs. 30.15 crore of which the expected central assistance is Rs. 20 crores.

#### **Cluster for Ayurvedic units under Industrial Infrastructure Upgradation Scheme**

8.39 A Special Purpose Vehicle has been formed among major Ayurvedic firms in the State, together with KSIDC & Kinfra and a company under the name 'CARE-Keralam' (Confederation for Ayurvedic Renaissance – Keralam Pvt Ltd) has been registered. The facilities being set up under this consortium will have common raw material supply facility, Q.C lab, R & D facility, branding of Kerala Ayurveda etc. The project is proposed to be set up on the 10 acre land in KINFRA Park at Koratty, Thrissur. The possibility of setting up the project under IIUS is being explored and as per this scheme 75% of the project cost (subject to a maximum of Rs. 50 crores) is available as grant.

#### **Industrial Estates**

8.40 Directorate of Industries and Commerce provides infrastructure facilities for small-scale sector by acquiring land and developing it into development area/ plots with facilities like developed land, road, water supply, electricity, necessary building etc. Details of development areas/development plots and mini industrial estates

provided by Industries Department are furnished in Appendices 8.48 and 8.49.

8.41 The Small Industries Development Corporation also undertakes works on provision of infrastructure facilities for the small-scale sector through its major industrial estates and mini industrial estates. Details are given in Appendices 8.50 and 8.51.

#### **Special Economic Zones (SEZ)**

8.42 One of the major thrust areas for export promotion has been the special economic zones. The scheme provides for setting up of Special Economic Zones in the country with a view to provide an internationally competitive and hassle free environment for exports. The Government have converted eight existing export processing zones including Cochin EPZ into SEZ. So far, approval has been given for setting up 24 special economic zones in the private/joint sector including Vallarpadam – Puthuvypeen in Kerala on the basis of proposals received from the State governments/private promoters. These SEZs are at various stages of implementation.

8.43 Exports from the SEZs during 2003-04 were of the order of Rs. 14003.09 crores as compared to the export of Rs. 10056.62 crores during 2002-03 representing a growth of 39 per cent over the previous year. There are 711 units in operation in SEZs as on 31.3.2004. Recently, two Hi-tech Parks of KINFRA have been accorded SEZ status by Government of India. (Box 8.8).

#### **Towns of Export Excellence (TEE)**

8.44 In the Foreign Trade Policy 2004, Government of India announced a provision for declaring towns and areas in specific geographical locations which have emerged as dynamic industrial clusters contributing handsomely to India's exports as "Towns of Export Excellence". Kerala has been duly recognised by the declaration of Aroor in Alappuzha and Kannur as "Towns of Export Excellence" for seafood and handloom industries respectively.

#### **Human Resource Development**

8.45 The Centre for Management Development (CMD) provides research, consulting and training support to development agencies, corporate organizations and the Government at the National, State and Local levels. During the year 2003-04

**BOX-8.8****SEZ Status for Kinfra Hi-tech Parks**

The proposed Electronics Park of Kinfra in Kochi and the Food Processing Industrial Park in Malappuram have been granted the status of Special Economic Zones (SEZ) by the Central Government. These zones cover 30 acres of land each at Kochi and Malappuram. They will be duty free enclaves to be treated as foreign territory for trade operations, duties and tariffs. No licenses will be required for import of goods into the zones. All units in these zones will also enjoy central sales tax and income tax concessions and other incentives. Cent per cent direct foreign investments are allowed in the zone for manufacturing barring a few sectors.

**BOX-8.9****Town of Excellence**

Towns of Excellence are actually industrial clusters which symbolizes the bursting force of the free market spirit and are essentially a collective response to common problems of competitiveness. These industrial cluster towns have been granted recognition with a view to maximize their export profiles and help in upgrading them to move up in high value markets. It is hoped that within a short time, these towns will become globally renowned manufacturing basis and will have to be provided with all necessary infrastructure facilities required for the particular sector at international standards, as in the case of Tirupur in Tamilnadu (knitted Hosiery).

CMD undertook several research assignments for the Government of India, Government of Kerala as well as Corporate Enterprises (public and private sectors) and developmental agencies. CMD continues to provide professional support to the Public Sector Restructuring and Internal Audit Board (RIAB), Government of Kerala. It also prepared the Annual review of Public Enterprises in Kerala, which forms part of the budget documents of the State, for the sixteenth consecutive year. Some of the studies undertaken during the year include Organization Analysis and Future Strategy for the Kerala State Livestock Development Board Ltd. Study on Handicrafts in Kerala, Market Study for the Kerala State Beverages Corporation Ltd., Strengthening of Kerala State Handloom Development Corporation (HANVEEV) etc. The Centre supported the Ministry of Rural Development (MoRD), Government of India, in Monitoring all MoRD

Schemes in seven districts in Kerala and Tamil Nadu, apart from conducting studies to evaluate and assess the impact of various rural development programmes in different districts. CMD was chosen as the Nodal Agency at the National Level for the Concurrent Evaluation of Sampoorna Grameen Rozgar Yojana (SGRY) in all the Districts of the Country. CMD also offered Management Development Programmes in the areas of Corporate Governance and Project Formulation & Management, apart from the course for Lead Auditors of Quality Management Systems for ISO 9001:2000, during the year. It also conducted 17 Entrepreneurship Development Programmes, participating 533 potential entrepreneurs.

8.46 Small Industries Service Institute (SISI) is a promotional and developmental agency under the Small Industries Development Organisation for

the overall development of small-scale industries in the State. This Institute renders techno-economic and managerial assistance to existing and prospective entrepreneurs. The Engineering workshop, leather and footwear service centre and Vegetable Preservation Centre attached to the Institute are conducting various technical-training courses. During 2003-04 the Institute conducted training programmes such as entrepreneurship development programme, skill development programme, management development programme, computer training programme etc. Entrepreneurship development programmes are being organised to cultivate the entrepreneurial qualities in young men and women and motivate them to set up their own small-scale industrial ventures. Besides specialised short-term courses in various management disciplines like Industrial Management, Financial Management, Marketing Management, Quality System, Accounting Procedures, Labour Law etc. were organised. Seminars, Motivation Campaigns, awareness programmes on ISO 9000, pollution control, energy conservation, waste minimization and cleaner production were also organised during the year under report.

**BOX-8.10****Training Programmes of SISI 2003-2004**

Training programmes conducted (Nos.)	54
Persons trained (Nos.)	837
Women	202
SC/ST	61

8.47 Kerala Industrial and Technical Consultancy Organisation (KITCO) caters to the consultancy needs of the small and medium industries and new entrepreneurs in the State. It achieved a modest growth rate of 4.22 % in the year 2003-04 as against 7.64 % during the previous year. The company rendered consultancy services largely in the fields of detailed engineering, valuation of assets, energy audit, project management and infrastructure development.

**Small Scale Industry (SSI)**

8.48 The Small-scale sector occupies a significant place in India's economy by contributing 40 per cent of the total industrial production and 34 per cent of the national exports. Eighty per cent of the employment in manufacturing is in the small-scale sector. Of the total industrial units in the country the share of small-scale sector is 95 per cent. After agriculture, small-scale sector is the single biggest group in the country. At present units with an investment of less than Rs One crore fall under SSI category with some exemptions of export oriented industries like Pharma, hand tools, hosiery and stationery items where the limit is Rs. Five crore. The exemption from excise duty for SSI sector has been raised from Rs.50 lakhs to Rs. One crore.

**Status of SSI Units**

8.49 The final result of the Third All India Census of Small-scale Industries for the reference year 2001-02 conducted during 2002-03 was published during the year 2004.

**BOX-8.11****Major assignments undertaken by KITCO 2003-04**

- KITCO extended consultancy service to M/S Roads and Bridges Development Corporation of Kerala Ltd. for the construction of 22 Road over bridges at an estimated cost of Rs. 85 crores of which 5 RoBs were completed.
- Extended detailed engineering service for the construction of a new bridge across Kunthi River at Pulamanthole - Bridge has been completed during 2003-04 and opened to traffic.
- Extended consultancy services for the construction of a 5 – storied Standard Design Factory for the Cochin Special Economic Zone at Kakkanad, setting up of a common effluent treatment plant, water supply system which have almost been completed.
- Completed energy audit in 3 industrial units
- Extended Valuation service to Kochi Refineries Ltd, KSIDC, CSEZ, IDBI, KBDC and other private organisations.

**Salient features****Registered SSI Sector**

- All the SSI units permanently registered upto 31-03-2001 numbering 22.62 lakhs were surveyed of which 13.75 lakhs units (61 %) were found to be working and 8.87 lakh units (39%) were found to be closed.
- Of the total number of 13.75 lakh working units 9.01 lakh units (66%) were SSIs and 4.74 lakh units (34%) were Small Scale Service and Business Enterprises (SSSBs).
- In terms of number of working units six States, viz, Tamilnadu (13.09%), Uttarpradesh (11.85%), Kerala (10.69%), Gujarat (10.08%), Karnataka (8.04%), Madhya Pradesh (7.41%) had a share of 61.16 %.
- With regard to closed units, six States, viz, Tamilnadu (14.33%), Uttarpradesh (13.78%), Punjab (9.32%), Kerala (8.43%), Madhya Pradesh (7.4%) and Maharashtra (6.11%) had a share of 59.37 %.
- Rice milling industry topped the list in terms of value of gross out put, whereas in terms of exports, textile garments and clothing accessories industry was on top.
- The employment in the registered SSI sector was estimated to be 61.63 lakhs indicating an average employment of 4.48 persons per unit.

**Unregistered SSI Sector**

- Coverage of industrial units in the unregistered sector for the first time
- The size of the unregistered SSI sector is estimated to be 9.46 lakhs, of which 38.75 % were SSIs and the rest were SSSBs.
- Maximum number of unregistered SSI units (16.89%) were located in Uttarpradesh followed by AP, WB, Maharashtra and MP.
- The average employment was 2.05 and employment generated per one lakh fixed investment was three persons.
- About 10.13% of the units were women enterprises and 57% of the units were managed by socially backward classes.

**Size of SSI Sector**

- The size of the total SSI sector comes to 1.05 crores. Of this, 44.45 lakhs (42.26%) units were SSIs and 60.75 lakh units (57.74%) were SSSBs.
- The number of women enterprises was 10.64 lakhs (10.11%). The number of enterprises actually managed by women was 9.95 lakhs

(9.46%).

- Total employment was 2.49 crores.

**Sickness in SSI sector**

- Sickness in the total SSI sector was one per cent whereas in the registered and unregistered SSI sectors it was 3.38% and 0.64% respectively.
- The maximum number of sick units were located in West Bengal, Kerala, Maharashtra, Karnataka and Andhra Pradesh with a share of 59.53 percent.

**SSI Sector- Kerala**

8.50 The total number of SSI units registered in Kerala as on 31-03-2004 was 2.75 lakhs with an investment of Rs 4031 crores providing employment opportunity to 12.37 lakh persons. There was a decline in the number of units registered, investment and employment as compared to the previous years. The number of SSI units registered and the employment provided during the year under report were 5305 and 21890 respectively. The decline was 57 per cent and 48 per cent respectively in the case of investment and employment compared to the previous year. The decline in the registration may be attributed to the shift in approach from target orientation to quality orientation by the Industries department. The district-wise details of registered SSI units in Kerala as on 31<sup>st</sup> March 2004 are given in Appendix.

8.51 Of the total number of 2.75 lakh SSI units 6477 units were identified as sick units, of which 2282 were registered. The department of Industries so far could revive only 1217 units. In spite of the setting up of separate cells in the District Industries Centers for the revival of sick units the total number of units revived decreased from 42 to 36 during the year under report from the previous year. The major reasons for sickness of the units are lack of demand, shortage of working capital, non-availability of raw materials labour problems and marketing problems. District-wise working status of SSI units as on 31<sup>st</sup> March 2004 is given in Appendix.

**Self Employment under PMRY**

8.52 The Prime Minister's Rozgar Yojana Programme witnessed the best performance since inception of the scheme during the year under report. As against the target of 20350 persons for

assistance under self employment programme 20377 persons were sanctioned assistance for a total of Rs 109 crores. An amount of Rs. 82 crores was disbursed to 16606 cases during the year 2003-04 as compared to 46 crores to 8596 cases during the previous year. The increase in the number of cases disbursed was 93 per cent.

### Industrial Co-operatives

8.53 During the year 2003-04, 17 industrial co-operative societies were registered afresh as against 27 in the previous year bringing the cumulative total to 1238 by the end of June 2004. Details of industrial co-operative societies in Kerala as on 30-6-2004 are given in Appendix.

### Cluster Development Approach for Small Scale Industries

8.54 The year under report witnessed the rise and development of clusters in growth sectors of Kerala. Coir cluster at Alappuzha, Rubber cluster at Changanassery and Kottayam, Plywood Cluster at Perumbavoor are the newly developed and successful ones. The Rubber Cluster in Kottayam is a typical SSI Cluster dominated by tiny and small scale industries numbering about 400 units producing low tech products such as

tread rubber, rubberised coir mats, footwear materials, rubber-bands, form rubber etc. Government Of India sanctioned Rs. 2.4 crores (90% CSS) to the Rubber Cluster Changanassery under Small Industry Cluster Development Programme for setting up Common Facility Service Centre. This type of assistance by Government of India was obtained for the first time by Kerala. By importing synthetic rubber from Korea, Kottayam Rubber consortium could make a saving of 30% in raw material cost. It established a raw material bank with the support of State Bank of Travancore. The coir cluster at Alappuzha consists of 200 consortia consisting of 3100 small and tiny enterprises. Employment is provided to 2200 women through 600 micro enterprises formed under the scheme. Department has trained 83 cluster development agents to coordinate the activities for formation of cluster consortium to undertake the cluster development activities. Fifty-three areas / sectors for industrial clusters have been identified in 14 districts by Kerala Bureau of Industrial promotion and District Industries Centres. Details are given in Table 8.9. The cluster development agents have completed preliminary works for the setting up of 46 clusters during 2004-05.

**Table 8.9**  
**Products /Sectors identified having good potential for Cluster Development**

Sl.No	District	Sector
1.	Thiruvananthapuram	Cane products, Wood Industry, Handicraft, Printing, Silk fabric
2.	Kollam	Food, Pencil, Wood
3.	Pathanamthitta	General Engineering, Food Products
4.	Alappuzha	Bell metal ,Stone products
5.	Kottayam	Apparel, Food, Leather
6.	Idukki	Garments, Lemon grass, Bamboo
7.	Ernakulam	Plywood, Fruit processing, Rice mill, Rubber, Plastic, Wood, Sweets, Electrical & Electronics, Mineral water, Printing
8.	Thrissur	Diamond, Wood Screw pine, pottery, Tiles, re-threading machinery, Note Book.
9.	Palakkad	Bell metal, Food, Agricultural implements, Bamboo
10.	Malappuram	Garments, Rubber, Wood, General Engineering, Food.
11.	Kozhikode	PVC foot wear, Food (Halwa, Banana chips), Jewelry
12.	Wayanad	Food, Garments, Bamboo
13.	Kannur	Coir mattress, Garments, Printing, Plywood, Handloom
14.	Kasaragod	Pottery, Screw Pine, Thalangara hat

Source: K-Bip

8.55 Details of developing clusters are given in Table 8.10.

**Table 8.10**  
**Developing Clusters**

Sl. No	Sector	Status
1.	Rubber Cluster - Malappuram	Consortium formed Constituted cluster coordination committee Objective: <ul style="list-style-type: none"> <li>• Standardisation of products</li> <li>• Raw material bank</li> <li>• Marketing network</li> <li>• Skill &amp; Technology upgradation</li> </ul>
2.	Tread Rubber Cluster, Ernakulam	<ul style="list-style-type: none"> <li>• Consortium formed</li> <li>• Raw material bank established</li> <li>• Strengthening the linkages with Financial Institutions</li> <li>• Decided to set up a common warehouse</li> </ul>
3.	Plywood Cluster , Perumbavoor	<ul style="list-style-type: none"> <li>• Consortium formed with 20 manufacturers</li> <li>• Rs.5 lakhs as Margin Money Loan granted for the CFC by State Govt.</li> <li>• CFC setup for processing wood and Face veneer</li> </ul>
4.	Rice Mill Cluster Kalady	<ul style="list-style-type: none"> <li>• Consortium formed with 35 entrepreneurs</li> <li>• Purchased land</li> <li>• Major initiatives placed <ul style="list-style-type: none"> <li>- Rice bran oil extraction unit</li> <li>- Effluent treatment plant</li> <li>- Testing and R &amp; D lab</li> <li>- Common Packaging unit</li> </ul> </li> </ul>
5.	Ethnic Food (Halwa) Cluster at Kozhikode	<p>Consortium formed for</p> <ul style="list-style-type: none"> <li>- Standardization of Kozhikode Halwa</li> <li>- Going to set up a raw material bank</li> <li>- Setting up a mini industrial estate excluding for Halwa manufacturing</li> <li>• Signed an MoU with CFTRI, Mysore for standardization, Product improvement of Kozhikode Halwa</li> </ul>
6.	Gold ornaments Cluster – Calicut	<p>Consortium formed</p> <p>Setting up CFC is for</p> <ul style="list-style-type: none"> <li>- Standardization &amp; Bench marking</li> <li>- Skill up gradation</li> </ul>
7.	Diamond cluster – Thrissur	<p>Consortium formed</p> <p>Setting up CFC is for</p> <ul style="list-style-type: none"> <li>- Standardization &amp; Bench marking of products</li> </ul>

Continued....



8.	Plastic Industries Cluster, Aluva	Construction formed for - Setting up CFC for a tool room and wind energy farm at Idukki. - Skill up gradation - Marketing linkages - Consortium representatives visited North Eastern States for identifying ideal suppliers
9.	Tile Cluster- Thrissur	Construction formed Setting up CFC is for - Technology and skill upgradation - Expanding marketing linkages - New product development
10.	Garment Cluster – Ernakulam & Kottayam	Construction formed for Kottayam Dt. Trust building activities is going on CFC required for - Skill and Technology Upgradation - Innovative and trendy designs - Marketing
11.	Agricultural implements Cluster – Palakkad	Consortium formed Setting up of RMB is intended for - Standardization - Bench marking - Brand creation
12.	Ethnic food Cluster – Palakkad	Consortium formed
13.	Garment Cluster, Idukki	Consortium formed Purchased one computer operated embroidery machinery for their CFC Setting up of Raw material bank is going on
14.	Leather consortium – Kottayam	Consortium formed for • Raw material bank inaugurated • Marketing linkages • Linkages with institutions like IILP, Chennai • Organised a training programme for skill up gradation. 37 artisans participated
15.	General Engineering – Adoor, Pathanamthitta	Consortium formed for • Setting up of Raw material Bank • CFC
16.	Agro-Food Cluster – Pathanamthitta	Consortium formed for • Raw natural bank • CFSC
17.	Bamboo Cluster, Wayanad (Uravu Eco links limited)	Consortium registered for • Setting up a RMB • Product Development

Continued.....

18	Silk Consortium , Thiruvananthapuram	Diagnostic study completed, Consortium formed for setting up CFSC for pre-loom processing facilities
19	Printing consortium, Ernakulam	Consortium Formation is under progress, Intends to set up post press facilities and raw material bank
20	Fruit processing cluster, Ernakulam	Consortium Formation going on for setting up RMB, Common testing centre, common project for waste disposal and cold storage, common marketing centre
21	Paint Cluster, Ernakulam	Diagnostic study completed, Consortium is for setting up RMB
22	General Engineering Cluster, Kozhikode	Consortium formed for setting up a RMB
23	Coir Mattress, Kannur	Consortium formed intends for common purchase of raw materials
24	Light Engineering, Kannur	Consortium formed by 150 units Raw Material Bank inaugurated
25	Cane and Bamboo Cluster - Tvpmm	Consortium formed - For setting up a Raw Material Bank - New product development

Source: Kerala Bureau of Industrial Promotion (K-Bip)

### Food Processing

8.56 Food processing has been recognized as a thrust area for the industrial development of the State. KINFRA is the nodal agency for promotion for food processing industries in the State. KINFRA set up a World Class Food Park at Kakkancherry, Malappuram, which is the first food-processing park in India. It is having 4 food processing units, Small Industries Park in Thiruvananthapuram with 2 units and Small Industries Park in Kasaragod with one unit with a total investment of Rs. 1333.26 lakhs provide employment to 144 persons. Food processing units are also under construction in the KINFRA Small Industries Park at Mazhuvannoor, Thalassery, Koratty and KINFRA Export Promotion Industrial Park in Kochi. K-Bip is engaged in the setting up of 4 'ethnic' food based industrial cluster at an estimated cost of Rs. 60 lakhs. Recognising the need to develop entrepreneurs in this sector, KINFRA has initiated steps to start Food incubation centre at a cost of Rs. 10 lakhs at the Kakkenchery Food Processing Park. A National Centre for HACCP certification has been set up in Kerala associated with K-BIP for giving HACCP certification to the food

processing units for ensuring good quality and safety of products to compete in the global market.

8.57 A separate agency named 'Agency for Development of Food Processing Industries in Kerala' (ADFIK) has been formed under KINFRA for the specific purpose of developing of food processing industries in the state and to function as facilitator to the nodal agency for the implementation of Govt. of India schemes. ADFIK has adopted numerous measures to enhance the available infrastructure, quality assurance and marketing of the processed food from the state.

8.58 Private investment in the food-processing sector has increased considerably. Of the total number of 30 applications recommended to Ministry of Food Processing for Financial assistance during 2003-04, nine were sanctioned and an amount of Rs.108.18 lakhs was disbursed by Govt. of India to seven food-processing units. The details of Food Processing Units in KINFRA Parks are given in Table 8.11.

**Table 8.11.**  
**Details of Food Processing Units in KINFRA Parks**

Name of the Park	Total area acquired (in acres)	Food Processing Units								
		Started Production				Commenced Construction				
		No. of units	Area allotted (in acres)	Investment (Rs. Lakhs)	Employment (Nos.)	Activities	No. of units	Area allotted (in acres)	Investment (Rs. Lakhs)	Employment (Nos.)
Kinfra Food Processing Park, Kakkancherry	60	4	9.84	1173.9	108	Edible oil & Vanaspathi, Fractionation & Votator unit, Icecreams, Corrugated boxes, Warehousing & cold storage facilities	4	1.39	385	74
Kinfra Small Industries Park, Trivandrum	40	2	0.90	126.3	26	Spice, rice and wheat powders, Vinegar, pickles, curry powder, rose water, atta, rava, maida and masalas	2	0.45	58	20
Kinfra Small Industries Park, Kasaragod	60	1	0.50	3	10	Ice creams	1	3	950	200
Kinfra Small Industries Park, Mazhuvannu	65	...	...	...	...	...	3	1.57	256.3	67
Kinfra Export Promotion Industrial Park, Kochi	180	...	...	...	...	...	1	6.99	3111	133
Kinfra Small Industries Park, Thalassery	50	...	...	...	...	...	1	0.105	30	5
Kinfra Small Industries Park, Koratty	20	...	...	...	...	...	2	7	908.80	120

Source : KINFRA

8.59 The major problems faced by the food processing industry in the State are lack of awareness on technology, especially in packaging, availability of latest machinery, food quality and safety. Government of India proposes to establish a Food Processing Institute at Konni.

#### Market Development

8.60 The Business to Business Meet (B2B) 2004 conducted at Kochi was a major initiative by the Industries Department. The three-day B2B meet provided a common platform for interaction of the buyers and sellers in the small scale industries sector. More than 50 national and international buyers from Germany, U.K, U.S., the Netherlands, Canada and South Korea participated in this meet. More than 300 buyers from India and abroad and about 300 manufacturing units from the State participated. The meet offered the opportunity to the buyers to come into contact with producers of high quality products in areas like coir, handloom, handicrafts, processed food and spices, chemicals, machinery, Ayurveda, wood based industries and rubber. Besides it opened up a gateway to the products of SSI units to International Market.

#### Traditional Industries

8.61 National Common Minimum Programme of Government of India gives much importance to traditional industries. Even though only Rs. 100

crores is earmarked at present, more funds are likely to be made available by GOI and financing institutions on the basis of viable project proposals. Therefore innovative project reports are to be prepared to seize the advantage.

#### Coir Industry

##### National Scenario

8.62 India accounts for more than 80% of the total world production of coconut fibre. Coir industry employs more than 5.5 lakhs persons and a majority of them are women from rural areas belong to the economically weaker sections of the society. Nearly 80% of the Coir workers are in the fibre extraction and spinning sectors. Apart from India, Srilanka, Thailand, Indonesia etc are the other coir producing countries in the world.

8.63 The development of Coir industry has all along been in areas where there is concentration of coconut cultivation and availability of coconut husks. For historical reasons the coir industry had started and flourished in Kerala, which had a long coastline, lakes, lagoons and backwaters, providing natural conditions required for coir retting. However, with the expansion of coconut cultivation, coir industry is getting strengthened in the States of Tamil Nadu, Karnataka, Andhra Pradesh etc. Thrust areas for development of coir industry are given in Box 8. 12.

#### BOX-8.12

##### Thrust Areas for Development of coir industry

- ❖ Modernisation of production infrastructure by means of approximate technology without displacement of labour.
- ❖ Expansion of domestic market through publicity and propaganda.
- ❖ Promotion of export of coir and new products by undertaking market promotion abroad.
- ❖ Promotion of research and development activities like process improvement, Product development and diversification and elimination of drudgery and pollution abatement.
- ❖ Development of manpower through training
- ❖ Extension of Research and Development findings through field demonstration.
- ❖ Development of coir industry in all the coir producing states in association with State Governments, with priority to potential areas

### Cluster Area Development

8.64 Under the UNDP Sponsored Project, Coir Board has promoted consortia of small scale coir manufacturers and small and medium exporters for manufacture of products in a cost effective manner by sourcing the raw material in bulk and also marketing the products through the consortium by reducing the marketing expenditure. Based on the success of the consortium movement, UNIDO has selected Alappuzha as a cluster for development and initiated activities for promotion of consortium. Already 60 consortia have been formed in the coir cluster with the technical support of Coir Board and this has facilitated the manufacturers in producing coir products in a cost-effective manner.

#### BOX-8.13

#### Coir Cluster at Alappuzha under Industrial Infrastructure Upgradation Scheme (IIUS)

Under IIUS, a project for Coir cluster at Alappuzha at a total cost of Rs. 56.8 crores has been sanctioned by Government of India. First Installment of Rs. 14.2 crore has already been released to the Alappuzha Coir Cluster Development Society. The project will benefit directly 23,000 workers and indirectly about one lakh families through Coir related activities. The upgradation would include areas such as husk collection, defibering process, mechanisation of looms, common facility centre for dyeing bleaching and processing and common effluent treatment units

#### Kerala Scenario

8.65 Coir industry in Kerala is a traditional industry, generating employment to more than 3.75 lakh workers, of which 76% are women. In spite of concerted efforts of the State and Central governments, the Coir industry still remains as backward one, due to the competition from products of other natural as well as synthetic fibers, both in domestic and international markets. Now the sector is suffering from other problems as well. (See Box 8.14).

8.66 There is acute shortage of fibre for the units and unprecedented increase in the price of fibre in the State. Hence, a huge quantity of fibre is imported from outside the State. As part of Government's attempt to promote more defibering mills in the private sector so as to ensure continuous supply of fibre, a 50% subsidy on capital investment has been offered. As such, 23 applicants in private sector have been registered for setting up defibering units and out of it three units have already been started (Two units at Palakkad and one at Alappuzha).

8.67 There are 451 Coir Co-operative Societies in operation out of the 853 registered and only 21 of them are working on profit. A good number of societies are now on the verge of liquidation. Inability to produce new designs and more value added items according to changing taste and preferences of the consumers, lack of R&D activities and lack of innovative marketing are the reasons for the poor performance.

8.68 Details of various types of societies and their activities during 2003-04 are given in Appendix.

8.69 In order to help small-scale producers in the Coir Sector, a Common Facility Service Centre was set up at Alappuzha through Mathruka Mats and Matting Society and an amount of Rs. 30 lakhs was spent for it during the period under review. With a view to supporting the coir workers, an amount of Rs. 200 lakhs was spent for their

#### BOX-8.14

#### Problems of coir sector

- Non-professionalised management system in the Co-operative sector.
- Reluctance to adopt machanisation and modern techniques
- Shortage of husk
- Excessive dependence on Government assistance
- Unhygienic surroundings and conditions in work area of retting and beating operations.
- Failure of worker's co-operatives
- Re-emergence of middlemen

welfare schemes through Kerala Coir Workers Welfare Fund Board during 2003-04. Also an amount of Rs. 100 lakh was expended to implement the Geo-textiles Development Programme.

8.70 Among the items of exports, Coir fibre, Coir rugs, Coir pith, Coir rope, Coir yarn, Geotextiles, Handloom matts, Power loom matts, Power loom mattings and tufted matts have shown an increase in export and curled coir, Handloom mattings and rubberised coir recorded a decrease. Export of coir and coir products from India during the year 2003-04 was 102254.40 tonnes valued at Rs. 407.50 crore as against 84182.55 tonnes valued at Rs. 352.71 crore in 2002-03. USA is the largest importer of Coir products from India. Germany, UK, France etc. are the other major importers. Item-wise details of export of Coir and coir products from India during 2002-03 and 2003-04 are given in Appendix.

8.71 Coirfed, the Apex Federation of the Coir Cooperative Societies, is engaged in the manufacture of Coir fibre, Coir yarn and Coir products. During 2003-04, the turnover of Coirfed decreased to Rs. 541.97 lakhs. Annual sales turnover of Foam Mattings (India) Ltd. Was Rs. 324.34 lakhs and that of the Kerala State Coir Corporation was Rs. 248.42 lakhs. Compared to previous year, the performance of Foam Mattings India Ltd. During 2003-04 was better. It earned a profit of Rs. 4.62 lakhs in 2003-04 against the loss of Rs 10.62 lakhs in 2002-03. But the company is facing stiff competition from private exporters. In the case of Coir Corporation, a decline in the sales has been offset by increase in other income, which has contributed to reduction in loss. Now, the company is engaged in research and promotion of coir geo-textile application and expansion of curled coir unit at Beypore.

8.72 Centre for Development of Coir Technology (C-DoCT) is an institution engaged in R & D activities in the Coir Sector. It is entrusted with the work of setting up the High Tech Coir Park at Perumon of a cost of Rs. 18 crores. A powerloom for the production, research, development and training on coir geo-textiles has been commissioned at the park. Steps have also been taken to establish a National Coir Research and Management Institute at Kudappanakunnu so as to strengthen the R&D activities in coir.

Achievements of R&D under coir sector in 2003-04 are given in Box 8. 15.

#### BOX-8.15

#### Achievements of R&D under Coir Sector - 2003-04

- ❖ Development of a mild steel metallic handloom called 'Anugraha' by Coir Board.
- ❖ Development of a technology for loomless weaving of coir geo-textiles
- ❖ Technology for blending coir fibre with other natural fibres.
- ❖ Under a collaborative project with IIT, New Delhi, Coir Board has developed 16 shades of natural dyes.
- ❖ Under the project on modernisation, extraction and processing of coir, studies on the composting of coir pith using Soya Nitrogen were carried out.

#### Handloom Industry

8.73 The Central Budget 2004 has done away with the mandatory excise duty on pure cotton, wool and silk whether it is fibre, yarn, fabric or garment. But there will be mandatory excise duty on man-made fibre. The removal of excise duty under the central value added tax (Cenvat) system will make export of variety handloom products manufactured by hundreds of handloom weaving units in the private and co-operative sectors more competitive after the phasing out in 2005 of the Multi Fibre Agreement. Kannur being a major export oriented handloom production centre in the State with its exports, accounting for 10 per cent of the total handloom exports in the country, is expected to gain.

8.74 Government of India under Foreign Trade Policy -2004 has declared Kannur as Town of Export Excellence for handloom industry. Details are in Box 8.16.

8.75 The handloom sector in Kerala employs about 1.75 lakh of people and this industry stands second to the coir sector in providing employment among the traditional industries of the State. The handloom industry in the State is concentrated in Thiruvananthapuram and Kannur district and in

## BOX-8.16

**'Town of Export Excellence' for Handloom at Kannur****Benefits**

- Common service providers are entitled for the facilities of the EPCG Scheme.
- The recognised association of units obtain the funds under the Market Access Initiative Scheme.
- Receive priority for assistance for filling infrastructure gaps from the ASIDE scheme.

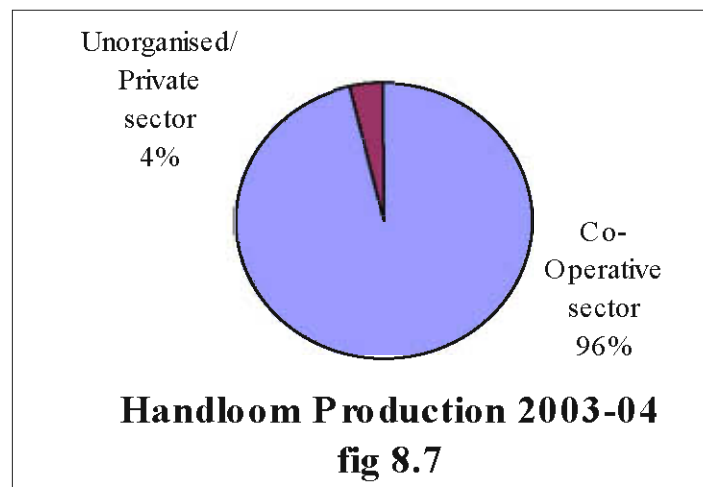
**Infrastructure Development Investment Projections  
over the next five years**

- |   |                    |
|---|--------------------|
| • Production infrastructure upgradation including augmentation of design facilities and post loom processing facilities | -Rs. 20.00 crores  |
| • Container freight station   | - Rs. 4.00 crores  |
| • Common effluent treatment plant   | - Rs. 5.00 crores  |
| • Road network development  | - Rs. 50.00 crores |
| • Handloom accessories producing units  | - Rs. 8.00 crores  |
| • Marketing initiatives   | - Rs. 40.00 crores |
| • Capacity building initiatives   | - Rs. 5.00 crores  |

some parts of Kozhikode, Palakkad, Thrissur, Ernakulam, Kollam and Kasaragod districts. The industry is dominated by the co-operative sector with 94% of looms. The remaining six per cent of handloom units is owned by industrial entrepreneurs. The co-operative sector consists of factory type and cottage type societies. By the end of March 2004 there were 758 PHWCS consisting of 155 factory type and 603 cottage type societies. The district-wise details of handloom societies in the state are given in Appendix.

8.76 Of the total number of 48000 looms in this State, the share of Kannur district is around 11000. There are 73 registered co-operative weaver's societies and 79 private handloom units in Kannur and they are largely engaged in the production of export variety items. The major varieties produced in the handloom sector of the State are dhothis, furnishing material, grey saree and lungi. Estimates show that the production of these items comes to 67% of the total production. About 54% of

the major items are produced in the southern region followed by the North (32%) and Central (14%) regions. The overall production of cloth by handloom societies in Kerala showed a marginal increase of 3.66 million metres from 56.82 million metres in 2002-03 to 60.48 million metres in 2003-04. Of the total production, 96.53 % is contributed by the co-operative sector and the balance of 3.47 % is by the units in the entrepreneurial sector as shown in Figure 8.7.



8.77 Cluster based approach is accepted for the repositioning of the handloom industry in the State. Four consortia had been formed in the handloom sector at Kannur at namely (i) Chirakkal consortium (ii) Kannur South consortium (iii) Irinavu consortium and (iv) Payyannur Handloom consortium. They are in the process of making innovative and trendy designs as well as new marketing networks. Besides these, three other garment consortia have also been registered of which two are charitable societies and one private limited company. Garment clusters are also being developed at Idukki, Kottayam, Ernakulam, Wayanad and Kasaragod.

8.78 The Department has evolved a new strategy for development of handloom industry by involving Self-Help Groups of weavers, a departure from the conventional co-operative approach. Two projects, THANIMA, at a cost of Rs. 1576 lakhs for Thiruvananthapuram district and KRITHIKA at a cost of Rs. 1108 lakhs for Kannur District have been submitted to Government of India for assistance under SGSY. THANIMA has been approved.

8.79 Under Deen Dayal Haatkargha Protsahan Yojana (DDHPY) also cluster development approach was taken as a component for the development of the handloom industry. The DDHPY covers weavers both under co-operative and non-co-operative fold. Project proposals in respect of 385 PHWCS were sent to Government of India, of which 295 were sanctioned and an amount of Rs. 412.47 lakh was released. This along with the state share amounting to Rs. 781.00 lakh has been released to the beneficiary societies. A host of reputed national agencies such as National Institute of Design (NID), National Institute of Fashion Technology (NIFT), National Centre of Textile Design (NCTD), Weavers Service Centre (WSC), Indian Institute of Management (IIM) -Kozhikode etc. are involved in the process of cluster development as support institutions.

#### Promotion of Handloom

8.80 Procurement and marketing of handloom fabrics in the State are being undertaken by two State level organisations viz. Hantex and Hanveev. Hantex is the apex organisation of handloom cooperatives. Main activities of Hantex include distribution of required inputs to member

societies, procurement and processing of goods produced by the member societies. The number of primary societies registered under Hantex increased to 458 during 2003-04 showing a marginal increase of eight societies. The value of yarn purchase increased by Rs. 5.46 crores reaching a high level of 6.71 crores during the year under report. As against 32 exhibitions conducted during 2002-03 Hantex could conduct only 15 exhibitions during 2003-04. The working results of Hantex are furnished in Appendix.

8.81 The Kerala State Handloom Development Corporation (Hanveev) set up in 1968 is another agency to accelerate development of handloom industry in the State. During the year 2003-04 the Corporation procured yarn worth Rs. 506.56 lakhs compared to the procurement of yarn of Rs. 589.66 lakhs in the previous year. Though the total income of the Corporation through sales of products increased from Rs. 1366.54 lakhs to Rs. 1627.37 lakhs in 2003-04, the other income by way of grants, MDA etc showed a decrease. As a result the Corporation incurred a net loss of Rs. 652.18 lakhs during 2003-04 as compared to the loss of Rs. 420.47 lakhs during the previous year. The accumulated loss increased to Rs. 2052.80 lakhs by the end of March 2004. The working results of Hanveev are given in Appendix.

8.82 Kerala Garments Ltd. is a fully owned subsidiary of Hanveev, incorporated in 1974. The main activities of the company are stitching garments on job work and sale of readymade garments. During 2003-04, the company produced 80000 pieces of readymade garments to the tune of Rs.60 lakhs as against the production of 61000 garments worth Rs. 40.00 crores in the previous year. It released stitching charges of Rs.49.02 lakhs and sold ready-mades worth Rs.9.50 lakhs. The loss of the company during the year under report was Rs.60.25 lakhs as against Rs.107.52 lakhs during 2002-03. Though the income of the company increased from Rs. 39.98 lakhs in 2002-03 to Rs. 88.63 lakhs in 2003-04, the expenditure remained almost steady as in the previous year.

#### Power loom Industry

8.83 The total number of power looms in Kerala decreased from 3,900 in 2002-03 to 3,800 in 2003-04 of which 1381 were in the co-operative sector. The looms are mostly found in districts including Kannur, Thrissur and Palakkad. There were 33



powerloom co-operative societies in the State at the end of March 2004. Of this, 12 were active powerloom societies which together account for about 680 power looms in the State. The total production capacity is seven lakh metres of fabric per month and the products being manufactured are grey fabrics, shirting fabrics, churidar material, blouse materials, sarees etc. The production of cloth by power loom societies showed a considerable decrease from 112.56 lakh metres during 2002-03 to 60 lakh metres in 2003-04 registering a decline of 47 per cent.

8.84 The powerloom sector in Kerala is in crisis due to a variety of reasons.

- Lack of modernisation
- Paucity of working capital
- High cost of production compared to neighboring states .
- Poor quality of fabrics.
- Lack of infrastructural facilities for bleaching and dyeing.

#### Handicrafts

8.85 There are number of craftsmen engaged in handicrafts activities. The various agencies engaged for the promotion of handicrafts industry are the Kerala State Handicrafts Apex Cooperative Society limited (SURABHI), Artisans Development Corporation,

Bamboo Development Corporation and Handicrafts Development Corporation.

8.86 Cluster Development model is adopted to ensure all-round development of the handicraft sector. Cane and Bamboo cluster is being developed in Thiruvananthapuram. A consortium was formed by a group of artisans hailing from Chirayinkeezhu, Thiruvananthapuram engaged in making value added products from cane and bamboo. Another handicrafts cluster in Thiruvananthapuram is also developing - artisans engaged in woodcraft & carving have registered a consortium. In Palakkad district at Thenkurissi Panchayat Bamboo consortium has been formed. The developing craft clusters in the State are given in Table 8.12.

**Table 8.12**  
**Craft Cluster Profile**

Craft	Places of concentration	No. of craft persons (approximate)
Bell Metal Craft	Alappuzha, Kottayam, Thrissur, Palakkad, Kannur	3600
Cane & Bamboo	Thiruvananthapuram, Kollam, Ernakulam, Idukki, Wayanad, Kottayam, Pathananthitta, Thrissur	87000
Wood	Thiruvananthapuram, Kollam, Malappuram, Thrissur	41000
Wood-based craft	Thiruvananthapuram, Ernakulam, Kottayam, Thrissur	3200
Lace & Embroidery	Thiruvananthapuram, Kollam	9000
Paper machine	Thiruvananthapuram, Alappuzha, Palakkad, Kozhikode	690
Straw picture	Kollam, Pathananthitta	1000
Screwpine craft	Thiruvananthapuram, Kollam, Kottayam, Thrissur	15000
Coconut shell/stem/ husk/ carving & hookas	Thiruvananthapuram, Kollam, Idukki, Kozhikode	500
Artistic pottery	Malappuram, Thrissur, Palakkad Thiruvananthapuram, Ernakulam,	435
Fibre (Banana, palm fibre, Tali pot fibre, palm leaf, cora grass, vetiver, peepal leaf etc.)	Thiruvananthapuram, Kottayam, Ernakulam	2000

Source: Directorate of Industries & Commerce, Tvpm.

8.87 The SWOT analysis of handicrafts industry in Kerala is given in Box 8.17.

8.88 Kerala State Handicrafts Apex Co-operative Society (SURABHI) was started in 1964 with the objective of uplifting the standard of living of handicraft artisans by marketing their products and implementing various welfare schemes with the assistance from State and Central

Government. This apex society has about 102 primary co-operative societies which market their products through 16 sales showrooms 12 in Kerala and four outside the State. During 2003-04 the apex society purchased goods worth Rs. 183 lakhs and achieved sales of Rs. 250 lakhs registering a decrease of 7.11 per cent and 19.09 per cent respectively compared to the previous year.

**BOX-8.17**

**SWOT Analysis**

**Strength**

- ✧ Eco-friendly, Ethnic & Elegant craftsmanship
- ✧ Indigenous augmentation of raw material resource
- ✧ Fast developing tourism industry
- ✧ Crafts out of cultural fusion (lace work, embroidery, batik painting, straw picture etc.)
- ✧ Educated artisan base
- ✧ Versatile adaptive skill of artisans
- ✧ Easy to adapt to non tariff barriers (Child labour, drudgery, satisfactory quality of life)
- ✧ Easy access to international market

**Weakness**

- ✧ Ageing artisan base
- ✧ Lack of infrastructure support services including design, technology, skills and marketing
- ✧ Lack of value chain management
- ✧ Poor quality consciousness
- ✧ Poor raw material management
- ✧ Lack of continuous flow of commercial intelligence
- ✧ Untapped export market

**Opportunity**

- ✧ Growing export - @ 20% annually
- ✧ WTO regime
- ✧ Preference to ethnic crafts – internationally
- ✧ Fast developing craft clusters – (21 nos.)
- ✧ Growing craft tourism

**Threat**

- ✧ Preferential trade agreements (preferably with neighbouring countries like Sri Lanka, Bangladesh, Thailand etc.)
- ✧ Non tariff barriers in international trade
- ✧ Lack of institutional finance at affordable interest rates
- ✧ Competition from products of economically strong countries like China.

8.89 The Kerala Artisans Development Corporation Ltd. has been nominated as one of the State channelising agencies for the implementation of schemes financed by the National Backward Classes Finance and Development Corporation (NBCFDC). The main activities of the corporation include assistance to artisans for establishing production units, promoting marketing of products and providing employment opportunities directly and indirectly through schemes of trade fairs and marketing centres. The loss of the Corporation during the year 2003-04 was Rs.9.37 lakhs as against Rs.11.28 lakhs during previous year. During the year 2003-04 the Corporation organised crafts bazar 2003 in Thiruvananthapuram and Kozhikkode on behalf of the Central Government and achieved a total turnover of handicrafts products of more than Rs.1.50 lakhs. Through its marketing centres the Corporation undertook work orders worth Rs.75 lakhs from various agencies.

8.90 Handicrafts Development Corporation has a net work of 19 emporia all over the country. The activities of the Corporation include marketing, raw material supply, production, infrastructure support, consultancy and workers welfare. During the year 2003-04 the Corporation organised 35 exhibition-cum sales in various parts of the country. The total sales turn over of the Corporation decreased from Rs.1048 lakhs in 2002-03 to Rs.945.43 lakhs in 2003-04. During the year 2003-04 the Corporation supplied raw materials worth Rs.10.13 lakhs to artisans at subsidised rate. It showed a decline of 42 per cent compared to the previous year. Six projects for development of craft clusters in Kerala under the Ambedkar Hastashilp Vikas Yojana and the setting up of Keral Haat at Thiruvananthapuram at a cost of Rs. 2.52 crores have been sanctioned by Government of India. The Corporation is making arrangements for exporting handicraft products to foreign countries like U.K., U.S.A. Germany, Spain, Italy etc. In 2003-04 the Corporation achieved a total export sale of Rs. 26.52 lakhs.

8.91 Kerala State Bamboo Corporation works for the upliftment of the workers belonging to mainly socially and economically backward communities engaged in the reed based cottage industry. The major activities of the Corporation

include i) collection of reeds from forest ii) distribution of reeds to the registered mat weavers and sale to other traditional workers iii) procurement of bamboo mats and iv) production and sale of bamboo ply.

8.92 Bamboo industry provides direct employment to one-lakh workers. During 2003-04 the Corporation produced goods such as bamboo ply and bamboo mats of 347.18 lakh sq. ft. valued at Rs. 973.51 lakhs. Sales turnover for the period 2003-04 was Rs. 892.90 lakhs as against Rs. 996.27 lakhs in the previous year. The loss of the Corporation increased by 144.22 lakhs reaching a high level of 256.82 lakhs registering 128 per cent increase. The main problem faced by the Corporation is marketing of the product. The market for bamboo mats and bamboo ply are coming down due to the entry of low cost and artificial substitute materials.

8.93 The State Bamboo Mission intends to secure the foundations for a sustainable bamboo based economy providing livelihood and economic security to artisans, craftsmen, planters and industrial workers through a broad-based association linking Government, NGOs, SHGs and local governments. As a part of expanding the area under bamboo plantation, 80000 hectares outside the forest area are to be covered, which can be achieved through plantations on rivers/stream sides, along roads, wastelands from clay mines etc. Kerala Forest Research Institute has a supply stock of 37000 seedlings of various species of bamboo for planting. Twenty-five panchayats were identified for plantation and seedlings supplied free of cost. KFRI would also provide the technical know-how on planting and maintenance of the bamboo seedlings. The seedlings have been distributed in Wayanad, Palakkade and Ernakulam districts. Uravu, an NGO was identified as one of the training centres for conducting training programmes for artisans and craftsmen.

8.94 Three day 'Kerala Bamboo Fest 2004' organised by the Department of Industries in association with State Bamboo Mission and related agencies and organisations in the State provided a platform for artisans, craftsmen and industrial units in the bamboo industry to showcase their products. Government has decided to declare

Bamboo as a Non Wood Forest Product (NWFP)

### Cashew Industry

8.95 At present there are nearly 1100 cashew processing units in India demanding one million tonnes of raw nuts. In Kerala there are 398 processing units employing about 223000 workers. The processing capacity of these units is about 5 lakh tonnes of raw nuts per year

8.96 The Kerala State Cashew Development Corporation (KSCDC) and Cashew Workers Apex Cooperative Society (CAPEX) are the two State agencies engaged in the cashew processing sector in Kerala. After lying closed for more than 31/2 years all the 30 cashew factories of KSCDC spread out in the districts of Thiruvananthapuram, Kollam, Alapuzha, Thrissur and Kannur reopened on 6.12.2004. The State Government took over the KSCDC's liability of Rs. 107 crores in order to facilitate the reopening of the factories. The 30 factories employ more than 20000 workers, a majority of them women. The Corporation has finalised deals to import 8000 tonnes of raw cashew. KSCDC exports cashew kernels and cashew nut shell oil.

8.97 The apex society could provide employment for 51 days during 2003-04 as against 29 days during the previous year. CAPEX incurred a loss of Rs. 177 lakhs as against Rs 136 lakhs during the previous year recording 30 per cent increase. There are 4219 workers and staff under CAPEX.

8.98 The cashew industry has started to introduce the HACCP system to achieve the food safety standards demanded by the highly competitive international market

### Khadi and Village Industries

8.99 Khadi and Village Industries Board's carries out its activities through co-operative societies, registered institutions and departmental units by availing financial assistance from the State Government, Khadi Commission and nationalised banks. The performance of the Khadi and village Industries sector of Kerala compared to the National level is given in Table 8. 13.

8.100 A major scheme of the KVIC for employment generation is the Rural Employment Generation Programme (REGP). A comparative picture of the implementation of the REGP in southern states is provided in Table 8. 14.

**Table 8. 13**  
**Performance of Khadi & Village Industries**

Indicator	All India		Kerala	
	2002-03	2003-04	2002-03	2003-04
Production (Rs crores)	8569.37	9715.91	182.59	184.74
Sales (Rs crores)	10193.34	11589.96	198.32	207.40
Employment (Lakh Nos.)	66.45	71.18	1.77	1.72

Source: Annual report 2003-04, Ministry of Agro & Rural Industries, GOI.

**Table 8. 14**  
**REGP Projects in Southern States as on 31-3-2004**

State	No. of Projects	Margin Money Utilisation (Rs. Lakhs)	Employment (Nos.)
Andhra Pradesh	1079	1670.83	31707
Karnataka	1422	1692.17	29959
<b>Kerala</b>	<b>2046</b>	<b>2753.15</b>	<b>50293</b>
Tamilnadu	1568	1362.17	24028
All India	24747	26438.02	469030

Source: Annual Report 2003-04, Ministry of Agro & Rural Industries, GOI.

8.101 During the year KVIB, Kerala sanctioned Rs. 1006.08 lakhs as margin money grant to 868 units for their loan from various financial institutions. The total investment by these units comes to Rs. 3695.73 lakhs providing employment to 7038 persons. The Board also implemented the new scheme of KVIC, viz. PRODIP (Product Development Design Intervention and Packaging) during the year.

8.102 The Board could produce goods worth Rs. 184.73 lakhs and sell goods for Rs. 207.40 lakhs through its 240 sales outlets in 2003-04.

8.103 The Board won the award for the best pavilion among the public sector undertakings which participated in India International Trade Fair 2003 at New Delhi.

#### Sericulture

8.104 Sericulture is an agro-based industry, promoted as a subsidiary occupation in Kerala. Kerala State Sericulture Co-operative Federation (SERIFED) is the nodal agency for promoting Sericulture activities. In spite of concerted efforts the industry could not take off as envisaged. Hence a new strategy for the development of Sericulture was introduced during the 10<sup>th</sup> plan period, which has mainly three components, namely (i) Cluster based development, (ii) Active Investment of local body and member societies (iii) Emphasis on Post Cocoon Technology sector.

8.105 The overall performance of the Serified during the first two and a half years of the 10<sup>th</sup> plan reveals positive signs of development. A

cluster-based approach for development of sericulture has been adopted and is in operation in 125 Grama Panchayaths covering 40 clusters. The cocoon production was 59.11 MT in 2003-04 as against 33 MT in 2002-03. Silk production crossed four tones. Silk fabric production was undertaken on an experimental basis during 2003-04. A silk weaving unit has been set up at Mangalathukonam in Balarampuzha at an estimated cost of Rs. 17.40 lakhs.

8.106 Performance under sericulture with regard to mulberry plantation, number of farmers covered, DFLs distributed and raw silk yarn produced is given in Table 8. 15.

8.107 The physical achievements of sericulture sector are shown in Appendix.

#### Mining

8.108 Kerala is endowed with a number of deposits such as Heavy Mineral sand China Clay, Iron Ore, Graphite, Bauxite, Silica sand, Lignite, Lime shell, Granite etc. However mining activities on large scale are confined mainly to a few minerals such as Heavy Mineral sand, China clay, Silca sand, Limestone and Graphite. In fact, Heavy Mineral sands and China clay contribute more than 90% of total value of mineral production in the State. An inventory of the mineral resources of the State is given in Table 8.16.

8.109 The Department of Mining & Geology has conducted investigation for China clay in

- Pallipuram area West of CRPF Group Centre – Thiruvananthapuram
- Nallimoodu area Veilur village
- Morthana near Manjeswaram in Kasaragod

**Table 8. 15**  
**Status of Sericulture**

Year	Plantation acre (cumulative)	No. of farmers (cumulative)	DFLs distribution (Nos.)	Cocoon production (kg)	Raw Silk Production (kg)
2002-03	1414	2366	98369	33229	2602
2003-04	1981	3216	154125	59113	4041
2004-05 (Up to Sept. 2004)	2536	3802	94230	34909	1826

Source: Serified

**Table 8.16**  
**Mineral Resources of Kerala**

Sl. No.	Name of Mineral	Location	Estimated Reserves (MTs)
1	Mineral Sands	Chavara, Kayamkulam Belts-Kollam District	128.00
2	Silica Sand	Cherthala, Alappuzha District	70.00
3	China Clay	Thiruvananthapuram, Kollam, Kannur & Kasaragod Districts	172.00
4	Fire Clay	Kollam, Alappuzha, Ernakulam, Thrissur & Kannur Districts	11.50
5	Ball Clay	Thiruvananthapuram, Kollam, Kannur & Kasaragod Districts	5.67
6	Limestone	Pandarathu, Walayar-Palakkad, Kollam & Kottayam Districts	24.00
7	Limeshell	Vembanad lake & Adjacent areas - Alappuzha & Kottayam Districts, Coastal tracts of Kannur & Kasaragod Districts & Estuaries of Periyar & Kadalundipuzha	1.50
8	Graphite	Thiruvananthapuram, Kollam, Kottayam & Ernakulam Districts	2.10
9	Iron Ore	Kozhikode & Malappuram Districts	84.00
10	Bauxite	Thiruvananthapuram, Kollam, Kannur & Kasaragod Districts	12.50
11	Gold	Maruda, Nilambur, Malappuram District	
12	Primary Gold	Wayanad Gold Field- Wayanad District, Attappadi Valley, Palakkad District	0.50
13	Placer Gold	Nilambur Valley, Malappuram District	2.50 cbm
14	Talc/ Steatite	Kozhikode & Kannur Districts	7.86
15	Magnesite	Salayoor, Mulli- Palakkad District	0.03
16	Lignite	Kannur & Kasaragod Districts	9.65

Source: Department of Mining and Geology.

- Miyapadavu area in Kasaragod

8.110 Based on the recommendation of the Public Accounts Committee of the Kerala Legislature, the Department undertook mapping of minor mineral quarries in Kollam, Thrissur and Ernakulam districts. Geo-chemical survey was carried out in and around Pirmed. Environmental impact assessment of various sand./ brick clay/ tile clay mining areas of Udayanapuram Grama Panchayath in Vaikom Taluk, Kidangoor Grama Panchayath in Meenachil Taluk and Enadikkara of Chembu village was carried out.

8.111 Bunka drill was fabricated to perform drilling operations in shallow water table areas.

Drilling was carried out using the bunka drill at Sreenivasapuram in Vellanadu Panchayat for assessment of sand reserve. Assessment of quantity of the accumulated deposits in the upstream side of the Peppara Reservoir has been conducted.

8.112 Identification of palaeochannels of three major rivers (Pamba, Periyar and Bharathapuzha) as an alternative source of sand for construction purpose using remote sensing techniques was started in collaboration with Geological Survey of India

## CHAPTER 9

## TOURISM

**Introduction**

World Tourism sector witnessed a set back in the year 2003 owing to three negative factors- the Iraq conflict, SARS and persistently weak economy. But there was no impact of these factors on Tourism in India. Foreign tourist arrivals stood at 27.52 lakhs and foreign exchange earnings at Rs. 17049 crores in 2003 against 23.62 lakh foreign tourist arrival and Rs 14195 crores of foreign exchange earnings in 2002. Thus Indian Tourism grew well with an increase of 16.54 % in foreign tourist arrivals and 20.11% in foreign exchange earnings over the previous year.

**BOX- 9.1****WTTC- Report**

As per the World Travel and Tourism Council's (WTTC) search in 2004, the India's Travel and Tourism Industry is expected to generate 2% of GDP and 11,404,000 jobs, while the broader Travel Tourism economy is expected to total 4.9 percent of GDP and 244,56,606 jobs. Again the Travel and Tourism demand is expected to achieve 10 % real growth in 2004 and 8.80% real growth per annum between 2005 and 2014.

**Performance of Kerala Tourism**

9.2. In recent times, tourism has emerged as Kerala's core competency sector creating employment, enhancing production, productivity and contributing significantly towards the development of the State. This has been made possible mostly on account of the government's policy of activist facilitation and public- private partnership. The State has focussed on the

building of infrastructure, marketing of the destination and creation of an environment where the private sector can invest and generate wealth for itself and the society.

**Foreign tourist arrivals**

9.3 Foreign tourist arrivals in Kerala increased to 294621 in 2003 from 232564 in 2002 showing an increase of 26.68%. Ernakulam stood first in foreign tourist arrival in the state followed by Thiruvananthapuram, Idukki, Alappuzha and Kottayam. These five districts attracted more than 93 per cent of the total foreign tourists to Kerala. The district wise details of foreign tourist arrivals in Kerala from 1999 to 2003 is given in Appendix 9.1. The details of foreign tourist arrivals in Kerala and in India from 1999 to 2003 are given in Appendix 9.2

9.4. The following Table 9.1 and Figure 9.1 give a comparison of growth rates of foreign tourist arrivals in Kerala, India and World.

**Domestic Tourist Arrivals**

9.5 Domestic Tourism plays a vital role in achieving the national objectives of promoting social and cultural cohesion and national integration. Its contribution to generation of employment is also very high.

9.6 Domestic tourist arrivals in Kerala increased to 58.71 lakh in 2003 from 55.68 lakh in 2002 showing an increase of 5.44 %. Details of domestic tourist arrivals in Kerala from 1999 to 2003 are given in Appendix 9.3. Thrissur district could attract the largest number of domestic tourists(13.69lakh).District-wise details of domestic tourist arrivals during 2002 and 2003 are given in the Table 9.2.

Table .9.1  
Foreign Tourist Arrivals  
(No in Lakhs)

Year	Kerala		India		World.	
	No.of Tourists	% of variation over previous year	No.of Tourists	% of variation over previous year	No.of Tourists	% of variation over previous year
1999	2.02	6.44	24.82	5.23	6504	3.81
2000	2.10	3.84	26.24	5.73	6873	5.67
2001	2.08	-0.53	25.37	-3.31	6841	-0.47
2002	2.33	11.37	23.62	-6.92	7026	2.70
2003	2.95	26.68	27.52	16.54	6940	-1.22

Source : Department of Tourism

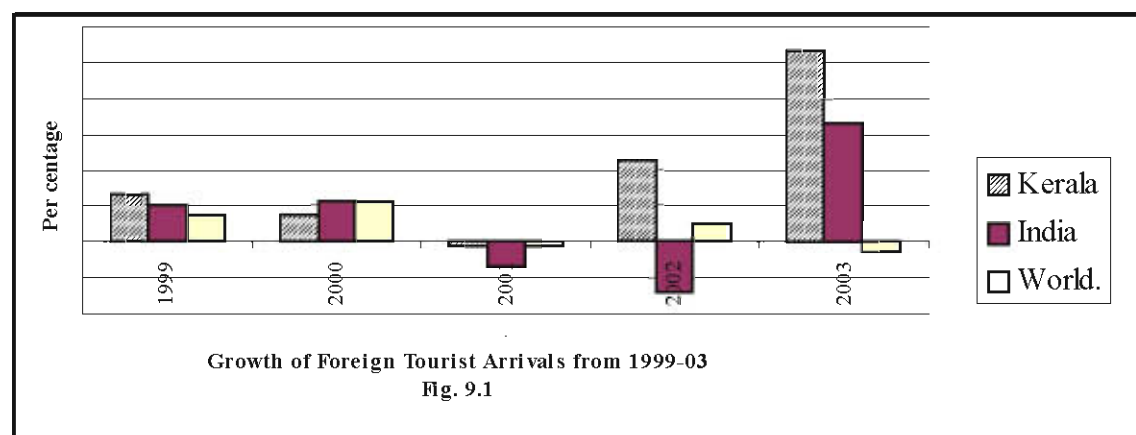


Table No. 9.2  
District -Wise Domestic Tourist Arrivals – 2002 & 2003

Sl.No	District	No. of Tourists	
		2002	2003
1	Thiruvananthapuram	775225	865048
2	Kollam	91331	101890
3	Pathanamthitta	67514	68014*
4	Alappuzha	139305	172119
5	Kottatam	160269	162779
6.	Ernakulam	961820	1001938
7.	Idukki	366861	420960
8.	Thrissur	1369419	1390491
9.	Palakkad	266438	271169
10.	Malappuram	272911	295102
11.	Wayanad	202291	202909
12.	Kozhikode	442602	461814
13.	Kannur	317879	319338
14.	Kasargode	134391	137657
	Total	5568256	5871228

\* Pilgrim tourism is excluded.

Source: Dept. of Tourism



- **Earnings from Tourism**

9.7 Earnings from tourism in Kerala increased to Rs. 983.37crores in 2003 as against Rs.705.67crores in2002 registering an increase of 39 percent.. The earnings from tourism from1999 to 2003 are shown in Appendix 9.4

- **Employment Generation**

9.8 Travel and Tourism industry directly and indirectly contributes nearly 8 lakh jobs in the State, which is 6.2% of the total employment.

**Infrastructure Development.**

9.9 Department of tourism has initiated various projects for the development of basic infrastructure at tourist destinations, improvement of tourism attractions at the destinations and creation of en-route facilities. These projects are executed either directly by Department of Tourism or through Line Departments or other government agencies. The important initiatives under infrastructure development are;

- Infrastructure Development along the Backwaters at Alapuzha, Kumarakom and Thanneermukkom
- Houseboat terminals at major backwater nodes
- Integrated development of the Pamba-Kuttanad backwater region
- Integrated development of the Ashtamudi backwaters
- Extension of backwater based tourism activities to the Malabar area
- Mater Plan for Backwaters of Kerala.

9.10 Bekal Resorts Development Corporation is implementing a water supply Project as part of developing infrastructure in the project area. Three Resort developers have signed agreement with the Company for the development of Resort sites.

**Joint Sector projects for quality infrastructure**

9.11 The following joint sector projects are cleared for implementation.

- Amusement park at Veli: 7.5 hectares of land at Veli is ready for handing over to Southern Fun City for the construction of an amusement park
- Marina at Kochi : government sanction is

received for setting up the Marina in Bolgatty Island. Government of India has also sanctioned Rs. 4.23 crores for this joint venture project

- Golf Course, Kochi : Government has approved the selection of the architect and formal approval to start the project from Cochin Port Trust is being awaited.
- Dreamcity project, Kozhikode: Government has accorded a sanction for setting up a theme park on a joint Venture basis and entrusted ICICI Kinfra to structure the project and TRKL to be the nodal agency to implement this project .For initial starting of the project, about 13 acres of land owned by KWA has been identified and the process of transfer of this land to TRKL is on.
- Airport Hotel Project, Nedumbassery, Kochi: An Airport Hotel project is being taken up on a joint Venture basis to be implemented at Nedumbassery, Kochi.
- Leela Group to start five-star hotel at Bekal : Leela Group is to construct a five-star hotel at Bekal in Kasaragod District as part of its project to tap the tourism potential of North Kerala

**Tourist Accommodation**

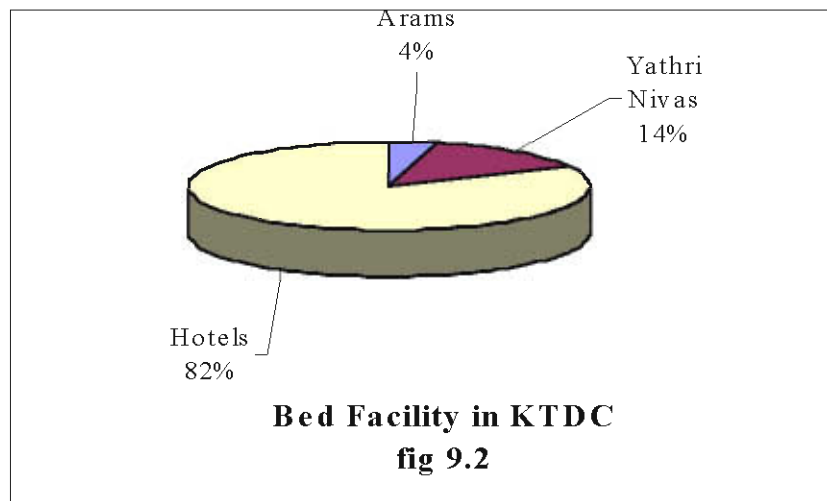
9.12 The hotel sector forms one of the most important segments of the tourism industry with high potential for employment generation and foreign exchange earning. Nine National Tourism Awards were presented to the classified hotels in India of which Kerala bagged two.

9.13 Kerala has to its credit a total of 5049 classified rooms, the maximum number of rooms being in 3-Star. The details of availability of accommodation facility in classified hotels in 2002 and 2003 are given as Appendix 9.5.

9.14 Kerala Tourism Development Corporation (KTDC) offers quality as well as budget accommodation, transport facilities, wayside amenities etc. The total bed facility with KTDC is 414630 (Motel Arams – 15840, Yathri Nivas – 58320 and Hotels – 340470). Details are as shown in Figure 9.2

**Eco-Tourism**

9.16 To enforce a drive for sustainability, Kerala Tourism introduced Eco Kerala, an eco-certification programme. The Department will



eco-certify all tourism service providers abiding by the accepted eco-friendly norms of the world.

9.17 Preparation of Master Plan for Ecotourism and Wild Life in Kerala is going on to make use of this potential segment. Thenmala Ecotourism features a tourist facilitation center, shop court, garden, plazas, picnic area, nature trail, rock climbing, river crossing, amphitheater, restaurant, suspension bridge, lotus pond, musical dancing fountain, sculpture garden, deer rehabilitation center, boating, battery powered vehicles etc.

9.18 The other initiatives on promotion of Ecotourism activities are:

- The Department of Tourism in consultation with the Forest Department has selected consultants for developing Ecotourism Products in all Wildlife Sanctuaries and National Parks.
- The Forest Department is evolving modalities for developing community based

Ecotourism Products in the already identified potential and Ecotourism spots through the institution of Vana Samrakshana Samithi/Eco Development Committees. Certain successful models of these efforts are programmes at Athirapally, Vazhichal and Thekkady.

- Government have constituted a "Committee for Ecotourism" as per the recommendation of the Commission "World Trade Organisation Concerns in Agriculture". The Committee is expected to draw up a detailed business plan for development of Ecotourism.

#### Quality Measures

9.19 Approval system to ensure quality of services and facilities and tourism products has been strengthened. Approval of motels, ayurveda centres, houseboats, amusement parks, handicrafts emporia etc are being ensured. The Government have sanctioned a new scheme for the approval of Restaurants also.

#### Facilitating private sector

9.20 Ever since tourism was declared an industry several incentives, which were available to investors in other industrial sectors, have been extended to the tourism sector as well by the State Government. These include subsidies, technical guidance, marketing assistance, publicity through governmental publications, help in availing loans etc.

#### BOX-9.2

#### Earnings from Eco tourism Project Thenmala (Rs. lakhs)

Financial Year	No. of tourists visited	Revenue generate
2000-01	26148	4.95
2001-02	41161	11.39
2002-03	65075	21.48
2003-04	118404	40.45

## New Initiatives

### (a) Village Tourism

9.21 Kumbalangi Tourism Village project is the latest initiative of Department of Tourism. Any form of tourism that showcases the rural life, art, culture and heritage at rural locations, thereby benefiting the local community economically and socially as well as enabling interaction between the tourists and the locals for a more enriching tourism experience can be termed as rural tourism, Kumbalangi, the rural village with diverse attractions and located very close to Kochi City has been selected by Kerala Government to develop as a model tourism village, Kumbalangi has unique attractions like large cluster of China – Vala', fish farms, house hold industries like Copra and coir making, very typical local cuisine's etc and inherent rural habitat, culture and traditions

### (b) Niche Markets

9.22 A new trend of tourism focusing on heritage and unique ethnic features is emerging. Preference for original and natural settings is developing among high end tourists. Tourist entrepreneurs in the State are fast adapting to this market demand by utilising existing traditional households, organic plantation of local crops etc. to attract exclusive tourists.

### (c) Special Tourism zones

9.23 Government is coming out with a legislation to declare certain areas within the tourist area as 'Special Zone's for the conservation, preservation and planned development of the area to ensure sustainable development.

### (d) Tourism Clubs

9.24 About 5000 tourism clubs are to be launched in Plus Two schools and colleges in the state in the next three years. Around 1400 clubs have already been set up with the objective of increasing awareness.

### (e) Conservation of Heritage

9.25 The architectural marvels of Kerala like the sprawling nalukettus, ettukettus and other traditional homesteads eloquently reflect the rich history and heritage of the State. A unique project, 'Grihasthali' envisages converting these heritage buildings for ethnic tourist accommodation

9.26 The first phase of the preservation project of the heritage zone of Fort Kochi and Mattancherry was successfully completed.

9.27 Another project has been implemented for the preservation of East Fort, Thiruvananthapuram as heritage zone.

9.28 Kerala Tourism Department has signed an MoU with Indian National Trust for Art and Cultural Heritage (INTACH) for protecting, conserving and preserving the cherished architectural, natural, cultural and material heritage of Kerala.

9.29 Conservation activities initiated at identified Heritage sites include development of Koyikkal Palace, Nedumangadu, Thiruvananthapuram Gateway at Shri. Swathithirunal College of Music, conservation of pavilion building in the Trivandrum Golf Club compound, conservation and preservation of Fort Kochi Heritage Zone project, integrated development of Pazhassi Raja Museum, Kozhikode, conservation of forts in Kasaragod district, conservation of St. Francis Xaviers Forane Church, Trissur, conservation and restoration of paintings in Napier Museum, conservation of Arakkal kettu, conservation of mural paintings at Trukacham urussi Temple. conservation of heritage building – Sree Chitra art Galery, Cultural Museum and Folk theatre at Kannur, beautification of Palakkad fort and its premises, Sakthan Tampuran Palace heritage gardens and archaeological park, Thrissur.

### (e) Development of Zero Waste Tourist Centres

9.30 The Department of Tourism is implementing a project called 'Zero Waste Kovalam' worth Rs. 71 lakhs, intended to make the international tourist destination Kovalam a waste-free zone. The project is implemented under the initiative of Panchayats viz., Venganoor and Vizhinjam along with Kerala Hotel and Restaurant Association, self-help groups and the voluntary organization 'Thanal.'

### Human Resource Development

9.31 Kerala Institute of Travel and Tourism Studies (KITTS) imparts quality education and training in the field of Travel & Tourism. Kerala Institute of Hospitality Management Studies

(KIHMS), the hospitality wing of KITTS is offering courses targeted at the hospitality sector. The Institute also develops and implements continuous training programmes to the host community, which includes tourist taxi/autorickshaw drivers, guides, Information Assistants, Immigration and Customs officials and Home stay operators, to be visitor friendly and thus create a mindset to the concept of tourism. KITTS also undertake awareness campaigns in various schools and colleges in the State through training programmes for Teacher Co-ordinators and Student Co-ordinators of Tourism Clubs.

#### Awards and Recognition for Kerala Tourism

9.32 Kerala Tourism continued to win world level awards and recognition. Important ones are;

- 2003 PATA Gold award for marketing as well as for its CD-ROM titled “Kerala.- The Green Symphony”
- Kerala is the only tourism destination selected as Superbrand in India
- World Tourism Organisation (WTO) selected Thenmala eco-tourism project as one of the best 64 eco-friendly tourist destinations, spread over 47 countries.
- Kerala Tourism won best debut destination award at Otdykh – leisure 2003, Moscow.
- Kerala bagged PATA grand Award for Heritage for Fort Kochi Project
- Kerala won Pacific Asia Travel Writer’s Association (PATWA ) International Award for Leisure Tourism
- Kerala Tourism bagged the National Award for best performing State four times during the last 5 years.
- Six National Awards from Government of India during 2003-04 consisting of Best performing State, Most effective use of Information Technology, Best Practices by State Government, The Best Eco-friendly projects: Zero Waste Kovalam & Thenmala, The Best Eco-friendly tourism organisation and the Best Maintained Tourist Friendly Wild Life Sanctuary: Tiger Reserve Thekkady.
- Kerala bagged PATA Grand Gold Award for Heritage for the East Fort Conservation Project, Best CD-ROM – ‘Niramaya’, Best Eco-tourism Project, in the year 2004.
- During 2004 Kerala Tourism’s seven-brochure kit, ‘Life in a New Light and CDs’, “Where the Season Never Ends – Malabar Mystique” and “A Day with the Masters” won the India Association of Tour Operators (IATO) awards for the best brochure and the best CD.

## CHAPTER 10

# INFRASTRUCTURE

Availability of good quality infrastructure is a prerequisite for sustained economic growth. Infrastructure forms the foundation on which social, economic and industrial development is built

constitutes only 1.76 per cent of the total road length, it carries forty percent of road traffic. The total length of National Highways in the country is 65,569 kms.

### Road Transport

10.2 India has a large network of roads, aggregating to 3.3 million kms, comprising of National Highways, State Highways, Major/ Other District Roads and Village/ Rural Roads.

### National Highways in Kerala

10.4 The length of National Highways remained stagnant without any increase or decrease during 2003-04. National Highways in Kerala is only 2.3 percent of the National length spread over a length of 1523.954 km in eight stretches. Improvement and strengthening of 320 km of National Highways was carried out by providing Bituminous Macadam and Asphaltic concrete in the year 2003-04.

10.5 State wise allocation of funds from Ministry of Road Transport & Highways (MORTH) for development and maintenance of National Highways during 2003-04 is given in the Table 10.1

#### BOX-10.1

#### Largest Road Network in the World

India has one of the largest networks of Roads second only to United States of America, in the World. Structure and quality are however very poor for rest of the roads.

10.3 Initiatives have been undertaken in recent years to set the stage for a quantum leap in India's road system. These initiatives combine new institutional arrangements, highway engineering of international standards, and self-financing revenue model comprising tolls and a cess on fuel. Roads in India carry 65 percent of the freight and 87 percent of the passenger traffic. Reports indicate that there is an annual growth rate of seven to ten percent in road traffic of the country. Even though the length of National Highways

**Table 10.1**  
State wise allocation of funds from MORTH for development and maintenance of NH during 2003-04

Name of State	Development Allocation			Rs in Crore Maintenance Allocation
	NH (O)	P.B.F.F	Total	
Andhra Pradesh	103.00	7.51	110.51	37.42
Karnataka	146.37	3.98	150.35	38.73
Kerala	95.00	4.86	99.86	20.81
Tamil Nadu	87	2.04	89.04	41.36
All India	1774.00	86.00	1860.00	731.74

NH (O) - from plan fund

PBFF - Permanent Bridge Fee Fund

Source: Annual Report 2003-04 (MORTH)

### State Road Network

10.6 The major development indicators of Transport and Communication sector in the State since 1998 are given in Appendix 10.1. Kerala

has a total road length of 1,45,704 kms of which 45,249 kms (31.05%) is surfaced. Road density in the state is 374.9 km/100 sq. km and it is far ahead of the national average of 74.9 km/100 sq km. The length of road per lakh population is 462.6 km much higher than the national average of 259.2 km.

10.7 The total road length in Kerala during 2003-04 increased to 1,45,704 km from 1,38,196 km in the previous year registering an increase of 5.15 per cent. The roads maintained by Panchayats increased by 3.62 percent in 2003-04. Roads maintained by different agencies is given in Table 10. 2. Category of road net work in Kerala is shown in figure. 10. 1

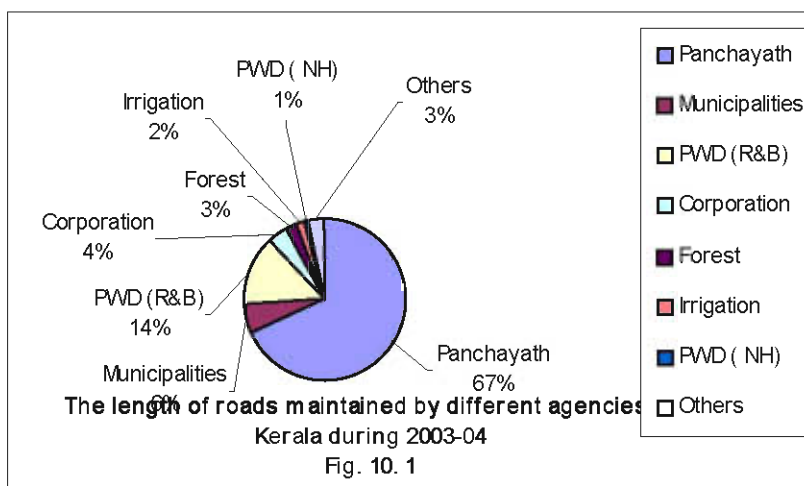
**Table 10. 2**  
**Agency wise Distribution of State Roads**

Name of Department	Length (km)	Percentage
Panchayats	98973	67.92
Municipalities	7696	5.82
PWD (Roads & Bridges)	21467	14.73
Corporation	5882	4.03
Forest	3926	2.69
Irrigation	2359	1.62
PWD (NH)	1523	1.04
Others ( Railways, KSEB)	3874	2.65
<b>Total</b>	<b>1,45,704</b>	<b>100</b>

roads with a length of 2173.427 km (10.12 %). Wayanad district has the lowest share with 515.897 (2.4%). Details of district-wise, category wise and surface wise length of road maintained by PWD (R&B) as on 31.3.2004 are given in Appendices 10.2 and 10.3. The district wise – and surface wise length of road maintained by PWD as on 31.3.2004 are given in appendices 10.4 to 10.6. Government has approved a proposal for conversion of 6000 kms of Other District Roads (ODR) to Major District Roads (MDR).

10.9 As on 31.3. 2004 there were 2024 Bridges and 47,605 culverts on the PWD roads. Of them, 182 bridges need reconstruction/renovation and 1,654 culverts are not in good condition.

10.10 Kerala envisages a significant role for the private sector in financing, the construction of highways. The State enacted the Kerala Road Fund Act 2001, which inter alia, provides for the setting up of the Kerala Road Fund with identified and dedicated revenue sources and sets out the framework for private sector participation in the development of highways.



**Kerala State Transport Project (KSTP)**

10.11 This is a World Bank assisted project. The project envisages upgradation of 584 kms of road and maintenance of 1143 km (993 km heavy maintenance and 150 km performance linked maintenance) covering State highways and Major District Roads. In addition the project envisages development of 93 km of Inland canals. The project

10.8 Out of the total road length of 98973.127 kms held by Panchayats, 73532.918 km (74.29%) are gravelled and 25440.209 (25.70%) km are black topped. Of the 14 districts in the State, Kottayam district has the major share of P W D

commenced on 6/2002 and it is expected to be completed by 12/2007. The total project cost is \$ 336 million (Rs. 1632.00 Crores) and the sharing of cost between World Bank and Government of Kerala is in the ratio 70:30.

The key components of KSTP is given in table 10.3

### Roads & Bridges Development Corporation (R B D C K)

10.12 The Roads and Bridges Development Corporation (R B D C K) acts as a nodal agency for executing Road Over Bridges in the State apart from other Road Projects. R B D C K has already completed construction of 50 Railway Overbridges under various projects of Railways.

#### BOX- 10.2

#### Projects undertaken by RBDCK during 2003-04

##### Road Projects

Airport-Seaport Highway Phase I.

Karingachira to Kalamassery Road

##### Railway Overbridges

Major Railway Over Bridges like Vellayil, Thirur, Vengali, Thripunithura etc are completed.

##### Bridge/Fly Overs

River bridge at Pulamanthole and Flyover at Arayadathupalam (Calicut) are completed

### North South Express Way

10.13 Preliminary studies for a High Speed Corridor extending over 506.5 km connecting Kasaragod and Thiruvananthapuram are over. This project is proposed to be executed with private participation

### Research and Development in Road Sector

10.14 Research and Development activities play a crucial role in meeting the challenges of modernising road system, technology upgradation and finding cost effective solution to infrastructure problems in general. Design, Research, Investigation and Quality Control (DRIQ) Board, Kerala Highway Research Institute (KHRI) and National Transportation Planning and Research Centre (NATPAC) are the agencies engaged in Research and Development of the Road sector.

10.15 In 2003-04 DRIQ Board completed detailed design of 34 and general design for 28 bridges. This included Mattor-Madakara Bridge in Kannur District having a length of 259 meters with an estimated cost of Rs 1038 lakhs and Kottappuram Bridge across Cannoli Canal in Thrissur District having a length of 259 m at an estimated cost of Rs 1192 lakhs.

10.16 The main function of KHRI is to make project reports including detailed design and cost estimation. Preparation of Detailed Project Report for Varkala Parippally road is the first full-fledged work of the Project Preparation Unit.

Table No. 10.3  
Key Components of KSTP

Sl.No	Components	Amount in Million USD	Amount in Rupees Crores
1	Upgradation Component – (584 km of Roads and 93 km of Inland Canals)	199.58	967.97
2	Maintenance Component (1143 km)	55.39	268.64
3	Consultancy Services	19.20	90.41
4	Land acquisition & Utility Shifting	19.79	95.98
5	Resettlement & Rehabilitation	20.57	99.76
6	Road Safety Component	3.20	15.52
7	Performance based maintenance works	1.00	4.85
8	Institutional Development Study	8.38	40.64
9	Incremental Operating cost	6.28	30.46
10	Front end fee	2.55	12.37
	<b>Total</b>	<b>336.00</b>	<b>1632.60</b>

10.17 The Kerala Highway Research Institute also conducts sample studies and quality testing of construction materials used for buildings, roads and bridges and road safety studies, studies about accident prone areas, surveying, investigation and design of alignment, testing of tar sample, design of mixtures, soil testing etc. It conducts training programmes for PWD personnel. The KHRI works in partnership with National Transportation Planning and Research Centre (NATPAC).

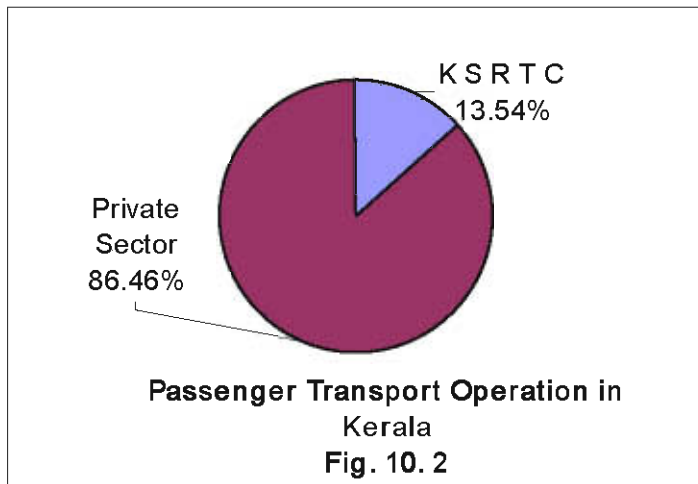
10.18 NATPAC taken up studies on all modes of transportation covering road, rail, water, seaport and airport. NATPAC undertook 13 research studies under Plan programme in the year 2003-04.

**Road Transport Services**

10.19 Road transport acts as the feeder service to rail traffic, air traffic and ports and harbours. Total number of stage carriages in the State comes to 31,889. Lion share of the passenger transport operations

is vested in the hands of private operators. Kerala State Road Transport Corporation (KSRTC) holds only 13.54 per cent of the Stage carriages in the State as can be seen in the figure 10. 2

10.20 Out of 4319 buses of K S R T C 545 buses (12.62%) are aged ten years. The age wise details of KSRTC buses are given in Appendix 10.15. The number of schedules operated increased from 3,651 to 3,768. About 11,453.97 lakh passengers travelled in the KSRTC buses during 2003-04 as against 11,096.76 lakh passengers in the previous year. The average km run by a bus in a day was 333 km during the period under review while it was 335 km in the previous year showing a marginal decrease of 0.20 per cent. The major indicators showing the operational parameters of KSRTC are given in Appendix 10.10. Inter-unit analysis of KSRTC reveals that about 30 percent of units exhibit poor performance. The unit wise details of operational statistics are given in Appendix 10.17.



10.21 The fares charged by KSRTC ranged from 35 paise per km in ordinary and city buses, 63 paise in Super Deluxe Service to 75 paise in High Tech Luxury (Volvo) buses. The fare structure of KSRTC is given in Appendix 10.18.

10.22 One hundred and seventeen new schedules were operated during the year 2003-04. The major performance indicators (Operational ratios) of KSRTC such as average kms run per day per bus, average route

**Table 10. 4**  
Category wise staff position of KSRTC

Sl. No	Category	As on 31.3.2003	As on 31.3.2004	As on 31.10.2004
1	Administrative Staff	2893	2721	2535
2	Traffic Personnel	18450	15946	15199
3	Maintenance Personnel	4221	3607	3348
	<b>Total</b>	<b>25564</b>	<b>22274</b>	<b>21082</b>



length, average earning per passenger, average earnings per vehicle on road per day, earnings per km of buses operated etc, during the year 2003-04 are shown in Appendix 10.19. The total number of employees of the Corporation decreased from 25,564 in 2002-03 to 22,274 in 2003-04. It further came down to 21,082 as on 31.10.2004. Details of employees in KSRTC are given in Table 10. 4

10.23 The availability of staff per operatable bus has come down to 5.52. The category wise staff position of KSRTC is given in Appendix 10.20

10.24 Financial performance of K S R T C is not in tune with its physical achievements. The reason attributed to this is increase in operating expenditure, hike in pension commitments, increase in interest payments etc. Operation in uneconomic routes and granting concessional travel add loss to the Corporation.

**BOX - 10.3**

**Damage to KSRTC Buses**

Six hundred and sixty two buses have been damaged in hartal-related incidents in the State for the period from June 1, 2000 to August 31, 2004. The losses suffered add up to more than Rs 1.5 crore. More than 17 percent of buses suffered damage in one hartal or the other during the period.

Source : Economic News Digest Dec 15, 2004

The performance of the Corporation is given in the Table 10.5. KSRTC happen to be the major victim of hatals and strikes.

10.25 Following measures were taken for revamping Administration and improving utilisation of fleets.

- Periodic review was undertaken regarding routes, which do not even fetch Rs.10 per kilometer. Such unremunerative routes measuring a total distance of 48,500 km was done away with and instead new remunerative routes were located and fleet was effectively and profitably utilised.
- The operating distance for a pair of conductor and driver which was 104 km earlier could be enhanced to 120 km
- Electronic ticketing machines were acquired and introduced in 13 depots. This has resulted in substantial savings of manpower and stationery cost. It increased efficiency of the conductors and ticket and cash accounting system. It totally avoids chances for pilferage in revenue
- Implemented computerised pay roll system and monthly pension roll preparation Introduced 730 Hi-tech buses during the period providing betting travelling facilities to passengers
- 800 speed governors were purchased and installed in long distance buses. The installation of speed governors resulted in savings of fuel, in addition to reduction in rate of accidents and consumption of spares.
- All units of KSRTC have been connected with the Chief office through an online system

**Table 10.5**  
**Performance of K S R T C**

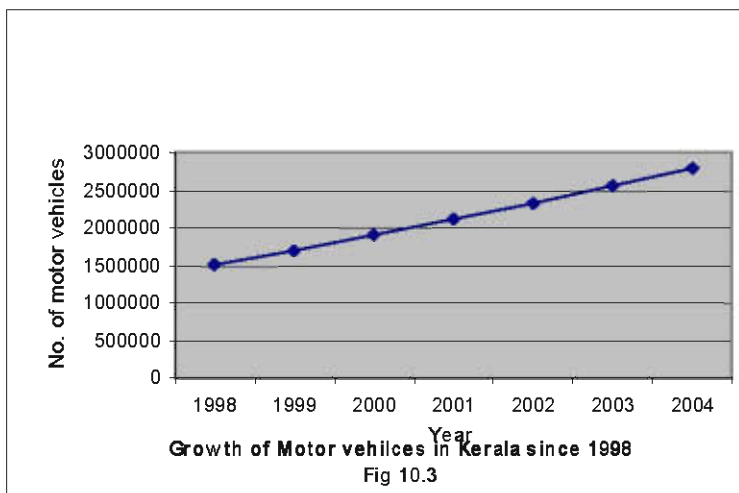
	2001-02	2002-03	2003-04 *
Net loss (Rs. Crore)	160.87	146.60	117.10
No. of buses at the end of the year	4155	4155	4319
Fleet utilisation (%)	76.78	85.00	90.00
Vehicles productivity (km) per bus per day	345.00	345.00	345.00
Load factor (%)	80.50	81.50	82.00
Bus Staff Ratio	7.90	5.95	5.52

\* provisional

- A modern engine-overhauling workshop is being set up at the Central Works, Thiruvananthapuram.
- The ratio of 7.4 persons per bus could be brought down to 5.52 due to the efforts made by optimising utilisation of staff.
- Earnings per kilometer per bus increased from Rs. 15.70 in 2002-03 to Rs. 16.61 in 2003-04 due to rationalisation of staff strength and improvement in management procedures.

10.27 The number of motor vehicles having valid registration as on 31.3. 2004 stood at 27,92,074 as against 25,52,171 in the previous year. The vehicles newly registered during 2003-04 being 2,39,903 or 8.59 percent. Personal vehicles recorded a faster growth. The percentage of category wise motor vehicles newly registered during 2003-04 is shown in figure 10. 4

10.28 The District wise details of vehicles newly registered, vehicles with valid registration and growth of vehicles in Kerala are given in Appendices 10.7 and 10.8. An analysis of growth of motor vehicles and road development in the State during the last six years reveals that the vehicle population has increased from 1.51 lakh in 1998 to 27.92 lakh in 2004, while only a marginal increase has been achieved in the case of augmentation of road length during the same period.



10.29 About 657 vehicles are newly added to vehicle population every day. Of this 402 are two wheelers. The details of category wise growth of Motor Vehicles in Kerala since 1998 are given in appendix 10.10 The highest vehicle population was recorded

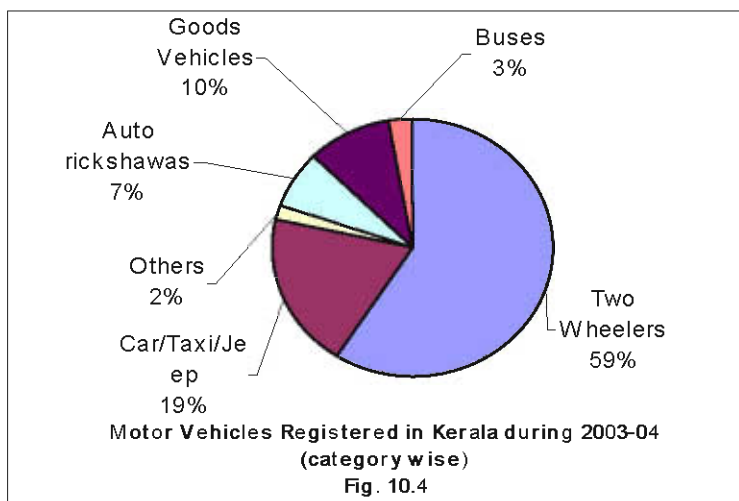
in Ernakulam district 4,64,922 (16.65%) followed by Thiruvananthapuram with 3,88,763 (13.92%) vehicles. Wayanad has the lowest number of vehicles ie. 36026 (1.29 %). The tremendous increase in the volume of road traffic in recent years has caused increase of road accidents.

**Motor Vehicle Population**

10.26 Kerala has 71.84 vehicles per sq. km of area and 8,769 vehicles per lakh population. The growth of vehicle population in Kerala is at a rate of 10 percent per annum. The growth of Motor Vehicles since 1998 is shown in figure 10.3

**Road Accidents**

10.30 Despite several initiatives taken by the police to enforce road discipline and enforcement of rules by Motor Vehicle Department road accidents are increasing. Statistics on road accidents in the State in 2002-03 and 2003-04 is shown in the Table 10. 6.



10.31 The details of accidents reported in Thiruvananthapuram district from January to June 2004 are shown below.

**Table 10. 6**  
**Daily Statistics of Accidents**

Description	Year	
	2002-03	2003-04
No. of accidents	107	110
No. of persons killed/injured	143	137
Accidents involving Two wheelers	34	36

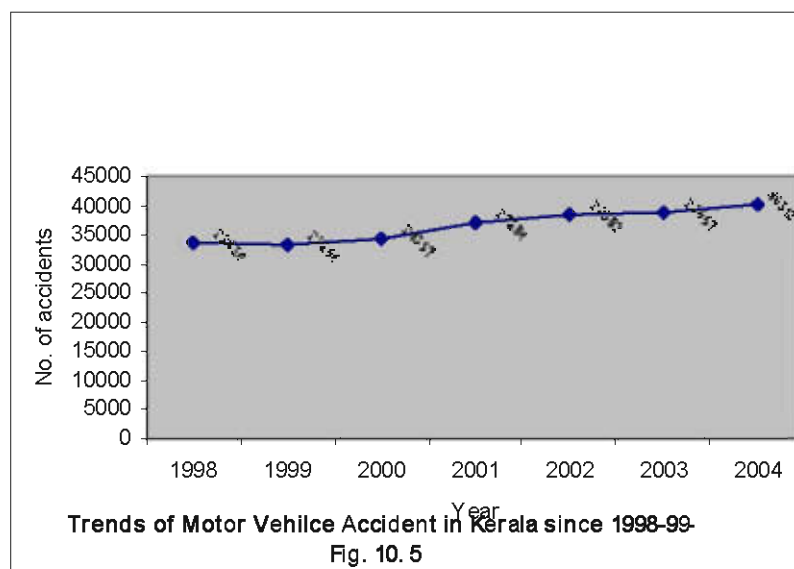
**BOX - 10.4**

**Accident scene in Thiruvananthapuram District during January-June 2004**

(No. of cases reported)

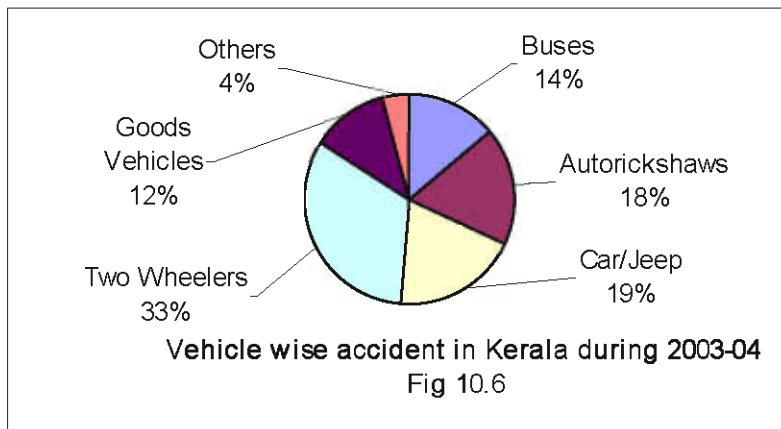
	City	Rural
◆ Accidents	1,021	1,600
◆ Persons killed	60	100
◆ Persons injured	1145	2,010
◆ Accidents due to rash driving	990	1681
◆ Accidents on NH 47	202	409
◆ Accidents on other roads	901	1,281
◆ Accidents during night time	323	661
◆ Accidents during daytime	698	1,029
<b>Accidents involving</b>		
◆ Two wheelers	731	844
◆ Autorickshaws	226	299
◆ Cars	191	244
◆ Buses	58	256
◆ Mini buses	49	155

Source : Kerala Police



10.32 In the year 2003-04 Kerala registered 40,312 accidents (110 per day) in which 2,943 persons were killed and 49,502 persons were

crores. The total deposits outstanding as on 31.3.2004 is Rs. 94.60 crores. In the year 2003-04, the Company launched a special vehicle loan scheme for MLA's and Officers for the purchase of four wheelers. Rs. 96.87 lakhs and Rs. 168.02 lakhs have been disbursed under these schemes respectively.



injured. KSRTC buses were involved in 1,158 accidents (3 per day) and private buses in 4,468. The trend in road accident in Kerala since 1998 is shown in figure 10.5

10.33 The percentage of category wise and vehicle wise accident in Kerala as on 2003-4 is shown in figure 10.6

**Transport Finance**

10.34 KTDFC continued to finance individuals, firms, KSRTC and other transport organisations for procurement of vehicles. The Company also grant loans to Small Road Transport Operators (SRTO) for the purchase of Commercial Vehicles. In addition the Corporation has granted institutional loans to the following agencies during 2003-04.

10.35 As on 31.3.2004KTDFC mobilised Fixed Deposits from the Public amounting to Rs. 143.88

62,800 kms with 16 lakh employees operating 8049 passenger trains and 5500 goods trains every day, carrying 1.36 crore passengers and 12 lakh tonnes goods daily.

10.37 The freight earnings came down from Rs. 252.29 crores in 2000-01 to Rs. 126.93 crores in 2003-04. The main reason for the sharp fall in the freight earnings is the shift from the rail transport to pipeline transport by oil refineries. The earnings from passenger and miscellaneous traffic is Rs. 274.39 crores. Freight traffic is expected to have quantum jump once transshipment hubs get commissioned.

10.38 The total route length of Railways in Thiruvananthapuram Division is 625 kms. The railway network in Kerala has been expanding over the years to accommodate the growth in passenger traffic.. The electrification of Shoranur-

Table 10.7

Name of Institution/ Agency	Amount Rs. (lakhs)
1. Kerala Tourism Development corporation (KTDC)	85.00
2. Kerala State Film Development Corporation (KSFDC)	25.00
3. Kerala State Audio visual and Reprographic Centre ( KSAV & RC)	33.06
4. Aluva Municipality	33.06
5. Tropical Botanic Garden and Research Institute	10.96
6. Kerala State Horti Culture Development Corporation	5.80
7. Kelpalm	4.27
<b>Total</b>	<b>171.97</b>

Ernakulam section was completed in 2000 and further extension up to Kollam is targeted to be completed by March 2005. The indicators of

directly linked to the overseas trade of a country. Trend in shipping industry is towards containerization. Hong Kong stands at the top in container traffic followed by Singapore, Shanghai and Shenzhen. The container traffic could be seen growing as evident from the Table 10.9.

**Table 10.8**

**Performance of Railway Division – Thiruvananthapuram**

Route Length	625 km
Daily Number of Express Trains (in pairs)	57
Daily Number of passenger Trains (in pairs)	58
Passenger carried daily	1.65 lakh
Annual Earnings from passengers and miscellaneous (Rs Crores)	274.39
Goods (Tonnes)	126.93

performance of Thiruvananthapuram Railway division are given in Table 10.8

## WATER TRANSPORT

### Port Sector

10.39 Growth and development of Port sector is

surging growth rates among other container ports. The top hundred container ports in the World are known as the Century Club. The representation of various countries in the club are given in Table 10.10

**Table 10.9**  
**Container Handled in Top Ten Ports in the World**

Country	Port	Cargo handled (TEUs)		Increase %	Rank
		2003	2004		
China	Hongkong	19144000	20450000	7	1
Singapore	Singapore	16941000	18100000	7	2
China	Shanghai	8611890	11370000	32	3
China	Shenzen	7613754	10650000	40	4
South Korea	Pusan	9453356	10368000	10	5
Taiwan	Kaohsiung	8493000	8844000	4	6
US	Los Angles	6105864	7148940	17	7
Netherlands	Rotterdam	6515449	7118000	9	8
Germany	Hamburg	5373999	6138000	14	9
Belgium	Antwerp	4777151	5445437	14	10

Source: Indian Express Ist Nov 2004

**Table – 10.10**  
**Country-wise Distribution of Ports in Century Club**

Country	No. of Ports
United States	14
China	11
Japan	5
Italy	5
Malasia	4
Spain	4
UK	4
South Korea	3
Thaiwan	3
Australia	3
Ten Countries	2 each
Other 24 countries	1 each
Total 44 countries	100

Source: Indian Express Ist Nov 2004

10.41 India is represented in the club by Jawaharlal Nehru Port (JNP), placed in the 30<sup>th</sup> position. Though JNP registered a growth rate of 17 per cent, its position in the club is down from 29<sup>th</sup> to 30<sup>th</sup> due to the leap of Chinese Ports.

**BOX -10.5**

Port Salalah of Oman recorded the highest growth of 65 per cent in container handling.

10.42 In the context of rising global trade, Indian ports have a long way to go. So far as Kerala is concerned, the final approval for the Vallarpadam container terminal, marks a major step forward.

**Performance of Indian Ports**

10.43 India with a coastline of 5600 km has 12 major and 185 minor/intermediate ports. The major ports in India handled a total traffic of 344.52 MT in the year 2003-04 as against 313.53 MT in 2002-03. Ports in India accounted for 95 per cent of the country's international trade in terms

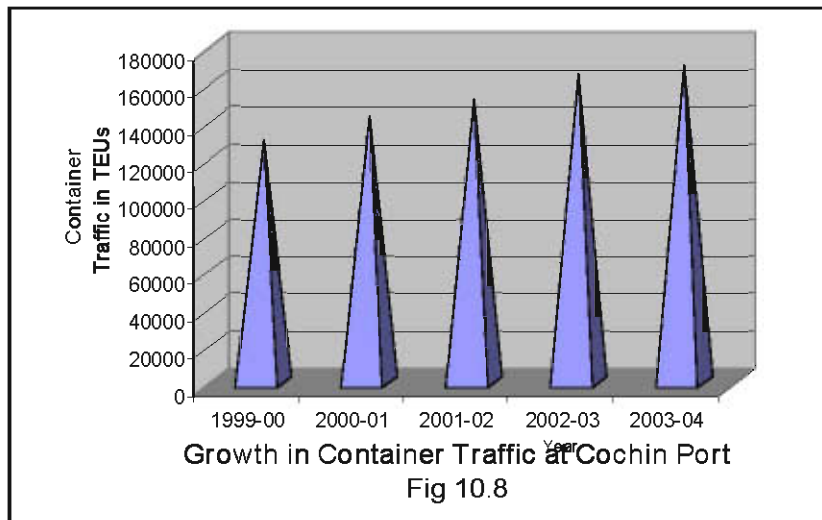
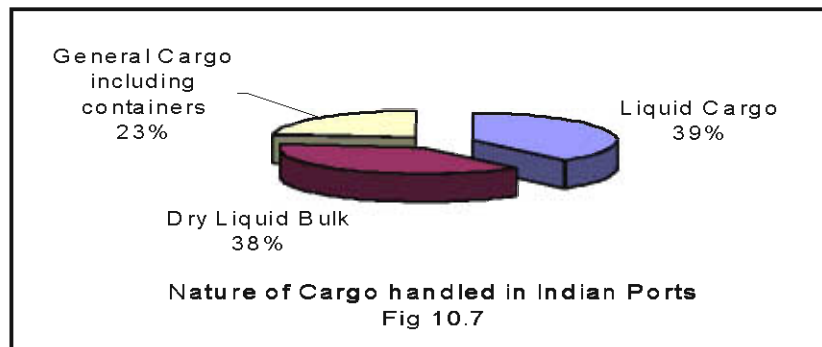
of its volume and 75 per cent in terms of its value. The type of Cargo handled in terms of its volume is depicted in Figure 10.7. In the year 2003-04 the aggregate capacity of the Major Ports was 390 million tonnes per annum whereas the traffic handled was 313.53 showing the head for modernisation and speedover handling to attract larger traffic.

**Kerala Port Sector**

10.44 Along its coastal line of 585 kms Kerala has one major, three intermediate and 10 minor ports. Four more minor ports also have been declared but not have yet started functioning.

**Cochin Port**

10.45 It is the only major port in Kerala. It is an ISO 9001-2000 port. Even though the hinterland of this port spreads to parts of Tamil Nadu and Karnataka States apart from the whole of Kerala State, a study shows that 97 per cent of the total volume of traffic from this port is accounted for by Kerala. Major share of (73.38 per cent) the Cargo handled at Cochin port during the year 2003-04 relates to Petroleum and Allied Products. The growth in container traffic is shown in figure 10.8



## BOX- 10.6

## Performance of Cochin Port at a Glance

Parameters	2002-03	2003-04
No. of Ships called at the Port	1174	1133
Net Registered Tonnage	7815244	7943909
Total Traffic in lakh tonnes		
(a) Import	108.99	111.19
(b) Export	21.25	24.53
Total	130.24	135.74
Container Traffic in TEUs	165687	169965
No. of Container vessels handled at the Port	433	381
Average turn round time in Days	2.19	2.22
Average pre-berthing time in hours	1.67	4.02
No. of Employees as on 31 <sup>st</sup> March	4375 persons	4353
Net surplus in Rs. Crores	19.40	21.34

Source: Cochin Port Trust

### Non Major Ports

10.46 Non major ports are under the control of State Government. The Government agencies involved in port development activities in the State are Port Department, Harbour Engineering Department, Hydrographic Survey Wing and Kerala State Maritime Development Corporation.

10.47 Cargo handling was mainly confined to Beypore Port except a small volume of Cargo in Vizhinjam Port (Appendix 10.22). The number of steamers and sailing vessels that called at non-major ports were 361 with a net registered tonnage 109701 (Appendix 10.23). The earning to the exchequer through Port department in the year 2003-04 was Rs. 79.17 lakhs. The activities of other Ports are limited to registration and licensing of harbour crafts, maintenance of local light houses, display of water warning signals for sea rescue operations and collection of revenue. During the year 2003-04, 2180 harbour crafts were registered (Appendix 10.24).

### Private Sector Participation.

10.48 An MOU was signed with M/s EECO Environmental and Consultancy Private Limited,

Mumbai on 9.7.2004 for the development of a Marina Port at Alappuzha. M/s Parison Group of Companies has been identified as an investor for Development of Beypore Port. M/s Universal Lubricant Sharjah has been selected as an investor for development of Alappuzha Port.

### Transshipment Hub at Vizhinjam

10.49 Considering the geographical advantage of Vizhinjam, which is within 10 nautical miles from International Shipping route and have a natural draft of 20 meters within one Kilometre of the seashore, initiatives are on the way for establishing transshipment facilities at Vizhinjam. The Project is proposed to be implemented with private sector participation. A special purpose vehicle has already been established for the purpose. The project is proposed to be completed in three stages with a total investment of Rs. 4207 crores. The investment in the three phases are Rs. 1728 crores, Rs. 971 crores and Rs. 1508 crores respectively for three phases. The fructification of the project will give a boost to the development of the area around it.

### Vallarpadam Container Terminal

10.50 Government of India has finally approved the establishment of International Container Transshipment Terminal (ICTT), Vallarpadam project. The total cost of the project is estimated at Rs. 2118 crores. Dubai Ports International is entrusted with this project for implementation on Build–Operate–Transfer (BOT) basis. The license period allowed is 30 years. With the establishment of the terminal, there would be facilities to handle 3 million TEUs vessels up to a size of 8000 TEUs. It would be up to the Government to ensure infrastructure facilities like rail and road connectivity.

### Cochin Area Development Consequent on Port Development

10.51 Government of India has already agreed in principle for the establishment of a port based Special Economic Zone. Another major development is the permission granted for establishing LNG Terminal at Puthuvaipin. The construction of Goshree Bridges is over. The proposal submitted for the establishment of International Bunkering Terminal is under process. With the commissioning of ICTT at Vallarpadam the volume of Rail Traffic will increase drastically. For example a ship with 8000 TEUs needs 100 trains of 80 TEUs each. This requires strengthening of the railway infrastructure and establishment of container depots to transfer trucks from rollon-rolloff train. Planned efforts for completing doubling of Feroke-Shornnur section, electrification of Shornnur-Mangalore, providing rail linkages from Edapply or Kalamassery to connect the Port without passing through the city and enhancing the capacity of Konkan Railway are all necessary. For all them it is urgently necessary to establish an inter – governmental and inter disciplinary arrangement to prepare an integrated plan for the Kochi Region, work at projects in different sectors and explore financial avenues.

### INLAND WATER TRANSPORT

10.52 Making Inland Canals navigable relieves the roads from getting into traffic jam to a great extent.

#### BOX- 10.7

#### Inland Water ways in India.

India has about 14500 kms of navigable water way comprising of rivers, lakes, canals, creeks, backwaters etc. About 18 million tonnes of Cargo is transported through the water ways.

10.53 The water transport operations in India are currently restricted to few stretches in the Ganga-Bhagirathi-Hoogly rivers, the Brahmaputra, the Barak River, the backwaters in Kerala and the deltaic region of Godavari, Krishna rivers. The major constraints facing the Inland water ways sector are lack of adequate infrastructure such as depth and width required for movement of vessels, lack of terminal facilities for loading and unloading and lack of navigational facilities aids for safe and unhindered navigation during day and night. Hence Central Government is giving thrust to developing infrastructure to make the Inland Waterways navigable.

10.54 Government agencies engaged in the development of Inland water transport in the State are Coastal Shipping and Navigation Department, State Water Transport Department and Kerala State Inland Navigation Corporation.

10.55 Coastal shipping and Navigation department carries out canal development activities. A project to develop 93 kms. of feeder canals is on the anvil as a component of the Kerala State Transport Project supported by the World Bank. Contrary to expectations, the Ministry of Shipping has turned down the request for extending National Waterway III at both sides, from Kollam to Kovalam in the south and Kottappuram to Kasaragod in the north but the proposal needs to be pursued. A study conducted by NATPAC projects that 16.6 per cent of total goods traffic through road is found to have potential for diversion to the water navigation system. At present inland water transport accounts for just 0.15 per cent of domestic transportation. The development of canals in Kochi - Kodungalloor stretch is being hampered due to the presence of fishing net.

10.56 State Water Transport Department operates passenger boats in the waterlogged areas of Alappuzha, Kollam, Kottayam, Ernakulam, Kannur and Kasaragod. State Water Transport Department has purchased one 50 passenger capacity fiber boat and one 150 pc wooden boat in 2002-03 and five steel boats in 2003-04 and put into operation. Even though the revenue receipts increased by six per cent in the year 2003-04, the revenue expenditure also increased by two per cent. The number of passengers handled recorded an increase of 13.83 per cent. Even though there



was only a nominal increase in loss compared to the previous year, State Water Transport Department has been incurring heavy loss for so many years.

10.57 Kerala State Inland Navigation Corporation recorded 49.19 per cent increase in its profit from Rs.31.31 lakhs in 2002-03 to Rs. 46.7 lakhs in 2003-04. The number of passengers handled decreased by five lakhs in 2003-04 compared to previous year, which is basically due to commissioning of Goshree bridges. Still it is able to run the organisation successfully due to diversification of its activities like operation of Luxury Cruise, Boat building, Construction of barges, Conversion/ Reconstruction of vessels and Cargo movement.

#### Air Transport

10.58 Kerala has three airports at Thiruvananthapuram, Kochi and Kozhikode. Of these, Thiruvananthapuram and Kochi (Nedumbassery) are International airports.

10.59 Although Thiruvananthapuram international airport ranks third in revenue among 120 airports in the country including five international airports managed by Airport Authority of India, the investment in the airport since 1991 is less than Rs 100.00 crores.

10.60 Cochin International Airport Ltd (CIAL) has handled 16590 aircraft movements during 2003-04 with an increase of 23 percent over the last year. During this period 13,32,601 passengers were handled reporting an increase of 48 percent over the last year. The duty free sales have recorded a turnover of US \$ 1.96 million (8.95 crores) as against US \$ 1.17 million in the previous year. This represents 58 per cent growth.

10.61 Taking into consideration the growth in passenger traffic, CIAL has already commenced expansion of the international terminal, aircraft parking bays, extension of taxiway etc.

10.62 From the Kozhikode Airport the number of flights per week increased from 170 in the previous year to 176 in the year under review after the introduction of Srilankan Airlines.

#### Air Cargo Traffic

10.63 Kerala State Industrial enterprise (KSIE) is operating the Air Cargo Complexes at Thiruvananthapuram and Kozhikode. Thiruvananthapuram Air Cargo Terminal (TACT) is the only ISO 2002 cargo complex in India.

**Table 10. 11**  
**Details of Export & Import through Air Cargo Complexes at Thiruvananthapuram and Kozhikode**

Year	Export		Import	
	Quantity (MT)	Value (Rs. lakhs)	Quantity (MT)	Value (Rs. lakhs)
2002-03	25088	125.80	10050	397.64
2003-04	25545	137.46	12177	433.67

10.64 The volume of cargo exported through the Thiruvananthapuram and Kozhikode airports has grown over the last few years. In 2003-04 the volume of cargo exported from the two airports was 25,545 tonnes, while in 2002-03 it was 25,088 tonnes .

10.65 In the first half of the current financial year, the volume of cargo exported from the Thiruvananthapuram and Kozhikode airports grew by 12.18 percent over the same period last year. The total volume of cargo exported from these two airports in the period April-September 2004-05 was 12,220 tonnes as against 10,875 tonnes in the same period last year. Of the 12,220 tonnes of cargo exported in the first half of the current fiscal year, Thiruvananthapuram airport accounted for 9,500 tonnes while contribution of Kozhikode was 2,720 tonnes. The cargo handled at Cochin International Airport Limited (CIAL) during 2003-04 was 12,826 tonnes, of which the volume of cargo exported is 9484 tonnes and volume of cargo imported is 3342 tonnes.

#### Passport and Emigration

10.66 The three passport offices at Thiruvananthapuram, Kochi and Kozhikode altogether received 4,97,814 passport applications in the year 2003-04. This is 22.49 per cent higher

than that in the previous year. The number of passports issued increased from 39,4,588 in 2002-03 to 4,47,552 in 2003-04 reporting an increase of 13.42 per cent.

## COMMUNICATIONS

### Postal Service

10.67 India has the largest postal network in the World. At the time of independence there were 23,344 post offices throughout the country. Of these 19,184 post offices were in the rural areas and 4,160 in urban areas. Today, the country has 1,55,295 post offices of which 1,38,818 are in the rural areas and 16,477 are in urban areas. During the last 50 years it has grown almost seven times. On an average a post office serves an area of 21.13 sq.km and population of 6,602.

#### BOX-10.8

##### Major Focus of the Postal system

- ◆ Ensure availability of basic postal services in all parts of the country, including tribal, hilly and remote areas
- ◆ Provide efficient, reliable and economic service
- ◆ Provide value added services according to market requirements
- ◆ Modernise the services to handle the growing volume of work with efficiency and thereby enhance customer and employee satisfaction
- ◆ Generate more resources and improve financial performance

10.68 A comparative study of postal network, and coverage in different countries is given in the Table 10.12

New initiatives in postal development are given in Box No. 10.9

#### BOX-10.9

##### New Initiatives in Postal Development

- ◆ Expansion of speed post network
- ◆ Mechanization of Delivery
- ◆ Computerisation of speed post centers
- ◆ Automation of Business Post Centers
- ◆ Outsourcing collection of speed post

10.69 Kerala Postal Circle has a postal network of 5083 post offices. The postal system in Kerala at a glance is given in Box 10.10

### Tele Communication

10.70 India has the fifth largest telecom network in the World comprising of 61.09 million telephone connections and over 1.48 million public call offices. There are over 16 million cellular subscribers in the country and the cellular customer base is growing at the rate of about one million per month. The speedy growth is being achieved by encouraging competition in the sector. In the area of mobile telephony of the total 78 licences, 55 are in the private sector and 23 in the

**Table 10.12**  
**Postal Network in Different Countries**

Country	Population	Area lakh (Sq.Km)	No. of Post Offices	People per Post Office	Service Area per post office
USA	284.8	93.72	38,123	7,471	245.85
UK	59.5	2.44	17,633	3,377	13.84
Germany	82.4	3.57	13,000	6,335	27.46
Brazil	172.4	85.12	12,520	13,769	679.87
South Africa	44.3	12.21	2,650	16,728	460.77
Nigeria	116.9	9.34	4,624	25,288	199.78
<b>China</b>	<b>1284.9</b>	<b>95.96</b>	<b>57,135</b>	<b>22,490</b>	<b>167.97</b>
Australia	19.4	77.13	3,872	5,008	1992.09
Egypt	67.9	10.01	5,399	12,575	185.49
Japan	127.3	3.78	24,760	5,143	15.26
<b>India</b>	<b>1027.0</b>	<b>32.88</b>	<b>1,55,618</b>	<b>6,602</b>	<b>21.13</b>

Source: International Telecommunication Union (ITU) December 2003

**BOX-10.10****Postal System in Kerala at a glance**

◆ Post Offices functioned during 2003-04	: 5083
◆ Head Post Offices	: 51
◆ Sub Post Offices	: 1464
◆ Extra Departments Sub Post Offices	: 526
◆ Branch Offices	: 3042
◆ Speed Post Centre	: 44
◆ Other Postal Services	: 100
◆ Rural Post Offices	: 4204
◆ Urban Post Offices	: 879
◆ Area served by One Post Office	: 8.22
◆ Population served by one Post Office	: 6283

public sector. Of the total roll out of telephone connection (basic and cellular), private sector accounted for about 28 percent and public sector 72 percent.

**BOX-10.11****Teledensity in different Countries 2002-03**

Countries	Teledensity
Australia	126.18
Bangladesh	1.56
Brazil	42.38
China	42.32
India	6.60*
Indonesia	9.17
Nepal	1.70
Pakistan	4.42
Sri Lanka	9.57
UK	143.13
USA	116.43

Source: Annual Report 2003-04, Ministry of Telecommunication & Information Technology

10.71 Kerala has an impressive record of performance in Telecom sector. All the telephone exchanges in Kerala were made automatic for the first time in the whole country, in 1990. Kerala is also the first State to provide public telephone facilities in all Panchayat Headquarters. Again it has the unique status of providing STD facility to all telephone exchanges.

10.72 Kerala has the highest telecom density among all States in India. In Kerala 99.2 percent of telephone exchanges are Electronic Exchanges. Five internet providers are there in the State and 8300 km of Optical Fibre Cable (OFC) has already been activated.

10.73 Kerala Telecom sector comprises 11 secondary switching areas (SSA). Total number of telephone exchanges in the circle is 1179. The equipped capacity has increased from 36,53,413 in 2002-03 to 40,36,782 in 2003-04. The number

**Table 10.13****Telephone per 100 population – Urban /Rural ( Total - density)2002-03 & 2003-04**

State	Total Density					
	Overall		Urban		Rural	
	2003	2004	2003	2004	2003	2004
1	2	3	4	5	6	7
Andhra Pradesh	5.66	7.85	15.42	22.7	2.03	2.33
Karnataka	6.67	9.46	14.78	22.58	2.37	2.41
Kerala	11.33	14.87	21.28	32.82	7.85	8.6
Tamil Nadu	6.22	8.54	12.28	17.21	2.12	2.35
Delhi	27.38	41.79	29.24	44.48	0	0
All India	5.11	7.02	14.32	20.74	1.49	1.57

Source : Annual Report 2003-04, Ministry of Telecommunication & Information Technology

**BOX-10.12****Status of Telecom Sector in Kerala**

◆ No. of Telephone Exchanges	: 1195
◆ Equipped Capacity	: 40.70 lakh
◆ Telephone Density as on 8/2004	: 10.54
◆ Telephone Density ( Rural)	: 9.19
◆ Telephone Density ( Urban )	: 14.38
◆ No. of applications in the waiting list till 30.09.2004	: 4.1 lakh
◆ No. of mobile connections (i) prepaid	: 417279
(ii)postpaid	: 147133
◆ No. of connections proposed to be provided during 2004-05	: 4.28 lakh
◆ No. of internet customers as on 30.09.04	: 49225

of working connections in Kerala is 32.58 lakh.. For every 1000 persons under the circle there are 106 telephone connections. There are 84 telephone connections per sq.km. Ernakulam district has the maximum number of telephone exchanges (171) and Wayanad the least with 25 exchanges Interactive Voice Response System (IVRS) based trunk booking has been introduced round the clock in all Trunk Exchanges in Kerala. Answering Machine Service, popularly known as Voice Mail Service, was launched in Kerala Telecom Circle on 17.05.2004. The unique advantage of this service is that the subscribers need not have an answering machine in his residence. The service is offered free of cost. The usage charge is as per the normal tariff.

10.74 Mobile connections in Kerala continued to increase and have crossed the one million marks as on 31.3.2004. In Kerala Telecom Circle,

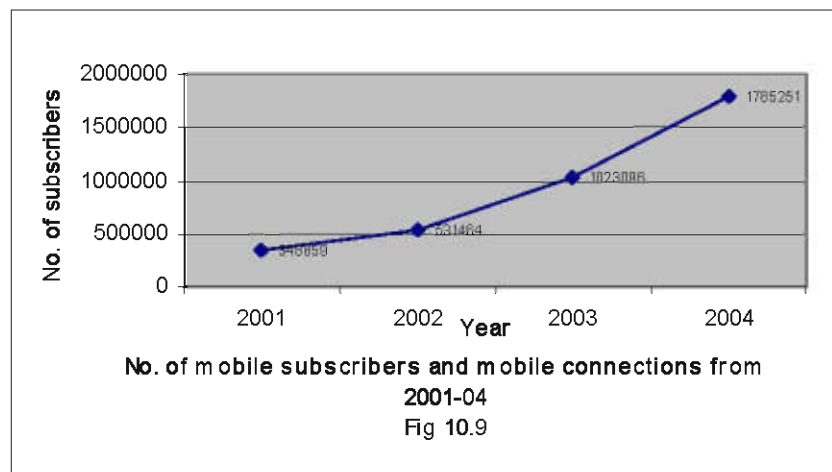
Internet nodes are at present functioning at all 14 district headquarters and at Kavarathy in Lakshadweep. Details of Agency wise mobile connections given in Box 10.13.

10.75 The total mobile subscribers and mobile connections issued per day during the last four years are given in figure 10. 9

**BOX-10.13****Mobile subscribers in Kerala as**

Agency	Connections (in lakh)
BSNL	5.76
Idea mobile	5.23
BPL cellular	3.61
Bharati (Airtel)	3.23

Source : Dhanakariam Mathubhoomi Daily Dec6, 2004



10.76 Kerala Telecom Circle is to start wireless Short Message Service (SMS) shortly. This will enable the subscribers to send messages using landline phones also by having their own Short Message Terminal Equipments (SMTE), an instrument similar to the ordinary telephone with additional facility for sending SMS. Arrangements are being done for the supply of these instruments through Customer Service Centres. To start with, the service is to be offered free of cost.

#### URBAN DEVELOPMENT

10.77 Urbanization is a continuing process, which are not merely a concomitant of industrialization, but a concomitant of the whole gamut of factors underlying the process of economic growth and social change. Urbanization in demographic sense, is an increase in the proportion of the urban population (U) to the total population (T) over a period of time. As long as U/T increases there is urbanization.

10.78 According to census 2001, 25.96 per cent of the state population live in the urban system, of which 62.75 per cent live in the Corporations and Municipalities. The urban system in Kerala comprises of 5 Municipal Corporations, 53 Municipalities and 40 urban agglomerations. Urbanization trend in this state shows slow progress and it is presented in Table 10.14 This table illustrates that the numbers of urban agglomerations/towns have increased over the period from 1901 to 2001, but the change from 1991 to 2001 is only marginal.

10.79 The share of urban population in Kerala increased steadily from 7.11 per cent in 1901 to 26.39 percent in 1991, but then declined to 25.96 per cent in 2001. Urban Population growth is due to the increase in number of urban areas and urbanization in the fringe areas.

#### Integrated Development Plan

10.80 The integrated development approach is aimed at making a direct attack on urban poverty and employment by integrating the developmental efforts at spatial, functional and social levels, is indeed a very comprehensive model for promoting productivity, effective peoples participation, trade and commercial activities and improving the quality of life in the urban system.

10.81 Kerala has three regions, such as Northern, Central and Southern, and these regions have City Corporations as their hub. It is interesting to note that all the sectors of the economy are functioning in all the Corporation areas too. Moreover, all the Corporations are linked with proper transportation network, which strengthen resource mobilization. Of the five Corporations, three major Corporations, such as, Thiruvananthapuram, Kochi, and Kozhikode are having special characteristic features. These Corporations have satellite towns and are functioning as nodal points for development. These satellite towns not only ease the pressure of the Corporations, but also provide functional links to the rural areas.

**Table No.10.14**  
**Trends in Urbanization of Kerala 1901-2001**

Sl.No.	Census Year	Total number of UAs/Towns	Total Population	Total Urban Population	Percentage s of Urban Population	Decimal growth (%)
			(In Crores)			
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	1901	21	0.64	0.04	7.11	
2	1911	27	0.71	0.05	7.34	+15.44
3	1921	44	0.78	0.07	8.73	+29.78
4	1931	53	0.95	0.09	9.64	+34.58
5	1941	62	1.10	0.12	10.84	+30.47
6	1951	94	1.35	0.18	13.48	+52.72
7	1961	92	1.69	0.25	15.11	+39.89
8	1971	88	2.13	0.35	16.24	+35.72
9	1981	85	2.55	0.48	18.74	+37.64
10	1991	109	2.91	0.77	26.39	+60.97
11	2001	98	3.18	0.83	25.96	+7.64

Source: Census 2001 Government of India, New Delhi

10.82 This State has peculiar functional characteristic features, compared to rest of the States in India, i.e., houses and infrastructure facilities are spread across the State. Almost infrastructure facilities, which are functioning in the urban system, have spread over the rural system too. Therefore, the entire rural system of the State (except the interior hill tracks) can be considered as 'rurban areas' due to its functional characteristic features.

10.83 Growth center approach, which was devised as an alternative to the growth pole approach, advocated decentralised pattern of human activities. It postulated that the development of agriculture and primary activities in the fringe areas would lead to evolution of growth centres, which will become engines of economic growth.

10.84 To have spatial integration of the urban system, the Corporation like, Thiruvananthapuram, Cochin and Kozhikkode need to be linked and developed like knowledge based industrial corridor. In this corridor, technological and knowledge based industrial research institutions need to come up, which will be useful for secondary and tertiary sector of economic development. Besides these, the proposed Liquefied Natural Gas terminal, and Vallarpadam Container Terminal projects in Kochi would have more influence over this corridor pertaining to resource mobilization in particular and overall development in general.

10.85 To have functional integration, all the sectors of the economy need to be strengthened by employing appropriate technology at the grass roots level, introducing need based, resource based and demand based industries along with strengthening trade and commercial activities in this system.

10.86 To have social integration, effective peoples participation in all aspects, which include evolving policies, programme and programme implementation, monitoring, etc. are to be done irrespective of social and ethnic groups, and the benefits of the plan will be shared by all these groups.

10.87 It has been decided to evolve plausible

integrated development plans in all these three regions separately, and all these regional development plans are to be linked with State level integrated development plan. The proposed State integrated level development plan will focus on location specific problems, resource mobilization, employment generation, increase in income earning opportunities, trade and commercial activities, etc., at the grassroots level, which will led to total development in the system.

10.88 In this present attempt, to achieve integrated development in urban system, urban system concept is employed.

### Urban System

10.89 An urban system functions as a whole with the interaction of several sub-systems. All the sub-systems of the urban system are interconnected, and inter-dependent to each other, and forming a system. If one of the sub-systems of the urban system defunct or functions with higher degree (taking a lead role) during its function, its effects can be visualized in the entire system. In an urban system, the following sub-systems are linked together:

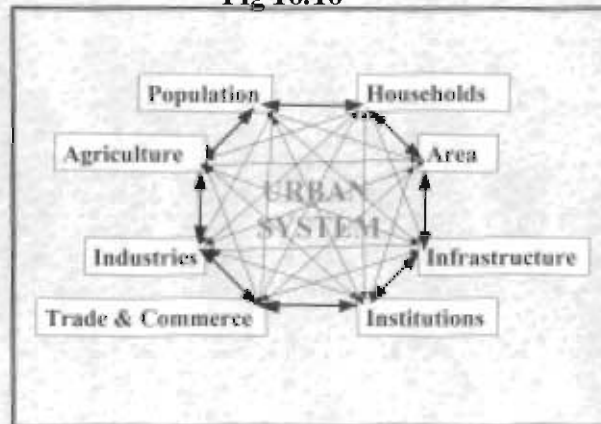
- Urban land.
- Population.
- Housing
- Industries.
- Trade and Commerce.
- Infrastructure facilities. (Both physical and social)
- Transportation, and
- Administration. (Control mechanism)

10.90 These all sub-systems are inter-linked and interdependent with each other, forming a system and functions as a whole. The function of this urban system is presented in Figure 10.10

10.91 The urban system is a complex social system, and it has the following characteristic features:

- It is not a mechanistic system, but rather an adaptive system.
- It is an open system, and thus cannot be studied or regulated apart from its contextual environments, which are defined by the nature of interactions.

Fig 10.10



- It is characterized by extreme interrelatedness of its part, calling forth the need for viewing the system in its entirety.
- It is also characterized by *substitutability* of parts and functions implying that the detection of new and independent trends is difficult as they are often masked by the apparent stability of the parts.

10.92 Each sub-system mentioned above may or may not have sub-systems within them. For example, population can be categorized into different types of households, such as, High Income Group, Middle Income Group, Low Income Group, Economically Weaker Section, Slums, Squatters, Pavement Dwelling Units, etc. Further, population in each segment would be classified into sub-systems like religion. These groups are also further divided into various other subgroups like illiterate, literate, professionally qualified, special professionally qualified, and so on.

10.93 Similarly, in urban land sub-system, urban land may be classified into various sub-systems based on its uses for different purposes, such as residential and non-residential, industries, infrastructure services, trade and commercial activities, urban agriculture, civic open spaces, etc. Like the above, other sub-systems of the urban system may also have different sub-system within their purview.

10.94 In Kerala, like other states in India, the problem of urban poverty; deficiencies in physical infrastructure like drinking water supply, solid waste management, sewerage and drainage

facilities, urban transport; issues relating to environment, housing, degradation in quality of life, rehabilitation of slum dwellers, etc. are the major areas of concern in urban development. Most of these problems in the urban system are to be addressed by the Local Government Institutions viz. Municipalities and Corporations. The present position of these housing stocks and physical infrastructure facilities are discussed below:

#### Urban Households

10.95 Despite, considerable private investment, remittances and efforts made over successive plan periods; the housing problem still persists. Given the growth of urban population and the unsustainable environment, the housing problem in urban areas may worsen unless concerted measures are taken.

10.96 In Kerala 25.06 per cent of the total households are in the urban system. Of the total urban housing stock, 64.90 per cent are good, 29.40 per cent are livable and 5.70 per cent are dilapidated. Of the total number of houses, 78.80 per cent of them are permanent, 14.48 per cent are semi-permanent and 6.62 per cent are temporary houses. Of the temporary houses, 52.79 per cent are serviceable (57723 houses) and 47.21 per cent are non-serviceable (51624 houses). As regards tenurial status, 87.50 per cent live in owned accommodation.

#### Sewerage

10.97 Sewerage treatment is essential to check environmental decay as well as to improve the living conditions. It is noted that the existing capacity of sewerage treatment system in all the Corporations in this State is inadequate, and about

**Table No.10.15**  
**Urban Household details of All India and Kerala**

Sl. No		Kerala		All India	
		Number	% to total urban household	Number	% to total urban household
(1)	(2)	(3)	(4)	(5)	(6)
1	Households	1652656	100.00	53692376	100.00
2	Condition of Houses				
	Good	1071777	64.9	34446903	64.2
	Livable	486658	29.4	17312563	32.2
	Dilapidated	94221	5.7	1932910	3.6
3	Permanent Houses	1302681	78.8	42602249	79.3
4	Electrified Houses	1393823	84.3	47028369	87.6
5	Having bathroom facility	1304163	78.9	37802114	70.4
6	Toilet facility	1520747	92.0	39581440	73.7
7	Drainage	510564	30.9	41807664	77.9
8	Having Telephone	483606	29.3	12331107	23.0
9	Having Television	966336	58.5	34500360	64.3
10	Having Two Wheelers	294157	17.8	13262048	24.7
11	Having Four Wheelers	121394	7.3	3021406	5.6
12	Availing Banking Services	890735	53.9	26590693	49.5

*Source: Census 2001, Government of India, New Delhi*

90 per cent of the population does not have access to regular municipal sewerage. The increasing pollution in certain pockets of the cities is also a major indicator for lack of sewerage treatment.

10.98 At present, only the Thiruvananthapuram Corporation area is reasonably covered by the underground sewerage system. It is estimated that there are about 75,000 houses have sewer connections (40% coverage) in this city. The parallel sewer main has already been completed and the ban on new connections is a lifted. The underground sewerage system in Kochi City covers only a very limited area. It is reported that there are about 1000 houses have sewer connection in Kochi, i.e., just only 2% coverage.\*

10.99 The existing sewerage schemes, both in Thiruvananthapuram and Kochi City need further expansion. Proper sewerage systems is required in all other Corporations, and Class II towns and I.

#### Other facilities

10.100 A comparison of facilities of urban households in Kerala with All India is presented in Table. 10.15 The table reveals that Kerala

lags behind in providing and drainage facilities, but is ahead in providing a few other facilities, such as, toilet facilities, telephone connections, having vehicles and banking services.

#### Solid Waste Management

10.101 Municipal Solid Waste (MSW) is a heterogeneous mixture of organic matter, demolition and construction debris, street sweepings, garden wastes, discarded parts of vehicles and appliances, and residues from small-scale industrial units. The organic degradable part is called garbage and the non-degradable part is called rubbish. The rubbish includes combustibles like paper, wood, rubber, leather, plastic, cloth, etc. and non-combustible waste like metals, glass, ceramics, etc. In Kerala, the per capita generation of solid waste is estimated to be varying from 150 – 500 g/day.

10.102 The management of solid waste is one of the essential services and important obligatory functions of the Urban Local Bodies (ULB). tackle it alone. But in most of the municipalities, more than half of the waste generated remains unattended. The practice of open air burning is increasing in most of the residential areas and waste dumping yards, leading to toxic emissions. The local governments with their limited human,

\*Source : Kerala Water Authority



technical, financial and institutional capacity are strengthening to cope up with the multi dimensional problems of solid waste management. The dense population and lack of available space are also severe constraints for disposal of garbage and other forms of waste.

10.103 Considering the requirement of implementing an integrated solid waste management system comprising source segregation, prompt collection, careful transportation, environment friendly processing and sanitary disposal of rejects in all the 58 ULBs of the state, the government formulated an action plan known as 'Clean Kerala Project' in February 2003, and it is being implemented by the Clean Kerala Mission. This envisages the following components:

- segregated storage of biodegradable, non-biodegradable and harmful wastes in different bins at source,
- transportation of waste from source to the processing plant without littering on ground,
- processing of biodegradable waste using aerobic or vermin composting technology,
- reuse and recycling of glass, paper, plastic etc.,
- develop sanitary landfill on a long-term basis,
- establish common facility for disposal of biomedical waste near the landfill site,
- arrange better implements and vehicles for collection and transportation of solid waste,
- entrust the left-over cleaning tasks after

- deploying the sanitary workers to Community Development Society or other agencies, and
- organize awareness campaign programme

#### **Involvement of Informal Sector in Waste Management**

10.104 The limitations of technical and managerial solutions to waste management problems and their socio-cultural and economic aspects are now being recognized. The inextricable linkage of waste management, waste recycling and urban poverty are also being recognized. Accordingly, a positive approach was evolved towards the involvement of the urban poor as integral partners in solid waste management, considering the immense scope for participation based on waste to wealth concept. Women micro enterprise units have been formed and trained under Kudumbashree for house-to-house collection of wastes in 15 Municipalities. At present, these units in selected wards of Kannur, Kozhikkode, Palakkad, Ottappalam, Thrissur, Aluva, Kochi, Thrippunithura, Alappuzha, Attingal and Thiruvananthapuram carry out source collection of waste. An experience of Kudumbashree initiatives for Door-to-Door collection of solid waste in Thiruvananthapuram Corporation is given in Box No.10.14

#### **Urban Development Programmes**

10.105 The major urban development programmes implemented at the State-level are given below:

#### **BOX-10.14**

#### **Kudumabshree initiative for Door-to-Door collection of solid waste in Thiruvananthapuram Corporation**

Two of the major gaps in solid waste management in Thiruvananthapuram Corporation are lack of primary collection and source segregation. Seeing this as a potential opportunity for developing micro enterprise units, Kudumbashree, the State Poverty Eradication Mission, formed five units in five wards of Thiruvananthapuram Corporation namely, Medical College-East, Medical College-West, Gowreesapattom, Fort and PTP Nagar as pilot projects. Each micro enterprise unit was formed by 15 women under the centrally sponsored urban poverty eradication programme namely SJSRY at a total project cost of Rs.4.5 lakh each. Each unit was provided with three-tipper auto rickshaw at a total cost of Rs.3.9 lakh and working capital of Rs.60,000/- for items such as uniform, hand gloves etc. The project fund was mobilized through a one-time grant of Rs.1 lakh from the Corporation, Rs.2.025 lakh loan from the bank; Rs.22,500/- as beneficiary contribution and Rs.1.25 lakh as SJSRY linked subsidy. The project was launched in March 2003 and benefits about 75 women, who earn net income varying from Rs.3000 – 6000 per capita per month. Finding it as a sustainable micro enterprise venture, 14 more Urban Local Bodies have replicated this project.

### a. Integrated Development of Small and Medium Towns

10.106 Integrated development of small and medium town's programme was initiated in 1979-80. The main objective of the programme is to slow down migration from rural areas and smaller towns to larger cities by developing selected small and medium towns, which are capable of generating economic growth and employment.

10.107 Integrated Development of Small and Medium Towns is a Centrally Sponsored Scheme being implemented in 45 urban local governments. The central allocation to the state during the first two years of the Tenth Five Year Plan was Rs.407.75 lakh and Rs.408 lakh respectively. The total amount released for this scheme including the State Share was Rs.600.44 lakh during 2002-03 and Rs.680.01 lakh during 2003-04. Ten towns selected for the years 2002-2004 were Angamali, Koyilandy, Kalamassery, Kunnankulam, Perumbavoor, Vaikom, Attingal, Thripunithura, Mavelikkara and Thaliparamba. Subsequently, eight new towns viz. Kanhangad, Payyannur, Chittoor-Thathamangalam, Paravur, Kuthuparamba, Adoor, Perinthalmanna and Mattannur were also selected under this scheme during the year 2004-05.

### b. Capital City Development Project

10.108 The Capital City Development Project was initiated during 2003-04 in order to enhance the quality of life in the Capital City by improving the critical infrastructure. The components of the Project include improvements of roads, water supply augmentation, solid waste management, surface water drainage and city beautification including parking places.

- Water supply improvement scheme for water scarce areas in Thiruvananthapuram city has been initiated at a total cost of 13.10 crore and about 75 per cent of work has been completed.
- Under surface water drainage, prevention of floods at Thampanoor, Pazhavangadi, Karamana, Killippalam and Jagathi has been initiated at a total cost of Rs 4.83

crore. Desliting of Amayizhanjan thode is also proposed to be undertaken.

- Althara-Vellayambalam Road, Sanghumugham Palace renovation, Puthirikandam Maithanam Development, Kovalam Area Development are proposed to be undertaken for city beautification and for parking area construction.
- The work for the renovation of Tagore Theatre Complex has been awarded
- Under City Road Improvement Project twelve roads at an estimated cost of Rs 30.50 crore are proposed
- Construction of Palayam market and Commercial Complex has been started at an estimated cost of Rs 3.50 crore.

### c. Kerala Sustainable Urban Development Project (KSUDP)

10.109 This project aims at sustainable growth and poverty reduction in the five Corporations and other District Head Quarters, and is being finalised with Technical Assistance from the Asian Development Bank.

10.110 Salient features of this KSUDP are given below:

- Promote good governance in Municipal Management
- Develop and strengthen urban infrastructure
- Formulate support programmes for improving urban social services for the elderly, destitute women and street children

10.111 The proposed Project City Infrastructure Components are:

- Water Supply
- Sewerage/Sanitation
- Urban Drainage
- Solid Waste Management
- Roads/Transport
- Poverty Alleviation

### d. Urban Reforms Incentive Fund (URIF)

10.112 Urban Reforms Incentive Fund (URIF) has been created by the Government of India for reform linked incentive to States. It seeks

to incentives State Government to follow certain reform programmes. The reforms under URIF are summarized in Box No 10.15 . The funds under URIF are untied and can be used for any

development or housing or poverty alleviation project. During 2003-04, the State Government received Rs.725 lakh under this scheme and 24 Municipalities were selected to implement this scheme.

**BOX-10.15****Urban Reforms Incentive Fund (URIF) –  
Reforms suggested by GOI**

- Repeal of the Urban Land Ceiling and Regulation Act
- Rationalization of Stamp Duty in phases to bring it down to no more than 5 per cent by end of the Tenth Five Year Plan period
- Introduction of Computerized process of registration
- Reform of Property Tax so that it may become a major source of Urban Local Bodies and arrangements for its effective implementation with collection efficiency of 85 per cent by the end of the Tenth Five Year Plan period
- Levy of reasonable user charges with full cost of O&M being collected by end of the Tenth Five Year Plan period.
- Introduction of a double entry system of accounting.

# CHAPTER - 11

## EDUCATION

### Literacy

11.1. Literacy as a qualitative attribute of the population is one of the most important indicators of socio-economic and political development of a society. It is a major component of human resource development and is thus basic to any programme of social and economic progress. The national literacy rate in 2001 is 65.38 percent as against 52.21 percent in 1991. The literacy rate of Kerala is well above the national average and it is the highest among the Indian states. The literacy rate in Kerala is 90.92 percent in 2001 as against 89.81 percent in 1991. The male and female literacy rates are 94.2 percent and 87.86 percent respectively. A discernable feature is that the belt of Kottayam, Alappuzha and Pathanamthitta is having very high literacy rates, 95.9 percent, 93.66 percent and 95.09 percent respectively. Details are given in Appendix.11.1. Among taluks, literacy rate is highest in Mallappally (97.03%) in Pathanamthitta district and lowest in Nilambur (81.39%) in Malappuram district. Regional and gender disparities in literacy rates are low in Kerala.

### School Education

11.2. There are now 12,322 schools and 48.94 lakh enrolled students. Private sector manages 63.5% schools with 67% students and 66.6% teachers. However, with fall in birth rate enrolment of children in primary classes started to decline since 1980's. With fall in enrolment of students, related issues like division fall, excess teachers and idle buildings/class rooms started to emerge. In other words 'schools which do not have minimum students' and 'protected teachers' emerged as vital issues in the school education sector.

11.3. Since 2000, more self financing institutions have been started in technical and medical education. The present status of general education of Kerala is summarised in Table 11.1. In Kerala there are 14552 general educational institutions with 53.53 lakh students.

**Table-11.1**  
**Educational Infrastructure in Kerala 2003-04**

Sl. No	Category	Institutions (Nos)	Students enrolment (Lakhs)
	General Education		
1	LP,UP and High Schools	12322	48.94
2	Higher Secondary Schools	1565	2.60
3	Vocational Higher Secondary Schools	375	0.30
4	Arts and Science Colleges	290	1.69
	<b>Total</b>	<b>14552</b>	<b>53.53</b>

Note: Students in unaided colleges not included

11.4. Total number of schools increased by 51 from 12271 in 2003 to 12322 in 2004. Out of the total schools in 2004, 6716 are Lower Primary, 2964 are Upper Primary and 2642 are High Schools. There are 3006 LP sections in UP and HS and 2075 UP Sections in High Schools. Besides, there are 373 CBSC schools, 78 ICSE schools, 26 Kendriya Vidyalayas and 13 Jawahar Navodaya schools. Details are given in Appendices 11.2, 11.3 and 11.4.

11.5. Out of 51 new schools started during 2004, six are government schools. Thus number of government schools increased to 4498 in 2004 from 4492 in 2003. New Private aided schools started in 2004 are five making the total 7287. New unaided schools started during 2004 are 40 and their total number increased to 537. The management-wise distribution of schools shows that 36.5 percent are Government, 59.14 percent are Private aided and 4.36 percent are Private unaided.

11.6. In Government schools, 86.7 percent have pucca buildings, 8.6 percent are in rented buildings

and 4.7 percent are in thatched sheds. Similarly, 10.29 percent of the government schools have no drinking water facilities and 11.73 percent have no toilets. Details are given in Appendix 11.5 and 11.6.

#### Enrolment of Students

11.7. Peak enrolment in schools was 59.07 lakhs in the year 1992. During 2003-04, total students enrolled in schools were 48.94 lakhs against 50.02 lakhs in 2003. Enrolment thus declined by 1.08 lakh in a year. Students enrolled in standard I in 2003-04 was 4.41 lakhs against 4.56 lakhs in 2002-03. Details of enrolment of students during

#### Enrolment of Girls students

11.9. In Kerala, there is no gender disparity in enrolment. Girls enrolled in schools from first to tenth standards in Kerala almost equal the boys. For instance, out of the total enrolment of students, in lower primary, upper primary and secondary school level, percentage of girls are 49.5 percent, 48.31 percent and 49.26 percent respectively in 2004.

11.10. In absolute numbers girls enrolment shows a decline in keeping with the changing demographic profile of Kerala. Number of girls at lower primary level decreased from 9.15 lakhs in 2002-03 to 9.05 lakhs in 2003-04; decrease of

0.10 lakhs. Number of girls at upper primary level decreased from 7.52 lakhs in 2002-03 to 7.26 lakhs in 2003-04. In secondary level, number of girls decreased

from 7.85 lakhs in 2002-03 to 7.7 lakhs in 2003-04. In all these levels together, enrolment of girls decreased by 0.51 lakh in 2003-04 over 2002-03.

**Table-11.2**  
**Enrolment of students in schools-2004 (in lakhs)**

Sl. No	Category	Boys	Girls	% of Girls	Total
1	LP	9.23	9.05	49.50	18.28
2	UP	7.76	7.26	48.31	15.02
3	HS	7.94	7.70	49.26	15.64
	<b>Total</b>	<b>24.93</b>	<b>24.01</b>	<b>49.06</b>	<b>48.94</b>

Source: DPI

2004 is shown in Table 11.2.

11.8. Out of 48.94 lakhs students enrolled during 2003-04, 37.35 percent are in Lower Primary, 30.7 percent in Upper Primary and the remaining 31.95 percent are in High Schools. Gender-wise analysis shows that 50.95 percent students are boys. Out of 18.28 lakh students in Lower

#### BOX-11.1

Educational targets of "Millennium Development Goals" (MDG) set by 189 countries across the world including India are the following.

- By 2015, children everywhere boys and girls alike, will be able to complete a full course of primary schooling.
- Eliminate gender disparity in primary and secondary education, preferably by 2005, and at all levels of education no later than 2015.

Primary, 9.05 lakhs(49.5%) are girls. Management wise and district wise details are given in Appendices. 11.7 and 11.8.

#### SC/ST Enrolment

11.11. SC/ST students enrolled in schools in 2004 number 5.85 lakhs which constitutes 11.94 percent of the total enrolled students. Out of them, SC students are 5.24 lakhs (10.71%) and ST students are 6 lakhs (1.23%). In 2003 the number of SC/ST students were 5.93 lakh which constituted 11.86 percent of the total school enrolment and out of them 5.33 lakhs were SC and 0.60 lakh were ST. Standard wise strength of SC/ST students during 2003-04 is given in Appendix. 11.9.

11.12. Standard - wise enrolment rate shows that the percentage of SC/ST students is lower at high schools. The percentage of SC students to total students in LP section is 11.37 and in High school section is 10.2. Similarly for ST students, the percentage in LP section is 1.57 and that of H.S section is 0.87 percent. Details are given in Table 11.3.

**Table-11.3**  
**Enrolment of SC/ST Students at School Level 2003-04**

Section	General	SC	Percentage to Total	ST	Percentage to Total
1	2	3	4	5	6
LP	1827765	207730	11.37	28669	1.57
UP	1502542	157141	10.46	18067	1.20
HS	1563698	159471	10.20	13603	0.87
<b>Total</b>	<b>4894005</b>	<b>524342</b>	<b>10.71</b>	<b>60339</b>	<b>1.23</b>

11.13. Management-wise enrolment of SC/ST students shows that their ratio is 15.1 percent in government schools, 11.01 percent in private aided and 3.3 percent in private unaided. In other words, out of the SC/ST students, 42.08 percent are in government schools, 56.39 percent in private aided and 1.53 percent in private unaided schools .

#### Drop-out rate in schools

11.14. Drop-out rate has been showing a declining trend over the past several years. Various schemes have been implementing to reduce the school drop out rate. Total drop-out rate of students in general is estimated as 1.46 percent and that of SC students and ST students are 3.64 percent and 4.66 percent respectively for 2004-05.

#### Sarva Shiksha Abhiyan

11.15. Sarva Shiksha Abhiyan, started in 2002-03, aims to provide quality elementary education to all children in the age group 6-14. Free Supply of text books to students in standards II-VIII, Teacher Training, Integrated Education of Disabled, Alternative/ Innovative education for out of school children through Multi-Grade Learning Centres, Early Childhood Care and Education, Girls Education, SC/ST Education, Computer Aided Learning, Community Mobilisation, Distance Education Programme and Civil works are the major activities of SSA.

#### BOX-11.2

##### Goals of Sarva Shiksha Abhiyan

- All 6-14 age children in school/EGS centre/bridge course by 2003.
- All 6-14 age children complete five year primary education by 2007.
- All 6-14 age children complete eight years of schooling by 2010.
- Focus on elementary education of satisfactory quality with emphasis on education for life.
- Bridge all gender and social category gaps at primary stage by 2007 and at elementary education level by 2010.
- Universal retention by 2010.

Table 11.4 shows the Physical achievement of SSA during 2002-04.

**Table. 11.4**  
**Physical Achievement of Sarva Shiksha Abhiyan during 2002-04**

Sl. No.	Activity	Physical Achievements	
		2002-03 (Nos.)	2003-04 (Nos.)
1	Block Resource Centre	152	153
2	Cluster Resource Centre	986	1101
3	<b>Civil Works</b>		
a	BRC Construction	20	20
b	CRC Construction	19	24
c	Building for Building less Schools/Replacement of Thatched sheds	4	62
d	Additional Class Room	238	760
e	Toilet/Urinals	542	704
f	Water Facility	244	491
g	Boundary Wall	216	742
h	Separation Wall	220	812
i	Electrification	222	598
4	Research and Evaluation	144	4458
5	School Grant	14017	11301
6	Teacher Grant	83603	116372
7	Maintenance Grant	3303	3831
8	Teacher Training	100491	128451
9	VEC Training	8591	16856
10	Free Supply of Text Book	865773	1805504
11	IEDC (No. of Children)	4265	89147

**BOX-11.3****Sarva Siksha Abhayan**

During 2004-05 approved outlay for Sarva Siksha Abhayan is Rs. 16789.7 lakhs and out of the approved outlay Rs. 12593 (75%) lakhs is central share and Rs. 4197 lakhs (25%) is state share. Out of the state share outlay, Rs. 430 lakhs (10%) is provided in the state budget and balance amount is to be met by the Local Self Government from its plan grant which is Rs. 3770 lakhs (90%).

To bring out of school children in the fold of elementary education Sarva Siksha Abhayan has two components (i) Education Guarantee Scheme (EGS) and Alternative and Innovative Education (AIE). EGS addresses inaccessible habitations where there is no formal school within the radius of 1 km. for children 6 to 14 years who are not going to school and Alternative and Innovation Education is for special category children like child labour, street children etc. During 2003-04 eventhough the target under Education Guarantee Scheme in Kerala was 19585 children achievement was zero since in all areas there are assessable schools within a radius of 1 km. Under Alternative and Innovative Education, achievement was 9169 students though there was no target.

During 2004-05, SSA has identified 8917 children with special need and trained 153 teachers to teach these children. Under mid day meal programme, 100% children have been covered under cooked meal programme.

### Integrated Education of the Disabled Children (IEDC)

11.16. Integrated Education of Disabled Children was started in 1974-75 with the objective of providing educational opportunities to all children with disabilities under the general school system with 100 percent Central Assistance. In 1998, IEDC was merged with DPEP. Disabled Children enrolled in primary and upper primary schools during 2002-03 was 54,874, out of whom 32,037 were boys and 22,837 were girls.

#### SSLC Examination results

11.17. SSLC examination results for the last 5 consecutive years show an upward trend in both the number of students appeared and pass percentage. Students appearing for SSLC Examination increased from 4.48 lakhs in 2000 to 4.69 lakhs in 2004. Those who passed increased from 2.59 lakhs to 3.25 lakhs. During 2000, 56.18 percent students passed SSLC and it significantly rose to 70.06 percent in 2004. It shows a 13.88 percent point increase. Details are shown in table 11.5.

**Table.11.5**  
**Number of students appeared for SSLC Exam (School going category) and number of students passed. (2000-2004)**

Year	Students appeared (Nos)	Students passed (Nos)	Percentage who passed	
			Before Moderation	After Moderation
2000	448364	25918	48.89	56.18
2001	455812	255854	43.58	56.22
2002	456458	276722	49.91	60.62
2003	458594	297379	52.52	64.85
2004	469704	325200	56.69	70.06

11.18. District wise analysis of SSLC Examination Results of March 2004 shows that highest pass percentage is in Ernakulam District (81.21%) and the lowest is in Palakkad district (50.18%). In 8 districts percentage of pass is above state average and in 6 districts it is below state average. Districts where the pass percentage is below the state average are Thiruvananthapuram, Pathanamthitta, Palakkad, Malappuram, Wayanad and Kasaragod.

#### Schools which do not have minimum students and have protected teachers

11.19. As per KER, a school in which the minimum strength per standard/batch in LP/UP/HS is below 25 is called an "uneconomic school".

In schools where Arabic or Sanskrit is taught as Part-I and II of the first language, the minimum strength per standard is 15. Based on this norm, there are 2622 uneconomic schools in 2004 against 2541 in 2003, an increase of 81. Of the total uneconomic schools, 1284 (48.97%) are government schools and 1338 (51.03%) are private aided. Category-wise uneconomic schools shows that 2111 (80.5%) are LP, 428 (16.32%) are UP and 83 (3.2%) are high schools. District-wise analysis shows that highest number of uneconomic schools are in Kannur and the lowest in Wayanad. District-wise and management-wise details of uneconomic schools are given in Appendix.11.11

### Protected Teachers

11.20. Total protected teachers in government and aided schools together are 3506 (593 High school teachers, 2088 PD teachers and 825 special teachers). Out of them, 1808 have been deployed in government schools, 895 retained in parent schools and 238 deployed in other aided schools in 2003-04. Remaining 565 protected teachers are undeployed. Out of these 565, 41 are High School teachers, 421 are PD teachers and 103 are special teachers. District-wise data shows that highest number of protected teachers are in Kannur (766) and the lowest are in Thiruvananthapuram (25). Details are given in Appendix.11.12.

#### BOX-11.4

Kerala State School Education Commission 2003-04 has recommended that to solve the problem of 'uneconomic schools' and protected teachers, the following measures can be adopted.

- Helping the mainstream schools to provide quality education which will be better than what is provided in the new generation schools.
- Increase the faith of the public in State sponsored schools.
- Re deploy protected teachers to permanent positions in working schools after a short re-training.

#### BOX-11.5

#### Report on Elementary Education in India- 2003 by NIEPA (National Institute of Educational Planning and Administration)

- The share of primary schools to the total schools is 70.71 percent at national level whereas in Kerala it is 54.51 percent
- The percentage of integrated Higher Secondary Schools imparting education from classes I to XII is only 2.18 percent of the total schools/sections that impart elementary education in the country whereas the percentage for Kerala is 6.2 percent. The category-wise distribution of schools (all schools) run by the Department of Education shows that on an average 66.21 percent of the total primary schools in the country are being run by the Department of Education itself. But in Kerala it is only 38.06 percent.
- About 87 percent of the total 8,53,601 schools that impart elementary education in the country are in the rural areas, except in the states of Kerala (79.35%) and Tamilnadu (79.21%). In the rest of the states, percentage of schools in the rural areas is above 80.
- Considering the physical facilities in schools, the highest percentage of primary schools having boundary wall is in the state of Himachal Pradesh (85.82%) and the lowest in Kerala (50.83%). All schools together, about 40 percent of the schools in the country did not have any boundary wall. More than 50 percent of the total schools in Kerala, however, do not have any boundary wall.



- About 6.34 percent primary schools in India are without building whereas it is only 0.52 percent in Kerala.
- The distribution of schools by the type of building shows that 70.19 percent of primary schools have pucca building as compared to 10.79 percent schools having partially pucca and another 2.52 percent Kuchha building. Only a few primary schools (.2%) are functioning in tents. About 8.35 percent primary schools have the multiple type of school building. The percentage of schools having pucca building in Kerala is 72.98 percent .
- Only 62 percent independent Upper Primary schools in India have pucca buildings. In Kerala 66.67 percent UP schools have pucca buildings.
- The average distribution of schools by number of class rooms (Zero, one, two and three & more) in India shows that the primary schools without a class room are 11.72 percent compared to 15.74 percent having one, 35.65 percent having two and 36.89 percent having 3 and more class rooms.
- The percentage of primary schools distributed by the number of class rooms (3 and more) further reveals that it is highest in the case of Kerala (89.68%) compared to only 18.79 percent in Bihar. Only 6.99% and 1.7 percent primary schools in Kerala have no class room and one room respectively.
- The distribution of schools by drinking water facility reveals that only 71.9 percent primary schools in India have drinking water facility. More than 86 percent primary schools in Kerala have drinking water facility in their premises.
- Only a few primary schools in India have common toilet facilities (29.06%) and separate toilets for girls (15.64%). In Kerala as many as 73.26 percent primary schools have common toilet and 26.49 percent schools have separate toilet for girls.
- More than 59000 (7%) schools imparting elementary education in the country have computers in school. Kerala (23.08%) has the highest percentage of such schools and Uthar Pradesh (2.58%) the lowest one.
- On an average there are 3.7 teachers in a school that imparts elementary education, Kerala has the highest number of teachers (9.85) and Bihar the lowest (2.55).
- One of the important indicators that influence class room transaction is the pupil teacher ratio. The highest teacher pupil ratio at the national level is observed in the case of primary schools (1:46). State-wise data shows the highest teacher pupil ratio in primary schools is observed in Bihar (1:83) . Kerala has an ideal teacher pupil ratio of 1:27.

#### Teacher Pupil ratio

11.21. Teacher Pupil ratio is an important indicator of the quality of education. Number of school teachers during 2003-04 was 172936 against 175701 in 2002-03. Out of 172936 teachers, 57627 (33.32%) are in government schools, 107122 (61.94 %) are in private aided and 8187(4.74%) are in unaided schools. Stage-wise distribution of teachers shows that 40545 (23.45%) are in Lower primary, 45010 (26.03%) are in upper primary and 87381 (50.52%) are in

High schools. Besides there are 871 TTI teachers in 2003-04 against 919 in 2003. Details of teachers are given in Appendix.11.10.

11.22. Teacher pupil ratio in Kerala has improved marginally from 1:28.5 in 2002-03 to 1:28.3 in 2003-04. However teacher pupil ratio differs at different levels. For instance, in Lower Primary Schools, it is 1:45, in Upper Primary Schools it is 1:33.4 and in High Schools it is 1:18.

**BOX-11.6****IT @ School**

Govt. of Kerala in 1994 introduced Computer Education in selected Govt. High Schools. However, computer education did not grow and spread as envisaged and hence a separate agency for implementing computer education was started during 2001. The agency, named IT @ School, was to use Information Technology as a powerful tool for improving quality of teaching and learning and to ensure basic knowledge and skill in computers through formal education. Preparation of curriculum, text books and multi media content for computer education and training of teachers are the activities included under IT @ school.

Govt. channelled 17 agencies to assist the schools in providing the hardware. The schools are to meet recurring expenditure by collecting Rs. 25 per student every month. The computer lab could also be used for the benefit of the society during outside school hours for income generation.

IT has been made compulsory in 8<sup>th</sup>, 9<sup>th</sup> and 10<sup>th</sup> standards. Out of 2422 high schools, there are minimum 5 computers in 2050 schools. In Malappuram and Alappuzha districts, all the high schools have five computers each. During 2003-04 five computers each have been supplied to 390 high schools. Similarly 31246 high school assistants have been trained in computer use.

SC/ST students have been exempted from the payment of IT tuition fees. Similarly the Constitution affords free education to all students up to 8<sup>th</sup> standard. Therefore, the tuition fee in IT education from 8<sup>th</sup> standard students could not be collected.

Out of 2422 schools, 2050 schools have set up computer labs and have five computers each. In 147 schools, computer lab does not have the requested specifications. Similarly there are 225 schools without computer lab/computers. In 73 schools, Kudumbasree have set up computer labs and in 1894 schools computer lab has been set up by PTA. 258 schools have internet connection.

During the first two years of the 10<sup>th</sup> plan, an amount of Rs. 1392 lakhs has been spent for IT education in schools. During 2004-05, an amount of Rs. 158 lakhs has been so far spent against an allotment of Rs. 1320 lakhs.

**HIGHER SECONDARY EDUCATION**

11.23. Department of Higher Secondary Education was formed in 1990 with the introduction of Plus Two courses in a few schools during 1990-91. However, Pre-degree was fully shifted from colleges only during the 9<sup>th</sup> plan. There were 932 higher secondary schools (416 in government sector, 508 in aided sector and 8 in unaided sector) with 3483 batches with an annual sanctioned intake of 174150 seats by 9<sup>th</sup> plan end. During 2002-03, the first year of the 10<sup>th</sup> plan, 322 new schools were started. In addition to this, 20% seats were additionally allowed to all the existing schools with a view to providing admission to the maximum number of SSLC pass outs. Thus annual intake of students increased to 2,28,456 and schools to 1254. Again during 2004-05 academic year, 286 High Schools in the govt. sector were upgraded to Higher Secondary Schools with two batches each. 633 Higher Secondary Schools

(HSS) have been newly started during the 10<sup>th</sup> plan (286 Govt., 15 Aided and 332 unaided). There are now 1565 HSS with an annual intake capacity of 3.23 lakh students. District-wise and Management wise number of HSS are given in Appendix 11.13.

11.24. During the academic year 2003-04, the actual enrolment of students was only 2.34 lakh as against the sanctioned seat strength of 2.60 lakhs. It shows that 26000 seats (10%) remained vacant. Details of enrolment of students is given in Appendix 11.14.

11.25. During 2001-02, Government created 9000 teaching posts in Higher Secondary Schools (Government 3241 and 5759 Aided). Similarly during 2002-03, two posts of Lab Assistants in each school were created.

11.26. Private registration was introduced for Higher Secondary Courses during the academic year 2001-02. The Kerala State Open School conducted by SCERT also provides chance to SSLC pass out students to opt Science courses through private study.

11.27. Accordingly in the first phase, 65 schools were given assistance (Rs. 2.15 lakhs per school for laboratory). In 2<sup>nd</sup> phase 320 schools have been given assistance of Rs. 795.6 lakhs for setting up laboratories. 286 schools started during 2004-05 have not been provided assistance for setting up laboratory. For each school, laboratory requirement is estimated at Rs. 5 lakhs. In order to provide additional amount to 385 existing schools and to 286 new schools for laboratory facilities an amount of Rs. 2356.89 lakhs is needed. In other words, in order to set up laboratory of Rs. 5 lakhs in each school, Rs. 23.57 crore is required.

#### Infrastructure

11.28. Existing infrastructure in all the higher secondary schools is inadequate and poor. The condition is very poor in 286 schools started during 2004-05. Facilities like class rooms, lab rooms, staff room, library rooms, toilet and water supply have to be either constructed or expanded/upgraded. According to a rough estimate, in order to provide minimum infrastructure facilities in all the higher secondary schools, an amount of Rs. 66 crore is required.

#### Strengthening of Libraries

11.29. Out of 702 Govt. Higher Secondary Schools, only 416 schools were given aid for library in phases. Assistance for each school is approved at Rs. one lakh. As part of it, in the first phase, 65 schools were given assistance at the rate of Rs. 0.5 lakhs and in the 2<sup>nd</sup> phase 201

schools were given aid at the rate of Rs. 0.35 lakhs. In the 3<sup>rd</sup> phase, 150 schools were given aid at the rate of Rs. 0.43 lakhs. In 286 schools started during 2004-05, no aid has been given for library. Total assistance provided to 416 schools is thus Rs. 167.35 lakhs. In order to provide library assistance of Rs. one lakh to each higher secondary school total amount needed comes to around Rs. 534 lakhs.

#### Computerisation

11.30. In 142 schools 674 computers have been provided during the first two years of 10<sup>th</sup> plan. It is proposed to provide 360 computers to 120 schools during 2003-04. In 286 schools started during 2004-05 computers have not been provided. Eventhough it has been decided to provide 10 computers each to all schools, only 5 computers could be provided to 120 schools sanctioned before 2004-05. It is targeted to provide 10 computers each to 286 new schools sanctioned during 2004-05.

#### Vocational Higher Secondary Education

11.31. Vocational Higher Secondary Education was introduced in 19 Govt. High Schools in Kerala during 1983-84. There are now 375 VHSS of which 247 are in government sector and 128 are in private aided. Under VHSE there are 1000 batches in 42 courses (2003). Out of 1000 batches, 606 are in the government schools and 394 are in the aided schools. The sanctioned intake and actual enrolment of students in VHSS during 2004-05 are 33,000 and 29,575 respectively. Course-wise intake of students in VHSS during 2003-04 is given in Appendix 11.15. During 2004, 26,906 students appeared for examination and 18,956 students passed (70.45%). The pass percentage of girls (73.09%) is higher than boys (67.35%).

#### BOX-11.7

##### Report of the Kerala State School Education Commission 2003-04

Reasons for the degeneration of the quality of school education are:

- Use of outmoded assumption and invalidated practices.
- A retrograde system culture of resisting change, sidelining the adoption of progressive practices adopted all over the world.
- Insincere implementation of new policies.

- Introducing new policies which have strong social implications without taking into account public confidence.
  - Evolving policies totally ignoring the interest of students who should be the main focus of all educational reforms.
- Recommendations for increasing the quality of teaching and related performance of the teachers:
- Adoption of a new culture of self assessment.
  - Constant supervision and monitoring by higher officers.
  - Constant evaluation of teachers by themselves as well as by their peers in school, by students and by community leaders and parents.
  - A profile of teacher performance is to be developed and made available for public scrutiny.
  - All teachers who appear for selection to teaching post should have passed the State Teacher Talent Test.
  - All initial appointments shall be on a contract basis for a period and permanent employment only after the successful completion of the contract period.

**University and Higher Education**

11.32. In Kerala there are 7 Universities that manage higher education. They are University of Kerala, University of Calicut, Mahatma Gandhi University, Sree Sankaracharya University of Sanskrit, Kannur University, Cochin University of Science and Technology and Kerala Agricultural University. There are also two deemed universities.viz, National Institute of Technology, Calicut and Sree Chithira Thirunal Institute of Medical Sciences, Thiruvananthapuram.

One government college has been able to get A grade; only two government colleges have B++ grade.

**Table.11.7**  
**University-wise and Management wise number of Arts and Science Colleges in the Universities of Kerala**

Sl. No.	Name of University	No. of Colleges			
		Govt.	Private Aided	Pvt. Un aided	Total
1	Kerala	9	37	13	59
2	Calicut	16	44	31	91
3	Mahatma Gandhi	7	55	38	100
4	Kannur	6	12	22	40
	Total	38	148	104	290

**Arts and Science Colleges**

11.33. There are 290 Arts and Science Colleges in 2004, of which 38 are Government colleges and 148 are private aided and 104 are private unaided. University-wise and management-wise numbers of Arts and Science Colleges are given in Table.11.7. 100 affiliated colleges in Kerala have accreditation from NAAC. Out of these accredited colleges, six are government and others are private colleges. Among the accredited colleges seven have A grade, 21 have B++ grade, 22 have B+ grade, six have B grade and others are having other grades.

**Government Arts and Science Colleges**

11.34. Out of 38 Government Arts and Science Colleges, seven old and large colleges have been declared as centres of excellence and out of them four have NACC accreditation. The other colleges are creating facilities to get NAAC accreditation.

11.35. Laboratory and Libraries need improvement for quality upgradation of teaching and learning. During the first 2 years of the 10<sup>th</sup> plan, Rs. 400 lakhs has been provided for

library and laboratory expansion and modernisation. Out of it Rs. 120 lakhs has been utilised for library.

11.36. Amount of Rs. 411.68 lakhs was spent during 2003-04 for providing facilities in Government Arts and Science Colleges. Out of it Rs. 79.85 lakhs (19%) was utilised for laboratory and library and Rs. 93.02 lakh (22.6%) was for starting new courses.

### Enrolment of Students

11.37. There were 1.69 lakh students studying in the various Arts and Science Colleges under the 4 universities of Kerala during 2004. The number was 1.59 lakhs in 2003. Enrolment of students increased by 0.10 lakhs in 2004 mainly due to the introduction of new courses in colleges. Of the total students enrolled, 65.64 percent are girls and 34.36 percent are boys. Similarly, 13.47 percent of total students are SCs and 1.08 percent are STs. Thus SC/ST students constitute 14.55 percent of total students in Arts and Science Colleges. Students in graduate courses are 1.53 lakh and that of Post Graduate courses are 0.16 lakh with shares of 91 percent and 9 percent respectively.

11.38. Out of the 1.53 lakh students enrolled for Degree courses in 2004, 0.54 lakh (35.31%) are boys and 0.99 lakh (64.69%) are girls. SC students account 13.7 percent of total students and ST students account 1.07 percent. Out of the total enrolled 16618 post graduate students, 4253 (25.6%) are boys and 12365(74.4%) are girls. Share of SC students is 11.4 percent (1894) and that of ST is 1.14 percent (189).Details of Enrolment are furnished in the Table 11.8.

**Table 11.8**  
**Enrolment of Students in Arts and Science Colleges-2004**

Name of Course	Enrolment of Students (Nos)		
	Boys	Girls	Total
<b>Degree courses</b>			
B.A	21772	41874	63646
BSc	21282	44559	65841
B.Com	11037	12660	23697
<b>Sub Total</b>	<b>54091</b>	<b>99093</b>	<b>153184</b>
<b>Post graduate courses</b>			
M.A	1837	5327	7164
MSc	1558	5395	6953
M.Com	858	1643	2501
<b>Sub Total</b>	<b>4253</b>	<b>12365</b>	<b>16618</b>
<b>Total</b>	<b>58344</b>	<b>111458</b>	<b>169802</b>

11.39. Out of the total students in graduate courses, 63646 students are for BA, 65841 are for BSc and 23697 are for B.Com. The girls' share in the BA course is 65.79 percent. There are 16 subjects offered for BA courses and among them, maximum number of students are in Economics (30.38%). For BSc Course, 65841 students were enrolled during 2004. Here also girls out number boys (67.68 %). 15 subjects are offered under BSc courses and maximum number of students are in Mathematics; ( 25.17 percent). There are 23697 students for B.Com courses. Here the difference between the number of girls and that of boys is not so wide; ie, girls share is 53.42 percent.

11.40. Details of course-wise and subject wise enrolment of students for degree courses are given in Appendices.11.16, 11.17 and 11.18.

11.41. Enrolment for P.G. courses during 2004 shows that out of 16618 students, 7164 are for MA courses which constitutes 43.11 percent. Of the total students for MA, 74.36 percent (5327) are girls. 16 different subjects are under the MA courses. Among the subjects, highest number of students were in Economics; ie. 1817 students(25.4%). M.Sc course is conducted under 10 different branches with a total student strength of 6953 during 2004. Mathematics admits maximum number of students; ie, 1454 (20.91%). Girls occupy a major chunk of the total seats available, ie, 77.59%(5395). Regarding M.Com Degree course, 2501 students were admitted during 2004. Out of 2501 students, 1643 (65.69%) are girl students. Details are furnished in Appendices 11.19, 11.20 and 11.21.

11.42. During 2003-04, total number of teachers in Arts and Science colleges (excluding unaided colleges) was 10347 as against 10458 in 2002-03. University-wise break-up of teachers shows that maximum number of teachers are in M.G. University (3693) followed by Kerala (3151), Calicut (2791) and Kannur (712). Women teachers constitute 52.58 percent of the total teaching staff. University-wise number of teachers in Arts and Science colleges is shown in Appendix 11.23.

### New courses started under the Universities.

11.43. With the increasing demand for skill based and job oriented education, Universities are

shifting from conventional humanities and social sciences courses to professional and technical courses. Most of the new courses are self financing.

11.44. University of Kerala has introduced job oriented and need based courses as part of the “vision statement”. During 2003-04, the University has started 6 semester BSc Botany & Biotechnology course with an intake of 20 students, 6 Semester B.Com (3 main) course with an intake of 30 students, 3 year B.Com course with an intake of 30 students and 6 Semester BSc Biochemistry and Industrial Micro Biology with an intake of 20 students. University of Calicut started one year B PED course during 2004-05, with a sanctioned intake of 40 students .

11.45. M.G. University started self financing courses such as M.Pharm course with a sanctioned intake of 5 students and MSc Computer Engineering and Net Work Technology with sanctioned intake of 30 students during 2004.

11.46. In Kannur University courses like printing Technology (certificate course), with a sanctioned intake of 50 students. Yoga Science & Indigenous Health care (Certificate course with a sanctioned intake of 50 students and PG Diploma course with a sanctioned intake of 60 students) and MBA (with a sanctioned intake of 60 students) were started during 2004 through community colleges.

#### Self financing Arts and Science Colleges

11.47. Universities have started several self financing Arts and Science Colleges/Institutions over the last four years. Details are given in Table.11.9

Table-11.9

University wise details of Self-financing Arts and Science Colleges started during 2001-04.

Sl. No	Name of University	2001		2002		2003		2004		Total	
		No.	Sanctioned Intake	No.	Sanctioned Intake	No.	Sanctioned Intake	No.	Sanctioned Intake	No.	Sanctioned Intake
1	Kerala	Nil	--	1	20	2	100	Nil	--	3	120
2	Calicut	N.A									
3	M.G	3	495	24	5665	9	1250	1	60	37	7470
4	Kannur	Nil	--	5	730	11	785	Nil	--	16	1515

11.48. Highest number of self-financing colleges were started in Mahatma Gandhi University during the past 4 years. The University started 37 institutions with a sanctioned intake of 7470 students.

#### IT Grid

11.49. The programme of the Kerala Educational Grid is being implemented in the IIITM-K. The Kerala Educational Grid has brought together IIITM-K, College of Engineering, Thiruvananthapuram, CUSAT and NIT Calicut and has equipped them to offer jointly e-learning and other web -based academic resources and services to their respective teachers, scholars and to those in other colleges. The major four universities have also been linked through the Education Grid.

#### Private Registration.

11.50. The number of private registrants in the main three universities of Kerala (Kerala, Calicut, Mahatma Gandhi) decreased from 78734 in 2002-03 to 46797 during 2003-04. Kerala University has discontinued private registration in PG courses from 2003-04 onwards. Stage-wise details of private registrants show that out of 46797 students, 41731 (89.17%) are for degree courses and the rest 5066 (10.83%) are for PG courses. Further, of the total 41731 students for degree courses 26992 (64.68%) are in BA courses and 14739 (35.32%) are in B.Com courses. Out of the 5102 students for post graduate courses 2014 (39.75%) are in MA courses, 2693 (53.16%) are in M.Sc courses and 359 (7.09) are in M.Com course. University -wise details of private registration at graduate and post graduate courses are given in Appendix 11.22.

#### Financing of Universities in Kerala

11.51. The day to-day activities of the Universities are financed through plan and non-plan grants

provided by government of Kerala, internal receipts and other sources. Expenditure of the Universities has increased due to increases in salary, pension, conduct of examination etc. which has created a widening gap between income and

expenditure. The internal receipts of the Universities during 2003-04 is only 27.17% of total receipts against 28.46% in 2002-03. University-wise receipts and expenditure during 2002-03 and 2003-04 is shown in Table 11.10 A and 11.10B. All the Universities in Kerala face financial difficulties.

11.52. Total receipts of the five universities increased from Rs.17682.23 lakh in 2002-03 to Rs. 18265.03 lakhs in 2003-04 which shows 3.29% increase. While the plan and non-plan grant from government increased from Rs.10514 lakhs to Rs. 10931.5 lakhs (3.97%) internal receipts increased from Rs.5031.49lakhs to Rs. 5061.23 lakhs.

11.53. While plan and non plan receipts form 59.85% of the total receipts of the Universities, internal receipts form only 27.71 %. Grant from UGC and from other sources form 12.7%. State government grant is thus the major source of resource of Universities.

11.54. The total expenditure of all the five Universities increased from Rs.20068.19 lakhs in 2002-03 to Rs.20377.14 lakhs in 2004-05. Salary accounted for 47.19% of the total expenditure of the Universities in 2002-03 and 48.93% in 2003-04. Conduct of examination, another major expenditure item accounted for 6.67% in 2003-04 against 6.9% in 2002-03.

**Table. 11.10.A**  
**University-wise- Details of Receipts (2002-03 &2003-04)**

A. Receipts										
Name of University	2002-03					2003-04				
	Internal Receipts	Plan	Non-Plan	U.G.C and Other	Total	Internal Receipts	Plan	Non-Plan	U.G.C and Other	Total
1	2	3	4	5	6	7	8	9	10	11
1.Kerala University	1598.91	360	3551	382.52	5892.43	1605.81	382.5	3685	551.18	6224.08
2.Calicut University	2393.22	280	2507	1680.61	6860.83	2384.87	297.5	2601.5	1570.13	6854.88
3.Mahatma Gandhi University	670.33	360	1484	70.2	2584.53	720.46	467.5	1540	-	2727.96
4.Kannur University	275.71	528	300	-	1103.71	301.94	680	330	-	1311.94
5.Sree Sankaracharya University of Sanskrit	93.32	120.00	1024	3.41	1240.73	48.15	127.50	820.00	150.52	1146.17
Total	5031.49	1648	8866	2136.74	17682.23	5061.23	1955.00	8976.5	2319.51	18265.03

**Table-11.10.B**  
**University-wise- Details of Expenditure (2002-03 &2003-04)**

B. Expenditure									
Name of University	2002-03				2003-04				
	Expendr. of Staff	Conduct of Exam	Others	Total	Expdr. of staff	Conduct of Exam	Others	Total	
1	2	3	4	5	6	7	8	9	
1. Kerala University	3377.97	343.18	2700.2	6421.35	3503.28	429.68	2884.39	6817.35	
2.Calicut University	3046.05	489.5	3192.2	6727.75	3235.56	524.02	3087.7	6847.28	
3.Mahatma Gandhi University	2137.19	503.89	2208.96	4850.04	2162.57	343.77	1943.07	4449.41	
4.Kannur University	302.47	66.12	574.93	943.52	399.3	74.94	790.7	1264.94	
5. Sree Sankaracharya University of Sanskrit	607.11	7.22	511.2	1125.53	670.50	9.69	317.97	998.16	
Total	9470.79	1409.91	9187.49	20068.19	9971.21	1382.1	9023.83	20377.14	

## Higher Education Issues and Imperatives

11.55. In recent years, higher education sector in Kerala has been suffering from several deficiencies which include out dated courses and syllabi, failure to keep pace with academic advancement within and outside the country, inability to realign courses as per the needs of the job market, very little original research and poor supporting infrastructure like laboratory and library. Issues relating to quality improvement are the biggest challenge facing the higher education scenario in the state. Kerala University has a proposal to start under graduate Hon's degree course to improve the quality of education.

11.56. Since Kerala has gone beyond the first step of providing literacy and basic school education, more funds need to flow into higher education sector, though more than funds it is the poor environment for improving quality that is a major challenge. There is complacency and resistance to change from incumbent interest. To break out of this state of affairs, bold changes both legislative as well as operational, coupled with greater infusion of funds are urgently needed.

### Technical Education.

11.57. Technical education system in Kerala Consists mainly of Engineering Colleges, Polytechnics, Vocational Higher Secondary Schools, Industrial Training Institutes and Technical High Schools. In addition to it, there are 17 Government Commercial Institutions, with minimum qualification for admission being a pass in SSLC, 42 Tailoring and garments making centres, 5 Industrial Schools, 3 Colleges of Fine Arts and 12 Food Craft Institutions/ Centres. National Institute of Technology Kozhikode, is also functioning with eight departments as a Deemed University offering graduate and post graduate courses. CUSAT is a University functioning in

Kerala conducting graduate and post graduate courses in 68 subjects. Table 11.11 shows the category-wise technical institutions in Kerala and its annual intake capacity.

**Table - 11.11**  
**Technical Educational Institutions and intake of Students.**

Sl. No	Category	Institutions	Annual intake of students (Nos)
1	Engineering Colleges	83	19346
2	Vocational Higher Secondary Schools	375	33000
3	Polytechnics	59	10875
4	Technical Higher Secondary Schools	44	2085
5	Industrial Training Institutes/RTCs	470	7587
6	Government Commercial Institutes	17	740
7	Tailoring & Garments Making	42	1260
8	Industrial Schools	5	80
9	Fine Arts Colleges	3	83
10	Food Craft Institute	12	622

### Engineering Colleges

11.58. State Government started to sanction more self-financing Engineering Colleges in the private sector since 2000. Owing to this policy shift, technical educational institutions, particularly engineering colleges, have grown in number significantly. When Eighth Five Year Plan ended in 1997, Kerala had only 15 Engineering Colleges with an annual intake of 4844 students and 38 Polytechnics with an annual intake of 6660 students. But when Ninth Plan ended in 2002, there were 44 Engineering Colleges with 11314 seats and 48 Polytechnics with 9380 seats excluding self financing institutions. During the first 3 years of the 10<sup>th</sup> Plan, 39 Engineering Colleges were newly started with 8032 more seats.

11.59. There are now 83 Engineering Colleges (excluding NIT Kozhikode and CUSAT) and out of them 9 are government, 3 are private aided and 71 are self financing. The sanctioned annual intake of students in these 83 engineering colleges for B.Tech courses is 19346 with an increase of 3.6 percent in annual intake in 2004 over 2003. Out of the total sanctioned intake, 79% (15323) are in self financing colleges. Similarly 22 Engineering Colleges are in M.G. University followed by 19 in Kerala University and 18 in Calicut University. Annual intake of students is 5.8 percent of all India intake. Out of the 71 self financing engineering colleges, 9 are under IHRD, a government sponsored organisation. Besides, part time B.Tech courses are offered through three Engineering Colleges and their annual intake is 610 students. B.Tech courses are in 24 subjects.



Out of the 19346 sanctioned seats, 62% are in three subjects, namely, electronics & communication (26%), computer science (23%) and electrical & electronics (13%). Major subject-wise distribution of B.Tech courses are shown in Table - 11.12. Further details are given in appendices - 11.24 and 11.25.

**Table - 11.12**  
**Subject-wise distribution of sanctioned seats for B.Tech.**

Sl. No	Subject	Sanctioned Students (Nos)	Percentage
1	Electronics & Communication	5025	26.0
2	Computer Science	4560	23.5
3	Electrical & Electronics	2550	13.2
4	Information Technology	2380	12.3
5	Mechanical	1791	9.3
6	Civil	932	4.8
7	Applied Electronics & Instrumentation	660	3.4
8	Others	1448	7.5
	<b>Total</b>	<b>19346</b>	<b>100.00</b>

11.60. Post Graduate engineering courses are offered in six subjects and the annual intake is 203 in 2004. Out of the total intake, 188 are in government colleges and 15 are in aided colleges. Subject-wise intake of students in post graduate courses are shown in Table - 11.13.

**Table - 11.13**  
**Subject-wise sanctioned intake of students in M.Tech Courses.**

Sl. No	Subjects	Annual Intake (Nos.)	
		2003-04	2004-05
1	Civil	50	75
2	Mechanical	43	53
3	Electrical & Electronics	26	36
4	Electronics & Communication	10	24
5	Architecture	5	7
6	Chemical	6	8
	<b>Total</b>	<b>140</b>	<b>203</b>

11.61. Annual intake of students for postgraduate courses in Kerala is only 203 (0.7%) against the all India total intake of 29,357.

11.62. Out of the nine Government Engineering Colleges, 5 Engineering Colleges started during the 9<sup>th</sup> Plan were lacking infrastructure like furniture, machinery and equipment, computers, library and buildings. An amount of Rs.7050 lakhs

has been earmarked for these five colleges during the 10<sup>th</sup> plan and during the first 2 years (2002-04) Rs.938 lakhs has been spent.

#### MBA & MCA Courses.

11.63. MBA courses are conducted through 7 engineering colleges and out of it 5 are self-financing with an annual intake of 300 students. Out of the other two, one is government Engineering College and other is aided Engineering College and each has an intake capacity of 30 students each. Thus in Kerala total intake of MBA students are 360. Three year MCA courses are conducted through 31 colleges with an annual intake of 1495 students. Out of these colleges, 26 are self financing, 3 are government and two are aided.

#### Technical Education Quality

11.64. The rapid increase in the number of engineering colleges in a short period has led to non-availability of qualified good quality teachers in a number of colleges. Quality improvement is an urgent need. The resistance to conversion of selected institutions into autonomous ones also stands in the way of improvement of quality and starting of new courses to meet emerging demands from industry. Government of Kerala have formulated a Technical Education Quality Improvement Programme with World Bank Assistance and started implementation during 2004-05. The broad objectives are;

- (i) Selected engineering colleges can achieve their own set targets for excellence and sustain it with autonomy and accountability.
- (ii) Improve efficiency and effectiveness of the technical education management system in the institutions selected.

11.65. Six colleges have been selected under the project and the approved outlays are as shown in Table 11.14.

**Table - 11.14**

Sl. No	College	Outlay Rs. lakhs
1	College of Engineering, Thiruvananthapuram	1416.65
2	College of Engineering, Chengannur	474.00
3	Model Engineering College, Kochi	431.30
4	SCT College of Engineering, Thiruvananthapuram	487.85
5	MES College of Engineering, Kuttippuram	493.62
6	LBS College of Engineering, Kasaragod	478.82
	<b>Total</b>	<b>3782.24</b>

11.66. The project started during February 2003 is scheduled to be completed by December 2007. Key components of the project are promote academic excellence, net working of institutions, service to community and economy and system management capacity improvement. The cumulative expenditure of the project up to March 2004 was Rs.49.85 lakhs. During 2004-05, an amount of Rs.30 crores is provided and the expenditure expected is only Rs.15 crores. However during 2005-06, the project development activities will be in full swing due to the streamlining of the modalities.

#### **Polytechnics & Technical High Schools**

11.67. In Kerala there are 59 polytechnics and out of it, 43 are government (including 7 women's polytechnics), 6 are private aided and 10 are self financing. Out of the 10 self financing polytechnics, 6 are under IHRD and 4 are private. The annual intake of students in all the polytechnics together in 2004 is 10875. Out of the total sanctioned students in 2004, 9500 are in government and private aided and 1375 are in self financing. Similarly polytechnics offer courses in 27 trades. Out of 10875 sanctioned seats in government, aided and self financing polytechnics, 1830 (16.8%) are in Electronics followed by 1760 (16.2%) in Computer Engineering, 1310 (12%) in Mechanical and 980 (9%) in Civil. Trade-wise details are given in Appendix - 11.27.

11.68. Total number of students studying in polytechnics during 2004-05 are 28273. Out of them 10318 are girls (36.49 percent). Teachers in government and aided polytechnics during 2004-05 are 1704 of whom 408 (24%) are female. Details of students and teachers are given in Appendix - 11.26.

11.69. Out of the total 59 polytechnics, 10 started during third and fourth five year plans need additional strengthening with buildings, machinery and equipment for laboratory. Similarly another 10 polytechnics started during the 9<sup>th</sup> Plan with new courses also need new high tech equipment like computer and electronic lab items and also buildings and lab equipment.

11.70. There are 39 Technical High Schools, with an annual intake of 2085 in 2004-05. Total students are 6255 of whom 630 (10%) are girls. Similarly out of 1031 teachers in Technical High Schools, 840 (81%) are male and 191 (19%) are women. Restructuring of technical and vocational high schools is over - due, in order to make the outgoing students employable in industry.

#### **Cochin University of Science and Technology (CUSAT)**

11.71. CUSAT aims at development of higher education with particular emphasis on post graduate studies and research in applied science, technology and commerce. The University is academically structured into nine faculties viz. Engineering, Environmental Studies, Humanities, Law, Marine science, Science, Social Science and Technology and 26 departments of study and research. The university conducts post graduate courses in 51 subjects with an annual intake of 892 students and graduate courses in 17 subjects, with an annual intake of 1102 students. University directly conducts B.Tech courses in 7 subjects with an annual intake of 820 students. In addition, 17 engineering colleges are attached to the CUSAT. Subject-wise courses and intake of students are shown in Table- 11.15, 2004 and further details are shown in Appendix - 11.28.

**Table - 11.15**  
**Subject-wise Graduate and Post Graduate courses in CUSAT.**

Sl. No	Faculty	B.Tech/Graduate Courses (Nos)		M.Tech/Post Graduate Courses (Nos)		Total (Nos)	
		Subjects	Intake of students	Subjects	Intake of students	Subjects	Intake of students
1	Engineering	7	820	5	90	12	910
2	Environmental studies	-	-	1	12	1	12
3	Humanities	5	100	4	71	9	171
4	Law	1	60	1	36	2	96
5	Marine Science	-	-	12	137	12	137
6	Science	-	-	10	132	10	132
7	Social Science	-	-	6	141	6	141
8	Technology	4	122	12	273	16	395
	<b>Total</b>	<b>17</b>	<b>1102</b>	<b>51</b>	<b>892</b>	<b>68</b>	<b>1994</b>

Note: Figures in bracket indicate percentage.

11.72. The University undertakes numerous externally funded research schemes and projects. University has registered steady growth and has earned recognition as one of the highly reputed and internationally acclaimed Indian universities. It has academic links and exchange programmes with several institutions across the globe.

11.73. Government of Kerala provides plan grant to CUSAT for creating infrastructure facilities like buildings, library, laboratory, furniture, equipment, staff training etc. During 2003-04 an amount of Rs.340 lakhs was sanctioned to CUSAT as plan grant and out of it Rs.300 lakhs has been spent. Plan grant allotted is Rs.400 lakhs for 2004-05.

**Institute of Human Resources Development (IHRD)**

11.74. Institute of Human Resources Development was established by the government of Kerala to develop manpower in the field of

electronics, computer and allied areas. Institute runs 9 Engineering Colleges, 6 Model Polytechnics, 14 Colleges of Applied Science, 25 Technical Higher Secondary Schools, and PGDCA courses in its 2 Regional Centres and one Extension Centre. All the institutions together have an annual intake of 9586 students. As against it students admitted in 2004 are only 5713 (59.6%). Institutions, annual intake and students admitted are given in Table. 11.16.

**Table - 11.16**  
**Sanctioned Annual Intake and Admission in 2004**

Sl. No	Institutions	2004 (Nos)		
		Institutions	Annual Intake	students admitted
1	Engineering Colleges	9	1405	1023 (72.8)
2	Polytechnics	6	775	723 (93.3)
3	Technical Higher Secondary Schools	25	3920	2275 (58)
4	College of Applied Science	14	1486	942 (63.4)
5	Regional Centres (PGDCA)	2	80	80 (100)
6	Extension Centre (PGDCA)	1	40	40 (100)
7	22 PGDCA Centres among Engineering Colleges, Model Polytechnics, Colleges of Applied Science and Technical Higher Secondary Schools	-	880	630 (71.6)
	<b>Total</b>	<b>57</b>	<b>9586</b>	<b>5713(59.6%)</b>

11.75. In all the Institutions, students admitted are below sanctioned intake. For instance in Polytechnics, students admitted are only 58% whereas in engineering colleges, students admitted are 73%.

11.76. Engineering Colleges, College of Applied Science and PGDCA courses are self financing. Most of the institutions lack even minimum

infrastructure facilities including buildings. AICTE has not given recognition to three model polytechnics at Karunagapally, Painavu and Kalyasseri due to lack of building and other infrastructure facilities. Fees levied from students in model polytechnics and THSS are insufficient to meet recurring expenditure. In the engineering colleges, 50% seats are government's seats and fees are as per government rates. Higher fees collected from 50% management seats and lower fees collected from government seats are insufficient to meet recurring expenditure of the engineering colleges.

11.77. Outlay set apart for Technical Education during the 10<sup>th</sup> plan was 269 crores. An amount of Rs.5071 lakhs has been spent during 2002-04, first two years of the 10<sup>th</sup> plan which is only 19 percent of the Plan outlay. Amount set apart for 2004-05 is Rs.6790 lakhs.

#### Expenditure on Education

11.78. Kerala spent Rs. 2928 crores for education during 2002-03 as against Rs. 2444 crore in 2001-02. During 2003-04, it is estimated to have spent Rs. 3101 crores. This shows that, states expenditure on education increased by 19.8% in 2002-03 over 2001-02 and the estimated expenditure, in 2003-04 over 2002-03 shows 6% increase.

#### BOX-11.9

The Human Development Report 2004 ranks India 78<sup>th</sup> in respect of share of public expenditure on education.

11.79. State devolves nearly a third of State's Plan outlay to Local Governments. Out of the total plan grant devolved to Local Governments in 2003-04, they have earmarked Rs. 3629 lakhs for education. Thus when we add Rs. 3629 lakhs spent by Local Governments for education, total amount spent for education in Kerala will increase to Rs. 3138 crores in 2003-04 and total amount spent for education will be around 3.5% of state domestic product.

11.80. In Kerala, primary and secondary education account for more than 69 percent of the total expenditure on education. Plan and Non-plan expenditure of the central and state governments for education was Rs. 68071 crore in 2001-02 of which Kerala's share of expenditure on education was 2444.23 crore (3.59%).

11.81. The proportion of education expenditure to total expenditure of governments (centre and states) was 9.9 percent in 2002-03(RE), whereas in Kerala, the proportion was 11.7 percent in 2002-03.

11.82. In 2003-04, primary education accounted for 41.85 percent of the total expenditure on education, Secondary Education 28.03 percent and Higher Secondary and Vocational Higher Secondary Education together reached 8.23 percent, University and Higher Education accounted only 15.96 percent and Technical Education 5 percent. Expenditure on education to state's total expenditure (Revenue and Capital) was 18.34 percent in 2003-04(RE). Similarly out of the total expenditure of Rs. 3101.77 crores in 2003-04, Rs.3002.07 crore (96.8 percent) was non-plan and Rs.99.7crores (3.2%) was plan. Out of the total non-plan expenditure, Rs. 2711.67 crores (90.3%) went to salary. Within salary 83% went to School Education, 14% to University and Higher Education and 3% to Technical Education.

11.83. However, under plan more outlay is sought to be given to higher education. For instance, during 2002-03, out of Rs. 145 crores spent under plan for education, amount spent for primary and secondary was Rs. 20 crores (14%). Meanwhile Rs. 42.85 crore(29.5%) was spent for higher secondary education including vocational higher secondary education. University and higher education accounted for Rs. 21.58 cores(15%) and Technical education Rs. 32.28 crores(22.2%). (See Table - 11.17).

**Table- 11.17**  
**Stage-wise Expenditure on Education (2001-02 & 2003-04)**

Sl.No	Stage	2001-02			2002-03(Accounts)			2003-04 (RE)		
		Plan	Non-Plan	Total	Plan	Non-Plan	Total	Plan	Non-Plan	Total
1	2	3	4	5	6	7	8	9	10	11
1	Primary Education	9.11	1038.24	1047.35	11.37	1225.59	1236.96	4.52	1293.69	1298.21
2	Secondary Education	4.25	675.04	679.29	9.08	781.97	791.05	13.82	855.46	869.28
3	Higher Secondary Education	50.94	--	50.94	28.85	89.77	118.02	1.50	189.78	191.28
4	Vocation Higher Secondary Education	1.50	27.45	28.95	14.00	39.05	53.05	4.00	59.96	63.96
5	University and Higher Education	12.15	478.58	490.73	21.58	530.56	552.14	23.59	471.38	494.97
6	Adult Education	0.37	0.01	0.38	0.13	0.03	0.16	0.20		0.20
7	Language Development	2.61	9.71	12.32	1.40	11.22	12.62	1.35	11.96	13.31
8	General	3.72	3.64	7.36	27.19	4.85	32.04	10.81	4.75	15.56
	<b>Sub Total General Education</b>	<b>84.65</b>	<b>2232.67</b>	<b>2317.32</b>	<b>113.00</b>	<b>2683.04</b>	<b>2796.04</b>	<b>59.79</b>	<b>2886.98</b>	<b>2946.77</b>
9	Technical Education	41.67	85.24	126.91	32.28	99.93	132.21	39.91	115.09	155.00
	<b>Total Education</b>	<b>126.32</b>	<b>2317.91</b>	<b>2444.23</b>	<b>145.28</b>	<b>2782.97</b>	<b>2928.25</b>	<b>99.70</b>	<b>3002.07</b>	<b>3101.77</b>

#### School Education and Local Governments.

11.84. Details available indicate that Local Governments formulate projects with the plan grant for activities like construction and maintenance of building, sanitation facilities, furniture, drinking water, library, laboratory and computer, sports equipment and training and training programmes for teachers and students for quality improvement. For implementing such activities Local Governments during 2004-05 formulated projects costing Rs. 2936 lakhs as

against Rs. 3629 lakhs during 2003-04. An outlay of Rs. 312 lakhs has been earmarked for high school education and Rs. 895 lakhs has been set apart for pre-primary and primary education. Out of the total outlay Rs. 1450 lakhs is for infrastructure development. While District Panchayats earmarked Rs. 1031 lakhs, all the Grama Panchayats together earmarked Rs. 1079 lakhs. Municipalities provided Rs. 347 lakhs and Corporations provided only Rs. 221 lakhs. (See Table - 11.18).

**Table-11.18**  
**Local Government Institutions Outlay for Education 2004-05**

Sl. No	Sectors	(Rs. in Lakhs)						Total
		District Panchayat	Block Panchayat	Municipalities	Corporation	Grama Panchayat		
1	Pre-primary	0	29	51	80	297	457	
2	Primary	22	17	41	61	305	446	
3	High School	109	41	71	14	77	312	
4	Education Infrastructure	805	136	155	63	291	1450	
5	Higher Secondary Schools	22	10	19	3	39	94	
6	Technical Education	70	18	3	--	21	113	
7	Informal Education and Literacy	3	7	7	--	49	66	
	<b>Total</b>	<b>1031</b>	<b>258</b>	<b>347</b>	<b>221</b>	<b>1079</b>	<b>2936</b>	

11.85. With the involvement of Local Governments in the educational activities at the lower level, the quality of education has improved which is reflected in SSLC pass results. For instance, the SSLC passed out was 56.18% in 2000 and it increased to 64.85% in 2003 and to 70.06% in 2004. Similarly more schools could be provided with drinking water and sanitation facilities and class rooms. Local Governments have also been actively involved in providing computer facilities at school level as part of IT education.

11.86. Details of physical achievement during 2002-03 are quiet improved. For instance, 8436 sq.ms. of new school buildings were constructed and 2910 sq.ms. of buildings were renovated. Similarly IT at school programmes was implemented in 74 schools and computers were installed in 318 schools.

**Industrial Training Institutes**

11.87. Industrial Training Department conducts craftsman training through Industrial Training Institutes (ITI's), Industrial Training Centres (ITC's) and Related Instruction Centres (RIC). ITIs are government owned and ITC's are private. There are 32 ITI's and 398 ITC's, 41 ITC's under SC Development Department for SC students and one ITC under ST development department. Total seat strength is 57149 and out of it 13565 (24%) are in ITIs and 43584 (76%) are in ITCs (Appendix - 11.29 & 11.30). There are one year, two year and three year courses. There are 16 trades in one year course. Similarly in two year courses also there are 16 trades but are entirely different trades.

11.88. In one year course there are 3491 students and the highest number of students are in trades like COPA (551), Plumber (435), Welder (735) and carpenters (343). In Eight trades students are below 100 (Appendix - 11.31) However in two year courses out of 16 trades, in 10 trades there are 250 students and above. But more students are in trades like Fitter (551), Mechanical (473), Electrician (405) and Wireman (336) (Appendix - 11.32)

11.89. Students admitted in ITI/ITC's has been showing declining trend. The reason may be due to increasing unemployment among ITI passed trainees. For instance in August 2004, 1.16 lakh certificate holders remain unemployed as per Employment Exchange data, against 1.33 lakh in 2003 and 1.23 lakh in 2002.

**Drop out rate in ITI's**

11.90. Intake in two year course during 2001 was 4590 and the out turn was 2438 (45%). Similarly out of the 4217 students who joined the one year course during 2002, only 1902 (45%) passed out. Details are given in the Table 11.17. The drop out rate is about 20% in ITI's. The percentage of students who passed the all India Trade Test during 2004 is 62.3.

**Table - 11.17**  
**Annual Intake and Outturn in ITI's**

				(Nos)
Year	Course	Intake	Outturn	Percentage
2001	2Year	4590	2438	53%
2002	1Year	4217	1902	45%
2002	2Year	4039	3295	82%
2003	1Year	3491	2379	68%

Source: Industrial Training Department

**Apprenticeship training**

11.91. Apprenticeship training is also provided through 9 RIC's (Related Instruction Centres) and 5 ITI's. During 2002, 6252 apprentices were trained against a seat strength of 7051 as against 6414 apprentices during 2003 against the strength of 7124. ie; only 88.7% of the apprenticeship training facility was utilised during 2002 and 91% during 2003. Of the total trainees (2003) 6039 were boys and 375 were girls. Institution- wise details of apprentices training are given in Appendix - 11.33.

**Modern Trades in ITI's**

11.92. During the Ninth plan, priority was for provision of machinery and equipment, diversification of trades and starting of new ITI's. Implementation of World Bank aided skill development project for modernising ITI's in Kerala started in 1989 at an estimated cost of Rs.22.11 crores and ended by 1998. Under this project 5 women's ITI's and three RICs were started, old and obsolete machinery in ITI's were

replaced. Similarly it was targeted to convert 27 units of unpopular trades to 25 job oriented trades. But only six trades could be converted.

11.93. Trades and units started earlier have become obsolete and unpopular due to the advancement in technology. Therefore the basic approach during 10<sup>th</sup> five year plan is to upgrade the existing trades and to introduce new trades having employment potential. Accordingly, the target is to convert 57 units of obsolete trades to modern trades during the Xth Plan. Retraining and updating the skill of teachers and modernization of the existing equipment are needed. Eight units in five trades have been upgraded in six ITI's by August 2003. Similarly during 2004, Government have accorded sanction to introduce new 14 trades in 17 ITI's. The Department intends to modernize 26 units in 13 trades in 13 ITI's during 2005.

11.94. Industrial Training Institutes are to provide updated technical training in industrial trades to equip students for employment in industry and industrial related enterprises. In Kerala, however, trades in ITIs are very old and have been neither upgraded nor modernized to suit the changing demands of the job market. Trainees coming out with certificates, therefore, fail to find suitable employment in modern industry. In Kerala, there are now, 1.16 lakh unemployed ITI certificate holders. Modern trades need modern equipment and qualified teachers but efforts to upgrade ITIs could not make much progress. Therefore modernization of trades in time with the advancement of technology is the need of the hour. The Common Minimum Programme stresses the need for upgrading the ITI trades to suit the modern industrial requirements by starting more 'Model ITIs, with Government of India support. Therefore, ITIs in Kerala may have to formulate specific projects for upgradation and for starting new trades to meet the emerging demand.

#### Sports and Youth Affairs

11.95. Government of India evolved a New National Sports Policy in 2001 with emphasis on development of infrastructure, support to sports agencies, scientific coaching, sports incentives, and enhanced women participation. (See Box-11.10)

#### BOX-11.10

##### Salient Features of Sports Policy 2001.

- Broad basing of sports and achievement of excellence
- Up-gradation and development of infrastructure
- Support to the National Sports Federations and other appropriate Bodies
- Strengthening of scientific and coaching support to sports
- Incentives to sports persons
- Enhanced participation of women, scheduled tribes and rural youth.
- Involvement of the corporate sector in sports promotion
- Promote sports mindedness among the public at large.

11.96. Government of Kerala promotes sports by setting apart more plan funds for infrastructure, incentives and involving more agencies, both in rural and urban areas. For instance an outlay of Rs. 5850 lakh, has been set apart during the Tenth plan for the promotion of sports and youth activities. The performance of Kerala in the important athletic events of the year 2003-04 was very good.

11.97. Government of Kerala passed the Kerala sports Act 2000, envisaging increased people participation, integration of the activities of the sports organisations and transparency in functioning. But integration of sports activities as envisaged in the Act is yet to materialise. Therefore even now agencies like Kerala Sports Council, Department of Sports and Youth Affairs, Kerala State Youth Welfare Board, Directorate of Public Instruction and Directorate of Collegiate Education implement sports activities.

#### Kerala Sports Council

11.98. Established in 1974, the Council promotes and co-ordinate sports activities at various levels including, schools and colleges. Students selected for sports disciplines are given hostel accommodation and training support by the

Council. At present there are 32 sports hostels in colleges, 8 centralised sports hostels and 25 sports hostels at school level. In these hostels there are 980 students. District Sports Councils conducted Women sports, Rural sports, May day sports and District level tournaments during 2003-04. There are 38 State Sports Associations and Kerla Sports Council gives them grant in aid. Conduct of sports festivals organising coaching camps including rural areas, preparing teams for national and international games are some of the important functions of the Council.

11.99. During 2003-04 pension was given to 190 sportsmen in indigent circumstances. As part of infrastructure development, Council constructed Basketball Hall at the Central stadium in 2004. International swimming pool complex at Pirappancode, Thiruvananthapuram and District Sports Complex at Attingal are the ambitious sports projects undertaken by the Sports Council. Activity-wise achievement of the Council during 2003-04 is given in Appendix.11.34.

#### **Directorate of Sports and Youth Affairs**

11.100. Directorate of Sports and Youth Affairs formed in 1987 co-ordinate all sports development

activities in the state. The department is implementing the following schemes for the development of sports in the state.

1. Conducting five sports training centres
2. Centre for Martial Arts/Rural Arts
3. Sports Development Project areas at Kollam and Thrissur
4. Rajiv Gandhi Sports Medicine Centre, .

11.101. Laying synthetic track at Maharajas College Stadium, Ernakulam and Corporation Stadium, Kozhikode, Municipal stadium, Kasaragod and construction of stadium complex at Palakkad, Thodupuzha, Alappuzha and Construction of Cycle Velodrome at Idukki are the ongoing activities. The Directorate has initiated steps to introduce new sports disciplines like Taekwondo and Fencing . Taekwondo, a Korean Martial Art, has been launched for school children below 18 years.

#### **Kerala State Youth Welfare Board**

11.102. The Board established in 1985 guides young people to get employment. Three youth hostels are functioning under the Board in Thiruvananthapuram, Ernakulam and Kozhikode.





## CHAPTER 12

# HEALTH

Kerala has achieved very good health standards in areas like birth rate, death rate, IMR, MMR, average life at birth as well as immunization and control of infectious diseases. But the state now faces problems like high morbidity rate, low maintenance of health infrastructure, shortage of manpower, growing prevalence of life style diseases and diseases of the elderly, re-emergence of some diseases like malaria, diarrhoea, T.B, dengue fever and rapidly increasing medical cost. Medical cost is increasing with the rise in the cost of drugs and equipment. Unless private hospitals with Specialities are increasing, the quality of public health services has failed to keep pace with public demand and expectation. Thus there is a mixed health situation in which second generation problems dominant.

12.2 Kerala achieved many health goals of 2000 AD by 1991 itself. The basic health indicators in Kerala and India are shown in Table –12.1

### Health care Infrastructure

12.3 Kerala achieved high health standards through widespread growth of three systems of medicine; allopathy, ayurveda and homoeopathy. In Kerala there is at least one health care institution

in each grama panchayat. Three systems of medicine together have 2696 institutions in the government sector and 48834 beds. The present status of the three systems of medicine is given in Table 12.2. Forty seven per cent institutions and 89% beds are under Allopathy. There are 931 primary health centres in allopathy, 737 rural dispensaries under Ayurveda and 525 rural dispensaries under Homoeopathy. In other words, out of 2696 health care institutions in Kerala 81% are in rural areas.

12.4 Three systems together treated 18.84 lakh inpatients and 756.6 lakh outpatients during 2003. It is against 19.36 lakh inpatients and 809.4 lakh outpatients during 2002. In-patients and outpatients treated decreased by 2.6% and 6.5% respectively. However, outpatients treated under allopathy increased from 48% in 2002 to 53% in 2003.

### Private Sector

12.5 Details of private health care facilities in Kerala are available only for 1995; based on a study by Department of Economics and Statistics which shows that there were 4288 allopathic medical institutions with 67517 beds, 4922 ayurveda institutions with 2595 beds and 3118

Tabel-12.1  
Health Development indicators- Kerala & India –2002

Health Indicators	Kerala	India
Birth rate (per '000 population)	16.90	25.00
Death rate (" )	6.40	8.10
Infant mortality rate (“ )	10.00	63.00
Maternal mortality rate (“ )	0.87	4.37
Total Fertility rate (per woman)	1.70	3.30
Couple Protection rate (%)	66	52
Life at birth		
Male	70	64.10
Female	73.62	65.60
Total	70.93	64.90

Source: Directorate of Health Services

**Table-12.2**  
**Medical institutions, beds and patients treated under three systems of medicine in Govt. Sector during 2002 and 2003.**

Sl. No	Systems of medicine	Institutions		Beds		Patients treated-2002 (Lakh)		Patients treated-2003(Lakh)	
		2002	2003*	2002	2003*	IP	OP	IP	OP
1	Allopathy	1310	1278	46224	43619	18.42	390.54	18.12	401.21
2	Ayurveda	845	857	3411	3920	0.68	179.77	0.47	187.89
3	Homoeopathy	557	561	1170	1295	0.25	239.09	0.25	167.50
	<b>Total</b>	<b>2712</b>	<b>2696</b>	<b>50805</b>	<b>48834</b>	<b>19.35</b>	<b>809.4</b>	<b>18.84</b>	<b>756.6</b>

\*Note: - Excluding sub-centres and grant in aid institutions

homoeopathic institutions with 394 beds. Private hospitals have grown rapidly during the last ten years.

#### Co-operative Sector

12.6 There are 85 co-operative hospitals/dispensaries with 4566 beds and 717 doctors and 2561 nurses and para medical staff in Kerala. District wise details are given in Appendix 12.1

#### Insurance Medical Services

12.7 There are 12 ESI hospitals with 1123 beds and 136 dispensaries in Kerala. District-wise details of ESI hospitals, dispensaries, medical and para medical personnel are given in Appendix.12.2

#### Beds per lakh population in Kerala

12.8 Three systems together have 48834 beds in the Govt. sector. It shows that for one lakh population there are 153 beds. District wise details of medical institutions and beds per lakh population are given in Appendix 12.20. System-wise beds available per one lakh people including private sector are 383 under allopathy, 20 under ayurveda and 5 under homoeopathy.

#### Directorate of Health Services

12.9 There are 6357 institutions and 35607 beds under the Directorate of Health services. Out of which 5094 are sub centres, 132 are hospitals, 931 are primary health centres, 115 are community health centres and 59 are dispensaries. Similarly 22645 (63.6%) beds are in hospitals, 7716 (21.7%) are in primary health centres and 4840 (13.6%) are in community health centres and 406 (1.1%) are in dispensaries. District wise details of institutions and beds are given in Appendix.12.3.

During 2004, 2743 new beds have been added, which shows an increase of 8.3% over 2003. Details of health personnel are shown in Appendix 12.12.

12.10 The Tenth Plan objective was to improve and standardise facilities in PHCs/CHCs/District and other hospitals based on norms. Accordingly a Committee was constituted to fix standards for facilities at each level of institution. The Committee submitted the report in November 2002. In order to utilise the idle buildings under Health Service Directorate, 1200 posts of different category of health personnel and 2393 additional beds were newly created in 201 health care institutions. (See Table 12.3). Similarly medical equipment worth Rs. 2.12 crores were also purchased during 2003-04.

12.11 Tele Health and Medical Education project connecting six medical colleges, 10 district/general hospitals and community Health centre at Attappady for distance medical treatment and education, formulated in association with ISRO is under implementation. Total cost of the project is estimated at Rs.233.12 lakh. The project implementation is in advanced stage and is expected to be commissioned during 2004-05 itself.

#### Immunization coverage

12.12 Kerala has achieved near universalisation of immunisation. But immunisation achievement in programmes like BCG, Measles and TT in 2003-04 is below 2002-03. Details of targets and achievements are given in Table 12.4. (Further details are given in Appendix 12.13)

**Table. 12.3**  
**Health personnel and beds created in different levels of institutions during 2004-05**

Sl. No	Category	Number	Additional posts created (Nos)						Additional Beds (Nos)
			Asst. Surgeon	Head Nurse	Staff Nurse	Nursing Asst.	Hospital Attender	Total	
1	Primary Health Centres	194	327	--	489	182	167	1165	2323
2	Community Health Centres	4	2	1	10	4	3	20	44
3	Govt. Dispensaries	2	4	--	2	1	1	8	14
4	Taluk Head Quarters Hospitals	1	2	--	3	1	1	7	12
	<b>Total</b>	<b>201</b>	<b>335</b>	<b>1</b>	<b>504</b>	<b>188</b>	<b>172</b>	<b>1200</b>	<b>2393</b>

Source: Directorate of Health Services

**Table-12.4**  
**Target and achievement of Immunization Programme-2003-04**

Sl. No.	Programme	Target	Achievement	%
1	DPT	582480	556582	95.6
2	Polio	582480	552064	94.8
3	BCG	582480	576128	98.9
4	Measles	582480	500260	85.9
5	TT for Pregnant Women	642678	574572	89.4
6	TT for 5 years	534759	431500	80.7
7	TT for 10 years	534759	517899	96.8
8	TT for 16 years	578969	525534	90.8

Source: Directorate of Health Services

### Communicable Diseases

12.13 Of the ten leading causes of Burden of diseases (BOD) and mortality in India, almost 50% are on account of respiratory infections, diarrhoeal diseases, T.B. and measles. T.B. kills more people in India than HIV, malaria, leprosy and tropical diseases combined (see Appendix 12.17). In Kerala while the incidence of major communicable diseases came down, the prevalence rate of respiratory infection increases and diseases such as dengue fever and leptospirosis is increasing. Table-12.5 shows the prevalence rate of major public health diseases in Kerala.

12.14 Statistics during the last two years indicate

that communicable diseases like dengue fever, leptospirosis, malaria, cholera and typhoid are re-emerging as a serious health problem. Table 12.6 below shows the details of dengue fever, leptospirosis, and diarrhoea during 2002 and 2003. (See Appendices 12.14 and 12.15)

12.15 Surveillance activities, control measures, diagnostic facilities, treatment facilities and IEC activities are being taken up. Awareness cum training programmes for medical officers and para medical staff are conducted and vector study mapping done. But the activities being implemented need further strengthening.

**Table-12.5**  
**Prevalence Rate of Public Health Diseases**

Sl. No.	Disease	Prevalence Rate per 1000 population	
		2002	2003
1	Leprosy	0.66	0.05
2	Filaria	1.28	N.A
3	Malaria	NA	0.08
4	T.B	0.70	0.67
5	Acute Diarrhoeal Diseases	16.96	15.43
6	Pneumonia	0.60	0.90
7	Enteric Fever	0.26	0.40
8	Measles	0.07	0.15
9	Respiratory Infection	221.42	247.89

Source: Directorate of Health Services

**Table 12.6**  
**Attack of communicable diseases and death**

Sl. No.	Diseases	Attack		Death	
		2002	2003	2002	2003
1	Dengue Fever	263	3861	1	67
2	Leptospirosis	2928	2162	199	98
3	Diarrhoea	539863	506034	26	16
4	Typhoid	8408	12996	5	3

Source: Directorate of Health Services

### Growing burden of non communicable diseases

12.16 Demographic trends and health transitions along with changes in the distribution of risk factors have accelerated the incidence of non-communicable diseases. Cardio Vascular disorder and cancer are the two leading non communicable diseases causing mortality and disease burden among adults as well as older adults (60+).

12.17 Statistics show that on an average 10 to 12 acute heart attack patients are being admitted daily in Medical College Hospital, Thiruvananthapuram alone. The annual admission to the coronary care unit in the MCH, Thiruvananthapuram is about 1300.

### Cancer Care

12.18 One of the major public health problems is the emergence of life style led cancer. In recent years incidence of cancer disease has been increasing. Data collected through two cancer registries, run by RCC, shows the cancer incidence rate at 94 per one lakh people (male) and 91 per

one lakh for females for Thiruvananthapuram District.(see Table-12.7)

12.19 Among women 40% cancers are of breast or cervix; while among men oral cavity (15-10%) and lung cancer (10%) are most common. Tobacco related cancer comes to 40% among males and 15% among females. Based on 2001 census and two cancer registries data, the estimated number of cancer patients annually is 25409 (13140 males and 13269 females). Cancer of oral cavity and lung in men and cervix and breast in women account for 56% of cancer deaths. The National Cancer Control Programmes started in 1975-76 has formulated a four step cancer control strategy - primary prevention, secondary prevention, strengthening of existing facilities and palliative care.

### Lifestyle Diseases

12.20 Studies conducted by different agencies indicate that the prevalence of diabetes, mellitus and high blood pressure is much higher in Kerala than in other states. For instance, about 8% of

**Table -12.7**  
**Incidence rates of cancer by sex in Thiruvananthapuram district**  
(per lakh population)

Sl.No.	Incidents rate	Urban		Rural	
		Male	Female	Male	Female
1	Crude incidence rate	86	94.4	89.6	84.2
2	Age adjusted incidence	89.6	91.4	98.3	81.4
3	Trencated incidence rate	129.6	194.0	179.3	153.7

Source: Regional Cancer Centre, Tvm

adults are diabetic in Kerala ranging from 6% in rural areas to nearly 20% in urban areas. Recent surveys reveal that one out of three adults in Kerala tends to be hypertensive. Lack of physical activity, overweight and obesity create a favourable milieu for diabetes and hypertension. Alarming increase in heart attacks and strokes in Kerala is partly the contribution of the high prevalence of hypertension. The Human Development Report of NCAER-2000 shows that Kerala stands second in the prevalence of major non-communicable diseases. It is shown below in Table 12.8

#### Mental Health

12.21 It is estimated that about 1% of the population at any given time suffers from mental illness. Similarly another 2 to 3% may suffer from mental disorders which may not be severe. Suicide is a major problem in Kerala, which is reported at 28.8 per one lakh people. According to Crime Record Bureau the suicide rate in Kerala is almost three times the national average of 11.6 per one lakh. Kerala contributes 10.1% of all suicides in India while the state population is only 3% of India. Over the last decade, suicide rate in Kerala rose at a compound rate of 4.6%.

12.22 Mental Health Care in Kerala is confined to three mental hospitals at Thiruvananthapuram, Thrissur and Kozhikode. A few beds are also attached to Medical Colleges and a few district hospitals. There are 1714 beds in mental hospitals. But mental health personnel to deal with mental patients are relatively very few in Kerala. For instance, in Kerala there are only 85 psychiatrists in government service and 157 in private service. Number of psychiatrists is only 0.77 per one lakh mental patients. Also there are no psychiatric nurses in Kerala.(see Table 12. 9)

12.23 Mental health care available in Kerala is grossly inadequate to meet the needs of the state. Govt. of Kerala during 2004-05, formulated a master plan at an estimated cost of Rs. 11 crore for the development of mental hospital, Thiruvananthapuram in a phased manner. Similarly it has also been decided to start psychiatric wards in all the district hospitals and taluk hospitals in phases.

#### HIV/AIDS

12.24 Today HIV/AIDs is a major global health emergency, affecting all regions of the world, causing more than 3 million deaths in 2003 and an

**Table – 12.8**  
**Prevalence rate of major diseases**  
(per lakh population)

Sl. No	Name of Disease	Kerala	India
1	Epilepsy	81	120
2	Hypertension	1433	589
3	Diabetes	980	221
4	Heart Diseases	914	385
5	Mental Diseases	283	132
6	Cancer	39	43

Source: Human Development Report of NCAER-2000

**Table -12.9**  
**Mental Health Services in Kerala**

Sl.No.	Facilities	(Nos.)
1	Mental Hospital Beds	
	(i) 3 Mental Hospitals	1342
	(ii) Medical Colleges	216
	(iii) General Hospital	156
	<b>Total</b>	<b>1714</b>
2	Man Power	
	(i) Private Service Psychiatrists	157
	(ii) Government Service Psychiatrists	85
	<b>Total</b>	<b>242</b>
3	Clinical Psychologists	7
4	Psychiatric Social Worker	11

estimated 40 million people suffering with the virus. In Asia, an estimated 7.4 million people are living with HIV, around half a million are believed to have died of AIDS in 2003 and about 1.1 million are suspected to have become newly infected with HIV.

12.25 HIV infection and AIDS cases were detected in India in 1986. With more than 5.1 million estimated HIV positives in the country, India has the largest population of HIV infected people outside South Africa. Six states in India viz. Manipur, Nagaland, Maharashtra, Andhra Pradesh, Karnataka and Tamilnadu are identified as high incidence states because the prevalence of HIV/AIDS in the general population is more than 1%. Over 35% of all reported AIDS cases in India occur among young people in the age group of 15-24 years.

12.26 First HIV positive case was identified in Kerala in 1987. Till now total number of AIDS cases reported from different parts of Kerala is 1995 of which 617 are AIDS death cases. Kerala has an estimated HIV population between 70,000 and 1,00,000. Roughly 500 children are born with HIV every year. It is likely that there are at least 3500 HIV positive children below 10 in the State.

#### Ageing Population

12.27 According to 2001 census, 60+ population is 33.62 lakh (10.5%) in Kerala. In 1991, 60+ was only 25.7 lakh (8.8%). Projected 60+

population is 11.2% in 2011 and 14.3% in 2021. In Kerala ratio of 60+ people is significantly higher than other states in India. The age composition of the projected population of the State is shown in Table 12.10

12.28 Similarly ratio of <14 children is coming down. In 2001, <14 children were 82.9 lakhs (26.1%) and this projected number is 71.10 lakhs (20.5%) in 2011 and 67.80 lakhs (18.5%) in 2021. People aged <14 years and 60+ years are mostly non productive and hence dependents. These two categories together is projected at 31.7% of the total population in 2011 and 32.8% in 2021 against 26.6% in 2001. In other words in 2021, one-third State population will be <14 years and above 60 years.

12.29 Low birth and death rate and high average life at birth causes the high proportion of aged people. State has already attained 100% enrolment in schools. Therefore further fall in birth rate will caused to closing down of schools and starting of more health care institutions for ageing people.

12.30 Statistics show that the prevalence rate of chronic diseases and the levels of disability among elder people are increasing. To tackle the situation appropriate health promotion strategies are needed. Percentage of 60+ having chronic diseases in rural and urban areas in Kerala is given in Table 12.11.

**Table -12.10**  
The age composition of the population in Kerala (projected)  
(lakhs)

Year	Age composition			Total
	0-14	15-59	60+	
2001	82.96 (26.1)	201.83 (63.4)	33.62 (10.5)	318.41 (100)
2011	71.10 (20.5)	237.30 (68.3)	38.90 (11.2)	347.30 (100)
2021	67.80 (18.5)	246.00 (67.2)	52.60 (14.3)	366.40 (100)
2031	57.70 (15.5)	241.60 (64.9)	72.90 (19.6)	372.20 (100)
2041	51.10 (13.9)	217.90 (59.5)	97.20 (26.6)	366.20 (100)
2051	45.40 (13.1)	192.40 (55.4)	109.40 (31.5)	347.20 (100)

Source: Centre for Development Studies

Note: Figures in brackets indicate percentage

**Table -12.11**  
Percent of 60+ Males and Females having Chronic Diseases  
in Rural and Urban Areas in Kerala

Type of Disease	Rural		Urban	
	Male	Female	Male	Female
Cough	25.5	18.0	20.9	12.7
Piles	8.2	4.0	4.2	2.8
Problem of Joints	47.1	56.5	31.1	42.1
High/Low Blood Pressure	16.9	18.1	21.0	23.1
Heart Disease	8.8	4.7	6.6	3.7
Urinary Problem	4.3	2.7	3.9	2.2
Diabetes	8.7	7.7	9.7	9.0
Cancer	0.6	0.5	0.0	0.7
Any	67.9	69.7	60.0	62.5

Source: National Sample survey organization –1996.

### Disabled Persons

12.31 In Kerala there are 8.60 lakhs disabled persons as per the 2001 Census. Seeing disability is more followed by moving disability and mental disability. 38.8% were seeing disabled, 27.7% were moving disabled and 16.5% were mentally disabled. Sex-wise disability shows that disability is more among males than females. Out of the total disabled, 53.2% were male and 46.8% were female. Among the disabilities hearing disabilities more among female than male whereas seeing disability is 50% each. Among female disability, 41.5% are seeing disabled followed by 23.6% movement disabled. However, among males

36.7% suffer from seeing disability followed by moving disability (31.3%). Mental disability among male and female are almost equal.(see Table.12.12)

### Rural Health Care

12.32 In Kerala rural-urban separation, as seen elsewhere in India, is difficult. Normally in Kerala Primary Health Centres under allopathy and dispensaries under Ayurveda and Homoeo are entirely in rural areas. But in the case of community health centres, nearly 80% are in rural area. Out of the total outlay in PHC and CHCs during 2004-05, 89% is non-plan and 11% is plan.

**Table 12.12**  
Category-wise Disabled Persons in Kerala

(in lakhs)

Sl. No.	Type of Disability	Persons				Total	%
		Male	%	Female	%		
1	Seeing Disability	1.67	36.4	1.67	41.5	3.37	38.8
2	Speech Disability	0.37	8.1	0.30	7.5	0.67	7.8
3	Hearing Disability	0.36	7.8	0.43	10.7	0.79	9.2
4	Movement Disability	1.43	31.3	0.95	23.6	2.38	27.7
5	Mental Disability	0.75	16.4	0.67	16.7	1.42	16.5
<b>Total</b>		<b>4.58</b> <b>(53.2)</b>	<b>100</b>	<b>4.02</b> <b>(46.8)</b>	<b>100</b>	<b>8.60</b>	<b>100</b>

Source: Census India 2001

Out of total outlay 75% is for allopathy , 16% ayurveda and 9% is for homoeopathy.

12.33 Under non-plan in Primary Health Centres 95% is for salary and wages and 3% is for materials and supplies. But in the case of Community Health Centres 63% is for salary and wages whereas 21% is for materials and supplies and 5% for machinery and equipments. The quality of service in the Primary Health Care institutions could be improved only if sufficient quantity of medicines and drugs are provided based on requirement. But this requires a scientific review of allotment of medicines, use of medicines and unused stock of medicines. Without a rational formula for distribution and use of medicines, the quality of service cannot be enhanced.

12.34 For each Ayurveda dispensary amount allotted for medicines is Rs. 30,000 against the demand of Rs. 60,000. Similarly for each homoeo dispensary amount allotted for medicine is Rs. 10,000 against the demand of Rs. 30,000. Here under ayurveda and homoeo also medicines are grossly inadequate.

12.35 Since 1997-98, one third of state plan outlay is devolved to local bodies as plan grant. During 2002-03, local governments have set apart 2.65% of plan grant to health sector which is around Rs. 4300 lakhs. During 2004-05 an amount of Rs. 9662 lakhs under Plan and Rs. 1607 lakhs as non plan is set apart by Local governments.(see Table-12.13)

**Table -12.13**  
Plan and Non-plan outlay to Health in Rural Areas in Kerala (2004-05)  
(Rs. lakhs)

System	Plan Outlay	Non-Plan Outlay	Total
<b>A. Allopathy</b>			
1. Primary Health Centres	1885.00	6154.07	8039.07
2. Rural Dispensaries	--	3412.49	3412.49
3. Community Health Centres.	360.00	8968.23	9328.23
<b>Sub Total</b>	<b>2245.00</b>	<b>18534.79</b>	<b>20779.79</b>
<b>B. Ayurveda Dispensaries</b>	80.00	4550.41	4630.41
<b>C. Homoeo Dispensaries</b>	70.00	2373.36	2443.76
<b>(A+B+C) Sub Total</b>	<b>2395.00</b>	<b>25458.56</b>	<b>27853.56</b>
<b>D. LSGIS</b>	6850.00	1078.58	7928.58
<b>Grand Total</b>	<b>9245.00</b>	<b>26537.14</b>	<b>35782.14</b>

Source: Detailed Budget Estimates 2004-05



### Ratio of Health Expenditure to SDP

12.36 State spent 1.24% of SDP for health during 1997-98. But the ratio of health expenditure to SDP has been coming down and during 2003-04 it is estimated at 0.94%. Including health expenditure by Local Bodies, the percentage of health expenditure to SDP is one percent. If the state has to spend 2-3% of SDP to health, as envisaged in the Common Minimum Programme, the amount for health care has to be doubled in the next five years.

### Blood units

12.37 There are 126 blood banks in Kerala in 2003 registered under Central Drugs and Cosmetic Act. Out of the total blood banks, 30 are in govt./autonomous sector and 96 are in private sector. During 2003, 2.38 lakh units of blood were collected and out of it 1.23 lakh units were from govt./autonomous institutions and 1.15 lakh units were from private institutions. During 2004 (till August) 1.49 lakh blood units were collected. The five Medical Colleges together collected 49626 units of blood which formed 33.2% of the total blood units collected. Market value of one unit of blood is around Rs. 700.

12.38 According to WHO norms, 70% of the beds are active and each such bed requires 7 units of blood in a year. Therefore number of blood units required to achieve 7 units per active bed under government sector is estimated at 1.53 lakh. Details of blood units collected during the last 3 years are given in Appendix.12.4.

### Hospital Waste Management

12.39 There are 216 secondary level hospitals in Kerala which generate bio medical waste. The

category of waste generated depends upon the type of service, provided. Hospitals with operation theatre generate pathological and highly infectious waste where as laboratory generates chemical waste. PHCs and CHCs generate mostly general wastes, sharps and some infectious and pathological waste. On an average hospitals produce 1.5 kg. of waste per day per bed of which 0.22 kg. (15%) are infectious/hazardous and need pre-disposal treatment. Therefore each hospital needs a plan for specific waste management. Proper waste management system in hospitals is practically non-existent in Kerala. This is a major challenge to be addressed at the earliest.

### Ayurveda

12.40 There are 115 Ayurveda Hospitals with 2744 beds and 737 Ayurveda dispensaries which include 4 visha chikilsa kendras, six siddha and one unani. Hospitals include 14 district hospitals, one nature cure hospital, at Varkala, one sidha hospital, one panchakarma hospital, at Alappuzha and one Ayurveda Mental Hospital at Kottakkal. (see Table-12.14) During 2003, 185.24 lakh patients were treated in Ayurveda institution and out of them 184.86 lakhs were outpatients and 0.38 lakh inpatients. District-wise details of Ayurveda hospitals, beds, dispensaries and patients treated are given in Appendix.12.5

### Major Achievements under Ayurveda

- 10 new dispensaries were started during 2003-04
- bed strength has been enhanced from 50 to 100 in two district hospitals; Pathanamthitta and Wayanad
- laboratory facilities have been started in all district hospitals and X-ray units have been

**Table 12.14**  
**Distribution of beds in Ayurveda hospitals**

Sl. No.	Category	Number	Beds
1	District hospitals	14	950
2	Govt.hospitals	96	1664
3	Nature cure hospital	1	30
4	Siddha hospital	1	20
5	Panchakarma hospital	1	20
6	Marma hospital	1	10
7	Mental hospital	1	50
<b>Total</b>		<b>115</b>	<b>2744</b>

Source: Directorate of Ayurveda

- started in two district hospitals.
- bed strength in Mental hospital, Kottakkal increased from 30 to 50

#### Ayurveda Medical Education

12.41 There are now 13 Ayurveda colleges in Kerala. Out of which 3 are Government, 2 are private aided and 8 are self-financing. Out of the 8 self financing colleges 3 were started in 2002, 3 in 2003 and 2 in 2004. Total annual intake capacity in these 13 Ayurveda Colleges is 650 for Degree (BAMS/BSMS) courses. There are 77 seats for postgraduate courses all of them in Government Colleges. The details of annual intake capacity in Ayurveda Colleges are given in Appendix-12.6. Five medical college hospitals attached to the medical colleges under government and private aided have 1176 beds. During 2003, these hospitals together treated 3.12 lakh patients, and out of them 3.02 lakh were out patients. The details of beds and patients treated are given in Table 12.15

#### Major Achievements

In the Ayurveda College, Thiruvananthapuram,

- Panchakarma department has been started newly during 2004-05
- three new PG courses in Panchakarma, Kaumarabhritya and Agadhathantra were started during 2003-04
- Speciality clinic in Ksharasutra, back Pain clinic and cancer care clinics have also been started.

In Ayurveda College, Kannur,

- 13 departments as per CCIM norms but the staff pattern has not been fully implemented. - During 2003-04, 7 new posts, 2 professors, 2 nurses, 2 nursing assistants and one masseur were created.
- Two Post Graduate courses in Roganidhana and Kriyasareera were also started with the assistance from GOI during 2002-04.
- Construction of 150 bedded hospital building started during the Ninth Plan period is nearing completion.

#### Homoeopathy

12.42 There are 31 hospitals and 525 dispensaries under homoeopathy. Hospitals include 14 district

Table -12.15  
Beds and patients treated in Ayurveda Colleges (2003)

(Nos)					
Sl. No.	College Hospital	Beds	Out patients	In patients	Total
1	2	3	4	5	6
<b>A.</b>	<b>Government</b>				
1	Ayurveda College Hospital, Thiruvananthapuram.	634	89280	5177	94457
2	Ayurveda College Hospital, Thrissur.	139	21692	923	22615
3	Ayurveda College Hospital, Kannur	100	33838	822	34660
<b>Sub Total</b>		<b>873</b>	<b>144810</b>	<b>6922</b>	<b>151732</b>
<b>B</b>	<b>Private Aided</b>				
1	Vaidyaratnam Ayurveda College, Ollur	153	47692	886	48578
2	Vaidyaratnam P.S. Varrier Ayurveda College Hospital, Kottakkal.	150	110312	1147	111459
<b>Sub Total</b>		<b>303</b>	<b>158004</b>	<b>2033</b>	<b>160037</b>
<b>TOTAL</b>		<b>1176</b>	<b>302814</b>	<b>8955</b>	<b>311769</b>

Source: Directorate of Ayurveda Medical Education

and 17 taluk hospitals. Total bed strength of these hospitals is 970. Out of the 525 dispensaries, 494 are rural and 30 are urban. During 2003, 163.86 lakhs patients sought homoeopathy treatment and out of them, 0.17 lakhs were inpatients and 163.69 lakhs were out patients. District-wise details of institutions, beds and patients treated in homoeopathy hospitals are given in Appendix.12.7.

### Homoeo Education

12.43 There are 5 homoeopathy medical colleges, 2 government and 3 private aided. Total annual intake for BHMS course is 250 and for PG course is 36. The details are given in Appendix-12.8. The hospitals attached to these colleges have 325 beds. During 2003-04, these hospitals together treated 3.93 lakh patients. Out of them 3.85 lakhs were out patients. Details of bed and patients treated under homoeopathy medical colleges are

given in Table 12. 16

### Medical Education and Training

12.44 Govt. of Kerala started to sanction medical colleges in the self-financing sector in 2001. Accordingly six self-financing medical colleges for MBBS course, five Dental Colleges and eight Ayurveda colleges have been started during the last three years. There are now 13 medical colleges for MBBS courses with an annual intake of 1450 students. Similarly in dental and ayurveda annual intake of students has increased to 410 and 650 respectively. Similarly 32 nursing colleges have been started in the last three years with an additional intake of 1600 students annually. Also nine Pharmacy colleges were started in the self-financing sector with an intake of 540 students. Details of medical colleges and annual intake of students in Govt. and self financing colleges are

Table -12.16

Medical College hospital wise distribution of beds and patients treated in 2003-04

Sl.No.	Name of Hospital	Beds (Nos.)	Patients Treated		Total
			IP	OP	
1	2	3	4	5	6
	<b>Government</b>				
1	Govt. Homoeopathic Medical College Hospital, Tvpm.	100	1482	93862	95344
2	Govt. Homoeopathic Medical College Hospital, Kozhikode.	100	1737	154637	156374
	<b>Government Aided</b>				
1	Dr. Padiar memorial Homoeopathic Medical College	100	2755	73965	76720
2	A.N.S.S.Homoeopathic Medical College	Nil*	147	17548	17695
3	Sree Vidhyadhiraja Homoeopathic Medical College	25	1712	45600	47312
	<b>Total</b>	<b>325</b>	<b>7833</b>	<b>385612</b>	<b>393445</b>

\*ANSS Homoeo Medical College is not having an independent teaching hospital. The hospital beds are under the control of the Director of Homoeopathy.

Table -12.17

Details of Medical Colleges and intake of students for Degree course

Medical Colleges	Courses	Government		Cooperative/aided		Self-financing		TOTAL	
		Number	Intake	Number	Intake	Number	Intake	Number	Intake
1	2	3	4	5	6	7	8	9	10
1. Allopathy	MBBS	5	700	2	150	6	600	13	1450
2. Dental	BDS	3	130	--	--	5	280	8	410
3. Ayurveda	BAMS	3	160	2	90	8	400	13	650
4. Homoeopathy	BHMS	2	100	3	150	--	--	5	250
<b>TOTAL</b>		<b>13</b>	<b>1090</b>	<b>7</b>	<b>390</b>	<b>19</b>	<b>1280</b>	<b>39</b>	<b>2760</b>
5. Nursing Colleges	BSc	3	150	--	--	32	1600	35	1750
6. Pharmacy Colleges	B Pharm	2	48	1	40	9	540	12	628
<b>TOTAL</b>		<b>5</b>	<b>198</b>	<b>1</b>	<b>40</b>	<b>41</b>	<b>2140</b>	<b>47</b>	<b>2378</b>

given in Table - 12.17.

12.45 In addition to it there are 281 seats for PG Degree and 39 seats for Super speciality courses. More details of medical/paramedical courses conducted in government medical colleges are given in Appendices 12.9, 12.10 and 12.11.

12.46 Five Government Medical College Hospitals under Allopathy together have 8012 beds, which constitute 16.4% of the total beds in government sector. Inpatients treated was 4.54 lakhs during 2003 which shows an increase of 2.5% over 2002. Outpatients treated increased only marginally by 1%. But major operations conducted during 2003 increased by 24.8% over 2001. Details of beds, patients treated, major operations conducted delivery cases attended etc. are given in the Table-12.18 below.

12.47 On an average 58 inpatients in the Medical Colleges used one hospital bed during 2003 but it varies hospital wise. It was highest in Kozhikode Medical College where 67 inpatients used one bed, whereas in Thiruvananthapuram Medical College 56 patients used one-bed. Total beds in five Medical Colleges together increased from 7978 in 2002 to 8012 in 2003 whereas inpatients treated increased by 0.11 lakhs. Similarly major operations conducted in all the Medical Colleges together increased from 0.67 lakhs to 0.84 lakhs. Number of operations conducted were 0.27 lakhs in Thiruvananthapuram medical college followed by 0.23 lakh in Kozhikode medical college. Delivery cases attended in medical colleges also increased from 0.66 lakhs to 0.69 lakhs. Out of the total delivery cases attended 0.31 lakhs (45%) were in Kozhikode medical college followed by 0.18 lakhs (27%) in Thiruvananthapuram. All

these show that eventhough inpatients treated over the year increased, there has not been proportionate increase in facilities.

#### Increasing Non-Plan Deficit

12.48 Over the years recurring/maintenance need like salary and wages, repair of equipment, minor works, electricity and water charges, equipments etc. have been increasing. But budget outlay under non-plan for recurring cost does not increase proportionate to the requirement, which causes shortage of drugs and personnel and poor maintenance of existing facilities. Eventhough medical college hospitals are treated as referral hospitals, people even with minor ailments reach medical college hospitals for better treatment from professionals leading to over crowding and stretching of scarce facilities. Under such circumstances quality of services is affected. Therefore a twin strategy is needed. (i) strictly enforce referral system to restrict inflow of patients with minor ailments (ii) thus increase non-plan outlay to meet the recurring cost. During 2004-05 non-plan budget outlay is Rs.211 crores against the estimated requirement of Rs.267 crores.(see Table-12.19)

12.49 Deficit of outlay is more for drug, diet and other materials. For instance, in 2000-01, budget outlay was Rs.2369 lakhs for these items against requirement of Rs. 3800 lakhs, which ended in a deficit of Rs. 1431 lakhs. In 2002-03, requirement for these items increased to Rs.5500 lakhs but budget outlay was only Rs.3396 lakhs. (see Table-12.20). This shows that gap between outlay and requirement for these items is continuously increasing indicating the need for clear-cut policy decision on resource allocation.

**Table 12.18**  
**Beds, Patients treated and operations conducted in**  
**Government Medical College Hospitals during 2003**

Sl. No.	Medical college Hospitals	Beds (Nos.)	Inpatients (Lakhs)	Outpatients (Lakhs)	Major Operations conducted	Delivery cases attended
1	Thiruvananthapuram	2457	1.37	7.73	27170	18400
2	Alappuzha	1031	0.51	3.50	8900	6246
3	Kottayam	1280	0.64	8.39	14050	7580
4	Thrissur	987	0.50	4.37	10250	5643
5	Kozhikode	2257	1.52	7.12	23420	31250
Total		8012	4.54	31.11	83790	69119

Source: Directorate of Medical Education

**Table -12.19**  
**Budget Outlay under Non Plan, Requirement and Deficit in**  
**five Medical College Hospitals**

(Rs. Crores)

Year	Non Plan Budget Outlay	Requirement	Deficit
1999-00	138.00	150.00	12.00
2000-01	137.00	160.00	23.00
2001-02	156.00	184.00	28.00
2002-03	158.00	193.00	35.00
2003-04	180.00	227.00	47.00
2004-05(BE)	211.00	267.00	56.00

Source: Directorate of Medical Education

**Table-12.20**  
**Budget Outlay and Requirement for Drug, Diet**  
**and Other materials**

(Rs. Crores)

Year	Budget Outlay	Expenditure	Requirement	Deficit
1999-00	22.75	22.75	35.00	12.25
2000-01	23.69	23.69	38.00	14.31
2001-02	32.81	32.81	46.00	13.91
2002-03	33.96	33.96	55.00	21.04

Source: Directorate of Medical Education

#### **Kerala Heart Foundation**

12.50 Considering the increase in the incidence of heart disease and limited facilities for cardiac care, Tenth Five Year Plan envisaged setting up Kerala Heart Foundation as a unit of medical college, but with functional autonomy. Project has been formulated at an estimated cost of Rs. 34.7 crores and the State Government support is estimated at Rs. 11.7 crore. An area, of. 3.78 acres for building construction has been allocated in the medical college campus. Steps have been initiated to explore the possibility of raising institutional finance.

#### **Major achievements**

##### **Health Personnel**

12.51 During the 10<sup>th</sup> Five Year Plan, the approach has been to create posts of health personnel in each college as per Medical Council of India norms in a phased manner based on an over all development plan. Accordingly during

2003 and 2004, 190 posts of doctors, para medical and others were created in medical colleges. Out of the total posts 40 posts were in Dental College, Kottayam. Similarly 36 posts were of medical officers, 89 were of para medicals and 65 posts were in other categories. In Thiruvananthapuram and Thrissur Medical Colleges posts created were very few while 77 posts were created in Kottayam Medical College and 47 posts were created in Alappuzha. (see Table-12.21)

##### **Expenditure on Medical and Public Health**

12.52 Kerala spends fairly substantial amount on public health compared to other Indian States, which is evident from per capita government health expenditure. In Kerala it was Rs.238 in 2001-02 as against the all India average of Rs.191. Including the investment of Local governments, per capita expenditure on health increased to Rs.267 in 2002-03 and to Rs.312 in 2003-04. Similarly expenditure on health to total State expenditure (Revenue & Capital only) was 5.4%

in 2003-04 as against the national average of 4.6%. The expenditure on Health including family welfare during 2001-02 to 2004-05 is

given in Table-12.23. (Achievement under family welfare programmes is shown in Appendices 12.18 and 12.19).

**Table -12.21**  
**Posts created in the Government Medical Colleges**  
**During 2003 and 2004.**

Sl.No	Medical Colleges	Posts created during 2003 and 2004			
		Medical Officer	Para medical staff	Others	Total
1	Kottayam	8	48	21	77
2	Thrissur	1	1	-	2
3	Alappuzha	-	27	20	47
4	Thiruvananthapuram	4	-	-	4
Sub total		13	76	41	130
5	Dental College, Kottayam	16	13	11	40
6	Nursing College, Kozhikode	7	-	13	20
<b>Total</b>		<b>36</b>	<b>89</b>	<b>65</b>	<b>190</b>

Source: Directorate of Medical Education

**Table -12.22**  
**Capital investment in Medical Colleges**

Sl.No.	Medical Colleges Hospitals	(Rs. lakhs)	
		2002-03	2003-04
<b>I</b>	<b>Medical Colleges</b>		
1	Thiruvananthapuram	57.5	100.00
2	Alappuzha	27.4	58.80
3	Kottayam	247.0	88.00
4	Thrissur	236.76	159.0
5	Kozhikode	76.50	93.12
6	Regional Institute Ophthalmology	14.5	134.51
<b>Total</b>		<b>659.66</b>	<b>633.53</b>
<b>II</b>	<b>Dental Colleges</b>		
1	Thiruvananthapuram	42.5	--
2	Kottayam	--	66.76
3	Kozhikode	17.5	--
<b>Total</b>		<b>60.00</b>	<b>66.76</b>

Source: Directorate of Medical Education

**Table - 12.23**  
**Plan and non-plan expenditure on Medical and Public Health including Family Welfare.**

(Rs. in Lakhs)

Year	Expenditure on Medical and Public Health (excluding FW)			Expenditure on Family Welfare	Plan grant of LSG	Total	% of Expenditure to SDP
	Plan	Non-Plan	Total				
<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>
2001-02	6466.88	59120.91	65587.79	10270.57	NA	75858.36	1.2
2002-03	8950.08	62264.16	71214.24	9459.40	4300.38	84974.02	1.2
2003-04 (RE)	8344.31	72225.90	80570.21	10000.00	8780.00	99350.21	1.3
2004-05 (BE)	10860.00	81665.51	92525.51	9200.00	9662.00	111387.51	1.3

Source: Detailed Budget Estimates 2004-05

### Local Self Governments and Health Programmes

12.53 As per Panchayat Raj Act 1994/ Nagarapalika Act 1994 health institutions upto and including District Hospitals were transferred to Local Governments. Accordingly out of above one third state plan outlay devolved to Local Governments they set apart Rs. 9662 lakhs for Medical and Public Health during 2004-05 as against Rs. 8780 lakhs during 2003-04. Local Government-wise outlay set apart for health during 2004-05 is shown in Table 12.24. Outlay is set apart for implementing major activities like (i) construction of PHC and CHC building, (ii) repair and maintenance of

building, (iii) construction of separate wards and supply of beds, (iv) purchase of equipment, (v) health awareness camps and immunization programmes, (vi) health counseling, (vii) health survey and study, (viii) women and children health programmes, (ix) distribution of medical kits, (x) medical waste management and (xi) purchase of medicines/drugs. During 2004-05 Local Governments together formulated 13267 projects for the health sector.

12.54 Physical achievement data relating to health during 2002-03 shows that 7219 sq.m. of hospital building space was created and 2910 sq.m. of building was renovated.

**Table-12.24**  
**Local Self Government-wise outlay on Health during 2004-05**

Sl.No.	Institutions	Projects (Nos.)	2004-05 (Rs.in lakhs)
1	Grama Panchayat	10865	5524
2	Block Panchayat	1381	1326
3	District Panchayat	377	1254
<b>Sub Total</b>		<b>12623</b>	<b>8104</b>
4	Municipality	594	928
5	Corporation	50	630
<b>Total</b>		<b>13267</b>	<b>9662</b>

## CHAPTER - 13

# HOUSING

State's accomplishment in human and social sector development is well reflected in the general housing situation and therefore average housing in Kerala is far ahead of the rest of India. While at the all-India level, 51.8 per cent households live in permanent and 30 per cent in semi-permanent houses, the corresponding proportion in Kerala is 68 and 21.6 per cent respectively (2001 Census). The Census 2001, indicates that on an average, a house in Kerala had three rooms while the all-India average is only two. In Kerala at the aggregate level, mismatch between households and occupied residential houses has declined to 63000 units, which account for only less than one per cent of the housing stock.

13.2. The gap between the number of households and housing units in India and in Kerala in 1991 and 2001, is shown in Table - 13.1.

**Table - 13.1**

**Details of households and Housing  
Units in 1991 & 2001 - Kerala & India**

Year		Households	Housing Units	Housing shortage
Kerala (Lakhs)	1991	55.13	54.59	0.54
	2001	65.95	65.32	0.63
India (Million)	1991	160.6	129.6	31.0
	2001	209.2	187.1	22.1

13.3. Kerala witnessed high growth in housing investment and construction during the last 30 years. The average growth of houses was 16 per cent during the decade 1991-2001 as against the population growth of 9 per cent. The average annual housing investment in the rural panchayats in Kerala during 1993-1998 was estimated at about Rs. 2.5 million and the average investment per household was about Rs. 5500. It is roughly equivalent to about 10 per cent of the total income of the rural households as against all-India percentage of 2.1.

13.4. Several novel housing programmes and schemes focused on the poor have been launched and successfully implemented during the past three

decades, about 80 per cent of the housing support provided by the State has gone to EWS. The subsidy provided to EWS houses has increased from Rs. 9000 in 1992 to Rs. 35,000 per house in 1998. It is Rs. 75,000 for scheduled tribes.

### Condition of Occupied Houses

13.5. Out of the occupied houses in Kerala in 2001, 55.8% are 'good' and 36% are 'livable' and only 8% are 'dilapidated'. Similarly, while 53% rural houses are good, 65% urban houses are good and 5.7% urban houses and 9% rural houses are 'dilapidated'. Details are shown in Table - 13.2.

**Table - 13.2**  
**Condition of Occupied Houses (2001)**

(lakhs)

Households	Rural	Urban	Total
A. Households	49.43	16.52	65.95
i. Good	26.11	10.72	36.82
ii. Livable	18.88	4.86	23.74
iii. Dilapidated	4.44	0.94	5.38
B. Residences	49.13	16.40	65.53
i. Good	25.98	10.65	36.63
ii. Livable	18.73	4.81	23.54
iii. Dilapidated	4.42	0.93	5.35
C. Residence cum other uses	0.29	0.12	0.41
i. Good	0.12	0.06	0.18
ii. Livable	0.15	0.05	0.20
iii. Dilapidated	0.02	0.01	0.03

Source: Census 2001

(The categorisation as 'good', 'livable' and 'dilapidated' is based on the responses of the people concerned and not on physical criteria).



**BOX-13.1**

Government of India, in pursuance of the UN strategy, announced a 'National Housing and Habitat Policy' in the year 1998. The policy identified 'Housing for All' as a priority area and emphasised more on the needs of the poor (vulnerable groups). The policy document promised to treat housing along with supporting services as a priority sector at par with the infrastructure. The central theme of the Habitat policy was to build up a strong public-private partnership for tackling housing and infrastructure problems. The national housing policy recognizes that provision of shelter is important in the following terms. (i) improves the quality of life of the poor, (ii) creates conditions for attainment of better health, hygiene and education, (iii) stimulates economic activity, (iv) enhances productivity, (v) creates employment opportunities, (vi) motivates savings, and (vii) promotes social justice.

**Living Households and dwelling Rooms**

13.6. In Kerala, size and condition of dwelling units are good in rural as well as urban areas when compared to all India and neighbouring states. For instance, in Kerala while only 11.58% households (rural) live in one room it is 37.98% at all India level, 52.2% in Andrapradesh and 48.7% in a rich state like Maharashtra. Similarly more than one-quarter of households in Kerala have four to five

rooms, while at all India their share is less than 10 per cent. In urban areas housing condition is still better in Kerala where 50% households have three to four rooms and nearly 19% households have five or more rooms which is far above all India level where only 26% households have only three to four rooms. Table - 13.3 shows households and dwelling rooms in Kerala and all India.

**Occupied Residential Houses.**

13.7. Number of occupied residential houses in Kerala has also registered a sharp and steady increase after 1951. The decadal growth rates peaked during the period since 1961. The net addition to the stock during 1971-81 was about 25 percent. Further it increased to 27 percent during the decade between 1981-91. Similarly, the number of census houses, which includes both residential and non-residential buildings, grew by 35 percent during the 1960s, by 29 percent during the 1970s and by 37 percent during the 1980s. According to the Survey on Housing and Employment in Kerala (1980), out of 40.66 lakh houses listed, 4.39 lakh (10.8 percent) houses were not older than two years. A major proportion of these new houses might have come in the place of old houses ie; replacing the old stock.

**Changing use of Housing Materials.**

13.8. Materials used in house construction have been under going rapid changes. Traditional materials used were mud, stone, bricks, thatch, grass, bamboo and tiles. Modern materials like cement, mosaic, floor tiles etc; have replaced traditional materials.

13.9. Popularity of concrete has been increasing at unprecedented levels. Micro-level studies in a

**Table - 13.3**  
**Households and Dwelling Rooms**

Sl.No.	Category	India (%)		Kerala (%)	
		Rural	Urban	Rural	Urban
1	No Exclusive Room	3.42	2.32	1.71	1.13
2	One Room	37.98	35.11	11.58	9.05
3	Two Rooms	30.17	29.53	27.72	23.37
4	Three Rooms	13.28	17.09	27.12	27.88
5	Four Rooms	7.02	8.67	17.72	20.05
6	Five Rooms	2.76	3.27	7.91	9.63
7	Six and More Rooms	3.58	4.00	6.24	8.89
	<b>Total</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>

few rural panchayats in one of the southern districts of Kerala indicated that roof of 52 percent of new houses constructed during the period 1993-1998 was concrete. The proportion of new houses with concrete roof in those panchayats was less than 10 percent during the quinquennium 1973-78. In 1961, 74% houses used traditional materials and their ratio started to decline and in 2001 only 11% houses were built with traditional materials. (Table - 13.4).

13.10. Similar is the case of the predominant

material used for the wall and floor. In 1961, only 36 percent of the total residential houses had walls built of modern materials like burnt brick, stone, concrete and GI sheets or other metal sheets. The proportion increased to 47 percent in 1981 and to 63 percent in 1991. Again it increased to nearly 69 percent in 2001. More than two-thirds of the households in Kerala are living in houses with cement or mosaic or floor tiles, while at the all India level the proportion is only about one-third of the total households (See Table. 13.5).

**Table - 13.4**  
**Distribution of Residential Houses by predominant material of roof**  
**1961, 1991 & 2001 Kerala** (in Percentage)

year and category		A. Traditional Materials	B. Modern Materials	B1. Tiles	B2. Concrete	Total
1961	Total	74.1	25.9	24.8	0.1	100
	Rural	76.9	23.1	21.9	--	100
	Urban	56.7	43.3	42.7	0.5	100
1991	Total	25.2	74.8	57.1	12.5	100
	Rural	28.1	71.9	57.2	9.6	100
	Urban	16.9	86.1	56.7	20.7	100
2001	Total	11.2	88.8	57.1	26.5	100
	Rural	12.4	87.6	59.4	22.5	100
	Urban	7.4	92.6	50.3	38.3	100

Source: Census of India, 1961, 1991 and 2001.

**Table - 13.5**  
**Percentage of households living in houses with materials of floor, wall,**  
**roof and number of rooms in 2001.**

Percentage of households living in houses with		Kerala		India	
		Rural	Urban	Rural	Urban
Material of Floor	Mud	28.57	11.78	72.29	18.02
	Brick/Stone	1.68	1.58	6.48	12.10
	Cement	61.83	66.71	18.05	48.31
	Mosaic, Floor tiles	7.0	18.09	2.17	20.48
Material of Wall	Grass, Thatch, Bamboo etc.	5.28	3.71	12.65	3.92
	Mud	27.05	14.00	39.72	12.78
	Burnt brick	28.38	41.42	34.21	68.02
	Stone	33.01	34.96	10.46	6.73
Material of Roof	Grass, Thatch, Bamboo etc.	11.49	6.56	27.73	6.97
	Tiles/Slate	59.47	50.25	38.63	20.31
	Concrete	22.53	38.23	10.99	42.45
Number of dwelling rooms	No exclusive room or one room	13.29	10.18	43.2	37.43
	Two rooms	27.72	23.37	30.17	29.53
	Three to Five rooms	52.75	57.56	23.06	29.03
	Six rooms and above	6.24	8.89	3.58	4.00
Percentage of households living in dilapidated houses.		8.99	5.70	6.23	3.60

Source: Census 2001.

**Table - 13.6**  
**Distribution of residential Houses by predominant Material of floor**  
**2001 Kerala and India**

(in percentage)

Category		A. Mud, wood, bamboo, bricks and stone	B. Cement, Mosaic and floor tiles	C. Others	Total
India	Total	65.9	33.7	0.4	100
	Rural	79.6	20.2	0.2	100
	Urban	30.5	68.8	0.7	100
Kerala	Total	26.1	72.8	1.1	100
	Rural	30.4	68.8	0.8	100
	Urban	13.4	84.8	1.8	100

Source: Census of India

**Table -13.7**  
**Distribution of Residential Houses by predominant Material of wall Kerala**

(in percentage)

Year and category		A. Non-durable Materials	B. Durable Materials	C. Others	Total
1961	Total	63.7	36.2	0.1	100
	Rural	65.9	33.9	0.2	100
	Urban	49.6	50.3	0.1	100
1991	Total	35.4	62.7	1.9	100
	Rural	39.3	58.8	1.9	100
	Urban	24.5	73.7	1.8	100
2001	Total	30.4	68.5	1.1	100
	Rural	33.9	64.8	1.3	100
	Urban	19.7	79.6	0.7	100

Source: Census of India, 1961, 1991 and 2001.

### Housing Agencies.

13.11. There are nearly 20 public agencies supporting housing schemes in Kerala. The Kerala State Housing Board, Rural Development Department, Kerala State Co-operative Housing Federation, Kerala State Co-operative Agricultural and Rural Development Bank and Nationalised Banks are the major Government departments/major agencies. During 2002-05 these agencies/departments have provided assistance to construct 324663 houses. Out of it 1.33 lakhs were assisted during 2002-03, 1.30 lakhs during 2003-04 and 0.62 lakh during 2004-05. Nationalised banks assisted house construction on a large scale during 2003-04. As much as 42% of the houses were assisted by them. Similarly 26375 (20%) houses were assisted by Rural Development Department under

Indira Awas Yojana. Houses constructed with assistance from different agencies during 2002-05 is given in Table 13.8. Agency-wise Houses assisted is given in Appendix.13.1

**Table - 13.8**  
**No. of Houses assisted by various agencies (2002-05)**

Year	Houses constructed (No.)
2002-03	133228
2003-04	129564
2004-05 (30-9-04)	61871
<b>Total</b>	<b>324663</b>

13.12. From the Ninth Plan onwards, Local Governments have been supporting house construction on a large scale for economically weaker sections. For instance, during 1997-02, Local Governments assisted construction of 5.71 lakh houses. Houses constructed with Local Government support was 50426 during 2003-04 as against 35012 during 2002-03.

13.13. With the level of housing reached and the entry of banks and local governments, the roll of different housing agencies have to be reassessed.

#### Kerala State Housing Board.

13.14. Kerala State Housing Board constructs houses and provides housing loan for different groups like EWS, LIGs, MIGs and HIGs. The Board also undertakes commercial building construction. Since inception Housing Board has constructed 55103 houses under various schemes until 30.9.2004. Similarly Kerala State Housing Board assisted 282238 houses under Maithri Housing Scheme for the BPL families. Out of these, 263778 houses have been fully completed and transferred to beneficiaries. Major Housing Schemes implemented by the Board are shown in Table.13.9. and Maithri Housing Scheme details are given in Appendix..13.2.

#### Kerala State Co-operative Housing Federation.

13.15. Kerala State Co-operative Housing Federation is an apex body with 207 primary co-operative housing societies affiliated to it. The main source of fund to the Federation are the share capital contribution from member societies and state government and borrowings from LIC, HUDCO and National Housing Bank. The Federation finances the affiliated Primary Co-operative Housing Societies for assisting house construction. Federation mobilised Rs.1500 lakhs from National Housing Bank during 2003-04 and Rs.1500 lakhs (up to 30-9-04). Institutional Fund raised by Kerala State Co-operative Housing Federation is given in the Table.13.10. States budget support to Federation was Rs.100 lakhs during 2003-04.

13.16. The Federation disbursed an amount of Rs.4129.71 lakhs during 2003-04 against Rs.5715.13 lakhs during 2002-03. Beneficiaries assisted during 2003-04 for house construction were 7562. Similarly out of total houses assisted during 2003-04, 3144 (42%) were EWS and 3456 (45%) were LIG. Outstanding borrowings of the Federation was Rs.37628 lakhs as on 31.3.2003 and it got reduced to Rs.32809.24 lakhs by 31.3.2004. Amount disbursed and houses assisted by the Federation are given in Appendix.13.3

**Table 13.9**  
Housing schemes implemented by Kerala State Housing Board other than Maithri Housing scheme (No)

Sl: No	Scheme	Up to 2001	2001-02	2002-03	2003-04	2004-05 up to 30-9-04
1	2	3	4	5	6	7
1	LIG Cash loan Scheme	18562	683	161	127	26
2	MIG "	12411	391	71	48	6
3	HIG "	2987	2	-	-	-
4	MLA/MP Housing Scheme	99	1	1	-	1
5	LIG Repair & Maintenance	1801	103	6	23	2
6	MIG "	1322	58	1	11	-
7	HIG "	250	1	-	2	-
8	Flood loan Scheme (1992)	15235	-	-	-	-
9	Working Journalist H.S	427	-	8	16	15
10	Jubilee	237	-	8	-	-
	<b>Total</b>	<b>53331</b>	<b>1239</b>	<b>256</b>	<b>227</b>	<b>50</b>

Source: Kerala State Housing Board

**HUDCO and Housing.**

13.17. HUDCO provides assistance for house construction to individuals and Institutions. During 2003-04, HUDCO provided assistance of Rs.901.14 lakhs to 501 individuals in Kerala. An

amount of Rs.621.23 lakh was given to 284 individuals during 2004-05 (up to October 2004). Assistance provided by HUDCO to individuals in Kerala is given in Table 13.11.

**Table - 13.10**  
**Institutional Fund raised by Kerala State**  
**Co-operative Housing Federation**

(Rs. Lakhs)

Year	Institutional fund raised		
	HUDCO	LIC	NHB
2001-02	133.08	3000	500
2002-03	-	4000	2500
2003-04	-	-	1500
2004-05 upto 30-9-04	-	-	1500

Source: Kerala State Co-operative Housing Federation

**Table - 13.11**  
**Assistance provided by HUDCO to Individuals.**

Year	Individuals (Nos.)	Amount (Rs. lakhs)
2001-02	778	1617.24
2002-03	758	1410.10
2003-04	501	901.14
2004-05(upto 31-10-04)	284	621.23

Source: HUDCO

## POVERTY AND SPECIAL PROGRAMMES FOR WEAKER SECTIONS

In India different strategies have been followed to mitigate the multi dimensional problems that prevail in the rural system. Five important strategies, which have been followed in this regard are presented below:

- Growth pole strategy, which was based on locational decisions guided by the consideration of efficiency and economic growth, stressed on identification of urban centres as growth poles with location of 'growth propulsive' industries in them which would, in turn, transmit growth generating impulses to the rural areas.

Agro-politan model, which emerged partly as a radical reaction to the urban based industrial approach and partly as an effort to overcome the chronic and severe food problem experienced by several developing countries during 1950s was propounded by John Friedman. It was more ambitious, more rural and agrarian, and more human and participatory in the sense that it advocated for the location of human and developmental activities in 'Agropolis' a new and hybrid type of settlement between villages and urban centres. These agropolitan centres would evolve in rural areas as a result of increased agricultural production, technologically improved agriculture and agro-based industries adequately aided by the measures of land-reforms, redistribution of land, renovating the tenancy laws in agriculture and ensuring regular employment to rural labour and would serve as relief centres for absorbing the rural population and plugging the rural urban migration.

Basic needs approach, the basic services approach, the rural industrialization approach, etc. had all good intentions, contained important elements of previous approaches and covered almost all aspects of rural development like alleviation of rural poverty and unemployment, generation of equity oriented growth, provision of basic services and facilities to rural areas, location of agro-

based small-scale and cottage industries in rural areas.

- Growth centre approach, which was devised as an alternative to the growth pole approach, advocated for decentralised pattern of human activities. It postulated that the development of agriculture and primary activities would lead to evolution of growth centres which will become engines of economic growth.
- Integrated rural development approach, which was aimed at making a direct attack on rural poverty and unemployment by integrating the developmental efforts at spatial, functional and social levels, was indeed a very comprehensive model for promoting productivity, participation and quality of life in rural areas.

14.2 To achieve total development, a rural system model is developed and shall be employed in preparing an integrated rural development plan.

### Rural system model

14.3 A rural system has several interacting subsystems, which inter-linked, and interdependent in several ways. In a given rural system, a subsystem's output, in general, has multiple usages, and thus forms the input to one or more subsystems resulting in a system possessing a complex structure. The major subsystems and their inputs and outputs are briefly discussed below:

### Households

14.4 The subsystem, Households, obtains energy from Households, Agriculture, and Livestock in the form of human labour, Food and animal power, while supplying energy input in the form of human labour to all other subsystems.

### Agriculture

14.5 The subsystem, Agriculture, obtains energy from different subsystems, such as, Household, Livestock, and Rural Transport, in the form of

human labour, animal power, farm yard manure. It also receives energy, in the form of electricity, diesel, and chemical fertilizers from outside the system, while producing food, and non-food items, crop residues, fodder, timber, logs, fuel wood, etc., which contribute inputs to various subsystems.

**Livestock**

14.6 The subsystems, Livestock, obtains energy from Household, Agriculture, Transport, and from itself in the form of human labour, animal power, crop residues, fodder, feed, etc., while it produces milk, cattle dung, and drought power forming inputs to other subsystems like Household, Agriculture, and Rural transport.

**Rural Industry**

14.7 The subsystem, Rural industry, obtains energy from different subsystems, such as, Household, Agriculture, Livestock, Rural Transport, in the form of human labour, animal power and industrial inputs (Agriculture output – both major products and by-products). It also receives energy, in the form of electricity, diesel and kerosene from outside the system, while producing output which contribute inputs to various subsystems.

**Rural Transport**

14.8 The subsystem, Rural Transport, mainly serves two subsystems—Household, and Agriculture, and draws its major inputs, i.e., drought power from the sub-system Livestock

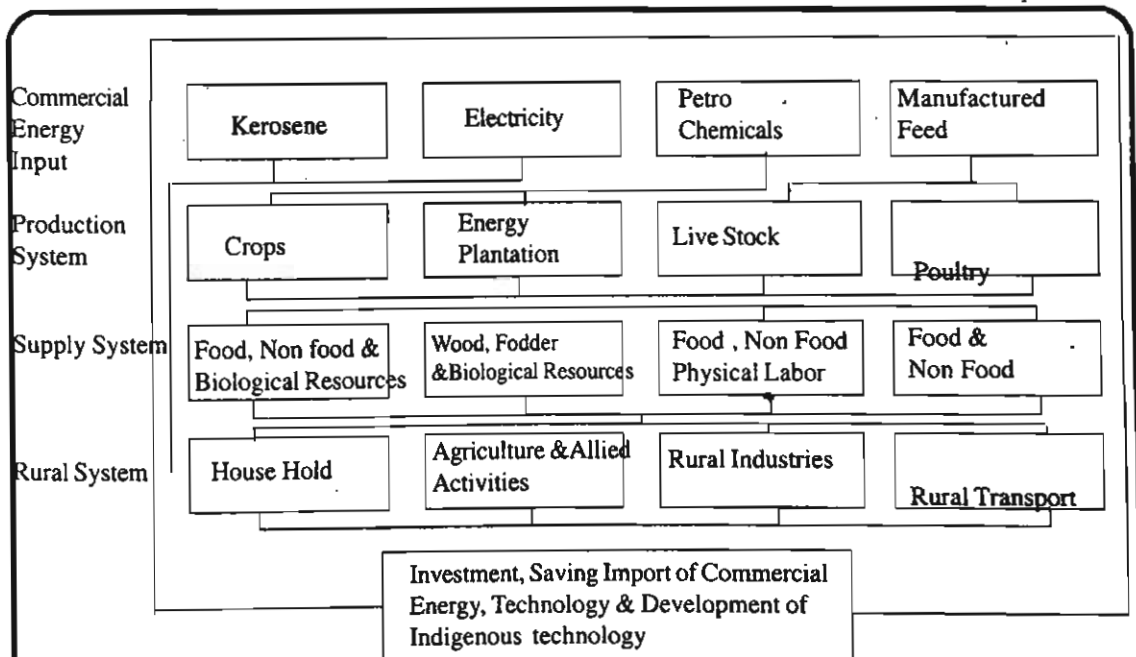
and manual power from the subsystem Households.

14.9 The inter-relationships and interactions for various subsystems of the rural system are shown in Fig. 1.

14.10 Kottayam District is chosen for preparing the model Integrated Development Plan for achieving total development. This plan will be developed with the help of Local Self Governments and will be implemented through them.

14.11 The decentralisation process in the State has helped in re-structuring development programmes with accent on people’s participation and with reliance on transparent indicators and criteria for conferring of benefits. In the decentralisation process, major thrust has been given to poverty reduction, and it has become a local government’s responsibility.

14.12 The strategy for rural development followed in the State is that of poverty reduction by providing credit, training, infrastructure and marketing support for self-employment, providing wage employment opportunity to the rural poor during the agricultural off season, providing



**Fig - 1**  
**Dynamic Functions of the Rural System with Energy Related Interaction**

**Table No.14.1**  
**Estimates of incidence of Poverty in India**

Sl.N O.	Year	Poverty Ratio (%)			Number of Poor (Million)		
		Rural	Urban	Combined	Rural	Urban	Combined
1	2	3	4	5	6	7	8
1	1973-74	56.40	49.00	54.90	261.30	60.00	321.30
2	1977-78	53.10	45.20	51.30	264.30	64.60	328.90
3	1983	45.70	40.80	44.5	252.00	70.90	322.90
4	1987-88	39.10	38.20	38.90	231.90	75.20	307.10
5	1993-94	37.30	32.40	36.00	244.00	76.30	320.30
6	1999-2000	27.10	23.60	26.10	193.20	67.10	263.30
7	2007*	21.10	15.10	19.30	170.50	49.60	220.10

\* Poverty Projection for 2007

Source: Tenth Five Year Plan, Vol.1 Planning Commission, GOI, New Delhi

nutritional support in the form of food grains to the rural poor, etc.

14.13 Poverty Ratios are estimated on the basis of 30 day recall period for 1973-74 to 1999-2000. Poverty at the national level is estimated as the Weighted average of State-wise Poverty levels, and presented in Table -14.1

14.14 This table indicates that the poverty ratio has been reduced from 54.90 per cent in 1973-74 to 26.10 per cent in 1999-2000. The proportion of poor in the rural and in the urban area has decreased considerably during the same period, i.e., 56.4 to 27.1 per cent and 49 to 23.6% respectively. In absolute terms, the number of poor declined to 260 million in 1999-2000.

14.15 As per the NSSO 55<sup>th</sup> round (1999-2000), Kerala has poverty figures of 9.38% in the rural areas and 20.27 per cent in the Urban areas, whereas in All India level, it is 27.09% in rural areas and 23.62% in the urban areas.

#### Poverty Alleviation Programmes

14.16 Anti-poverty programmes have been strengthened over the years to generate additional employment, create productive assets, impart technical and entrepreneur's skills and raising the income level of the poor in the rural system. For the years, 2002-03 and 2003-04, an amount of Rs.87 crore has been provided under the Plan Provision

for the said purpose, of which, Rs.44 crore has been earmarked to rural development, rural employment and poverty alleviation programmes under State sector. Important poverty alleviation programmes implemented in the State through the Panchayat Raj Institutions are Swarnajayanthi Gram Swarozgar Yojana (SGSY), Indira Awas Yojana (IAY), and Sampoorna Gramin Rozgar Yojana (SGRY).

#### 1.Swarnajayanthi Gram Swarozgar Yojana (SGSY)

14.17 Swarnajayanthi Gram Swarozgar Yojana (SGSY), at 75:25 cost sharing between the Centre and the State was launched in April, 1999, after a review and restructuring of the erstwhile Integrated Rural Development Programme and its allied schemes. The objective of SGSY is to bring the assisted Swarozgaris above the poverty line by providing income generating assets to them through bank credit and government subsidy. Since its inception, a total allocation of Rs.157 crore was made available for this scheme upto 2004. Of which, Rs.132 crore (84 per cent), has been utilized upto 2004-05 (October 2004) and 1.42 lakh beneficiaries assisted.

14.18 During 2003-04 and 2004-05 (October), 2136 Self Help Groups started economic activities. Of the total number of Self Help



**Table No14..2**  
**Swarnajayanthi Gram Swarozgar Yojana (SGSY)**

Sl. No	Year	Self Help Group (No. of members covered)				Individual (No. of Members covered)			
		SC	ST	Others	Total	SC	ST	Others	Total
1	2	3	4	5	6	7	8	9	10
1	2003-04	2938	346	10452	13736	4343	255	1728	6326
2	2004-05 (October)	2035	213	6307	8555	1557	85	463	2105
	<b>Total</b>	<b>4973 (22%)</b>	<b>559 (3%)</b>	<b>16759 (75%)</b>	<b>22291 (100)</b>	<b>5900 (70%)</b>	<b>340 (4%)</b>	<b>2191 (26%)</b>	<b>8431 (100%)</b>

Source: Commissionerate of Rural Development, GOK, Thiruvananthapuram

Groups, one-fourth (25%) of Scheduled Castes and Scheduled Tribes. In the case of individual Swarozgaris, the total number of families is 8431, of which, SC persons represent 70%. The physical achievement under this programme is given in Table.14.2.

14.19 The Centre for Management Development (CMD) has done a concurrent evaluation of SGSY in all the states of the country, and observed that the average annual income obtained by an individual is Rs.8800 and for groups it is Rs.34930 in India, whereas in Kerala it is Rs.7766 and Rs.21767 respectively.

14.20 The Evaluation study reveals that more than half of the Swarozgaris in Kerala (53.33%) have not done any market assessment prior to starting their micro-enterprises. Bank release of the loan amount to the members of the SHG to few states, such as Kerala, U.P., Madhya Pradesh and Punjab are good. Other major points in the concurrent evaluation study with special reference to Kerala is given below:

- The per capita poverty line per year is Rs. 4497 about 48.38 per cent individual Swarozgaris and 26.56 per cent group Swarozgaris have income above poverty line.
- The female representation is 92.72 per cent.
- Of the total beneficiaries SC represents 22.2 per cent, ST 4.87 per cent and the rest 72.91 per cent belong to other categories.
- Beneficiaries owing landed property is 92.95 per cent.

- About 14.43 per cent of them have kutcha houses, 54.99 per cent semi-pucca houses, 28.40 per cent have pucca houses. 2.19 per cent does not own houses.
- 92.2 per cent is members of BPL families.
- About 98.97% beneficiaries received Loan/ financial assistance.
- About 39.69% Swarozgaris are owing land but unable to invest.
- About 49.88 per cent livestock assets were created.
- Activities initiated by individual Swarozgaris – production of goods 32.54 per cent, on farm activities 10.22 per cent, services 13.46 per cent and trade and commerce 12.72 per cent.
- About 38.08 per cent Swarozgaris have undergone basic orientation programme and 9.5% skill development programme.
- 98.97 per cent beneficiaries received Loan/ financial assistance

## 2. Sampoorna Gramin Rozgar Yojana

14.21 The Sampoorna Gramin Rozgar Yojana (SGRY) was launched in September 2001, by merging the ongoing schemes of Jawahar Grameen Samridhi Yojana (JGSY). The objective of this programme is to provide additional wage employment, food security, and creation of durable community, social and economic infrastructure in the rural areas. SGRY is open to all rural poor who are in need of wage employment and desire to do manual and unskilled work in and around the village/habitat. The cost of each component of this programme is shared by the Centre and State in the ratio of 75:25. An amount of Rs. 101.25 Crore as cash component, and 61308 tonnes of

**Table No.14.3**  
**Sampoorna Gramin Rozgar Yojana – Employment Generation**  
(Lakh Mandays)

Sl.No	Year	SC	ST	Others	Total
1	2003-04	32.97	5.10	62.81	100.88
2	2004-05(Oct.)	17.96	1.88	28.80	48.64
	<b>Total</b>	<b>50.93</b> (34.06%)	<b>6.98</b> (4.67%)	<b>91.61</b> (61.27%)	<b>149.52</b>

∴ Commissionerate of Rural Development, GOK, Thiruvananthapuram.

food grain were released to the State that led to generation of 149 lakh mandays of employment during the year 2003-04. Employment generated under this programme during 2003-04 and 2004-05 (October 2004) is given in Table – 14. 3

14.22 The Table illustrates that about two-third (61.27%) of the benefits of the programme is confined to the general population and the rest is shared by the SC/ST population. Thus the benefits accruing to SC/ST population is much higher proportionately.

14.23 Major Points in the Concurrent Evaluation study by Centre for Management Development of Sampoorna Grameen Rozgar Yojana for 2002-03 with special reference to Kerala State is given below:

- Employment generated for men is 70.95 lakh man-days.
- Employment generated for women is 21.53 lakh man-days.
- Percentage of beneficiaries 79.22 per cent male, and the rest (20.78 per cent) is female.
- Of the total beneficiaries, SC represents 39.08 per cent, ST represents 5.50 per cent, and the rest (55.37 per cent) belong to other category.
- Fund utilized for the period of 2002-03 is 69.73 per cent.
- Fund utilized for SC/ST activities are 25.49 per cent.
- Food allocated to Kerala State is 149217 tons. Of which, 45.62 per cent is lifted.
- Food grain distributed is 80.35 per cent of the

total lifted 68072 tons.

• Beneficiaries belonging to BPL families are 86.84 per cent.

• Beneficiary owned landed

properties is 95.62 per cent.

- Maintenance of muster roll is 10.83 per cent, whereas in Punjab it is 98.69 per cent.
- As part of the annual action plan 86.67 per cent of the work are undertaken.
- Of the total work 2.38 per cent are undertaken for disabled.
- Awareness about the implementing agency in Kerala is 31.72 per cent, whereas in Pondichery it is 94.38 per cent.

### 3.Indira Awaz Yojana

14.24 The objective of Indira Awaz Yojana, a centrally sponsored scheme shared between the Centre and the State in the ratio 75:25, is to help construction of dwelling units by member of SC/ST, freed bonded labourers and also non-SC/ST rural poor below poverty line by providing them with grant-in-aid @ Rs.27,500 per house. Of the total amount, 20% of the amount is allowed for upgradation of unserviceable katcha houses for which ceiling of Rs.12,500 per unit applies.

14.25 The total number of new houses constructed during 2003-04 and 2004-05 (October) is 36,495. Of which, the number of houses constructed for SC, ST and others are 19121(52.39%), 2048 (5.61%) and 15326 (42%) respectively. In the case of upgradation of houses, total number of houses upgraded is 17513, of which the number of houses upgraded for SC, ST and other groups is 9542 (54.48%), 993(5.67%), and 6978 (39.85%) respectively. The total available fund for this scheme in 2003-04 was Rs.105.65 crore. The physical and financial achievement pertain to this programme is shown in Table.14.4 and it illustrates that proportionate

Table No.14.4  
Physical Achievement of Indira Awas Yojana

Sl.No	Year	New Houses				Upgradation			
		SC	ST	Others	Total	SC	ST	Others	Total
1	2003-04	13278	1653	11444	26375	7230	778	5442	13450
2	2004-05 (Oct.)	5843	395	3882	10120	2312	215	1536	4063
	<b>Total</b>	<b>19121</b> (52.39%)	<b>2048</b> (5.61%)	<b>15326</b> (42%)	<b>36495</b>	<b>9542</b> (54.48%)	<b>993</b> (5.67%)	<b>6978</b> (39.85%)	<b>17513</b>

Source: Commissionerate of Rural Development, GOK, Thiruvananthapuram

higher benefits have flowed for SC/ST groups.

14.26 The financial achievement under Centrally Sponsored Poverty Alleviation Programmes is shown in Appendix 14.1. A sum of Rs.1494 crore was made available to these programmes from 1997-98 to 2004-05 (October 2004).

#### Kudumbashree

14.27 The State Poverty Eradication Mission implements the Kudumbashree programme by organising the poor by creating community based structures of women below poverty line with focus on self help, demand-led convergence of available services and resources under the leadership of

the local governments. The major activities carried out are listed below:-

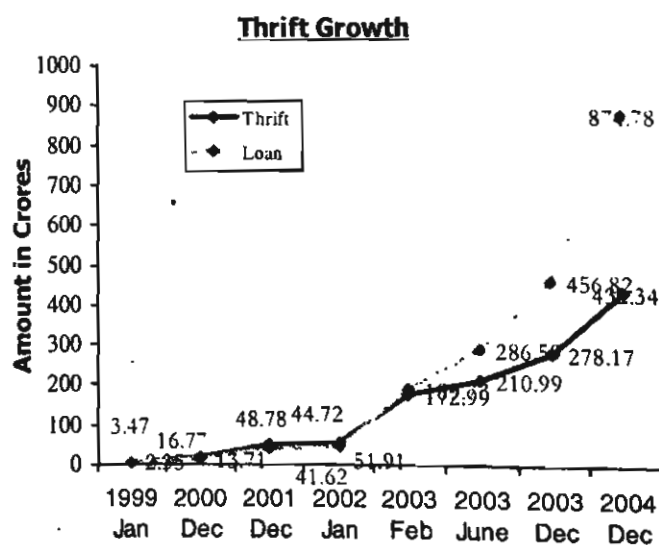
#### (a) Community Based Organisation of the Poor

14.28 The Kudumbashree Programme, which covered the entire rural area in three phases has created 135572 NHGS, 13199 ADSs, and 991 CDSs. The Community based organisation, which has coverage of 2726580 families, mobilised a sum of Rs. 376.07 crore as thrift and disbursed credit to the tune of Rs. 764.03 Crore to its members. (As on 31.10.2004) (See Appendix 14.2 & Box 14.1)

#### BOX-14.1

### Micro Finance For Poverty Reduction - Thrift & Credit

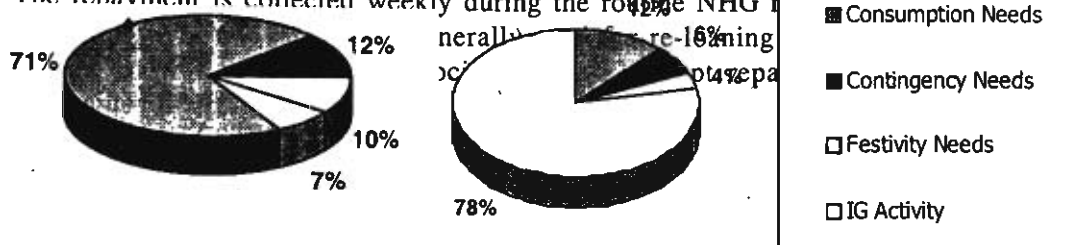
Kudumbashree is the largest micro finance institution in the State that encompasses 1,51,406 Neighbourhood Groups (NHGs), 13,924 Area Development Societies (ADS) and 1,050 Community Development Societies (CDS). This federated network has a membership to 30,98,011 lakh poor families. The thrift mobilised by the NHGs amounts to Rs. 432.34 crores and this has been circulated as loan amounting to Rs. 874.78 crores. The Thrift & Credit Societies at NHG level motivates and facilitate the poor to save and provide them



with cost effective and easy credit. The poor families bring in small sums according to their capability, pool them together, form a corpus and take back loans to meet their immediate needs without depending on the whims and fancies of money lenders, formal or informal. It's their money and it's their decision to invest and withdraw.

The thrift operation also necessitates a formal bank account that is operated jointly by the President and Secretary. In rotation all the members of the NHGs get opportunity to attend the bank, involve in the transactions and learn the banking procedures. This gives them confidence, builds self-esteem and awareness of their rights.

A member can avail loan up to a maximum of four times of her savings. The amount of loan and the priority of disbursement are decided by the NHG. The repayment is collected weekly during the routine NHG meeting.



Micro Finance – Utilization pattern over the years (Urban alone)

The Salient features of the Micro finance is given below .

- Poor can save
- Flexible financial service
- Enables to undertake Micro Enterprises
- Informal bank
- Easy to avail
- Facilitate timely credit
- Low transaction cost
- Poor can pay interest at market rate
- Weekly repayment
- Transparency in operation
- Loan disbursement – Need based
- Loans at the convenience of the poor
- No collateral security
- Time saving
- Credit at the doorstep
- Prompt repayment due to peer pressure
- Leap in self-confidence and building up of self esteem

The Present Status of Thrift & Credit Operation in Kudumbashree is given below

As on 31.12.2004

(Rs. Crore)

	NHG	ADS	CDS	Thrift	Credit
Urban	8614	725	59	27.80	29.39
Rural	140743	13199	991	400.97	841.14
Tribal	2049			3.57	4.25
<b>Total</b>	<b>151406</b>	<b>13924</b>	<b>1050</b>	<b>432.34</b>	<b>874.78</b>

**(b) Linkage Banking**

14.29 The linkage-banking programme was launched during the year 2002-03 after proper grading the NHGs as per NABARD guidelines. During the year 2003-04 and upto Nov. 30<sup>th</sup> 2004, 66503 NHGs were graded and 39677 NHGs were linked with banks. A sum of Rs.13002.70 lakh has been made available to the NHGs as loan. (See Appendix 14.3)

**(c) Lease Land Farming**

14.30 The lease land-farming programme, which was initiated in the rural areas during the year 2002-03, was successfully extended to 712 Grama Panchayats. Under this programme, 18817 NHGs consisting of 228159 families have participated. Through this programme, 11236.14 hectares of land are brought under cultivation.

**(d) Bala Sabha**

14.31 The Bala Sabha, which intends to prevent intergenerational transmission of poverty, has been extended to the rural areas also. In 2003, Bala Sabha Sanghamam were organised in Alappuzha, Ernakulam & Kasaragode Districts. A total number of 1578 children participated in these Sanghamams.

**(e) Destitute Identification, Rehabilitation & Monitoring**

14.32 State Poverty Eradication Mission has formulated a specific project for destitute identification, rehabilitation and monitoring called "Ashraya" with the assistance of the Central Government to reach out the downtrodden and neglected destitutes through out the State. In 2002-04, 179 panchayats of the state have forwarded family specific projects for destitute care and rehabilitation that intend to assist 14790 destitute families. (See Boxes-14.2 & 14.3). 117 grama panchayats have prepared detailed projects, which envisage to rehabilitate 8863 families during the current year. The total project cost is Rs.48.05 crore.

**BOX-14.2**

**'Ashraya' – The Destitute Identification, Rehabilitation & Monitoring Project**

In the Five Year Plans, the approach was to assist the BPL families on the 'Antyodaya' principle the poorest of the poor coming first. In the VI<sup>th</sup> & VII<sup>th</sup> Five Year Plan the BPL families listed were also categorized into poor, very poor, very very poor and destitute based on their income. Subsequently, in the VIII<sup>th</sup> Five Year Plan onwards though the categorization process was withdrawn, the 'Antyodaya' approach continues. A critical analysis on the implementation of the Poverty alleviation programmes shows that the destitute category who are in the lower strata of the BPL list always got sidelined or their interests are not adequately protected due to the following reason.

- i) The conventional Poverty programmes aimed at reducing poverty on economic terms only
- ii) The various needs of the destitute category such as housing, drinking water, sanitation facilities, education, social problems, etc., were not taken into account.
- iii) The incapacity of the destitute to set up and run profitably a micro enterprise.
- iv) The destitute were sidelined in wage employment programme'
- v) The programme implementers had not taken into account the awareness level of the destitutes.
- vi) There was no holistic approach in tackling the multiple dimensions of poverty
- vii) The various programmes were implemented parallel to one another and never led to a demand led convergence.
- viii) The destitutes never constituted a Vote Bank.

This situation prompted the State Planning Board is introduced the idea of a plan for the poorest of the poor and the State Poverty Eradication Mission submitted a project to the Planning commission during 2002-03, for the development of this particular segment of the population. This was approved. The project was started and successfully implemented in 179 Grama Panchayats of the State. It is expected that the programme is to be universalized in next two years.

## BOX-14.3

## COMMUNITY BASED SOCIAL SECURITY FOR THE ABSOLUTELY POOR THROUGH ASHRAYA

### The Destitute

The destitutes are the poorest of the poor, the totally excluded. They are the outliers of the development scenario in the negative extreme. They live at the margins of the economy, society and polity. They do not have a "voice" or the power of "choice". They are not a constituency or vote bank. They face the worst forms of deprivation and lack of access to the basic minimum services. They are exposed to all forms of vulnerability and do not have any safety net against risks. Their income is below subsistence and they are dependent. These faceless powerless people lack capabilities and are not aware of their entitlements nor can they access them. They are even outside statistics and numbers.

They cannot compete nor can they bargain. They drift pushed by circumstances. Severity of destitution is by unfavourable physical, gender or caste status. That is, being disabled, being a woman, being a widow, belonging to a Scheduled Caste or Tribe can singly or in combination aggravate the suffering. The collapse of the traditional social support systems has orphaned the destitutes. They are sometimes objects of charity. But they are never subjects of development. They have to be invested with identity, personality and empowered to stand on their own. Only an Antyodaya approach can reach them. Only care and handholding can lift them. They can develop only after a period of well-targeted well-designed welfare.

### Process of Implementation

At the first instance the concept of the project was communicated to the leaders of best performing Grama panchayats and who were then sensitised of the extreme deprivation suffered by the destitute families and were motivated to take up special projects to rehabilitate such families. Interestingly 110 grama panchayats positively responded and prepared draft projects for identification, rehabilitation and monitoring of the destitute families in their respective Gramapanchayats.

Since these drafts projects needed some more conceptual and operational clarity in the case of identification, need assessment and the rehabilitation mechanism the State Poverty Eradication Mission organized 2 State Level and 4 Regional workshops cum training programmes for the Leaders and Officials of Gramapanchayat in which 106 Gramapanchayats attended. In these workshops the draft projects prepared by them were thoroughly scanned with their participation and the defects were jointly identified. Subsequently these panchayats have revised projects. Out of the 106-grama panchayats **101 projects** were found in conformity with the guidelines and accepted.

During the year 2003-04 **78 Grama panchayats** identified destitute families and prepared detailed projects for implementation. Again in 2004-05, **117 Grama Panchayats** have also prepared projects. The remaining **695** Grama panchayats could be covered within the next two years.

### Identification of Destitute Families

Normally, at risk our BPL families are identified following the risk indices developed by the State Poverty Eradication Mission, which is listed below:

- 1) *Kutchra House*
- 2) *No access to safe drinking water*
- 3) *No access to sanitary latrine*
- 4) *Illiterate adult in the family*
- 5) *Family having not more than one earning member*
- 6) *Family getting barely two meals a day or less*
- 7) *Presence of children below the age of 5 in the family*
- 8) *Alcoholic or drug addict in the family*
- 9) *Scheduled Caste or Scheduled Tribe family*

If any four or more of the above risk factors are positive in a family, the State Poverty Eradication Mission treats such a family as a 'risk family'. In the case of destitute family, all the risk factors or at least eight out of the nine have to be positive. To have a more precise identification the presence of any of the following factors is also taken in to account **in addition** to the above said nine point risk indicators.

- (i) Those families, which have no landed property to put up their dwelling place (living in *puromboke* land, forest land, side bunds of canal and paddy fields etc)
- (ii) Those who spend the night time in public places, streets or in the verandas of shops for sleeping.
- (iii) Families led by unwed mothers, single parent or those separated women living in distress
- (iv) Families led by young widows who are poor or having women who have passed the age of marriage, but remain unmarried.
- (v) Families having members who are subjected to severe, chronic and incurable diseases or physically and mentally challenged.
- (vi) Families having no healthy member to win bread for the family
- (vii) Beggars who resort beggary as a means of livelihood
- (viii) Women subjected to atrocities

The identification on the above criteria is done very transparently through Community Based Organizations (CBOs) of the Kudumbashree. All destitute may not be members of the NHGs, but the NHG members can easily identify them because they live in close proximity to them and their social and economic status are well known to the NHG members. More over identification through the NHG leads to a discussion at NHG level and many heads are put together for assessing real situation.

**Special Parameters for identifying destitute families in urban area.**

In Urban areas to suit the requirements of the Urban situation different additional parameters have been designed to identify the destitute families. They are given below.

- |  |  |
|--|--|
| 1) Spending the nighttime in public places, streets or on verandahs of shops for sleeping.                       | 6) Families having street children / children in Juvenile Home or Poor Home            |
| 2) Young widows who are economically poor or women who have the passed the age of marriage and remain unmarried. | 7) Families having children below the age of 14 who work to earn money for the family. |
| 3) Beggars who resort beggary as a means of livelihood   | 8) Families having Commercial Sex Workers  |
| 4) No healthy member to win bread for the family below the age of 60.  | 9) Families having women members who live in Abala Mandiram.                           |
| 5) Women subjected to atrocities   | 10) Families living in slums   |

**Need Assessment & Package of Care Services**

(1) The Gramapanchayats after identifying the destitute families following the transparent indices mentioned above conduct participatory need assessment for identifying the various needs of the families. The identified needs are subsequently consolidated and a project is prepared for each family. To incorporate all the identified needs and to facilitate total rehabilitation each project is prepared in the form of a **package of care services**. The various needs of the families are classified in to four broad categories, which are listed below.

- a. **Survival needs** such as food, health, pension, education,
- b. **Infrastructure needs** such as land for housing, construction of house, safe drinking water, sanitation
- c. **Development needs** such as employment, skill development, livelihood for sustenance
- d. **Social needs** such as inculcation of initiative, awareness, creation inclusion etc.

After preparing individual projects for each family all the projects of the panchayats are consolidated and the Panchayat project prepared. A detailed analysis of the projects of 179 Grama Panchayats reveals the following factors.

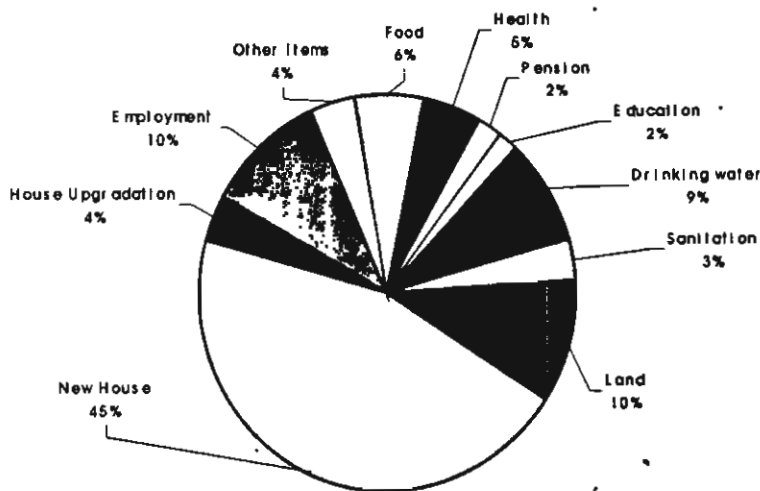
- (1) The destitute families are less than 2% of the total families in the panchayats - 14790 families identified from 179 Grama panchayats
- (2) The total estimated Project cost of the 179 grama panchayats to meet the entire needs of the destitute families is Rs.71.17 crores



- (3) 6.02% of the total allocation is earmarked exclusively for procuring food.
- (4) Majority of the families identified have no land to set up dwelling house.
- (5) Majority of the families identified are suffering from chronic illness such as TB, cancer etc
- (6) Presence of mentally and physically challenged persons
- (7) Families headed by unwed mothers / widows/divorcees
- (8) Presence of school drop out children

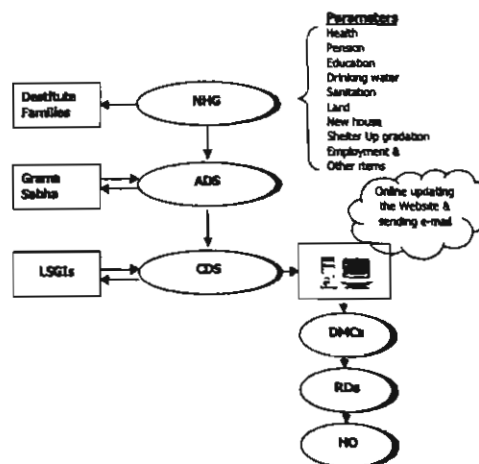
The worst form of vulnerability and deprivation are found in the families identified

### Component-wise Details of the Ashraya Projects of 179 Grama Panchayats



### Community Based Monitoring

The monitoring of the programme is done at various levels. However, the most significant factor in monitoring is that it is entrusted to the beneficiary community. The first information / data is generated by the community at its NHG meetings. Thereby the community is made more responsible not only in implementing the programme but also to assess what they have done. The training module and curriculum have a separate chapter / session on community based monitoring. This helps the people to realize their actual needs and to find out solutions of the problems. This approach is to help make the programme sustainable. The data generated by the NHGs are reviewed by the ADS at ward level and CDS at the Panchayat level.



14.33 The Kerala Institute of Local Administration would be conducting 10 special programmes for sensitizing Panchayat & CDS functionaries for the expansion of this programme to the all grama panchayats.

**(f) I.T. enabled services to the poor**

14.34 On line monitoring system is introduced in destitute identification, rehabilitation and monitoring of projects. Government of India has sanctioned Rs.3 crore during 2002-03 and Rs.2.50 crore during 2003-04 for the said purpose. As per the project, the CDS office will be computerised and online monitoring is done for improving the services of the poor.

**(g) Kerashree**

14.35 State Poverty Eradication Mission (SPEM), has brought out a new brand of coconut oil in the brand name of Kerashree. There were 67 Kerashree units started in the state during the year 2002-03 and all are functioning well in the state.

**(g) Vidhyashree**

14.36 In 2003-04, in IT education, a revolutionary experiment was made by the State Poverty Eradication Mission (SPEM) by setting up Vidyashree Units in schools to impart computer education to the students studying in 8<sup>th</sup>, 9<sup>th</sup> & 10<sup>th</sup> standards as per the curriculum prepared by the education department on a micro enterprise mode.

**(h) Coconut tree climbers training**

14.37 Recently, an efficient equipment has been invented for climbing the coconut tree. Trained youth can climb a 30 ft. tall coconut tree within 2 to 3 minutes by using this equipment. Training has been organised at Grama Panchayat levels to train the local youth for this programme.

**(i) Self Sufficient, Self reliant and Sustainable Panchayats**

14.38 The objective of this programme is reduction of poverty by 2005 in the system. The novel self sufficient, self reliant and sustainable

(S<sup>3</sup>) Panchayat Scheme was launched in the year 2003-04. There are 89 Village Panchayats in the programme. In a highly subsidised regime, Kudumbashree has broken fresh ground by designing a Rs.40,000 per unit housing scheme with 75% as loan from commercial banks at 7.2% interest given directly to the beneficiaries.

**(j) Bhavanashree Programme**

14.39 There were 11706 applications forwarded to the Banks. Of which, 1035 cases were disbursed. (See Appendix-14. 4)

**LAND REFORMS**

14.40 The main objective of this programme was to increase agricultural production and build an egalitarian social order as envisaged in the Constitution of India. Land Reforms has come back on the political agenda of the country. Reforms are necessary not only for bringing about equity and social justice, but also for laying sound foundations for viable growth. Generating greater access of landless rural poor to land is considered as an important component in Poverty Alleviation.

14.41 The major objectives of Land Reforms are re-ordering of agrarian relations in order to achieve an egalitarian social structure, reduction of poverty among the rural poor, realising the age old goal of land to the tiller, strengthening the asset base of the rural poor, increasing agricultural productivity. Kerala is acknowledged to be ahead of most other States in land reforms.

14.42 Distribution of surplus land is the important activity under Land Reforms. 648 acres of land were distributed to 2415 families from 1.4.2003 to 31.10.2004. 799 SC and 306 ST females were benefited under this scheme, and they received 159 and 168 acres of land respectively. The distribution of surplus land to SC/ST and others from 1.4.2003 to 31.10.2004 is shown in Appendix 14. 5 Since the beginning, the total extent of land declared as surplus is 1.41 lakh acres. Of this, about 0.96 lakh acres have been distributed to 1.66 lakh beneficiaries. An area of 0.25 lakh acres is involved in litigation. Apart from the surplus land, an area of 4.57 lakh acres of Government wasteland has also been distributed to the landless rural poor.

### Attappady Environmental Conservation and Wasteland Development Project

14.43 The objectives of this project are "Ecological restoration of degraded wasteland in Attappady and development of replicable models of participative eco-restoration, so as to prevent further degradation and promote sustainable method of livelihood to the local people (with special emphasis on tribal population) in harmony with resource base".

14.44 This is an eco-restoration project for reclamation of 507 Sq. km. degraded wasteland of Attappady and to provide sustainable livelihood to the local people particularly the Tribal Population. The Japan Bank for International Co-operation (JBIC) is assisting this project. The total cost of this Project is Rs.219 Crore, of which the external assistance is to the tune of Rs.177 crore. The project period is from 1996-97 to 2004-05. This project was officially inaugurated in 2000 April. This project is expected to continue upto 2010, since it was started late.

14.45 Attappady Hills Area Development Society (AHADS) is implementing this Project. This project is being implemented in 146 micro watersheds divided into 15 Development Units. User Associations are constituted for every micro watershed for implementing the project activities. There are 160 Ooru Vikasana Samithies formed for implementing various activities in Tribal hamlets.

14.46 Considerable amount of work has been done so far that comprising of afforestation (3414.ha), Production of seedlings (29 lakh), Private Wasteland Planting (1265 ha.), Production of fencing post (48000 Nos.), Structural Conservation in forest land (1600 ha.), Homestead activities (2800 families covered), Organic farming (4.54 ha.), Construction of pits and trenches (11 lakh Nos.), Check dams (5067), Contour bunds (7.4 km.), Drainage canals (3.9 km.) and Retaining walls (11781 m.), etc. About 12.95 lakh mandays of employment opportunities have been generated under this programme.

### Urban Poverty Reduction Programmes

14.47 Poverty grows along with the process of urbanization in the State. As per the NSSO 55<sup>th</sup> round (1999-2000), 20.27 per cent of the total

urban population live under poverty stricken condition, where as the All India figure is 23.62 per cent.

14.48 The urban local governments are implementing Kudumbashree, one of the poverty alleviation schemes, in the system. Kudumbashree has set up Community Based Organisation in all the Urban local governments in the State. There are 8614 Neighbourhood Groups (NHGs) covering 2,92,207 families below poverty line, 725 Area Development Societies (ADSs) and 58 Community Development Societies (CDSs) in the Municipalities and Corporations in the state. The CDS System acts as the delivery system for various Centrally Sponsored Urban Poverty reduction programmes. The Communities Based Organisations in urban areas have mobilized thrift to the tune of Rs 27 crore and distributed loan worth of Rs 28.13 crore as on November, 2004. District-wise details of number of NHGs and thrift mobilized are presented in Appendix 14.6

### 1. Swarna Jayanthi Shahari Rozgar Yojana (SJSRY)

14.49 Swarna Jayanthi Shahari Rozgar Yojana is an anti - poverty programme launched by the Government of India during 1997 aiming at eradication of poverty from the urban areas by replacing the schemes, such as Nehru Rozgar Yojana, Urban Basic Services for the poor and Prime Ministers Integrated Urban Poverty Eradication Programme.

14.50 Antyodaya approach is followed in providing benefits under this scheme. The identified poor families are organised into Neighbourhood Groups consisting of 25-40 families living in contiguous Neighbourhood. At the Ward level, the Neighbourhood groups are not worked into an Area Development Society, and at the Municipal level into an apex organization called the Community Development Society, which is registered as Charitable Society. Identification of beneficiaries, selection of micro enterprises, programme implementation and monitoring programme, social audit, etc., are done by the CDS system.

14.51 SJSRY has components like, Urban Self Employment Programme (USEP), which assists

for starting self employment ventures, and Development of Women and Children in the Urban Areas (DWCUA) that assists for starting gainful employment through group activities. Kudumbashree has so far organized 16,076 Micro enterprises. Of which 1268 are group ventures of poor women. Altogether, there are 27,638 families benefited through self employment under SJSRY. The cumulative expenditure under this

SJSRY upto 30<sup>th</sup> November 2004 is Rs.39.08 crore. Year wise release of fund and expenditure under SJSRY are presented in Table 14.5. The physical achievement of this scheme during the Tenth Five Year Plan period is presented in Table 14.6. About 83 per cent of the funds available under SJSRY have been utilized upto November 2004.

Table No.14.5  
Year wise release of funds and Expenditure under SJSRY

(Rs. in lakh)

Sl.No	Year	Funds released			Funds available including previous year balance	Expenditure	% of expenditure
		Central	State	Total			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	1997-98	556.74	560.73	1117.47	1117.47	1070.93	95.84
2	1998-99	377.09	125.70	502.79	549.33	549.93	100
3	1999-00	448.32	149.44	597.76	597.76	472.74	79.09
4	2000-01	256.50	129.82	386.32	511.34	459.36	89.93
5	2001-02	266.23	88.74	354.97	406.95	239.12	58.75
6	2002-03	301.99	150.00	451.99	619.82	453.04	73.09
7	2003-04	610.50	400.00	1010.50	1177.28	452.06	38.40
8	2004-05*	139.61	175.00	314.61	1039.83	210.85	20.28
	<b>Total</b>	<b>2956.98</b>	<b>1779.43</b>	<b>4736.41</b>		<b>3908.03</b>	<b>82.51</b>

Source: Directorate of Kudumbashree, GOK, Thiruvananthapuram

\*Upto November 2004

Table No.14.6  
Physical Achievement of SJSRY from 2002-03 to 2004-05

Sl. No	Component	Unit	Achievement			
			2002-03	2003-04	2004-05*	Cumulative
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	USEP – Individual Self employment enterprises	Number	803	432	1041	14808
2	DWCUA – Women Group Enterprises	Number	181	176	42	1268
3	UWEP – Mandays created	Lakh Mandays	0.10	0.02	0.08	2.01
4	Skill Development Training	Number of persons	1829		2461	29800

Source: Directorate of Kudumbashree, GOK, Thiruvananthapuram

\*Upto November 2004

## 2.Valmiki Ambedkar Awas Yojana (VAMBAY)

14.52 VAMBAY is a Centrally sponsored scheme launched during 2001-02 for ameliorating the housing condition of the Slum dwellers that are living below the poverty line including members of EWS who do not possess adequate shelter. National City Sanitation Project under the title of Nirmal Bharat Abhiyan is an integrated component of the VAMBAY. The upper financial limit for

construction of a house with plinth area not less than 15 Sq. mts. with sanitary toilet is Rs.40,000/- . The 50 per cent of the cost are central subsidy and the remaining 50 per cent are to be shared equally by the State Government and the Urban Local Government. The State Poverty Eradication Mission is the nodal agency for the implementation of VAMBAY. The performance of the scheme in the state is given in Table 14.7

Though construction of 19784 houses has been targeted under this scheme in the first three years, 7512 houses have been completed (38%). The implementation of VAMBAY is dovetailed and synergised with other programme such as SJSRY and NSDP.

**3.National Slum Development Programme**

**Table No.14.7 Physical and Financial Achievement of VAMBAY (2001-02 to 2004-05)**

Sl. No.	Year	Release of fund (Rs lakh)				Physical status			
		Central	State	ULBs	Total	Houses targeted	Houses completed	Houses at lintel level	Houses at Plinth level
1	2	3	4	5	6	7	8	9	10
1	2001-02	266.00	266.00	-	532.00	1330	1220		
2	2002-03	2305.65	1000.00	1152.83	4458.48	11528	5788	2496	930
3	2003-04	1385.20	1000.00	692.60	3077.80	6926	504	1061	528
4	2004-05*	2000.00	1000.00	1000.00	4000.00	10,000			
<b>Total</b>		<b>5956.85</b>	<b>3266</b>	<b>2845.43</b>	<b>12068.28</b>	<b>29784</b>	<b>7512</b>	<b>3557</b>	<b>1458</b>

Source: Directorate of Kudumbashree, GOK, Thiruvananthapuram  
\*Amount earmarked

**(NSDP)**

14.53 National Slum Development Programme is an Additional Central Assistance Scheme introduced in 1996 to tackle the problem of the slum dwellers. This programme has the following components, such as upgradation of urban slums by providing physical amenities like drinking water supply, storm water drains, community bath, widening and paving of existing lanes, community latrines, street light, shelter upgradation and construction of new houses. The Urban Local Governments prepare the action plans of NSDP linking with SJSRY plan through the CDS according to the felt needs. Under this programme, an amount of Rs 67.59 crore has been received, and of which Rs.60.24 crore has been expended upto 30<sup>th</sup> November 2004. The physical achievement of this scheme so far is given in Table No 14.8.

**SOCIAL SECURITY AND WELFARE**

14.54 Social Security caters to the universal human need for reassurance and support in times of deprivation unemployment, illness, disability, death and old age. The State bears the primary responsibility for developing appropriate systems for providing protection and assistance to its

people. According to ILO, the scope of social security that is limited to maintenance of one's income against to loss or diminution is a protective form of social security. If the objective of social security is to

enable a person to attain a decent standard of life and to sustain it is promotional.

**BOX-14.4**

**International Labour Organisation**

Social Security is required for meeting the following contingencies:

- (i) Unemployment
- (ii) Sickness
- (iii) Employment Injury
- (iv) Maternity
- (v) Invalidity
- (vi) Old Age
- (vii) Death
- (viii) Emergency Expenses.

ILO added medical care and family benefit to the forgoing list and dropped emergency expenses.

Recommendation No: 67 and convention 102 of the ILO

**Table No.14.8 Physical Achievement of National Slum Development Programme**

Sl.No.	Name of component	Achievement
1	2	3
1	Construction of Houses and Shelter Upgradation (Nos.)	61472
2	Construction of latrines (Nos.)	31005
3	Construction of Wells (Nos.)	4774
4	Construction of roads and foot path (KM)	4585
5	Wiring of houses (Nos.)	12968
6	Water Connection (Nos.)	1166
7	Street light (Nos.)	1430
8	Construction of Community hall (Nos.)	56
9	Storm water drainage (km)	92
10	Sewerage	167

Source: Directorate of Kudumbasree, GOK, Thiruvananthapuram

14.55 First order type of social insecurity arise from insufficient economic development and second order type of insecurity emanates from contingencies such as loss of employment, disability, old age and death. Social security measures in Kerala can be broadly categorised into two (i) institutional care and (ii) pension schemes. The schemes are implemented by Government departments and Welfare Fund Boards.

14.58 In department run institutions for the Old Age and day care there are 338 inmates against an intake capacity of 1050 persons. The details are given below.(see Table 14.10)

**Table - 14.10**  
**Welfare Institutions for Old Age & Day Care Centres 2004 by Government.**

Sl. No	Institutions	Total Beneficiaries (Nos.)	Sanctioned strength (Nos)
1	Old Age Home	319	1000
2	Day Care Centre & Old Age Home	17	50
	<b>Total</b>	<b>336</b>	<b>1050</b>

**Institutional Care and Protection.**

14.56 There are 51 Welfare Institutions in the state. They are 12 Mahila Mandirs, 10 old age homes, 4 homes for physically handicapped, 3 Asha Bhavans, 13 Observation Homes and 4 centres for the care of the disabled. Similarly there are 420 orphanages in the state run by NGO's with more than 34005 orphans in 2003 as against 29250 in 2002. These orphanages have facilities to accommodate 54560 orphans.

14.59 There are about 40601 destitute inmates in the institutions run by Non-Governmental Organisations against an intake capacity of 64856 persons. Details are given in the Table - 14.11. The demographic profile of the aged in Kerala are given in Appendix - 14.8.

**Table - 14.11**  
**Welfare Institutions and inmates in Non-Governmental Organisations - 2004.**

Sl. No	Institutions	Inmates (Nos)	Sanctioned strength (Nos)
1	Orphanages	34005	54560
2	Fondling Home	290	460
3	Beggar Homes	419	419
4	Home for Aged Infirm	73	-
5	Old Age Homes	5814	9417
	<b>Total</b>	<b>40601</b>	<b>64856</b>

14.57 In the government welfare institutions, the number of inmates is far below the sanctioned strength. As against the total sanctioned strength of 2870 inmates in the 51 institutions, the occupants were 901 in 2003 and 885 in 2004, covering only 32% of the sanctioned strength (See Table 14.9). This indicates the need for revamping and restructuring the institutions to avoid waste. The sanctioned strength and actual beneficiaries in different categories of schemes are given in Appendix-14.7.

**Table - 14.9**  
**Major Welfare Institutions: Inmates and Sanctioned Strength - 2004**

Sl. No.	Institutions	Numbers	Inmates (Nos)	Sanctioned Strength (Nos)
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
1	Mahilamandir	12	214	420
2	Home for physically Handicapped	4	57	175
3	After Care Home	3	71	250
4	Old Age Homes	10	319	1000
5	Rescue Homes	2	22	200
6	Observation Homes	13	41	475
7	Care for Disables	4	42	100
8	Home for mentally cured patients (Asha Bhavan)	3	119	150
	<b>Total</b>	<b>51</b>	<b>885</b>	<b>2770</b>

**Disabilities**

14.60 In Kerala there are, 8.61 lakh disabled person (2001 census) ie: 2.7% of total population. According to an estimate by National Sample Survey in 2004, 4.5% of India's population is disabled and out of it approximately 1.9% are visually challenged and others are hearing impaired and mentally retarded. In Kerala, it is estimated that, approximately 5 lakh children have some form of disability. These 5 lakh challenged children need special education and training for rehabilitation to bring them into the main stream population. The state supports 1078 mentally challenged children through 46 institutions run by NGOs and each student is given an amount of Rs. 900 per year. Details of disability in Kerala and India are given in Appendix - 14.9 & 14.10. Distribution of the total disabled by type of disability is given in Appendix - 14.11.

**BOX-14.5**

**Disabled Persons in Kerala**

861000 disabled persons in Kerala (2001 Census)

10% of the population is disabled in one way or other

1/3<sup>rd</sup> of the total disabled in Kerala are children

4.5% of our country's population are disabled (2004 estimate by National Sample Survey).

Approximately 1.9% of the population are visually challenged, hearing impaired or orthopaedically handicapped.

Accordingly 6 lakh people are with visual, hearing or orthopaedic handicaps

Approximately 2% of the total population mentally retarded in one form or other.

Kerala have been implementing a pension scheme for disabled persons since 1982. The scheme benefits about 1.48 lakh persons in the state the monthly pension is Rs.150.

**National Institute of Speech & Hearing (NISH)**

14.62 Government of Kerala set up the National Institute of Speech & Hearing (NISH) in 1997 to rehabilitate hearing impaired persons. NISH has set up a state of the art diagnostic centre and about 6380 cases have undergone evaluation till March 2004. NISH also started a pre school and parent guidance centre in 1998. NISH also has a technology division to repair and service hearing aids. In 2002-03 newly started a Bachelor degree course in Audiology and Speech language pathology.

**Kerala State Handicapped Persons' Welfare Corporation.**

14.63 Kerala State Handicapped Person's Welfare Corporation implements self employment programmes and distributes aids and appliances for disabled persons. During 2003-04, 1165 aids and appliances were distributed costing Rs.27.29 lakhs as against 1644 aids costing Rs.33.00 lakhs during 2002-03. Table 14.13 gives details of self employment assistance and more details in Appendix - 14.12.

14.61 There are 6 institutions for the care of physically and mentally retarded children in the State with facilities for 675 children. Details are given in Table - 14.12.

**Table - 14.12**

**Institutions for Physically & Mentally retarded persons - 2004**

Sl. No	Institutions	Total Inmates (Nos)	Sanctioned strength (Nos)
1	Home for Mentally Deficient Children	24	50
2	Home for Physically Handicapped	57	175
3	Home for Cured Mental Patients	119	150
4	Care Home for Disabled Children	42	100
5	Home for Physically Handicapped (Aged)	84	150
6	Pratheeksha Bhavan (Home for Mentally Retarded above 16 years)	24	50
	<b>Total</b>	<b>350</b>	<b>675</b>

**Table - 14.13**  
**Self Employment Assistance to Disabled Persons.**

Year	Application Received (Nos)	Application Sanctioned and forwarded to Banks	Application sanctioned by the Bank	Amount released by the Corporation (Rs.)
2001-02	1348	1348	242	481000
2002-03	1303	1303	281	562500
2003-04	1256	1256	344	756535

### Social Security and Pension.

14.64 The State has several pension schemes as a safety net for vulnerable sections of the society. These pension schemes are implemented directly by the government or through different Boards. There are more than 40 schemes of which 20 are financed by the State. More than 36 lakh people are benefited through different pension schemes. Agricultural workers pension has highest coverage with 16.68 lakh workers covering 46.25% of the total pensioners. Beneficiaries under unemployment assistance numbers 4 lakh. Paucity of funds has come in the way of increasing the meagre monthly amounts. Also, even the payment of the small sums has been in arrears from time to time. Details of major monthly pensions are given in Table - 14.14. Further details are given in Appendix - 14.13. In Appendix - 14.14 the details of social security/pension schemes in the State including all Welfare Fund Boards are given.

**Table - 14.14**  
**Major Monthly Pensions.**

Sl. No	Pension Schemes	Pension Rate/pm
1	Destitute Pension	110
2	Journalist's Pension	1000
3	Freedom Fighters Pension	3000
4	Kerala Handloom Workers Welfare Board	200
5	Kerala Motor Workers Welfare Fund Board	150
6	Kerala Cashew Workers Welfare Fund Board	125
7	Kerala Handloom Workers Welfare Fund Board	200
8	Construction Workers Welfare Fund Board	100
9	Agricultural Workers Welfare Fund Board	200
10	Kerala Abkari Workers Welfare Fund Board	100
11	Tailoring Workers Welfare Fund Board	200
12	Beedi and Cigar Workers Welfare Fund Board	100
13	Fishing folk Pension	100
14	Coir Workers Welfare Fund Board	120
15	Khadi Workers Welfare Fund Board	100
16	Pension to Master Craftsman	100
17	Toddy Workers Welfare Fund Board	100

### Social Protection Measures Exclusively for Women

14.65 Several schemes for the social security of women are under implementation. Destitute/Widow pension is the major scheme. The scheme benefits 230947 women and the monthly rate of pension is Rs.110. Expenditure incurred during 2003-04 was Rs.3048.50 lakh. Unmarried Women above 50 years are also paid a monthly pension @ Rs.110/-. Financial assistance is also given to poor widows for the marriage of their daughters. The rate of assistance is Rs.5000. An amount of Rs.275 lakhs has been distributed during 2003-04 as marriage assistance.

#### BOX-14.6

#### Women in Kerala

19% of women, are under nourished  
23% have anaemia, of which  
3% have severe anaemia  
42% have some reproductive health problem  
10% experience domestic violence  
25% have work other than domestic work  
14% of married women are in the age group of 14 - 19 years

Source: State Plan of Action for the Child in Kerala - 2004.

### Welfare of Ex-Servicemen.

14.66 There are approximately 1,40,000 ex-servicemen and nearly 30,000 war widows in Kerala. Funds from non-plan state budget and interest accrued from two Welfare Funds viz (i) State Military Benevolent Fund & Flag Day Fund and (ii) Amalgamated Fund for Reconstruction and Rehabilitation of Ex-servicemen, are the major resource.

14.67 Since job opportunities in State service and quasi government institutions are limited, re-employment opportunities of ex-servicemen and war widows are very few.

### Welfare of Prisoners.

14.68 In Kerala there are 3 Central Prisons, 2 open prisons, 3 district jails, 5 special sub jails, 26 sub jails, one women prison and one Borstal school. In 2004, there were 7197 prisoners out of which 266 were women. The details of district-wise jail prisoners are furnished in Table - 14.15.



Table - 14.15  
Jails in Kerala and District-wise prisoners - 2004

Sl No	District	(Nos)													
		Central Jail		Distict Jail		Sub-Jail		Open Jail		Women Jail		Spl.Sub Jail		Grand Total	
		Total	Fema	Total	Fema	Total	Fema	Total	Fema	Total	Fema	Total	Fema	Total	Fema
1	Trivandrum	1612	38	286	17	118	10	203	0	54	54			2273	102
2	Kollam			175	17	154	9							329	26
3	Pathanamthitta					160	7							160	7
4	Alappuzha					89					82	9		171	9
5	Kottayam					43					111	7		154	7
6	Idukki					147								147	0
7	Eranakulam					357	13							357	13
8	Thrissur	510	26			115						205		830	26
9	Palakkad					46					157	4		203	4
10	Malappuram					238	10							238	10
11	Kozhikode			520	18	29								549	18
12	Wayanad					64								64	0
13	Kannur	1508	38			72						56		1636	38
14	Kasargod					86	6							86	6
	<b>Total</b>	<b>3630</b>	<b>102</b>	<b>981</b>	<b>35</b>	<b>1718</b>	<b>55</b>	<b>203</b>	<b>0</b>	<b>54</b>	<b>54</b>	<b>611</b>	<b>20</b>	<b>7197</b>	<b>266</b>

14.69 Annually 150 long term prisoners are released. Financial assistance is given to released prisoners and probationers for taking up self employment by starting small trade, business or other income generating activities. The scheme has helped to improve their financial status and rehabilitation. For providing library books, television sets, cooking vessels, gas ovens etc. to jails, and conducting social gatherings, entertainment programmes, educational and awareness programmes for its inmates, an amount of Rs.67 lakh was spent during 2003-04. As part of modernisation of jails an amount of Rs.400.00 lakh was spent to provide basic and minimum infrastructure facilities in jails.

#### Juvenile Homes.

14.70 There are 13 observation homes in Kerala under the J.J Act. There are also 6 Juvenile Homes to care, protect, develop and rehabilitate neglected juveniles. Government of India provides per capita maintenance grant of Rs.150 per month and a bedding grant of Rs.50 annually. Maintenance charges per inmate provided are @ Rs.750 per month. Expenses are shared by the Union and

the State. There are now 600 inmates in the J.J. Homes.

#### Welfare Fund Boards

14.71 In Kerala there are 23 Welfare Fund Boards, covering different sectors, and providing welfare assistance and income security and employment to workers in the unorganised sector. Estimates show that the workers engaged in different sectors in the unorganised sector number 68.48 lakhs. Out of them, 15 lakhs are in construction sector and 16.53 lakhs are in agriculture. But total workers enrolled in the 22 Welfare Fund Boards by 2003-04 number 49.74 lakhs ie: 73% of the estimated workers. Female workers out number males in cashew, tailoring, Coir and Beedi Industry. In Cashew Workers Welfare Board 96% enrolled workers are female. Similarly in Coir, 81.6% workers are female. In Boards like Toddy Workers, Head Load Workers and Abkari Workers, above 90% of the workers are male. Details regarding estimated workers, enrolled workers and male-female workers are shown in Table - 14.16.

**Table - 14.16**  
**Total Number of Workers in the sector and number of Workers enrolled as Members in the Welfare Fund Boards**

Sl No.	Name of the Board	Total Number of Workers in the Sector	Total number of members enrolled in the scheme			Percentage of Members to total Workers		
			Male	Female	Total	Male	Female	Total
1	2	3	4	5	6	7	8	9
1	Kerala Coir Workers Welfare Fund Board	200000	40000	160000	200000	20	80	100
2	Kerala Cashew Workers WFB	180810	5955	169142	175097	3.4	96.60	100
3	Kerala Toddy Workers WFB	41336	41146	190	41336	99.54	0.46	100
4	Kerala Building and other Construction W WFB	1500000	NA	NA	1070881	NA	NA	100
5	Kerala Tailoring Workers WFB	500000	70890	228388	299278	23.7	76.3	100
6	Kerala Bamboo, Kattuvalli and Pandanus Leaf W WFB	250000	2861	8595	11456	25.00	75.00	100
7	Kerala Agriculture W WFB	1653601	NA	NA	1840851	--	--	--
8	Kerala Head Load Workers WFB	300000	80352	342	80694	99.5	0.5	100
9	Kerala Artisans and Skilled W WFB	211770	107452	104318	211770	50.74	49.26	100
10	Kerala Hand Loom Workers WFB	110000	11004	13856	24860	44.26	55.74	100
11	Kerala Beedi and Cigar WWFB	170000	10036	28982	39018	25.72	74.28	100
12	Kerala Akbari Workers WFB	1987	1987	--	1987	100	--	100
13	Labour Welfare Fund Board	508454	NA	NA	508454	--	--	100
14	Kerala State Lottery WFB	32296	3791	156	3947	96.05	3.95	100
15	Traders Welfare FB	61375	61300	75	61375	99.9	0.10	100
16	Kerala Motor Transport Workers Welfare Board	264593	52405	--	52405	100	--	100
17	Kerala Anganwadi Workers & Helpers WF	48582	--	40608	40608	--	100	100
18	Kerala Autorickshaw Workers W.F Board	294939	18468	--	18468	100	--	100
19	Kerala Khadi Workers Welfare Fund Board	14556	14556	--	14556	--	--	100
20	Kerala Fishermen's WFB	220592	197375	23217	220592	87	13	100
21	Kerala Ration Dealers Welfare Fund Board	13200	10385	2128	12513	83.0	17.0	100
22	Kerala Co-operative Employees Pension Board.	20610	--	--	20610	--	--	100
	<b>Total</b>	<b>6598700</b>			<b>4741756</b>			<b>100</b>

**Expenditure**

14.72 All the 22 Boards (for which data are available) together spent Rs. 175 crore during 2003-04 against Rs. 123.98 crores during 2002-03 showing an increase of 20% in 2003-04 over 2004-05. Out of the total expenditure during 2003-04 Rs. 23.00 crores was on administration and Rs. 104 crores was on welfare measures. During 2002-

03 expenditure on welfare measures was 81% and administrative cost was 19%. The Board-wise expenditure for administration and welfare measures varies. For instance, in Toddy Workers Board, out of the total expenditure of Rs. 68 crores, during 2003-04, 93% was for welfare measures and in Building Construction, it was 91%. Further details are shown in Table-14.17

**Table-14.17**  
**Expenditure on Administration and Welfare Measures in Welfare Fund Boards**

Sl No.	Name of the Board	(Rs. lakhs)					
		Administrative Expenditure		Expenditure on Welfare Measure		Total Expenditure	
		2002-03	2003-04	2002-03	2003-04	2002-03	2003-04
1	2	3	4	5	6	7	8
1	Kerala Coir Workers Welfare Fund Board	57.85	55.75	358.3	529.00	416.15	584.75
2	Kerala Cashew Workers WFB	67.97	68.84	345.12	598.61	413.09	667.45
3	Kerala Toddy Workers WFB	392.56	426.60	3732.81	6370.74	4125.37	6797.34
4	Kerala Building and other Construction W WFB	177.82	230.63	1965.37	2178.52	2143.19	2409.15
5	Kerala Tailoring Workers WFB	69.52	73.27	218.87	180.27	288.39	253.54
6	Kerala Bamboo, Kattuvalli and Pandanus Leaf W WFB	4.53	4.84	NA	NA	4.53	4.84
7	Kerala Agriculture W WFB	122.90	124.83	607.42	456.79	730.32	581.62
8	Kerala Head Load WFB	564.36	669.32	2207.74	2667.74	2772.10	3337.06
9	Kerala Artisans and Skilled W WFB	34.18	38.56	43.88	54.87	78.06	93.43
10	Kerala Hand Loom Workers WFB	23.85	23.58	37.42	29.67	61.27	53.25
11	Kerala Beedi and Cigar WWFB	33	23.3	2.9	8.5	35.9	31.8
12	Kerala Akbari Workers WFB	18.78	41.95	63.39	73.91	82.17	115.86
13	Labour Welfare Fund Board	58.71	62.82	83.67	85.90	142.38	148.72
14	Kerala State Lottery WFB	18.12	18.60	2.37	2.13	20.49	20.73
15	Traders Welfare FB	8.80	9.25	0.78	48.60	9.58	57.85
16	Kerala Motor Transport Workers WFB	135.00	148.00	3.00	2.00	138.00	150.00
17	Kerala Anganwadi Workers & Helpers Workers Welfare Fund Board	21.54	22.37	4.60	6.60	26.14	28.97
18	Kerala Autorickshaw Workers Welfare FB	0.42	0.09	10.11	17.47	10.53	17.56
19	Kerala Khadi Workers Welfare F B	19.87	34.59	17.94	46.70	37.81	81.29
20	Kerala Fishermen's Welfare Fund Board	156.77	168.40	684.47	773.72	841.24	942.12
21	Kerala Ration Dealers Welfare Fund Board	9.18	11.47	12.99	26.96	22.17	38.43
22	Kerala co-operative Employees Pension Board	NA	43.33	NA	1053.70	NA	1097.03
	<b>Total</b>	<b>1995.66</b>	<b>2300.39</b>	<b>10403.15</b>	<b>15212.40</b>	<b>12398.81</b>	<b>17512.79</b>

**Welfare Measures of the Workers Welfare Fund Boards.**

14.73 General Welfare Measures implemented by the Workers Welfare Fund Boards are the following;

1. Pension benefits to the Workers on their retirement or invalidity or family pension after their death.
2. Exgratia financial assistance to workers on prolonged illness/permanent disability and death relief to the dependents for funeral and related functions.
3. Medical reimbursement for medical treatment of the workers or dependents.
4. Marriage assistance for daughter's marriage.

5. Educational assistance to member's children like scholarships, cash awards and lumpsum grants.
6. Long term Housing Loans at low interest rate.
7. Maternity Benefits.

Major Welfare Measures are given in Appendix - 14.15.

**Unemployment Assistance.**

14.74 Government of Kerala introduced unemployment assistance scheme in 1982. The present rate of assistance is Rs.120 per month. During 2003 there were, 3.487 lakh beneficiaries under unemployment assistance scheme and the annual amount required is Rs.5021.00 lakhs. As against it an amount of Rs.1423 lakhs was distributed during 2003 and Rs.4329 lakh during 2004. See Table - 14.18.

**Table - 14.18**

**Unemployment Assistance to Beneficiaries and Amount spent.**

Year	Beneficiaries (Nos)	Amount (Rs.in lakhs)
2002	332287	2516.40
2003	348027	1423.10
2004	344629	4329.90

**Budget Support for Social Security.**

14.75 Kerala sets apart sizeable amount for social security in the state budget. For instance, during 2004-05 an amount of Rs.21184.80 lakhs is set apart for various social security schemes in Kerala, as against Rs.18393.00 lakhs earmarked during 2003-04. Out of the total amount earmarked during 2004-05, agricultural workers pension share Rs.4464.00 lakhs (21%) followed by Freedom Fighters pension Rs.3896.64 lakhs (18%), destitute pension Rs.2966.54 lakhs (14%) and Rs.2095.64 lakhs for physically handicapped (10%). (See Table - 14.19)

**Local Governments and Social Security. Welfare of Aged, Disabled and Destitutes**

14.76 Local Governments since 1997-98 has been involving actively in the welfare of aged, disabled and destitutes by allocating resources from their plan grant. During 2004-05 they have set apart an amount of Rs. 1802 lakhs for the welfare of old aged people, Rs. 1238 lakhs for destitutes and Rs. 2632 lakhs for the disabled. Out of the total amount earmarked for old aged people, the share of Grama Panchayat is 75% followed by 12% by Block Panchayats. In the case of disabled the share of Grama Panchayat

**Table - 14.19**

**Financial Assistance from State Budget on Social Security Schemes in 2004-05.**

Sl. No	Name of Scheme	Monthly Rate (Rs.)	Name of Implementing Department	Amount (Rs.lakhs)
1	Destitute Pension	110	Revenue Dept.	2966.54
2	Agricultural Workers Pension	100	Revenue Dept.	4464.00
3	Welfare Fund for Journalists		P.R.D.	12.14
4	Relief to T.B. Patients		Revenue Dept.	20.00
5	Welfare Measures for Coir Workers			300.00
6	Pension Scheme for Physically Handicapped		Social Welfare	2095.64
7	Freedom Fighters Pension	3000	Revenue Dept.	3896.64
8	Financial Assistance for Leprosy/ Cancer patients		„	6.50
9	Marriage assistance to the daughters of widows		„	165.00
10	Assistance to orphanages, Homes for aged and infirm and Beggar Homes.		„	226.48
11	Journalists Pension	1000	P.R.D	14.00
12	Welfare Scheme for eminent journalists			7.86
13	Kerala Non-journalists pension scheme			10.00
14	Self Employment Assistance			7000.00
	<b>Total</b>			<b>21184.80</b>

In addition to pension schemes through state budget, Welfare Fund Boards also provide pension to workers as shown in Table - 14.20.

**Table - 14.20**

**Welfare Boards Pension Schemes.**

Sl. No	Name of Welfare Boards	Pension Rate/pm
1	Kerala Handloom Workers Welfare Board	200
2	Kerala Motor Workers Welfare Fund Board	150
3	Kerala Cashew Workers Welfare Fund Board	125
4	Kerala Handloom Workers Welfare Fund Board	200
5	Construction Workers Welfare Fund Board	100
6	Agricultural Workers Welfare Fund Board	200
7	Kerala Abkari Workers Welfare Fund Board	100
8	Tailoring Workers Welfare Fund Board	200
9	Beedi and Cigar Workers Welfare Fund Board	100
10	Fishing folk Pension	100
11	Coir Workers Welfare Fund Board	120
12	Khadi Workers Welfare Fund Board	100
13	Pension to Master Craftsman	100
14	Toddy Workers Welfare Fund Board	100

is 59% followed by 13% by Block Panchayats. Out of the total amount set apart for the welfare of destitutes, 81% is by Grama Panchayat and 11% is by Municipalities (See Table - 14.21).

**Table - 14.21**  
Outlay for Development and Welfare of Aged, Mentally and Physically challenged and Destitutes through LSGs during 2004-05.

Sl. No	PRI	Old Age People	Physically and Mentally challenged	Welfare of Destitutes
1	District Panchayat	51	215	22
2	Block Panchayat	214	319	63
3	Municipalities	177	350	140
4	Corporation	1	201	5
5	Grama Panchayat	1359	1547	1008
	<b>Total</b>	<b>1802</b>	<b>2632</b>	<b>1238</b>

14.77 The welfare activities for the destitutes being implemented by Local Governments include shelter, nutrition, health care, training and self-employment. In the case of old aged people, activities taken up include day care centres, medical camps, etc. For the disabled, activities include supply of equipment.

#### Welfare of Women and Children

14.78 Local Governments also formulate projects implement them for the welfare of women and children. During 2004-05, Local Governments have earmarked Rs. 6999 lakhs for the development activities of women and children together. Out of it Rs. 2672 lakhs (38%) is exclusively for women Grama Panchayats have earmarked Rs. 4944 lakhs (71%) followed by Rs. 953 lakhs (13.6%) by Block Panchayats and Rs. 723 lakhs by Municipalities. Table -14.22 shows outlays for 2004-05 set apart by different tiers.

**Table - 14.22**  
Development and Welfare of Women and Children through LSGs during 2004-05.

Sl. No.	PRI	(Outlay Rs. in lakhs)		Total
		Women Development	Women and Children	
1	District Panchayat	192	94	286
2	Block Panchayat	160	743	953
3	Municipalities	299	424	723
4	Corporation	50	43	93
5	Grama Panchayat	1971	2973	4944
	<b>Total</b>	<b>2672</b>	<b>4327</b>	<b>6999</b>

#### BOX-14.7

##### Children in Kerala

4.7% children among 0-5 years have sever malnutrition  
26.9% have moderate malnutrition (0-5 years)  
17.6% have low birth weight  
4% have Iodine deficiency  
43.9% children below 5 years have anaemia

50% of pre-school children are covered by Anganwadis  
30% of pre-school children are covered by other institutions  
20% of pre-school children do not attend any institutions

Source: State Plan of Action for the Child in Kerala-2004

Social Welfare Department.

#### Development of Children

14.79 Local Governments during 2004-05 have earmarked Rs. 920 lakhs for the exclusive development of children. Out of it Rs. 618 lakhs (67%) is by Grama Panchayats and Rs. 149 lakhs (16%) is by Block Panchayats. (See Table - 14.23).

#### BOX-14.8

##### Child Population in Kerala

0 - 6 Child population 3653578  
3 - 5 Pre-school population 989868  
315 child labour as on February, 2004

**Table - 14.23**  
Outlay for Development and Welfare of Children through LSGs during 2004-05.  
(Rs. in lakhs)

Sl. No.	PRI	Child Development
1	District Panchayat	9
2	Block Panchayat	149
3	Municipalities	44
4	Corporation	100
5	Grama Panchayat	618
	<b>Total</b>	<b>920</b>

#### Safety of Factory Workers

14.80 In the State, Factories and Boilers Department ensures safety, health and welfare of factory workers and the general public living in the vicinity of factories by implementing various labour laws. In Kerala there are 18207 establishments which come under Factories and Boilers Act in 2004 as against 18274 in 2003. Details are given in the Table - 14.24.

**Table - 14.24**  
**Establishments and workers coming**  
**under the purview of various Acts**  
**enforced by Factories and Boilers Department**  
**(Nos.)**

Year	Establishment	Workers
2001	17942	656758
2002	17942	655034
2003	18274	665500
2004	18207	660687

14.81 In order to ensure the safety of workers, department inspects major accident hazard prone units and hazardous factories. During 2003-04, the department inspected 400 hazardous factories and 252 factories during 2004-05 until October 2004. Air monitoring studies were also conducted in 18 factories during 2004-05. Training to workers and medical examinations in factories conducted during 2004-05 are shown in Table - 14.25.

**Table - 14.25**  
**Inspection and Training of Factories and Boilers Department**  
**during 2003-04 & 2004-05 (Nos)**

Sl.No	Inspection/Training	2003-04	2004-05 (up to 31-10-04)
1	Priority Inspection of Major Accident Hazard (MAH) units	18	12
2	Air monitoring studies in Hazardous Factories	13	18
3	Workshop/training programme for workers/Managers	9	5
4	Inspection of hazardous factories by specialists inspectors	400	252
5	Medical Examination of Factory workers	72	14

## NUTRITION

### Integrated Child Development Services

14.82 In Kerala Integrated Child Development Service Scheme was started in 1975 to improve the nutrition and health status of children below six years and reduce infant mortality, morbidity, malnutrition and school drop outs, through a package of services like supplementary nutrition, immunization, health check up, reference service, nutrition and health education and non-formal pre-school education. The beneficiaries also include pregnant women, lactating mothers and adolescent girls. The focal point of delivery of these services are Anganwadi Centres managed by Anganwadi Workers and assisted by Helpers. The scheme is implemented all over Kerala through 163 projects (151 Rural, 11 Urban and 1 Tribal). There

is one Anganwadi centre for every 1000 population in Rural and Urban Projects and one for every 700 population in Tribal area. There are 25393 sanctioned Anganwadi Centres and out of it 24394 are functioning.

14.83 Anganwadis provide services to 3.94 lakh children below 3 years; 5.39 lakh children in 3 to 6 years and 1.54 lakh pregnant and lactating women. See Table - 14.26. District-wise ICDS beneficiaries in Kerala is shown in Appendix - 14.16.

**Table - 14.26**  
**Total Beneficiaries under the**  
**Nutrition Programme.**

Sl No.	Category	Beneficiaries-2004 (Nos)
1	0-3 years group	3,94,218
2	3-6 years group	5,39,160
3	Pregnant and Lactating Women	1,53,515
	<b>Total</b>	<b>10,86,893</b>

### Nutrition for Health and Human Development.

14.84 In Kerala 4.7% of children below five years suffer from severe malnutrition and 26.9% from moderate malnutrition. Similarly 4% children suffer from iodine deficiency constitute 43.9% below 5 years suffer from anaemia. Women in 15-49 age group suffering from anaemia constitute 22.7%. Similarly 15% of adolescent girls

weigh less than 45Kg. Considering the nutritional deficiency among children and adolescent girls, it is targeted to reduce severe mal nutrition to 2.5% and moderate malnutrition to 10% by 2007. It is also intended to reduce Vitamin-A deficiency disorders by 60% and iodine deficiency to 4% by 2007. By 2007 anaemia incidence is to be halved among children below five years and 15% among women in 15-49 age group.

14.85 At present neo-natal mortality is 11/1000 and IMR is 10/1000. The target is to reduce neo-natal mortality to 4/1000 and infant mortality rate to 8/1000 by 2007. According to National Family Health Survey, low birth weight is 17.6% and it is targeted to reduce low birth weight to 15% by 2005 and 10% by 2007.

14.86 Women's health needs to improve, to

reduce neo-natal mortality rate. In Kerala 14% women are married in the age, 14 to 19 years. Similarly 19% of women are under nourished, 23% have anaemia problem, (3% have severe anaemia) and 49% women have some reproductive health problem. The health status of women particularly in the reproductive age group has to be enhanced.

**BOX-14.8**

**Adolescent Girls in Kerala**

15% of adolescent girls weigh less than 45 kg.  
17% of women married less than 18 years.

14.87 It is, targeted to reduce adolescent girls marriage from 14% to 11.5% by 2007 and further down to 7% by 2012. Similarly it is targeted to achieve 100% institutional deliveries and to ensure minimum 5 antenatal check ups by 2007. Similarly it is targeted to reduce anaemia from 23% to 15% by 2007 and to provide supplementary feeding to all eligible antenatal women through ICDS net work.

**BOX-14.9**

**Beneficiaries for Supplementary Nutrition in India (as on 31.3.2004)**

Number	Coverage per AWC	
0 - 3 years	16798824	34
3 - 6 years	17352353	32
P&LM	7357501	14
<b>Total</b>	<b>41508678</b>	<b>80</b>

**BOX-14.10**

**National Nutrition Mission**

A pilot project to provide free food grains to the under nourished adolescent girls with weight less than 35 kg, pregnant and lactating women with weight less than 40 kg, through Public Distribution System was launched in 51 identified districts throughout India during 2001. The basic objective of the Mission is to address the problem of malnutrition on a holistic manner and to accelerate reduction in various forms of malnutrition, particularly among women and children. In Kerala, Palakkad and Malappuram districts have been selected for which Rs.469.96 lakhs was provided. Total beneficiaries covered in this scheme comes to 102212, of which, 93288 are adolescent girls, 4946 are pregnant women and 3978 are lactating women.

14.88 Total beneficiaries covered under the nutrition programme is as shown in Table - 14.27 and Project-wise details of ICDS is given in Appendix - 14.17.

**Table - 14.27**

**Number of beneficiaries and expenditure under Nutrition Programme - 2000 - 04**

Sl. No	Year	No. of Beneficiaries	Expenditure (Rs. Lakhs)
1	2	3	4
1	2000-01	2327851	1628.18
2	2001-02	2334680	3505.00
3	2002-03	2355686	8505.00
4	2003-04	2166510	7590.98

14.89 In addition to nutrition programme it is also envisaged to construct own building for Anganwadis According to data available only 40% Anganwadis have own building and 60% are in rented buildings. Facilities like drinking water, toilet and toys and other related facilities are uneven across the Anganwadi Centres. From 1997-98 onwards fund for nutrition is set apart by the Local Government from their plan grant.

**SOCIAL JUSTICE**

**Population**

14.90 According to Census 2001, the Scheduled Caste Population in the State is 31.24 lakh accounting for 2.10 per cent of the total Scheduled Caste population of the country. The Scheduled Tribe population of Kerala is 3.64 lakh accounting for 0.71 per cent of the total Scheduled Tribe Population of the country.

**BOX-14.11**

More than 85% population of Meghalaya, Mizoram and Nagaland states are ST's and Mizoram with 94.5% ranks the first. Punjab, Chandigarh, Haryana, Delhi and Pondicherry have no ST population at all and Nagaland, Lakshadweep and Andaman & Nicobar Islands have no SC population - Census 2001

The shares of Scheduled Caste Population and Scheduled Tribe population to the total population of the state are 9.81 per cent and 1.14 per cent respectively. In India, the Scheduled Castes and Scheduled Tribes population account for 16.23 per cent and 8.15 per cent respectively of the total population. Details are given in Table 14.28.

**Table 14.28**  
**SC/ST Population of India & Kerala 1971 - 2001**  
*(Population in lakhs)*

Sl. No	Census	Population of India			Population of Kerala		
		Total Population	SC	ST	Total Population	SC	ST
1	2	3	4	5	6	7	8
1	1971	5481	800	380	213.47	17.22	2.69
2	1981	6834	1047	516	254.50	25.49	2.61
3	1991	8463	1382	678	290.32	28.87	3.20
4	2001	10264	1666	836	318.40	31.22	3.64

Source: Census

14.91 The growth rate of population of Scheduled Castes and Scheduled Tribes in the State are much lower than the All India growth rate during the last decade 1991-2001. The rates of growth in Kerala are 8.14 per cent and 13.75 per cent respectively for Scheduled Castes and Scheduled Tribes as against 20.55 per cent and 23.30 per cent respectively for the country as a whole.

14.92 The decadal growth rate of Scheduled Castes is slightly lower than the decadal growth rate of the total population in Kerala. The decadal growth rate of Scheduled Tribes is more than that of the total population in Kerala. The decadal growth rate of Scheduled Castes and Scheduled Tribes is given in Table 14.29, and is graphically represented in Figure.2

14.93 The SC and ST population is not evenly distributed across the State. The distribution of Scheduled Castes in various districts ranges from 1.07 per cent in Wayanad district to 13.85 per cent in Palakkad district. The distribution of Scheduled Tribe population ranges from 0.86 per cent in Alappuzha district to 37.36 per cent in Wayanad district. Details are given in Table 14.30. District-wise SC/ST population is given in Appendix 14.18

**Table 14.30**  
**District-wise Percentage details on SC/ST Population in Kerala - 2001 Census**

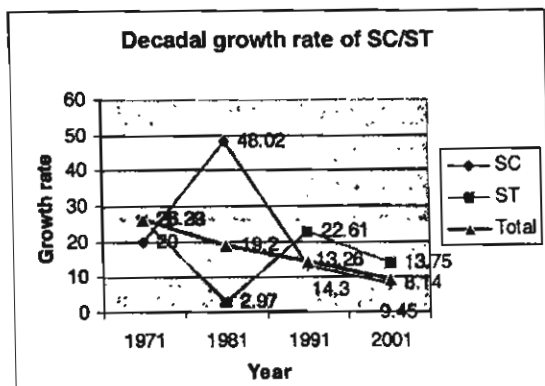
Sl.No	District	Percentage Distribution		Percentage to Total Population	
		SC	ST	SC	ST
1	2	3	4	5	6
1	Kasargod	2.88	8.33	7.49	2.52
2	Kannur	3.17	5.48	4.11	0.83
3	Wayanad	1.07	37.36	4.27	17.43
4	Kozhikkode	6.43	1.63	6.98	0.21
5	Malappuram	9.14	3.36	7.87	0.34
6	Palakkad	13.85	10.89	16.53	1.52
7	Thrissur	11.34	1.33	11.91	0.16
8	Ernakulam	8.44	2.76	8.48	0.32
9	Idukki	5.1	14	14.11	4.51
10	Kottayam	4.81	5.04	7.69	0.94
11	Alappuzha	6.37	0.86	9.45	0.15
12	Pathanamthitta	5.19	1.8	13.13	0.53
13	Kollam	10.34	1.43	12.49	0.20
14	Thiruvananthapuram	11.87	5.74	11.47	0.65
	Total	100	100	9.81	1.14

Source: Census 2001

**Table 14.29**  
**Decadal growth rates of SC/ST Population in Kerala (1971-2001)**

Sl. No.	Year	Decadal Growth Rate		
		Scheduled Caste	Scheduled Tribe	Total Population
1	2	3	4	5
1	1971	20.00	26.29	26.33
2	1981	48.02	2.97	19.2
3	1991	13.26	22.61	14.3
4	2001	8.14	13.75	9.45

Fig.-2



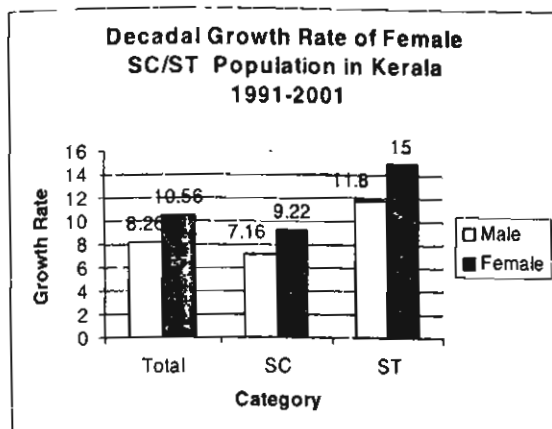
Note: The drop in the decadal growth rate for Scheduled Tribes during 1971-1981 was due to declassification of tribal communities.

14.94 According to Census 2001, 51.19 per cent of the Scheduled Caste Population are women as against 48.00 per cent for country as a whole. Scheduled Tribe women in the State constituted 50.55 per cent of the total population as against 49.43 per cent for the country as a whole. Decadal growth rate of female SC/ST population is depicted in Fig.3.

14.95 In the State, SCs aged 60+ constitute



Fig.-3



9.34 per cent of the total SC population. The share of female 60+ is higher compared to male 60+ by 0.9%. While among the STs, there is not much variation between male and female 60+ population. At the State level, the proportion of 60+ population to total population constitutes 9.59 per cent for males and 11.31 per cent for females. Details on age-wise SC/ST population in the State is furnished in Appendix 14.19 and 14.20.

14.96 In sex ratio, the number of females per 1000 males, indicates the survival scenario of women. The sex ratio for Scheduled Castes and Scheduled Tribes in Kerala are 1048 and 1027 as against 936 and 978 respectively at the All India level.

14.97 Kerala has registered an increasing trend in the sex ratio of Scheduled Castes and Scheduled Tribes during the last three decades. The sex ratio of Scheduled Caste increased from 1012 in 1971 to 1048 in 2001, while the sex ratio of the Scheduled Tribes increased from 995 to 1027 in the same period. It has been obtained that the sex ratio of Scheduled Castes showed only a marginal increase from 930 to 933 while the sex ratio of Scheduled Tribe decreased from 982 to 978 in the country as a whole in the same period. Details are given in Table 14.31.

Table 14.31  
Sex Ratio of SC/ST in Kerala/India 1971 to 2001

Sl. No	Census Year	India			Kerala		
		Total Population	SC	ST	Total Population	SC	ST
1	2	3	4	5	6	7	8
1	1971	930	935	982	1016	1012	995
2	1981	934	932	984	1032	1023	992
3	1991	927	922	972	1036	1029	996
4	2001	933	936	978	1058	1048	1027

BOX-14.12

In Kerala nearly, 47% of agricultural labourers belong to SCs and a little over 13% belongs to STs. - Yojana

14.98 Scheduled Castes constitute 19 per cent of the BPL population in Kerala, though they are only 9.81 per cent of the total population of the State. It shows that the incidence of poverty among the Scheduled Caste people is about double that of the total population of the State. Scheduled Tribes constitute 3 per cent of the total BPL population while the proportion of Schedule Tribe population to total population is only 1.14 per cent. It implies that the incidence of poverty among the Scheduled Tribes is about three times that of the total population of the State.

Table 14.32  
Percentage of families Below Poverty Line

Sl. No	Category	Share of BPL	Percentage of Total Population
1	Scheduled Caste	19	9.81
2	Scheduled Tribes	3	1.14
3	Others	78	89.05

Literacy rate.

BOX-14.13

Female Literacy rates of STs in Kerala increased from 26.02% in 1981 to 58.1% in 1991 and that of the SCs from 49.73 to 74.31% during the same period.

14.99 Kerala raised the SC/ST literacy levels by two folds from 1971 to 2001 and also above double the All India level. It succeeded in reducing gap between the literacy rates of SC/ST and of the general categories in the State, but the gap is widening in India as a whole. The literacy rate of Scheduled Castes in Kerala was 79.66 per cent as against 89.81 per cent for the

total population according to 1991 census. At the national level the literacy rates are 37.41 per cent and 52.21 per cent respectively. The highest SC literacy rate is recorded in Kottayam district (90.26 per cent), is found and the lowest in Kasaragod district (63.61 per cent).

14.100 The literacy rates among the Scheduled Tribes was 57.22 per cent as against 29.60 per cent at national level. Among the districts, the highest literacy rate of Scheduled Tribes was recorded in Kottayam district (88.69 per cent) and the lowest was found in Palakkad district (34.87 per cent). The literacy rates of SC/STs and general population of Kerala from 1971 to 1991 is furnished in Table 14.33. The literacy rate of SC's increased from 40.21 to 79.66 during 1971 census to 1991 census.

Table 14.33  
Literary rates of SCs and STs. in India and Kerala - 1971 - 1991

Census	India			Kerala		
	Country Total	Scheduled Castes	Schedule d Tribes	State Total	Scheduled Castes	Schedule d Tribes
1971	29.45	14.67	11.3	60.42	40.21	25.72
1981	36.03	21.38	16.35	70.42	55.96	31.79
1991	52.21	37.41	29.60	89.41	79.66	57.22

Source: Census

14.101 The female literacy rate of Scheduled Castes in Kerala was increased from 17.4 per cent in 1961 to 74.31 per cent in 1991. During the same period, the All India female literacy rate of Scheduled Castes was increased from 3.3 per cent to 23.8 per cent. For Scheduled Tribes the female literacy rate in Kerala was increased from 11.9 per cent in 1961 to 51.07 per cent in 1991. The female literacy rate in India as whole was increased from 3.2 to 18.2 per cent during the same period.

Fig.4

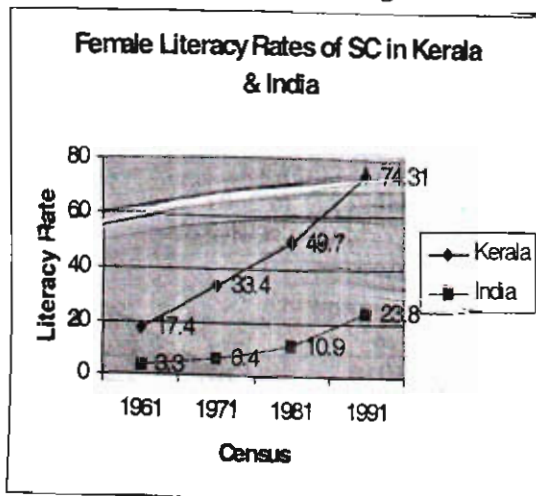
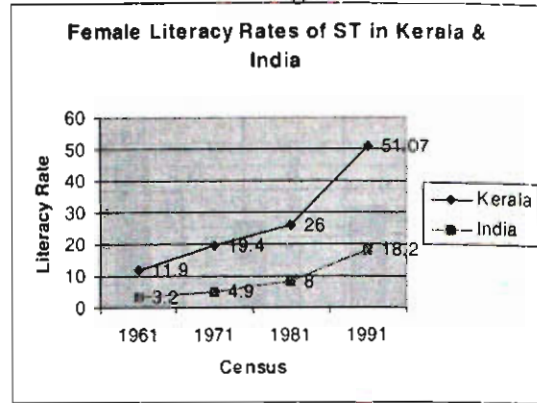


Fig.5



**Enrolment**

14.102 There were 2.08 lakh Scheduled Caste students enrolled in the L.P. Section, which account for 11.37 per cent of the total enrolled students in the State in the L.P.Section. In High School section, the proportion of Scheduled Caste students is 10.46%. The higher percentage of enrolment shows that the educational incentives like scholarships, lump sum grant and stipend have produced good results.

14.103 However, in Higher Secondary School, the proportion of Scheduled Caste students is only 7.66 per cent which is lower than the population share. The high rate of failure in SSLC may be the reasons for low enrolment in Higher Secondary Section. Special initiatives have to be made to improve the quality of education at the school level. Enrolment of Scheduled Castes in Degree courses and Post-graduate courses is also higher than the population proportion.

14.104 As far as ST's are concerned, the percentage of enrolment in Lower Primary and Upper Primary section is higher than the population proportion but less in High School and Higher Secondary section. The location of educational institutions at far away places from the Scheduled Tribe habitats may be the reason for low level of enrolment. Details of enrolment of students belonging to Scheduled Caste and Scheduled Tribes are given in Table 14.34

**Table 14.34**

**Enrolment of Scheduled Caste/Scheduled Tribe students in Schools and Colleges- 2003-04**

Sl. No.	Section	No. of Total students	Scheduled Castes		Scheduled Tribes	
			No. of Students	Percentage to Total	No. of students	Percentage to Total
1	2	3	4	5	6	7
1	Lower Primary Section	1827765	207730	11.37	28669	1.57
2	Upper Primary Section	1502542	157141	10.46	18067	1.20
3	High School Section	1563698	159471	10.20	13603	0.87
4	Higher Secondary	234438	17961	7.66	1300	0.55
5	Degree Courses	153184	20986	13.70	1640	1.08
6	Post-graduate courses	16618	1894	11.40	189	1.14

Source: Various Educational Departments

14.105 There were 242 students comprising 220 Scheduled Caste and 22 Scheduled Tribe students enrolled for various medical and Para-medical courses during 2004-05. Among them, 48 scheduled caste students and 12 scheduled tribe students were admitted to the MBBS Course. The percentage of overall enrolment of SC/ST students to various Medical and Para-medical courses in Government Colleges was 15.53 and 1.56 respectively. Details are given in Table 14.35

14.106 Of the students enrolled in all technical education institutions, 9.62 per cent are SC's and 1.16% are ST's. The rate of SC's enrolled in engineering colleges is 7.45 per cent and ST's only 1.01 per cent. The enrolment in Polytechnics and technical schools is higher than the population proportion. Details on enrolment is given in Table 14.36

**Table 14.35**

**Scheduled Caste and Scheduled Tribe students in Medical and Para-medical courses 2004-05**

Sl.No.	Courses	Total No. of students	Scheduled Castes		Scheduled Tribes	
			No. of students	Percentage to Total	No. of students	Percentage to total
1	2	3	4	5	6	7
1	Medical PG	328	26	7.93	1	0.3
2	Dental PG (MDS)					
3	M.Pharm.					
4	M.Sc. Nursing	24	2	8.33		
5	MBBS	595	48	8.06	12	2.02
6	BDS	102	8	7.84	2	1.97
7	B.Sc. Nursing	180	14	7.78	3	1.67
8	B.Sc. MLT	20	1	5	1	5
9	B.Pharm.	48	3	6.25	1	2.08
10	D.Pharm.					
11	Para Medical Courses for SC/ST only	80	80	100		
12	D.Pharm. Courses for SC/ST only	40	38	95	2	5
13	Certificate Course on Nursing for SC/ST only					
	<b>Total</b>	<b>1417</b>	<b>220</b>	<b>15.53</b>	<b>22</b>	<b>1.56</b>

Source: Directorate of Medical Education

**Table-14.36**  
Enrolment of SC/ST students in Technical Education

Sl. No.	Name of Institution	Total	SC	ST	Percentage of SC	Percentage of ST
1	2	3	4	5	6	7
1	Government Engineering Colleges	5725	462	54	8.07	0.9
2	Private Aided Engineering Colleges	2434	146	28	6.00	1.2
	- Sub Total	8159	608	82	7.45	1.01
3	Polytechnic	19441	1844	197	9.5	1.01
4	Technical Schools	5098	695	99	13.6	1.9
	Total	32698	3147	378	9.62	1.16

Source : DTE

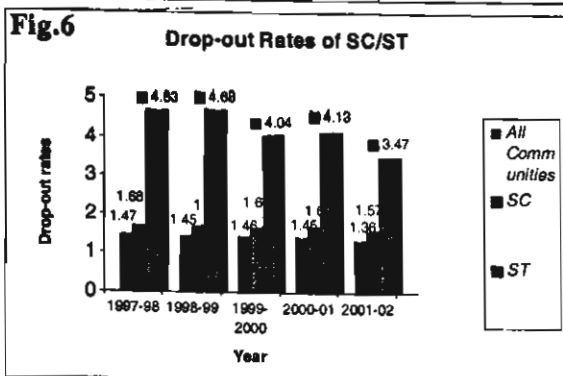
**Dropout rates**

14.107 The percentage of dropout of students is an indicator of socio-economic and educational backwardness. The dropout rate for Scheduled Castes and Scheduled Tribes students in primary classes was 1.57 per cent and 3.47 percent respectively as against 1.36 per cent for all communities in the State. Efforts are being made through the SC/ST promoters to identify the dropouts and to continue their education.

14.108 The trend in the dropout rates during the period from 1997-98 to 2001-02 shows that the decline is marginal in the case of Scheduled Tribes compared to the decline in dropout rates of Scheduled caste and total population of the State. Details are given in Table-14.37 and graphically presented in given in Fig.5

**Table-14.37**  
Drop-out rates from 1997 to 2002

Sl. No.	Year	SC	ST	All Communities
1	2	3	4	5
1	1997-98	1.68	4.63	1.47
2	1998-99	1.67	4.68	1.45
3	1999-2000	1.66	4.04	1.46
4	2001-01	1.69	4.13	1.45
5	2001-02	1.57	3.47	1.36



**Performance in SSLC Examinations**

14.109 In the regular SSLC examination, there were 43,161 students belonging to Scheduled Castes appeared and 20,779 passed out in the year 2003-04. The number of Scheduled Tribe students who appeared for regular examination in 2004 was 4189 representing 0.89 per cent of the total State and the number passed out represents 0.59 per

cent.

14.110 The percentage of pass in the SSLC examinations is a good indicator of the socio-economic development of the family. It is seen that the Scheduled Caste and Scheduled Tribes are lagging behind others in socio-economic development.

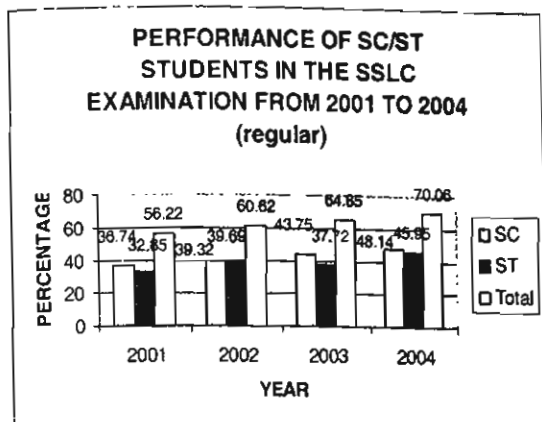
14.111 However, an upward trend in the percentage of pass of Scheduled Caste as well as Scheduled Tribes is observed. It increased from 36.74 per cent in 2001 to 48.14 per cent in 2004 for Scheduled Caste students and from 32.85 to 45.95 for Scheduled Tribes. The percentage of pass of the state as a whole increased from 56.22 in 2001 to 70.06 in 2004. The details of number of SC/ST students who appeared and passed in SSLC examination are given in Table No.14.38 and the Fig-6 represents the percentage of pass during 2001 to 2004.

**Table- 14.38**  
SSLC Results of SC/ST students from 2001-2004 (regular candidates)

Year	Scheduled Castes		Scheduled Tribes	
	Appeared	Passed	Appeared	Passed
(1)	(2)	(3)	(4)	(5)
2001	42466	15601	3683	1210
2002	42409	16676	3905	1550
2003	41689	18240	4356	1643
2004	43161	20779	4189	1925

Source: Paveeksha Bhavan

Fig 7



**Employment Seekers**

14.112 There were 5.22 lakh Scheduled Castes in the live registers of Employment Exchanges during 2004 accounting for 13.76 per cent of the total. There are 0.30 lakh Scheduled Tribe persons in the live register of Employment Exchanges of Kerala in 2004 accounting for 0.80 per cent.

14.113 District-wise number of persons in the live register is given in Appendix 14.21.

**Special Component Plan and Tribal Sub Plan through Local Governments**

14.114 The total plan provision set apart for the development of Scheduled Caste and Scheduled Tribes during 2003-04 was Rs. 275.53 crores and Rs. 38.58 cores respectively. Details of district-wise fund received and amount expended under SCP/TSP schemes during 2003-04 is given in Appendix.14.22 and 14.23 respectively.

14.115 The plan grant to Local Governments for SCP and TSP has considerably increased in recent years. During 2004-05, Rs.28520 crore and Rs.48.13 crores have been allocated as plan grant to local governments under SCP and TSP respectively. Details on distribution of Plan grant LSG wise during 2003-04 are given in Table 14.39. Percentage distribution of plan grant to Local Governments is represented in the diagram 7 & 8

Table 14.39  
Outlay & Expenditure for SC/ST Schemes through Local Self Governments (2003-04)

Sl. No.	Name of Local Body	Funds received		Expenditure (Rs. in crore)			
		SC	ST	SC	%	ST	%
1	2	3	4	5	6	7	8
1.	Grama Panchayats	156.28	18.83	119.5	76.5	13.13	69.7
2.	Block Panchayats	39.34	8.55	39.48	100	5.78	67.6
3.	District Panchayat	48.74	10.85	23.28	47.8	6.11	56.3
4.	Municipality	18.22	0.35	14.83	81.4	0.13	37.1
5.	Corporation	12.95	--	8.54	65.9	--	--
	Total	275.53	38.58	205.63	74.6	25.15	65.2

Source : District Planning Offices

Fig.8

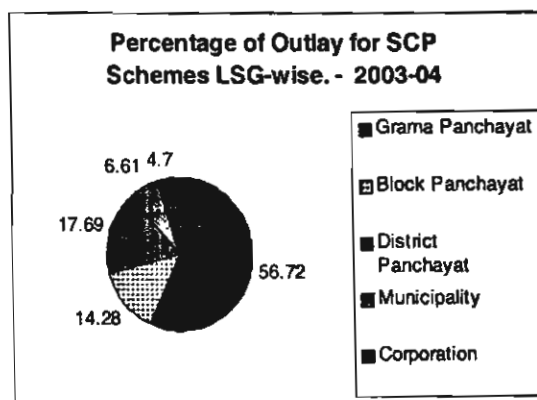
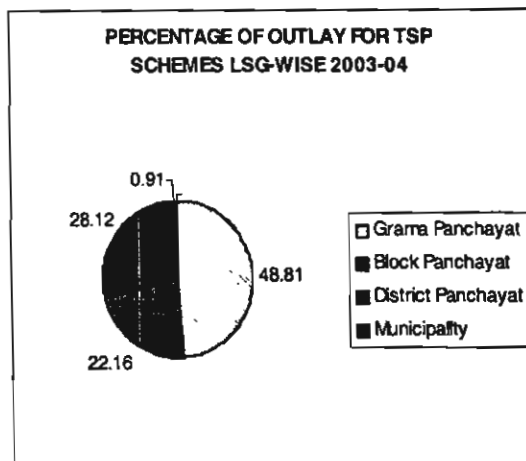


Fig.9



**Development of Scheduled Castes and Scheduled Tribes**

14.116 For the development of Scheduled Castes population, 10 per cent of the total plan budget provision is earmarked and for the development of Scheduled Tribes 2.25 per cent of the total plan budget provision is provided. Certain issues have cropped up during plan implementation. They are summarised in Box No.14.14

**BOX-14.14**

**Implementation Issues in SCP and TSP**

The planning and implementation of SCP and TSP was decentralized more than two decades ago. Most of the funds were spent through departments on schemes which were prepared at the district level based on the concept of habitat and approved by the Working Group under the District Collector. This System was acclaimed nationally.

However, some departments could not spend their full allocation. With a view to allowing flexibility to transfer funds across departments based on need and performance, the system of pooling was introduced in 1995. Some how, it was misinterpreted to mean that the entire funds are to be spent by the Scheduled Castes and Scheduled Tribes Development Department. As funds were provided under the demand of the SC/STDD the other departments moved away and shirked the responsibility for planning and implementation.

In 1997, a policy decision was taken to transfer a large chunk of SCP/TSP to local governments. Though the system continued, the district level Working Groups got atrophied and stopped functioning.

On the positive side during the Ninth Plan real funding was provided under SCP/TSP and the perverse system of reckoning "flows" to SCP and TSP that existed during the Seventh and Eighth Plan periods was done away with. This suddenly increased availability of investible resources but this increase unfortunately coincided with the weakening of the planning and implementation system.

Local governments have shown a strong preference for beneficiary oriented programmes. Of late the performance of local governments under SCP/TSP has been declining with expenditure hovering around 80% in the case of SCP and 70% in the case of TSP. At the same time the considerable resources with the State Government is also being spent mostly on schemes in the domain of local governments without the discipline of either rigorous centralized planning or participatory planning. This has tended to distort the flow of funds to less deserving schemes and areas.

Now the Government is seriously addressing the two fold challenge of improving the performance of local governments under SCP and TSP and improving the quality of planning and implementation of State level SCP and TSP.

14.117 A two pronged strategy is followed for development of Scheduled Caste and Scheduled Tribe in the State. Infrastructure facilities like roads, electricity, and water supply, are provided in habitats having more than 50 per cent SC/ST families. More than 50 per cent of area should owned by SC or ST for implementing minor irrigation work.

14.118 Whereas, for projects benefiting individuals and families, 100 per cent of the beneficiaries should belong to SC and ST. The dispersed Scheduled Castes and Scheduled Tribes living outside SC/ST habitats are also be assisted.

14.119 SC/ST volunteers called promoters have been appointed for assisting Scheduled Caste and

Scheduled Tribe beneficiaries to access the benefit of schemes and to monitor programmes under SCP/TSP. Distribution of Plan grants under various sectors for SCP and TSP schemes depicted in fig 10 and 11

**Fig.10**

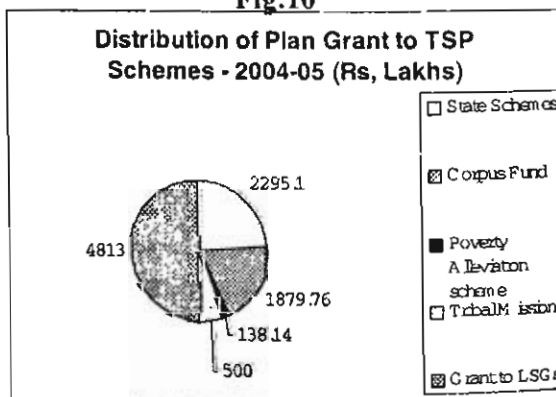
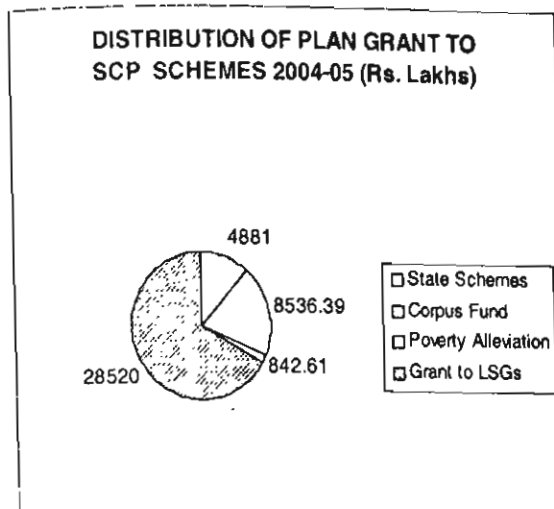


Fig.11



14.120 The ST Development Department runs 18 Model Residential Schools, of which 4 are Ashram Schools, 105 Pre-matric hostels, 38 single teacher schools and 58 Kindergartens in the state. 3 ITC's are functioning under the department for providing training to ST's District-wise details of educational institutions under the SC and ST departments are furnished in Appendix.14.24.

14.121 A survey conducted by the ST Department in 2000-01 revealed that there were 9374 houseless ST families in the State. During 2003-04, the ST department constructed 1158 houses. In order to provide better medical facilities to tribals, the Health Department runs 63 Primary Health Centres in the State. The ST Development Department has 4 Mid Wifery Centres, 17 Ayurveda Dispensaries, 5 Allopathic Dispensaries/Out-Patient Clinics, one Ayurveda Hospital, 2 Mobile Medical Unit and one Allopathy hospital. Apart from the above, Homeo Dispensaries are also functioning in tribal areas under Tribal Sub Plan. A Sickle Cell Anemia Unit has been set up in Kozhikode Medical College. Details of physical achievements of major schemes implemented for Scheduled Tribe development are given in Appendix 14.25.

14.122 The Protection of Civil Rights (PCR) Act, 1955 and the Prevention of Atrocities (POA) Act 1989 are the two important legal measures to prevent and curb social discrimination and atrocities committed against ST's and SC's in the state, the Government of India is providing 50% assistance for strengthening the relief and rehabilitation of the affected persons.

14.123 The SC Development Department constructed 3107 Houses during 2003-04. District-wise details of houses constructed by the SC and ST departments are provided in Table 14.40.

Table 14.40  
District-wise details of houses constructed by SC/ST Development Departments, during 2003-04

Sl.No.	Name of District	SC		ST	
		No. of houses constructed	Amount spent (Rs.lakhs)	No. of Houses constructed	Amount spent (Rs. Lakhs)
(1)	(2)	(3)	(4)	(5)	(6)
1	Thiruvananthapuram	1099	210.44	17	1.070
2	Kollam	864	120.03	46	18.56
3	Pathanamthitta	1214	85.35	43	12.73
4	Alappuzha	1311	164.27	-	-
5	Kottayam	578	74.24	239	21.600
6	Idukki	617	16.83	244	45.3
7	Ernakulam	1559	280.66	37	9.89
8	Thrissur	1330	219.14	44	2.77
9	Palakkad	1134	119.34	98	4.15
10	Malappuram	1316	141.12	17	3.47
11	Kozhikode	992	115.92	25	7.06
12	Wayanad	253	29.47	223	24.17
13	Kannur	1221	147.03	63	-
14	Kasaragod	575	81.95	62	3.94
	<b>Total</b>	<b>14063</b>	<b>1805.79</b>	<b>1158</b>	<b>154.71</b>

Source: SC&ST Directorates

14.124 Physical achievements of the SC Department on various development programmes is given in Appendix 14.26.

### Tribal Development Mission

14.125 A special scheme for providing land to the landless and house to the homeless is being implemented in the state. As part of the resettlement of landless, Tribal Development Mission has been formed to undertake rehabilitation activities based on a Master Plan. They have identified 22052 landless tribal families and 32131 families with less than one acre of land. The highest number of landless tribes is found in Wayanad District with 60.32% of the total followed by Palakkad with 24.44%. 5173.92 acres of land have been distributed to the benefit of 3208 landless tribal families. Details of district-wise landless tribals, area of land distributed and number of families benefited are furnished in the Table 14.41

**Table 14.41**  
**District-wise details of landless tribal families and families benefited and land distributed under TRDM-2004**

Sl.No.	District	No. of Landless tribals	No. of Tribals <1 acre land	No. of families covered	Acres of land distributed	Average acres per family
1	2	3	4	5	6	7
1	Kasaragode	226	171	69	73.43	1.6
2	Kannur	1395	2249	400	304.37	0.76
3	Wayanad	13303	12184	585	1974.90	3.37
4	Kozhikkode	318	889	420	600	1.43
5	Malappuram	339	2224	61	46.38	0.76
6	Palakkad	5389	2637	10	4.44	0.44
7	Thrissur	271	840	20	5.68	0.28
8	Ernakulam	132	888	296	418.90	1.42
9	Idukki	190	5436	1072	1583	1.48
10	Kottayam	153	1340	19	19	1.0
11	Alappuzha	117	568	114	27.75	0.24
12	Pathanamthitta	68	1032	14	1.39	0.1
13	Kollam	138	572	128	114.68	0.9
14	Thiruvananthapuram	13	1101	--	--	--
	<b>Total</b>	<b>22052</b>	<b>32131</b>	<b>3208</b>	<b>5173.92</b>	<b>1.61</b>

Source: TRDM

**Kerala State Development Corporation for Scheduled Castes and Scheduled Tribes**

14.126 The Corporation functions with the objective of implementing various income generating schemes so as to make the SC/ST population self-reliant in all respects. It provides assistance to self employment schemes, to improve their socio-economic status in the society. The major schemes implemented by the Corporation include agricultural land purchase scheme, micro credit finance scheme, mini-venture loan, beneficiary-oriented schemes, small enterprises loan, housing scheme, education loan schemes and training programmes.

14.127 During 2003-04, 320 families were benefited under agricultural land purchase scheme. Micro credit finance scheme benefited 679 families. The scheme-wise details of physical and financial achievements of the Corporation are given in Appendix. 14.27.

**Kerala Institute for Research, Training and Development Studies (KIRTADS)**

14.128 The institute is meant to conduct research and intensive study on Scheduled Caste and Scheduled Tribe population of the State. During the financial year (2003-04) the research wing of KIRTADS undertook preparation of the following projects:

1. Guaranteeing quality education for Scheduled Tribes
2. Baseline Survey of PTG's
3. Encyclopaedia of the ST Communities
4. Digital Documentation of tribal communities of Kerala
5. Archery Academy

14.129 The evaluation wing of KIRTADS undertook the following evaluation studies this year. They are:

- (1) Indigenous knowledge and Traditional Agricultural practices of Scheduled Tribes of Muthuvan Community
- (2) Development activities for Koragas of Kasargod
- (3) Tribal development activities of Kannur District with special emphasis on Aralam Farm
- (4) Women empowerment of Kudumbashree
- (5) Functioning of Model Residential Schools for ST's.

14.130 The training wing conducted selected training programmes for SC/ST promoters, Anganwadi workers and teachers working in tribal areas.



**Kerala State Development Corporation for Christian Converts from Scheduled Castes and other recommended Communities**

14.131 The main objective of this Corporation is to improve Social, Educational, Cultural and Economic condition of the converted Christians from Scheduled Castes and other recommended communities. The main schemes under implementation by the Corporation are agricultural land purchase scheme, foreign employment scheme, housing, cash incentive to students, marriage loan, agriculture and allied scheme, small business schemes, educational loan etc. The Corporation implements these schemes with the financial assistance received from state government and the loan assistance from NBCFDC.

14.132 The achievements of Kerala State Development Corporation for Christian Converts upto October 2004 are given in **Table 14.42**

**Kerala State Backward Classes Development Corporation**

14.133 The Corporation aims at the economic empowerment of the backward classes and minorities in the state. The main objectives of

the Corporation are:

- i) To promote the comprehensive development of the Other Backward Classes and Minorities of Kerala by rendering assistance by way of loans and advances for establishing small enterprises in various sectors like agricultural & its allied activities, small business, service, transport, artisan and handicrafts, etc.
- ii) To promote schemes and establishing institutions for socio-economic and educational upliftment of the members of Other Backward Classes and Minorities of the State.
- iii) To assist the Other Backward Classes and Minorities for upgradation of their technical and entrepreneurial skills.

14.134 The Corporation mobilises funds from the National Backward Classes Finance and Development Corporation (NBCFDC), National Minorities Development and Finance Corporation (NMDFC) and from the State Government.

14.135 The source-wise expenditure and the physical achievements of the Corporation during 2003-04 and 2004-05 are given in Table.14.43

**Table 14.42**  
**Achievements of KSDC for Christian Converts - 2003-04**

Schemes	Outlay		Expenditure		Physical Targets and Achievements	
	2003-04 (Rs.Lakhs)	2004-05 (Rs.Lakhs)	2003-04	2004-05 (upto October)	2003-04	2004-05
1	2	3	4	5	6	7
State Schemes	255	35	170.05	80.69 (Upto 10/04)	291	187
NBCFDC Schemes	75	50 (not released yet)	78.85	--	153	--

Source : Kerala State Development Corporation for Christian Converts from Scheduled Cast and other recommended Communities

**Table-14.43**  
**Financial and physical achievements of Kerala State Backward Classes Development Corporation (2003-04, 2004-05)**

Sources of Fund	Financial Achievements (Rs. Lakh)		Physical achievements (No. of beneficiaries)	
	2003-04	2004-05*	2003-04	2004-05
1	2	3	4	5
NBCFDC	2667.59	1257.19	5,854	7,572
NMDFC	660.28	677.22	1,466	1,494
Own Fund	765.52	540.24	2,496	1,578
<b>Total</b>	<b>4093.39</b>	<b>2474.65</b>	<b>9816</b>	<b>10644</b>

Source: KSBCDC

\* upto 31<sup>st</sup> October 2004.

## CHAPTER-15

# PRICES AND FOOD SECURITY

### PRICES

#### Consumer Price Index

Consumer Price Index (CPI) helps to measure the average percentage change in the prices paid by the consumers for a fixed basket of goods and services consumed by the consumers. It is a measure of inflationary trend. During 2004 (up to September), the Consumer Price Index (CPI) went up by 4 points (base: 1998-99=100), compared to the corresponding period in 2003. i.e. the index rose from 116 points in September 2003 to 120 points in September 2004 (Table 15.1). The corresponding increase in 2003 was just 2 points only, which shows that inflation in terms of consumer price index was slightly higher in the State during the period under review, compared to the previous year. This was mainly on account of the increase in the prices of certain essential commodities, viz, dhal, sugar, milk, potato, banana, chillies (green) and tubers.

15.2 When the indices of nineteen centres were subjected to review, Kollam and Kasaragod centres recorded the highest index (126 points

each) and Punalur continued to be at the lowest position (115 points). Indices of nine centres fell below the State average of 120 points. The year-on-year variation of indices over previous year for the various centres ranged from 1.8 to 7.7 per cent, with largest increase being at Kasaragod and the least at Punalur. Compared to the northern and southern regions of the State, percentage change in consumer price index was rather lower in the central region of the State. Since the movement of indices in the State is within a moderate range of 115 to 126 points, variations in the levels of inflation among centres are rather small.

15.3 The month-wise movements of Consumer Price Indices are shown in Appendix-15.1. The indices remained more or less subdued in the first quarter of 2004 and thereafter went up in the second and third quarters. The highest increase was recorded by Kannur with 9 points from 118 points in 2003 (sept) to 127 points in 2004 (sept) and the lowest by Thrissur with three points from 117 to 120 points during the same period.

**Table 15.1**  
**Annual Average Consumer Price Indices in selected Centres of Kerala:2002-2004\***  
( Base:1998-99=100)

Centres	Year					Percentage Change Over Previous Year		
	2002*	2002	2003*	2003	2004*	2003*	2003	2004*
1.Thiruvananthapuram	115	116	121	122	125	5.2	5.2	3.3
2. Kollam	116	117	122	123	126	15.2	5.1	3.3
3. Punalur	113	113	113	113	115	0.0	0.0	1.8
4.Pathanamthitta**	113	114	118	118	121	4.4	3.5	2.5
5. Alappuzha	113	113	115	115	119	1.8	1.8	3.5
6. Kottayam	114	115	116	117	120	1.8	1.7	3.4
7.Mundakayam	112	113	115	115	118	2.7	1.8	2.6
8. Munnar	115	115	114	114	117	-0.9	-0.9	2.6
9. Ernakulam	114	114	117	117	120	2.6	2.6	2.6
10.Chalakyudy	113	113	115	116	119	1.8	2.7	3.5
11.Thrissur	114	114	115	116	119	0.9	1.8	3.5
12. Palakkad	112	113	116	116	119	3.6	2.7	2.6
13. Malappuram	113	114	117	118	121	3.5	3.5	3.4
14.Kozhikode	113	113	115	116	119	1.8	2.7	3.5
15. Meppady	115	115	113	114	117	-1.7	-0.9	3.5
16.Kannur	114	114	116	117	123	1.8	2.6	6.0
17.Kasaragod**	113	113	117	119	126	3.5	5.3	7.7
State Average	114	114	116	117	120	1.8	2.6	3.4

\*January to Sept., \*\* New Centers, Source: Directorate of Economics and Statistics

### Retail prices

15.4 The average retail prices of essential commodities from 2001 to 2004 are shown in Table 15.2. On reviewing the prices of eighteen essential commodities in 2004 (upto October, the latest month for which data are available), it was observed that the prices of as many as six items witnessed fall in their prices, ranging between 0.04 per cent and 23.08 per cent, compared to the corresponding period in 2003. This was reflected more in the prices of coriander and chillies (dry) under condiments & spices group and redgram under pulses group. When the price of coriander came down by 23.1 per cent, that of chillies (dry) and redgram came down by 22.30

per cent and 15.2 per cent respectively, compared to the price levels in the corresponding period of 2003. While potato and banana witnessed heavy spurt in their prices with increases of 29.5 per cent and 29.1 per cent respectively, blackgram, milk, sugar and onion (small) witnessed rather moderate increases of 10.2 per cent, 7.7 per cent, 13.2 per cent and 11.3 per cent respectively.

15.5 The month-wise movement of prices is given in Appendix-15.2. A significant point noted was that at the end of October 2004, prices of as many as 10 items- greengram, redgram, egg, coconut oil, refined oil, coriander, chillies (dry), onion (big), brinjal and cabbage-came down to a

**Table.15.2**  
Average Retail Prices of Essential Commodities 2000-2004

1	Unit	Prices at the end of December (Rupees)						% change over previous year			
		2000	2001	2002	2003*	2003	2004*	2001	2002	2003	2004*
		3	4	5	6	7	8	12	13		14
<b>Cereals</b>											
Rice (red) OM Matta	Kg	13.34	12.20	13.40	13.77	13.81	13.89	-8.55	9.84	3.06	0.87
<b>Pulses</b>											
2.Green Gram	kg	26.11	30.29	30.32	27.94	27.61	27.93	16.01	0.10	-8.94	-0.04
3.Black Gram (split w/o husk)	Kg	42.57	35.38	29.59	25.34	25	27.93	-16.89	-16.37	-15.51	10.22
4.Red gram	Kg	19.88	19.98	29.41	24.82	23.2	21.04	0.50	47.20	-21.12	-15.23
5.Dhall (Tur)	Kg	29.35	29.7	31.03	32.24	33.42	34.19	1.19	4.48	7.70	6.05
<b>Other Food Items</b>											
6.Milk (cow's)	Litr	12.93	12.96	13.04	13.02	14	14.02	0.23	0.62	7.36	7.68
7.Egg Hen's ( Nadan)	Dozen	29.14	27.70	26.55	25.75	27.08	26.49	-4.94	-4.15	2.00	2.87
8.Sugar (OM)	Kg	15.19	15.17	13.31	14.59	14.04	16.51	-0.13	-12.26	5.48	13.16
<b>oil &amp; Oil Seeds</b>											
9.Coconut Oil	Kg	35.04	46.23	60.53	71.49	70.86	70.27	31.93	30.93	17.07	-1.71
10.Ground Nut Oil	Kg	48.05	50.14	59.43	68.16	68.2	68.81	4.35	18.53	14.76	0.95
11.Refined Oil (post man)	Kg	61.34	60.32	76.06	90.31	90.38	86.61	-1.66	26.09	18.83	-4.10
12.Coconut (without husk)	100 nos	357.14	461.96	575.27	651.71	689.04	664.52	29.35	24.53	19.78	1.97
<b>Spices &amp; Condiments</b>											
13.Coriander	Kg	36.68	39.3	37.64	41.98	38.5	32.29	7.14	-4.22	2.28	-23.08
14.Chillies dry	Kg	41.01	44.68	51.55	52.27	53.73	40.62	8.95	15.38	4.23	-22.29
15.Onion (small)	Kg	13.00	15.82	18.89	13.77	13.23	15.32	21.69	19.41	-29.96	11.26
<b>Tubers</b>											
16.Tapioca (raw)	Kg	5.68	4.79	5.96	5.74	5.62	5.76	-15.67	24.43	-5.70	0.35
17.Potato	Kg	8.91	12.84	10.28	8.86	9.67	11.47	44.11	-19.94	-5.93	29.46
<b>Fruits &amp; vegetables</b>											
18.Banana	Kg	13.21	11.01	10.78	12.72	14.68	16.42	-16.65	-2.09	36.18	29.09
* October											
Source: Directorate of Economics & Statistics											

level lower than that at the end of October 2003. The prices of other commodities witnessed uptrend, though by erratic movements, within a moderate range.

### Consumption Expenditure

15.6 Kerala, being a consumer State, the pattern of living expenditure is different from the other regions of the country. The survey of NSSO on household consumption expenditure reveals that the consumption pattern of Kerala has undergone considerable change over the last 30 years.

15.7 Table 15.3 gives the details of 1000 distribution of persons over 12 Monthly Per Capita Consumer Expenditure (MPCE) classes of rural sector, on the basis of NSS survey 58<sup>th</sup> round (2002). The rural population is more concentrated in lower levels of MPCE classes. The population having MPCE below Rs.615 accounted for 74.8 per cent. The inter-State variation is substantial in the distribution of MPCE. In Orissa, when 42.1 per cent of the population lies in the lowest expenditure class (000-3000), in Punjab it is just one per cent and in Kerala 2 per cent. In Punjab and Kerala, major size of population is skewed towards the higher expenditure classes of 615 –

950 and above. The percentages being 63.3 for Punjab and 63.1 for Kerala. The population having MPCE above Rs.950 is the highest in Kerala (30 per cent), followed by Punjab (13.6 per cent); the all India level being 7.1 per cent. In the case of average MPCE also, Kerala stands first with Rs.881, followed by Punjab (Rs.788) and Haryana (Rs.703). The all India average MPCE is Rs.531. Among the major 15 States, five States (Bihar, Madhya Pradesh, Orissa, Uttar Pradesh and West Bengal) are with average MPCE below Rs.500, seven States (Andhra Pradesh, Assam, Gujarat, Kerala, Maharashtra, Rajasthan, Tamil Nadu Haryana, Punjab) between Rs.500 and Rs.700 and three States (Haryana, Punjab and Kerala) above Rs.700.

15.8 Table 15.4 gives the corresponding details with regard to urban area. The average urban MPCE exceeds average rural MPCE by around 90 per cent at the all India level. The rural – urban disparity in MPCE is relatively small for Punjab (41 per cent), Kerala (44 per cent) and Rajasthan (45 per cent) but large in Orissa (123 per cent), West Bengal (116 per cent) and Maharashtra (114 per cent). Like in the case of rural sector, in urban sector also, MPCE is the

**Table 15.3**  
1000 Distribution of persons in the Rural Sector over 12 MPCE  
Year 2002 (58<sup>th</sup> round NSS)

Major States	Monthly Per Capita Expenditure Classes (Rs)								Avg. MPCE (Rs)
	(000-300)		(300-615)		(615-950)		>950		
	persons	%	persons	%	persons	%	persons	%	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1. Andhra Pradesh	112	11.2	590	59.0	210	21.0	87	8.7	575
2. Assam	54	5.4	681	68.1	246	24.6	19	1.9	532
3. Bihar	198	19.8	699	69.9	90	9.0	13	1.3	424
4. Gujarat	110	11.0	549	54.9	241	24.1	100	10.0	590
5. Haryana	33	3.3	440	44.0	339	33.9	198	19.8	703
6. Karnataka	116	11.6	676	67.6	154	15.4	53	5.3	513
7. Kerala	20	2.0	349	34.9	331	33.1	300	30.0	881
8. Madhya Pradesh	264	26.4	594	59.4	113	11.3	29	2.9	436
9. Maharashtra	116	11.6	605	60.5	218	21.8	61	6.1	545
10. Orissa	421	42.1	449	44.9	104	10.4	26	2.6	390
11. Punjab	10	1.0	357	35.7	397	39.7	236	23.6	788
12. Rajasthan	46	4.6	656	65.6	219	21.9	79	7.9	574
13. Tamil Nadu	131	13.1	590	59.0	186	18.6	93	9.3	542
14. Uttar Pradesh	166	16.6	649	64.9	141	14.1	44	4.4	486
15. West Bengal	120	12.0	693	69.3	151	15.1	36	3.6	493
All India	146	14.6	602	60.2	181	18.1	71	7.1	531

Source: NSSO

highest in Kerala (Rs.1267) and it is followed by Gujarat (Rs.1229) and Maharashtra (Rs.1164). While in rural sector the average MPCE exceeds Rs.700 only for two States, in urban sector, it exceeds Rs.700 for all the States except for Bihar where it is Rs.692. The average urban MPCE is more than RS.1200 only for two States- Kerala and Gujarat.

15.9 Table 15.5 given below shows the average consumer expenditure per person for a period of

30 days. While in 70's the average consumer expenditure per person for a period of 30 days in rural sector of Kerala was almost close to that of rural area of India, from 1980 onwards it began to exceed that of India and in 2002 it attained a level which exceeds that of India by 66 per cent. In urban area, till 70's the average consumer expenditure per person for a period of 30 days in Kerala was lower than that in India and from 1980 onwards the trend began to reverse as in rural area and in 2002 it attained a level that exceeds that of India by 25%.

Table 15.4  
1000 Distribution of persons in the Urban Sector over 12 MPCE  
Year 2002 (58th round NSS)

Major States (1)	Monthly Per Capita Expeniture(Rs)								
	(000-500)		(500-1120)		(1120-1925)		>1925		Avg. MPCE(Rs)
	persons	%	persons	%	persons	%	persons	%	persons
	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1.Andhra Pradesh	173	17.3	548	54.8	189	18.9	90	9.0	989
2.Assam	138	13.8	598	59.8	201	20.1	63	6.3	947
3.Bihar	455	45.5	423	42.3	89	8.9	33	3.3	692
4.Gujarat	55	5.5	551	55.1	241	24.1	153	15.3	1229
5.Haryana	40	4.0	619	61.9	239	23.9	102	10.2	1123
6.Karnataka	221	22.1	501	50.1	196	19.6	82	8.2	969
7.Kerala	169	16.9	428	42.8	269	26.9	134	13.4	1267
8.Madhya Pradesh	425	42.5	456	45.6	101	10.1	18	1.8	709
9.Maharashtra	144	14.4	500	50.0	231	23.1	125	12.5	1104
10.Orissa	318	31.8	448	44.8	175	17.5	58	5.8	869
11.Punjab	104	10.4	560	56.0	230	23.0	106	10.6	1110
12.Rajasthan	244	24.4	601	60.1	107	10.7	48	4.8	830
13.Tamil Nadu	160	16.0	534	53.4	196	19.6	110	11.0	1072
14.Uttar Pradesh	320	32.0	464	46.4	149	14.9	67	6.7	879
15.West Bengal	197	19.7	532	53.2	179	17.9	92	9.2	1066
All India	210	21.0	508	50.8	190	19.0	92	9.2	1012

Source: NSSO

Table 15.5  
Average Consumer Expenditure Per Person for the period of 30 days

Year and Round of NSS	Rural		Urban	
	Kerala	India	Kerala	India
1970-71 25 <sup>th</sup>	36.12	35.31	47.63	52.85
1972-73 26 <sup>th</sup>	42.19	44.17	58.27	63.33
1977-78 32 <sup>nd</sup>	74.76	68.89	84.10	96.15
1983 38 <sup>th</sup>	145.44	112.31	179.81	165.80
1987-88 43 <sup>rd</sup>	211.47	158.10	266.22	249.93
1990-91 46 <sup>th</sup>	261.85	202.12	369.36	317.75
1993-94 50 <sup>th</sup>	390.40	281.60	493.50	457.70
1999-00 55 <sup>th</sup>	765.71	486.00	932.00	855.00
2000-01 56 <sup>th</sup>	841.31	494.91	1203.65	914.58
2002 58 <sup>th</sup>	881.00	530.74	1266.64	1011.94

Source:NSSO

15.10 Table 15.6 given below shows the percentage distribution of food and non food expenditure classification by various rounds of survey by NSSO. In the State, the share of food items in the total consumption expenditure was exceeding the non food items in rural area till the 55<sup>th</sup> round of Survey (1999-2000) and in the urban area till the 50<sup>th</sup> round of Survey (1993-94) and thereafter the trend reversed, i.e the share of food items in total expenditure began to fall below that of non-food items, both in rural and urban area.. A significant point noted is that as the income level increases, the share of income spent for food items declines.

#### Wholesale Price Index (WPI)

15.11 In the first quarter of 2004 (the latest period for which data are available), the wholesale price index of agricultural commodities

went up by 156 points compared to the corresponding period in 2003, witnessing an inflation of 5.9 per cent in terms of Wholesale Price Index (Table 15.7). Index of all commodities, but for the index of fruits & vegetables, maintained uptrend during the period under review. When the index of molasses went up by 521 points (29.4 per cent) and that of condiments and spices went up by 395 points (20.0 per cent), the index of fruits and vegetables came down by 107 points (2.8 per cent). Food crops and non-food crops recorded more or less same growth rate in their indices, with 6.0 per cent and 5.9 per cent respectively. One of the major reasons for the increase in prices of agricultural commodities was the hike in prices of crude oil and petroleum products in the international markets and their impacts in domestic markets. Crude oil price in international market

Table 15.6

#### Percentage Distribution of Food and Non food Expenditure Classification

Year & Round of NSS	Rural				Urban			
	Kerala		India		Kerala		India	
	Food	Non Food	Food	Non Food	Food	Non Food	Food	Non Food
1970-71 25 <sup>th</sup>	70.21	29.79	73.58	26.42	63.34	36.66	64.41	35.59
1972-73 26 <sup>th</sup>	70.42	29.58	72.81	27.19	64.85	35.15	64.49	35.51
1977-78 32 <sup>nd</sup>	60.75	39.25	64.35	35.65	60.61	39.39	59.98	40.02
1983 38 <sup>th</sup>	61.56	38.44	65.56	34.44	58.24	41.76	58.69	41.31
1987-88 43 <sup>rd</sup>	59.92	40.08	63.77	36.23	57.08	42.92	55.92	44.08
1990-91 46 <sup>th</sup>	63.29	36.71	65.97	34.03	49.66	50.34	55.63	44.37
1993-94 50 <sup>th</sup>	60.45	39.55	63.21	36.79	53.90	46.10	54.62	45.38
1999-00 55 <sup>th</sup>	53.70	46.30	59.47	40.53	49.03	50.97	48.07	51.93
2000-01 56 <sup>th</sup>	49.63	50.37	56.29	43.71	43.22	56.78	43.80	56.20
2002 58 <sup>th</sup>	50.23	49.77	55.07	44.93	40.25	59.75	42.47	57.53

Source: NSSO

Table- 15.7  
Whole Price Index of Agricultural Commodities-2000-2004  
(Base: 1952 - 53 = 100)

	Crops	Weight	Whole Price Index of Agricultural Commodities						% change over previous Year			
			2000	2001	2002	2003*	2003	2004*	2001	2002	2003	2004*
	1	2	4	5	6	7	8	9	10	11	12	13
A	Food Crops	63.5	2610	2232	2022	2580	2660	2734	-14.5	-9.4	31.5	6.0
	Rice	40.4	2330	2058	1585	2434	2504	2575	-11.7	-23.0	58.0	5.8
	Condiments & Spices	10.4	3161	2123	2448	1975	2298	2370	-32.8	15.3	-6.1	20.0
	Fruits & Vegetables	10.7	3293	3041	3281	3867	3743	3760	-7.7	7.9	14.1	-2.8
	Molasses	2.0	1763	1988	1891	1773	1899	2294	12.8	-4.9	0.4	29.4
B	Non-Food Crops	36.5	2068	1807	2375	2799	2899	2960	-12.6	31.4	22.1	5.8
	Oil Seeds	25.5	2331	1996	2823	3407	3551	3593	-14.4	41.4	25.8	5.5
	Plantation Crops	11.0	1461	1370	1337	1394	1392	1495	-6.3	-2.4	4.1	7.3
C	All Crops	100.0	2412	2077	2151	2660	2747	2816	-13.9	3.6	27.7	5.9

Source: Directorate of Economics & Statistics

\*up to March

increased by 5.6 per cent per barrel in 2003-04. The occurrence of drought and decline in agriculture production were the other reasons for the rise in the price of agricultural commodities.

15.12 The month-wise movements of indices are shown in Appendix-15.3. Index of all the commodities generally witnessed erratic trend from month to month. When the index of food crops attained a peak level of 2798 points in the month of June, that of non food crops and all crops attained peak levels in November with 3346 pints and 2900 points respectively.

#### Parity Index

15.13 Parity Index reflects the price situation of the farming community in the State. It is a relative measure of prices received by farmers and prices paid by the farmers. In 2003 (data are available only upto 2003), the parity index went up by 8 points from 49 points in 2002 to 57 points in 2003, as against an increase of just one pint in 2002 from 48 points in 2001 to 49 points in 2002 (Table 15.8). The uptrend witnessed in 2002 and 2003 cannot be taken as an indication for the years to come, as it is evident from the table that the indices had been generally on downward trend over the years, barring slight increases witnessed in certain years. This implies that the price situation in the State has not been generally

favourable to the farming community over the years. During the period 1993-2003, when the prices received by farmers increased by an annual average growth rate of 6.1 per cent, the prices paid by farmers increased by an annual average growth rate of 8.9 per cent. During the same period, farm cultivation cost grew at a rate of 10.7 per cent and domestic expenditure grew at a rate of 7.3 per cent.

#### Wages

15.14 The average daily wage rates of skilled and unskilled workers in agricultural sector during the period from 1994-95 to 2003-04 are presented in Tables-15.9 and 15.10 respectively. In 2003-04, wages of carpenter and mason witnessed only marginal increases of 1.0 per cent and 0.9 per cent respectively in the place of increases of 4.20 per cent and 3.5 per cent respectively in 2002-03. Wages of paddy workers also showed similar trend as is evident from the Table. A noteworthy point is that the gap between wages of male paddy worker and female paddy worker is on the increase. The gap, which was 40.7 per cent in 1980-81 went up to 69.45 per cent in 1990-91 and then came down to 46.32 per cent in 2003-04, which is higher by 5.62 per cent compared to the level in 1980-81. The gap between the wages of male and female paddy workers needs to be looked into.

**Table-15.8**  
Index of Prices Received and Prices Paid by Farmers  
1993-2003  
(Base: 1952-53=100)

Year	Prices received by Farmers	Farm Cultivation Cost	Domestic Expenditure	Price paid by farmers	Parity as col. 2 to 5
1	2	3	4	5	6
1993	1496	2579	1303	1834	82
1994	1582	2891	1464	2057	77
1995	1802	3312	1641	2331	77
1996	2079	3928	1810	2666	78
1997	2486	4571	1979	3007	83
1998	2447	4895	2107	3212	76
1999	2907	5556	2246	3532	82
2000	2492	6173	2384	3836	66
2001	1927	6584	2489	4048	48
2002	1999	6684	2542	4122	49
2003	2454	7056	2615	4295	57

Source: Department of Economics and Statistics Wages

**Table 15.9**  
Average Daily Wage Rates of Skilled Workers in Agricultural Sector  
1994-95 to 2003-0

Year	Average Daily Wage Rates		Percentage changes over Previous year	
	Carpenter	Mason	Carpenter	Mason
1994-95	87.44	87.04	14.32	13.62
1995-96	107.20	105.96	22.60	21.74
1996-97	128.54	127.81	19.91	20.62
1997-98	145.94	144.04	13.54	12.70
1998-99	155.42	154.80	6.50	7.47
1999-00	165.35	164.70	6.39	6.40
2000-01	176.15	173.85	6.53	5.56
2001-02	182.42	180.06	3.56	3.57
2002-03	190.07	186.30	4.20	3.5
2003-04	192.00	188.00	1.0	0.9

Source: Department of Economics and Statistics

**Table 15.10**  
Average Daily Wage Rates of Unskilled Workers in the Agricultural Sector  
1994-95 to 2003-04

Year	Average Daily Wage rates of paddy field workers		% change over previous year	
	Male	Female	Male	Female
1994-95	63.53	41.92	17.08	18.12
1995-96	77.17	51.17	21.47	22.10
1996-97	92.18	60.52	19.45	18.27
1997-98	103.72	69.35	12.52	14.59
1998-99	111.76	71.42	7.75	2.98
1999-00	118.90	78.80	6.39	10.33
2000-01	123.15	82.38	3.57	4.54
2001-02	127.21	88.75	3.30	7.73
2002-03	144.90	99.73	13.9	12.4
2003-04	148.72	101.64	2.6	1.9

Source: Department of Economics and Statistics

15.15 Tables-15.11 and 15.12 represent the average daily wage of skilled and unskilled workers in construction sector in the State. In 2003-04, the wage of carpenter in rural area increased by Rs.3 and in urban area by Rs.6. The same for mason, it was Rs 2 in rural area and Rs.3 in urban area. The wage of unskilled workers during this period remained unchanged in rural area where as in urban area the wages witnessed a uniform increase of Rs 2 for both male and female workers.

## FOOD SECURITY

### Public Distribution System (PDS)

15.16 Public Distribution System (PDS) is the

key element of the food security system in India particularly for the poor. It is an instrument for ensuring availability of certain essential commodities at affordable prices. The Government, through the Food Corporation of India (FCI) procures and stocks foodgrains which are released every month for distribution through the Public Distribution System network across the country. Foodgrains, mainly rice and wheat, sugar and kerosene are distributed to the public through a network of PDS outlets.

15.17 The Public Distribution System was a general entitlement scheme to all consumers without any targeting, for the ground that the



**Table – 15.11**  
**Average Daily Wage Rates of Skilled Workers in the Construction Sector**  
**1992-93 to 2003-04**

(Rupees)

Year	Carpenter		Mason	
	Rural	Urban	Rural	Urban
1992-93	68.89	70.92	68.07	70.23
1993-94	73.57	76.50	72.75	75.98
1994-95	87.03	91.47	86.49	90.55
1995-96	109.45	113.85	107.59	112.83
1996-97	129.57	134.87	129.20	134.07
1997-98	147.00	150.00	146	149
1998-99	158.09	159.17	156.71	157.88
1999-00	171.09	172.21	168.77	171.94
2000-01	182	184	181	183
2001-02	185	187	184	186
2002-03*	189	190	188	190
2003-04*	192	196	190	193

\* Provisional

Source: Department of Economics and Statistics

**Table 15.12**  
**Average Daily Wage Rates of Unskilled Workers in the**  
**Construction Sector 1992-93 to 2003-04**

(Rupees)

Year	Men		Women	
	Rural	Urban	Rural	Urban
1992-93	46.34	48.66	37.23	39.38
1993-94	50.36	52.58	40.89	42.80
1994-95	60.08	63.63	49.94	52.00
1995-96	76.59	79.15	62.80	65.34
1994-95	88.47	90.76	73.73	75.76
1997-98	101	104	85.00	87.00
1998-99	111.18	112.43	93.44	94.06
1999-00	125.45	126.54	102.59	105.27
2000-01	130	133	108	111
2001-02	135	136	111	114
2002-03*	137	141	112	114
2003-04*	137	143	112	116

\* Provisional

Source: Department of Economics and Statistics

system failed to translate the macro level self sufficiency in foodgrains achieved by the country into household level food security for the poor, the Government of India decided to introduce Targetted Public Distribution System w.e.f 1<sup>st</sup> June 1997 in which allocation of foodgrains out of the central pool was made to the states at two sets of prices, a highly subsidized price for the poor and near open market price for others.

15.18 The shift in policy in the allocation and pricing of foodgrains, announced by the Central Government constitutes a major departure with regard to food security policy in the country. On the one hand, it has sought to restrict the coverage of the subsidized Public Distribution System to the poor. On the other, it has increased the price

of the foodgrains. One of the hard hit states of this policy shift is the foodgrains deficit state of Kerala. In the process, its Public Distribution System, assiduously built up over a long period of time and hailed as a model one, is now facing survival problems.

15.19 Kerala has a long history of public distribution system dating back to the beginning of second world war. Universal and Statutory rationing was introduced on 24.10.1965. At present the state has also switched over to the National pattern i.e. Targeted Public Distribution System from 1.6 1997. Accordingly families under Above Poverty Line (APL) and Below Poverty Line (BPL) categories have been identified, distinctive ration cards under each category issued and food grains are distributed to the families at different prices. In Kerala, even though the Government of India have approved 15.54 lakh families (i.e 25.43% of the state's BPL population as on 1-3-2000) under BPL category, the State Government has identified the number of BPL families as 20.22 lakh including AAY (i.e 42% of the population). The subsidized rice is distributed to this additional 4.65 lakh families by meeting the subsidy portion from the State exchequer.

15.20 Before the introduction of Targetted Public Distribution system by the Central Government, on an average 155000 tonnes rice and 35000

tonnes wheat were sold through the ration shops in Kerala every month. But with the introduction of APL-BPL system through TPDS, the number of real beneficiaries declined and the monthly offtake has come down to almost one-third of the earlier times.

15.21 In Kerala, the coverage of ration cards is nearly hundred percent. Now ration cards are issued to all families including those who do not have house numbers. The total number of ration cards in the state has increased from 62.68 lakh as on 1<sup>st</sup> April 2003 to 64.59 lakh as on 1<sup>st</sup> April 2004. At the same time the number of ration permits for institutions has come down from 16183 in 2003 to 15900 in 2004. There are 14139 PDS outlets in 2004. This include 694 shops in Co-operative Sector. Table 15.13 gives the details of Public Distribution System in Kerala.

15.22 Out of the total 6496211 ration card holders (as on 30<sup>th</sup> September 2004) in the state, 4473898 families are under APL and 1664813 families are under BPL category and 357500 families are under AAY scheme. Food grains are allotted by the Government of India for distribution to all cardholders at the rate of 35 Kg. per month irrespective of the category. Accordingly 113420 MT of rice and 37325 MT of wheat for distribution to APL families, 31406 MT of rice and 10468 MT of wheat to BPL families and 12510 MT of rice

**Table 15.13**  
**Public Distribution System in Kerala – A profile (2000-2004)**

Items	Unit	2000	2001	2002	2003	2004
Ration cards and permits as on 1 <sup>st</sup> April						
a) Ration cards for families	No	6262074	6344119	6383322	6268411	6459235
b) Ration Permits for institutions	No	17528	17127	16769	16183	15900
No of FCI Sub Depots as on 1 <sup>st</sup> April	No	23	22	23	23	22
No of Wholesale Shops as on 1 <sup>st</sup> April						
a) Co-operative Sector	No	42	39	35	41	38
b) Others	No	303	305	286	270	260
TOTAL (a+b)		345	344	321	311	298
No of ration shops as on April						
a) Co-operative Sector	No	966	953	953	828	694
b) Others		13266	13217	13217	13246	13445
TOTAL (a+b)		14232	14170	14170	14074	14139
Sugar	MT	152437	72766	45465	34270	36881*
Kerosene Oil	KL	361610	359437	314663	292175	207630*

to September 2004

Source: Directorate of Civil Supplies

to AAY families are allotted monthly by the Government of India.

15.23 Retail prices of commodities issued through ration shops during 2004 are shown in Table 15.14 and details of retail price of ration commodities from 1997 to 2003 are given in Appendix 15.4

15.24 After introduction of TPDS, it is seen that APL families are not buyers from PDS shops for foodgrains. This is evident from the Table 15.15 and 15.16.

### Distribution of Rice & Wheat

15.25 Distribution of rice and wheat through Public Distribution System in Kerala reveals a declining trend since 2000. Whereas in 1999 the off take of rice through Public Distribution System was 13.58 lakh tonnes and wheat 2.71 lakh tonnes. It declined to 4.39 lakh tonnes of rice and 1.75 lakh tonnes of wheat in September 2004 (Table 15.17). Considerable reduction of Central subsidy on foodgrains under APL category from April 2000, higher price for APL rice and wheat, lack of desired quality of foodgrains, restriction of levy sugar to BPL cardholders are the reasons for the low off-take of foodgrains under

**Table 15.14**  
Retail Price of Commodities issued through ration shops

Items	Price on April 2004 (Rs. per Kg)
Rice - APL	8.90
BPL	6.20
Antyodaya Annayojana Scheme	3.00
Wheat APL	6.70
BPL	4.70
Sugar-BPL	13.50
Kerosene/Litre	9.50 to 9.70
Annapoorna rice	Free of cost

Source: Directorate of Civil Supplies

**Table 15.15**  
District-wise Food grain Distribution under PDS – 2003

Name of District	BPL Scheme						APL Scheme					
	Wheat			Rice			Wheat			Rice		
	Lifting	As % of Allocation	Off-take	Lifting	As % of Allocation	Off-take	Lifting	As % of Allocation	Off-take	Lifting	As % of Allocation	Off-take
2	3	4	5	6	7	8	9	10	11	12	13	14
TVM	No Wheat is allotted under BPL Scheme			26463	53.35	27544	15660	38.81	17442	462	0.19	313
Kollam		Do		11349	21.90	10730	11317	31.29	11189	94	0.11	120
PTA		Do		7200	31.17	6762	2837	15.77	2800	80	0.05	34
Alappuzha		Do		24461	60.84	28175	7250	31.43	9202	51	0.25	228
Kottayam		Do		31353	86.67	31926	6802	38.23	10092	28	0.11	95
Idukki		Do		13938	59.26	14251	4842	39.53	6641	27	0.09	45
Eranakulam		Do		23239	61.23	23362	22365	52.17	21724	70	0.07	102
Trissur		Do		48764	84.68	50281	16284	38.83	16214	235	0.21	247
Palakkad		Do		32354	86.87	33323	7689	19.31	6813	1642	0.11	132
Malappuram		Do		50647	88.76	51778	12175	28.98	12834	20	0.19	219
Kozhikode		Do		42345	92.93	45593	14848	48.73	17717	210	0.30	344
Wayanad		Do		9244	83.13	10274	993	11.28	1055	1161	3.65	1096
Kannur		Do		40794	99.98	40644	14635	43.97	14140	530	0.44	398
Kasargod		Do		19385	94.92	20556	1636	11.32	1684	305	0.76	319
<b>TOTAL</b>				<b>381535</b>	<b>72.19</b>	<b>395201</b>	<b>139332</b>	<b>35.05</b>	<b>149548</b>	<b>491436</b>	<b>0.28</b>	<b>3692</b>

Source: Directorate of Civil Supplies

**Table:15.16**  
**Foodgrain Distribution under PDS for the year 2004 (upto September)**  
 (Qty in MT)

Month	BPL Scheme						APL Scheme					
	Wheat			Rice			Wheat			Rice		
	Lifting	As % of Allocation	Off-take	Lifting	As % of Allocation	Off-take	Lifting	As % of allocation	Off-take	Lifting	As % of Allocation	Off take
1	2	3	4	5	6	7	8	9	10	11	12	13
Jan-04	9116	85.85	6042	31443	98.71	32684	7321	19.61	9557	323	.28	384
Feb-04	8113	76.41	8292	29200	91.67	30510	5683	15.23	5755	575	.51	337
Mar-04	10018	95.7	9832	30586	97.39	32003	5517	14.78	5253	493	.43	503
Apr-04	9140	87.31	9684	31406	100	32185	6975	18.69	4994	1022	.9	1051
May-04	10468	100	11144	31406	100	34432	8266	22.15	6998	1897	1.67	2041
June-04	10468	100	10723	31406	100	30790	14257	38.2	10942	8421	7.42	6910
July-04	10468	100	11207	31406	100	31924	12231	32.77	12625	10842	9.56	10045
Aug-04	10468	100	11213	31406	100	34556	16935	45.37	14656	21334	18.81	9094
Sep-04	10468	100	10512	31406	100	30673	15108	40.48	15742	3298	2.91	4988

Source: Directorate of Civil Supplies

**Table- 15.17**  
**Quantity of Rice and Wheat distributed through Public Distribution system in Kerala**  
 (In lakh tonnes)

Year	Rice	Wheat
1998	16.39	4.58
1999	13.58	2.71
2000	6.56	0.64
2001	4.61	0.78
2002	4.23	1.40
2003	5.07	1.50
2004(9/04)	4.38	1.75

Source: Directorate of Civil Supplies

TPDS. Distribution of Rice and Wheat through PDS during the last seven years is detailed in the Appendices 15.5 & 15.6

#### Central Allotment of Sugar and Kerosene

15.26 Central allotment of Sugar was restricted to BPL card holders alone from February 2001 onwards. The central allocation of kerosene to the state was also reduced year by year. The allotment of Kerosene to the state was 314661 Kilo Litres in 2002 and it came down to 292175 Kilo Litres in 2003 and again to 207630 Kilo Litres in October 2004.

#### Food Security

15.27 According to a study by Prof . K.P.Kannan of CDS entitled "Food Security in a Regional Perspective", the important component of the Social Security Programme in Kerala is Food Security. There are 3 major components to the food security system in Kerala. One is the Public Distribution System. The needs of the poor are taken into account in this system by giving a higher level of subsidy. Apart from food, the system also meets almost the entire requirement of Kerosene which is a basic need for cooking and/or lighting in poorer households. The second is the supplementary nutrition programme

targetted on children, one on pre-school children with some health care elements and the other noon meal for school going children up to 12 years of age. The third is the old age and other disability pensions for the poor. This could be treated as food security as they are targeted only on the poor. CDS study has attempted an estimation of the coverage of these food security schemes for 1991 and it is presented in Table-15.18. It is interesting to note that the major programmes such as PDS, supplementary nutrition and pension for agricultural workers cover more than the estimated poor below the poverty line. In fact, 92 percent of the population are covered under PDS, 44 percent of pre-school children are covered under the supplementary nutrition programme, 70 percent of the children between

5 & 12 years are covered by the free noon meal scheme and more than the main agricultural labourers above 60 years are covered by the oldage pension scheme.

15.28 Even then the PDS is able to cover only two thirds of the requirements of rice of the poorer households, the calories provided for children cover only one-fourth of their daily requirements and the real value of old age and other pensions has steadily declined over the years as to hardly cover one meal a day.

15.29 The Common Minimum Programme of the Government of India talks about strengthening the Public Distribution System, particularly in the

**Table 15.18**  
**Selected Food Security Cover for the Poor in Kerala**

(Nos. in 000s)

Total Population			Estimated Poor	Beneficiaries	(5) as % of (4)	(5) as % of (3)
1	2	3	4	5	6	7
Male	Female	Total	Public Distribution			
14289	14810	29099	9602	26696	278	92
Children (0-4)			Supplementary Nutrition			
Boys	Girls	Total	911	1201	132	44
1410	1349	2759				
Children (5-12)			Free Noon Meals			
Boys	Girls	Total	1142	2410	211	70
1760	1701	3461				
Old aged (60+)			Old age Pensions			
Male	Female	Total	845	505.3	60	20
1689	1371	2560				
Widows			Widows Pension			
Male	Female	Total	474	129.3	27	9
137	1298	1435				
Total Agricultural labourers (60+) Main Workers (Total cultivators + AL 60+ Main Workers)			Pension for Agricultural Labourers			
Male	Female	Total	87 (151)	344.3	396 (228)	233 (96)
108 (298)	40 (55)	148 (353)				
Divorced/Deserted/Widowed			Pension			
Male	Female	Total	537	51.76	10	3
167	1461	1628				
Physically Disabled			Pension			
Male	Female	Total	48	8.35	17	6
NA	NA	145				

poorest and backward blocks of the country and also about involving women's and ex-servicemen's co-operatives in the management of the PDS. Special schemes to make the food grains available to the destitutes and infirm are proposed to be launched. Besides, grain banks are mooted in chronically food scarce areas. The details of what is proposed to be done are not clear.

### Special Schemes

#### (1) Antyodaya Anna Yojana Scheme (AAY)

15.30 Antyodaya Anna Yojana, launched in December 2000 in the country, aimed at providing wheat and rice at nominal prices (Rs. 2 per kg for wheat and Rs. 3 per kg for rice) to the poorest of the poor households. To begin with, this scheme was meant to cover about one crore such families, out of an estimated 6.52 crore BPL households all over the country. It was subsequently expanded in 2003 to cover an additional 50 lakh families.

15.31 This scheme which was implemented in Kerala since Feb. 2001, provides 35 kgs of foodgrains to the poorest of the poor families per month @ Rs.3 per kg. Eventhough the Central Government have fixed the target of beneficiaries in the state initially as 2,38,200, later Government of India have fixed the target as 471400 during August 2004 as part of further expansion of the scheme. The Government of India is allotting rice under the scheme @ Rs. 3000 per MT and the State Government is meeting the expenses towards transportation and handing charges due to the dealer. The expenditure on this account comes to around seven crore per year.

#### (2) Annapoorna Scheme

15.32 As per the Scheme 44980 destitutes above the age of 65 years who are not receiving National old age pension are eligible for 10 kgs of rice per month free of cost. The scheme has been implemented in the state with effect from 14.2.01. As decided by the State Government, all tribals who are unable to work have also been included under the scheme. For implementing the scheme, the amount is provided by Government of India as Additional Central Assistance.

#### Kerala State Civil Supplies Corporation

15.33 The Kerala State Civil Supplies Corporation's main objective is to engage, promote,

improve, develop, counsel and finance production, purchase, storage, processing, movement, transport, distribution and sale of food grains, foodstuffs and any other commodity which the Government may consider as essential. The mission of the Corporation is "food security for Kerala"

15.34 The Corporation has a credit facility of Rs. 15 crore from a consortium of four commercial banks and a food credit limit of Rs. 5 crore sanctioned to the State Government. The turnover of the Corporation in 1974-75 was Rs. 6 crore and it went upto Rs.630 crore during 1999-2000. The turnover for 2001-02 and 2002-03 was Rs. 409 crore and Rs. 382 crore respectively. The decline in the turn over is mainly due to the heavy drop in sales of PDS items. The turn over for 2003-04 is Rs. 450 crore.

15.35 The Corporation acts as a second line of PDS in the State by distributing essential commodities through maveli Stores/labham markets at subsidized prices. In addition to this the Corporation has established some profit making ventures like tea, super market which sell luxury items, medical stores, petrol bunks, LPG outlets etc. In maveli medical stores the selling price is less by 10% to 30% than that of market price. At present Corporation has 851 maveli stores, 138 labham markets, 20 mobile maveli stores, 10 super markets, 38 medical stores,. 10 petrol bunks, 4 LPG outlets and 1 kerosene depot. In addition to the above the Corporation is the wholesale distributor of levy sugar for the entire State and also Corporation is running 10 sub-depots for PDS items in 7 districts.

15.36 Another major activity of the Corporation is the organisation of fairs and markets in all parts of the State during the festival seasons so as to control price levels. During 2003-04 the Corporation had organised 5 onam fairs, 10 district fairs and 86 onam markets in the District and Taluk Headquarters through which a variety of provisions, consumer goods and vegetable were sold and the total turn over was Rs.4.66 crore. The Corporation is operating a hotel at Sannidhanam during sabarimala season.

15.37 The Supply of Commodities to schools for

noon – meal scheme is another important activity. During 2003-04 the Corporation supplied 595318.98 Qtls of rice and 98237.63 Qtls of pulses to 10061 schools and 21.16 lakh children got benefit of the scheme.

15.38 The Corporation has an authorised share capital of Rs. 15 crore of which Rs. 8.56 crore is paid up. Government of Kerala have advanced an amount of Rs.131.82 crore as loan and Rs. 319.77 crore as grant to Corporation upto 31<sup>st</sup> March 2004.

#### Mid – day Meal Programme

15.39 Nutrition requisites are provided through mid – day meal programme in Kerala. The Education Department has been implementing the programme in Government and private aided primary schools from 1984. While Government of India provide 100 gm of rice per pupil, State Government provide 60 gm rice and 30 gm pulse items per pupil. During the year 2003-04, about 21.67 lakh children in the primary section ( Std. I to VII) are benefited through this scheme in the state as against 23.56 Lakh children during 2002-2003.

## CHAPTER-16

# EXPORT AND IMPORT

### World Trade

The World Trade position of selected countries is shown in Table 16.1

16.2 The world export growth rate during 2002 was 4.7% which grew to 16.0% during 2003. The percentage export growth rate of the developing countries during 2002 was 7.7 which increased to 19.1 in 2003. The share in world

export of the developing countries was 37.8% in 2002 & 38.8% in 2003. China's percentage growth rate and share in world exports during 2002 and 2003 were remarkable. Its growth rate during 2002 was 22.4% and 34.5% during 2003. China's share in the world exports was 5.1% during 2002 & 5.9% during 2003. Table 16.2 shows the export growth and share in world exports of selected countries.

Table 16.1  
World Trade – Position of Selected Countries

Country	Export			Import		
	Export (\$ billion)	% Share	Rank	Import (\$ billion)	% Share	Rank
USA	730.80	11.90	1	180.20	18.30	1
Germany	570.79	9.30	2	492.80	7.70	2
Japan	403.50	6.60	3	349.10	5.40	3
France	321.84	5.20	4	331.8	5.20	4
UK	273.09	4.40	5	325.8	5.10	5
China	266.16	4.30	6	243.6	3.80	6
Canada	259.86	4.20	7	232.90	3.60	7
Italy	241.13	3.90	8	227.20	3.50	8
Netherland	229.46	3.70	9	207.30	3.20	9
Hongkong	191.07	3.10	10	202.00	3.10	10
<b>India</b>	<b>43.61</b>	<b>0.70</b>	<b>30</b>	<b>49.60</b>	<b>0.80</b>	<b>27</b>

Source:- Southern Economist

Table 16.2  
Export Growth and Share in World Exports of Selected Countries

Country	Percentage growth rate					Share in the World Exports			
	1995-99	2000	2001	2002	2003	2000	2001	2002	2003
China	10.4	27.7	6.8	22.4	34.5	3.9	4.3	5.1	5.9
Malaysia	8.1	16.3	-10.4	6.0	6.5	1.5	1.4	1.5	1.3
Indonesia	4.3	27.7	-9.1	3.0	7.8	1.0	0.9	0.9	0.8
Singapore	4.0	20.2	-11.1	2.8	16.1	2.2	2.0	2.0	2.0
Thailand	5.7	18.2	-5.7	5.6	17.1	1.1	1.1	1.1	1.1
<b>India</b>	<b>7.7</b>	<b>18.8</b>	<b>2.3</b>	<b>13.8</b>	<b>13.5</b>	<b>0.7</b>	<b>0.7</b>	<b>0.8</b>	<b>0.8</b>
Korea	8.9	19.9	-12.7	8.0	19.3	2.7	2.5	2.5	2.6
Developing Countries	7.1	24.7	-4.5	7.7	19.1	37.1	36.8	37.8	38.8
<b>World</b>	<b>5.9</b>	<b>12.9</b>	<b>-3.5</b>	<b>4.7</b>	<b>16.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Source: Economic Survey 2003-04



### India's Foreign Trade

16.3 The Government of India announced a foreign trade policy for 2004-2009 on 31<sup>st</sup> August 2004. (A detailed note on the policy and the opportunities for Kerala is given as Appendix 16.1) According to the trade policy "trade is not an end in itself but a means to economic growth and national development". The primary purpose of trade is not the mere earning of foreign exchange, but the stimulation of greater economic activity. The foreign trade policy is rooted in this belief and built in two major objectives. (1) to double our percentage share of global merchandise trade within next five years (2) to act as an effective instrument of economic growth by giving a thrust to employment generation.

16.4 Government of India has also introduced a new scheme to accelerate growth of exports called "Target Plus". Exporters who have achieved a quantum growth in exports would be entitled to duty free credit based on incremental exports substantially higher than the general annual export target fixed. Rewards would be granted based on a one tiered approach.

16.5 A new scheme to establish Free Trade and Ware Housing Zone has been introduced to create trade related infrastructure to facilitate the export & import of goods and services with freedom to carryout trade transactions in free currency. This is aimed at making India into a global trading hub.

16.6 India's share in world trade was 2.2 percent when it became independent. Its share has shown a declining trend since independence. During 1952-53 India's export constituted 1.3 percent. It was merely 0.5 percent in the decade 1973-1983. The share of Indian trade increased marginally to 0.6% in the year 1993 to 0.7% in 2002 and again grew to 0.8% in 2003.

16.7 In 2002, India emerged amongst leading exporting nations as the world's fastest growing exporter after China. Currently India is the 30<sup>th</sup> leading exporter & 27<sup>th</sup> leading importer in world

merchandise trade.

### Balance of Payment

16.8 Balance of Payment position remained healthy during 2003-04. Data released by RBI shows a higher \$ 8.7 billion surplus on current account as compared with \$ 4.1 billion surplus in the previous year. Balance of payment position is also projected to remain healthy in the fiscal year 2004-05, on top of the 20 percent increase recorded in 2003-04. Import growth is projected to slow down to 19 percent, after growing by 22 percent in the previous year.

16.9 Year by year India's Export as well as Import have shown remarkable progress. During 2002-03 India's Export was to the tune of Rs. 255137 crore and Import was Rs. 297206 crore. It grew to Rs. 291582 crore and Rs. 353996 crore respectively during 2003-04. The trade scenario of India for 1995-96 to 2003-04 is shown in Table 16.3.

Table 16.3  
India's Foreign Trade (Rs. Crore)

Year	Export	Import	Trade Balance
1995-96	106352	122678	-16326
1996-97	118817	138920	-20103
1997-98	130101	154176	-24076
1998-99	139752	178332	-38580
1999-00	159095	215529	-56433
2000-01	201356	228307	-26950
2001-02	209018	245200	-36182
2002-03	255137	297206	-42069
2003-04	291582	353976	-62394

Source: CMIE

16.10 Major items of Indian exports are manufactured goods, engineering goods, gems & jewellery, agriculture & allied products, textiles, chemicals and other related products. India's major import items are petroleum and non-petroleum products, capital goods, electronic goods, pearls (precious & semi precious), gold, silver and non electrical machinery.

16.11 The country's export in the first nine months of the financial year 2004-05 crossed \$ 53 billion, a growth of more than 23 percent over the previous year. The major sectors of export that have witnessed high export growth of 10

percent and above include gems & jewellery (45.9%), engineering goods (36.5%), ores and minerals (78.8%), petroleum products (78.8%) and plantation (22.5%). The surge in Indian exports with an over 29 percent sustained growth comes despite rupee appreciation. The Government have fixed an export target of \$ 88 billion for the next fiscal year 2005-06, \$ 104 billion for 2006-07, \$ 125 billion for 2007-08 and \$ 150 billion for 2008-09.

### Kerala

16.12 A lion's share of Kerala's trade is being conducted through the port of Cochin. It is expected that the volume of export will be strengthened on completion of Vallarpadom container terminal and Vizhinjam Port. Important export items of Kerala are pepper, cashew, coir and coir products, tea, marine products and spice oils and oleoresins. Marine products and spices are the largest export earner of Kerala. Software export is also gaining momentum now-a-days. The Cochin Special Economic Zone (CSEZ) has become the second largest export earner among the eight SEZs. CSEZ exported goods worth Rs. 1534 crore in 2003-04, next to Santa Cruz (Rs.7800 crore).

### Cargo handled by Kochi Port

16.13 Total export of cargo through Kochi Port started declining since 1999-2000. Total export (both coastal and foreign) from Kochi port was 22.05 lakh MT during 1999-2000. It came down to 20.83 lakh MT during 2000-01, 19.68 lakh MT during 2001-02, 21.25 lakh MT during 2002-03 and slightly increased to 25.56 lakh M.T during

2003-04. At the same time foreign export from Kochi port shows an increasing trend. The foreign export from Kochi port during 1999-2000 was 8.93 lakh MT. It increased to 12.17 lakh tonnes during 2001-02 and slightly decreased to 11.09 lakh tonnes in 2002-03 but increased to 16.5 lakh MT during 2003-04. On the contrary the total coastal export from Kochi port has declining since 1999-2000. The total coastal export from Kochi port was 13.12 lakh tonnes during 1999-2000. It decreased to 10.11 lakh tonnes in 2000-01 and to 7.51 lakh MT in 2001-02. But in 2002-03 it slightly increased to 10.16 lakh MT & again slowed down to 8.97 lakh tonnes.

16.14 The trend of total import (both coastal and foreign) through Kochi port is just the opposite of export. Total import during 1999-00 was 106.36 lakh tonnes. It increased to 110.17 lakh tonnes in 2003-04 while coastal import through Kochi port declined from 71.46 lakh tonnes during 1999-2000 to 42.79 lakh Metric tonnes during 2001-02 and to 36.70 lakh tonnes in 2002-03 and 28.44 lakh MT during 2003-04. Foreign import through Kochi port during 1999-2000 was 34.9 lakh tonnes. It increased to 62.78 lakh tonnes during 2000-01 but decreased to 58.12 lakh tonnes in 2001-02 and increased to 72.29 lakh MT during 2002-03 & again grew to 81.73 lakh MT during 2003-04. (see Table 16.4)

### Commodity Composition of Kerala's Exports.

16.15 Commodity Composition of exports from Kerala is presented in Appendix.16.1. Out of the total exports, miscellaneous items represent the

**Table 16.4**  
Cargo handled at Kochi Port during 1998-99 to 2003-04 in Lakh MT

Traffic	Export						Import					
	1998-99	1999-2000	2000-01	2001-02	2002-03	2003-04	1998-99	1999-2000	2000-01	2001-02	2002-03	2003-04
Coastal	14.78	13.12	10.11	7.51	10.16	8.97	40.82	71.46	47.83	42.79	36.70	28.44
Foreign	9.52	8.93	10.72	12.17	11.09	16.59	61.69	34.9	62.78	58.12	72.29	81.73
Total	24.3	22.05	20.83	19.68	21.25	25.56	102.51	106.36	110.61	100.91	108.99	110.17

Source: Kochi Port Trust

major portion of export through Kochi port. The percentage of miscellaneous items to total export shows declining trend. It was 83.4 % during 1997-98. It decreased to 74.9 % during 2002-03. But 4.1 percent increase was recorded in 2003-04 against 2002-03. Export of cashew kernels, sea foods, coffee and coir products through Kochi port witnessed a steady growth in 2003-04 compared to 2002-03. Export of Tea steeply declined from 103544 tonnes in 2002-03 to 86794 tonnes in 2003-04 representing a decrease of 16.2 percent. So also the export of spices declined from 46284 tonnes in 2002-03 to 25419 tonnes in 2003-04 representing a decline of 45.1 percent.

16.16 Out of the total export through Kochi port miscellaneous commodity accounted for 26.9% followed by sea foods (20.5%), coir products (14.4%), cashew kernels (5%) and coffee (3.7%).

16.17 Total value of foreign export through Kochi port declined from Rs. 6532.76 crore in 2002-03 to Rs.5980.45 crore in 2003-04. Out of the total value of export in 2003-04 cashew kernels accounted for Rs. 1147.24 crore followed by seafoods (Rs.986.93 crore), coffee (Rs.443.42 crore), tea (Rs.269.93 crore), coir products (Rs.259.27 crore), pepper (Rs.118.38 crore), ginger (Rs.14.44 crore), and cardamom (Rs.9.00 crore).

#### **Commodity composition of Kerala's Imports.**

16.18 Commodity wise imports through Kochi port are given in Appendix 16.2. The category "miscellaneous" mostly consisting of petroleum products accounted for 91.45% of the total imports through Kochi port during 2003-04. Growth rate of import of news print grew by 65.46% in 2003-04 compared to the previous year. But during the previous year the increase was 11.55%. Import of cashew nuts through Kochi port was 259736 tonnes in 2002-03, but rose to 309095 tonnes during 2003-04. Import of Iron, steel and machinery was 231033 tonnes in 2002-03 and 61427 tonnes during 2003-04 showing a decline of 73.41% in 2003-04. The import of fertilizers and raw materials recorded a negative growth rate of 20.06% compared to the growth rate of 2.28% during 2002-03.

#### **Marine Products -National Scenario**

16.19 The performance of Indian seafood exports in 2003-04 was not on expected lines. There was an unsteady trend in the market. The decline in export during 2003-04 was 11.83% in quantity and 11.47% in rupee earnings and 6.61% in US \$ realisation when compared to 2002-03. The details of exports during the last three years are shown in Appendix 16.5.

16.20 The export of marine products has been increasing since 1998-99 to 2002-03 except in 2001-02. The percentage of export in 2000-01 was 28.41% in quantity and 25.24% in value (19.11% in Dollar terms). It again slowed down during 2001-02 and grew to 10.09% in terms of quantity and 15.52% in terms of value. It again decreased to 11.83% in terms of quantity & 11.47% in terms of value during 2003-04.

16.21 Frozen shrimp continued to be the largest item in terms of value. It contributed 31.50% in volume and 65.88% in value of the total export of Marine Products from India during 2003-04. The share of shrimp increased from 28.85% of the previous year to 31.50% (in terms of quantity); it declined from 66.97% of the previous year to 65.88% (in terms of value). Export of Frozen shrimp has shown a decline both in terms of quantity and value.

16.22 The share of frozen fish during 2003-04 was 33.50% in volume against 42.01% in 2002-03 and 10.10% in value against 12.23% in 2002-03. The export of frozen fish also showed a considerable decrease of 29.70% in quantity and 26.25% in rupee value compared to the previous year. All the frozen fish except frozen tuna, sea bean, frozen baracuda and fresh water fish contributed considerably to the decrease in the export of frozen fish.

16.23 The market-wise export of marine products shows that China's share in value was only 11.10% in rupee value terms and 11.39% in US \$ terms. There was also a significant decrease in export to China in terms of quantity by 27.56% and value by 11.28% in rupee value terms & 4.19% in US \$ terms while the export to South East Asia increased by 14.91% in quantity and there was a decline of 15.04% in rupee value and 10.55% in US \$ terms compared to the last year in rupee earnings.

16.24 USA continued to be the single largest market for Indian marine products in value terms during 2002-03 relegating Japan to the 2<sup>nd</sup> position. The share of USA has declined to 12.90% in volume 27.61% in rupee value and 27.49% in US \$ terms. There was a shortfall in the export to Japan to the tune of 8.92%, 24.18% and 19.96% in quantity, in rupee value and in US \$ terms respectively. Export to EU has registered a positive growth in export compared to the previous year. It showed a marginal increase of 1.84%, 5.94% & 11.16% in quantity, in rupee value & in US \$ terms respectively. In terms of quantity, however China occupied the first position contributing 30.03% of the total exports from India.

16.25 The export of cephalopods especially squid showed a negative growth rate during 2003-04. The decline of frozen squid was to the tune of 0.02% in terms of quantity and 2.98% in value terms but showed a positive growth of 1.47% in US \$ terms. The export of frozen cuttlefish showed an increase of 4.34% in terms of value but showed a negative growth of 4.28% in terms of quantity. There has been a considerable increase in the export of dried items with 93.75% in volume, 72.96% in rupee earning. The export of chilled items showed an increase to the tune of 12.81% in volume 8.29% in rupee earnings and 14.10% in US \$ realisation in 2003-04.

#### Kerala Scenario

16.26 Kerala is the second largest foreign exchange earner of the country from export of marine products during 2003-04. Exports through ports in Kerala showed a positive growth in terms of value by 5.10% in 2003-04 compared to 2002-03 but there was a shortfall of 5.86% in terms of volume.

16.27 Exports from ports in Kerala were to the tune of 76627 MT valued at Rs. 1099.13 crore. The share of Kerala increased from 17.42% to 18.60% in quantity and from 15.20% to 18.04% in value during 2003-04. The export details can be seen in Appendix. 16.4.

16.28 Frozen shrimp is the major item exported from Kerala and it accounts for 38.10% & 54.35% in quantity and value respectively during 2003-04. Frozen cuttlefish contributes 23.04% in quantity and 21.89% in value followed by frozen

squid 14.19% in quantity and 11.76% in value and frozen fish 13.76% in quantity and 4.51% in value.

16.29 During 2003-04 the export of frozen shrimp was 29198 MT registered a growth of 6.19% in quantity and value of which was Rs. 597.43 crore registering 9.99% in value. Frozen cuttlefish registered a growth of 4.70% in volume and 10.26% in value. Export of frozen fish & frozen squid declined drastically. Frozen fish registered a decline of 42.66% in volume and 35.91% in value. Frozen squid declined by 8.64% in volume and 6.38% in value. Frozen cuttlefish export from Kerala contributes about 44.58% in volume and 55.30% in value of the total export of cuttlefish from India. Frozen shrimp contributes 22.57% in volume and 14.89% in value of the total shrimp exported from India.

#### Spices

##### Export performance of Indian spice industry

16.30 The export scenario of Indian Spices Industry has been showing a fluctuating trend since 1990-00 especially a downward trend. During 2004, a total quantity of 36134 tonnes of spices valued Rs. 217.86 crore has been exported against 21653 tonnes valued at Rs. 177.82 crore in 2003. The export of chilli, turmeric, coriandar, celery, fennel, fenugreek and spice oils and oleoresins have shown substantial increase both in terms of quantity and value as compared to 2003. The export of cardamom (small), nutmeg and mace have increased in quantity only. The cumulative spices export for the financial year 2003-04 is estimated as 246566 tonnes, valued at Rs. 1905.08 crore as against 264107 tonnes valued at Rs. 2086.71 crore in the year 2002-03. Compared to the last year, the export has shown a decrease of 7% in terms of quantity and 9% in rupee value. Spice oils and oleoresins including mint products contributed 42% of the total export earnings. Chilli contributed 19% followed by pepper (8%).

16.31 The export earnings from coriander has also registered an alltime record by exporting coriander and its product worth Rs. 71.04 crore. During 2003-04, 34500 tonnes of turmeric valued Rs. 127.52 crore as against 32402 tonnes valued Rs. 103.38 crore exported compared to the last year. Export of coriander was 2100 tonnes valued at Rs. 71.04 crore in 2003-04 against 18065

tonnes valued at Rs.55.65 crore in 2002-03. As regards vanilla, India exported 26 tonnes of vanilla valued at Rs.36.06 crore in 2003-04 as against 25 tonnes valued at Rs. 22.26 crore last year. Export of fennel seed was 5200 tonnes valued at Rs. 21.43 crore against 4160 tonnes valued at Rs. 17.84 crore of last year. The export of celery during 2003-04 was 4400 tonnes valued Rs. 13.89 crore against 3960 tonnes valued at Rs. 12.25 crore of last year. Garlic export was 3500 tonnes valued at Rs. 13.21 crore as against 1539 tonnes valued at Rs. 6.99 crore of last years.

### Pepper

16.32 Indian pepper is likely to lose its place to Vietnam whose export will match its production of 85000 tonnes. Indian pepper production is expected to fall to 62000 tonnes from 65000 tonnes. India was able to export only less than half of Vietnam's at 20000 tonnes. Even Indonesia with a production of 56000 tonnes may outstrip India exporting 42000 tonnes.

16.33 Total export of pepper and pepper products from 1989-90 to 1998-99 increased annually by 14.07 per cent in terms of quantity and 19.44 per cent in terms of value. There is also a marked change in share of value added products especially pepper oil and oleoresins (9.25% and 9.24% respectively) leading to the conclusion, that the composition of export basket is changing rapidly.

16.34 The export of pepper came down in terms of volume, from 21609 tonnes in 2002-03 to 16700 tonnes in 2003-04. In value terms, it declined from Rs.17887.98 crore to Rs.14350.50 crore which is attributed to a slight higher unit value realization of Rs.85.93 per kg. as against Rs.82.78 per kg of the previous year 2002-03.

16.35 Export of pepper from Kerala shows progress from 15094 M.T during 2002-03 to 15755 M.T in 2003-04. But its value decreased from Rs.139.87 crore in 2002-03 to Rs 135.00 crore during 2003-04. However the export of pepper from Kerala had been 41332 M.T valued at Rs.856.99 crore during 1999-2000.

### Cardamom (small)

16.36 Export of cardamom (small) from India increased during 2003-04 in terms of quantity but decreased in terms of value. The export

during 2003-04 was 690 M.T valued at Rs.33.67 crore compared to 682 M.T valued at Rs.47.07 crore during the previous year. Export from Kerala during 2002-03 had been 475. M.T valued at Rs.32.78 crore as against 500 M.T valued at Rs.25.00 crore during 2003-04.

### Cardamom (large)

16.37 During 2003-04 India exported 800 M.T cardamom (large) valued at Rs.11.07 crore against 1450 M.T valued at Rs.20.57 crore during 2002-03.

### Chilli

16.38 Export of Chilli during 2003-04 was 81500 tonnes valued at Rs.355.11 crore against 81022 tonnes valued at Rs.315.15 crore in 2002-03. Export of chilli increased by 1% in quantity and 13% in value during 2003-04.

### Ginger

16.39 The export of ginger from India decreased from 8641 M.T.in 2002-03 to 5000 MT in 2003-04 in quantity and the value was also decreased from Rs.23.96 crore to Rs.23.41 crore. However the export of ginger from Kerala declined from 2415 M.T valued at Rs.13.71 crore in 2002-03 to 2110 M.T in terms of quantity during 2003-04. But the value increased slightly to Rs..14.83 crore during 2003-04.

### Turmeric

16.40 Export of turmeric from India during 2003-04 was 34500 M.T and the value realized was Rs.127.52 crore, whereas it was 32402 M.T and the value realized was Rs.103.38 crore during the previous year. Export of turmeric showed 6% increase in terms of quantity and 23% increase in terms of value. During 2001-02 Kerala's export was 4800 tonnes valued at Rs.17.87 crore. It decreased to 4770 M.T during 2002-03 but the value of export increased to Rs.24.09 crore during 2002-03. But during 2003-04 export of turmeric recorded an increase in quantity. The quantity exported was 5010 M.T and value realised was Rs.27.74 crore.

### Coriander

16.41 The export of coriander showed a remarkable progress during 2003-04. During 2003-04 India exported 21000 MT of coriander valued at Rs.71.04 crore against 18065MT valued

at Rs. 55.65 crore of the previous year.

#### Curry Powder

16.42 Export of curry powder from India during 2002-03 was 8492 tonnes valued at Rs.68.94 crore which declined to 7600 tonnes valued at Rs.65.08 crore during 2003-04. Export of curry powder from Kerala also declined. During 2002-03 Kerala's export was 1695 tonnes and the export value realised was Rs.16.99 crore. It became 1640 tonnes and Rs.17.35 crore respectively during 2003-04.

#### Spice oils and oleoresins

16.43 The export of spice oils and oleoresins from India during 2003-04 was 4750 tonnes valued at Rs. 372.06 crore as against 4839 tonnes valued at Rs.350.94 crore of the previous year. Export of spice oils and oleoresins as value added products has been steadily growing over the past years. but has slightly declined during 2003-04.

16.44 Export of spice oils and oleoresins from Kerala also has increased in quantity and value. The export during 2003-04 was 3830 tonnes valued at Rs.309.14 crore as against 3496 tonnes valued at Rs.309.06 crore during 2002-03. But the unit value realised during 2002-03 was Rs.883.92 per kg, which came down to Rs.807.14 per kg during 2003-04. For details of spices see the Appendix 16.9.

#### Vanilla

16.45 During the year 2003-04, India exported 26 tonnes of vanilla valued at Rs. 36.06 crores as against 25 tonnes valued at Rs. 22.26 crore in the previous year.

16.46 Total export of vanilla from Kerala during 2002-03 was 6 M.T in quantity valued at Rs. 584.09 lakhs. During 2003-04, Kerala exported 5 MT vanilla and earned Rs. 585 Lakh.

#### Production of Raw Cashewnuts.

16.47 India is the largest producer of raw cashewnuts in the world followed by Brazil and Vietnam. Among Indian states Maharashtra comes first in production followed by Kerala and Andhra Pradesh. The record production of raw cashewnuts in India during 1999-2000 was 520000 M.T. It decreased to 470000 M.T in 2001-02 and increased to 506000 M.T during 2002-03. and again increased to 535000 MT during 2003-

04. Kerala's highest production of raw cashewnut was in 1998-99 which was 1,30000 M.T. It came down to 76000 M.T during 2000-01. But the production of raw cashewnut slowly picked up to 94000 M.T in 2002-03 and again to 95000 MT during 2003-04.

#### Export of Cashew Kernels

16.48 The export of cashew kernels from India shows in an increasing trend since 1996-97. The value realised through the export increased up to 1999-00. Afterwards it started decreasing. Total export of cashew kernels from India during 1996-97 was 68663. M.,T valued at Rs.1285.50 crore. It increased to 96805 MT and valued at Rs.2569.50 crore during 1999-00. During 2003-04 the total quantity of cashew kernels exported was 100828 M.T. valued at Rs.1804.45 crore. During 2002-03 the exported quantity was 104137 M.T valued at Rs.1933.02 crore. Eventhough the quantity of export increased the value realised came down. On an average out of the total export of cashew kernels from India about 56% in quantity and 55% in value was from Kerala during the last five years.

16.49 The export of cashew Kernels from Kerala during 2002-03 was 66859 M.T valued at Rs.1216.11 crore which went up to 68119. M.T in quantity and the value realised was Rs.1204.56 crore during 2003-04. The average unit export price of cashew kernels came down from Rs.185.62 per kg during 2002-03 to Rs.178.96 per kg in 2003-04. Major markets of India's cashew kernels are USA, Netherlands, UK, Japan, UAE, France, Canada, Saudi Arabia, Spain, Israel, Singapore, Italy and Germany.

16.50 The export of cashew nut shell liquid from India during 2003-04 was 7215 M.T valued at Rs.9.26 crore which is an all time record but the export came down to 6926 MT valued at Rs.7.03 crore during 2003-04. During 2001-02 it was 4178 M.T valued at Rs.5.93 crore. Kerala's share was 6424 M.T valued at Rs.7.55 crore during 2002-03 and to 6784 M.T during 2003-04 valued at Rs.6.68 crore. The major markets are USA, Korea, Japan etc.

16.51 The total raw cashew nuts imported into India during the period 2002-03 was 4,00,659 M.T valued at Rs.1236.60 crore.. During 2003-04 the

**Table-16.5**  
**Export of Cashew Kernels: Kerala and India (1996-97 to 2003-04)**  
**(Quantity in MT and Value in Rs. Crore)**

Year	Kerala*		India		Share of Kerala (%)	
	Quantity	Value	Quantity	Value	Quantity	Value
1	2	3	4	5	6	7
1996-97	38546	731.79	68663	1285.50	56	57
1997-98	39441	746.88	76593	1396.10	52	53.90
1998-99	43665	940.47	77076	1630.10	57	57.69
1999-2000	50022	1342.1	96805	2569.50	51.67	52.23
2000-01	49874	1152.36	89155	2049.60	55.04	56.22
2001-02	54717	971.11	98203	1788.70	55.72	62.96
2002-03	66859	1216.96	104137	1933.02	64.20	62.96
2003-04 (P)	68119	1204.56	100828	1804.43	67.56	66.76

\*Export through Cochin Port,

Source: The Cashew Export Promotion Council of India

**Table -16.6**  
**Export of Cashew nut Shell Liquid - Kerala & India (1996-97 to 2003-04)**  
**(Quantity in MT and Value in Rs. Crores)**

Year	Kerala*		India	
	Quantity	Value	Quantity	Value
1	2	3	4	5
1996-97	814	0.78	1735	2.77
1997-98	2932	3.59	4181	6.74
1998-99	1185	1.81	1912	4.21
1999-2000	1040	1.54	1930	3.74
2000-01	907	1.31	2246	3.89
2001-02	3365	4.56	4178	5.93
2002-03	6424	7.55	7215	9.26
2003-04** (P)	6784	6.68	6926	7.03

\*Export through Cochin Port

\*\* Various Custom Houses

Source: The Cashew Export Promotion Council of India

total import of raw cashew nut increased to 452398 MT in quantity valued at Rs.1400.90 crore which is an all time record. Apart from African countries Indonesia was the major supplier of raw cashew nuts to India.

#### Coffee

16.52 Total coffee production in India shows a fluctuating trend since 1950-51. The peak coffee production was 301200 M.T during 2000-01. It fell down to 275275 M.T during 2002-03 and further to 270500 MT in 2003-04 and post blossom forecast predict increase in production of 292400 MT during the current year. Total production of coffee in Kerala was 64425 tonnes in 2002-03 which came down to 63850 tonnes in 2003-04 which is 23.6% of the total production in India.

16.53 Export of Coffee from India in term of quantity and value showed an increasing trend since 1997-98 to 1999-00. After 2000-01 the all India export of coffee has been decreasing in quantity and value. During 1997-98 India exported 179055 M.T coffee valued at Rs.1707.59 crore. It went up to 246908 M.T in 2000-01 in quantity and value realized was Rs.1374.25 crore. During 2002-03 India exported 207333 tonnes of coffee and realised an amount of Rs.1051.44 crore. It grew to 232684 tonnes and value realised was increased to Rs.1158.44 crore.

16.54 Export of coffee from Kerala has been showing a decreasing trend both in quantity and value since 1999-00. Total coffee export from Kerala was 10010 tonnes valued at Rs.55.51

**Table- 16.7**  
**Import of Raw Cashewnuts: Kerala and India (1996-97 to 2003-04)**  
**(Quantity in M.T. value in Rs. Crores)**

Year	*Kerala		India	
	Quantity	Value	Quantity	Value
1	2	3	4	5
1996-97	49169	159.76	212866	687.60
1997-98	70527	237.46	247181	769.60
1998-99	109660	448.82	241161	958.00
1999-00	156488	736.63	255227	1198.26
2000-01	152516	552.74	249318	960.85
2001-02	191579	502.46	355556	950.01
2002-03	249970	772.47	400659	1236.60
2003-04 ** (P)	294552	909.45	452398	1400.90

\*Import through Cochin Port, \*\* Various Custom Houses, P-Provisional

Source: The Cashew Export Promotion Council of India

**Table-16.8**  
**Export of Coffee from India & Kerala (1997-98 to 2003-04)**

Year	Kerala		India	
	Quantity in MT.	Value (Rs. Lakhs)	Quantity in MT.	Value (Rs. Lakhs)
1997-98	2,163	1,755.0	1,79,055	1,70,759.2
1998-99	10,087	7,059.2	2,11,731	1,75,158.9
1999-00	10,010	5,551.8	2,44,941	1,90,120.9
2000-01	5,374	2,431.5	2,46,908	1,37,425.1
2001-02	3,685	1,623.2	2,13,586	1,05,036.1
2002-03	3,103	1,162.8	2,07,333	1,05,144.6
2003-04	3,195	1,449.7	2,32,684	115844.7

Source: Coffee Board

crore in 1990-00. It decreased to 3685 tonnes valued Rs.16.23 crore in 2001-02. The export again declined to 3195 tonnes and export value realised was only Rs.14.49 crore in 2003-04.

### Tea

16.55 World tea production improved marginally from 3056 Million Kgs in 2002 to 3097 Million Kgs in 2003. India maintained its leading producer status in tea with its share of 27.7% followed by China (24.9%), Sri. Lanka (9.8%) and Kenya (9.5%). India's total tea production was 857.1 Million Kgs in 2003 compared to 826.2 Million Kgs in 2002 registering an increase of 3.7% in production.

16.56 World Export of Tea declined to 1378.7 Million Kgs in 2003 from 1422.9 Million Kgs in 2002. Tea Export from India declined drastically to 173.1 Million Kgs in 2003 from

201 Million Kgs in 2002 registering a decline of nearly 13.9 percent. Among major exporting countries, except China (3.1%) and Sri. Lanka (2.1%), other countries reported decline. India occupies 4<sup>th</sup> position in world export of Tea.

16.57 World import of Tea was 1359 Million Kgs in 2002 which came down to 1281.6 Million Kgs in 2003. All major importing countries reported decline in the quantum of import for consumption. A few countries reported increase include Afghanistan (30.7%) and Pakistan (21%). One interesting fact is that traditional markets as a whole recorded a decline while non-traditional markets recorded increase.

16.58 Tea was cultivated in an area of 36800 ha in Kerala during 1999-2000. The production of tea in Kerala decreased from 59.7 M. Kgs in



**Table 16.9**  
**Major Tea Exporting Countries**

(In M Kgs)

Country	1996	1997	1998	1999	2000	2001	2002	2003	% Change	Share
Sri. Lanka	233.6	257.3	265.3	263.0	280.1	287.5	286.0	291.9	2.1	21.2
Kenya	244.2	198.6	263.4	241.7	217.0	258.1	286.3	268.8	6.1	19.5
China	169.7	202.5	217.4	199.6	227.7	249.7	252.3	260.0	3.1	18.9
<b>India</b>	<b>160.0</b>	<b>200.7</b>	<b>210.4</b>	<b>191.7</b>	<b>206.8</b>	<b>182.6</b>	<b>201.0</b>	<b>173.1</b>	<b>13.9</b>	<b>12.6</b>
Indonesia	101.5	66.8	67.2	97.8	105.6	99.7	100.2	90.0	10.2	6.5
Argentina	41.3	56.4	59.0	52.0	49.8	56.6	57.1	58.2	1.9	4.2
Vietnam	20.8	27.0	33.2	36.4	55.7	68.2	74.8	51.8	30.7	3.8
Malawi	36.7	49.2	41.0	42.7	38.4	38.3	39.4	40.0	1.5	2.9
Uganda	15.0	18.3	23.4	22.1	26.4	30.4	31.1	34.1	9.6	2.5
Tanzania	18.4	19.0	22.2	21.4	22.5	22.1	22.6	20.4	9.7	1.5
Others	86.0	108.0	102.4	91.8	98.4	95.4	721	90.4	25.4	6.6
<b>World</b>	<b>1127.2</b>	<b>1203.8</b>	<b>1304.9</b>	<b>1260.2</b>	<b>1328.4</b>	<b>1388.6</b>	<b>1422.9</b>	<b>1378.7</b>	<b>3.1</b>	<b>100.0</b>

Source: International Tea Committee

**Table 16.10**  
**Major Tea Importing Countries.**

(in M.Kgs)

Country	1996	1997	1998	1999	2000	2001	2002	2003	% Change	Share
Russia/CIS	160.1	200.3	181.5	200.7	203.2	220.7	217.6	204.0	-6.3	15.9
U.K	148.5	150.5	146.3	137.3	133.5	136.6	136.6	125.3	-8.3	9.8
Pakistan	110.7	86.9	111.6	107.7	111.4	106.8	97.8	118.3	21.0	9.2
USA	89.2	81.2	96.6	92.9	88.3	96.7	93.5	94.1	0.6	7.3
Egypt	65.0	77.9	65.5	73.2	63.4	56.4	78.9	53.0	32.8	4.1
Iraq	4.9	23.5	49.7	44.9	52.8	62.0	81.0	19.0	-76.5	1.5
Japan	48.4	52.1	45.3	49.3	57.8	60.1	51.5	47.1	-8.5	3.7
Morocco	28.4	35	40.6	35.4	42.3	37.7	42.0	47.0	11.9	3.7
Iran	30.6	36.3	33.4	39.8	47.2	42.2	38.1	32.5	-14.7	2.5
Afghanistan	48.1	34.8	25.9	17.3	25.5	31.1	34.8	45.5	30.7	3.6
Poland	30.2	30.3	29.7	32	30.5	33.1	31.0	28.5	-8.1	2.2
Others	383.1	389.5	410.4	401.9	409.6	439.2	456.2	467.3	2.4	36.5
<b>World</b>	<b>1147.2</b>	<b>1198.3</b>	<b>1236.5</b>	<b>1232.4</b>	<b>1265.5</b>	<b>1322.6</b>	<b>1359.0</b>	<b>1281.6</b>	<b>-5.7</b>	<b>100.00</b>

Source: International Tea Committee

2002 to 56.6 M. Kgs in 2003. Tea exported from south India was 106.6M. Kgs in 2002 & the value realised was Rs. 697.6 crore. It decreased to 80.6 M.Kgs in value term Rs. 515.5 crore in 2003. The quantity of export as well as value has remarkably decreased in South India during 2003.

16.59 Tea export through Kochi port during 2002-03 was 103544 MT which declined to 86794 MT in 2003-04. The value gained by export of tea through Kochi Port during 2002-03 was Rs. 325.23 crore. which declined to Rs. 269.93 crore in 2003-04.

#### Coir & Coir Products

16.60 Export of Coir and Coir products from India during 2003-04 was 102253.41 MT valued at Rs. 407.50 crore as against export of 84182.59 M.T valued at Rs.352.71 crore achieved during 2002-03. The increase in quantity is 18070.82 M.T (21.47%) and the value increase is Rs. 54.79 crore (15.33%). The export recorded an all time high over the last five years.

16.61 During 2003-04 export of coir fibre, coir pith, coir rugs, coir yarn, handloom mattings, coir geo textiles, powerloom mats tufted mats and coir

**Table-16.11**  
**Export of Coir & Coir Products from India**  
**(1995-96 to 2003-04)**

Year	Quantity in MT	Value (Rs. Crores)
1995-96	48277	206.84
1996-97	46369	212.58
1997-98	49850	238.93
1998-99	55490	292.19
1999-00	61031	303.05
2000-01	67493	313.66
2001-02	71335	320.58
2002-03	84183	352.71
2003-04	102253	407.50

Source: Coir Board

other sorts have shown an increase compared to those of the previous year. A decline in export was recorded in curled coir, handloom mattings and rubberized coir both in quantity and value. Eventhough there was a decrease in the export of coir rope in quantity, an increase in value was recorded.

16.62 Out of the total export of coir products from India during 2003-04, handloom mats constitute 35.50% in terms of quantity and 54.32% in terms of value followed by coir pith (28.54% and 4.85%), coir yarn (12.10% and 8.59%) in terms of quantity and value respectively.

16.63 Major markets of coir products are USA, Netherland, UK, Italy, Germany and Spain. About eighty countries import coir products from India and the major countries are USA, Germany, U.K, France, Netherlands. Italy, Belgium, Denmark, Spain, Ireland, Finland, Portugal, Sweeden and Greece.

16.64 Export of coir products from Kochi Port during 2002-03 was 99319. M.T valued at Rs.428.92 crore, which increased to 113638 tonnes in quantity valued at Rs. 259.27 crore in 2003-04.

#### BOX-16.1

#### Foreign Trade Policy (2004-2009) of India

##### Objectives

- (i) To double our percentage share of global merchandise trade within the next five years.
- (ii) To act as an effective instrument of economic growth by giving a thrust to employment generation.

##### Strategy

- (i) Unshackling of controls and creating an atmosphere of trust and transparency to unleash the innate entrepreneurship of our businessmen, industrialists and traders.
- (ii) Simplifying procedures and bringing down transaction costs.
- (iii) Neutralizing incidence of all levies and duties on inputs used in export products, based on the fundamental principle that duties and levies should not be exported.
- (iv) Facilitating development of India as a global hub for manufacturing, trading and services.
- (v) Identifying and nurturing special focus areas which would generate additional employment opportunities, particularly in semi-urban and rural areas, and developing a series of 'Initiatives' for each of these.
- (vi) Facilitating technological and infrastructural upgradation of all the sectors of the Indian economy, especially through import of capital goods and equipment, thereby increasing value addition and productivity, while attaining internationally accepted standards of quality.
- (vii) Avoiding inverted duty structures and ensuring that our domestic sectors are not disadvantaged in the Free Trade Agreements/Regional Trade Agreements/Preferential Trade Agreements that we enter into in order to enhance our exports.
- (viii) Upgrading our infrastructural network, both physical and virtual, related to the entire Foreign Trade chain, to international standards.
- (ix) Revitalizing the Board of Trade by redefining its role, giving it due recognition and inducting experts on Trade Policy.
- (x) Activating our Embassies as key players in our export strategy and linking our Commercial Wings abroad through an electronic platform for real time trade intelligence and inquiry dissemination.

## CHAPTER - 17

# INSTITUTIONAL AND BANK FINANCE

The economic reforms initiated by the government and the concerted efforts made to increase investment in the state started yielding results despite setbacks. In Kerala the role of financial institutions is also improving, albeit at a slower pace than desired.

### Institutional Finance

17.2 The total disbursement by all India Financial Institutions in Kerala during 2003-04 was Rs.682.63 crore as against Rs. 648.6 crore in 2001-02 and Rs. 817.2 crore in 2000-01. The

disbursement of credit by NABARD in Kerala during 2003-04 was Rs. 342.05 crore and that of NCDC was Rs. 96.58 crore against Rs. 307.70 crore and Rs. 50.18 crore during 2002-03 respectively. The cumulative disbursement by NABARD in Kerala as on March 2004 increased to Rs. 3,127.59 crore from Rs.2, 785.5 crore as on March 2003. The cumulative disbursement of NCDC as on March 2004 reached to Rs. 641.06 crore from Rs.544.48 crore of March 2003. Disbursement by other financial institutions to Kerala during 2003-04 were Rs.25.2 crore by

#### BOX-17.1

### NABARD to launch Kerala – Specific farm credit plans

The National Bank for Agriculture and Rural Development (NABARD) will shortly introduce a series of Kerala specific projects as part of its 'model bankable agricultural projects' initiative. These will be in addition to the project proposals the bank has already introduced under the scheme.

These model schemes are part of the bank's efforts to increase the flow of credit to the agricultural sector, he pointed out. The idea is to provide farmers and agricultural entrepreneurs with information on viable investment options in agriculture and allied sectors, encourage them to invest in setting up such projects and thereby improve the flow of credit to the sector.

Details of all the model agricultural projects, including the Kerala-specific ones, will be made available to farmers and entrepreneurs through multiple channels including bank branches, offices of the State agriculture department and the 300 farmers clubs across the State.

Nabard is also organising a series of agri-business workshops as part of the effort to create greater awareness about the model agriculture projects. While the first such event was held in Thrissur, similar events will be organised in other locations across Kerala.

Meanwhile, the bank's technical services department has already prepared nine model bankable agricultural projects from seven areas including minor irrigation, land development, plantation and horticulture, agricultural engineering, forestry and wasteland development, fisheries and animal husbandry.

Examples of specific projects include establishment of bio-pesticide units, mango cultivation, jasmine cultivation, guava cultivation, establishment of cold storage facilities for plantation and horticultural produce, construction of grain godowns, bamboo cultivation, shrimp farming, fresh water prawn culture, dairy farming and milk processing.

Each project proposal has information on the technical aspects of the project, scope of the venture, rationale for the project, indicative economic and financial details and so on.

IDBI, Rs. 118.8 crore by ICICI, Rs.20.0 crore by GIC and Rs. 80.0 crore by LIC.

17.3 NABARD disbursed Rs. 7,605.3 crore during 2003-04 at the national level as against Rs. 7,418.77 crore in 2002-03 with an increase of Rs. 186.53 crore. During 2003-04, UttarPradesh received the highest disbursement from NABARD of Rs. 1,221.8 crore (16.1%) followed by Tamil Nadu Rs. 733.1 crore (9.6%) and West Bengal Rs.613.2 crore (8.1%). The percentage disbursement share by NABARD to Kerala during 2003-04 was only 4.5.

17.4 During 2003-04, NCDC disbursed Rs. 626.62 crore at the national level as against Rs.514.46 crore in 2002-03 with an increase of Rs.112.16 crore. Maharashtra received the major share of Rs.136.42 crore (21.8%) followed by Kerala Rs.96.58 crore (15.4%) and TamilNadu Rs.92.15 crore (14.7%).

17.5 NABARD and NCDC together disbursed Rs.438.63 crore (6.69%) in 2003-04 against Rs. 357.88 crore (4.51%) in 2002-03 in Kerala with an increase of Rs.80.77 crore. Uttar Pradesh had the highest combined disbursement of Rs.1, 225.94 crore (14.89%) followed by TamilNadu Rs.825.25 crore (10.02%) and West Bengal Rs.635.67 crore (7.73%).

17.6 State wise disbursement by NABARD and NCDC during 2003-04 and their cumulative disbursement as on March 2004 are furnished in Appendix 17.1 & 17.2 respectively.

17.7 Regarding the disbursement made by All India Financial Institutions like IDBI, IFCI, ICICI, UTI, GIC, LIC, NABARD and NCDC during 2003-04, all India total disbursement was Rs.55, 854.11 crore of which Rs.35, 585.40 crore (63.7%) was to 15 major states. Maharashtra received the major chunk of Rs.14, 975.51 crore (26.8%) and all other states received comparatively nominal shares. AndhraPradesh received Rs.3, 198.10 crore (5.70%), Karnataka Rs. 2,940.62 crore (5.3%), Tamil Nadu Rs. 2,633.25 crore (4.7%), Gujarat Rs. 2,425.39 crore (4.3%) and so on. Kerala received only Rs. 682.63 crore (1.2%) in which half the portion was from NABARD. State and Institution wise disbursements during 2003-04 are furnished in Appendix 17.3.

17.8 Again coming into the cumulative disbursement by these Financial institutions as on March 31,2004, all India total reached to Rs.5, 75,973.47 crore in which Rs.4,64,081.62 crore (80.6%) was to 15 major states. In cumulative disbursement also Maharashtra ranks first with a cumulative disbursement of Rs.1, 34,769.65 crore (23.4%) followed by Gujarat Rs.63, 351.10 crore (11.0%), Tamil Nadu Rs.39, 785.06 crore (6.9%), AndhraPradesh Rs.37, 810.68 crore (6.6%), Uttar Pradesh Rs. 36,424.84 crore (6.3%) etc. Cumulative disbursement by these Institutions in Kerala as on March 2004 is only Rs. 8,363.25 crore (1.5%) State and Institution wise cumulative disbursements are given in Appendix 17.4. It can be observed that the disbursement by these Financial Institutions keeps no proportion with the state population.

#### Per capita Assistance by AIFIs

17.9 Regarding the per capita assistance disbursed by the all India financial institutions excluding NABARD and NCDC, Maharashtra stands far ahead of other states. In Maharashtra the per capita assistances disbursed during the last three years were Rs. 3,386.4 (2001-02), Rs. 462.9 (2002-03), Rs. 882.1 (2003-04). The per capita assistances at national level were Rs.471.7, Rs.121.6 and Rs.208.1 and in Kerala the figures were Rs.80.7, Rs.16.4, Rs.39.4 for 2001-02, 2002-03 and 2003-04 respectively. Per capita assistance to other south Indian states for 2003-04 were Rs.112.7 (AndhraPradesh), Rs.177.2 (Karnataka) and Rs. 125.9 (TamilNadu). State- Institution wise per capita assistance disbursed during 2001-02, 2002-03 and 2003-04 are given in Appendix 17.5.

#### Bank Finance

17.10 At the time of bank nationalisation there were only 8,262 bank branches all over India. The number rapidly grew to 66,436 in March 2003 and to 66,970 in March 2004. The number of rural bank branches in 2004 was 32,080 (47.9%), semi-urban branches-15,018(22.4%), urban branches-10,990(16.4%) and metropolitan branches - 8,882(13.3%). 88.2 percent of all the branches (59,049 Nos.) are located in 15 major states. The highest number of bank branches are in UttarPradesh (8,213 Nos-12.3%) followed by Maharashtra with 6,334 branches(9.5%), AndhraPradesh with 5,284 branches (7.9%), Karnataka with 4,834 branches (7.2%) and Tamil Nadu with 4,757 branches (7.1%).

## BOX- 17.2

**Tamil Nadu tops in credit flow**

Tamil Nadu has scored a first in terms of credit flow from all commercial banks. This implies the state economy is growing at a more rapid pace, with industry spurring the charge, as compared to other states. It is also an indication of the State attracting investments in a large amount, leading to higher credit demand, according to bankers and industrialists.

According to figures published by the RBI, Tamil Nadu has been the first among all states this year, till end-June, in attracting commercial bank credit. While all scheduled commercial banks in Tamil Nadu put together had mopped deposits of Rs.98,170 crore till June, the banks have advanced Rs.88,180 crore to various sectors. This translates into a credit to deposit ratio (CD ratio) of 90%. Chandigarh is the only territory which bettered TN's record, with a CD ratio of 102%. However, it is only a city, not a state.

Maharashtra is a distant second, with a CD ratio of 80%. Commercial banks in the State had ranked in a deposit base of Rs.3,27,909 crore and advanced Rs.2,62,158 crore till June. Karnataka is third, but way down, with a 66% CD ratio. Commercial banks have collected Rs.92,905 crore and advanced Rs.61,568 crore upto June, Andhra Pradesh also has a CD ratio of 66% though on a smaller base: banks in the state have mopped deposits of Rs.85,482 crore, while advancing Rs.56,212 crore during the period.

Kerala has a CD ratio of just 50%, which is bound to kick up yet another round of polemics, with political parties accusing the commercial banks of robbing the state.

According to experts, the high CD ratio gives credence to the Tamil Nadu's claim of the state emerging as the fastest growing destination for investments. If disbursements given by the leading FIs in the state is included, the picture is even better

**Cumulative CD Ratios  
Commercial banks (as of June 04)**

(Rs. in crore)

State	Credit	Deposit	CD Ratio
Chandigarh	11632	11359	102
Tamil Nadu	88180	98170	90
Maharashtra	262158	327909	80
Karnataka	61568	92905	66
Andhra Pradesh	56202	85482	66
Delhi	110548	186067	59
Rajasthan	22500	38695	58
Orissa	12416	22483	55
Kerala	32498	65609	50
West Bengal	46955	100349	47
Gujarat	35683	86691	41
Uttar Pradesh	33890	117891	29
Bihar	8738	34501	25
Uttaranchal	3628	18262	20

Source: RBI and Financial Express dated: 10.1.2005.

17.11 As on March, 2004 Kerala had 3404 bank branches (5.1%) as against 3,351 (5.0%) branches in 2003 showing an increase of 53 branches. At the same time the number of new branches started during 2003-04 in other states were : AndhraPradesh - 41, Haryana -38, Karnataka - 52, Maharashtra - 46, TamilNadu -36, UttarPradesh -29 and WestBengal -35. State wise statistics on number of bank branches during 2003-04 are furnished in Table 17.1

#### Advances by Public Sector Banks

17.12 Total advances by public sector banks in India amounted to Rs.6,48,912 crore in 2003-04 while Kerala received a meagre share of Rs. 22,553 crore. The other 15 major states received the major chunk of bank finances. The highest credit was received by Maharashtra Rs.1,39,852 crore and the other states received comparatively smaller advances in 2003-04. TamilNadu - Rs.58,053 crore, AndhraPradesh - Rs.48,399 crore, Karnataka - Rs.46,823 crore, WestBengal - Rs. 40,330 crore. The same trend continued in the figures of June 2004 also: Maharashtra - Rs.1,39,404 crore, Tamil Nadu - Rs.58,201 crore, AndhraPradesh - Rs. 48,431 crore, Karnataka - Rs. 48,019 crore, WestBengal - Rs. 39,697 crore. State wise deposits, credits and CD ratios by public sector banks are shown in Appendix 17.7.

#### Advances by Commercial Banks

17.13 During 2003-04, the total advance given by all commercial banks in Kerala was Rs. 31867 crore as against Rs. 27007 crore of 2002-03 with an increase of Rs. 4860 crore. The growth of advance in 2002-03 was 22.4 per cent and in 2003-04 it was only 18.0 per cent. The total advance disbursed by commercial banks at national level during 2003-04 was Rs.8,90,866 crore as against Rs.7,59,210 crore in 2002-03. The annual average advance for the last four years (2001 to 2004) in Kerala was Rs.25029 crore while at national level it was Rs. 6,87,808 crore. The per capita advance in Kerala during 2003-04 was Rs. 10,009 as against Rs. 8,482 of 2002-03. The corresponding figures at all India level were Rs. 8,674 and Rs. 7,392 respectively. Advances disbursed by commercial banks in India as well as in Kerala from 1985 to 2004 are furnished in Table 17.2.

17.14 Advances as percentage of state income from 1985 to 2004 (at current prices) are furnished in Table 17.3. The advance as percentage of state income for 2004 is estimated as 35.3 (quick) and for 2003 it is 33.4 (provisional)

#### BOX-17.3

##### Budget assurance on Credit

“It is my intention to double flow of agricultural credit in three years. We have made a beginning by announcing a comprehensive policy on agricultural credit on June 18, 2004. The policy have been received well and will be fine tuned, if necessary.

Government has entrusted the implementation of the policy to the public sector and private sector banks, the regional rural banks (RRBs) and the co-operative banks”.  
(From the Union Budget Speech delivered by the Finance Minister Shri P. Chidambaram on 8.7.2004)

#### BOX-17.4

##### NEW DEAL

“The National Common Minimum Programme of the United Progressive Alliance is committed to giving a ‘New Deal’ to rural India. Agriculture must receive the priority attention it deserves. Public and private investments in agriculture has to be greatly increased. A key concern in recent years has been lack of access to credit. Our government is already addressing this time directly by pursuing policies that improve the farmer’s access to affordable credit.”

*Source: Prime Minister’s Address to the nation on 14.6.2004*

**Table 17.1**  
**State wise distribution of Scheduled Commercial Bank Branches**  
**as on March 2004**

Sl. No.	State	Rural		Semi urban		Urban		Metropolita n		Total	
		No.	%	No	%	No	%	No	%	No	%
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1	Andra Pradash	2401	7.5	1258	8.4	1082	9.8	543	6.1	5284	7.9
2	Assam	792	2.5	261	1.7	168	1.5	-	-	1221	1.8
3	Bihar	2485	7.7	673	4.5	411	3.7	-	-	3569	5.3
4	Gujarath	1503	4.7	845	5.6	484	4.4	836	9.4	3668	5.5
5	Hariyana	701	2.2	422	2.8	492	4.5	-	-	1615	2.4
6	Karnataka	2165	6.7	1053	7.0	820	7.5	796	9.0	4834	7.2
7	Kerala	346	1.1	2430	16.2	628	5.7	-	-	3404	5.1
8	Madyapradash	1866	5.8	789	5.3	438	4.0	360	4.1	3453	5.2
9	Maharashtra	2242	7.0	1102	7.3	932	8.5	2058	23.2	6334	9.5
10	Orissa	1587	4.9	331	2.2	322	2.9	-	-	2240	3.3
11	Panjab	1125	3.5	722	4.8	575	5.2	219	2.5	2641	3.9
12	Rajasthan	1843	5.7	750	5.0	493	4.5	264	3.0	3350	5.0
13	Thamilnadu	1724	5.4	1225	8.2	1016	9.2	792	8.9	4757	7.1
14	Utterpradash	4862	15.2	1353	9.0	1449	13.2	549	6.2	8213	12.3
15	WestBanganl	2270	7.1	565	3.7	625	5.7	1006	11.3	4466	6.7
<b>Total</b>		27912	87.0	13779	91.7	9935	90.4	7423	83.6	59049	88.2
<b>All India Total</b>		32080	100	15018	100	10990	100	8882	100	66970	100

Source: Quarterly Banking Statistics by RBI, March 2004.

Note: Percentages are to All India Total.

**BOX-17.5**

**Banking Ombudsman Scheme**

Fifteen offices of the Banking Ombudsman administer the Banking Ombudsman Scheme, 2002. During the year 2003-04 8,246 complaints were received. The number of complaints dealt with pertained, inter alia, to deficiency in servicing of loans and advances, deposit accounts and delay in collection of cheques/bills. During the period 1999-2000 to 2003-04, 98 per cent of the complaints disposed off were by mutual settlement and awards were passed in respect of the remaining two per cent. As provided in the scheme, the amount spent by the Ombudsmen is being recovered from the participating banks in proportion to the working funds of there banks as at the end of the preceding financial year.

Source: Annual Report of RBI 2003-04

**Table 17.2**  
**Advances By Commercial Banks in Kerala and India**  
**(From 1985 to 2004)**

(Rs. Crore)

Sl. No.	Year (End of March)	Advances in Kerala		Incremental Advance in Kerala	Advances in India	
		Amount	% of Growth		Amount	% of Growth
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	1985	2181		-	48953	-
2	1986	2371	8.7	190	56067	14.4
3	1987	2769	16.8	585	63308	20.1
4	1988	3116	12.5	347	70536	11.4
5	1989	3701	18.8	585	84719	20.1
6	1990	4118	11.3	417	101453	19.8
7	1991	4638	12.6	520	116301	14.6
8	1992	5003	7.9	365	125592	8.0
9	1993	5818	16.3	815	151982	21.0
10	1994	6442	10.4	624	164418	8.2
11	1995	7797	21.0	1355	211560	28.7
12	1996	8961	14.9	1164	254015	20.1
13	1997	10482	17.0	1523	278401	9.6
14	1998	12274	17.1	1793	324079	16.4
15	1999	13577	10.6	1303	368837	13.8
16	2000	15941	17.4	2364	435958	18.2
17	2001	19180	20.3	3239	511434	17.3
18	2002	22062	15.0	2882	589723	15.3
19	2003	27007	22.4	4945	759210	28.7
20	2004	31867	18.0	4860	890866	17.3
<b>Average</b>						
21	1985 - 1990	3043	13.6	387	70839	15.7
22	1991 - 1995	5939	13.7	736	153971	16.1
23	1996 - 2000	12247	15.4	1629	332258	15.6
24	2001 - 2004	25029	19.0	3982	687808	19.7

Source: Bank credit in Kerala- an analysis of Trends and Issues & Quarterly Banking Statistics by RBI, March 2004

**BOX- 17.6**

**Improving credit at the Village Panchayat level**

A new initiative has been launched by SLBC, Kerala in partnership with the State Planning Board to organize an informal forum at the level of the Village Panchayat to facilitate active interaction among Bankers, elected representatives and officials of Village Panchayat and the farmers.

Two Village Panchayats have been selected in each of the 14 districts and each Panchayat has been assigned to one Bank which has to provide the coordinating role and bring together all the stakeholders.

The objective of the scheme is to enhance people's participation in identification of innovative projects for absorbing more credit from the banks. The Village Panchayats are expected to chip in with investment to fill up critical gaps which are preventing absorption of credit.

This innovative experiment is expected to develop a model for partnership between Bankers and Village Panchayats so that the Lead Bank system can reach out to the grassroots level.



**Table 17.3**  
**Advances as percentage of State Income**  
**(From 1985 to 2004)**

Year	Kerala	India
(1)	(2)	(3)
1985	35.5	24.4
1986	36.5	25.2
1987	37.7	25.5
1988	37.7	25.5
1989	40.3	25.5
1990	38.6	25.9
1991	38.1	25.4
1992	33.1	23.9
1993	33.9	25.4
1994	27.0	23.6
1995	26.9	25.8
1996	25.4	26.6
1997	25.8	25.1
1998	27.3	26.2
1999	26.6	25.4
2000	25.5	25.1
2001	27.5	26.9
2002	30.5	28.3
2003	33.4 (P)	34.1
2004	35.3 (Q)	NA
<b>Average</b>		
1985 - 90	37.7	25.2
1991 - 95	31.8	24.8
1996 - 00	26.1	25.7
2000 - 04	31.7	NA

Source : Bank credit in Kerala  
 RBI Note: (P): Provisional, (Q): Quick

**Growth of Bank Deposits in Kerala**

17.15 Evidently there is increase in bank deposit in Kerala during 2004 but with decline in growth rate to 9.95 from 15.0 in 2003 and 15.2 in 2002. The total bank deposit at the end of March 2004 was Rs. 65,961 crore as against Rs. 59,399 crore in 2003 and Rs. 51,656 crore in 2002. Total deposits at the end of September 2004 and September 2003 were Rs. 65,852 crore and Rs. 61,119 crore respectively. The corresponding growth rates were 7.74 and 12.0 respectively. The shortage in the flow of NRE deposits affected the growth rate of total deposit also in Kerala. Growth of bank deposits from 1998 to 2004 (both domestic and NRE) are furnished in Table 17.4

**Credit Deposit Ratio**

17.16 Overall Credit Deposit Ratio in India during March 2003 was 56.4 per cent and 54.3 per cent in June 2003. The ratio got slightly reduced to 55.2 % in March 2004 and 54.1 % in June 2004. Considering State wise CD ratios, TamilNadu tops with 83.1 per cent in March 2004 and 82.7 per cent in June 2004. Maharashtra, which was top in previous years came down to second with 74.4 per-cent in March 2004 (88.8 % in March 2003) and 69.6 per cent in June 2004 (83.0 % in June 2003) followed by Karnataka (69.6 % in March 2004 and 69.5 % in June 2004) and Andhra Pradesh (67.7 % in March 2004 and 67.3 % in June 2004). CD ratio of Kerala was only 49.9 per cent (March 2004) and 53.1 per cent (June 2004) against 43.7 per cent (March 2003) and 43.6 per cent (June 2003) respectively. It is worth noting that the CD ratio of the state has increased when compared with previous years. The corresponding CDR as on March 2002 was 42.2 and as on June 2002 was 41.8. State wise CD ratios for June 1969, March/ June 2002, March / June 2003 and March/ June 2004 are given in Appendix 17.7.

17.17 Analysing the CD ratio of major banks in Kerala, Bank of India stands first with 62.48 per cent in March 2004 against 59.31 per cent in March 2003. Union Bank of India comes second with 61.33 per cent in March 2004 against 53.54 per cent in March 2003. The state level CD ratio during 2004 was 48.31 per cent against 45.47 per-cent in 2003 and 42.71 per cent in 2002. Credit-Deposit Ratios of major banks from 1991 to 2004 are furnished in Table 17.5

17.18 Consequent on the recent reforms in financial sector a paradigm shift has been taken place in banks' priority sector lending. Banks want to play safe and so their priorities in lending is directed towards housing, vehicles, consumer durables, constructions etc. Conscious marketing efforts are initiated by banks in this direction. Emerging needs of

Table 17.4  
Growth of Bank Deposit in Kerala- 1988 to 2004

(Rs. Crore )

Year (March)	Total Deposit		NRE Deposit		Domestic Deposit	
	Amount	Annual Growth %	Amount	Annual Growth %	Amount	Annual Growth %
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1988	4811	-	1369	-	3442	-
1989	5667	17.8	1584	15.7	4083	18.6
1990	6660	17.5	2012	27.0	4608	12.9
1991	7935	19.1	2304	14.5	5554	20.85
1992	9787	23.3	3039	31.9	6632	19.4
1993	12261	25.3	4499	48.0	7613	14.8
1994	15138	23.5	6015	33.7	8926	17.2
1995	17694	16.9	6886	14.5	10572	18.4
1996	20419	15.4	8103	17.7	12068	14.2
1997	23354	14.4	10178	25.6	13176	9.2
1998	27552	18.0	12735	25.1	14817	12.5
1999	31532	14.4	13329	4.7	18203	22.9
2000	38619	22.5	18724	40.5	19895	9.3
2001	44850	16.1	21431	14.5	23419	17.7
2002	51656	15.2	24534	14.5	27122	15.8
2003	59399	15.0	28696	17.0	30703	13.3
2004	65961	9.95	30100	4.89	35861	16.8
Sep.2003	61119	12.0	28998	11.5	32121	12.4
Sep.2004	65852	7.74	29089	0.31	36763	14.5

Source: Banking Statistics of Kerala, SLBC.

**BOX-17.7****Banks Recovery Management**

Banks Recovery Management improved considerably with corporate debit restructuring; recovery through Lok Adalats, Civil Courts, Debt Recovery Tribunals and compromise settlements and the enactment of securitisation and reconstruction of financial assets and enforcement of Security Interest Act 2002. Gross NPAs declined from Rs.70861 crores in 2001-02 to Rs.68715 crores in 2002-03, while net NPAs declined from Rs.35,554 crores to Rs.32764 crores. The ratio of gross NPAs to gross advances for all States Co-operative Banks declined from 12.7% in 1999-2000 to 8.8% in 2002-03.

Source: *Economic Survey: 2003-04***BOX-17.8****Consumer Credit**

Retail lending has become the most spectacular innovation in the commercial banking sector in recent years. As commercial banks shifted their focus from traditional need based lending to a broad based portfolio, retail lending has become a mainstream business and an important contributor to their profitability. On March 31, 2004 the retail portfolio of commercial banks constituted 21.5 per cent of their total outstanding advances, sharply higher than the 12.5 per cent in the previous year. Including loans to the housing sector, banks had lend more than Rs.1,89,000 crore by way of consumer loans up to the end of last year. The rapid absorption of technology by banks has reduced their transaction costs and helped them deliver a wide range of retail loan products efficiently.

Source: *The Hindu*; 31.12.2004.

Table 17.5  
Credit - Deposit ratio of Selected Major Banks Operating in Kerala (as at March)

Name of Bank	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
State Bank of India	67.50	59.90	54.20	45.30	44.70	47.00	48.00	47.53	41.95	39.80	46.68	42.64
State bank of Travancore	60.00	50.60	49.50	44.50	48.00	43.50	45.20	44.82	44.93	45.97	46.00	46.13
Canara Bank	49.40	41.50	37.10	29.00	28.00	30.40	35.10	40.37	39.05	36.95	37.41	42.45
Indian Overseas Bank	35.60	28.00	25.20	21.80	24.00	25.80	25.00	25.22	26.03	26.25	28.00	33.14
Syndicate Bank	48.60	37.30	33.70	27.90	26.40	33.00	29.20	31.25	33.13	34.94	32.79	31.00
Indian Bank	74.90	72.00	69.70	61.00	51.50	61.30	47.50	41.13	34.21	32.59	35.53	29.80
Bank of India	36.90	36.00	39.30	37.30	35.90	39.20	34.00	34.21	28.80	32.83	34.08	31.20
Central Bank of India	62.60	58.00	58.80	46.00	53.00	50.30	44.00	42.38	42.84	35.48	37.03	35.00
Union Bank of India	69.70	57.00	47.60	44.50	45.00	45.70	47.30	47.30	51.47	51.36	45.00	49.97
Vijaya Bank	54.50	46.00	40.30	38.00	35.00	41.60	36.00	38.78	44.89	31.05	44.28	40.51
<b>State Average</b>	<b>59.00</b>	<b>51.00</b>	<b>48.00</b>	<b>43.10</b>	<b>44.70</b>	<b>44.40</b>	<b>45.50</b>	<b>44.88</b>	<b>43.06</b>	<b>41.28</b>	<b>42.77</b>	<b>42.71</b>

Source: State Level Bankers Committee

agriculture and industry are getting back seats. Is this attitude of lending institutions good for our developments. This deserves deep study.

### NRE Deposits

17.19 Annual growth rate on NRE deposits of Kerala at the end of March 2002 was 14.5 and the same at the end of March 2003 was 17.0. But it declined to 4.89 at the end of March 2004. At the same time domestic deposits showed a small decline during 2003 but it has recorded an increase in 2004. The growth rates of domestic deposits during the end of March 2002, 2003 and 2004 were 15.8, 13.3 and 16.8 respectively. During 2003-04 the total NRE deposits in Kerala was Rs. 30,100 crore against Rs. 28,696 crore in 2002-03. As on September 2004, the NRE deposit in Kerala was Rs. 29,089 crore against Rs. 28,998 crore of September 2003. The reason for the decreasing trend in NRE deposits in Kerala recently is attributed to the lowering interest rates

and the move of central government to bring NRE deposits also in tax brackets. The state urged the Centre to withdraw the newly proposed tax. The appreciation of the Rupee has also contributed to the slow down.

17.20 The share of NRE deposits collected by the State Bank groups during 2003-04 in Kerala was Rs. 10,764.57 crore (37.01%), the highest by bank groups, followed by other nationalized bank groups - Rs. 9,778.45 crore (33.62%) and other scheduled banks - Rs. 9,146.59 crore (31.44%). The total NRE deposits collected during 2003-04 by SBT group, other nationalized banks, regional rural banks, private banks, foreign banks and co-operative banks in Kerala was Rs. 30,100.39 crore against a total deposit of Rs. 65,961.11 crore. The corresponding figures as on September 2004 by these banks are Rs. 29,088.64 crore (NRE) and Rs. 65,851.50 crore (Total). Bank group wise details on total deposits, NRE deposits, advances disbursed and CD ratios from 1990 to 2004 and September 2004 are

#### BOX-17.9

##### Saving Small Farmers

In the short-run, much needs to be done to instill confidence among the vulnerable groups of farmers. A moratorium on debts and its restructuring is essential to alleviate the misery of small and marginal farmers. To ensure that the credit flow to the small farmers is not affected, there has to be a big drive immediately through the NABARD for the supply of Institutional credit to such farmers by adopting innovative methods. This is necessary to rescue them from the strange hold of money lenders and traders. Such public support alone constitutes real insurance to the farmers complementing the conventional crop insurance under implementation. Community effort at the village level is essential to identify the vulnerable farmers and instill confidence in them by bringing the benefits of GATT programmes to their door step.

*Source: Sri.C.H. HanumanthaRao, Chairman, Centre for Economic and Social Studies,Hydrabad*

#### BOX-17.10

##### Self-help groups

“Micro finance initiatives are a cost effective way to take the banking system to the poor. The self-Help Groups (SHGs) – bank linkage programme, initiated in 1992, has come a long way. Until March 31, 2004, 1.67 families had benefited through 10.79 lakh SHGs financed by banks. While the SHG concept will be promoted vigorously, I am of the view that mentioned SHGs may be in a position to graduate from consumption or production credit to starting micro enterprises. An indication target of credit banking 5.85 lakh SHGs during the period up to March 31, 2007 has been sent for NABARD, SIDBI, banks other agencies.”

*(From the Union Budget Speech delivered by the Finance Minister Shri P. Chidambaram on 8.7.04.)*

shown in Appendix 17.8. District wise distribution of number of branches, aggregate deposits, gross bank credit and CD ratios of scheduled commercial Banks, Kerala 2003-04 are given in Appendix 17.9. Share of NRE deposits and CD ratios of some major banks in Kerala as on March 2004 are furnished in Table 17.6

**Educational Loans**

17.21 These have become highly necessary and socially relevant with the throwing open of higher education to the private sector. After some initial problems, flow of educational loans has improved. Figure for September 2004 show a total of Rs. 631 crore as outstanding educational loans in the state.

**Loans to SC/ST Groups**

17.22 In spite of several efforts, lending to SC/ST groups has been very poor. As per the latest data (September, 2004) this stream represents only 4.1 per cent (Rs. 481.93 crore) of the total lending (Rs.11715.25 crore). During 2003-04, advance to SC/ST groups was only Rs.118 crore ( 0.37% of the total advance in Kerala).

**Micro Finance**

17.23 This has caught on in the State with the consolidation of ‘ Kudumbashree’. During 2003-04, 18406 Neighbour Hood Groups (NHGs) were linked involving an amount of Rs. 59.22 crore. The total number of NHGs linked since inception of the scheme reached to 44325 and the cumulative disbursement to these NHGs rose to Rs. 153.70 crore as on 31<sup>st</sup> December,2004.

**Table 17.6**  
Share of NRE Deposits and CD ratios of some major banks in Kerala - March 2004

Sl. No.	Name of Bank	Share of NR Deposit (Percentage)	C D Ratio
(1)	(2)	(3)	(4)
1	State Bank of Travancore	23.33	50.89
2	State Bank of India	12.31	45.59
3	Canara Bank	11.63	50.09
4	Indian Overseas Bank	4.77	35.68
5	Indian Bank	2.55	33.61
6	Syndicate Bank	2.29	41.27
7	Union Bank of India	3.62	129.10
8	Federal Bank	14.77	46.54
9	Catholic Syrian Bank	3.41	31.77
10	South Indian Bank Ltd	8.25	35.23

Source: SLBC June 2004

**AGRICULTURAL FINANCE**

17.24 There has been increase in both the outreach and flow of credit to the Agricultural sector over the years. The share of agricultural bank credit in GDP originating in agriculture which rose marginally from 10.3 per cent in 1993-94 to 10.8 per cent in 1999-00 moved up sharply to 16.7 per cent in 2002-03 at the national level. However some problems continue to affect the flow of credit to agriculture, like decline in the proportion of medium term and long term loans in agriculture, from over 41 per cent in 1990-91 to about 31 per cent in 2000-01, declining share of loans to small and marginal farmers (55% in 90-91 to 51% in 2000-01) disparities in credit flow across the

regions and prevalence of cumbersome legal systems etc.

**Priority Sector lending in Kerala**

17.25 Priority sector advances as a percentage of net advances which was showing a declining trend during last three years showed a slight increase during the year 2003-04. The priority sector advances which was 45.9 per cent in 2002 declined to 43.9 per cent in 2003 and increased to 49.4 per cent by the end of March 2004. The total bank advances was Rs.31867 crores out of which the priority sector advance was Rs.15725 crores (49.35 percent) The priority sector advance in proportion to the total deposits

(Rs.65,961 crores) was only 24 per cent, against the mandatory norm of 40 per cent.

17.26 The agency-wise disbursement of the priority sector advance indicates that the major share (36%) was disbursed through nationalized banks followed by State Bank group (33.3%), private sector banks (23%) and RRBs (18%), RRBs advanced 88.2 per cent of their total advances to priority sector, nationalized banks 52.90 per cent, state bank groups 48.50 per cent, and private sector banks 40.62 per cent.

17.27 Out of the total advance of Rs. 31867 crores, Rs. 4502 crores (14.1%) was for agriculture sector and Rs. 2618 crores (8.2%) for the SSI sector. Though in absolute terms, the amount advanced for SSI sector has increased, there was a slight decline noted in the percentage

compared to the previous year. The details of priority sector advance by commercial banks are given in Table -17.7

17.28 Agency-wise disbursement of the annual credit flow is given in Table -17.8. In the disbursement of total advances, commercial banks stood at the first place disbursing Rs. 8847.49 crores (65.07%), followed by Co-operative Banks disbursing Rs. 3538.73 crores (26.03%) RRBs Rs. 1107.76 crores (8.15%) and other agencies Rs.101.98 crores (0.75%). In the lending for agriculture also commercial banks dominated by disbursing Rs.2579 crores followed by Co-operative Banks with Rs.1215 crores and RRBs. Rs. 755.00 crores.

17.29 Under Annual credit plan 2003-04, the total advances were to the tune of Rs.13596

**Table 17.7**  
**Priority Sector Advance Disbursed by Commercial Banks-Kerala**  
*(Rs. Crore)*

Year (March)	Total Advance	Total Priority Sector Advance		Agriculture Sector		Ssi Sector	
		Amount	% to Total Advance	Amount	% to Total Advance	Amount	% to Total Advance
1	2	3	4	5	6	7	8
1992	5093	2151	42.2	821	16.1	<b>SSI Sector</b>	
1993	5861	2380	40.6	914	15.6	-	-
1994	6485	2590	39.9	953	14.7	811	12.5
1995	7843	3407	43.4	1199	15.3	1090	13.9
1996	9007	3994	44.3	1364	15.1	1223	13.6
1997	10565	4539	43.0	1597	15.1	1445	13.7
1998	12364	5214	42.2	1814	14.7	1558	12.6
1999	13577	5997	44.2	1951	14.4	1783	13.1
2000	15941	6840	42.9	2231	14.0	1991	12.5
2001	19180	8894	46.4	2747	14.3	2262	11.8
2002	22062	10132	45.9	3035	13.8	2540	11.5
2003	27007	11867	43.9	3507	13.0	2562	9.5
2004	31867	15725	49.35	4502	14.1	2618	8.2

**Table -17.8**  
**Agency-wise Annual Credit flow to Agriculture and total priority sector in Kerala**  
*(Rs. in crores)*

Agency	Priority Sector			Agriculture		
	2001-02	2002-03	2003-04	2001-02	2002-03	2003-04
Commercial Banks	4863	6703	8847	1466	1914	2579
RRBs	687	628	1108	414	408	755
Co-operatives including Land Development Banks	2550	3138	3539	981	1192	1215
Kerala Financial Corporation	141	94	102	0	0	0
Grand total	8241	10563	13596	2861	3514	4549
Percentage increase to previous year	13.73%	28%	29%	-1.57%	22.82%	29.44%

*Source: State Level Banker's Committee*

crores of which the share of Agriculture was Rs.4549 crores (33%). District wise analysis of the flow of credit to the priority sector reveals that out of the total disbursement, Kollam district advanced the major share of Rs.1754 crores (13%) followed by Ernakulam Rs.1602 crores (11.78%) and Thrissur Rs.1421 crores (10.45crores) Thiruvananthapuram Rs.1217 crores (8.96%) and Kannur Rs. 1157 crores (8.5%). In the case of disbursement in agricultural advances Malappuram had a share of Rs.489.90 crores. Thrissur Rs. 447.26 crores and Kozhikode Rs.416.69 crores. The details of district wise credit flow to priority sector and agriculture sector are furnished in Appendix-17.10 The fall in the ratio of priority sector lending to deposits from 25.6 per cent in 1991 to 23.84 per cent in 2004 in Kerala in the overall credit deposit ratio of banks till above 2001.

**Credit flow to Agriculture**

17.30 Adequate credit plays a crucial role in augmenting private sector capital formation. The annual compound growth rate of direct institutional credit (disbursements) to agriculture and allied activities improved from 12.0 per cent during 1980s to 12.7 per cent during the 1990s at national level. However, the credit delivery scenario at the disaggregated level in the 1990s showed a decelerating trend for credit disbursement of scheduled Commercial banks of direct finance to small farmers from 13.1 per cent in the 1980s to 11.0 per cent in the 1990s. Similarly the annual compound growth rate of direct finance to marginal farmers, decelerated to 13.0 per cent from 18.1 per cent during the same period.

17.31 As per the Tenth Plan projection, the flow of credit to agriculture and allied sectors is

expected to be of the order of Rs. 7,36,570 crore. However, despite the extensive outreach of rural and semi urban branch network of commercial banks (about 33000) co-operative banks (about 1 lakh) and RRBs (about 14000) the estimated actual flow of credit to agriculture from formal rural financial institutions during 2002-03 stood at Rs. 69560 crore against the projected amount of Rs. 82073 crore (85 percent). Therefore there is a need to double the flow of credit to agriculture.

17.32 Government of India, announced certain measures for doubling of credit to agriculture in three years, with the target of 30 per cent increase during 2004-05 which are required to be implemented by all Scheduled Commercial banks. The details are shown in Box-17.11

17.33 In the State, a special SLBC meeting was organised on 30.6.2004 under the Chairmanship of the then Chief Minister and it was decided to achieve 40 per cent increase in disbursement instead of stipulated 30 per cent at the national level. It was also decided to constitute committees at the district level to scout for viable proposals to be referred to banks for financing. The unit costs as well as scale of finance were revised.

17.34 Based on a review of agricultural lending by Public sector banks by the Prime Minister of India, it was advised by the RBI to prepare monthly progress report on agricultural lending from October 2004 and directed to achieve the stipulated target of 18% of net bank credit towards lending to agriculture by the end of 2004-05.

**Credit flow to Agriculture in Kerala**

**Table - 17.9**  
**Flow of Credit to Priority Sector and Agriculture as a Proportion of Credit and Deposits (in percentage)**

Year	All Commercial Banks			
	Priority Sector Lending		Agriculture Credit	
	As a % of Total Credit	As a% of total Deposits	As a % of Total Credit	As a% of total Deposits
2001	46.37	19.83	14.32	6.13
2002	45.93	19.61	13.76	5.88
2003	43.94	19.98	12.99	5.90
2004	49.35	23.84	14.13	6.82

Source: State Level Banker's Committee

**BOX-17.11****Measures announced by the Finance Minister, Government of India for Doubling the Flow of credit in Three years.**

- ◆ In 2003-04, the total flow of agricultural credit from all lending institutions has been estimated at Rs. 80,000 crores. Action Plans were prepared to increase the amount to Rs. 105000 crores (30% increase) during 2004-05 with a break up Rs. 57000 crores by commercial banks, Rs. 8500 crores by RRBs and Rs. 39000 crores by Co-operatives.
- ◆ Every effort to be made to enhance coverage of institutional credit including through KCCs.
- ◆ Under the framework of Special Agricultural Credit Plan, commercial banks will make an effort to bring into their hold on average at least 100 new farmers at each rural and semi rural branch during 2004-05.
- ◆ Each rural and semi urban branch of commercial banks on average will take up at least two to three new investment projects in the area of plantation and horticulture, fisheries, organic farming, agro processing, livestock, micro irrigation, watershed management and village ponds development.
- ◆ In every district on an average, all commercial banks put together will finance 10 agro-clinics during 2004-05.
- ◆ Public sector banks will be advised to lend more to small and marginal farmers.
- ◆ NABARD will implement a special package to promote technology upgradation in agriculture, agro processing and agri biotech.

*Ministry of Finance, GoI, 2004.*

**BOX-17.12****Measures taken by RBI to increase flow of credit**

- ◆ Coverage of rural credit is extended to include facilities such as storage as well as credit through NBFCS
- ◆ Procedural and transactional bottlenecks are sought to be recommended, including elimination of service area approach, except for government sponsored programmes, reducing margins, redefining overdue to coincide with crop cycles.
- ◆ Kissan credit Card scheme is being improved and widened in its coverage while some banks are popularizing General Credit Cards which is in the nature of overdraft for multipurpose use
- ◆ Public and Private sector banks are being encouraged to enhance credit delivery while strengthening disincentives for shortfall in priority sector lending.
- ◆ Banks are urged to price the credit to farmers based on actual assessment of individual risk rather than on a flat rate depending on category of borrowers ensuring that interest rate charged are justifiable.
- ◆ Decided to extend the formulation of Special Agricultural Credit Plans mechanisms for 2005-06 targeting an annual growth rate of 20-25% to Private sector banks in order to enhance flow of credit to Agriculture.
- ◆ Directed banks to increase their disbursements to small and marginal farmers to 40% of their direct advance under SACP by March 2007
- ◆ RBI has constituted empowered committees to focus on operational issues related to better functioning of RRBs.
- ◆ Prepared the Task Force Report for reviving rural co-operative banking institutions in December 2004. (Finance Ministry)
- ◆ Increased the limit on advances under Priority sector for dealers in agricultural machinery including drips/sprinkler irrigation system for Rs. 20 lakhs to Rs. 30 lakhs and for distribution of inputs for allied activities from Rs. 25 lakhs to Rs. 40 lakhs.
- ◆ Limit on advances under priority sector enhanced for improving credit delivery to the agricultural sector.

*RBI, 2004*



17.35 The credit flow per hectare of net cropped area increased from about Rs. 3300 in 1993-94 to about Rs. 20734 per hectare during 2003-04. More than two-thirds of this credit has been for production credit for supporting agricultural operations. The production credit has increased from Rs. 547.82 crore in 1993 to Rs. 3620.36 crore during 2003-04. During this period the production credit per ha of gross cropped area has increased from Rs. 1800 to Rs. 12165

**Table-17.10**  
**Flow of Credit to Agriculture Sector**  
(Rs. Crores)

Sl. No.	Year	Production Credit	Investment Credit	Total
1.	1999-00	1911.49 (79%)	509.08 (21%)	2420.57
2.	2000-01	2311.99 (80%)	595.75 (20%)	2907.74
3.	2001-02	2310.97 (81%)	550.39 (19%)	2861.36
4.	2002-03	2900.96(83%)	612.93 (17%)	3519.89
5	2003-04	3620.36 (79.58%)	928.75 (20.42%)	4549.11

17.36 At the all India level also disbursement of short term loans to agriculture and allied sectors registered a higher trend growth in the 1990s than during 1980s. The trend growth rate of medium/long term loans which are important for capital formation in agriculture has shown only a marginal improvement. The shift in the composition of the agricultural loans towards short term loans reflects a growing 'risk aversion' among banks in respect of medium/long term loans which entail higher credit and market risk as observed by RBI.

17.37 A purpose wise analysis of the credit flow to the investment sector reveals that reduction in disbursement was mainly on plantation crops.

17.38 The major portion of short term and medium term credit requirements in the state are met by the Co-operative banking sector consisting of the State Co operative Banks, District Co-operative banks and Primary Agriculture Credit Societies which covers 1/5<sup>th</sup> of the activities and Commercial Banking sector. During 2003-04, in the disbursal of total agricultural credit was Rs. 3620.36 crores (79.58 per cent) for production credit and Rs. 928.75 crores (20.42 per cent)crores for investment credit. The share of co-operatives in the disbursal was 27 per cent in production credit and 25 per cent in investment credit.

**Long term Credit**

17.39 A net work consisting of Kerala State Co-operative Agricultural and Rural Development Bank at the apex level and 44 Primary Co-operative Agricultural and Rural Development Banks at the Taluk level is responsible for long term credit disbursement for rural development. The various activities covered by the KSCARDB's lending include Minor Irrigation, Plantation/Horticulture, Agricultural machinery,

Land Development, Poultry, Fisheries, Dairy and Animal Husbandry. The KSCARDB raises funds through flotation of debentures issued on Government Guarantee. Central and State

Governments, NHB, LIC, SBI, and SBT are the financial institutions, which invest in the debentures floated by the KSCARDB. The total loan disbursement during 2003-04 was Rs.268.56 crores against that of Rs.293.31 crores in 2002-03, registering a decline of 8.44 per cent over the previous year. In the purpose-wise disbursal of the total loan during 2003-04 the major share was for Rural Housing (47 per cent) followed by Agriculture (35 per cent) and Non-farm sector (18 per cent). The details of loan disbursement are given in Appendix 17.14.

17.40 NABARD has initiated action on the recomm-entations of Expert Committee on Rural Credit under the Chairmanship of Prof. V.S. Vyas relating to financing asset less poor, small farmers/tenants, dry land agriculture, private capital formation and steps to strengthen RRBs.

17.41 The measures taken by RBI to improve credit delivery to agriculture like enhanced limit of advances granted to dealers in drip irrigation/sprinkler irrigation system/agricultural machinery under Priority sector for agriculture, inclusion of loans to the Agri-clinics and Agribusiness centre under direct finance to agriculture under priority sector, widening the scope of Kissan Credit Cards are positive steps which need to be exploited in the State.

17.42 In view of the importance as well as the urgent need to provide credit to agriculture and allied activities in an accelerated manner, the Reserve Bank of India constituted an Advisory Committee on flow of credit to Agriculture and related activities from Banking system under the Chairmanship of Prof. V.S. Vyas during the Mid term Review of the Monetary and Credit Policy on November 2003. The major recommendations of the Committee are given in Box -17.13

17.43 Since 1994-95, public sector banks prepare Special Agricultural Credit Plans (SACP) on an annual basis, under which banks are required to fix self set targets. With the introduction of SACP, the flow of credit to the agricultural sector by public

sector banks improved slightly at the national level while it showed dismal performance in the State which warrants a re-examination of the SACP prepared in the State. From 2005-06 it has been directed to prepare SACP by the private sector banks also.

17.44 The tendency of the shift of the disbursement from farm to non-farm sector is increasingly reported due to less risks, lower transaction costs and better returns in the non-farm sector. The major observations of macro level analysis of credit flow to agriculture at the national level are shown in Box.-17.14

17.45 Another important area that needs attention

**BOX-17.13**

**Advisory Committee on flow of Credit to Agriculture and related Activities from the Banking Systems**

- ◆ A comprehensive review of mandatory lending to Agriculture by Commercial banks to enlarge direct lending programmes for greater integration of investment credit and production credit.
- ◆ Special Agricultural credit plan to be restricted to direct lending and extended to private sector banks.
- ◆ The share of small and marginal farmers in Agricultural credit to be raised to 40% of disbursement under the Special Agricultural credit plan by the end of the Tenth Plan period.
- ◆ Expanding the outreach of banks in rural areas by enlarging retail lending to agriculture, externalizing retailing through corporate dealers networks, organisational innovations offering hedging mechanisms to the farmers, providing legal backing to tenancy to facilitate access to credit, capacity building of borrowers, greater use of information technology, procedural simplification and modifications in the service area approach.
- ◆ Reduction in cost of Agricultural credit through enhancing the cost effectiveness of agriculture loans, especially in terms of cost of raising funds, transaction cost and risk cost.
- ◆ Non Performing Asset (NPA) norms in agricultural credit to be attuned to the cash flow of the farmers, coinciding with the harvesting/marketing of the crop.
- ◆ Impediments to the flow of credit to disadvantaged borrowers to be mitigated through reduction in cost of borrowing, revolving credit packages, procedural simplifications, involvement of Panchayat Raj institutions and extension of micro finance.

*Source: RBI 2003-04*

**BOX-17.14**

**Major observations of a macro level study at national level on Credit flow to agriculture**

- The proportion of accounts for the credit limit of Rs. 25000 and less in agriculture sector declined from 49.30% in December 1983 to 40.90% in March 1992 and further down to 37.83% in March 1998, while in the non-agricultural sector it increased from 46.28% to 54.07% and down to 49.56% in the corresponding period.
- The proportion of Loan accounts above Rs. 25,000 in agriculture sector increased from 1.13% in December 1983 to 1.21% in March 1992 and further to 2.71% in March 1998.
- Banks tended to adopt non-price credit rationing and minimizing the lending risk.
- Proportion of accounts and amounts in agricultural lending is being done in the post reform period.
- Banks are concentrating more in the non-agricultural sector due to less transaction costs, less risks and better returns compared to agriculture sector.

*ISEC, 2002*

is to make agricultural credit available at lower rates of interest. The benefit of declining rates of interest has not been passed on to the agricultural borrowers. The decision of the Finance Ministry to reduce interests on farm loans upto Rs. 50,000/- to 9 per cent may help the growers. The current PLR of most of the banks is in the range from 8.5 to 11 per cent.

**Access to rural credit**

17.46 Access to available credit is an important factor in the economic well being of a rural household. According to (RFA 2003) 41 per cent of rural households have a deposit account and only 21 per cent of rural households have access to credit from a formal source.

17.47 Developments in India's financial sector particularly after the later 1960s resulted in substantial achievements in enhancing access to credit in rural areas. The share of banks was only 1 per cent in total household debt in 1951 then steadily increased to 29 per cent due to rising share of co-operatives. Later it increased to 61.2 per cent before declining in 1991.

17.48 Share of rural household debt by source of credit, (All India 1951-91) is shown in Table-17.11

17.49 A recent World Bank - NCAER Survey on rural access to finance indicates that 70 per cent of the rural poor do not have a bank account and 87 per cent have no access to credit from a formal source. A recent study was conducted in Palakkad district and Kannanj district of Uttar Pradesh. The study showed that the households in Kerala do not have significantly better access

to credit. The predicted probability of borrowing from a bank and a money lender are identical across two regions. The survey covered 720 rural households from 21 villages across two districts. Data were collected during June to September 2002. The Major findings are shown in Box-17.15.

**Performance of State Co-operative bank and District Co-operative banks**

17.50 State Co-operative banks and District Co-operative banks channelise their own fund and fund of NABARD for disbursal. The total deposit of State Co-operative Bank in 2003-04, was Rs. 2427.47 crores against Rs.2326.76 crores in 2002-03, registering a slight increase of 4 per cent. The total loans and advances stood at Rs. 1117.5 crores, the NPAs amounting to Rs. 92.63 crores constituting 8.3 per cent of the total portfolio of the Bank, as against 7.5 per cent in the previous year. The interest spread has decreased from 1.46 per cent to 0.7 per cent. The operational expenses has declined to Rs. 12.75 crores in 2003-04 from Rs.34.38 crores in the previous year.

17.51 The operations of the SCB are shown in Appendix 17.11. During the year under report, the deposit position of the Bank had increased marginally compared to the last year. The Bank's deposit stood at Rs. 2327 crores in 2002-03 had increased to Rs.2427 crores recording an increase of 4.3 per cent in 2003-04. The borrowings from other institutions had increased from Rs.87.79 crores to Rs.164.30 crores. The working capital position also increased to 12 per cent in 2003-04. Though the deposits and working capital position

**Table-17.11**  
Share of rural household debt by source of credit,  
All India, 1951-91 (percentage)

Year	Institutional				Non-Institutional		
	Banks	Co-operatives	Govt.	Total Instnl.	Relatives/Friends	Money lenders	Others
1951	1.1	4.6	3.1	8.8	14.4	68.6	8.2
1961	0.3	10.4	6.6	17.3	5.8	60.9	16
1971	2.4	20.1	6.7	29.2	13.8	36.9	20.1
1981	28.6	28.6	4	61.2	9	16.9	12.9
1991	29	18.6	5.7	53.3	6.7	15.7	24.3

"Others" includes non-institutional sources other than friends and relatives and moneylenders, eg. traders, agriculturist money lenders, landlord, etc.

Source: All India Rural Credit Survey and All India Debt and Investment Surveys

**BOX-17.15****Results of the study based on Primary data collected from 360 households in Palakkad district.**

- ◆ There is higher indebtedness in Kerala whether measured in terms of amount of money borrowed per loan, as per debt to income ratio per household or even the number of households per village. The outstanding debt per household is Rs. 20940 and the average percentage of household indebted is 70 per cent. The outstanding debt as a proportion of income is 48 per cent.
- ◆ Commercial banks accounted for 35 per cent of the outstanding debt, co-operative societies 49 per cent, money lenders 9 per cent, Neighbour/relative 3 per cent and employees 3 per cent.
- ◆ Average money lenders in a village ranged from 3 in Vandazhy to 12 in Alathur, with an average of 6. Average distance to a commercial bank is 3 km. The number of co-operative societies ranged from 1 in Kavasery to 13 in Alathur with an average of 4
- ◆ Rate of interest ranged from 10-18 per cent by Commercial banks and 12-20 per cent by co-operative banks, and 60-240 per cent by money lenders.
- ◆ Average Consumption loan was Rs. 15649, average Production loan Rs. 23752 and average Medical loan Rs. 10632
- ◆ There are large disparities in access to credit and particularly access to formal credit across households. The predicted probability of a household borrowing from formal source is significantly higher (0.76)

*New York University, 2004*

of the Bank has increased during the year under report, this has not reflected in the deployment of resources as loans and advances. The total deployment of resources-loans and advances had declined marginally during 2003-04. The total disbursement during 2003-04 was Rs. 1117.50 crores against that of Rs. 1237.13 crores in 2002-03. The credit disbursement was mainly for agriculture, marketing, cottage & small scale industries, consumer business, consumption purposes, housing etc. The net profit of the bank shows a fluctuating trend during the last few years. In 2003-04, the profit amount showed a downward trend (Rs.5.05 crores) when compared to the last year's position (Rs.6.12 crores)

17.52 The Bank has been implementing SHGs Scheme of State Government through Kannur, Palakkad and Ernakulam District Co-operative Banks. The thrust of the programme is organising SHGs of agriculturists and agricultural workers under PACS and financing from their own fund by making use of group dynamism. The financing is done from the own funds of the Bank.

17.53 During 2003-04 total deposit of District Co-operative Banks had increased to Rs.6317.16 crores as against Rs.5617.74 crores in the previous year. The amount disbursed as Loan and Advances was Rs.4360.79 crores, which was

69 per cent of total deposits. The average overdue to the demand was Rs. 3445.93 lakhs. The district wise operational indicators of District Co-operative banks are given in Appendix: 17. 13

17.54 During 2002-03, all District Co-operative Banks were on profit and the average NPA was Rs. 5212.83 lakhs. The average NPA to average loan outstanding was 16.74 per cent.

17.55 The working results of SCB show a steep rise in borrowings, from Rs. 87.79 crore in 2002-03 to Rs. 164.30 crores. The net profit of the institution decreased from Rs.6.12 crores to Rs.5.05 crores. The major share of the profit was from trading in Government securities. The details are shown in Appendix 17-11. The purpose wise cumulative loan disbursed by the State Co-operative Bank is furnished in Appendix 17- 12. During 2003-04, out of total loans and advances of Rs. 1117.50 crores, Rs. 113.85 crores i.e. 10.19 per cent is disbursed for agriculture.

**Short term and Medium term Loans**

17.56 The compound growth rates of medium/ long term loans disbursed to agriculture and allied activities which are important for private sector capital formation in agriculture have shown deceleration to 9.7 percent in the 1990s from 11.5 per cent in the preceding decade. However, the disbursements of short term loan have

accelerated from 12.2 per cent to 14.5 per cent during the same period. The shift in the composition of agricultural loans in favor of short term advances is a matter of concern, as it is likely to further accentuate the declining private sector capital formation in agriculture. In the annual policy statement for 2004-05, RBI announced the revised norms on NPAs as applicable to all direct agricultural advances. Loan granted for short duration crops will be treated as NPA, if the installment of principal or interest there on remains overdue for two crop seasons. A loan granted for long duration crops will be treated as NPA if the installment of principal or interest thereon remain over due for one crop season.

17.57 In Kerala, majority of the crops are perennial/plantation crops, which yield through out the year, without apparent seasonal variations. In view of this, perennial/plantation crops are treated as 'short duration crops'.

**Regional Rural Banks**

17.58 Regional Rural Banks, viz., North Malabar Gramin Bank (NMGB) Kannur and South Malabar Gramin Bank (SMGB) Malappuram are working in Kerala under the sponsor ship of the Syndicate Bank and Canara Bank respectively covering 10 districts in the State, besides the existing 354 branches SMGB has opened five more branches. The deposit position of both the Banks increased about 20 per cent compared to the last year. The borrowings of the Banks also declined. The disbursement of loans by the banks shows an increasing trend. The amount of loan disbursed through the RRBs aggregates to Rs. 1244.27 crores in 2003-04 against that Rs. 989.97

crores in 2002-03. In the disbursement of loans, the major share Rs.1108 crores (88 per cent) was for priority sector. The average percentage of loans outstanding is 8.34 per cent in the year under report.

17.59 Key parameters of Regional Rural Banks in Kerala are given in the Table-17.12.

**Re-finance by NABARD**

17.60 NABARD's refinance policy for 2003-04 laid emphasis on accelerating the pace of credit flow to farmers. The total refinance from NABARD was Rs. 342.05 crores in 2003-04 as against of Rs. 307.70 crores in the previous year recording an increase of 11.16%. An agency-wise analysis reveals that KSCARDB continued to avail the largest share (66.%), followed by the KSCB (20%) and Commercial Banks (8%) and RRBs (6%). Agency-wise Disbursement of Refinance Assistance by NABARD in Kerala is given in Appendix. 17.16.

17.61 Purpose-wise analysis of the refinance assistance reveals that the non- farm sector availed the major share (66.4%) of the total refinance. This is against 61 per cent of the total refinance during the previous year. Under farm sector the major share (8%) was for land development followed by plantation and Horticulture (6%)Minor Irrigation (4%) and Dairy Development. The percentage of refinance assistance to the non-farm sector is steadily increasing from 1999-00 onwards. The percentage share which was 41.50 in 1999-00 had gone up to 66.4 per cent in 2003-04. The purpose-wise refinance by NABARD is

**Table: 17.12**  
**Key Parameters of RRBs in Kerala as on 31.03.2004**

Items	NMGB	SMGB	Total
No. of branches	152	207	359
Deposits	616.34	908.49	1524.83
Borrowings	79.66	191.91	271.57
Investment	227.59	254.93	482.52
Loans outstanding	544.41	911.65	1456.06
Loans issued	461.12	783.15	1244.27
CD Ratio%	88.33	100.5	94.34
NPA	57.61	51.88	109.49
Average % of NPA loans outstanding	10.98	5.70	8.34

Source: NABARD

furnished in Appendix.-17.17. The continuance of poor disbursement of refinance to the farm sector especially the sectors like fisheries, poultry etc which are very important in the rural sector of Kerala for income and employment generation, calls for intervention.

17.62 The non-farm sector investments are mainly for processing (fish processing), concrete works, mat making, furniture making, bricks making multi-catering units etc: Additional income and employment generation are expected from NFS lending. NABARD has undertaken an ex-post evaluation study on Rural Non Farm Sector activities in two districts viz, Kollam and Alappuzha of Kerala. The findings of the study are given in Box-17.16

17.63 NABARD reduced the interest rates on

refinance for all agencies with effect from February 2004 onwards. The rates are given in the Table 17.13.

**Micro Financing of NABARD**

17.64 Micro finance initiative of NABARD has been growing at a rapid pace and undergoing many changes. This initiative of NABARD yielded remarkable success and the SHG - bank linkage programme has emerged as the largest micro finance programme in the world. The pilot project started in 1992 has turned into a national movement, linking more than one million SHG with bank credit and leading to socio economic empowerment of women.

17.65 The year 2004 witnessed an all-round growth in the SHG - bank linkage programme in

**Table 17.13**  
**Interest rates on Refinance for Farm/Non farm sectors**  
(Percent/Annum)

Loan size	NER including Sikkim & A & N Islands	Other regions		
		Farm sector	Non-Farm sector	Others
Up to Rs,50,000	5.50	5.50	5.50	5.50
Rs. 50,000 - Rs. 2 lakh	5.50	6.25	6.25	6.25
above 2 lakh	5.50	6.25	6.50	6.75

Source: Annual Report NABARD

**BOX-17.16**

**Major Findings of a study on Rural Non-farm sector in Kerala**

- Loans under Rural Non-farm sector ranged from Rs.20,000 to Rs. 4,00,000.
- Cent per cent utilisation of the bank loan was observed. There was no procedural delay in sanction and disbursement of loan. Banks had abided by the stipulated terms and conditions by NABARD.
- Entrepreneurs depended more on hired labour than family labour for their production units. Female labourers were getting work only in fish processing, mat making and brick manufacturing units, Female workers constituted only 11.85% of the total work force.
- Investments below Rs. 50,000 were generating more net income than investments above Rs. 50,000
- The investment activities covered under study were financially viable and economically profitable. However, the repayment performance of units with more investment was found to be discouraging. Increasing expenditure decreasing demand and poor income are stated as the reasons for poor repayment.
- The macro impact of the selected investments under study has been substantial in generating employment and additional income thereby.

NABARD, 2004

various states. In Kerala also the performance was encouraging. The position of bank linkage programme of the SHGs are given in Table-17.14

17.66 Self Help Groups contribute to development of human and social capital. The number of SHGs linked to banks under SHGs-bank linkage programme aggregated to 10,79,091 as on March 31<sup>st</sup> 2004. The cumulative disbursement of Bank loans to SHGs amounted to Rs.3904.00 crores as on March 31<sup>st</sup> 2004 to around 16 million families. An average loan per SHG was Rs. 36,179 and the average loan per family was Rs.2412/-

relating to structure and sustainability, funding regulation and capacity building of micro finance institutions, banks were advised to provide adequate incentives to their branches for financing SHGs for establishing linkages and adopting simple and easy procedures to suit local conditions.

17.68 An ex-post evaluation study has been undertaken by NABARD on self-help groups financed by DCBs, South Malabar Gramin Bank & Union Bank of India in Wayanad district. The study covered 120 members belonging to 40 SHGs (30 women SHGs and 10 men SHGs)The findings of the study are given in Box-17.17.

17.67 Based on the recommendations on issues

**Rural Infrastructure Development Fund (RIDF)**

**Table-17.14**  
**Self Help Groups and Bank Linkages**  
**(As on 31<sup>st</sup> March 2004)**

(Amount in Rs. Crores)

Region	Comm. Banks		RRBs		Co-op. Bank		Total	
	No. of SHG	Bank Loan	No. of SHG	Bank Loan	No. of SHG	Bank Loan	No. of SHG	Bank Loan
India	53842	2254.8	405998	1278.3	134671	371.1	1079091	3904.2
Kerala	21378	78.60	5365	13.60	6985	30.7	33728	122.9
%	4.00	3.00	1.00	1.00	5.00	8.00	3.00	3.00

Source: RBI, Annual report 2003-04

**Table -17.15**  
**Yearwise SHG - Bank Linkage Programme -**  
**Cumulative Progress (As on 31<sup>st</sup> March 2004)**

Year	SHGs Financed (No.)	Bank loans disbursed (Rs. crore)	SHGs Refinanced (No.)	Refinance disbursed (Rs. Crores)
2002	461478	1026.34	340131	796.47
2003	717360	2048.67	493634	1418.80
2004	1079091	3904.20	611043	2124.24

Source: RBI, Annual report 2003-04

**BOX-17.17**

**Findings of the ex-post Evaluation Study on SHGs in Wayanad District.**

- Saving habits of the members had increased by 98.58 percent & 439.38 percent respectively during pre and post SHG periods.
  - Annual interest rates on loans from SHGs to members were in the range of 12% to 24%.
  - Members with the growth of groups, opted for a change in borrowing habit from consumption purposes to income generating purposes.
  - Employment opportunity increased by 2.20percent(118.13, man-days to 120.73 man-days)per household during pre and post SHG periods.
  - Increase in the annual income of the members of SHGs. Average net income/household had increased by 32.12 percent.
  - Average value of asset/household of 44.09 percent members had increased above Rs.10,000 and the housing condition of 25.93 percent members had improved.
  - Significantly contributed in improving the self confidence, self-worth and communication skill of the members.
  - SHGs played a major role in increasing the business as well as the recovery performance of selected Banks The recovery performance of SHG lending was better than the overall recovery performance.
  - SHGs helped 29.4 poor households to increase their economic status by acquiring assets exceeding Rs.10,000/
- NABARD, 2004

17.69 The RIDF which started in 1995-96 with a corpus of Rs.2000.00 crores has reached a level with a corpus of Rs.34,000.00 crores disbursing loans to schemes in RIDF-I to IX tranche in 2003-04. During 2003-04, the allocation under RIDF IX was Rs.5,500.00 crore. An amount of Rs. 8000 crores is set apart for assistance under RIDF at the national level and Rs. 250 crores at State level during 2004-05.

17.70 While public sector banks and foreign banks as a whole achieved their overall targets, viz., 40 per cent and 32 per cent of net bank credit respectively for priority sector lending, private sector banks fell short of their stipulated targets viz., 40 per cent. The Public and Private sector banks with shortfalls in priority sector lending and of agricultural lending as at the end of March 2002 were advised to contribute to the RIDF VIII with a corpus of Rs. 5500 crore as announced in the Union Budget for 2002-03. In the case of RIDF I to VI, the rate of interest on deposits placed in the fund was uniform for all banks irrespective of the extent of their shortfall. Effective from RIDF VII, the rate of interest on RIDF deposits is linked to the banks' performance in lending to agriculture. Accordingly banks receive interest at rates inversely related to their shortfall in agricultural lending. The foreign banks falling short of priority sector targets as at the end March 2002 have to deposit amounts equivalent to the shortfall with the Small Industries Development Bank of India (SIDBI) for one year.

**Deposits**

17.71 With the receipt of deposits of Rs.2158.69 crore from Commercial banks during the year, the cumulative deposits under RIDF received upto 31 March 2004 stood at Rs.18304.06 crore. Deposits amounting to Rs.2229.34 crore were redeemed during 2003-04. The deposits outstanding at the end of March 2003 stood at Rs.12159.23 crores.

**Assistance to Kerala**

17.72 Kerala has been receiving assistance under RIDF from 1995-96 onwards. The major projects for which refinance has been disbursed include watershed development projects, rural bridges, rural roads, reclamation of water logged areas, inland navigation, tourism oriented roads and rural market yards etc. The scope of RIDF was widened in 1999-00 to include lending to Grama Panchayats, Self-Help Groups and Non-Governmental Organisations for implementing village level infrastructure projects, innovative projects such as information technology enabled services and new activities (system improvement), mini hydel generation under power sector, construction of primary/secondary school buildings, primary health centres and rainwater harvesting structures etc. Priority has been given to irrigation, agriculture and allied sectors and power sector.

**Table - 17.16**  
**Priority Sector advances in the Country**  
(Rs. Crores)

Year	Public Sector banks	Private Sector banks	Foreign banks
1997-98	91319 (41.9)	11614 (40.9)	6940 (34.3)
1998-99	1,07,200 (43.5)	14,295 (41.3)	8270 (37.1)
1999-00	1,27,807 (43.6)	18348 (39.4)	9699 (34.5)
2000-01	1,46,546 (43.0)	21550 (38.1)	11835 (34.1)
2001-02	1,71,186 (43.1)	21530 (38.8)	13,414 (34.2)

1. Figures in brackets are % shares in net bank credit in the respective groups.
2. The target for aggregate advances to the Priority sector is 40% of the net bank credit for domestic banks and 32% of net bank credit for the foreign banks.



17.73 The cumulative sanction amount as on 31.7.2004 stood at Rs.1128.51 crores, which is 3.3 per cent of the total amount sanctioned from RIDF, in the country, in respect of 1917 projects. This include minor irrigation projects (772), medium irrigation projects (6), flood control projects (19), inland navigation projects (1), roads and bridges (234), reclamation projects (1), rural roads constructed by CRD (501), and rural roads constructed by PWD (107), watershed management (181), rural market yards (108) and tourism roads (2). Up to March 2004, 1099 projects have already been completed and another 422 projects are in progress. Work has not been started in the case of 396 projects. Completion reports were produced only in 667 projects. Under RIDF-IX projects relating to irrigation, agriculture and allied activities, power projects (mini-hydel) were given more focus.

17.74 The projects sanctioned under RIDF-I were financially closed on 31<sup>st</sup> December 2000. Implementation period for projects under RIDF-II and RIDF-III has been extended upto 30 June 2002 and 31<sup>st</sup> March 2003 respectively. As regards projects sanctioned under RIDF-IV and V, the period for implementation is extended up to 31<sup>st</sup> March 2005. The utilisation of loans under RIDF was low as compared to amounts sanctioned due to delays in getting land, tendering and drawl of funds, lack of co-ordination among the implementing departments. The reimbursement received is only 62 per cent to the effective

sanction up to RIDF-IX. The interest rates on RIDF loans to state governments were gradually reduced from 13 per cent in RIDF-I to 11.5 per cent under RIDF IV, 10.5 per cent under RIDF-VII and fixed at 8.5 per cent under RIDF VIII and IX and 6.5 per cent under RIDF-X. Considering the declining trend in interest rates, The lending rates in respect of undisbursed amounts of RIDF tranches IV to IX were restructured with effect from November 2003 with the approval of RBI. Accordingly, the lending rates for loans disbursed under RIDF IV to VIII were fixed at 7 per cent and 6.5 per cent for RIDF VIII and IX respectively.

17.75 The sanction and disbursement under various tranche under RIDF at the national and state level are given in Table-17.17. The total disbursement at the national level is Rs.21067.17 crore (60.80%) against a cumulative sanction of Rs.34678.07 crores.

17.76 As part of rural infrastructure development, 50 road projects under PWD, 227 rural roads by Block Panchayats, 142 bridges and 114 watershed management projects were completed as on 31/07/2004 Under irrigation projects 43360 ha. of land was benefited by completing 552 projects. Area benefited by completed soil and water conservation projects comes to 22865 ha. The status of RIDF projects from I to IX is given in Table-17.18

**Table -17.17**  
**Tranche-wise Sanction & Disbursement under RIDF**

*(Rs. Crores)*

RIDF	Kerala (as on 1/05)		India (as on 3/04)	
	Sanction	Disbursement	Sanction	Disbursement
I	95.83	86.26 (90%)	1910.54	1760.71 (92.2%)
II	85.65	73.12 (86%)	2658.88	2397.75 (90.18%)
III	86.20	73.88 (86%)	2718.45	2444.30 (89.09%)
IV	61.77	52.85 (86%)	2912.83	2266.39 (77.80%)
V	124.72	129.53(75%)	3513.92	2711.79 (77.20%)
VI	171.74	95.74 (52%)	4549.50	3273.87 (72.00%)
VII	183.14	86.69 (45%)	4893.10	2768.81 (56.60%)
VIII	192.17	4.02 (5%)	6083.34	2449.88 (40.30%)
IX	81.17	-	5437.51	993.51 (18.30%)
X	190.91	-	-	-
<b>Total</b>	<b>1273.29</b>	<b>710.20 (56%)</b>	<b>34678.07</b>	<b>21067.17 (60.80%)</b>

*Source: Annual Report 2003-04 NABARD*

*(Figures in brackets are % share of disbursement to sanction)*

**Table - 17.18**  
**Status of RIDF Assisted Projects as on 31/07/2004 (All Tranche - Cumulative)**  
**(Rs. Crores)**

Sl. No.	Purpose	No of Projects						Sanctioned		Reimbursement Received (Rs. Crores)
		Sanctioned (original)	Completed	Incompleted/ongoing	Work not started	Drawal against expenditure not started	PCRs	(Original)	Sanctioned effective	
1	MIP	6	2	4	0	0	1	113.14	113.14	99.34
2	MIS	811	552	50	134	271	355	118.79	109.46	63.25
3	DR & FL. PRT	19	5	7	7	7	3	38.21	38.21	18.28
4	Navigation	1	0	1	0	0	0	10	10	7.49
5	RB	234	142	66	26	25	74	357.68	357.68	266.90
6	Reclamation	1	0	0	0	0	0	10.33	0	0.00
7	RR-PRI	501	227	148	96	208	130	175.87	168.44	81.62
8	RR-PWD	107	50	45	12	20	7	173.52	173.52	111.52
9	WSM	234	114	54	53	56	97	87.88	83.33	40.12
10	Market Yard	108	7	45	56	108	0	9.72	9.72	1.94
11	Tourism	2	0	2	0	2	0	31.5	31.5	6.30
12	Rural Water Supply	8	0	0	8	8	0	33.24	33.24	1.99
13	School Building	1136	0	0	0	1136	0	14.48	0	0.00
14	Boat Jetties	4	0	0	4	4	0	0.27	0.27	0.02
	<b>Total</b>	<b>3172</b>	<b>1099</b>	<b>422</b>	<b>396</b>	<b>1845</b>	<b>667</b>	<b>1174.63</b>	<b>1128.51</b>	<b>698.77</b>

Source: NABARD

17.77 The Working group on streamlining the implementation of the RIDF and strengthening the coordination between NABARD and State government has given the major

recommendations pertaining to streamlining the implementation of RIDF which are given in Box-17.18

<b>Box -17.18</b>	
<b>Issues and major recommendations of the Working Group for streamlining the implementation of RIDF</b>	
<b>Issues identified</b>	<b>Recommendations</b>
1. Need for sectoral allocation. Low priority for sectors like power, medium irrigation, education and health etc. and high priority for road projects	1. Priority should be given for creation of productive assets like medium and minor irrigation, watershed management, fish landing centres, fish markets, traditional markets, improvements of facilities in veterinary hospitals. The allocation to roads and bridges may be restricted only to one third of the total allocation.
2. Low absorption of funds due to delay in submission of project proposals and poor quality of proposals	(i) Prepare a perspective plan for at least 3 years under RIDF (ii) Reduce the time for vetting process by NABARD (iii) State government may take up with NABARD & Ministry of Finance in delegating the power of approval of smaller projects below Rs. 5 crore to the Regional office of NABARD.
3. Constraints in flow of funds	(i) As the provision of funds for RIDF is made in the budget, the release needs to be streamlined. RIDF works which do not exceed the estimate amount, funds may be released within one week by the Finance Department.

Box Continued

<p>4. Administrative matters such as delay in issuing A/S and T/S., Submission of Project completion reports and deficiencies in monitoring.</p>	<p>(i) A Streamlined system for issue of A/s and T/s for NABARD works has to be followed.                  (ii) A separate concurrent monitoring system has to be put in place for RIDF works.                  (iii) Quality assurance by independent agency should be ensured for all RIDF projects.                  (i) RIDF provisions should not be invested in private lands and to individual Plots.</p>
<p>5. Cost escalation -                   Cost escalation is due to time overrun and cost overrun and out dated schedule of rates.</p>	<p>(i) Timely payment should be ensured for RIDF works.                  (ii) Schedule of rates may be revised. Pending revision, Government may notify gross annual increase by a fixed percentage. This could be accepted by NABARD as the schedule of rates.</p>

**NON-BANKING FINANCIAL INSTITUTIONS (NBFIs) IN KERALA**

17.78 Non-Banking Financial Institutions have become an integral part of economic life by virtue of variety of services offered by them. Some of them are:

- Leasing and hire purchase financing
- Consumer Finance and Investment Banking
- Issue management and underwriting
- Bill discounting / Re-discounting
- Inter-Corporate deposits and Venture Capital finance
- Short-term bridge loans/ promoter funding
- Project Finance, Project counseling and pre-investment studies
- Mergers and amalgamations including takeovers
- Forex advisory Services
- Institutional placement Services
- Housing finance and Credit Card issuance

17.79 The main NBFIs functioning in the State include Kerala State Industrial Development Corporation (KSIDC), Kerala Finance Corporation (KFC), Kerala Transport Development Finance Corporation (KTDFC), Kerala State Financial Enterprises (KSFE), other deposit taking NBFIs registered with Reserve Bank of India, Chit Companies, Money Lending Institutions (Regd), Institutions unregistered and registered in other states but operating in Kerala.

17.80 This enormous increase in number both formal and non-formal has made regulation framework rather difficult in the context of inexplicit legal provisions and inadequate regulatory mechanism. It is against this

background that the State Planning constituted a Working Group under the Chairmanship of Member, Kerala State Planning Board, to study their functioning focussing on the following:

- Preparation of Database of NBFIs in the State
- Evaluation of performance of NBFIs
- Study the extent of Chit business
- Assessment of informal NBFIs
- Recommendation for improving functioning of NBFIs

17.81 The study reveals that between 1997-98 and 2002-03, nearly 45000 chits were registered in the formal sector in Kerala with a total Capital turnover of Rs. 360.00 crores. About two – third of the formal sector chits are registered in Thiruvananthapuram and Ernakulam with 43 per cent and 23 per cent respectively. Similarly, there are 5696 money lending institutions in the organized sector in Kerala as on March 2004 and southern districts (Thiruvananthapuram, Kollam, Pathanamthitta and Alappuzha) alone had over half of the money lending institutions in the State. At the same time there are only 3376 commercial bank branches in the State. In a sense, the money-lending institutions are overtaking the organised banking sector. Further, there is a vast informal sector with numerous unregistered institutions operating in each and every nook and corner of the State. Population covered per money lending institution in the State is 5590 as against 9431 per branch in the banking sector. Table 17.19 gives district-wise details on money lending institutions in Kerala.

**Table 17.19**  
**Money Lending Institutions in Kerala 2003-04**

Sl No	District	Money Lenders		Population covered per Institution
		Number	Percentage	
1	2	3	4	5
1	Thiruvananthapuram	570	10.01	5675
2	Kollam	675	11.85	3828
3	Pathanamthitta	785	13.78	1569
4	Alappuzha	976	17.13	2157
5	Kottayam	366	6.42	5336
6	Idukki	344	8.57	6097
7	Ernakulam	225	3.95	13770
8	Thrissur	488	8.57	6097
9	Palakkad	144	2.53	18174
10	Malappuram	162	2.84	22405
11	Kozhikode	601	10.56	4789
12	Wayanad	128	2.25	6145
13	Kannur	139	2.44	17355
14	Kasaragode	93	1.63	12939
	<b>Kerala</b>	<b>5696</b>	<b>100.00</b>	<b>5590</b>

Source: Inspecting Assistant Commissioners, Sales Tax Department

17.82 A Case Study undertaken in Kannur District reveals that there are 139 money lending institutions in the formal sector of which 45 per cent are registered after 2001, which highlights the trend of growth of money lending industries. The annual business turnover of these money-lending institutions in the district is worked out as Rs. 13.57 crores. Around 70 per cent of the money-lending institutions have business turnover less than Rs. 5.00 lakhs and only 5 per cent have more than Rs. 50 lakhs of business operations.

17.83 A primary survey on money-lending institutions in Thiruvananthapuram district by the Department of Economics and Statistics reveals, that all are registered under Kerala Money Lenders Act and some are managed by women. Around 15 per cent of the money lenders accept deposit @ 7 – 12 percent interest and majority extend loans @ 10 – 20 per cent on security of gold which is auctioned when defaulted. The major depositors are NRIs and

the major loanees are ordinary workers, Government employees, businessmen etc. The major defaulters are farmers. The falling interest rate and liberal lending policies have become a question mark on the survival of these institutions.

17.84 The total assets of the NBFIs in the state rose from Rs. 141.76 crores in 1999-00 to Rs. 199.65 crores in 2001-02. They rely much on exempted borrowings as a source of finance to avoid regulatory provisions. Their recent trend is to lend against gold than hire purchase advance.

17.85 Primary survey undertaken by the Department of Economics and Statistics in Kollam and Kottayam districts with selected unregistered money-lending institutions (69 and 36 respectively) during August '04 reveals the following:

- Fifty per cent operate business in own building

- Some are operating with out a building other than a cash bag
- Some accept deposits
- Gold, Cheque, Promissory notes and Land documents forms securities
- A few lend without securities to ‘honest customers’
- Usage of physical force to handle defaulters is common

**Chit Funds**

17.86 Chit finance has great significance as a pure saving-cum-borrowing avenue. As an indigenous financial instrument, chit is complementary to modern financial techniques of savings and borrowing; with and inherent

ideology of mutual help and co-operation that has survived the test of time and has become a part of the culture and traditions of the people of Kerala. Though KSFE is the dominant chit foreman in the State, it needs to be innovative and competitive in the wake of privatisation. The privilages the KSFE enjoyed as a Government company and exemptions of certain legal provisions, demand better schemes. The default record of KSFE is on the higher side due to poor revenue recovery. Its outreach to the rural areas is also not satisfactory.

17.87 The details of Capital turn over of working chit funds registered in Kerala are given in the table 17.20 given below:

**Table 17.20**  
**Details of working chit funds registered in Kerala (1997-97 to 2002-03)**

Sl No	District	Working Chits		Capital Turnover	
		Numbers	Percentage	Amount (Rs. crores)	Percentage
1	2	3	4	5	6
1	Thiruvananthapuram	19664	43.31	133.94	37.17
2	Kollam	3745	8.25	32.15	8.92
3	Pathanamthitta	890	1.96	7.18	1.99
4	Alappuzha	665	1.46	2.07	0.57
5	Kottayam	1667	3.67	29.53	8.20
6	Idukki	469	1.03	4.41	1.22
7	Ernakulam	10324	22.75	78.18	21.70
8	Thrissur	1153	2.54	9.15	2.54
9	Palakkad	3139	6.91	32.32	8.98
10	Malappuram	481	1.06	5.13	1.42
11	Kozhikode	1645	3.63	13.33	3.70
12	Wayanad	71	0.16	1.94	0.54
13	Kannur	1333	2.94	9.59	2.66
14	Kasaragode	152	0.33	1.40	0.36
	<b>Kerala</b>	<b>45398</b>	<b>100.00</b>	<b>360.32</b>	<b>100.00</b>

Source: Inspecting Assistant Commissioners, Sales Tax Department

**Conclusions**

17.88 The analysis throws some light on the dynamics of money lending in Kerala. Today, the conventional banking is in a fix. They find

it difficult to accommodate more people due to high operating cost. The cost per customer/centre is very high. Hence banks tend to discourage small customers. At the same time, bulk lending for micro credit could help to a large extent.

**BOX-17.19**

**Credit flow across the States**

Kerala ranks 9<sup>th</sup> in terms of credit flow from all commercial banks while the neighboring state, Tamilnadu is the first among the states. Instead of accusing the commercial banks of robbing the State measures have to be taken to kick it up. There is a wide fluctuation on the per capita credit and CD ratio across the states

.The per capita credit, deposit and cumulative CD ratio of different States / Union territories is given in the table 17.21 given below:

**Per capita credit, Deposit and Cumulative CD ratios  
Of Commercial Banks across States**

(as on June 04) (Rs. in crore)

Sl No	State / Union Territory	Population (2001)	Credit @	Deposit@	Per capita Credit <sup>#</sup>	Per capita Deposit <sup>#</sup>	CD Ratio
1	2	3	4	5	6	7	8
1	Chandigarh	900635	11632	11359	129153	126122	102
2	Tamilnadu	62405679	88180	98170	14130	15731	90
3	Maharashtra	96878627	262158	327909	27060	33847	80
4	Karnataka	52850562	61568	92905	11649	17579	66
5	Andhara Pradesh	76210007	56202	85482	7375	11217	66
6	Delhi	13850507	110548	186067	79815	134339	59
7	Rajasthan	56507188	22500	38695	3982	6848	58
8	Orissa	36804660	12416	22483	3373	6109	55
9	Kerala	31841374	32498	65609	10206	20605	50
10	West Bengal	80176197	46955	100349	5856	12516	47
11	Gujarat	50671017	35683	86691	7042	17109	41
12	Uttar Pradesh	166197921	33683	86691	2027	5216	29
13	Bihar	82998509	8738	34501	1053	4157	25
14	Uttaranchal	8489349	3628	18262	4274	21512	20

*@ Source: RBI*

*# In Rs.*

*Courtesy: Financial Express*

## CHAPTER - 18

# GENDER AND DEVELOPMENT

Women of Kerala are relatively more developed in terms of social indicators. But these indicators do not seem to add up to empowerment. Women are educated, but are more unemployed than men. Women live longer than men but if it is of poor quality of life it makes it burdensome. Women are more aware. Nonetheless, they continue to be abused. This scenario calls for serious thought and action.

### Gender Population, Child Population and Literacy

18.2. The overall sex ratio in Kerala has always been favourable to females. The ratio was 1022 females per 1000 males in 1961 and increased to 1058 in 2001. This is against to 933 females per 1000 males in India (2001). The child sex ratio in the age group 0-6 is far below the average but still favourable to female children. According to 2001 census, the child sex ratio is 963 females per 1000 males whereas the normal sex ratio at birth is 950 females per 1000 males. Table 18.1 shows the population census of Kerala from 1941 to 2001 with sex ratio.

**Table-18.1**  
Total Population and Sex ratio in Kerala and All India (1941 to 2001) (in 000)

Year	Total	Men	Women	Sex Ratio per 1000 men: Kerala	All India sex ratio
1941	7493	3742	3751	1002	NA
1951	9280	4621	4659	1008	NA
1961	16904	8362	8542	1022	941
1971	21347	10558	10759	1016	930
1981	25434	12528	12926	1032	934
1991	29099	14289	14810	1036	927

Source: Directorate of Economics & Statistics

18.3. Women literacy rate in Kerala is far above figures for all India and other states. In Kerala literacy gap between men and women which was 19.23% points in 1961 narrowed down to 6.34% point in 2001. (Table. 18.2).

**Table.18.2**  
Women Literacy rate in Kerala and all India (1961 to 2001)

Year	Kerala		All India
	Men	Women	Women
1961	64.89	45.66	12.95
1971	77.13	62.53	18.68
1981	84.56	73.36	29.76
1991	93.62	86.17	39.29
2001	94.20	87.86	54.16

Source: Directorate of Economics & Statistics

18.4. The district-wise details on female population, female children and female literacy as per 2001 census are given in Appendix. 18.1

### Women and Features of Demography

18.5. The demographic profile of Kerala and all India is shown in Table. 18.3.

**Table.18.3**  
Demographic Profile- Kerala and India

Sl. No	Indicators	Kerala	India
1	Population (Million)	31.84	1027.02
	Males	15.47	531.28
	Females	16.37	495.74
2	Decadal Growth Rate of Population	9.42	21.38
3	Urban Female Population (Million)	4.25	
4	Sex Ratio	1058	933
5	Rural sex ratio	1059	922
6	Sex ratio (SC)	1029	922
7	Sex ratio (ST)	996	972
8	Juvenile Sex Ratio	962	
9	Life Expectancy (Years)	73.3	61.1
	(i) Males	70.4	60.4
	(ii) Females	75.9	61.8
10	Proportion of Women in Reproductive Age Group	56%	51.1%
11	Median Age of Marriage		
	Males Females	25.5 27.5	
12	Effective Age of Marriage of Girls (Years)	22	19.5
13	Proportion of Girls Marrying after 21 years(%)	63	25.9
14	Proportion of Girls Marrying between 18 and 20 years(%)	32.3	53.4
15	Marital Status (widowed/Divorced/separated)(%)		
	Males	1.5	2.5
	Females	10.5	8.0

Source: A situational Analysis of Women in Kerala. National Commission for women.

18.6. Rural sex ratio, is in favour of women. Effective age of marriage of girls, proportion of girls marrying after 21 years are above the national average.

18.7. Life expectancy at birth is high for females (75.9 years) and males (70.4 years) in Kerala compared to other states. Ratio of females married after 21 years are more and girls marrying between the age of 18 and 20 years are less than 5%. The decadal growth rate of female population in Kerala was 11.48% during 1991 –

2001 compared to the national figure of 22.89%. 3.3% of India's females are in Kerala though the state's population share is only 3.1%. Female population and sex ratio of Kerala and India from 1961 to 2001 are shown in Table-18. 4

Total enrolment of girls in the Lower Primary level is 9.05 lakhs in 2004 and 7.26 lakh in Upper Primary level. Out of the total enrolment of 15.64

**Table 18.4**  
**Female Population and Sex Ratio – 1961 to 2001**

Census Year	Total Population (million)	Female (Million)	Growth Rate (%)	Sex Ratio (per 1000 men)
1	2	3	4	5
1961	16.90	8.50	23.19	1022
1971	21.35	10.80	27.06	1016
1981	25.45	12.90	19.44	1032
1991	29.09	14.80	14.73	1036
2001	31.84	16.50	11.48	1058

Source: Census of India

### Gender, Education and Female Enrolment

18.8. Education is an important tool for social empowerment of women, therefore specific schemes to provide incentives to promote education, especially among girls children and reduce the school dropout rates is being implemented. Government of India implements two important schemes viz, "Sarva Shiksha Abhiyan" (SSA) and 'Mahila Samakhya' as a special effort to stretch the reach of education especially to the girl children.

18.9. In Kerala, the enrolment of girl students in school education is the highest in the country with more than 49% of the total enrolment. Out of 48.94 lakh students enrolled in schools in 2003-04, 24.01 lakh students (49.06%) are girl students.

lakh students in High School level 7.70 lakh students are girls (49.23%). In plus-two courses, out of total 2.34 lakhs, 1.53 lakhs (65.38%) are girls. (See Table - 18.5). The percentage of girls is 64.71% in Degree courses and 74.4 % in Post Graduate courses. Details on enrolment of girl students in Kerala from 1999 to 2004, at various stages are given in Appendix-18.2. District-wise enrolment of girl students during 2003-04 is shown in Appendix-18.3.

18.10. In Teaching profession, females outnumber males. The ratio of female teachers in LP, UP, HS including Teachers Training Institutes to teachers is 68% during 2002-03 as against 53% in 1980-81 and 41% in 1960-61. It shows that employment of women as teachers in educational sector is increasing rapidly. The Table 18.6 shows the number of female teachers and

**Table.18.5**  
**Male, Female Students in HSS, VHSC, ICSE and CBSE Schools**

Category	Year	Total Students	Boys	Girls	% of girls
Higher Secondary Schools	2002-03	339353	144961	194392	57.3
Vocational Higher Secondary	2002-03	55893	26076	29821	53.3
Kendriya Vidyalaya	2001-02	31575	17104	14471	45.8
Navodaya School	2001-02	5962	3477	2483	41.6
CBSE School	2001-02	224585	125406	99179	44.2
ICSE Schools	2001-02	46087	26927	19160	41.6



their ratio from 1960-61 to 2002-03 in schools and Table 18.7 shows the female teachers in polytechnics and colleges in 2003.

**Table.18.6**  
Teachers in LP, UP, HS including  
TT Institutes in Kerala

(Nos.)				
Year	Total	Male	Female	Female %
1960-61	108857	64367	44490	41
1970-71	142305	75497	66808	47
1980-81	175434	82057	93377	53
1990-91	191008	72804	118204	62
2000-2001	182216	58588	123628	68
2002-03	176620	56372	120248	68

18.11. The stage-wise and management –wise number of women teachers in schools and university –wise number of women teachers in

**Table. 18.7**  
Teachers in Polytechnics and Colleges-2003

(Nos.)					
Sl. No.	Institutions	Total	Men	Women	% of women
1	Polytechnics	1699	1270	409	24
2	Arts & Science Colleges	10585	4965	5493	52

Arts and Science Colleges during 2003-04 are shown in Appendices - 18.4 and 18.5.

## Gender Development

18.12. India ranks 105<sup>th</sup> in Gender Related Development Index (UNDP Report-2001). India's position is below Srilanka but is marginally above Pakistan. The Status of Women in India with International comparisons based on Human Development Index is presented in Table.18.8. To uplift the position of women in India a National Policy for the Empowerment of Women –2001 projected a new form of action (See Box 18.1).

**Table-18.8**  
Status of Women in India – International Comparison

Hdi rank	Name of the Country	Gender Related Development Index (gdi)		Life Expectancy at Birth (Years)		Combined Primary, Secondary and Tertiary Gross Enrolment ratio (%)		Estimated Earned Income (Ppp Uss)	
		Rank	Value	Female	Male	Female	Male	Femal e	Male
1	2	3	4	5	6	7	8	9	10
<b>High Human Development</b>									
1	Norway	1	0.937	81.3	75.4	99	95	22037	34960
2	Australia	2	0.935	81.7	76	118	114	19721	29469
3	Canada	3	0.934	81.4	75.9	98	96	20016	32607
6	United States	4	0.932	79.7	73.9	99	91	24302	39655
9	Japan	11	0.921	84.1	77.3	81	83	15187	35018
14	United Kingdom	12	0.92	80	75	112	100	16753	27611
17	Germany	15	0.916	80.6	74.3	93	95	15846	31994
<b>Medium Human Development</b>									
55	Russian Federation	52	0.774	72.5	60.1	82	75	5877	9283
77	Maldives	69	0.735	65.3	66.9	77	77	3256	5531
81	Srilanka	70	0.732	75	69.3	71	68	2193	4305
87	China	76	0.715	72.5	68.3	73	73	2841	4350
115	India	105	0.553	63.3	62.4	49	62	1195	3236
<b>Low Human Development</b>									
127	Pakistan	117	0.466	59.5	59.8	28	51	826	2787
129	Nepal	120	0.461	57.8	58.3	52	67	849	1607
130	Bhutan			62.8	60.3				
132	Bangalades h	121	0.459	59	58.9	33	41	1076	1866
158	Ethiopia	142	0.308	44.9	43.3	19	34	414	844
160	Burundi	145	0.302	41.5	39.6	16	21	472	690
161	Niger	146	0.26	45.1	44.5	12	20	561	941

Source: UNDP-2001

18.13. Women awareness, women movements at the grassroot level, greater mobility, education and women and child health interventions at all levels have all led to the overall development of women in Kerala. The gender development indicators of Kerala and India are given in Table 18.9.

**Table.18.9**  
**Gender Development Indications-Kerala Vs. India –1981 &2001**

Sl. No	Indicators	India		Kerala	
		1981	2001	1981	2001
1	2	3	4	5	6
1	Mean age at marriage	18.3	19.5	20	22
2	Infant mortality Rate	79	71	41	15.3
3	Maternal Mortality Rate (per lakh)	468	407	--	140
4	Work participation Rate	19.7	25.7	16.6	15.3
5	Public Sector Employment (lakhs)	15	28	1.39	1.93
6	Administration (1987 and 2001)	360 (5.40%)	645 (7.60%)	8 (5.9%)	18 (6.8%)

Source: Census and selected statistics

18.14. The gender and development approach, which forms the basis of the Plan of Action, focuses more on the fact that women and men have different life courses and that development policies affect them differently. It seeks to address these differences by mainstreaming gender into development planning at all levels and at all sectors,

focusing less on providing equal treatment for men and women and more on taking whatever steps are necessary to ensure equal outcomes. It recognizes that improving the status of women cannot be understood as a separate, isolated issue and can only be achieved by taking into account the

status of both women and men.

**BOX-18.1**

The Commonwealth Secretariat has developed a series of policy options for integrating gender into national budgetary policies in the context of economic reform. The policy options centre on six possible tools:

- sex-disaggregated beneficiary assessment,
- sex-disaggregated public expenditure incidence analysis
- gender-aware policy evaluation of public expenditure
- gender-aware budget statement.
- sex-disaggregated analysis of the impact of the budget on time use; and
- gender-aware medium-term economic policy frame work

source: Commonwealth Secretariat, "Gender Mainstream in Development Planning", 1999.

18.15. Table 18.10 presents a typology of government attempts on policy approach to address gender issues in development planning.

**Table.18.10.**  
**A Typology of Government Attempts on Policy Approach to Gender Development Planning**

Sl.No.	Policy Approach	Activities assessed	Impact on Gender Inequalities
1	Welfare	As a safety net to cushion the negative impact of the 'free market' on the lives of poor people.	Some practical needs met. Women seen as passive recipients of welfare
2	Anti-Poverty	Helping poor women will increase their productivity and promote economic growth.	Limited to only meeting practical gender needs.
3	Efficiency	Acceptance that because of changing global arrangements women's production role as cheap labour is critical to economic development.	Greater visibility of women in productive roles.
4	Equity	Promotion recognition of women's contribution to development and fair treatment because of its value	Using an equity approach has some potential in respect of gender.
5	Empowerment/Transformation	By various gender awareness and a critical analysis of social and structural problems through mass based popular development education.	Potential impact to address strategic gender needs great.

Source: Common Wealth Secretariat.

## Women Empowerment

18.16. The 'National Policy for Empowerment of Women' was adopted in India in 2001 with the ultimate objective of ensuring women their rightful place in society by empowering them 'as agents of socio-economic change and development'. 'Empowerment of Women', is therefore, an important approach adopted in the Tenth Five Year Plan (2002-07), for development of women.

18.17. The major strategies of women empowerment include- social empowerment, economic empowerment and gender justice ie, to eliminate all types of discriminations against women and the girl child. Social empowerment of women is designed to create an enabling environment by adopting various affirmative policies and programs for development of women, besides providing them easy and equal access to all the basic minimum services to enable them to realize their full potential. The early nineties marked this shift in the Development paradigm from "Development to Empowerment". Empowerment implies expansion of assets and capabilities of people to influence control and hold accountable institutions that affect their lives. (World Bank Resource Book).

### Women Participation in Decision Making

18.18. Women participation in decision-making positions is vital for empowerment. For instance in services like Indian Administrative Service and

Indian Police Service the share of women which was 5.4% in 1987 increased to 7.6% in 2000 at all India level. In Kerala, though the number of IAS and IPS officers increased from 136 in 1987 to 266 in 2000, women are only 6.77%. Details of IAS and IPS officers from 1987 to 2000 at all India and Kerala are given in Table .18.11

Table-18.11  
Women Representation in IAS/ IPS services-All India and Kerala

Category	All India						Kerala					
	1987		1997		2000		1987		1997		2000	
	Women	Total	Women	Total	Women	Total	Women	Total	Women	Total	Women	Total
1	2	3	4	5	6	7	8	9	10	11	12	13
IAS	339	4204	512	4991	535	5159	7	88	13	150	17	167
IPS	21	2418	67	3045	110	3301	1	48	1	91	1	99
TOTAL	360	6622	579	8036	645	8460	8	136	14	241	18	266

Source: Department of Personal & Training GOI

18.19. According to NFHS-2, in Kerala, 23% of women who earn cash have no decision about the use of their earnings while 42% make decision of their own. The details of the survey are furnished in Table 18.12

Table-18.12  
Household decision of women in Kerala

Sl.No	Item	Wife	Husband	Wife and Husband	Others in household	Women and other in hand	Total
1	2	3	4	5	6	7	8
1	What to cook	56.6	3.1	5.7	15.9	18.6	100
2	Obtaining Health care	54.6	20	13.3	7.4	4.7	100
3	Purchasing Jewellery	20.7	26.1	30.9	10.5	11.7	100
4	Going and staying with Her Parents/sibling	20.5	29.9	31.7	10.4	7.6	100
5	How money earned will be used	42.3	21.4	30.3	1.8	4.2	100

Source: NFHS-2 1999

18.20. In India, 9.4% of women are not involved in any kind of decision making where as it is only 7.2% in Kerala. While 59% have access to money at all India level it is 66% in Kerala. A detailed state-wise analysis of autonomy enjoyed by women is presented in Appendix. 18.6

## Female Headed Households

18.21. The proportion of female headed households in Kerala has been increasing since 1961 and as of 1999, the proportion was 22.1%, more than double the proportion in India as a whole which is 10.3%. Desertion, death, divorce and migration are the basic reasons for female-headed households. Districts having relatively higher incidence of female-headed households are Kannur, Palakkad, Kollam, Malappuram and Kozhikode.

## Women Governance

18.22. Women participation in Local Governments, after the enactment of the 73<sup>rd</sup> and 74<sup>th</sup> amendments of the constitution of India in 1993, went beyond the mandatory requirement of one-third of total seats. Women's role in governance has increased in Kerala at grass root democratic institutions, viz, Panchayat Raj Institutions and Nagarapalika Institutions. District-wise representation of women in the present Local governments in Kerala is given in Appendix-18.7

18.23. The number of seats reserved for women in local government comes to 4800 in 991 Grama

Panchayats, 629 in 152 Block Panchayats, 105 in 14 District Panchayats, 550 in 53 Municipalities and 100 in 5 corporations. Out of the total seats of 17095 in all LGIs, 6184 seats are reserved for women.

## Women and Migration

18.24. There are 2.18 lakh female migrants in Kerala constituting 15.72% of the total migrants as per the survey conducted by the state government. Out of the total female migrants,

141737 (65%) are unemployed and 76265 (35%) are employed. The married female migrants are 130576 (60%) and among them 2213 are above 60 years. Details are given in Table 18.13

**Table.18.13.**  
Marital Status of female migrants by age in Kerala

Sl. No.	Marital Status	(Years)						Total
		Less than 20	20-30	30-40	40-50	50-60	Above 60	
1	2	3	4	5	6	7	8	9
1	Married	1284	44645	55467	22167	4800	2213	130576
2	Un married	58371	15046	2276	569	286	124	76672
3	Widow	-	99	610	1257	848	2183	4997
4	Divorced	-	863	1202	690	118	729	3602
5	Separated	-	291	922	478	-	-	1691
	<b>Total</b>	<b>59655</b>	<b>60944</b>	<b>60477</b>	<b>25161</b>	<b>6052</b>	<b>5249</b>	<b>217538</b>

Source: Department of Economics and Statistics

18.25. Among 60+ years, 2162 are unemployed and 51 are employed. Among the unemployed female migrants, 42% are below 20 years and out of them 1078 are married. Out of the unemployed unmarried female migrants, 124 are above 60 years. Out of the total employed female migrants, 15784 (21%) are in government service, 2889 are in semi-government and 57592 (76%) are in private firms. Marital status of the unemployed shows that 51% are married, 45% are unmarried, 2% are widows and the remaining are divorced. Table 18.14 shows the details.

**Table.18.14**  
Marital Status of unemployed female migrants by age in Kerala

Sl. No.	Marital Status	(Years)						Total
		Less than 20	20-30	30-40	40-50	50-60	Above 60	
1	2	3	4	5	6	7	8	9
1	Married	1078	30061	26856	9290	2151	2162	71598
2	Unmarried	58163	4232	490	366	235	124	63610
3	Widow	-	-	-	493	597	2183	3273
4	Divorced	-	355	843	483	118	729	2528
5	Separated	-	239	365	124	-	-	728
	<b>Total</b>	<b>59241</b>	<b>34887</b>	<b>28554</b>	<b>10756</b>	<b>3101</b>	<b>5198</b>	<b>141737</b>

Source: Department of Economics and Statistics

## Women and Ageing

18.26. High female life expectancy in Kerala will increase the old women population. Now itself proportion of the aged females is highest in Kerala, compared to other states. In Kerala, out of 165 lakh women in 2001, 33.35 lakh (20.2%) 60+ years. Within them 19.34 lakh (11.7%) are in the age group of 60-69 years, 10.12 lakhs (6.1%) were 70-79 years, and 3.89 lakhs (2.3%) are 80+.

### Gender Budgeting (Women's Component Plan)

18.27. Women's development plan started with the implementation of the Women's Component plan from 1997-1998 on wards. Kerala is, indeed, the only state in India which implements women component plan. In Kerala, in addition to gender development, gender specific schemes have been formulated and implemented.

18.28. In Local Government Plan, 10% of the plan outlay is earmarked for Women Component Plan (WCP), exclusively for projects benefiting women. In Kerala, during 2002-03, there were as many as 12338 projects specifically drawn up

and implemented benefiting exclusively women. Out of 15510 social welfare projects of Local Governments, majority of them are for the overall benefit and welfare of women and children.

### Women Development Agencies in Kerala

18.29. In Kerala, several agencies/government institutions and non-government organisations (NGO's) are involved in implementing specific women development programmes. The major governmental institutions are Kerala State Women Development Corporation, Kudumbasree and Kerala State Women's Commission. The activities and achievements of these institutions are detailed below.

Institution	Activities	Achievements
1. Kerala State Women Development Corporation	Started in 1988 with the objective of social and economic empowerment of poor women providing self employment and training in modern trades. It is the nodal agency for implementing STEP and NORAD schemes through mobilising fund from NBCFDC and NMDFC and Government of India.	During 2003-04, Corporation mobilised Rs.12.98 lakhs from NBCFDC and Rs.161.28 lakhs from NMDFC. Provided self employment assistance to 807 women and training to 830 women. Corporation is also running 6 workingwomen hostels(Gandhinagar,Thrikkakkara, Mananthavady, Manjeri,Kannur and Tirur) benefiting 335 inmates.
2. Kudumbasree	Comprehensive network approach of State Poverty Eradication Mission started in 1999 as a partnership of GOK, GOI, LSGIs and NABARD. The objective is eradication of poverty from the state within a decade. The core activities include women empowerment initiatives, micro finance operation, micro enterprise promotion and convergent community action carried out through BPL women. It has three tier structure - Neighbourhood group at the grassroot level, Area Development Societies at the local ward level and CDS at the local government level.	At present 8614 NHGs and 725 ADSs are functioning in the urban areas covering 2.92 lakh families. In the rural areas 130672 NHGs and 13187 ADSs are functioning covering 26.48 lakh BPL families. About 29 lakh families in the rural and urban areas together were linked with the thrift programme and loan about Rs. 703.49 crores disbursed during 2004. Kudumbasree has been identified by the Planning Commission and UNDP as one of the best practices in governance in the country.
3.Kerala Women's Commission	Established in 1996 with the objective of improving the status of women in Kerala and to enquire into unfair practices against women.	During 2004 (up to Sept..30), the Commission received 4502 complaints which include 459 related to violence, 668 on harassment by husband and 237 dowry cases. Of the total complaints Thiruvananthapuram district is in the forefront with 1178 followed by Kollam 509. The lowest number of complaint is from Kasargode 92. Complaints related to child marriage is only from Trivandrum.

## Women Development Corporation

18.30. Women Development Corporation provides support to women exposed to socio-economic deprivation. The major objective of the Corporation is to implement programmes for the economic development of women.

18.31. The Corporation formulate and implement several programmes like skill upgradation, training to women, assistance to NGOs for developing awareness etc.

18.32. The loans are provided to women to take up self employment and to alleviate poverty. Corporation extended loans to 7070 women amounting Rs. 207.2 lakhs during 2003-04 through agencies like NBCFDC, NMDFC and State Government. It is against a loan amount of Rs. 337.74 lakhs benefiting 835 women during 2002-03. Similarly loan assistance was provided to NGOs amounting Rs. 2.62 lakhs.

18.33. The Corporation operates 12 production-cum-training centres for specialised skill oriented entrepreneurship development programme to unemployed women. Out of this, 3 have been closed. But 830 women have been trained. The Corporation runs six working women's hostels benefiting 335 women. During 2003-04, training was provided to 210 women in computer and repair unit against 270 women trained in food processing, computer and electronic assembling. The Corporation also runs 2 marketing centres and 17 stalls for women entrepreneurs. (See Table - 18.15). Details of major programmes are shown in Appendix - 18.8.

**Table - 18.15**  
**Major Activities of the Corporation during 2003-04**

Sl.No.	Activities	Units	Beneficiaries
1	Training and Employment	20	500
2	Women Hostel	6	335
3	Training Programmes	-	210
4	Marketing Centres	2	--
5	Meter Repairing and Testing Centres	8	160

## Women and Health

18.34. Health and family welfare needs of the women community are facilitated through Self-Help Groups since the 10<sup>th</sup> plan. Efforts are being made to ensure engendering of primarily health

care services in rural and urban areas through more women friendly environment. National Population Policy, 2001, particularly focused on Women Empowerment and their improved health through Reproductive and Child Health Programme.

18.35. Gender bias seems to be deepening in the preference for boys over girls. According to National Family Health Survey-2 percentage of women who want at least one boy is 85% and at least one girl is 80%. Percentage of women with 3 children of whom at least 2 are boys and who want no more children are >90% and women with 3 children of whom all are girls and who want no more children are 50%.

18.36. Easy availability of the sex determination tests seems to be a catalyst in the process. For the last two decades, reproductive technologies in the form of amniocenteses, ultra sound and several other new methods have enabled families to know the sex of the unborn child. For uprooting the menace of female foeticide, Government brought into force the Pre-Natal Diagnostic Techniques (Regulation and Prevention of Misuse) Act, 1994 (PNDT Act) with effect from 1-1-1996. The Act has been amended with effect from 14-12-2003 to make it more effective.

18.37. Another problem area with gender implication is on global HIV/AIDS epidemic. Prevention of HIV among women and children has become crucial to the society. As estimated, in Asia, 7.4 million people are living with HIV. Around half a million are believed to have died of AIDS in 2003 and about 1.1 million are estimated

to have become newly infected with human immunodeficiency virus. Among young people in Asia in the 15-24 age group, 0.3% of women are living with HIV by the end of 2003. Kerala has an estimated HIV

population between 70000 and 100000 and its Ante Natal HIV prevalence is 0.33%. HIV/AIDS contributes to the rise of female headed households on a large scale. AIDS widows are younger and thus tend to have dependent children who

need to be looked after and who cannot contribute to farm work/or off-farm income generating activities. In Kerala, 27% women do not know the way to avoid infection, compared to 33% in India. The percentage is much higher among women who are not regularly exposed to the media (53%), illiterate and less educated women (42-55%) and women from households with a low standard of living (39%).

18.38. In the changing society, women have to play multiple roles from child bearing, rearing and income earning and active partnership in development and governance. In India, mortality rate among females is greater than males in all stages, especially in the age group 15-35 years. While the infant mortality rate per 1000 birth in India is 67.6 the rate in Kerala is only 16.3%. Child mortality rate also differ in India and Kerala. For instance, rate is 29.3 in India against only 2.6 in Kerala. In India, the percentage of Institutional delivery is 33.6% while in Kerala it is 93.0%. The details are shown in Table 18.16

18.39. Female infant mortality rate was 15.3 in Kerala with a gender gap of 1.6 in 1999 where as at all India level it was 70.8 with 1 point gender gap. MMR (per one lakh) in India declined from 468 in 1980 to 437 in 2002; in Kerala it is 87 in 2002.

18.40. National Family Health Survey-II (1998-99) shows that while 1.9% of the adolescent married girl suffer from severe anaemia, 45.9 percent suffer from moderate anaemia at the all India level. Table. 18.17 shows anaemia level of women 15-49 age in Kerala according to NFHS-II survey. Overall, 23 percent of women have some degree of anaemia, 20 percent women are mildly anaemic, 3 percent moderately and 0.46 percent with severe anaemia. At the all India level while prevalence of anaemia is highest among pregnant women with 49.7 percent, it is note worthy that pregnant women have slightly lower than average levels of anaemia in Kerala with 11.6 percent mild and 8.7 percent moderate.

**Table.18.16**  
**Health Status of Women and Children in India and Kerala**

Sl.No	Indicators	India		Kerala	
		I	II	I	II
1	2	3	4	5	6
1	Neo-Natal Mortality	48.6	43.4	15.5	13.8
2	Infant Mortality Rate	78.5	67.6	23.8	16.3
3	Child Mortality Rate	33.4	29.3	8.4	2.6
4	Total Fertility Rate	3.39	2.85	2.00	1.96
5	% of mothers received ANC	62.3	65.4	97.3	98.9
6	% currently using any method	40.6	48.2	63.3	63.7
	a) Sterilisation	30.8	36.1	48.3	51.0
	b) Spacing method	5.5	6.8	6.1	5.1
7	% of children full vaccinated	35.4	42.0	54.4	79.7
8	Institutional Delivery (%)	25.5	33.6	87.8	93.0
9	Safe Delivery(%)	34.2	42.3	89.7	94.0
10	% of children with anaemia	NA	74.3	NA	43.9
11	%of women with anaemia	NA	51.8	NA	22.6

Source: NFHS I and II

**Table. 18.17**  
**Anaemia among Women in Kerala**

Background Characteristic	Percentage of women with any anaemia	Percentage of women		
		Mild Anaemia	Moderate Anaemia	Severe anaemia
1	2	3	4	5
<b>Age</b>				
15-19	26.4	24.0	2.4	0.0
20-24	18.5	15.4	2.4	0.7
25-29	24.3	21.1	2.8	0.4
30-34	26.1	23.2	2.1	0.8
35-49	21.7	18.3	3.0	0.4
<b>Marital Status</b>				
Currently married	22.5	19.4	2.6	0.5
Not currently Married	26.0	21.1	4.4	0.5
<b>Residence</b>				
Urban	20.4	16.9	3.0	0.5
Rural	23.4	20.3	2.6	0.5
<b>Education</b>				
Illiterate	25.7	18.8	5.6	1.2
Literate, <middle School complete	22.4	19.3	2.8	0.3
Middle school Complete	20.6	18.6	1.8	0.3
High school Complete and Above	22.9	20.2	2.1	0.6
<b>Religion</b>				
Hindu	25.9	21.7	3.6	0.6
Muslim	19.4	17.5	1.7	0.3
Christian	18.9	16.3	2.0	0.7
<b>Pregnancy/breast Feeding status</b>				
Pregnant	20.3	11.6	8.7	0.0
Breastfeeding (not pregnant)	21.3	20.0	1.1	0.2
Not pregnant/ not breastfeeding	23.2	19.9	2.7	0.6

HS-II 1998-99

### Women and Disability

18.41. Sex-wise disability among disabled persons shows that 46.8% are females out of 8.60 lakh in Kerala as per 2001 Census. Among female disabled, 41.5% are seeing disabled, 23.6% are moving disabled, 16.7% are mentally disabled, 10.7% are hearing disabled and 7.5% are speech

disabled. Among the disabilities hearing disabilities were more among female than male (Men 7.8%, Women 10.7%) whereas seeing disability and mental disability are about 50% each. (See Table 18.18).



**Table –18.18**  
**Female Disabled Persons in Kerala**

Sl.No.	Type of disability	(In lakhs)	
		Total	Female
1	Seeing disability	3.37	1.67
2	Speech disability	0.67	0.30
3	Hearing disability	0.79	0.43
4	Movement disability	2.38	0.95
5	Mental disability	1.42	0.67
<b>Total</b>		<b>8.60</b>	<b>4.02</b>

### Female Labour Force

18.42. Kerala which ranks first among the Indian states in terms of Human Development Index (HDI) and Gender Development Index(GDI), presents, however a poor picture in terms of female work participation. Educated unemployment in the state is the result of rapid expansion of higher education and a strong preference for white collar jobs and salaried jobs and an aversion to manual work. The occupational distribution of the work force in Kerala significantly, differ from that of all India is shown in Table 18.19. Distribution of female work seekers are given in Appendix - 18.9.

the women in the work force in Kerala. During 1981-1991 the proportion increased marginally from 20.96 percent to 21.65 percent. But at the all-India level, the proportion declined from 9.04 percent in 1981 to 8.07 percent in 1991. The proportion of women employed in the secondary sector in Kerala is higher than all-India figures. Female economic power is the most important independent variable that affects overall gender stratification in the household. And, the greater a woman's relative economic power, the greater is her control over her own life and women's self-esteem grows when they earn independent income.

**Table.18.19**

**Classification of Female workers in Kerala and India: 1981 and 1991**

Sector	Percentage of Female Workers			
	Kerala		India	
	1981	1991	1981	1991
Primary Sector	55.23 (50.51)	43.61 (47.84)	81.61 (66.28)	81.09 (63.37)
Secondary Sector	20.96 (18.19)	21.65 (17.14)	9.04 (13.95)	8.07 (13.30)
Tertiary Sector	23.81 (31.30)	29.74 (35.02)	9.35 (19.77)	10.84 (23.33)

Note:- Figures in brackets are the corresponding percentages for males.

Source: CDS

18.43. The Table above presents that primary sector still remains the largest provider of employment for both men and women in India. But in Kerala only less than half the work force is employed in the primary sector. The proportion of female workers in the primary sector declined from 55.23 percent in 1981 to 43.61 percent in 1991 partly due to the fall in the area under rice cultivation and partly due to moving of female agricultural labourers towards self employment. The secondary sector accounts for one-fifth of

18.44. Incidence of unemployment among educated women is more in Kerala. For instance out of the total registered unemployed job seekers of 40 lakhs in Kerala (2004) women are 23 lakhs (57.7%).

### Legal Entitlements

18.45. There are several Acts now in effect which provide facilities like creches for children, maternity benefits, equal remuneration for similar work, etc. for female workers. They are as show below in Box. 18.2.

## BOX-18.2

Name of Enactment	Protective Provisions
Beedi & Cigar workers (Conditions of employment) Act, 1966	Provision of creches for the benefit of women workers in the industrial premises wherein more than fifty female employees are ordinarily employed.
The Plantation Labour Act, 1951.	Provision of creches in every plantation wherein fifty or more women workers (including women workers employed by any contractor) are employed or where the number of children of women workers (including women workers employed by any contractor) is twenty or more.
The Contract Labour (Regulation & Abolition) Act, 1970	Women workers are provided time off for feeding children.
The Contract Labour (Regulation & Abolition) Act, 1970	Provision of creches where twenty or more women are ordinarily employed as contract labour. Female contract labour to be employed by any contractor between 6 AM and 7PM with the exception of mid-wives and nurses in hospitals and dispensaries.
The Inter State Migrant Workmen (Regulation of Employment & Conditions of service) Act, 1979	Provision of creches for the benefit of women workers in establishments wherein twenty or more women are ordinarily employed a migrant workers and in which employment of migrant workers is likely to continue for three months or more.
The Factories Act, 1948	Provision of creches in every factory wherein more than thirty women workers are ordinarily employed.
The Mines Act, 1952	Employment in mines below ground prohibited. Provision of separate toilets and washing facilities for women workers.
Maternity Benefit Act, 1961	Maternity benefits to be provided on completion of 80 days working.
Maternity Benefit Act, 1961	Not required to work during six weeks immediately following the day of delivery or miscarriage. No work of arduous nature, long hours of standing likely to interfere with pregnancy/normal development of foetus or which may cause miscarriage or is likely to affect health to be given for a period of six months immediately preceding the period of one week before delivery. On medical certificate, advance maternity benefit to be allowed.

Equal Remuneration Act, 1976	Rs. 250.00 as Medical bonus to be given when no prenatal confinement and post natal care is provided free of charge.
Employee's State Insurance (General) Regulation, 1950	Payment of equal remuneration to men and women workers for same or similar nature of work protected under the Act.
Beedi Workers Welfare Fund Act, 1976	No discrimination is permissible in recruitment and service conditions except where employment of women is prohibited or restricted by or under any law.
Iron Ore Mines, Manganese Ore Mines and Chrome Ore Mines Labour Welfare Fund Act, 1976.	Claim for maternity benefit becomes due on the date medical certificate is issued for miscarriage, sickness arising out of pregnancy, confinement or premature birth of child.
Lime Stone and Dolomite Mines Labour Welfare Fund Act, 1972.	Claim for maternity benefit becomes due on (General Regulation 1950) the date medical certificate is issued or miscarriage, sickness arising out of pregnancy, confinement or premature birth of child.
Mica Mines Labour Welfare Fund Act.1946	Appointment of women member in the Advisory and Central Advisory Committee is mandatory under the Acts at Sl. Nos. 10-13.
The Building and Other Construction workers (Regulation of Employment and conditions of service)Act, 1996.	-do-
Industrial Employment (Standing Orders) Act, 1946	-do-
	Representation of a women member on Building and other Construction Workers Welfare Board.
	Provisions for maternity benefit to female beneficiaries of the Welfare Fund. Provision for creches where more than 50 female construction workers are ordinarily employed.
	Provision regarding safeguards against sexual harassment of women workers at their work places.

### Kerala Women's Commission

18.46. Kerala Women's Commission since its inception on 1996 has been undertaking promotional and educational activities for improving the status of women in Kerala and to make enquiry into unfair practices against women. The Commission during 2004, received 4502 complaints from 1/2004 to 9/2004, out of which 668 were husbands harassment 459 were against violence, 433 were against harassment of women, 381 were property related and 237 were dowry harassment. The highest number of complaints, were from Thiruvananthapuram district (1178) and lowest from Kasaragod (92). District-wise details are shown in Appendix. 18.10

### Women and Crime

18.47. State Crime Bureau's report shows that the number of crimes committed against women has increased to 143795 in 2001. The level of crime against women in India by states and rank in 2001 is given in Appendix. 18.11. Among the states, while Uttar Pradesh reports the highest with 202227 crimes of (14.1 per cent of all states) followed by Andhra Pradesh (16477) and Madhya Pradesh (14549) with 11.5% and 10.1% respectively. Kerala ranks 10th with 5450 crimes (3.79%).

18.48. In Kerala, number of crimes committed against women were 5658 in 2004. Of the total crimes against women in Kerala, cruelty by husband/relatives claims 41 per cent, followed by molestation 29% per cent. While crimes against women in India are increasing, in Kerala it shows decline. Details of district-wise cases on crime

against women in Kerala are given in Appendix. 18.12.

### Women and Suicides

18.49. Family problems, insanity, dreadful diseases, bankruptcy, love affairs, failure in examination are the major causes cited for suicides of women in Kerala. Lack of adequate and effective interpersonal communication is a bye-product of modern life. Most of the victims were found to be lacking timely advice or suggestion from competent persons. In Kerala men commit more suicide than women. For instance out of the total 9145 suicides in Kerala during 2003, 6707 (73.3%) were men and 2438 (26.6%) were women. (See Table - 18.20).

Table -18.20

Total Suicides in Kerala - 2001 to 2003.

Year	Male	Female	Total
2001	6787 (71)	2785(29)	9572
2002	7165 (73)	2645 (27)	9810
2003	6707 (73)	2438 (27)	9145

Note: Figures in bracket indicates percentage.

Source: SCRB

18.50. During 2003, 1446 males committed suicide because of family problems and 910 because of insanity and 902 due to bankruptcy. Out of total female suicides, 581 (24) were due to family problems and 442 (18%) were due to insanity suicides were 581 and 442 respectively. Details are furnished in Appendix. 18.13. Total suicides in Kerala increased from 9572 in 2001 to 9810 in 2002, but decreased to 9145 in 2003. Female suicide has a downward trend from 2785 in 2001 to 2645 in 2002 and again to 2438 in 2003.

## CHAPTER 19

# LABOUR AND EMPLOYMENT

### Labour Force and Labour Welfare

In India there are 402.54 million workers (2001). Out of them 313.2 million are main workers (77.8%) and 89.34 million are marginal workers (22.2%). Illiteracy among Indian workers is very high. For instance, out of the total workers, 44% are illiterate and 22.7% workers only primary educated.

19.2 Kerala has 2.5% of India's workers. Similarly out of India's total main workers, 2.6% are Keralites. With regard to marginal workers 2.3% are in Kerala.(Table 19.1)

### Work Participation Rate

19.3 Work participation rate in an economy indicates the level of employment. In 2001, work participation rate was 32.3 percent in Kerala against 31.4 percent in 1991 and 30.5% in 1981. This shows that work participation rate increased by only 0.90 percent point in 2001 over 1991. The same rate of increase could be noticed in 1991 over 1981. Male-Female work participation rate shows that female rate is far below male rate. For instance, in 1991 when male work participation is 47.80 percent, it is only 16.9 percent for female. In 1981, male-female rates were 44.90 percent and 16.80 percent respectively. Male-female labour participation rate at all India level which is far above Kerala is respectively 51.60 percent and 22.70 percent.(Table 19.2)

### Population and Work Force.

19.4 In 2001, total population of Kerala was 318 lakhs. According to age-wise classification, 82.96 lakhs are below 14 years and 33.6 lakhs are 60+ years. In other worlds population in the productive age group (15 – 59 years) are 201.83 lakhs which form 63.5%. Work seekers are from this age group. Work seekers registered with employment exchange belonging to this category are termed unemployed job seekers. In October 2001, there were 39.56 lakh registered job seekers in Kerala and they were 19.6% of the productive age group (15 – 59 years). Sex-wise unemployment among productive age group of 15 - 59 years shows that 21.23% are female and 17.7% are male.

19.5 In Kerala, according to 2001 census, there are 10.3 million workers which constitutes 32.3% of state population. Main workers are 8.2 million and out of them 6 million (73%) are in rural areas and 2.2 million (27%) in urban areas. Similarly there are 2.05 million marginal workers. Non workers are 21.6 million (67.7%) in the state.

### Migrant Labourers

19.6 The number of workers who were granted emigration clearance during 1999-03 is shown in Table - 19.3. Out of the total emigration clearances granted during 2000, 30.3% were from Kerala. But the share of Kerala declined to 19.7% in 2003.

Table - 19.1  
Work Force in India and Kerala (2001 Census)

Sl. No	Category of Workers	Workers (million)	
		India	Kerala
1	Total Workers	402.54	10.3 (2.5)
2	Main Workers	313.20	8.2 (2.6)
3	Marginal Workers	89.34	2.1 (2.3)

Note: Figures in bracket indicate percentage.

Table - 19.2

Sl. No	Category	Number (lakhs)
1	Productive Age group (15 – 59 years)	201.83
2	Registered Job Seekers	39.56
3	Percentage of unemployed job seekers to productive age group	19.6
4	Male productive age group	97.41
5	Female productive age group	104.41
6	Percentage of Male unemployed job seekers to male productive age group	17.80
7	Percentage of Female unemployed job seekers to female production age group	21.30

Table - 19.3  
Workers Granted Emigration clearance/Endorsement during 1999-03  
Kerala & India

Year/Item	1999	2000	2001	2002	2003
Kerala	60445(30.3)	69630(32.7)	61548(22.1)	81950(22.3)	92044(19.7)
India	199552	212846	278664	367663	466456

Source: Annual Report 2003-04 GOI

Note: Figures in bracket indicate percentage.

### Issues Related to the Employment Situation in the State

19.7 There has been a structural imbalance between the environment in the productive sectors, infrastructure and the supply of labour. There is labour shortage for traditional agriculture purposes or for manual work as well as for trained and skilled personnel in emerging areas of employment. The formal education system is not producing persons suitable for need jobs or for self employment. The 'educated' labour in the state seeks full-time, life-time employment in government (preferably) or in the organised sector and considers itself unemployed otherwise.

19.8 There are several issues which need to be understood before designing a job generating strategy for the State. The important ones are summed up below.

#### i) Changing structure of the economy

19.9 The economy of Kerala has changed from one dominated by agriculture to one dominated by the services sector. This is due to growth of the public services and growth of services spurred by high remittances from abroad. Manufacturing sector is relatively small and this has affected the entrepreneurial culture which in

turn has influenced the pattern of investment in the State. The State does not produce many things it could have and loses reasonably stable jobs which come through the manufacturing sector.

#### ii) Changing profile of job seekers

19.10 The high registration in the Employment Exchanges reveals a marked preference for white collar government jobs. Over the years the focus on education enabled people to acquire not only school but also general college education. However there is a limit to generating jobs which are appropriate for people of such educational background. Because of this, Kerala has a paradox of high wage unskilled labourer and low wage educated worker.

#### iii) Pattern of education and poor employability

19.11 As higher education in Kerala follows a pattern dominated by general education in Arts and Science, with the changed needs of the industry and services sector, most of these educated persons have become well-nigh unemployable unless they are able to add on relevant vocational training to their basic qualification. The vocational institutions themselves have become 'generalised' and the

products of the institutions do not have the skills and knowledge required by fast changing modern industry. There is a mismatch between the two.

19.12 In the case of technical and professional education particularly in the engineering and technology sectors, obsolete trades still dominate the curriculum. Difficulties of retraining the existing instructors and resistance to learn new things have contributed to the obsolescence in the professional education sector.

19.13 Due to acute budget constraints, the government could not for some years start new courses or modify the existing facilities to keep up with the times. At the same time reluctance to allow private participation (which was got over only recently) allowed the sector to stagnate. A major project for modernisation of IRs, technical and vocational training schools and higher level institutions of engineering is overdue and has to be under taken overcoming the resistance of incumbent interests, so that the youth and younger generation are benefited. Those who leave formally completed their education also need to be given opportunities for 'last mile' training to make them employable. Language and up to date technical skills can vastly change the employability of youths and thereby the unemployment situation.

#### iv) Labour attitudes

19.14 The labour situation presents a complex mosaic which has been much debated about. From one angle a labour force which is aware of its rights and which is organized enough to access entitlements could be seen as a positive feature but when the neighbouring States are far behind in this respect it becomes a disadvantage. Several industries have migrated across the border, to name a few Cashew, Coir, Poultry, Foundry etc. As the study by the of Centre for Development Studies put it, "gain in wages has often resulted in loss in jobs."

19.15 In the unorganized sector like that of Headload Workers/Construction Workers, have often resorted to unfair tactics bordering on extortion. Practices like 'Sons of the soil' Attimarry and Nokk Kooli (extortionate wages) have tarnished the fair image of labour in the State, increased costs, affected smooth working of units and have acted as disincentives for

investment.. The adverse effects have been realised in recent years and there is a change taking place.

19.16 Certain features of Kerala labour particularly in the unorganised sector like absence of off-season wages again resulted in gain in wages and loss in jobs. The case of agricultural labour is a good example where the real wages have gone up while the number of days of work has come down sharply over the years, as many a farmer prefers to keep the land fallow rather than pay high wages unless he is sure of assured return.

#### v) Resistance to Technology

19.17 Instances are many wherein the interest of retaining existing jobs new technology has been resisted particularly by the affected labour. Farm mechanization, mechanization of traditional industries and computerization were all delayed by such resistance. This affected generation of jobs in time. Here again, a change is taking place in recent years.

#### vi) Changes in agricultural economy

19.18 Several changes in the agricultural economy have affected job creation in the sector. They are summed up below.

1. Aversion to manual labour by the newly educated youth.
2. Keeping of land fallow by even small land holders due to absence of lease provisions as well as due to high wages.
3. The low growth rate of agriculture in the 1970's and 1980's.
4. Changes in cropping pattern towards more perennial crops has reduced labour absorption. Area under paddy declined by 40% in the 90's and area under tapioca by 24% during the same period.
5. The pace of modernisation of agriculture has been very slow. Kerala was ranked 13 among the States in the index of agriculture modernization in 1998.
6. The relatively faster growth of agricultural wages in comparison to output prices has made farming less attractive. For example in 1960 one quintal of paddy could purchase 29 mandays of labour while 40 years later the same quantity is worth only about five mandays.

**vii) Poor Performance of Public Sector**

19.19 Of the 111 Public Sector Units employing 1.28 lakh people, unfortunately only 12 are profit making units. Public sector units have suffered from bad management, over-staffing, low productivity, failure to upgrade technology and government interference. Thus they have been unable to expand on their own and generate more employment.

**viii) External Shocks**

19.20 The agrarian and service sector of the State economy are very much dependent on outside factors the former to international prices and the latter to remittances from abroad. Of late shocks from outside have severely affected the agrarian economy especially in plantations which employ 3.87 lakh people. Fluctuations and uncertainty in prices have affected their expansion. As many of Kerala's agriculture crops are traded outside the country, they are vulnerable to export-import policies over which the farmers of Kerala have very little control. Similarly any crisis in the Gulf region affects the outflow of people. Thus, perhaps more than any other State in the country external factors can influence employment in the State.

**ix) Collapse of traditional industries**

19.21 Traditional industries of Kerala are in danger due to unfair terms of trade and substitution with machine made and synthetic products. Cashew industry which employs 2.1 lakh people, coir industry which employs 3.6 lakh people, the handicraft sector which employs 1.75 lakh people and the handloom sector which employs 1.75 lakh people are all in severe difficulties. Since the poor and weaker sections

are employed in these sectors there are social implications in their decline.

**x) Limits to Government jobs**

19.22 For a State of Kerala's size, Government has been a major employer accounting for 3.25 lakh staff. The growth of Government employment will slow down in the coming years. This would affect the educated youth with general qualifications who have high expectations of joining government service. Also particularly affected would be the weaker sections who have traditionally depended on government jobs for their economic upliftment.

**unemployment**

19.23 The comparison between Kerala and India as revealed in the distribution of employment by current weekly activity given in Table 19.4 shows that the unemployment rate for Kerala is 11.6% in rural areas and 12.2% in urban areas, where as the comparative figures for the country as a whole are 2.3 and 5.7 respectively. This again points to the acute unemployment problem in the State which is worse in rural areas.

19.24 According to live registers of employment exchanges in Kerala, the total number of work seekers in 2003 was 40.05 lakhs. The total number up to August 2003 is 37.94 lakhs. The total number of general work seekers in the category below SSLC increased from 7.12 lakh in 2002 to 7.46 lakh in 2003 and 6.77 lakhs upto August 2004. The total number of work seekers who possess SSLC and above increased from 29.68 lakh in 2002 to 32.58 lakh in 2003 and it was 31.18 lakh upto August 2004. Their percentage share to total work seekers has

**Table 19.4**  
**Distribution of Employment by current weekly Activity per 1000 persons**  
**(January 1998-June 1998)**

	Kerala		India	
	Rural	Urban	Rural	Urban
1. Working	321	325	369	313
2. Self Employment	119	116	201	129
3. Regular Employed	45	98	22	122
4. Casual Labour	157	111	145	62
5. Unemployed	42	45	11	19
6. Unemployment Rate(%)	11.6	12.2	2.3	5.7



increased from 81.6% in 2003 to 82.1% in 2004. This percentage was only 75 in 1996 and 1998.

19.25 The number of graduates registered in employment exchanges stood at 2.68 lakh in 2003. It has come down to 2.35 lakh upto August 2004. The number of job seekers with postgraduate degree increased from 0.53 lakh in 2002 to 0.61 lakh in 2003 and it was 0.44 lakh upto August 2004. At the same time their total number during 2001 was 0.66 lakh (Appendix 19.2).

19.26 The number of professional and technical job seekers had been increasing year after year, since 1996. The total number of professional and technical work seekers was 1.80 lakh in 2002. This number decreased to 1.59 lakh in 2003. A notable feature among the medical graduates is that their total number has sharply increased since 1999 to 2002. In 1999 there were only 1698 medical graduates who had registered their names in the employment exchanges for job. Their total number has gone to 3736 in 2002 and marginally decreased to 3567 in 2003. Their total number upto August 2004 is 3344. The number of veterinary graduates has decreased from 480 in 2002 to 436 in 2003 and their total number upto August 2004 is 761. The number of job seeking agricultural graduates has also increased from 881 in 2002 to 897 in 2003 and 947 upto August 2004.

19.27 However the total number of Engineering diploma holders has been decreasing since 2001. The total number of diploma holders in the live registers of employment exchanges was 0.43 lakh in 2002 which came down to 0.41 lakh in 2003 but increased to 0.42 lakh in August 2004 (See

Appendix 19.3).

19.28 A peculiar feature of Kerala's unemployment situation is that women outnumber men seeking employment through employment exchanges. This position is reflected in all the 14 districts in Kerala. Out of the total number of 40.05 lakh job seekers during 2003 women number 23.10 lakh.

19.29 Thiruvananthapuram District ranks first in the number of work seekers in general as well as professional categories. In 2003, the total number of work seekers in Thiruvananthapuram District is 5.94 lakh of which 3.54 lakh were women and 2.40 lakh men. The second largest number of work seekers is from Kollam District. There are 4.10 lakh job seekers in Kollam District in 2003, out of which 2.49 lakh are women and 1.62 lakh men. The lowest number of work seekers is in Wayanad and Kasaragod Districts. In Wayanad, there are 0.83 lakh work seekers, whereas in Kasaragod the number is 0.95 lakhs in 2003.

19.30 According to the study "Activity status of Migrants and Returnees" conducted by the Department of Economics & Statistics in 1999, 40.90 lakh i.e 13% were employed permanently and 58.69 lakh (18.65%) were engaged in various types of temporary employment and the remaining 215.08 lakh persons (68.35%) were unemployed. The number and percentage distribution of unemployed persons in the state is given in Table 19.5

#### Unemployment Assistance

19.31 Government of Kerala introduced an

Table 19.5  
Status of Unemployed persons in 1999

Sl. No	Status	No. Of Persons (lakh)	Percentage
1	Job seekers	27.25	12.67
2	Students	70.19	32.64
3	Service Pensioners	2.96	1.38
4	Other Pensioners	1.87	0.87
5	Job not needed	29.64	13.78
6	Disabled	6.85	3.18
7	Age <15 & > 60	49.24	22.89
8	Others	27.07	12.59
<b>Total</b>		<b>215.07</b>	<b>100</b>

Source: Department of Economics & Statistics

unemployment assistance scheme in 1982. Initially the scheme was introduced for a period of 4 years w.e.f 12.11.1982. Thereafter the scheme is being extended annually. Under the scheme, unemployed youths remaining in the live registers for over 3 years, (but physically handicapped need only two years) after attaining the age of 18 and having passed SSLC (but the SC/ST & physically handicapped candidates need to have only appeared for the SSLC examination) and having annual family income below Rs. 12000/- and personal income below Rs. 100 are eligible for an unemployment assistance of Rs. 120/- per month upto the age of 35 years from April 2000. During 2003 an amount of Rs.14.23 crore was disbursed to 348027 beneficiaries. During 2004 the total number of beneficiaries was 344629 and the amount disbursed was Rs. 43.3 crore. As per the Kerala Panchayat Raj Act and Municipalities Act 1994 the scheme of unemployment assistance has been transferred to local governments for implementation since June 1998.

19.32 A Self employment scheme called KESRU (Kerala State Self Employment Scheme for the Registered Unemployed) is being implemented since March, 1999. All literate and registered unemployed candidates within the age group of 21 to 40, other than students are eligible to apply under the scheme if their annual family income is below Rs. 24,000/- and individual income also is below Rs. 500 per month. The loan amount admissible is between Rs. 30000/- to Rs. 50000/- Two or more persons can join together and avail the loan facilities. Twenty percent of the assistance amount is given as subsidy. During 2003 an amount of Rs.36.61 lakh was disbursed to 668 persons and during 2004, Rs.33.48 lakh to 317 beneficiaries.

#### Employment in the Organised Sector

19.33 In India, the number of persons employed in the organised sector during 1994 was 27.37 million out of the total of 374.45 million persons employed. In 2000 it increased to 28.11 million

persons constituting 7 percent of the total number of 397 million persons employed. In March 2002, the number of persons employed in the organised sector was 27.21 million which is nearly 6 lakh less than the number of persons employed in March 2001. Employment in the organised sector has decreased generating some concern. The details of public sector employment are given in Table 19.7. Employment of women in the organised sector (both public and private) as on March, 2002 is 4.95 million, constituting 18.1 percent of the total organised sector employment in the country, compared to 17.9 percent in 2001.

19.34 In Kerala the total employment in the organised sector which had been increasing slightly since 1996 started declining from 2000 onwards (Appendix 19.6) Total number of persons employed in the organised sector in December 1996 was 1175711 persons. The total number grew to 1251532 persons in December 2000. Out of this 651241 persons worked in public sector and 600291 persons in private sector. During 2002 total number of workers came down to 1220304 out of which 637996 persons were in public sector and the remaining 582308 persons were in private sector. It again decreased to 1168833 persons (464218 women & 704615 men) by December 2003 of which 619263 persons (429208 men and 190055 women) were in public sector and 549570 persons (275407 men & 274163 women) in private sector. Of the total of 619263 persons employed in the public sector 80979 were Central Government employees, 272483 State Government employees, 238565 Quasi Government employees and 27233 Local Government employees. Details on public sector employment are given in Table 19.8 District-wise employment in public and private sectors in Kerala as on 31<sup>st</sup> March of every year from 1999 to 2004 are included in the Appendix 19.8.

19.35 The EMI data in Table 19.9 gives the sector-wise distribution of employment over the last three decades.

Table 19.6  
Persons Employed in the Organised Sector – All India ( in lakhs)

	Employment as on		Percentage Change
	31 <sup>st</sup> March 2001	31 <sup>st</sup> March 2002	
Public	191.38	187.73	-1.90
Private	86.52	84.32	-2.54
<b>Total</b>	<b>277.90</b>	<b>272.05</b>	<b>-2.10</b>

**Table 19.7**  
**Employment in Public Sector – All India (in lakhs)**

Constituents of Public Sector	Employment as on March ending		Percentage Change
	2001	2002	
Central Government	32.61	31.95	-2.03
State Government	74.24	73.84	-0.55
Quasi Govt. (Central)	32.91	31.95	-2.90
Quasi Govt. (State)	29.01	28.24	-2.63
Local Bodies	22.61	21.75	-3.78
<b>Total</b>	<b>191.38</b>	<b>187.73</b>	<b>-1.90</b>

**Table 19.8**  
**Employment in Public Sector in Kerala**

Year (at the end of December)	Central Govt.	State Govt.	Quasi Govt. (Central)	Quasi Govt. (State)	Local Bodies	Total
1	2	3	4	5	6	7
1997	99333	275947	90871	132390	23434	621975
1998	103265	291256	92563	132149	24551	643784
1999	102185	292527	92386	134324	22505	643927
2000	101908	292950	90235	141128	25020	651241
2001	97115	294469	87473	140272	26341	645670
2002	83496	289473	100528	137714	26785	637996
2003	80979	272483	101391	137177	27233	619263

**Table 19.9**  
**Employment in Public and Private Establishments in Kerala as on 31<sup>st</sup> March**

Sl. No	Industry	Number of Persons Employed						
		1971	1981	1991	2001	2002	2003	2004 (Provisional)
1	Agriculture and allied Industries	92055	103145	104727	108966	102681	110072	104380
2	Mining and Quarrying	610	1340	3548	3571	3550	30043	44710
3	Manufacturing	188924	323359	307038	321903	310851	272161	217148
4	Construction	23562	25170	19327	25242	24383	47880	38246
5	Electricity, Gas, Water & Sanitary Services	11850	16349	26642	26526	24779	7456	18647
6	Trade, Restaurants & Hotels	23083	13676	21946	25580	24778	172626	107975
7	Transport, Storage & Communication	54212	74422	97299	104596	104072	195318	137329
8	Financing, Insurance, Real Estate & Business Services	0	47779	78739	86320	83871	179068	83097
9	Community, Social & Personal Services	307470	409358	488598	538990	535038	196769	377320
<b>Total</b>		<b>701766</b>	<b>1017298</b>	<b>1147864</b>	<b>1241694</b>	<b>1214003</b>	<b>1211399</b>	<b>1128852</b>

Source:-Directorate of employment

**Placement through Employment Exchanges**  
19.36 As on December 2003, the number of persons registered in employment exchanges across the country was 414 lakh. The number of persons registered in the employment exchanges in India stood at 409 lakh in July 2004. The special employment exchanges for the physically handicapped registered 1292 persons in July 2004 of which 199 persons were placed in jobs. The number of handicapped applicants on the live registers of these exchanges at the end of July 2004 is 1.12 lakh. Number of Employment Exchanges, Registration, placement, vacancies notified etc. are shown in Table 19.10.

19.37 In Kerala total placement has been declining from 2001 onwards. Total placement through employment exchanges in 2002 was 12409 and in 2003 it was 9902 as against 15750 in 2001. As per data available till August 2004 the total placement is only 6317 persons.

### Migration

19.38 Till the beginning of World War II Kerala was a net in-migration state, as it attracted labour force and traders in large numbers from the neighbouring area, mainly the Madras Presidency. Kerala's transition to a net out-migration state was during the second World War, when a large number of youth were recruited from the state for war related jobs and sent to other parts of India and even to foreign countries like Burma, Malaya and Singapore. Since independence, Keralites have migrated to almost all countries. However, large scale emigration to the Gulf countries began in the 1970's consequent to the oil boom. According to the Housing and employment survey conducted by the Directorate of Economics & Statistics in 1980, 5.1 lakh Keralites migrated outside the state and out of

this 2.1 lakh were in foreign countries. The 1992/93 survey gave the number of Keralite migrants to Gulf countries as 6.41 lakh and to other foreign countries as 0.27 lakh.

19.39 According to a study entitled as "Report on Activity Status of Migrants and Returnees" conducted by the Department of Economics & Statistics in 1999 about 13.84 lakh Keralites are staying outside India. It is more than 4.4% of the people permanently residing in the state. Out of the total 13.84 lakh persons residing abroad, 11.40 lakh are employed and the remaining 2.44 lakh are their dependents. 80.33% of the employed migrants have no technical qualification and 91.34% are employed in private sector.

19.40 According to CDS study on migration entitled "Kerala Gulf connections", in 1995 the estimate of the number of emigrants from Kerala was 13.6 lakh. Between 1988/92 and 1993/97 the number of emigrants increased by 120 percent. Arab Countries of the Middle East were the destination of 95% of the emigrants with Saudi Arabia alone accounting for nearly 40% of the total.

19.41 Emigration of Keralites remains strong, with a latest study conducted by CDS \* in 2004 showing that the number of emigrants went up by 35 percent in last five years from 13.6 lakh in 1999 to 18.4 lakh in 2004.

19.42 According to the study, among the emigrants from Kerala, Muslims were the most numerous constituting 43.7 percent. Hindus came next with 31.2 percent and Christians 25.1 percent. The rate of growth in migration was highest among Christians with 53.9 percent while

**Table 19.10**  
**All India Employment Exchange Statistics: All categories**

Year	Employment Exchange (No)	Registration ('000)	Placement ('000)	Vacancies notified ('000)	Submission made ('000)	Live register ('000)
1	2	3	4	5	6	7
1998	945	5851.8	233.3	358.8	3076.6	40089.6
1999	955	5966.0	221.3	328.9	2653.2	40371.4
2000	958	6041.9	177.7	284.5	2322.8	41343.6
2001	938	5552.6	169.2	304.1	1908.8	41995.9
2002	939	5064.0	142.6	220.3	1748.8	41171.2
2003	945	5462.9	154.9	256.1	1917.3	41388.7

\*The study was conducted by K.C. Zachariah and S. Irudayarajan

it was 17.3 percent among Muslims. The female migration had gone upto 16.8 percent in 2004 compared to 9 percent in 1999.

19.43 The study further showed that migration to the Gulf which was 95 percent of the total migration went down to 90 percent. The migration to the USA, European countries and Africa went up from 5 percent to 10 percent correspondingly. Among the Gulf Countries, UAE replaced Saudi Arabia as the most preferred destination.

19.44 The study found that instead of reducing unemployment, the growth in emigration fuelled it. While 12 lakh people were estimated to be unemployed in the 1999 study, the figure went up to 24 lakh in the latest study. This growth in unemployment could be explained partly by the increase in the waiting period for jobs among the educated and partly by the phenomenon of replacement migration with workers from other

states taking over unskilled jobs involving manual labour here at lower wages.

19.45 According to Health Department's reports the year wise estimated number of emigrants from 1980 to 1998 is given in Table 19.11

19.46 According to Kerala Health Department's destination-wise data on migration indicates that Saudi Arabia topped the list (38.1 %, 519000) followed by the UAE (29.7%, 405000) and other Arabian Countries (25.9%) leaving 6.3% for other countries. The major western destination was the USA with 2.2%.

19.47 An overall measure of the Impact of migration on the Kerala household is given by Migration Prevalence Rate (MPR) which is the ratio of the total migrants from an area to the number of households in that area. Pathanamthitta district has the highest MPR of

**Table 19.11**  
**Estimated Number of Annual Emigrants 1980-1998**

Year	Number of Emigrants	Year	Number of Emigrants
Before 1980	35,038	1990	89,542
1980	11679	1991	49,313
1981	31,794	1992	85,649
1982	33,741	1993	1,13,550
1983	40878	1994	1,12,253
1984	25,954	1995	1,28,474
1985	38,932	1996	1,45,993
1986	42,825	1997	1,55,726
1987	22,061	1998*	67,832
1988	77,863		
1989	28,550	<b>Total</b>	<b>13,61,954</b>

Source:- Health Department

**Table 19.12**  
**Emigration According to Destination**

Country	Emigrants	
	Percent	Number (000's)
Saudi Arabia	38.1	519
United Arab Emirates	29.7	405
Oman	10.4	142
Bahrain	5.7	77
Kuwait	5.1	69
Qatar	4.7	64
USA	2.2	30
Others	4.1	57
<b>Total</b>	<b>100.0</b>	<b>1,363</b>

Source:- Department of Health Service Report on Migration (1998)

99%. While the State average is 59%. MPRs of the lowest range were recorded in Idukki (12%) and Wayanad (20%). Alappuzha., Thrissur and Malappuram recorded a level of higher than the state average.

#### Foreign Remittances in the Kerala Economy

19.48 NRE deposits with scheduled banks in India increased from Rs.2,304 crore in 1991 to Rs. 28.871 crore in June 2003 registering a growth of 11.53%. It again increased to Rs.30100 crore in March 2004. In 1991 the NRE deposits, accounted for 29.04% of the total deposits. This grew to 48.48% in 1999-2000 and then slightly declined to 48.16% in June 2003.

19.49 According to the CDS study in 1999, the total cash remittances received by Kerala households during the 12 month period in 1998 was Rs. 35.304 million. The cash remittances alone constituted about 9.3% of the SDP. If the remittances were added to SDP, the per capita SDP would have been Rs.13,041 instead of the actual Rs. 11,936. The annual remittances received by the Kerala house holds were 2.55 time higher than what Kerala received from the central government as budget support. According to the study, by the early 1990's remittances to Kerala economy had assumed a significant share of State income. This ranged between 17% during 1991-92 and 24% during 1997-98 with an average of 22% for the second half of the 1990's.

The large increase in rupee terms is also due to the sharp depreciation in the value of the rupee vis-a-vis the US dollar from Rs. 17 at the beginning of the decade to over Rs.48 at the end. The state thus benefited significantly from the liberalization of the exchange rate.

19.50 The latest study by CDS in 2004 shows that the remittances by the emigrants went up by 35 percent in 5 years from Rs.13652 crore in 1999 to Rs.18465 crore in 2004. The per capita remittance is Rs.5678 during 2004(Rs.473 per month). It also found that 17.6 percent of house holds in the state had at least one emigrant. The district-wise remittance figure during 2004 showed that Thrissur district has the largest remittance of Rs.3234 crore followed by Malappuram (Rs.2892 crore) and Thiruvananthapuram (Rs.1927 crore). The total remittances by the emigrants were found to be seven times the Kerala Government received from the centre as budgetary support.

#### Return Emigrants

19.51 A sizeable number of people return to the State. According to the study "Activity Status of Migrants and Returnees" by the Department of Economics and Statistics in 1999 there are 5.43 lakh returnees. The maximum number of returnees i.e. 90688 is in Malappuram district followed by Kollam. The reasons for return to home land are sent back(16.8%), ill

Table 19.13  
Emigrants, Emigrants per 100 Households and Return Emigrants – 2004

District	Emigrants		Emigrants per 100 Households		Return Emigrants	
	2004	1999	2004	1999	2004	1999
Thiruvananthapuram	168046	130705	21.5	19.9	103059	118878
Kollam	148457	102977	24.4	18.4	69314	74106
Pathanamthitta	133720	97505	44.3	33.1	83502	54537
Alappuzha	75036	62870	15.2	13.2	43109	34572
Kottayam	106569	35494	24.0	9.1	28368	18164
Idukki	7880	7390	2.9	2.9	3766	5017
Eranakulam	121237	103750	16.9	17.0	74435	45028
Thrissur	178867	161102	27.2	25.6	86029	116788
Palakkad	177876	116026	32.6	21.8	55008	39238
Malappuram	271787	296710	45.0	49.2	141537	123750
Kozhikode	167436	116026	28.6	22.0	109101	60910
Wayanad	7704	4552	4.4	2.9	3852	3327
Kannur	202414	88065	43.2	19.0	45394	28263
Kasaragod	71449	38747	30.6	19.1	47468	16667
<b>Total</b>	<b>1838478</b>	<b>1361955</b>	<b>26.7</b>	<b>21.4</b>	<b>893942</b>	<b>739245</b>

health(16.31%), retrenchment(14.94%), no life security(13.25%), re-migration for better job(7.07%), retirement(4.33%), bad climate(2.08%) etc. According to Kerala Health

work. Keeping up the growth trend in passport taking in the state, 5.33 lakh passports were issued by the three passport offices in the state during the year 2004 as against 4.57 lakh during 2003, with the Kozhikode Office accounting for the lion's

share of 2.35 lakh passports. During 2004, Thiruvananthapuram office alone grossed over Rs.15 crore by way of passport application fees and services provided. On an average Kochi Office gets 700 applications a day and 1.78 lakh passports issued by this office during 2004 was the highest ever.

**Table 19.14**  
**Sector wise percentage of employment of Returnees**

Sector	Percentage
Government / Semi Government	03.10
Co-Operation	00.90
Other organised	17.90
Self employed in Non Agriculture	31.20
Political and social Activity	00.50
Other Activities	46.40
Total	100.00

Source: Directorate of Economics & Statistics

Service Department's Report on Migration, 7.5 lakh migrants are stated to have returned home. CDS study puts it as 7.4 lakh in 1999 and 8.9 lakh in 2004. District-wise details of emigrants and return emigrants are given in Table 19.13.

19.52 Most of the returnees are from Saudi Arabia followed by UAE. As regards the age group of returnees, about two third of them are less than 49 years of age. Hence majority of the returnees are in need of employment or economic activity. Sector – wise present employment of returnees is that the highest percentage are engaged in self employment in non-agricultural sector (31.2%) followed by other organised sector (17.90%) and other activities (46.40%) . The details are shown in Table 19.14

#### Strong Growth in Passport Issuance

19.53 The buoyancy in passport application is a pointer to the fact that more opportunities are opening up for Keralites who travel abroad on

#### Placement through ODEPC

19.54 The overseas Development and Employment Promotion Consultants Ltd. (ODEPC) was incorporated in 1977 with the main objective of promoting employment in foreign countries. As part of diversification, ODEPC started travel agency business also. The authorised share capital of the Company is Rs. 1 crore and paid up capital is Rs.65.79 lakh. So far, the company could deploy 4314 personnel to various foreign countries like Saudi Arabia, UAE, Qatar, Oman, Bahrain, Kuwait, Libya, Singapore, Malaysia, Brunei, Cyprus etc. During the year 2003-04, 101 persons were deployed; of them 59 to Saudi Arabia, 13 to Sri Lanka, 9 to Malaysia, 8 to Oman and 6 each to Qatar and UAE. Out of these 101 persons, 53 were nurses, 17 doctors, 15 technicians, 4 para medical, 4 supervisors, 3 engineers, 2 administrative staff, 2 nursing lecturers and 1 driver. The turn over of travel division was Rs.141.35 lakh during 2002-03 which increased to Rs.213.91 lakh during 2003-04.

**Table 19.15**  
**Passports Issuance in Kerala ( in lakh )**

	2002	2003	2004
Thiruvananthapuram	0.92	1.13	1.20
Kochi	1.28	1.54	1.78
Kozhikode	1.80	1.90	2.35
Total	4.00	4.57	5.33

## CHAPTER - 20

# HUMAN DEVELOPMENT AND SOCIO ECONOMIC WELL-BEING IN KERALA

Human Development is a process of enlarging people's choices to lead healthy life, to acquire knowledge and be educated, and to have access to resources needed for a decent level of living as well as raising the level of well being. The notion of well being includes consumption of goods and services, cultural liberty, accessibility of all sections of society especially the deprived and those who are living below the normative minimum poverty line to the basic necessities of productive and socially meaningful life. Human development results in economic growth.

20.2 Development can be measured using a set of composite Indices – Human Development Index (HDI), Human Poverty Index (HPI) and Gender Equality Index (GEI) estimated from selected human development indicators such as per capita consumption expenditure, incidence of poverty (as head count ratio), access to safe drinking water, proportion of households with pucca houses, literacy rate for the age group of 7 years and above, intensity of formal education, life expectation and infant mortality rate.

### Human Development Index (HDI)

20.3 Human Development Index is a summary measure of three critical dimensions of well being such as longevity – the ability to live long and healthy, education- the ability to read, write and acquire knowledge and command over resources- the ability to enjoy decent standards of living and have a socially meaningful life.

#### BOX-20.1

#### Cultural Liberty

Cultural liberty is a vital part of human development “because being able to choose one's identity without losing the respect of others or being excluded from other choices is important in leading a full life.

People want the freedom to practice their religion openly, to speak their language, to celebrate their ethnic or religious heritage without fear of ridicule or punishment or diminished opportunity. These struggles over cultural identity, if left unmanaged or managed poorly, can quickly become one of the greatest sources of instability within states or between them and, in so doing, trigger conflicts that take development backward”.

*Source : Human Development Report, 2004, UNDP*

20.4 The global position on human and gender development of certain countries are given in Table 20.1.

Table - 20.1

India's global position on human and gender development

Country	Human development index (HDI)			Gender development index (GDI)			Gender empowerment measures (GEM)		
	2002	2001	1990	2002	2001	1992	2002	2001	1992
	Norway	0.956	0.944	0.911	0.955	0.941	0.911	0.908	0.837
Australia	0.946	0.939	0.886	0.945	0.938	0.901	0.806	0.754	0.568
Sri Lanka	0.740	0.73	0.692	0.738	0.726	0.660	0.276	0.272	0.288
China	0.745	0.721	0.624	0.741	0.718	0.578	NA	0.483	0.474
Indonesia	0.692	0.682	0.619	0.685	0.677	0.591	NA	0.362	0.362
India	0.595	0.59	0.519	0.572	0.574	0.401	NA	0.240	0.226
Pakistan	0.497	0.499	0.444	0.471	0.469	0.360	0.416	0.414	0.153
Bangladesh	0.509	0.502	0.414	0.499	0.495	0.334	0.218	0.218	0.287
Nepal	0.504	0.499	0.413	0.484	0.479	0.310	NA	N.A	0.315

Source: 1) Human Development Report, 2004, UNDP

2) Economic Survey, Government of India.



20.5 India's position in human development is 127<sup>th</sup> which is below even that of countries like Cuba, Libya, Bosnia, Kazakhstan and Azerbaijan (Table 20.2)

Table 20.2

**Ranked Position of Human Development**

Country	Rank	Country	Rank
Cuba	52	Kazakhstan	78
Libya	58	Azerbaijan	91
Malaysia	59	China	94
Bosnia	66	Srilanka	96
Brazil	72	Namibia	126
Thailand	76	India	127

Source: Human Development Report, 2004, UNDP.

20.6 The changes in Human Development Index from 1975 to 2002 with respect to certain comparable countries are shown in Table 20.3. The growth of human development index of China and Vietnam are quiet impressive, compared to that of India.

Table - 20.3

**Changes in Human Development Index**

Countries	1975	1980	1985	1990	1995	2000	2002
China	0.523	0.557	0.593	0.627	0.683	0.721	0.745
India	0.411	0.437	0.476	0.514	0.548	0.579	0.595
Vietnam				0.610	0.649	0.686	0.691

Source : Business Line-The Hindu-26.7.2004

**KERALA**

20.7 Kerala is at the top in the country in human development index (0.638). This position is consistent since 1981. This is because of the physical quality of the life of the people. Punjab (0.537) stood next to Kerala followed by Tamil Nadu (0.531). HDI is the lowest for Bihar. Poor States show relatively poor performance on HDI. Similarly the economically better off States are the ones with relatively better performance on HDI. But the relation between HDI and the level of development does not show any correspondence in the case of middle income States. For example, some States like Kerala have high attainments of HDI, at the same time, there are States like Andhra Pradesh and West Bengal where HDI values are not as high. The details are given in the Table - 20.4.

**BOX-20.2**

**China and India -impressive growth, important differences.**

China and India together containing a third of the world's population, have enjoyed tremendous economic growth over the past decade. Their successes in advancing average well-being imply major improvements for a large portion of humanity. But their experience also point to the importance of looking beyond national averages to understanding differences within countries.

Though both countries have achieved rapid, sustained economic growth, their rates of progress have been quiet different. China has enjoyed the fastest sustained economic advance in human history, averaging real per capita growth of 8% a year over the past decade. Its per capita income is now \$ 3,976 in purchasing power parity (PPP) terms. Meanwhile, real per capita income in India grew at a robust though more modest average rate of 4.4%, reaching \$2,358 in 2001. Reflecting their successful economic growth, both countries have been significant reductions in poverty. According to World Bank estimates based on consumption surveys, the proportion of people living on less than \$1 day declined in China from 33% in 1990 to 16% in 2000, and in India from 42% in 1993/94 to 35% in 2001 (World Bank 2003). While highly contested because of differences in methodology, survey design, and samples, these calculations nonetheless provide a rough indication of poverty trends in these countries.

**Market Reforms**

China's exceptional growth is partly explained by its market-based reforms that started in 1978, well before India's similar reforms began in 1991. These reforms have enabled China to integrate with the global economy at a phenomenal pace. Today it is the largest recipient of foreign direct investment among developing countries, with annual investment rising from almost zero in 1978 to about \$2 billion in 2002 (nearly 5% of GDP). Foreign direct investment in India has also increased significantly, though at much lower levels, growing from \$129 million in 1991 to \$4 billion in 2002 (less than 1% of GDP)

Robust export growth has contributed to the economic performance of both countries, with a growing dominance of manufactured exports- though again, China has had much more success in this realm. Its exports reached \$320 billion in 2001, compared with \$35 billion for India. Manufactured

exports accounted for 53% of China's total exports in 1981 and for 90% in 2001; in India that share rose from 60% to 77%. China has had particular success in moving from labour-intensive to technology-intensive exports: telecommunications equipment and computer now account for a quarter of its exports.

#### Social investments

Social investments are required for a sustained economic growth. In China public spending on education is 2.3% of GDP while that on health is 2.1% of GDP. The outcomes for human development are clear. Literacy stands at 84%, infant mortality rates at 32 per 1,000 live births and under five mortality rates at 40 per 1,000 live births.

India, in contrast, has traditionally had lower spending levels. Health spending stands at 1.3% of GDP (Central and State Governments combined). Spending on education has increased significantly, from 0.8% of GDP in 1950 to 3.2% today, though it still falls short of the government target of 6% of GDP. Human development indicators for India remain much lower than for China. Literacy stands at 65%, infant mortality at 68 per 1,000 live births, and under-five mortality rates at 96 per 1,000 live births.

#### Regional variations and other challenges

It would be misleading to talk solely in terms of national averages for two countries so large in population and area. In China the highest economic growth has occurred in the coastal provinces-while the geographically isolated north-western provinces have experienced much lower growth. India also harbours stark regional variations. In 1992-97 per capita economic growth ranged from -0.2% in Bihar to 7.8% in Gujarat. Similar variations appear in other human development indicators, such as those for education and health.

Both countries still face challenges, such as the spread of HIV/AIDS and other sexually transmitted diseases accompanying increased labour migration and international trade. And both face the challenge of fostering a knowledge-based economy to maintain consistently high economic growth as average skill levels increase. Both also need to focus on spreading the gains of growth to regions, communities and ethnic groups that have seen so little benefit from the new prosperity. Inclusive public policies should focus on investments in health, education and infrastructure for future development.

Source : Human Development Report, 2003, UNDP

Table - 20.4  
Human Development Index of Major States.

States	1981		1991		2001	
	Index	Rank	Index	Rank	Index	Rank
1. Andhra Pradesh	0.298	9	0.377	9	0.416	10
2. Assam	0.272	10	0.348	10	0.386	14
3. Bihar	0.237	15	0.308	15	0.367	15
4. Gujarat	0.360	4	0.431	6	0.479	6
5.Haryana	0.360	5	0.443	5	0.509	5
6.Karnataka	0.346	6	0.412	7	0.478	7
<b>7. Kerala</b>	<b>0.500</b>	<b>1</b>	<b>0.591</b>	<b>1</b>	<b>0.638</b>	<b>1</b>
8. Madhya Pradesh	0.245	14	0.328	13	0.394	12
9. Maharashtra	0.363	3	0.452	4	0.523	4
10. Orissa	0.267	11	0.345	12	0.404	11
11. Punjab	0.411	2	0.475	2	0.537	2
12. Rajasthan	0.256	12	0.347	11	0.424	9
13. Tamil Nadu	0.343	7	0.466	3	0.531	3
14. Uttar Pradesh	0.255	13	0.314	14	0.388	13
15. West Bengal	0.305	8	0.404	8	0.472	8
<b>All India</b>	<b>0.302</b>	-	<b>0.381</b>	-	<b>0.472</b>	-

Source : NHDR 2001

**Score and Rank: State-wise**

20.8 According to a study conducted by the 'India Today' in 2004, Score is an indicator of a State's performance where Score is determined on the basis of eight select parameters such as sex ratio, poverty ratio, hunger, literacy, female to male literacy ratio, gross enrolment, infant mortality and immunisation. Table 20.5 shows the Scores and Ranks of major States in India. Score of Kerala improved from 2.23 in 2003 to 2.34 in 2004; however, the rank two remained unchanged.

Punjab is at the top in performance with score 2.46 and ranked first.

20.9 According to the survey, among socially developed States, Kerala ranks first followed by Tamil Nadu, Himachal Pradesh, Karnataka and Andhra Pradesh (Box - 20.3). Among socially most developed 10 districts, eight are in Kerala with Kollam occupying the first place. Punjab and Kerala are the best two States to live in (Box No. 20.4). The other findings of the survey are given in Appendices 20.1, 20.2 and 20.3.

**Table - 20.5**  
**Score and Rank of Major States in India**

States	Score			Rank		
	2004	2003	Change	2004	2003	Change
1. Andhra Pradesh	1.46	1.32	0.14	11	10	-1
2. Assam	0.87	0.68	0.19	15	14	-1
3. Bihar	0.41	0.24	0.17	20	17	-3
4. Gujarat	1.79	1.83	-0.04	7	6	-1
5. Haryana	1.93	1.84	0.09	5	5	0
6. Karnataka	1.69	1.57	0.12	8	8	0
<b>7. Kerala</b>	<b>2.34</b>	<b>2.23</b>	<b>0.11</b>	<b>2</b>	<b>2</b>	<b>0</b>
8. Madhya Pradesh	1.17	0.77	0.39	12	13	1
9. Maharashtra	1.86	1.69	0.17	6	7	1
10. Orissa	0.71	0.46	0.24	18	16	-2
11. Punjab	2.46	2.52	-0.06	1	1	0
12. Rajasthan	1.14	1.00	0.14	13	11	-2
13. Tamil Nadu	2.07	1.95	0.13	4	4	0
14. Uttar Pradesh	0.80	0.57	0.23	17	15	-2
15. West Bengal	1.08	0.87	0.21	14	12	-2

Source : India Today, Special issue August, 2004.

**BOX-20.3**

**Socially Developed States**

- 1 Kerala
- 2 Tamil Nadu
- 3 Himachal Pradesh
- 4 Karnataka
- 5 Andhra Pradesh

**Socially Most Equal States**

- 1 Haryana
- 2 Rajasthan
- 3 Himachal Pradesh
- 4 Uttar Pradesh
- 5 Bihar

Box Continued

**Socially Most Developed Districts**

1	Kollam	Kerala
2	Pathanamthihha	Kerala
3	Kottayam	Kerala
4	Idukki	Kerala
5	Alappuzha	Kerala
6	Ernakulam	Kerala
7	Mahe	Pondichery
8	Thiruvananthapuram	Kerala
9	Trichur	Kerala
10	Karaikal	Pondichery

**Socially Least Developed Districts**

1	Sahibganj	Jharkhand
2	Tirap	Arunachal Pradesh
3	Sitamarhi	Bihar
4	Giridith	Jharkhand
5	Rayagada	Orissa
6	Palamju	Jharkhand
7	Garhwa	Jharkhand
8	Nabarangapur	Orissa
9	Shochar	Bihar
10	Pakaur	Jharkhand

Source: India Today, Special Issue, August 2004

**BOX-20.4**

Pathanamthitta is around 2500 km south of Patiala. People in the two places speak entirely different languages, eat totally different food, wear completely different dresses and are as similar as chalk and cheese. Yet the States the two districts belong to - Kerala and Punjab - have one abiding commonality. They are the two best states in India to live in. That is if one counts only the large states. The north-south uniformity replicates itself when it comes to smaller states. Delhi and Pondicherry were India's best two small states. That throws water on the long held notion of the north-south divide!

Source: India Today, Special Issue, August, 2004.

Table - 20.6

**Education – Rank position of States**

**Gender Equality Index (GEI)**

20.10 Gender Equality Index is a composite variable derived for measuring the inequality in the attainments of human development indicators between females and males. During the eighties, attainment of women improved only marginally. At national level GEI increased from 62 % in the early eighties to 67.6% in the early nineties. At the state level Gender equality was the highest for Kerala followed by Manipur, Meghalaya, Himachal Pradesh and Nagaland in eighties.

**Education**

20.11 Education is one of the basic components of human development which is a pre condition for economic growth and it is the foundation of a vibrant democracy. The indicators of education are literacy level, enrolment rate and dropout rate.

20.12 Lack of education robs an individual of a full life. It also robs society of a foundation for sustainable development. Educated people are likely to be more productive and hence better off. State wise ranking position is given in Table 20.6

State	2004	2003	Variation
Kerala	1	2	1
Himachal Pradesh	2	1	-1
Tamil Nadu	3	3	0
Maharashtra	4	4	0
Uttaranchal	5	NR	NA
Punjab	6	5	-1
Jammu&Kashmir	7	7	0
Karnataka	8	6	-2
Haryana	9	10	1
Assam	10	8	-2
Gujarat	11	9	-2
Andhra Pradesh	12	11	-1
West Bengal	13	12	-1
Orissa	14	13	-1
Madhya Pradesh	15	14	-1
Chhattisgarh	16	NR	NA
Rajasthan	17	15	-2
Uttar Pradesh	18	16	-2
Jharkand	19	NR	NA
Bihar	20	17	-3

Source : India Today Agu, 2004

has a high enrolment for both male and female children. School enrolment of male and female children is given in Table 20.9.

**Literacy rate**

20.13 Literacy is one of the most important outcomes of primary education and it is the first step in learning and knowledge building of a person. Kerala has a literacy rate of 90.9 per cent followed by Mizoram (88.5%) and Goa (82.3%). The details are given in Table 20.7.

**Literacy rates of 10 top States in India (2001)**

Rank	States	Literacy Rate
1	Kerala	90.9
2	Mizoram	88.5
3	Goa	82.3
4	Delhi	81.8
5	Pondicherry	81.5
6	Maharashtra	77.3
7	Himachal Pradesh	75.9
8	Tripura	73.7
9	Tamil Nadu	73.5
10	Punjab	70.0

Source : Census figures

20.14 Kerala is far above other states in women literacy. The gap between men and women literacy rates is decreasing. Women literacy rate in Kerala and India is depicted in Table 20.8.

**Table - 20.8  
Women Literacy Rates in Kerala and India**

Year	Kerala (%)		All India (%)
	Men	Women	Women
1961	64.89	45.66	15.35
1971	77.13	62.53	21.97
1981	84.56	73.36	29.76
1991	93.62	86.17	39.29
2001	94.20	87.86	54.16

Source: Census figures

**Enrolment rate**

20.15 Enrolment of children in schools depicts the current flow or the spread of education. Kerala

**Table - 20.9**

**School enrolment of male-female students Std.1-10**

Year	Total	Boys	Girls	Girls %
1960-61	3270301	1778010	1492291	45.63
1970-71	4795532	2551644	2243888	46.83
1980-81	5602953	2896774	2706179	48.30
1990-91	5901101	3012308	2888793	48.95
2000-01	5219052	2660898	2558154	49.02
2003-04	4881585	2489214	2392371	49.00

Source: Directorate of Economics and Statistics

20.16 Though there is a decreasing trend in the enrolment of total students, the percentage of girls' enrolment is on increasing trend. The gross enrolment ratio is given in Appendix-20.4. It can be seen from Table 20.10 that enrolment of girls is more in HSS and VHSC courses.

**Table-20.10  
Male and Female students in HSS, VHSC, ICSE and CBSE schools**

Enrollment in students in	Total	Boys	Girls	%of girls
HSS (2002-03)	339353	144961	194382	57.3
VHSC (2002-03)	55893	26076	29821	53.3
Kendriya Vidyalaya (2001-02)	31575	17104	14471	45.8
Navodaya Schools (2001-02)	5962	3477	2483	41.6
CBSE Schools (2001-02)	224585	125406	99179	44.2
ICSE Schools (2001-02)	46087	26927	19160	41.6

Source: Directorate of Economic and Statistics

**Teacher-pupil Ratio**

20.17 Teacher-pupil ratio is one of the indicators which reflects the quality of education. During 2002-03, the overall Teacher-pupil ratio was 1:28.5 and in 2003-04, it became 1:28.3,

registering a marginal increase. At the lower primary, upper primary and at high school levels the ratios are 1:45, 1:33 and 1:18 respectively.

### Drop out

20.18 It is the percentage of students dropping out of a class/classes in a year. Kerala has the lowest drop out rate among all States in India. In 2002, the drop out rate in Kerala was 1.36 per cent as against 1.45 per cent in 2001. Total drop out rate which was 1.69 per cent in 2001 among SC students decreased to 1.57 per cent during 2002. Drop out rate among ST students which was 4.13 per cent during 2001 also decreased to 3.47 per cent in 2002.

### Health

20.19 Like Economic growth, the Health of a nation is a product of many factors and forces that combine and interact with each other. Economic growth, per capita income, employment, levels of literacy and education – especially among females – age of marriage, birth rates, availability of information on health care and nutrition, access to safe drinking water, public and private health care infrastructure, access to preventive health care and medical care, pucca homes with sanitation facilities, access to electricity, public hygiene, road safety and environmental pollution are among the factors that directly contribute health of a nation.

20.20 The health status of population can be measured by indicators such as life expectancy, infant and child mortality rates along with the incidence of communicable and non communicable diseases. The ranked positions of the 20 major states are given in the Table 20.11. Kerala stands in the first position followed by Himachal Pradesh and Tamil Nadu.

**Table - 20.11**  
**Health Rank Positions of 20 Major States.**

Sl No	Name of States	2004 (Rank)	2003	change
1	Kerala	1	3	2
2	Himachal Pradesh	2	2	0
3	Tamil Nadu	3	5	2
4	Jammu & Kashmir	4	1	-3
5	Karnataka	5	6	1
6	Punjab	6	4	-2
7	Maharashtra	7	8	1
8	Uttaranchal	8	NR	NA
9	Gujarat	9	7	-2
10	Andhra Pradesh	10	9	-1
11	West Bengal	11	10	-1
12	Rajasthan	12	12	0
13	Haryana	13	11	-2
14	Assam	14	15	1
15	Chattisgarh	15	NR	NA
16	Orissa	16	16	-
17	Madhya Pradesh	17	13	-4
18	Uttar Pradesh	18	17	-1
19	Jharkhand	19	NR	NA
20	Bihar	20	14	-6

Source: India Today, Special Issue, August, 2004.

### BOX-20.5

#### Kerala

Kerala's birth, death, infant mortality and literacy rates compare favourably even with countries having much higher income levels. It is all the more creditable that these have been achieved in a democratic set up without any coercive measures. There are several factors that explain Kerala's performance but most of these are not easily replicable in other states. Historically, the benevolent rulers of Travancore and Cochin had enlightened policy towards health and education that paved the way for a human development strategy for the State. Several mass movements led by social reformers and visionaries helped mobilise the masses and empowered them to fight for their rights. This led to a high degree of political consciousness and social awareness. Christian Missionaries have played a pioneering role in promoting health and education. They continue to manage accessible and affordable hospitals, schools and colleges in the State.

Effective implementation of land reforms under the Communist Governments created a high degree of motivation for education, which has yielded long-term social dividends to Kerala. As a result of the land reforms, those who lost land and those who got small parcels of land realised the need for alternate source of income and , hence, turned to education in a big way. Matrilineal system, though confined to certain higher castes, created a helpful social environment and a higher status of women compared to other States in India. The marriage age of girls and boys increased continuously and this made a significant impact on birth rate. Late marriages and educated mothers resulted in lower rates of maternal, infant and child mortality and higher practice of contraception. Massive investment in health and education combined with good administration, private and civil society participation helped in enriching the human resource development strategy, yielding better health standards and adoption of small family norms. Effective management of Government’s family planning programme and contribution of private doctors and charitable hospitals have played a significant role in reducing mortality and fertility rates. The widespread coverage of print and electronic media along with cinema in the State helped improve communication and publicity for the spread of family planning concerns and practices. A rural-urban continuum in human habitations and well developed transportation network by road and water- improved accessibility to health services and education. Finally, migration in large number has always been a feature of Kerala’s development. Apart from easing population pressure and unemployment, migration has brought in considerable monetary remittances to families in Kerala, which has improved the living standards.

*Source: NHRD 2001*

**Infant Mortality**

20.21 Infant Mortality Rate (IMR) is the number of deaths per thousand live births in the first year of child’s life. The IMR in Kerala during 2001 was 11 per cent. The infant mortality rate of 10 states during 2001 is given in the Table 20.12.

**Table - 20.12  
Infant Mortality Rate (2001)**

Rank	States	IMR
1	Kerala	11
2	Tamil Nadu	44
3	Gujarat	45
4	Maharashtra	46
5	Punjab	48
6	Bihar	55
7	West Bengal	55
8	Haryana	56
9	Andhra	61
10	Pradesh	63
	Assam	
<b>All India</b>	<b>64 (provl.)</b>	

Source : India Today, Special Issue, August 2004

**BOX-20.6**

**Infant mortality rates**

Wide disparities between the rich and poor in many countries indicate the persistence of deprivation among poor people. They have less access to basic health services, safe drinking water, adequate nutrition and safe motherhood and child initiatives. All this is reflected in higher infant mortality among the poor.

*Source : World Development Indicators-2003.*

**Poverty**

20.22 The interstate disparity in human poverty is quiet striking. It was in the range of 55-60% in the early eighties for the worse off states, and between 32-35% in the better off states like Kerala, Punjab and Himachal Pradesh. It has declined since then. The state wise rank of Population Below Poverty Line -!999-2000 (%) is given in Table 20.13.

**Table - 20.13**  
**Population below**  
**poverty line 1999-2000**

Rank	Name of state	%
1	Punjab	5.84
2	Haryana	7.94
3	Kerala	12.05
4	Gujarat	13.13
5	Rajasthan	14.78
6	Andhra Pradesh	15.36
7	Karnataka	19
8	Tamil Nadu	20.95
9	Maharashtra	24.58
10	West Bengal	28.01

Source: India Today August, 2004

**Microfinance**

20.23 Kerala's achievements in rural development through participatory planning and Kudumbashree is another model in the development front. Kudumbashree envisages mobilising microfinance through thrift and credit operation and set up micro enterprises for the unemployed for additional income generation. Kudumbashree is an attack on poverty. Achievements under Kudumbashree Programmes are given in Table-20.14

**Table - 20.14**  
**Major achievements under Kudumbashree Mission, 2004**

Sl No	Particulars	Achievements (Nos)
1	Number of members/families	3098011
2	Neighborhood groups (NHGs) at Grass root level	151406
3	Area Development Society (ADS) at ward level	13924
4	Community Development Society CDS at local Government level	1050

Source : Kudumbashree Mission, Kerala.

20.24 The thrift amount (cumulative) collected is Rs.432.35 crore and internal lending (cumulative) to NHGs is Rs.874.78 crore. The cumulative disbursement of bank loans to NHGs amounted to Rs.153.70 crore as on December 31, 2004 around 44325 NHGs. This translates to an average loan per NHG at Rs.34,676.

**Crime**

20.25 The year-wise total number of crimes under Indian Penal Code (IPC) and Special Local Laws (SLL) is given in Table-20.15. Nearly three-fourth of all crimes are Indian Penal Code crimes. The Special and Local laws crimes constituted nearly 25% during 2002.

**Table-20.15**  
**Details of Cases Under IPC and**  
**SLL in Kerala.**

Year	IPC	SLL	Total	Ratio (IPC:SLL)
1996	86141	14675	100816	100:17
1997	92523	13507	106030	100:15
1998	93020	15782	108802	100:17
1999	94448	17825	112273	100:19
2000	99033	23529	122562	100:24
2001	103847	31598	135445	100:30
2002	104200	34954	139154	100:34

Source: Directorate of Economics and Statistics

**Crime rate:**

20.26 The rate of crime defined as the number of crimes per one-lakh inhabitants is universally accepted as an indicator since it balances the effect of growth in population. The crime rate in respect of IPC decreased marginally by 0.6% while SLL increased 9.1% and total crime rate increased of 1.7% during 2002 over 2001(Table-20.16).



**Table-20.16**  
**Crime rate under IPC and SLL –Kerala**

Year	Estimated Mid-year Population (lakhs)	Crime Rate		Total
		IPC	SLL	
1997	308.03	300	44	344
1998	310.82	299	51	350
1999	313.65	301	57	358
2000	316.50	313	74	387
2001	319.38	325	99	424
2002	322.29	323	108	431

source: Directorate of Economics and Statistics

**Atrocities against women in Kerala**

20.27 The atrocities against women have been increased 300% during the period 1991 to 2001, while the population growth of women increased only by 14.58%. Incidence of total crimes against women reported a decline of 3.7% during 2003 over 2002. Rape cases reported a decline of 24% and molestation cases reported a decline of 5.5% while torture cases reported an increase of

1.1%. An analysis of the share of various crimes against women indicates that crimes like rape and molestation decreased while cruelty by husband and relatives increased during 2003 over 2002. The details are given in Table 20.17

**Migration**

20.28 Lack of employment opportunities within the State has forced a large chunk of working age population to go else where in search of employment.

20.29 There were 13.62 lakh Kerala emigrants living abroad in 1998. Emigration from Kerala has increased in recent years. Between 1988 - 1992 and 1993 - 1997, the number of emigrants increased by 120 per cent. Large scale emigration from the State began only in the 1970's. Arab Countries and Middle East Countries were the destination of 95 % of emigrants. The district wise details of non-resident Keralites is given in Table 20.18.

**Table 20.17**  
**Atrocities committed against women-Kerala (1991-2003)**

Offences	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003*
Rape	211	227	211	197	266	389	588	589	423	552	562	499	377
Molestation	569	523	468	679	810	1166	1561	1173	1643	1695	1942	2123	2007
Kidnapping	99	86	85	120	110	149	160	130	123	89	97	91	121
Eve-teasing	5	1	5	3	14	40	70	96	50	69	81	102	80
Dowry Death	13	12	8	9	21	25	25	21	31	25	27	17	23
498(A) cruelty by Husband and relatives	237	290	380	551	787	1079	1675	2125	2488	2418	2561	2836	2866
Others	733	939	737	986	1305	2122	3227	2739	2985	2773	2171	1833	1748
Total	1867	2078	1894	2545	3313	4970	7306	7473	7743	7621	7441	7501	7222

\*Provisional

Source: Directorate of Economics and Statistics

**Table-20.18**  
**District-wise Migrants -Kerala**

Districts	Non-Resident Keralites (NRK)			NRK per 100 HH		% to total	
	2004	1999	% increase	2004	1999	2004	1999
Thiruvananthapuram	271105	249583	8.6	34.6	38.0	9.9	11.9
Kollam	217771	177083	23.0	35.8	31.6	8.0	8.4
Pathanamthitta	217222	152042	42.9	72.0	51.6	7.9	7.2
Alappuzha	118145	97442	21.2	24.0	20.4	4.3	4.6
Kottayam	134937	53658	151.5	30.4	13.7	4.9	2.6
Idukki	11646	12407	-6.1	4.3	4.9	0.4	0.6
Ernakulam	195672	148778	31.5	27.4	24.4	7.2	7.1
Thrissur	264896	277890	-4.7	40.3	44.2	9.7	13.2
Palakkad	232884	155300	50.0	42.6	29.2	8.5	7.4
Malappuram	413324	420460	-1.7	68.5	69.7	15.1	20.0
Kozhikode	276537	176936	56.3	47.3	33.5	10.1	8.4
Wayanad	11556	7879	46.7	6.6	5.0	0.4	0.4
Kannur	247808	116328	113.0	52.9	25.1	9.1	5.5
Kasaragod	118917	55414	114.6	50.9	27.3	4.4	2.6
<b>Kerala</b>	<b>2732420</b>	<b>210200</b>	<b>30.0</b>	<b>39.7</b>	<b>33.0</b>	<b>100</b>	<b>100</b>

Source : Working paper I, Gulf Revisited (7/2004 CDS, Tvm)

### Road and Motor Vehicles

20.30 The total road length in Kerala during 2003-04 is 145704 Kms. In relation to per lakh of population and 100 Sq.kms. of area the State's total road length is 462.6 kms and 374.9 kms against the national average of 258.2 kms and 74.9 kms respectively. In the previous year the total length of road in Kerala is 138196.47 kms.

20.31 The growth of Vehicle population in Kerala is growing at the rate of 10% per year. During 2004 the number of motor vehicles registered under Motor vehicle Act is 2792074 as against 2552171 in the previous year showing an increase of 9.4%. Kerala has 7184 vehicles per sq. km. and 8769 vehicles per lakh population.

### Infrastructure Indices

20.32 Kerala occupies the fourth position in Social and Economic Infrastructure Index. The first three places are occupied by Delhi, Punjab and Goa respectively (Table-20.19)

**Table.20.19**  
**Social and Economic Infrastructure Index**

	CMIE Index		CMIE Index
Andhra Pradesh	104.01 (13)	Maharashtra	106.77 (9)
Arunachal Pradesh	71.89 (26)	Manipur	83.5 (23)
Assam	104.39 (12)	Meghalaya	77.6 (25)
Bihar	91.31 (18)	Mizoram	84.49 (22)
Delhi	730.62 (1)	Nagaland	89.89 (19)
Goa	171.57 (3)	Orissa	101.45 (15)
Gujarat	105.33 (11)	Punjab	171.92 (2)
Haryana	133.12 (6)	Rajasthan	87.27 (20)
Himachal Pradesh	113.88 (7)	Sikkim	83.01 (24)
Jammu & Kashmir	92.03 (17)	Tamil Nadu	145.62 (5)
Karnataka	106.12 (10)	Tripura	92.85 (16)
<b>Kerala</b>	<b>162.42 (4)</b>	Uttar Pradesh	112.04 (8)
Madhya Pradesh	86.66 (21)	West Bengal	102.09 (14)

Source : Centre for Development Studies

#### BOX-20.7

#### Tele- Density

The overall tele- density of the country crossed 7% . Six States namely Punjab, Kerala, Andaman and Nicobar, Himachal Pradesh and Gujarat have tele density greater than 10%. The tele- density of Major Cities is Delhi-42%, Mumbai-36%, Chennai-39% and Kolkata 19%.

Source : Department of Tele communication, Annual Report 2003-04

### Growth of Telecom Net work

20.33 The overall Telephone connections in Kerala as on 2004 are 48.76 lakh as against 36.81 Lakh in 2003. All India figures corresponding to this are 765.40 lakh and 546.17 lakh respectively.

### Consumption of Electricity

20.34 In 2002-03, the per capita consumption of electricity in Kerala was 395 Kw h, which was much lower than the all India level of 566.69 Kwh. Among southern States, per capita consumption was the highest in Tamil Nadu (815.26 kwh), followed by Andhra Pradesh( 672.64kwh) and Karnataka (611.16 kwh). In 2003-04, the per capita consumption of Kerala is 392 kwh and in 2004-05 it is 386 kwh.

### Aged in Kerala

20.35 Compared to other States, Kerala has the largest proportion of elderly population. The ageing and feminisation of the Kerala

population in five decades are shown in Table.20.20. The male population aged 60 years above constitutes about 10 per cent of the total male population, whereas the corresponding proportion of women is 11.62 per cent. The proportion of aged population increased from 5.8 per cent in 1961 to 10.84 per cent in 2001 and is expected to increase further. Serious thought need to be given in the coming years to the adoption of a variety of policies and action programmes to meet the needs of the growing elderly population.

**Table-20.20**

#### Male and Female 60 years and above. (%)

Year	Male	Female	Average
1961	5.65	6.02	5.84
1971	5.97	6.47	6.22
1981	7.15	7.84	7.50
1991	8.33	9.29	8.82
2001	10.00	11.62	10.84

Source : Kerala Calling. (Aug. 2004)

## CHAPTER 21

# INFORMATION TECHNOLOGY

Information and Communication Technology (ICT) today permeates almost every sphere of human endeavor. ICT is one of the World's fastest growing economic activities and investment in Information and Communication Technology has the largest multiplier effect rippling through the economy.

21.2 Indian IT Software and Services Industry accounted for about 2.4 per cent of India's GDP and 20.4 per cent of exports in 2002-03 and is projected to account for seven per cent of India's GDP and 35 per cent of exports by 2008. It is expected to provide employment to 6.5 lakh IT professionals.

21.3 Southern States are ahead in attracting leading multi national companies for the ICT sector into their hi-tech international software parks. Growth of software industry in four Southern States is given in Table 21.1

21.4 For Kerala, ICT is probably the major industry other than tourism that can come up in a big way. With competitive communication cost, well-developed infrastructure and a huge pool of English speaking and computer literate graduate manpower, apart from highly skilled professionals, Kerala rates higher than many other Indian States as a potential hub for ITES industry, call centres and medical transcriptions. The IT policy of the State Government highlights the need to develop the ICT Industry and the need to strengthen

Technopark and Infopark to lead Kerala to the forefront of the ICT revolution and make the State 100 per cent digital.

21.5 Compared to the potential, the growth of the sector in Kerala has been lowest. The State has nevertheless made steady progress in ICT sector in terms of investment, infrastructure development and employment generated through focused initiatives of the IT Department. A significant stride in the sector during the last year has been its conscious march towards taking IT to the common people by implementing Akshaya, in the district of Malappuram. Kerala is the first State in India to have a district with 100 per cent household e- literacy. Now Akshaya is being replicated in seven more districts.

### BOX-21.1

#### Highest Tele-density

The seemingly insatiable appetite of Keralites for telecommunication facilities is poised to take the tele-density in the State far above the national level to touch a new bench mark of 20 telephones per 100 persons in the State by mid 2005. This would be roughly double the expected national average tele-density in mid 2005. As per the National Telecom Policy of 1999 the target for tele-density in the country is only 15 per 100 population by 2010. Source: Annual Report 2003-04, Ministry of Telecommunication & IT, GOI

**Table 21.1**  
**Growth of Software Industry in Southern States**

(U.S.\$ Million)

State	1998-99		1999-2000		2000-2001		2001-2002		2002-2003	
	Units	Export	Units	Export	Units	Export	Units	Export	Units	Export
Tamilnadu	166	300.37	601	446.41	757	681.45	865	1145.40	936	1384.98
Karnataka	271	678.24	782	1072.89	812	1639.7	1038	2171.71	1154	2708.30
Andhra Pradesh	92	139.04	346	247.00	1206	419.24	1680	595.32	2015	804.38
Kerala	54	11.38	174	15.63	229	25.56	250	32.23	277	36.18

Source: STPI-Thiruvananthapuram

21.6 The investments in ICT sector in the State cover five major categories viz. (1) Infocoms (Telecoms) (2) Infrastructure, (3) Industry (Hardware and Software) (4) Training and (5) E-governance. It is estimated that about one lakh people are directly or indirectly employed in ICT sector in the States. The total investment in the ICT sector in the last four years is estimated to be roughly Rs. 6250 crores. The overall growth percentage has been 25 per cent.

#### 1. Infocoms

21.7 One of the most notable achievements in the infocoms sector during the year has been the mass deployment of wireless Internet technology in Malappuram to the rural locations, throughout the Akshaya centres in Malappuram. Now Malappuram has broad band wireless access connecting all Village Panchayats in the district. This is one of the largest deployment of wireless IP network anywhere in the world.

21.8 The year under review also witnessed consolidation of existing telecom infrastructure, backed with the launch of new services and rapid expansion of cellular/mobile phones segment. The number of mobile phones in Kerala has doubled within one year from 8.91 lakhs to 17.85 lakhs as on October 2004. As per estimates during October 2004 about 2450 mobile connections were being taken every day in place of 277 during 2001. Investments of major Infocom companies namely Reliance, Bharti and Asianet availing the Rights of Way Policy and ongoing support extended to build a wired State touched nearly Rs.4500 crores which is just 50 per cent higher

than that of the previous year. Leading Infocoms investors, VSNL and BSNL have also expended their facilities in Kochi and other parts of Kerala. Kochi continues to be bandwidth surplus in the region improving the prospects of setting up bandwidth intensive ITES companies in the State. The annual turnover of this sector is estimated to be approximately Rs.2500 crores, which is about 39 per cent higher than that of 2002-03.

#### 2. Infrastructure

21.9 Creation of ICT infrastructure in terms of built up space matching with the demand from IT/ITES companies is of prime focus. Technopark provides world-class infrastructure environment for IT companies in a 143.64 acres campus in Thiruvananthapuram. The infrastructure offered includes land and 12,12,000-sq. ft. built-up space. Kochi Infopark has a built up space of 1,20,000-sq. ft. Construction of the modern state-of-the-art 2,20,000 sq. ft premium space in Kochi will be over shortly. Private sector companies have also come forward to invest in creating ICT space of about 33000 sq. ft in Kochi which is almost ready. To benefit the start up companies 20000 sq. ft space was created in Kochi ITES habitat which is also functioning as an Incubator and five companies have already started functioning in this facility. The total built up space available in the State stands at over 2 million sq. ft spread over in the IT parks at Thiruvananthapuram, Kochi and Kozhikode.

21.10 ICT infrastructure created in various parks is given in table 21.3

Table 21.2  
OFC Connectivity

OFC Cable laying (length-Km)	Achievement on date
Reliance	2413
Bharti	917
Asianet	310
Bharti + Asianet	325
BSNL	1111 digital exchanges
Cochi - SEA-ME-WE-3 Bandwidth availability by VSNL	Expansion work
Investment upto March 2003	Rs. 3000.00 Crores
Investment during 2003-04	Rs. 750.00 Crores
Investment upto March 2004	Rs. 3750.00 Crores

Source: IT Department

**BOX-21.2****Kochi as Top Destination for ICT**

Kochi has been ranked by NASSCOM as one of top destinations for ITES operations and 70 percent of India's Data Traffic currently flows through Kochi Gateway.

**BOX-21.3****Technical & Support Infrastructure in Technopark**

- Uninterrupted Power Supply
- Water Supply System
- Fire protection system
- Communicative Net Work
- Techno Mall Business Centre
- Technopark Resource Centre
- Convention Centre
- Technopark Club
- Business Value Added Services – Technopark Software Engineering Competency Centre ( TSECC) and Technopark Business Incubation Centre ( T – B IC)
- Technopark Project Facility Centre
- Banking facilities

21.11 In view of the potential for growth of industry in the State and for future requirements, action has been initiated to acquire 92 acres of land in Thiruvananthapuram near Technopark campus and 135 acres of land in Kochi near Infopark campus.

**Table 21.3**  
**ICT Infrastructure**

Infrastructure created	Cumulative upto March 2003	During 2003-04	Cumulative upto March 2004
<b>Thiruvananthapuram</b>			
<i>Technopark</i>			
Land (acres)	182*	20	202
Built-up Space (Sq. ft.)	1500000	..	1500000
Investment (Rs. Crores)	145	10	155
<b>Kochi</b>			
<i>KEPIP/Infopark</i>			
Land (acres)	260	..	260
Built-up Space (Sq. ft.)	300000	..	300000
Investment (Rs. Crores)	35.00	20.00	55.00
Park Infrastructure			
Investment (Rs. Crores)	20.00	5.00	25.00
<i>ITES Habitat</i>			
Built-up Space (Sq. ft.)	20000	..	20000
Investment (Rs. Crores)	2.00	2.00	4.00
<i>Kozhikode</i>			
KITEL Park			
Land (acres)	10	..	10
Investment (Rs. Crores)	13.00	..	13.00
<b>Total</b>			
Land (acres)	452	20	472
Built-up Space (Sq. ft.)	1820000	..	1820000
Investment (Rs. Crores)	215.00	37.00	252.00

\* Includes 26 acres at Akkulam

Source: IT Department

21.12 Currently 64 companies operate from the Technopark campus providing direct employment to around 7000 professionals and training to 1500 software engineers in Tata Consultancy Service and around 500 students in IITM –K and Technopark Project Facility Centre (TPFC), PARK Centre. These companies include 4 CMM level five companies, 2 CMM level three companies and over ten ISO certified companies. In Kochi Infopark, 24 companies, mostly foreign, give employment to 650 persons. The total turnover of the companies in Technopark is Rs. 230 crores and the details are given in Table 21.4

**Table 21.4**  
**Turnover of Technopark Companies**

Particulars	Rs. lakhs			
	Foreign Turnover	NRI Turnover	Domestic Turnover	Total
Software	9593	8325	3682	21600
Hardware	1200	200	0	1400
Total	10793	8525	3682	23000

Source: IT Department

**BOX-21.4**

**International Standard Park**

Designed to International standard, the Technopark at Thiruvananthapuram is the one and only CMMI level for assessed Technology park in the country and provides a serene environment with high quality support infrastructure at low cost for IT / ITES Companies.

21.13 Since STPI – Thiruvananthapuram came into existence, 290 companies have been registered and 120 companies are exporting software regularly. During 2003-04 twenty three units have been registered under STPI-T showing a decline in registration by 15 per cent. But the exports recorded a steady growth from Rs. 165 crores to Rs. 218 crores during 2003-04 (24%). Though STPI centres were started in Kochi, Kozhikode, Palakkad, Thrissur and Kollam in addition to one at Thiruvananthapuram, they have not attracted any serious software export firm. A Smart Business Centre (SBC) at the SDF – IT building in the Infopark which is described as the country's first state-of-the-art 'plug and play' facility offering an environment for companies to

begin operations promptly has been started.

**3. IT Industry (Software and Hardware)**

21.14 IT hardware sector (assembling and components) also recorded healthy growth in the year 2003-04. Domestic IT Hardware turnover for 2003-04 was Rs. 600 crores. Hardware assemblers and vendors in the State occupy a major space in Kerala's ICT Industry Scenario and employ around 20,000 people. There are about 2750 units under small-scale enterprises in the State in this category. About 350 small and micro software enterprises in the ICT sector account for a turnover of over Rs. 40 crores. This sector employs about 4000 IT professionals Statewide. During 2003-04 total export turnover in Hardware and Software comes to Rs. 465 crores by showing a growth of about 48 per cent. The hardware export is only from CEPZ units and in software Rs.

265 crores of export is from STPI units and Rs. 20 crores from units in CEPZ. During the year 2003-04 six major companies have invested in Kerala. They are:

- WIPRO Infotech
- Infosys Technologies Ltd
- Tata Consultancy Services
- Allianz Cornhill
- Ernst & Young
- Mickinsey & Co.

21.15 WIPRO Infotech will commence operations from the Infopark Kochi. They have also acquired 15 acres of land inside the Infopark for building their own campus and are in the process of acquiring additional 25 acres of land. New BPO companies from UK like Astron Alamy Images, Shertson Educational Software, RMPic. etc have also commenced operations in the State.

21.16 The Investment Promotion and Management Cell (IPMC) provides Investment guidelines to new companies and extending financial incentives as per the IT policy of the Government. It coordinates with the Government for grant of necessary clearness to the investors and the completion of technical formalities at different levels. IT department initiated ITES

**BOX-21.5****Smart City, Kochi**

Dubai Internet City (DIC) has proposed to establish Smart City in Kochi, spreading over 400 acres of land. In the first phase, the State Government have offered to provide land on mutually agreed conditions. The project is expected to generate 33000 professional jobs within a period of three to five years.

training programme during 2003-04 to make available a highly skilled, readily employable human resources by the IT/ITES Industry. Pilot programmes were rolled out with the support of British Council for English Language Training.

21.17 Status of ICT Industry by March 2004 is given in table 21.5

21.18 On the basis of an extensive all Kerala study covering over 800 representative enterprises across different sectors, the size of the IT Industry in the State has been assessed as follows:

**Table 21.5**  
**Status of ICT Industry as on 31 March 2004**

IT Companies	No. of Industrial Units	Employment (Nos)	Domestic Turnover (Rs crores)	Export Turnover (Rs. crores)
Technopark STPI Companies	52			
Non-Technopark STPI Companies	268			
<b>Total STPI Companies</b>	<b>320</b>	<b>3500</b>	<b>2.00</b>	<b>5.00</b>
IT Companies-Technopark				
STPI Registered	52			
Non-STPI Registered	13			
<b>Technopark Total</b>	<b>65</b>	<b>6500</b>	<b>30.00</b>	<b>260.00</b>
CSEZ- Kochi Companies				
EOU(S/W)	4			
SEZ Unit (H/W)	14			180.00
SEZ Unit (S/W)	12			20.00
<b>SEZ Total</b>	<b>30</b>	<b>3000</b>		<b>200.00</b>
Hardware Assembly/Vendors	3000	25000	600.00	
Software Developers (Small & Micro)	450	5000	50.00	
<b>Grant Total: IT Industries</b>	<b>3865</b>	<b>43000</b>	<b>682.00</b>	<b>465.00</b>

Source: IT Department

**Table 21.6**  
**Size of the ICT Industries**

Item	No. of Entities	Annual Turnover (Rs. crores)	Direct Employment
Distributors, Vendors & Assemblers	2450	490.00	15000
Small & Micro Software Enterprises	300	30.00	3600
Training Institutes	2000	40.00	8000
Internet Cafes & DTP Centers	2500	35.00	4000
Medium & Large Software Companies	50	170.00	6000
Hardware Manufacturers	20	420.00	3800
<b>Total</b>	<b>7320</b>	<b>1185.00</b>	<b>40400</b>

Source: Sectoral Study Report on Electronics & IT – KSIDC

21.19 There are also a large number of one-man operations (about 4000) involved in the assembling of computers, each one assembling two to three computers in a month.

#### 4. IT Exports

21.20 Software export has acquired prominence not only in India's computer/ electronic sector but also in the export sector. The IT software and services industry has emerged as the biggest contributor towards India's exports and it is expected that by the year 2008 the industry would account for 35 per cent of the country's exports and 7.7 per cent of GDP. Software is now widely held as a major engine of growth and earner of essential foreign exchange.

21.21 The four southern Indian States account for about 45 per cent of the total software exports from India. The details of growth rate of software exports from southern States are given below in

Table 21.7.

21.22 Details of IT export for the period from 1999-2000 to 2003-2004 are furnished in Tables 21.8 and 21.9.

#### Human Resource Development

21.23 The State has 2850 ICT training institutes and 4200 Internet Cafes/DTP centres. About 12500 persons work in these training institutes accounting a turn over of Rs. 60 crores. In Internet Cafes /DTP centres 6000 people work with a turn over of another Rs. 60 crores. Buoyancy in ICT sector in terms of hardware, software, training etc was clearly evident in the year 2003-04 due to increasing number of educational institutions including schools setting up IT laboratories. Details of training institutes, Internet Cafe and growth of Internet service provides are given in Tables 21.10 & 21.11.

Table 21.7  
Growth Rate of Software Export from Southern States

State	1999-2000	2000-2001	2001-2002	2002-2003
Tamilnadu	48.62	52.60	68.08	20.92
Karnataka	58.18	52.36	32.44	24.71
Andhra Pradesh	77.64	69.73	42.00	26.00
Kerala	37.26	53.94	30.78	12.25

Source: STPI - Thiruvananthapuram

Table 21.8  
Software Exports

(Rs. Crores)

Year	STPI Units	CEPZ Units	Total
1999-2000	66.64	1.63	68.27
2000-2001	112.37	5.38	117.75
2001-2002	150	12.84	162.84
2002-2003	165	20	185
2003-2004	265	20	285

Source: IT Department

Table 21.9  
Hardware Export (CEPZ Units)

(Rs. Crores)

Year	Exports
1999-2000	120.81
2000-2001	157.84
2001-2002	113.43
2002-2003	130.00
2003-2004	180.00

Source: IT Department



**Table 21.10**  
**Training Institutes and Employment**

Item	No. of Units	Employment Created (Nos)	Investment (Rs. Crores)
Training Institutes	2850	12500	60.00
Internet Cafe /DTP Centers	4200	6000	60.00
Total	7050	18500	120.00

Source: IT Department

**Table 21.11**  
**Growth of Internet Service Providers**

Year	Active ISPs
2000-2001	4
2001-2002	6
2002-2003	7
2003-2004	10

Source: IT Department

#### E-Governance

21.24 FRIENDS is a single window 'no queue' integrated remittance centre where the citizens have the opportunity to pay all taxes and other dues to the Government under one roof at no extra cost. Offering a comfortable ambience, each FRIENDS centre accepts payments of the Kerala University, local bodies, KSEB, KWA, Land Revenue, Civil Supplies, Motor Vehicles, BSNL and Electrical Inspectorate. Railway reservation facilities were arranged in two centres viz.

#### BOX-21.6

#### Kerala's Advantages

##### Technology Advantages

- 100% of 988 telephone exchanges are digital
- 98% of telephone exchanges connected by OFC to the National Internet Backbone (NIB)
- Highest telephone density – 7 per 100 - India's 2005 target.
- SEA – ME – WE – 3 and SAFE Submarine landings
- 15 GBPs bandwidth supported
- VSNL's primary international gateway in India is in Kochi

##### Human Resource Advantages

- Highest density of science and technology personnel in India
- Lowest employee attrition rate in the country - < 5%
- 82 Engineering Colleges in the State
- Data base of readily employable graduate enabling internet ITES companies to excess the best of professional talent
- Training centres for ITES manpower pool

##### Cost Advantages

- A fully burdened cost of just US\$ 8 per hour when compared to the global average of \$ 15.
- Salaries - 1/5<sup>th</sup> of the International averages
- Operational cost < 50% when compared to other Indian Cities
- Rentals lower by more than 60% in companies to other Indian cities.
- Power and water tariff among the lowest in the country.

Wayanad and Malappuram and it is to be extended to Pathanamthitta also.

21.25 FRIENDS Janasevana Kendras are currently operational at all the 14 district headquarters. An average of 700 – 1000 people visit each centre every day. The increasing popularity of the facility can be gauged by the fact that the collection during 2003 – 04 has increased by more than 75% vis-a-vis the collection in the previous year. Number of transaction during the last four years is given in table 21.12.

**Table 21.12**  
**Transactions in FRIENDS**

Year	No. of Transactions	% Increase
2000-2001	123709	..
2001-2002	1026919	730.11
2002-2003	2023811	97.08
2003-2004	2632137	30.06

Source: IT Department

**BOX-21.7**

**Key points for the success of FRIENDS**

- Single window facility for many services
- Properly trained employees
- Proper linking for digital to manual governance activities
- Separate units for linkages (Kudumbashree units)
- Comfortable environment for making payment
- Electronic queue management facilities
- 24 hours security arrangements
- Cash transaction arrangements through banks
- Technical help from qualified agencies
- Educated team for coordinated activities

21.26 Government of Kerala has prioritized the departments for computerisation on the basis of two parameters namely earning capacity and degree of citizen interface. The identified departments and agencies are Secretariat, Collectorate, Local Governments, Treasuries, Revenue, Registration, Employment Exchanges, Motor Vehicles, Civil Supplies, Water Authority

and KSEB. In the area of education the projects that have been accorded top priority include IT @ School, Education Grid connecting all technical institutions, Universities, Libraries, Research Institutions etc in the State.

21.27 Secretariat Wide Area Network Project aimed at networking the Secretariat and other public offices is intended to facilitate speedy disposal of files in the Government Offices. Twenty three District Treasuries and 165 Sub Treasuries in the State have already been computerised. Moreover 54 Sub Registrar Offices have been fully computerised using PEARL (Package for Effective Administrative of Registration Laws) and the remaining are expected to be computerised shortly. Palakkad collectorate has been completely computerised. The Department of IT along with the State Library Council has launched 14 Rural Information Centres in the rural libraries, one in each district.

21.28 Almost all the e-governance projects are under implementation for some years and are at various stages of completion. Determined efforts are necessary to complete them in all respects in a year so that full benefits of the large investments that have been made, could be reaped by the Government and the people.

**Citizen Call Centre**

21.29 Work relating to setting up of a call centre for multi purpose services such as details of Government programmes, help desks to access Government services etc has been completed. The call centre established adjacent to the Friends Centre at Thiruvananthapuram would provide information relating to citizen transactions over phone to the citizen of the State. The Call centre facility is the first of its kind in the country

**Akshaya**

21.30 Akshaya is an integrated attempt to address the most critical aspects of the digital divide in developing countries. The central component of the project is the creation of a public access ICT infrastructure and network of internet kiosks on the lines of STD/PCO model. In Malappuram 630 community ICT centres called Akshaya centres have been set by local entrepreneurs with bank support. The network of Akshaya centres has been utilised to implement a universal household E-literacy programme where by one

adult member of each family is imparted training in basic IT and use of internet. Six lakh people were trained in Malappuram. The project brought in private sector investments of over Rs. 30 crores in the first phase.

#### IT @ School

21.31 IT @ School project is to provide information technology enabled education to all high school children in the State for which an amount of Rs.1477.92 lakhs has been spent in the Tenth Plan till August 2004. Out of 2422 high schools 2050 schools are now covered under the scheme. Kudumbashree set up computer labs in 73 schools and in 1894 schools it is done by the concerned PTA. Details of implementation of the project are given in Table 21.13.

21.33 Two important projects that are being made available by the Edusat to the State are Tele-medicine and Tele-education.

21.34 The Tele-education project taken by the Education Department in association with ISRO envisages launching pilot projects in 42 Government high schools in Wayanad and lead schools from each educational district of the State. Multi media rooms and equipment are being installed in these schools for creating virtual class rooms from where students can participate and interact in sessions of expert teachers from all over the country.

**Table 21.13**  
**Statistics of Implementation of IT @ school**

1	Total No. of Govt. & Aided High Schools	2422
2	Schools having computer labs	2050
3	Of which schools having minimum five computers as per specifications	2050
4	Schools having computer labs but not upto the specifications	147
5	Schools without computer labs/computers	225
6	Schools where empanelled agencies set up computer labs	182
7	Of which schools where Kudumbashree set up computer labs	73
8	Schools where PTA set up computer labs	1894
9	Schools with internet connection	258

Source: IT @ school Progress Report, October 2004

#### Edusat

21.32 The successful launch of Edusat has opened up several possibilities for the State.

#### BOX-21.8

##### Potential Uses of Edusat

- Online Education through Internet
- TV Broadcast
- Radio Broadcast
- Video Conferencing
- Asymmetric Internet through TVRO
- Voice Chat on Internet
- Webscan as Return Link
- Telephone as return Link
- Internet as Return Link

#### Indian Institute of Information Technology and Management – Kerala (IIITM-K.)

21.35 With a view to creating a pool of highly skilled IT professionals in the State, Government of Kerala set up Indian Institute of Information Technology and Management – Kerala (IIITM-K). Apart from conducting postgraduate programmes in IT, the Institute is also helping the government creating Education Grid, Kissan Kerala, Police Portal etc. Major Initiatives of IIITM-K are given below.

#### IT Grid

21.36 The project is executed by NIT – Kozhikode, CUSAT, Collage of Engineering, Thiruvananthapuram and IIITM-K.

**BOX-21.9****Major Achievements of Education Grid**

- Developed systems and competencies related to a wide variety of information systems needed in setting up the technology enhanced learning and teaching environment in the collages
- Understanding and development of the process of content design and development for the course in higher education that will assist in effective teaching and learning delivery
- Established and equipped the Education Grid Resource centres in NIT-C, CUSAT, CET, and IIITM-K. All the resource centres have commenced some E-learning initiative in some of the courses.
- A UGC sponsored E-journals services network has been established across the four major universities of Kerala. The net work passes through the operation centre in IIITM-K.
- Considerable training has been imparted to systems and network administrators across the Resource centres for managing the complex systems servers and information systems effectively
- Several courses on awareness building and usage of E-learning in the regular courses have been given to the teachers in the various colleges and Universities
- The plan to net work atleast 30 Institutions over the Education Grid services is being finalised in association with ERNET India and SWAN initiative of the Government of Kerala.
- Effective integration of EDUSAT services with the terrestrial broad band information and learning services

**KISSAN - KERALA**

21.37 Karshaka Information Systems, Services and Networking (Kissan – Kerala) project is executed and co-ordinated by IIITM-K as a project of the Department of Agriculture. The project has successfully developed, commissioned and made operational at pilot level the following systems and services of value to the farmers and agricultural institutions.

- Agriculture call centre of Kerala - The toll free agriculture telephone call centre services
- Krishiyidapadam - TV Serial programme
- Virtual University for Agriculture Trade
- Major R & D in Agriculture Information

**Systems**

- Internet access for farmers in 10 Krishi Bhavans

**Police Portal for community Interaction**

21.38 The objective of the project is to bring the citizens and the police closer in solving several issues of traffic management, getting information faster on issues related to citizen's security needs curbing illegal activities etc. The project has completed the networking of all the city police stations and offices and is equipping them for effective service delivery.

21.39 SWOT analysis of IT industry in Kerala is given in Box 21.10

**BOX-21.10****SWOT Analysis****Strength**

- Availability and low cost of professionals at entry level
- Low attrition rate
- Technopark (World class facility at the lowest cost in the country)
- Adequate data communication bandwidth at lowest cost in the country at Kochi
- Relatively low cost of power
- Three International Airports
- Temperature, Climate, pollution free environment, Law and Order
- Adequate quality housing at low cost
- Good Schools and Hospitals
- Reasonably good urban infrastructure amenities
- Pro-active State Government Policies
- Reasonable track record of existing companies
- The Vast Kerala Diaspora.

**Weakness**

- Shortage of middle / senior level professionals
- Scarcity of extensive parcels of land
- Inadequacies and interruptions in Power
- Few direct connections to US and European destinations
- Sub – optimal domestic market size
- Inadequate base of entrepreneurs with international linkages
- Work disruptions like hartals
- Inadequate attention to City infrastructure
- Poor perception as an investment destinations.

**Opportunities**

- International demand
- NASSCOM's aggressive marketing of India
- Pro "IT – business" policies of Government of India
- Increasing outsourcing to India
- E-governance initiatives of Central and State Government
- Growing trend to create geographical redundancy.

**Threats**

Competition from other States

## CHAPTER 22

# LOCAL GOVERNMENTS AND DECENTRALISED DEVELOPMENT

### Introduction

Of all the States in the country, Kerala is accepted as the leader in decentralization in the post 73<sup>rd</sup> and 74<sup>th</sup> Amendment period. In the last ten years it was able to structure a decentralized system of development administration, following classical fiscal decentralization principles with emphasis on untied funding, clear demarcation of functions on the principle of subsidiary, structuring of a transitional local governance system, setting up of independent umpiring institutions, facilitating people's participation and above all backing of all these with powerful laws.

22.2 In order to drive decentralization, which was achieved in a big bang approach, participatory planning was used so as to attract different interest groups. This approach called for harnessing the involvement of people other than the elected members and officials. Though a viable methodology has been evolved the focus has been on planning and spending. The time to move on to good governance and quality service delivery has come.

22.3 Realizing this, during the Tenth Five Year Plan, several institutionalization efforts have been taken but the results have been mixed but the

resolve to move on to a proper local government system beneficial and accountable to the people is there among the important stakeholders. It is this positive feature, which holds out hope for the future.

### Performance during 2003-04

22.4 During the year there was a strong shake up of the system with the withdrawal of unspent funds as on 9-7-2003 and removal of the provision to carry over 25% of the unspent funds to the next year. Though this has brought about better fiscal discipline it completely upset the planning process as the local governments had to restructure their plans all over in accordance with available resources. In other words a Rs.1900 crore plan had to be reshaped into Rs.1200 crore plan. This affected sectoral ceilings and balances.

22.5 But it is worth mentioning that the largest amount of grant release in the nine years of decentralization was in 2003-04 and it was in this year that the highest ever expenditure was incurred.

22.6 The details of budget provision and release during 2003-04 are given in Table 22.1

Table 22.1  
Details of Budget Provision and Release of Grant-in-aid during 2003-04

(Rs. Crore)

Sl. No	Category	Budget Provision	Grant-in-aid carried over (opening)	Grant-in-aid surrendered on 9-7-03	Release of Grant-in-aid	Additional Grant-in-aid released	Total Grant-in-aid released
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	General	923.92	401.76	327.36	616.69	198.35	889.44
2	SCP	263.33	151.30	133.19	167.75	39.92	225.78
3	TSP	45.31	10.14	8.98	30.51	0.99	32.66
4	EFC	79.55	33.81	29.47	58.72	17.73	80.79
	<b>Total</b>	<b>1312.11</b>	<b>597.01</b>	<b>499.00</b>	<b>873.67</b>	<b>256.99</b>	<b>1228.67</b>

Source: Compiled from the Statistical Annexures of Plan Documents of Local Governments.

22.7 The expenditure of local governments during the year is given in Table 22.2

22.9 The category wise expenditure of different tiers of local governments is given in Table 22.4.

22.8 The sector wise and category wise expenditure of local governments may be seen in Table 22.3

22.10 The sector wise expenditure of different

**Table 22.2**  
**Performance of Local Governments during 2003-04**

(Rs. Crore)

Sl. No.	Category	Budget Provision	Total Grant in Aid released	Expenditure	Percentage of Release to Budget provision	Percentage of Expenditure on Release
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	General	923.92	889.44	816.94	96.27	91.85
2	SCP	263.33	225.78	182.41	85.74	80.79
3	TSP	45.31	32.66	22.61	72.08	69.23
4	EFC	79.55	80.79	67.90	101.56	84.05
	<b>Total</b>	<b>1312.11</b>	<b>1228.67</b>	<b>1089.86</b>	<b>93.64</b>	<b>88.70</b>

*Source: Compiled from the Statistical Annexures of Plan Documents of Local Governments*

**Table 22.3**  
**Expenditure Pattern of Local Governments during 2003-04**

(Rs. crore)

Sl No.	Category	Productive Sector	Service Sector	Infrastructure Sector	Total	Un-classified	Grand Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	General	174.34	305.67	272.12	752.13	64.81	816.94
2	SCP	11.79	125.02	44.80	181.61	0.79	182.40
3	TSP	1.53	18.60	2.08	22.21	0.41	22.62
4	EFC	4.99	46.26	11.53	62.78	5.12	67.90
	<b>Total</b>	<b>192.65</b>	<b>495.55</b>	<b>330.53</b>	<b>1018.73</b>	<b>71.13</b>	<b>1089.86</b>

*Source: Compiled from the Statistical Annexures of Plan Documents of Local Governments*

**Table 22.4**  
**Expenditure Pattern of Different tiers of Local Governments (2003-04)**

(Rs. crore)

Sl. No.	Tier of Local Governments	General	SCP	TSP	EFC	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	Grama Panchayats	542.47	122.32	15.08	57.46	737.33
2	Block Panchayats	11.42	35.97	5.16	2.02	154.57
3	District Panchayats	42.10	8.40	2.24	0.00	52.74
4	Municipalities	95.45	12.68	0.13	7.35	115.61
5	Corporations	25.50	3.03	0.00	1.07	29.60
	<b>Total</b>	<b>816.94</b>	<b>182.40</b>	<b>22.61</b>	<b>67.90</b>	<b>1089.85</b>

*Source: Compiled from the Statistical Annexures of Plan Documents of Local Governments*

tiers of local governments is given in Table 22.5.

to be limited.

22.11 The percentage of sector wise expenditure of different tiers of local government can be seen in Table 22.6.

3) Under SCP and TSP expenditure under productive sector is very low. This implies that the focus is on beneficiary oriented minimum needs rather than on self-employment or economic development.

22.12 There are certain disturbing trends evident from the expenditure figures. They are:

- 1) The expenditure under Tribal Sub Plan is 22% less than the expenditure under General Sector. Similarly the expenditure under Special Component Plan is 11% less than that of the General Sector.
- 2) Expenditure under productive sector is also relatively lower at 17.68% in all. Within the productive sector capital expenditure seems

#### Achievements

22.13 Selected physical achievements during 2003-04 are given in Table 22.7.

22.14 The physical achievement show that the earlier trend of providing basic minimum needs like drinking water, electrification, housing continues. But it is significant that 11730 hectares have been brought under cultivation through

**Table 22.5**  
**Sector wise Expenditure of different tiers of Local Governments during 2003-04**

(Rs. crore)

Sl. No	Tier of Local Governments	Sectors				
		Productive	Service	Infrastructure	Exempted	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	Grama Panchayats	144.35	338.94	204.20	49.84	737.33
2	Block Panchayats	27.34	69.73	42.41	15.09	154.57
3	District Panchayats	12.44	26.77	13.22	0.31	52.74
4	Municipalities	7.74	46.43	56.24	5.20	115.61
5	Corporations	0.77	13.69	14.45	0.69	29.60
	<b>Total</b>	<b>192.64</b>	<b>495.56</b>	<b>330.52</b>	<b>71.13</b>	<b>1089.85</b>

Source: Compiled from the Statistical Annexures of Plan Documents of Local Governments

**Table 22.6**  
**Percentage of Sector wise Expenditure of different tiers of Local Governments during 2003-04**

Sl. No	Tier of Local Governments	Sectors				
		Productive	Service	Infrastructure	Exempted	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1.	Grama Panchayats	19.58	45.97	27.69	6.76	100.00
2.	Block Panchayats	17.69	45.11	27.44	9.76	100.00
3.	District Panchayats	23.59	50.76	25.07	0.59	100.00
4.	Municipalities	6.69	40.16	48.65	4.50	100.00
5.	Corporations	2.60	46.25	48.82	2.33	100.00
	<b>Total</b>	<b>17.68</b>	<b>45.47</b>	<b>30.33</b>	<b>6.53</b>	<b>100.00</b>

Source: Compiled from the Statistical Annexures of Plan Documents of Local Governments



**Table 22.7**  
**Selected Physical Achievements during 2003-04 (provisional)**

Sl.No. (1)	Item (2)	Unit (3)	Total (4)
1	Area brought under cultivation	Ha	58401
2	Beneficiaries of vegetable cultivation	No	211939
3	Distribution of tractors under agricultural development projects	No	67
4	Distribution of tillers under agricultural development projects	No	506
5	Poultry-egg rearing units	No	32504
6	Poultry-broiler unit	No	1237
7	Construction of cattle sheds	No	15943
8	Watershed development projects	No	1553
9	Land brought under cultivation through watershed development projects	Ha	11730
10	Micro enterprises started	No	6276
11	Self employment units started	No	5521
12	Self employed persons	No	24901
13	Self employment units started by poor people	No	4055
14	Self employment units for destitutes	No	467
15	Employment training programme for destitutes	No	394
16	Destitutes trained (persons)	No	462
17	Distribution of land to landless (beneficiaries)	No	15320
18	Area of land distributed to landless	No	2662
19	Houses constructed	No	50426
20	Construction of sanitation units	No	174689
21	Drinking water projects	No	11926
22	Beneficiaries of drinking water projects	No	307489
23	Drinking water projects implemented with beneficiary contribution	No	3035
24	New Wells	No	21033
25	Renovation of drinking water projects	Sq.m	14706
26	Mobility assistance devices, Crutches, Walkers	No	2265
27	Wheel chair, Tricycle, mechanized three wheeler vehicles	No	2223
28	Hearing aids	No	1771
29	Braille kit, Study materials	No	757

*Source: Compiled from the Statistical Annexures of Plan Documents of Local Governments*

watershed development projects.

#### **Mobilisation of Resources**

22.15 The sources of funding of the Development Projects of Local Governments are shown in Table 22.8.

22.16 It is seen that beneficiary contribution in cash comes to a substantial amount of Rs.63.81 crore but loan from financial institutions including Co-operative Banks works out to only Rs.12.89 crore or less than 1% of the total investment. This is cause for concern. This shows that the special

effort made by the State Government to dovetail credit with local government investments has not borne fruit.

22.17 The Budget provision for different tiers of local governments is shown in Table 22.9

22.18 The sector-wise allocation of Plan Grant by local governments during 2004-05 is shown in Table 22.10.

22.19 The above data show that the allocation to productive sector has improved to 22.31 %. It is interesting to note that the allocation for

**Table 22.8**  
**Expenditure of Local Governments across Sources of Funds during 2003-04**

(Rs. crore)

Tier of Local Governments	Grant in Aid	Own Fund	State Sponsored Scheme	Centrally Sponsored Scheme	Externally Aided Fund	Loan from Cooperative Institutions	Loan from Financial Institutions	Voluntary Contributions	Beneficiary Contribution (Direct)	Others	Total
2	3	4	5	6	7	8	9	10	11	12	13
Grama Panchayats	737.33	62.86	18.08	55.04	6.80	0.95	3.44	5.37	54.73	44.87	989.47
Block Panchayats	157.57	0.20	5.45	79.27	1.19	0.93	6.84	0.01	7.57	1.23	260.26
District Panchayats	52.74	0.35	9.37	6.63	0.00	0.00	0.00	0.00	0.02	1.56	70.67
Municipalities	115.61	11.54	2.97	10.26	0.00	0.11	0.62	0.22	1.49	0.61	143.43
Corporations	29.60	6.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	35.61
<b>Total</b>	<b>1092.85</b>	<b>80.95</b>	<b>35.87</b>	<b>151.20</b>	<b>7.99</b>	<b>1.99</b>	<b>10.90</b>	<b>5.60</b>	<b>63.81</b>	<b>48.28</b>	<b>1499.44</b>

Source: Compiled from the Statistical Annexures of Plan Documents of Local Governments

**Table 22.9**  
**Tier-wise Budget Provision to Local Governments during 2004-05**

(Rs. lakh)

Sl. No	Local Government	No. of LGs	Budget Provision			Amount per Local Govt.		
			Plan	Non-Plan	Total	Plan	Non-Plan	Total
1	Grama Panchayat	991	77837.54	23745.53	101583.07	78.54	23.96	102.51
2	Block Panchayat	152	22006.39	901.36	22907.75	144.78	5.93	150.71
3	District Panchayat	14	19749.90	1525.59	21275.49	1410.71	108.97	1519.68
4	Municipalities	53	15131.11	2427.17	17558.28	285.49	45.80	331.29
5	Corporations	5	11693.31	879.24	12572.55	2338.66	175.85	2514.51
	<b>Total</b>	<b>1215</b>	<b>146418.25</b>	<b>29478.89</b>	<b>175897.14</b>	<b>120.51</b>	<b>24.26</b>	<b>144.77</b>

Source: APPENDIX IV. Budget 2004-05. Govt. of Kerala

**Table 22.10**  
**Sector-wise Allocation of Plan Grant by Local Governments during 2004-05 (Provisional)**

(Rs. Crore)

Sl. No	Local Governments	No. of Projects	Plan Grant to Sectors				Total
			Productive	Service	Infrastructure	Not included in any group	
1	Grama Panchayat	117715	187.73	376.51	133.44	43.93	741.60
2	Block Panchayat	13679	31.62	83.38	31.06	9.56	155.62
3	District Panchayat	2741	2056	55.90	25.57	0.96	102.99
4	Municipalities	8044	11.59	55.01	32.88	4.18	103.65
5	Corporations	705	2.04	17.34	12.99	0.00	32.37
	<b>Total</b>	<b>142884</b>	<b>253.54</b>	<b>588.14</b>	<b>235.94</b>	<b>58.63</b>	<b>1136.24</b>
	Percentage of Allocation		22.31	51.76	20.76	5.16	100.00

Source: Compiled from the Statistical Annexures of Plan Documents of Local Governments.

infrastructure sector has come down by one-third.

22.20 The percentage of allocation of Plan Fund to productive sector varies among different tiers as may be seen in Table 22.11.

22.21 It is seen that District Panchayats and Block Panchayats have set apart lower allocation for the productive sector compared to Village Panchayats though they are all bound by the same mandatory sectoral provisions. Similarly Corporations spend far less on the productive sector than Municipalities.

### Capacity Building

22.22 Capacity building efforts continued on a large scale during 2004 also. The Kerala Institute of Local Administration was responsible for organizing several training programmes. The details are summed up below:

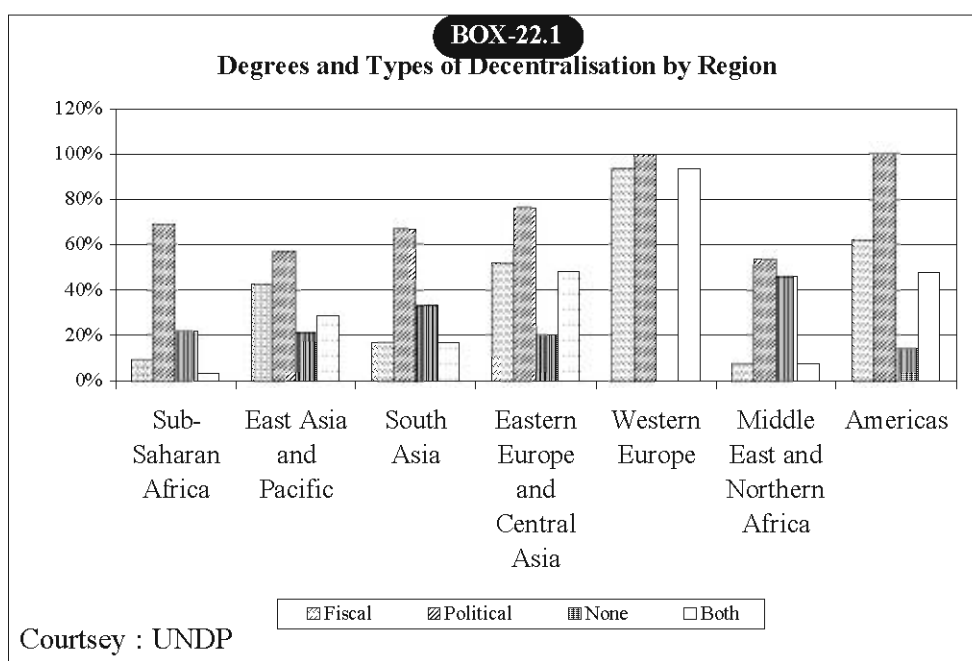
### General Training Programmes

22.23 General Training Programmes were held for elected representatives and officials as follows:

- (1) Training on good governance
- (2) Training for Empowerment of women and SC/ST elected representatives
- (3) Training for Standing Committee Members
- (4) General Training for Panchayat Secretaries
- (5) Training on Performance Audit
- (6) Training on Bill system
- (7) TOT for Technical Committee Members
- (8) TOT for Technical Advisory Committee Members

### Decentralized Training Programmes

22.24 Regional Training programmes were conducted to reach out to all the members and officials. Most of these training programmes were on topics of immediate relevance. The District Panchayat Officers and Deputy Directors of



**Table 22.11**  
**Percentage of Allocation of Plan Fund to Productive Sector by the Local Governments during 2004-05 (Provisional)**

Sl.No.	Tiers of Local Governments	Percentage of Allocation
1	Grama Panchayat	25.31
2	Block Panchayat	20.32
3	District Panchayat	19.96
4	Municipalities	11.18
5	Corporations	6.30

*Source: Compiled from the Statistical Annexures of Plan Documents of Local Governments.*

Panchayats arranged the District level training programmes. More than 100,000 people were trained in this manner.

**Certificate Course for elected representatives**

22.25 KILA has conducted four batches under this course, which is a one-year programme based on correspondence-cum-contact methodology. Sixty seven representatives have completed the course successfully. Such persons are fully involved in the decentralised planning process as members of Working Groups and Technical Advisory Committees. The feed-back on this programme indicates that there has been significant capacity addition and confidence creation among the participants.

**Best Practice sharing**

22.26 This training was arranged on the principle of “learning from the doers”. Four such programmes were organized covering Watershed management and poverty reduction in which interested Village Panchayats and Block Panchayats learned from the experience of lead performers by actually visiting such Panchayats and studying their efforts first hand.

22.27 Recognizing that for sustainable

decentralization, the local governments themselves need to take the lead in partnership with other stakeholders, KILA has started the process of setting up platforms at the district and state levels. It is expected that local governments individually and through their associations would take an active role in setting the agenda for performance and reform through the semi-formal bodies.

22.28 Another initiative taken by KILA is to identify high quality Trainers-on-Call at the district level and utilize them for decentralized training programmes. To start with Thiruvananthapuram, Thrissur and Kasaragod have been identified.

22.29 In order to get the best performers among local governments to contribute substantially to the decentralization process an action research project has been initiated by KILA in which the Beacon Panchayats would experiment in selected areas of governance and development and evolve high quality replicable models.

**Issues**

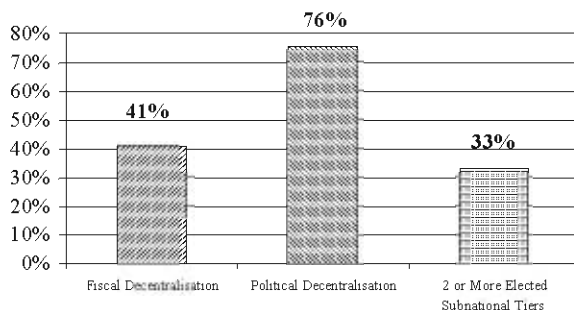
22.30 Some of the issues which need immediate attention are the following:

- 1) There is a persistent departmentalism which is not wearing away. Even after ten years of decentralization organic and harmonious linkages between transferred institutions and the local governments have not been generally established even though there are isolated outstanding examples of coordinated functioning. By and large much more needs to be done to integrate the functioning of different officials and institutions with local governments.
- 2) Critical support systems in the formulation and vetting of local government projects like the Working groups which basically formulate the projects and Technical Advisory Committees which are responsible for their proper vetting have not been functioning very effectively.
- 3) A major innovation of Kerala’s decentralization was the de-mystification of the process of issuing Technical Sanction

**BOX-22.2**

**Decentralisation Worldwide**

- It is estimated that 80 percent of developing countries including the transitional economies of Eastern and Central Europe are experimenting with some form of decentralisation.
- In 1999, 96 of 127 (76%) countries were **politically** decentralised. (At least one elected sub-national level of government. )
  - 42 or 33% had two or more elected sub-national tiers.
- 52 of the 127 countries (41%) had **fiscal** decentralization



Courtesy: UNDP

and its de-technocratisation. As per rules Committees of technical experts consisting of qualified people from government, private sector, NGOs and academic institutions are to come together and technically appraise and approve public works projects. This system seems to be falling apart and there is a strong clamour for going back to the old system whereby individual officers would accord technical sanction as per their delegated powers.

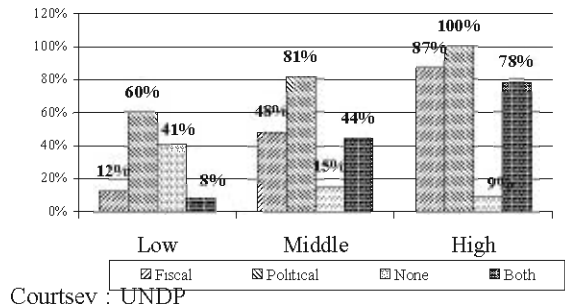
poverty reduction local economic development has been rather limited.

- 7) The checks and balances designed to increase accountability do not seem to be functioning very effectively. Both the Local Fund Audit and Performance Audit have not succeeded in improving the accountability systems in local governments. The account-keeping leaves much to be divided.
- 8) Local resource mobilization has been very weak. Though massive infusion of grants has not affected normal collection of own revenue, the collectable quantum is rarely reached.
- 9) The fiscal crisis of the State is getting transmitted to local governments through fund flow problems and treasury restrictions.

**BOX-22.3**

**Degrees and Types of Decentralization by Income**

- Degrees and types of decentralisation vary by income. Countries with high incomes are likelier to adopt both fiscal and political decentralisation.
- Countries with low GNP are least likely to devolve fiscal responsibilities to the sub-national level.



**Initiatives launched to strengthen decentralization.**

22.31 Several initiatives have been launched during 2004 to strengthen decentralization. They are summarized below:

**Implementation of Second State Finance Commission Recommendations.**

22.32 All the important recommendations of the Second Finance Commission have been accepted by Government except the recommendation to give statutory basis to the transfer of Plan Grant to local governments by permanently fixing it as one-third of the State's total Plan outlay. As the first step from 1-4-2004, Rs.205.32 crore has been set apart as General Purpose Grant, constituting 3.5 per cent of State's Own Tax revenue and Rs. 325.79 crore has been set apart as Maintenance Grant, constituting 5.5 per cent of the State's Own Tax revenue. The tier-wise allocation of these two grants is given in Table 22.12.

22.33 The distribution of Maintenance Grant is based on a tentative formula related to the formula for distribution of Plan Grant. But this is to be fundamentally changed in the coming year so that the Maintenance Grant is directly linked to the assets owned/transferred to local governments. This calls for preparation of an Asset Register as

- 4) Participation is the cornerstone of Kerala's decentralization. But the quality of participation seems to be declining with people attending Grama Sabhas and Ward Sabhas more in expectation of benefits than with the objective of shaping investment decisions. Similarly social auditing is also weak.
- 5) A major difficulty in decentralized planning has been the tendency to spread resources thinly across constituencies – to have councilor-wise or member-wise allocation of development funds. This has affected the quality of investment and its impact even though local governments have proven that their investments are comparatively cost effective.
- 6) In spite of the mandatory sectoral investment for the productive sector, increase in production and productivity has been limited to a few projects. Other than

**Table 22.12**  
**Tier-wise allocation of General Purpose and Maintenance Grant**

Tier	General Purpose Grant	Maintenance Grant	
		For Road assets	For non-road assets
Village Panchayat	15,021.76	9,351.00	11,047.00
Block Panchayat	836.00	-	2,181.00
District Panchayat	560.00	1,073.00	3,141.00
Municipalities	1,626.56	1,462.66	1,831.51
Corporations	2,487.68	1,048.34	1,443.49
<b>Total</b>	<b>20,532.00</b>	<b>12,935.00</b>	<b>19,644.00</b>

well as Maintenance Plans by local governments. Once this is done a quantum improvement is expected in the maintenance of critical public assets especially those related to human development like anganwadies, schools and hospitals, thus solving to a significant extent the problems hitherto caused by poor maintenance of important public assets.

22.34 Among the critical reforms suggested by the Second Finance Commission, which have been accepted by Government the following are to be operationalised on a priority basis.

1. Introduction of presumptive Profession Tax.
2. Issue of rules for assessment and collection of Advertisement Tax
3. Issue of rules for Service Tax
4. Removal of ceiling on surcharges on Property Tax
5. Fixing of minimum fees and removing the cap on maximum fees
6. Setting up of a single financing agency for local governments
7. Amending the Kerala Panchayat Raj Act and Municipality Act to specify the shares of General Purpose and Maintenance Grants.
8. Conduct of survey of local government assets
9. Linking tax and non-tax items to value of money through legislation
10. Penalizing un-permitted diversion of funds by charging two percent penal interest per month from the person(s) responsible.

22.35 Operationalizing these recommendations would help local governments improve their financial base.

#### Constitution of Third Finance Commission

22.36 Kerala is one among the few States, which has set up the Third Finance Commission. The Third SFC came into being on 20<sup>th</sup> of September 2004 and has a period of one year for submitting its report. The terms of reference of the Third Finance Commission is given in Box. No. 22.4.

#### Introduction of Bill system

22.37 As recommended by the Second State Finance Commission the Bill system has been introduced for local governments with effect from 1<sup>st</sup> December 2004. Though there are severe teething problems the new system is expected to strike root soon. This will enhance accountability and improve monitoring considerably. The biggest gain is that people don't have to go to treasuries to get payment from local governments.

#### Restoration of Implementing Officer system.

22.38 Implementing Officer system has been reintroduced along with the Bill system. The withdrawal of the Implementing Officer system in July 2003 led to a major set back to decentralization in the sense that Officers transferred to local governments were cut off from their formal links with local governments resulting in indifference and non-cooperation. The restoration of the system is expected to reconstruct the formal links between officers transferred to local governments and the elected executive authority.

#### Computerisation of DPC approvals

22.39 From 2004 onwards all approvals given by the District Planning Committee are being computerized and local government-wise proceedings are issued by the Member Secretary on behalf of the DPC. This simple administrative reform has brought in the following advantages:

- (i) Clear database on projects approved;

## BOX-22.4

**Terms of Reference of the Third Finance Commission**

The Finance Commission shall review the financial position of the Panchayats and Municipalities and make recommendations as to –

- (a) **The principles which should govern,**
- (i) the distribution between the State, Panchayats and Municipalities of the net proceeds of the taxes, duties, tolls and fees leviable by the State, which may be divided between them under Part IX and Part IX-A of the Constitution and the allocation between the Panchayats at all levels and the Municipalities of their respective shares of such proceeds;
  - (ii) the determination of the taxes, duties, tolls and fees which may be assigned to or appropriated by the Panchayats and the Municipalities;
  - (iii) the grants-in-aid to the Panchayats and the Municipalities from the Consolidated Fund of the State.
- (b) **The measures needed to improve the financial position of the Panchayats and the Municipalities with reference to:-**
- (i) the scope for local bodies to raise institutional finance and to suggest a frame-work for local self governments to take recourse to such sources along with procedures to be followed and limits, if necessary, to raise such resources;
  - (ii) the need for sharing the cost of maintenance of assets and institutions transferred to local self-governments, and evolving criteria for it, with due regard to the fiscal position of the State Government and the local self governments;
  - (iii) the steps necessary for efficient financial management with particular reference to efficiency in resource mobilization and economy in expenditure;
  - (iv) the settlement of claims and dues of Panchayats and Municipalities vis-à-vis Government and Governmental agencies;
  - (v) the procedures to be followed for smooth flow of funds to local self governments and for ensuring proper financial accountability;
  - (vi) the systems and procedures with respect to budgeting, accounting and auditing;
  - (vii) the incentives for higher source mobilization and efficiency in resource use;
  - (viii) the systems and procedures for monitoring the fiscal performance of local self governments;
  - (ix) providing for specific fiscal responsibilities on local self governments.
  - “(x) the transfer of budget to Local Self Governments for the payment of pay and allowances of employees working in institutions already transferred to Panchayats and Municipalities and modalities for the same”.

- (ii) A document for verification by local governments, treasuries and auditors;
- (iii) A tool of financial discipline as the amounts approved by DPC cannot be exceeded without prior permission of the DPC while bills are presented;
- (iv) Incentive to improve the costing of projects;
- (v) The tool for accountability preventing unauthorized change of projects.

#### Deployment of Engineers

22.40 Four years after the decision was taken the transfer of engineers to local governments advanced considerably during the last one year. Of course there are a lot of operational problems owing to the scale and nature of the redeployment process but by April 2005 the process is expected to be completed and local governments would have technical persons under their direct control.

#### Modification of Plan Guidelines

22.41 The guidelines for preparation of the Annual Plan 2005-06 have been revised. The revised guidelines address two long-standing issues. Firstly, framework has been prescribed for local governments to assist cooperatives in a rational and accountable manner. Secondly, the Plan preparation process has been advanced so that the new projects are ready by end March allowing the local governments a full year for implementation.

#### Activity Mapping

22.42 Based on the decision of the First Round Table of Ministers of Panchayati Raj convened by Government of India at Kolkata, it has been decided to prepare a responsibility map for local governments. By demarcating the areas of responsibility of different tiers of local government and by exhaustively listing out sub-functions and activities it is expected to achieve greater clarity on the functional responsibility of local governments.

#### Setting up of the Appellate Tribunal

22.43 Five years after the enabling provisions were introduced in the Panchayati Raj and Municipality Acts, the Appellate Tribunal has been created. This institution would serve both as accountability-enforcing mechanism against illegal and biased decisions in the regulatory sphere of local governments as well as an effective

autonomy-protecting system by preventing the bureaucracy from sitting in judgment over local government decisions. To start with one Tribunal has been set up at Thiruvananthapuram. Depending on the quantum of work, the need for more Tribunals would be examined.

#### Database for Anti-poverty Sub Plan

22.44 The Anti-poverty Sub Plan introduced from the Tenth Plan onwards has been suffering from certain infirmities arising from the absence of validated data on poverty available at the level of the Village Panchayats and Urban Local Governments. Now Government have approved a programme to get the data validated by the volunteers of the Neighbourhood Groups of the Kudumbashree net work. Thus the poverty data would now become community owned and would serve as the basis for participatory planning for poverty reduction in a transparent and normative manner.

#### Expansion of Asraya

22.45 The innovative community based social security scheme implementing through the CDS system called 'Asraya' has now stabilized and is being extended to cover 350 more Village Panchayats and 20 Urban Local Governments in the next one year. Enhanced allocation has been provided under Plan to Kudumbashree to achieve this in partnership with Village Panchayats and Urban Local Governments where the scheme would be taken up for the first time. Going by the current indications Asraya bids-fair to be a viable model for convergent social security to the poorest of the poor.

#### Janasevana Kendrams

22.46 In Urban Local Governments, to improve service delivery to the citizens, *Janasevana Kendrams* are being set up in all the 53 Municipalities and 5 Corporations. Essentially, these IT based Centres facilitate the following services:

- (i) Birth and death registration
- (ii) Payment of taxes, fees etc.

#### Service Delivery Project

22.47 Under Modernizing Government Programme (MGP) Service Delivery Projects have been taken up in 104 Village Panchayats, 14 Municipalities and 5 Corporations. The



services delivered through these local governments and improvement required in respect of each service has been identified both at the micro and macro levels. At present, projects are being prepared by these selected local governments for supplementary funding from MGP.

22.48 Simultaneously government have adopted a Service Delivery policy that covers the State and local governments. This policy envisages reparation of action plans by each local government to improve the quality of Service Delivery to citizens. This is to be linked up with the decentralized planning process as also to the Citizen Charter initiative.

#### **Operationalisation of Decentralization Support Programme**

22.49 After a lot of initial delay - the Decentralization Support Programme with the help of Royal Netherlands Embassy has finally been operationalised. Several initiatives are proposed under this programme, all selected to tone up the general and development administration of local governments by creating viable processes and systems evolved on the basis of action research. The areas targeted for intervention in the first year are:

- Strengthening Women Component Plan and capacity building for gender planning, gender budgeting and gender auditing.
- Improving management of educational institutions.
- Preparing an action plan for local economic development.
- Revisiting the decentralized planning process to tone up systems and procedures.
- Designing support systems from expert institutions and agencies for local governments.
- Addressing staffing issues.

22.50 These bunch of initiatives can go a long way in addressing the deficiencies seen in the first decade of decentralization.

#### **Strengthening expert participation**

22.51 Government have decided to dialogue

with academic institutions and NGOs, to harness their involvement in the local planning and development process. The process of local applied research would be initiated.

#### **Thematic focus on poverty reduction and public health**

22.52 A development paradigm "with a human face and a human heart" is to be operationalised through local governments with account on poverty reduction and public health. This grand vision will inform policies and practices in the coming years. The impact of decentralisation on poverty reduction is explained in Box No. 22.5

#### **Improving monitoring**

22.53 A new monitoring arrangement is to be put in place by assigning one local government to one officer from the Statistics Department whose duty would be to collect plan performance and fiscal data from each local government and transmit it to the government on a regular basis. In the case of Village Panchayats, to start with, the Block mechanism would be utilized, till such time the computerization takes place.

22.54 Along with this formal monitoring system, a community based system would be in place from 1<sup>st</sup> April 2005 to periodically monitor different Anti-poverty programmes being implemented by local governments. This participatory monitoring would be through the CDS system.

#### **Evaluation study on Panchayats awarded by Swaraj Trophy**

22.55 The State Planning Board undertook an evaluation study on the effectiveness of productive sector schemes implemented by 27 Grama Panchayats which are recipient of Swaraj Trophy during 2001-02. The findings are given in Box No. 22.6

#### **Best Practices**

22.56 There have been highly innovative initiatives by Local Governments spanning different activities.

## BOX-22.5

## DECENTRALISATION AND POVERTY REDUCTION

A forthcoming UNDP study on the subject by Prof. M.A. Oommen of Institute of Social Sciences, New Delhi gives the following conclusions in respect of Kerala:

“Now the question is how far has the decentralisation process launched in Kerala helped to consolidate the gains in human development and facilitate the eradication of poverty in the state. We have adduced substantial macro and micro level evidences to evaluate the impact of decentralization on poverty. There is no need to reiterate them. We have noted that while the overall outcome definitely helped to deepen participatory democracy and poverty reduction, there are several negative aspects that need be considered to put the wheels of democratic decentralization and development on a stable track.

It is a widely acknowledged fact that sustained increase in economic growth is needed to eradicate poverty. As a matter of fact the PPC was “a political response” to the crisis of economic stagnation that has engulfed the state for several years. But the progress made in economic growth, leaves many things to be desired, especially because a sum of Rs.62270 million has been spent through local bodies during 1997-2002 and more than 87 per cent of which has been through the PRIs. The rate of growth in agriculture during the 9<sup>th</sup> Plan was only 2 per cent as against 19 per cent during the 8<sup>th</sup> Plan when there was no devolution of powers and resources to the local governments. True, there was significant quantitative and in some respects qualitative improvements in the conditions of the housing, sanitation, drinking water supply, electricity supply and the like to the poor. Even so, one cannot firmly maintain that the public delivery system as a whole has acquired a new style of performance as one would expect. The primary duty of the public health centers, viz. preventive health care of the people is virtually neglected. Not more than 40 per cent of the population attend the PHCs. The increasing shift to private medicare system which is highly costly has driven the poor to indebtedness. The endemic leakage of public resources through artificial escalation of project estimates, manipulation of tenders, use of inadequate and poor quality materials and so on continues despite the great effort made to contain these corrupt practices through the beneficiary committee system and social audit practices. While transparency guarantees, right to information, citizen’s charter seeking to guarantee minimum standards in the delivery of public services, accountability to gram sabha and so on are accepted principles of decentralised governance in Kerala, they are neither insitutionalised nor operationalised except in very exceptional instances. The situation of the tribals and fisher folk continues to be bleak. Despite a seven-fold increase in the annual average plan expenditure in the fisher-folk panchayat we studied (Karumkulam), there was no perceptible transformation in the quality of life of the people. The unhygienic overcrowding and poor housing (several families in a single house), insanitary conditions, the reported cases of diarrhoea and dysentery during rainy seasons, chicken pox during summer and the continuation of chronic diseases like tuberculosis, lung cancer, asthma etc. do not speak highly of the preventive and curative efforts of the panchayat. The debt per poor family to the money lenders ranged from Rs.10,000 to Rs.150,000. It is indicative of the economic malaise they are in. surely there are acute pockets of poverty in the state, which continue to elude the purview of decentralisation.

The most sanguine story that one can write home about the decentralization episode of Kerala is definitely the demonstrated synergy between Kudumbashree (the state poverty eradication mission), and the local self-governments. This synergy has helped and definitely will continue to help not only in reducing poverty, but even in eradicating the worst forms of poverty within a foreseeable time in Kerala.

It will be difficult for this brief study to come out with firm inferences or lessons for

Box Continued...

other states. Even so, it may be possible to formulate certain tentative hypotheses that hold great promise for further in-depth probe and analysis.

First, the linkage between decentralisation and poverty cannot be comprehended without reference to the historical context of the region under study. This is particularly true in regard to a state like Kerala with a rich public action tradition and a strong social capital base.

Second, there is no automatic linkage between poverty reduction and decentralized governance. More than any other state in India Kerala has provided the necessary conditions and framework for democratic and participatory governance to take root. But in practice not more than 150 to 200 GPs could be considered as having internalized the message and acted firmly to usher in sustained democratic practices. There is a great chasm between the ideal and the actual which can be bridged only through support from the higher level governments, the political parties, the media, the intelligentsia, the voluntary sector, the public and so on. It is a learning game.

Third, decentralization will not easily succeed in a highly fragmented society which contemporary Kerala has fast tending to become. The slogan “decentralization with mass participation” will not work in such a society. Clientelism has enveloped the civil life and all political parties. Quite often it is not logic or common purpose, but partisan rhetoric that gets echoed in gram sabha meetings, development seminars, panchayat committee meetings, public debate and so on. An average Keralite is a member of several organizations, social, cultural, political, religious, economic and so on. Caste and communal interests, which were buried deep in the past, are raising their ugly head in manifold ways. Indeed, there are serious problems in embedding decentralization in the emerging social setting of Kerala.

Fourth, the longstanding collusion between the bureaucrats, technocrats, contractors, and the political class has to be broken to ensure sustained decentralized governance and sustained poverty reduction in Kerala and equally so in the rest of India. This is one area in which the higher-level governments also will have to demonstrate their sincerity and commitment. The PPC failed to resist the concerted onslaught of the rentier class. The beneficiary committee system instead of being fostered as an agency to fight corruption has been discredited and permitted to vanish. Political initiative to dismantle corrupt practices and establish the role of the public accountability mechanism already available in place is very important.

Fifth, the proven outcome of the effective linkage between Kudumbashree, the local governments and the community-based organizations of the poor show that, unless the poor are fostered as the agents of their development, the linkage between decentralization and poverty reduction could not be firmly established. In this pattern the local government acts as the facilitator of the self-help initiatives of the poor. Being located nearest to the people, the local government has a comparative advantage in developing a synergistic relationship between the government and the community-based organizations for strengthening poverty alleviation efforts. The conventional poverty approach perceiving the poor as the object of development should not be the dominant approach in seeking to establish a viable linkage between poverty reduction and decentralization.

Six, decentralization could be endangered by the inefficiency or deliberate action of the higher level government. Not only that the higher government should not give a wrong signal regarding decentralization to the lower government, the latter should be actively supported through appropriate policy initiatives statutory and institutional backups and so on. Institutionalising local democracy remains a far distant goal and is a process that needs fostering care for several years to come”.

## BOX-22.6

### Evaluation Study on 27 Grama Panchayats which are recipient of Swaraj Trophy 2001-02

The State Planning Board undertook an evaluation study on the quality and effectiveness of productive sector schemes implemented by 27 panchayats which are recipient of Swaraj Trophy during 2001-02.

The study revealed that there is an increase in income and employment of the beneficiaries of productive sector projects. The findings from analysis of these projects reveal the following:

- Majority of the productive sector projects are multi purpose minor irrigation projects which is followed by SSE and live stock development
- Most of the minor irrigation projects relate to installation of pump sets followed by construction of wells
- Irrigation enhancement under paddy development was mainly through construction of canals and bunds
- Among the women projects, majority of them are kudumbashree based small scale units
- Average Plan outlay was higher for SSE and SSI sector through Kudumbashree units, whereas it was lowest for fisheries projects
- The highest average expenditure under productive sector projects was reported in Wayanad and the lowest in Malappuram District.
- In Thiruvananthapuram, Pathanamthitta, Palakkad and Kannur districts, cent per cent expenditure was reported.
- The highest resource mobilisation (through beneficiary contribution) was reported for vegetable promotion schemes followed by live stock development.
- Additional resources mobilisation through beneficiary contribution was highest in Thrissur and lowest in Kannur District.
- The highest increase in area was for paddy development projects.
- The highest production increase was reported in coconut extension projects
- Kudumbashree units based SSEs and SSIs registered highest income generation
- Employment generation was highest for projects implemented through Kudumbashree units.
- Minor irrigation projects succeeded in reducing the cost of cultivation of crops
- The average value of Growth Trigger Index (GTI) for all products is estimated at 0.461
- The highest value of GTI was registered for Kudumbashree based SSEs and SSIs.
- Paddy development projects recorded highest values for area index
- Production index was higher for coconut development projects
- Kudumbashree based SSEs again scored higher indices for income and employment generation
- Cent per cent achievement was reported in 34 per cent of projects
- Vegetable promotion projects ranked first in achievement of targets.

A collection of best practices as listed below is presented in Box Nos 22.7 to 22.20.

(1)	Nedumbassery Grama Panchayat	:	Towards a dynamic Local Level Development (Box No. 22.7)
(2)	Panmana Village Panchayat	:	Resoruce Mobilisation (Box No. 22.8)
(3)	Changanassery Municipality	:	Recycling of Solid Waste (Box No. 22.9)
(4)	Maneed Village Panchayat	:	Promotion of Paddy cultivation (Box No. 22.10)
(5)	Elikulam Grama Panchayat	:	Vanila Development Project (Box No. 22.11)
(6)	Vadakarapathy Grama Panchayat	:	Water for Local Level Development (Box No. 22.12)
(7)	Edayur Grama Panchayat	:	Harvesting Rain water (Box No. 22.13)
(8)	Kollam District and Pulinkunnu Grama Panchayat	:	Participatory Spatial Planning : Two pioneering initiatives (Box No. 22.14)
(9)	Pathanapuram Grama Panchayat	:	A Waste to Energy Plant (Box No. 22.15)
(10)	Paravur Municipality	:	Vermi-composting Unit (Box No. 22.16)
(11)	Venganoor Grama Panchayat	:	Special School for physically and mentally differently abled children at the age 0-6 years (Box No. 22.17)
(12)	Ten Village Panchayats from Wayanad District	:	Panchayat, NGO, Government partnership (Box No. 22.18)
(13)	Mangattidam Grama Panchayat	:	Poverty Reduction (Box No. 22.19)
(14)	Pilicode Village Panchayat	:	Winner of Nirmal Grama Puraskar (Box No. 22.20)

**BOX-22.7****Nedumbassery Grama Panchayat in Ernakulam - towards dynamic local development****Resource mobilisation**

The Panchayat mobilised Rs.1.62 cr. from different sources like Cochin International Airport Ltd., Kerala Agro Machinery Corporation, SAJ Flights Ltd., Federal Bank Ltd., and NRIs, during 2003-04. This amount together accounted for about 56 per cent of the total plan outlay of Rs.2.92 cr., which included grant in aid, own fund, central and state sponsored schemes.

The Federal Bank has constructed an Agathamandiram costing Rs.15 lakhs in 15 cents of land contributed by the Cochin International Air Port Ltd.

There are 6 water tanks ranging from 2.5 Acres to 9.5 acres cleaned, beautified by planting trees and maintained by the panchayat for rain water harvesting. The clay removed from these tanks fetched Rs.33 lakhs, which was used for beautification. The water level in the wells of the panchayat increased considerably as a result. The panchayat has planted 500 trees aside roads. Watering was done for two years. Tree- guards were provided free of cost by the ABT Company and all the 500 plants planted are alive.

**Destitute Plan**

The Grama Panchayat has prepared a destitute plan under Asraya Scheme costing Rs.75 lakhs benefiting all the 156 destitute families in the panchayat, and is under implementations. Houses have been provided to 24 families of the total 74 homeless. House plots have been identified for 19 landless families. Micro enterprises have been organised for 66 families and are under different stages of implementation. Under Antyodaya Annapoorna scheme 10 Kg. of rice costing Rs.3/- per kg. is being distributed every week to all the 156 destitute families and the cost is met by the panchayat. Separate files are maintained for every family for effective monitoring of this programme.

**BOX-22.8****Resource Mobilisation in Panmana Village Panchayat**

One of the remarkable features of Panmana Village Panchayat is the spectacular achievement it could make in the field of collection of taxes and income from other sources. When one goes through the collection details of the panchayat during the last four years, it could be seen that the graph goes up steep making the overall increase of income during 2003-04 when compared to that of 2000-01. The noteworthy feature of this upward and steep increase in own income is that among different sources of income, nearly 20 items show a percentage increase of above 100 during the above period.

Deliberate and systematic effort on the part of the Panchayat to mobilise all sources of income and collect the amount in full succeeded.

In order to study the increase in income of the Panchayat only those items that fetched an income above Rs. one lakh during 2003-04 were taken into account. The percentage increase in income is calculated taking the difference between the income of 2000-01 and 2003-04. The following are the various special efforts taken by the panchayat for maximising the collection.

Box Continued...

1. Arrears under different items were collected issuing notices and filing suits in the court
2. Revision of license fee with retrospective effect was resorted. Accordingly, the annual license fee of Rs.2000 per year collected from KMMML was raised to Rs.2 lakh a year and the arrears for the previous years were also collected.
3. Buildings constructed remained unassessed were assessed and numbers were given. On the basis of which arrears are collected.

The following table shows the details of important items of tax and amount of tax collected during last four years.

**Resource Mobilisation of Panmana Village Panchayat from 2000-01 to 2003-04  
(Selected Items only)**

Sl. No.	Items	2000-01	2001-02	2002-03	2003-04	Percentage change
1	2	3	4	5	6	7
1	Building Tax	481308	621511	633565	1006506	109.12
2	Service Tax	177630	230502	234880	373057	110.02
3	Profession Tax	1576480	1745200	2034310	2989720	89.65
4	Shopping Complex	134603	78867	253752	175230	30.17
5	Late Fees	2716	3222	1898	134664	4858.17
6	Slaughter House	81000	79025	190830	246810	204.70
7	D and O License Fee	50012	51050	23565	410200	720.20
8	Pensions	-	-	978736	2525239	158.01
9	Deposits	1200	142661	770346	558290	46424.16
10	Penal Interest	12932	11584	23420	179454	1287.67
11	Receipts from Various Departments	257773	-	-	500452	98.14

Panmana is one of the very few village panchayats which has been able to develop as a model in resource mobilisation.

#### BOX-22.9

### Recycling of Solid Waste – Changanassery Municipality

Changanassery Municipality in Kottayam District has 15789 households, 2467 trading shops, 24 Hospitals, 4 Colleges, 20 Schools, 12 Common Halls, 2 Markets, 79 Hotels and 15 Hostels, which together produce an average of 20 tonnes of solid waste per day. Disposal of waste was the main issue in the Ward Sabhas and this forced the Municipal Authorities to find out solution by employing appropriate technology.

Manufacturing of Farm Yard Manure (FYM) by employing Vermi Compost method was the project designed, and it has two components – (i) improvement of dumping yard infrastructure and (ii) recycling of Solid Waste.

The Municipality constructed the required facilities, such as, road, compound wall, shed, waste sorting yard, pits, modern slaughter house, etc., for the said purpose. Further, the Municipality procured two vehicles, two power tillers with trailers. This project started to work as a catalyst at the grassroots level by creating mass awareness among families and the Kudumbashree units. Further, three bins with separate colors for depositing metal/plastic/degradable waste are also placed in various points, such as public places, residential areas, hostels, hospitals, hotels, etc., and the Kudumbashree units collect the same, and the waste is sent to manure manufacturing unit where vermi compost method is employed.

The total plan outlay of the project is Rs.8.50 lakh. Out of this Rs.4.06 lakh is plan fund and Rs.4.44 lakh is the own fund of the Municipality. The expenditure incurred was Rs.3.56 lakh.

**BOX-22.10****Promotion of Paddy Cultivation - Maneed Village Panchayat**

Group farming has been introduced in all the 16 padasekharams of Maneed Grama Panchayat covering an area of 300 ha., with a view to reducing the cost of cultivation. A uniform management and cultivation practice was adopted in the Panchayat by introducing high yielding variety of paddy called jyothi.

The Panchayat invested Rs.3 lakhs for the purchase of 3 power tillers. The power tillers, have worked for more than 5,000 hours. There is a saving of about one lakh rupees from these tillers. Introduction of machines usually reduces the employment opportunities for women even though it reduces the cost of cultivation. To compensate the employment opportunities to women, lease-land-farming was introduced through the Kudumbashree Unit in 50 Acres of land.

Paddy cultivation has been reintroduced in 38 ha. of fallow land. Besides these, 12 ha. of paddy crop area has been brought under double cropping system. The productivity of paddy has increased from 4 MT to 4.5 MT per ha. due to introduction of better management practices at farm level, and adoption of High Yielding Varieties (HYV).

**BOX-22.11****Vanilla Development Project in Elikulam Grama Panchayat**

Elikulam Grama Panchayat is largely rural and based on an agrarian economy with a strong background of field and cash crops. During the first half of 1980's, Rubber emerged as the major crop. Fall in price of this major cash crop suddenly had an adverse impact on the standard of living of the people. In this alarming situation, the Panchayat formulated a project in 2002-03 for popularising Vanilla cultivation, which was not very familiar then with the help of the Krishi Bhavan. Spices Board provides technical exposure to the farmers with regard to vanilla cultivation. The cost of cultivation is presented as below:

(Cost in Rs.)

Sl.No.	Item	Production Cost
1	Preparation of site	750
2	Supporting stands	450
3	Vanila Cuttings	4500
4	Cost of Planting	300
5	Cow dung/manure(5 Kg/plant)	750
6	Irrigation and mulching	250
	Total	7000

There were 201 farmers selected for the project and sapling were supplied through the Krishi Bhavan during 2002-03. The Panchayat gave subsidy of about one-third of the total expenditure, (Rs.2.44 lakh) and the rest (Rs.4.92 lakh) was met by the beneficiaries. The vanilla cultivated during 2002-03 will be yielding in 2005-06. It has been decided that an agency namely "Farmers Forum Pala" will be collecting the beans from the farmers.

Vanilla, being an eco-friendly crop, can be cultivated even in smallholdings. The prevailing high prices for beans and vanilla cuttings, has attracted more farmers. The Panchayat intends to start a large scale processing unit during 2005-06, which will generate employment opportunities and income earning opportunities through value addition.



## BOX-22.12

WATER FOR LOCAL LEVEL DEVELOPMENT –  
LESSONS FROM VADAKARAPATHY

Vadakarapathy Grama Panchayat launched the Potteri Community Irrigation Scheme to solve the problem of irrigation and water scarcity in the region. The Palakkad gap does not allow the rain clouds to condense and the dry wind blowing from the gap removes the humidity in the area. So the average rainfall in the area is 60% less than the state average.

About 90% per cent of the population of this Panchayat depend on agriculture and the major problem faced by the population was water scarcity.

The proposal was to connect the Chinna eri pond with the Potta eri pond. Chinna eri pond gets fill up in rainy season and with the water of the Walayar river. By linking Chinna eri pond with Potta eri pond a command area of 50 acres would benefit.

The two ponds are linked through a channel of 400m. Through this channel water flows to the Potta eri pond. An existing canal of 100 meter length was also repaired to complete the link and direct rain water to Potta eri pond.

The scheme was implemented with the active participation of beneficiary groups. The total cost estimated for the scheme was Rs. 2.6 lakhs, with 90% of the expenditure (Rs.2.34 lakh) to be met by the Village Panchayat. The beneficiary contribution was Rs. 26,000/-. But the total expenditure incurred for the scheme is Rs.2.1 lakh.

The noticeable achievement of the scheme is that the Panchayat could save more than 50,000 rupees through proper management of the work. With the launching of the scheme, the Potta eri pond was filled up during this rainy season after a long period of 20 years. The community has now returned to paddy cultivation during this year.

## BOX-22.13

## Harvesting Rain Water

Members of Edayur Panchayat in Malappuram district in Kerala State participated in a World Bank-supported project in the hope of installing water taps in their homes. They borrowed money but never thought that the project, called *jalanidhi*, would completely change their life.

As members of the Women Development Group, they opted to undergo a skill-building program to construct ferro-cement tanks for rainwater harvesting. After the 16-day training, they started building demonstration units at the village primary health centre. Group leader Sarada proudly says her team is now confident about constructing any number of tanks for the villagers. They also plan to learn how to build environmental sanitation structures such as flush latrines, soak pits and compost pits, and hope to set up a service center too.

The \$65.5 million (Approx. Rs.3045.75 million) World Bank credit for the Kerala Rural Water Supply and Environmental Sanitation project is helping improve water and sanitation services for 1.5 million people in Kerala's Kozhikode, Malappuram, Palakkad and Thrissur districts. The project, which targets disadvantaged communities, has helped local and state public agencies shift their focus from direct service delivery to supporting some 2,500 community groups in planning, constructing and operating piped water supply (using traditional local water sources), constructing more than 45,000 environmental sanitation systems, and promoting ground water recharge schemes.

To ensure sustained commitment, communities finance part of the capital cost and all of the operation and maintenance costs. The communities also have gained a greater voice in determining how the water and sanitation schemes are designed and where they are located.

The project has encouraged the participation of women and socially disadvantaged groups, who had limited access to drinking water and latrines. It has also given opportunities to generate income.

Source: Stories of Development, World Bank.

**BOX-22.14****Participatory Spatial Planning Two pioneering initiatives**

Ever since decentralized planning started, there has been a debate on preparation of local level plans with reference to accepted scientific planning principles which at the same time are recognized by the stakeholders, both the elected representatives as well as the people. In fact there is a widespread criticism that spatial planning had been given the go by as negotiated priorities in decentralized planning more often reflect short-term and local interests rather than the long-term interest of the community as a whole.

It is against this background that the Town and Country Planning Department and the State Planning Board launched an initiative to develop a model for participatory spatial planning. Two case studies outlining the progress are summarized below:

**1. Preparation of Integrated District Development Plan (IDDP) and Local Development Plans (LDP) in Kollam district**

This is a district-wide initiative of the District Planning Committee of Kollam in partnership with the Town and Country Planning Department. The objective is to prepare Local Development Plans (LDPs) for individual local governments marrying the best practices of spatial planning with local knowledge. These LDPs are to be integrated into a District Development Plan (DDP) with a perspective of at least 15 years within which an execution plan for five years would be embedded.

The following steps are involved:

- Collection of primary and secondary data for LDPs under the co-ordination of a Spatial Integration Committee set up for each local government.
- Computerization of data.
- Analysis by Town and Country Planning Department as well as by the Spatial Integration Committee.
- Joint identification of priority areas for development, basic planning principles and strategies.
- Preparation of Draft LDPs
- Data collection at the district level for IDDP using the existing structures of decentralized planning.
- Vetting of the analysis by Technical Advisory Committees.
- Development seminar to discuss findings.
- Approval of draft IDDP by DPC.
- Discussion with local governments and appropriate modification of LDPs.
- Finalisation of IDDP and LDPs.

So far the most difficult first stage, of collection and compilation of data has been completed in 64 out of the 72 local governments in the district. Discussion of the data is going on in Grama/Ward Sabhas.

In Paravoor Municipality and in Panmana Village Panchayat the local level analysis is over. It is expected that the entire process would be completed for the whole district by September 2005. This could become a major innovation in town and country planning.

**2. Integrated spatio economic development plan of Pulinkunnu Village Panchayat in Alappuzha**

As different from the approach in Kollam, in Alappuzha district one Village Panchayat has been taken up to prepare an integrated spatio economic development plan. As the first step the primary data collection has been done at the grassroots level. For the first time in Kerala every data on land and inhabitants going down to each plot in a survey number has been collected. 14 types of land use has been documented. Every item of infrastructure has been mapped in scale. To this layer has been added socio economic data.

This was done by 20 persons having ITI qualifications selected from the Panchayat area and the survey was carried out with the support of elected members and NGOs.

As the second stage the digitalization process has been completed so that a ready to use data base is available for GIS applications.

In a third stage secondary data from all public agencies in the Village Panchayat have been compiled. Now the fourth stage of the project is under implementation which is the critical plan preparation process with the involvement of experts and all stakeholders. This process has several stages of consultation and community based validation and approval.

Once completed, it can become a model, which could be adopted for local level planning in the XI<sup>th</sup> Five Year Plan

**BOX-22.15****A Waste to Energy Plant at Pathanapuram – a Grama Panchayat**

Pathanapuram, a grama panchayat in Kollam district has initiated an innovative step by considering waste as resource and an input to energy plant in the Pathanapuram meat and fish market. The plant received a subsidy from the Ministry of Non-conventional Energy (MNES), Government of India. The plant was erected in 2003, processing 250 kg of meat and fish waste per day. The treatment plant comprises of a gas holder and a fermentation chamber in which bio degradable organic matter and other cellulose waste materials can be treated anaerobically which is used for cooking, lighting, running diesel engine and for generation of electricity. The meat and fish waste collected from the market stalls is brought to the plant where it is shredded first in a mechanical shredder operated by 1 HP motor. The enzymes are added to the shredded waste to accelerate the decomposition process. The gas generated containing methane and carbon dioxide mainly is routed through a filter to get rid of the carbon dioxide gas. Part of the methane gas is converted into electricity (equivalent to 2 kW) using a dual fuel engine using 20 per cent diesel and 80 per cent Methane. The generator is operated during night only at present. Hence, the remaining methane is flared off. The generated electricity is used for lighting 20 CFL provided in the market.

**BOX-22.16****Vermi-composting unit at Paravur Municipality**

Paravur Municipality in Ernakulam District of Kerala State has a population of 30056 people (2001 census) and estimated solid waste generation is 70. tons/day, of which about 60 per cent is collected and transported. The earlier practice was crude dumping of the waste in one hectare land owned by the Municipality. In 1998, Municipality decided to process the organic fraction in the same site to mitigate the environmental problems. A project for composting the market waste by open pit method was formulated but the programme had to be discontinued due to processing difficulties of un-segregated waste, water accumulation in pits during rains and poor quality of compost.

The present Vermicomposting unit was then setup with the assistance of Peerumedu Development Society (An NGO experienced in Vermicomposting). The plant currently has 15 composting beds (7.5x1.2x0.3m) with a roof (10x5.7m) to protect the beds from sun and rain. Bed is prepared by digging 30 cm below ground level and spreading or lining the pit with a layer of coconut fiber followed by a layer of cow dung slurry. Approximately 3000 earthworms (of 'eifenia foetida' species and of average 7 cm size) are spread evenly over this. The waste is fed to the bed prepared in alternate layers of waste and cow dung slurry. One pit is enough to accept one ton of waste per day for one week. The pits are covered with wet jute bag (available in plenty as waste) to prevent the top layer from getting dried. After 60 days the matured pits are opened and there after broken down, sieved manually and the worms are separated. The current production rate of vermicompost is 300 kgs. Worms are sold at Rs. 0.50 / worm. Though the plant capacity is 2 tons per day, the current operation is one ton / day only. The Municipality is earning about Rs. 1.2 lakhs per annum. The Municipal Health department has been managing the plant with one lady supervisor and 3 women workers.

**BOX-22.17****Special School for physically and mentally differently abled children at the age 0-6 years in Venganoor Grama Panchayat**

As part of decentralised planning with a view to preparing anti-poverty sub plan, the Venganoor village panchayat conducted detailed survey with the help of Kudumbashree setup. As part of this, details on the children at the age group of 0-6 years were collected. On the basis of the details collected, it was decided to conduct medical camps for the children and accordingly six such camps were conducted. In the medical camps 72 children were found facing either physical or mental disability. Again a detailed medical check up by the Medical Board was conducted and out of the 72 children 53 were found having disability above 40 per cent. They were given disability certificates too in the camp.

In order to rehabilitate these children as a first step the panchayat committee decided to start a school. The school was first started at Balabhavan with the financial assistance of Rs. 1.50 lakh received from Kudumbashree Mission. In the beginning 32 children were admitted to the school. All the basic amenities are provided in the school, Children from neighboring panchayats are also coming to this school.

**School Activities**

School functions from 9 AM to 3.30 PM. Technical advice of State Handicapped Development Corporation and 'Adarsh', another school of similar type functioning at Ernakulam is received. Two trained ladies are employed to look after the children. Another woman with a Post Graduate degree in child psychology is appointed as teacher. The service of a physiotherapist is made available twice a week in the school.

**School Administration**

A committee consisting of eight members including elected panchayat representatives, CDS Chairperson and a few officers handle administrative matters of the school.

**Expenses met for running the school**

To and fro travelling expenses of the children, stationary items, expenses for keeping the school hygienic, food to the children, items required in the kitchen, annual maintenance of the school building and payment of salary to psychologist, lady helpers, sweepers, physiotherapist, speech therapist, principal, driver etc. are the expenses. They are met from the funds raised from the following sources.

- a. Five per cent of the plan grant-in-aid assistance of the panchayat
- b. Grant from the Social Welfare Department
- c. Grant from Government of India
- d. Contribution from public.

Monthly expenses come to Rs. 33,166 in all.

## BOX-17.18

**Panchayat, NGO, Government partnership – Example from Wayanad**

The Giridhara Water Supply and Sanitation Project exclusively for tribals was approved for implementation using additional Central Assistance which was allotted to ST Development Department. It was decided that the work would be entrusted to the leading NGO in the WATSON sector, Socio Economic Unit Foundation (SEUF) with the full involvement of the Village Panchayat and beneficiary groups.

Tribal hamlets in 10 Village Panchayats have been taken up for implementation. The beneficiaries have formed Ooruvikasana Samithies. Those CBOs are involved from the pre-planning stages and have a direct say in the choice of technology. For example, some of the hamlets have gone in for rainwater harvesting considering the low capital investment and low O&M cost.

The project is structured in such a way that 80 per cent of the cost is met from the Central Assistance, 10 per cent by the Village Panchayat and 10 per cent by the beneficiaries.

For the first time, the long prevailing notion that the tribals are unwilling to pay has been completely belied. Sixty four schemes are in various stages of implementation in the Pania hamlets covering 847 households (Panias are one of the poorest tribal groups in Kerala working as agriculture labourers without their land). These households have contributed 1.82 lakh rupees as their share. Even more remarkable is the fact that 12 schemes are being implemented by the Kattunaikars who constitute a Primitive Tribal group. In this case twelve schemes have been taken up benefiting 218 families and these poor people have raised Rs. 4,40,000 as their share towards capital cost.

The entire Operation and Maintenance is to be carried out by the Ooruvikasana Samithies which have a mandatory 30 per cent representation of women. This project is a path breaker and holds out much hope for developing Scheduled Tribes who constitute the most exploited, most dispossessed and most excluded social group in the State.

## BOX-22.19

## Poverty Reduction in Mangattidam Grama Panchayat in Kannur

Mangattidam grama panchayat has made remarkable achievement in poverty reduction during 2003-04. Kudumbashree unit conducted comprehensive household survey in this Panchayat based on nine risk factors and the results are given below.

## Number of families below poverty line

Sl. No.	No. of risk factors	Number of families BPL	
		December 2003	December 2004
1	2	3	4
1	9	-	-
2	8	48	-
3	7	9	-
4	6	26	1
5	5	26	20
6	4	167	135
	<b>Total</b>	<b>276</b>	<b>156</b>

The panchayat constructed 180 houses during 9<sup>th</sup> plan period. There were 133 houses constructed during the first two years of 10<sup>th</sup> plan. Efforts are on to construct further 162 houses to fulfill the demand of the total 180 homeless families in the Panchayat. There were 763 latrines constructed during 9<sup>th</sup> plan and 281 latrines constructed during the 10<sup>th</sup> plan. At present, there are 382 families in need of latrine facilities.

In the Panchayat, about 20 thatched houses are there, and they are to be replaced with tiled roof. This Panchayat promoted 83 micro enterprises benefiting 730 families. The following activities, such as direct marketing, organic vegetable cultivation, vermi culture, bee keeping, goat rearing, cow rearing, pickle units, soap units, and paper bag units are in progress. Under Clean Mangattidam project, plastic bags have been banned and paper bags are introduced to promote better environment. Under Bhavanasree project, 116 houses have been constructed. In this Panchayat, a pre-school is functioning particularly meant for the mentally retarded children. This Panchayat has published a citizens charter. The Panchayat has shown a model for resource mobilisations. Relief fund has been mobilised by receiving contributions from individuals and organisations. The fund is used for treatments of diseases like cancer among the poor families.

The initiatives taken by the Panchayat for economic and social changes has yielded good results. The gap between social groups like scheduled castes, scheduled tribes and others have been narrowed. All scheduled castes and scheduled tribes in the panchayat have livable houses.

Ageing is a major problem in the State. The traditional social safety mechanism is giving way, leading to exclusion of old people. To address this problem the Panchayat has come out with an innovative idea of clubs for the aged. There are nine such clubs for the aged in the Panchayat facilitating regular social interaction to reduce loneliness and boredom. All the 18 old Anganwadis in the panchayat have own building. Own buildings are to be constructed only for the newly sanctioned 5 Anganwadis. All the schools in the Panchayat have water supply and sanitation facilities. It has been observed that the Panchayat has made serious efforts to develop the families live below poverty line. As a consequence, large number families (44 per cent) have crossed the poverty line within a year. It is an excellent example of improving well-being through pro-poor action.

**BOX-22.20****Pilicode Village Panchayat – Winner of Nirmal Grama Puraskar**

The Pilicode Village Panchayat of Kasaragod District with 5103 families has been selected as one among the 38 Village Panchayats in the country for outstanding excellence in Environmental Sanitation.

This Panchayat, which won the ‘Grama Swaraj’ Trophy in 1997-98 started its sanitation efforts way back in November 1996, when a survey was conducted and it was found that 2020 families did not have any toilet facilities. (i.e. nearly 50% of the then number of families). The Panchayat submitted a project to Government of India for support under RCRSP and received an assistance of Rs.39.92 lakhs. It constructed latrines for all the families and the then Chief Minister Shri E.K. Nayanar declared the Panchayat as a total sanitation Panchayat in November 1997.

The Village Panchayat conducted a resurvey after eight years in 2004 and found that 249 houses without toilet facilities. In the Annual Plan 2004-05 a project was prepared to cover these families as well. In the last two years the Village Panchayat has been taking several other sanitation projects like protecting drinking water wells, construction of sanitation complexes in all schools and holding of awareness camps. It has also started paper bag units to eradicate plastics and compost units to manage solid waste, linking with the anti-poverty Kudumbashree programme.

The Panchayat has been given recognition for its systematic and holistic approach to sanitation taking into account its total coverage with sanitary latrines and prevention of plastic waste from accumulating.

## SCIENCE AND TECHNOLOGY

Realizing the huge potential and impact on development, Government of India took initiatives to establish State Committees on Science & Technology in 1971. Kerala was the first State in the country which created a State level Committee on Science & Technology. The Committee was transformed into the autonomous Kerala State Council for Science, Technology and Environment (KSCSTE) in 2002-03.

- **The R & D Centres**

23.2 Consequent to the formation of the Council the seven R & D centres which came under the erstwhile STEC were amalgamated with the Council. Of these, ANERT was subsequently attached to the Power Department outside the purview of the Council. The Council provides assistance to the following six R & D Centres.

- **Centre for Earth Science Studies (CESS)**

23.3 CESS had been continuing its activities relating to coastal zone management, Monitoring the seismic activity in Kerala, shoreline management along west coast, earth system studies, project on Regional Technical Assistance for Coastal and Marine Resources Management and Poverty Reduction in South Asia, Project on Application of High Resolution Remote Sensing for local level development, Coastal Ocean Monitoring and Prediction System, Pollution assessment, Tribal settlement maps for the southern districts of Kerala etc.

- **Centre for Water Resources Development and Management (CWRDM)**

23.4 CWRDM undertakes research, training and extension activities of Water research, Transfer of technology, Research guidance, Collaborative ventures, and Consultancy service. During the year 2003-04, 28 projects on various aspects of water resources development and

management were taken up. These projects broadly deal with estimation of surface and groundwater potential, spatial and temporal requirement of water, appropriate allocation of water resources, water quality status, coastal dynamics, environmental impact assessment, water related environmental studies etc.

- **Tropical Botanical Garden and Research Institute (TBGR I)**

23.5 TBGRI continued its R&D activities related to Plant systems and Evolutionary science, Plant Biotechnology, Microbiology, Conservation biology, Ethno Pharmacology and Ethno Medicine, Environmental planning and Eco education,

- **Kerala Forest Research Institute (KFRI)**

23.6 Research and studies on forestry, wild life management, agro forestry, wood science, and man forest interaction are the major activities of the Institute. During 2003-04, a total of 35 new research projects have been initiated under various themes. Of these, 10 are sponsored projects by different agencies

- **National Transportation Planning and Research Centre (NATPAC)**

23.7 Research activities under NATPAC include Urban Transportation Planning, Road Development and Highway Engineering, Inland Water Transport, Accident Prevention and Road Safety, Environmental studies, Traffic Engineering and Management, Rural Road Planning, Tourism Infrastructure Planning, Extension Programmes and Sustainable Transport Systems. During 2003-04, 13 research studies were taken up.

- **Rajiv Gandhi Centre for Bio-technology (RGCB)**

23.8 RGCB was extended support for continuing advanced research in Biotechnology,



Molecular biology Bioinformatics, infectious disease research and Referral diagnostic like DNA finger printing, paternity testing etc.

#### Activities of the Council

- **Science Research Scheme (SRS), a scheme for fostering Research in Science and Engineering**

23.9 SRS is the flagship activity under the Science and Technology promotion programme of the Council. SRS aims at promotion of R & D activities in the State both in fundamental and applied research. Under the scheme, research projects in emerging areas of Science and Engineering are supported by providing financial support for the implementation of projects. During the year 87 projects with a total cost of Rs. 388 lakhs have been recommended

- **Selective Augmentation of R & D Activities (SARD) , a scheme for strengthening S & T infrastructure**

23.10 Selective Augmentation of R & D activities (SARD) is a scheme initiated by the Council with a view to strengthening S & T infrastructure primarily in the University Departments, Colleges and R & D institutions. SARD envisages modernisation of laboratories by way of acquisition of essential equipments and the upgradation of existing facilities for teaching and R & D activities. 13 projects in different laboratories have been approved.

- **KSCSTE Research Fellowship , a scheme for encouraging research talents.**

23.11 A research fellowship scheme to promote research career in science and engineering among bright students was first introduced in 2002. The first five rank holders in B. tech/M.Sc in Physics, Chemistry, Botany, Zoology, Engineering, Mathematics and Agriculture from any of the universities in Kerala are eligible to apply. The selection procedure involves a written test in general research aptitude and the optional subject followed by an interview. Candidates selected would be offered a fellowship grant to join for a PhD programme in Kerala. In the year 2002, five candidates were selected.

23.12 From 2003 onwards, the fellowship grant was raised to Rs. 8000/-p.m,during the first

and second year and Rs. 9000/ - p.m during the third year, with annual contingency of Rs. 10,000/ - at par with national norms. During 2003, two fellowships were offered in each subject and a total of 14 candidates were selected.

- **Sastraposhini ; a scheme for establishing model science laboratories**

23.13 Sastraposhini is a programme aimed towards strengthening of science education in the schools of Kerala. The programme envisages setting up of model laboratories for conducting science experiments in the selected schools in the State on a pilot project mode. The objectives of the scheme include:

- To stimulate interest in science by the performance of experiments in schools
- To provide hand on experiments to students
- To organise training programmes for the teachers
- To evolve low cost laboratory kit.

- **Refresher Course for College / University Teachers**

23.14 Kerala State Council for Science, Technology and Environment in association with the Indian Academy of Sciences, Bangalore has initiated a refresher course programme for college teachers in Kerala for promoting the standard of higher education of the State.

- **16<sup>th</sup> Session of Kerala Science Congress**

23.15 The 16<sup>th</sup> session of the Kerala Science Congress was held on the 29<sup>th</sup> to 31<sup>st</sup> January 2004 at CWRDM, Kozhikode. Focal theme of the congress was "Traditional and appropriate technologies for development of Kerala". About 600 delegates from various districts and central institutions of Kerala participated in the Congress.

- **State of Environment Report (SoER) for Kerala**

23.16 KSCSTE is preparing the State of Environment Report (SoER) for the state with financial assistance from Ministry of Environment and Forests, Government of India.

23.17 The main objective of the project is to design and operationalise a participatory and scientifically rigorous SoE Reporting system for Kerala that enables informed policy/strategy formulation, decision making and follow-up action.

● **Environmental Information System (ENVIS)**

23.18 With financial assistance from the Ministry of Environment and Forests, Government of India, KSCSTE has established an ENVIS NODE. The ENVIS programme aims to provide a comprehensive environmental information data base under the identified subject areas and on the issues pertaining to the environment of the state.

23.19 The focal theme of the ENVIS NODE is Coastal Zone Management. The necessary data collection and creation of database are in progress and are available in the ENVIS website (<http://stedk.org/envis/index.html>).

● **Wetland Management Programmes**

23.20 KSCSTE has taken up projects for Wetland Management in the State of Kerala. Accordingly, a wetland conservation and management programme is being executed for the Sasthamcotta and Ashtamudi wetland system. A management action plan was formulated and implementation of the same was being done by the District Collector, Kollam. Ministry of Environment and Forests has extended financial assistance for the above project

**Biotechnology**

23.21 The Biotechnology Policy for Kerala was formulated in 2003 to provide an ambience needed for the healthy, efficient and competitive growth of biotechnology knowledge base and industry in the State. In compliance with the policy, a Biotechnology Board and Biotechnology Commission have been set up and are functioning in the Kerala State Council for Science, Technology and Environment. The Commission is responsible for the implementation of the BT Programmes in accordance with the decisions of the Biotechnology Board. Currently the following programmes are being implemented.

◆ **Promotion of R & D in Biotechnology**

23.22 The Kerala Biotechnology Commission promotes R & D in Biotechnology in the State through joint ventures involving research institutions/universities and biotech industries.

◆ **Post Doctoral Fellowship in Biotechnology**

23.23 Three Post Doctoral Fellowships have been instituted and offered to selected candidates.

◆ **Five year integrated Masters' course for Biotechnology**

23.24 The objectives of the human resource development in Biotechnology can be adequately and more effectively achieved through a 5 year integrated Master's degree programme. A committee of eminent academicians and scientists has been constituted to formulate the 5 year M.Sc. programme in Biotechnology under the Chairmanship of Prof. P. Balaram, Molecular Biophysics Unit, Indian Institute of Science, Bangalore.

◆ **Other programmes envisaged in the Biotechnology Policy**

23.25 Apart from those mentioned above there are a few more programmes envisaged in the Biotechnology Policy for the State. These are

- Towards the strengthening of HRD, the state institutions in Biotechnology will be networked with advanced R & D laboratories of the Central Government and private institutions in the State.
- To organize special programmes to foster Intellectual Property Rights (IPR) and Patent literacy.

**Other Initiatives of KSCSTE**

◆ **Patent Information Centre (PIC)**

23.26 The Kerala State Council for Science, Technology and Environment has initiated a patent Information Centre (PIC) to support patenting activities in Kerala and to provide awareness on Intellectual Property Rights among researchers, academicians and industrialists. The Centre is being supported by Department of Science and Technology, Government of India.

◆ **GIAN Centre – Kerala**

23.27 It is proposed to set up a Grassroots Innovation Augmentation Network (GIAN) centre in Kerala in collaboration with National Innovation Foundation (NIF). Exploratory meetings have been held with several groups such as handloom weavers, handicraft workers and traditional artisans.

**Regional Cancer Centre**

23.28 During the year 2003-04, 135556 patients were treated in Regional Cancer Centre. The most striking event during the year 2003-04 was

the commissioning of Dual Photon High Energy Linear accelerator. During this period 2609 surgeries and 1713 endoscopic procedures were carried out. Autologous Bone Marrow Transplantation, following High Dose Chemotherapy for multiple myeloma was performed in five patients.

23.29 For early detection of cancer 21 Cancer Awareness classes and 29 cancer detection camps were conducted in different parts of the State. The Research Division also conducted

training in early detection and prevention for the Medical Officers and paramedical staff of Thiruvananthapuram Corporation area. In addition to the above the Community Oncology Division conducted 60 cancer awareness programme.

23.30 Tobacco awareness was given to 9474 persons through 63 programmes. During 2003-04, Regional Cancer Centre gave free treatment to nearly 50% of the patients spending Rs. 8.76 crores.

## CHAPTER 24

## GOVERNANCE

'Governance' means the process of decision making and the process by which decisions are implemented (or not implemented). Recently the terms 'governance' and 'good governance' are being increasingly used in development literature. Good governance is directly related to purposive and development oriented administration which is committed to the improvement of quality of life of the mass of people. It refers to the adoption of new values of governance with a view of establishing greater efficiency, legitimacy and credibility of the system. In simple terms good governance can be considered as the citizen friendly, citizen caring and responsive administration. Governance depends on the co-operation and involvement of a large number of citizens and organizations.

24.2 Good governance has been defined as a high level of organizational effectiveness in relation to policy-formulation and the policies actually pursued, especially in the conduct of economic policy and its contribution to growth, stability and popular welfare. Good Governance also implies accountability, transparency, participation, openness and the rule of law.

**BOX- 24.1**

The World Bank has defined good governance as the one epitomized by predictable, open and enlightened policy making, a bureaucracy imbued with a professional ethos acting in furtherance of public good, the rule of law, transparent processes, and a strong civil society participating in public affairs. Poor governance (on the other hand) is characterized by arbitrary policy making, unaccountable bureaucracies, unendorsed or unjust legal systems, the abuse of executive power, a civil society unengaged in public life, and widespread corruption.

*Source: Governance for Development, By Pardeep Sahni & Uma Medury*

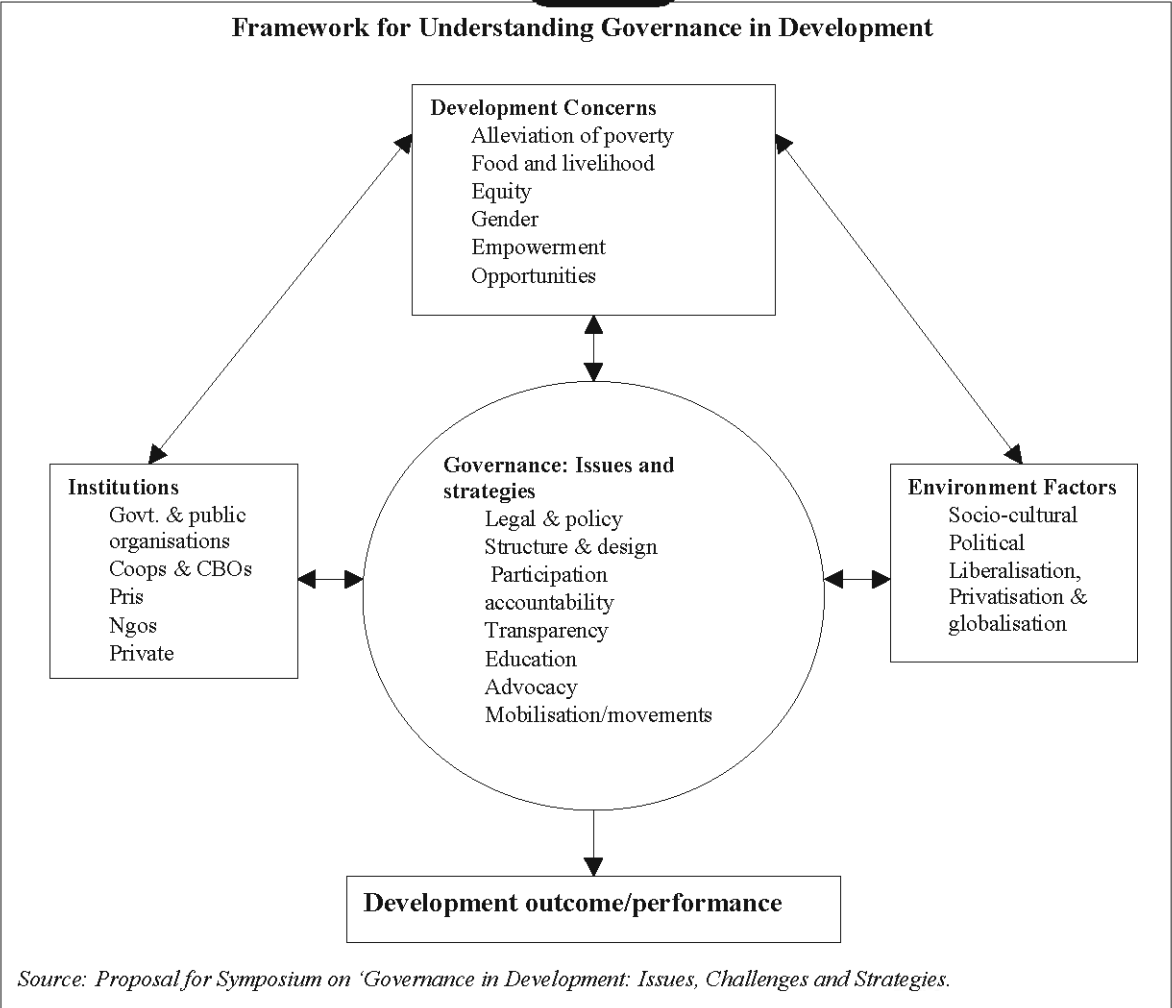
24.3 Governance reform is about doing things differently in a more efficient and effective manner with utmost transparency and accountability, offering enough scope for a ex-ante, concurrent and ex-post participation of citizens. In the Tenth Five-Year Plan, Government of Kerala has given much importance to Governance reform. The flagship Governance reform programme of Kerala, viz. Modernizing Govt. & Fiscal Reforms (MGP) programme was started in 2002. The basic objective of MGP is to help Government overhaul and improve its services to the people of the State. The thrust in MGP is to facilitate public servants and elected officials to serve the citizens of Kerala more effectively, efficiently and equitably with greater accountability. This transformation will facilitate the achievement of the human development and poverty reduction targets envisaged in the Tenth Five-Year Plan.

#### A. Modernising Government Programme (MGP)

24.4 The Modernising Government and Fiscal Reforms Programme (MGP) are conceptualised around four core areas: Fiscal Sustainability; Poverty Reduction; Service Delivery; and Strengthening Functions and Structures of Government. MGP in turn is a collection of 100 governance initiatives. These initiatives are grouped into 5 themes or categories.

- a) Theme 1: MINIMUM NEEDS PROGRAMME which contains initiatives that highlight the need for ensuring assured level of basic public services to the poor and the marginalized.
- b) Theme 2: ENABLING ENVIRONMENT FOR ECONOMIC GROWTH AND EMPLOYMENT GENERATION with initiatives that largely focus on removing procedural and legal hurdles that stand in the way of building the necessary conducive

BOX- 24.2



environment for investment, economic growth, and employment generation.

- b) Theme 3: FISCAL SUSTAINABILITY, where initiatives address the need to restore the finances of the state to levels close to what the state ideally can achieve in revenue generation and expenditure management.
- c) Theme 4: CORE GOVERNMENT, where initiatives are designed to ensure Government functions more effectively.
- d) Theme 5: LOCAL SELF GOVERNMENTS, which are selected initiatives that are intended to consolidate the state's achievements in decentralization and make Local Self Governments more efficient, effective and accessible.

the Chief Secretary in October 2002. The inputs were drawn from the work done by various departments and agencies in various areas of governance. These plans were presented before the Council of Ministers for approval. Subsequently through a series of discussions the MGPSC together with Task Teams had worked out schematic outlines for the initiatives under different themes of MGP. These papers were published in MGP website <http://www.keralamgp.org>. Based on the thematic outlines, Detailed Implementation Plans were prepared by Task Teams and representatives from the implementing departments through a series of workshops conducted for the purpose with the active assistance of Technical Assistance Teams provided by ADB and the Dutch government for the programme. The Detailed Implementation Plans for the 93 MGP initiatives approved by the government for implementation in 17 departments are annexed in this Chapter.

24.5 The Government approved the Strategic Implementation Plans (SIPs) designed by the MGP Steering Committee (MGPSC) headed by

24.6 Government have approved a group of Projects under MGP that are aimed at improving service delivery in selected departments for fast track implementation. Details of the Service Delivery Project (SDP) are given below:-

**a. Service Delivery Project**

24.7 The Service Delivery Project recommended as a fast track project under Modernising Government Programme seeks to improve the quality of services delivered by government to the people of Kerala particularly the poor. Under the project, Institutions are selected in selected Departments and made models in terms of service delivery.

24.8 Kerala has been in the forefront among the states in India, in terms of the development of physical and social infrastructure and human development. This is no doubt largely on account of the strength of its public service institutions. The state has now to ensure that this unique Kerala model is sustainable.

24.9 Historically Kerala has consciously followed a path of development with a focus on providing services to its people, especially in the area of human development. There has been a powerful tradition of demand for increasing their quality and quantity of these services. Over the years governments have been responsive to the demands of the people. A special feature of service delivery in the state has been the uniform spread of services and easy accessibility.

24.10 However, in recent years due to a combination of factors like fiscal stress, deterioration in work ethics, unfair competition from the private sector, negative and adversarial public action etc., the quality and access to public services has declined. This problem needs to be tackled as the first priority of the government.

24.11 A government, which is committed to the welfare of its people and the development of the state, has to provide high quality services to its citizens in an equitable and fair manner. With decentralisation, Local Governments have been entrusted with the task of providing a large number of public services.

24.12 There are several kinds of public services. These include civic services like water supply and

sanitation, welfare services like social security, human development services like health, nutrition and education and basic minimum services like housing. In addition government and Local Governments provide several regulatory and administrative services.

24.13 The Service Delivery Policy of the Government is to improve the mode and manner in which services are delivered to the citizens. In a broad sense it covers the whole range of interface between the Government and the people and the whole gamut of the interaction between the people and their government. The objective of the Service Delivery Policy is to provide a systematic approach to ensure that adequate level of public services of prescribed quality are provided by the various departments and implementing agencies in the State and Local Self Governments of Kerala.

24.14 The Service Delivery Policy will be systematically implemented across all institutions and agencies that provide public services. Implementation of the Policy would be self-sustaining (i.e. made a regular part of the annual and five year planning process for Government and Local Governments). It would also at the same time, provide for sufficient flexibility to encourage innovations and to allow improvements and refinements over time. As the first step, the service delivery policy will be implemented in the following types of institutions:

**Institution - Department**

1. Secretariat - General Administration
2. Collectorates - Revenue
3. Taluk Offices - Revenue
4. Village offices - Revenue
5. District Hospital - Health/LSG
6. Taluk Hospitals - Health/LSG
7. Primary Health Centres - Health/LSG
8. Community Health Centres - Health/LSG
9. Sub Registrar Offices - Registration
10. Government Vocational Higher Secondary Schools - Education (VHSE)
11. Government Higher Secondary Schools - Education (HSE)

12. Government High Schools - General Education/LSG Welfare Department - Social Welfare Department /LSG
13. Government Upper Primary Schools - General Education/LSG 22. Anganwadies -Social Welfare Department /LSG
14. Government Lower Primary Schools - General Education/LSG 24.15 These have been identified because of their wide interface with the public and the criticality of their services to human development and good governance
15. Grama Panchayats- LSGD
16. Municipalities - LSGD
17. Municipal Corporations - LSGD
18. Taluk Rationing Offices/City Rationing Offices - Food and Civil Supplies
19. Police Stations - Police
20. Old Age Homes - Social Welfare Department /LSG
21. Other Welfare Institutions under Social

#### Institutions Selected for Implementing Service Delivery Project

24.16 Government have approved a list of 2605 institutions for the implementation of Service Delivery Projects. The number of institutions for each category is as given below:

Institutions	Number Selected
Secretariat	1
District Collectorates	14
District Hospitals	4
Taluk Hospitals	14
Primary Health Centres	99
Community Health Centres	17
Taluk Offices	63
Village Offices	506
Sub Registrar Offices	69
Government Vocational Higher Secondary Schools	28
Government Higher Secondary Schools	56
Government High Schools	56
Government Upper Primary Schools	56
Government Lower Primary Schools	224
Grama Panchayats	103
Municipalities	14
Municipal Corporations	5
Taluk Supply Offices/City Rationing Offices	69
Police Stations	57
Old age homes	14
Other Welfare Institutions under Social Welfare Departments	34
Anganwadies	1102
<b>Total</b>	<b>2605</b>

### Citizens' Charter

24.17 Citizens' Charter nowadays has been considered as an effective tool to raise standard of public services by making civil services more responsive to the wishes and needs of the users. It is about giving more power to the citizens. Such charter is based on the principle that all public services are paid by the citizens either directly or indirectly or through their taxes and therefore, citizens are entitled to expect high quality services, provided efficiently at reasonable cost. The aim

of the charter is to empower the citizens particularly where it is believed that the citizens have a right to be informed and for making a choice. As a consequence of this, every citizen will be entitled to standards, openness and transparency, information choice, non-discrimination, accessibility and accountability in the government machinery.

24.18 In Kerala, as part of Service Delivery Project, which is a fast track project of MGP, it

#### BOX -24.3

#### An example of how 'Citizens' Charter' Should work

If a citizen were to obtain permission for construction of a building from say a Municipal Body/Local Body/Housing Board etc.

- There should be a published document available with the concerned department/organisation, indicating clearly, the procedures to be followed, the forms to be filled up and other requirements, such as standards and specifications of construction, extend and purpose of land use etc.
- It should indicate how and to whom applications are to be submitted, for various purposes such as establishment of title for land, clearance of plans and other clearance to be obtained, procedures for obtaining water and electricity connections, obtaining of completion certificate, inspection procedures if any, Municipal and other taxes payable and above all the specified time within which the citizens can get these aspects cleared by the authorities concerned.
- Each of the authorities concerned should also have clearly laid out standards and procedures, for attending to each of the aspects.
- Clear indication should be given as to whom to approach in case of difficulties or for getting grievance redressed.
- Names of officials responsible for different aspects should be spelt out and all concerned should wear name badges.
- Names and designation of officials and information as to when they will be available for attending to complaints such as delay in redressal of grievances etc., should also be displayed prominently.
- More than anything else, all the officials concerned should be required to be courteous in their dealings and responsive to the citizens' needs .

Similar Citizens' Charters incorporating various charter principles with prescribed standards of services can be worked out and notified by all wings of the government at different levels so as to bring all those who have public dealings within the ambit of Citizens' Charter.

*Source: World Consumer Rights Day, 2003- Workshop Theme:  
The Citizens' Charter, 15<sup>th</sup> March 2003.*



has been decided to prepare Citizens Charter for the 2605 institutions selected to implement the Service Delivery Project. About 150 persons were given training from the selected departments namely Health, Registration, Police, Revenue, Local Bodies, Education, Civil Supplies and Social Welfare. These departments are now under preparation of their Citizens' Charter.

#### PROGRESS IN IMPLEMENTATION OF OTHER MGP INITIATIVES

1. **SLPE Reforms:** Considerable progress has been achieved in one time settlements and implementation of Voluntary Retirement Schemes, potential for attracting funds for technology upgradation etc. The Social Safety Net Policy was notified on 24.6.2003. Considerable progress has been achieved in clearing backlog on Auditing. As on April 2004, auditing up to 2002-03 is complete in 22 PSUs.
2. **Implementation of Integrated Personnel and Payroll Management System (PPMIS) :** Government have accorded in principle approval for a proposal submitted by National Informatic Centre and authorized NIC to conduct system study. The NIC has submitted an interim report for implementation of the pilot phase in the Secretariat by December, 2004 and the pilot phase is expected to be commissioned this year itself.
3. **SIMPLIFICATION OF RULES** For faster implementation of decisions in Government. Government have already invited suggestions/opinions from General Public regarding simplification/modification of rules and procedures in government. Now the public opinion is being processed and consolidated.
4. **NEW PROCUREMENT PROCEDURES:** The Store Purchase Department has already initiated steps for getting Nodal Officers from different departments for discussing and consolidating modifications required in the Store Purchase Manual.
5. **DEVELOPMENT AND APPLICATION OF ENTITLEMENT INDEX:** The fundamental data required for this initiative is

poverty database. The poverty survey in the state is over and the data have been computerised. Now they are to be validated by the NHG.

6. **FUNCTIONAL REVIEW:** Government has availed Technical Assistance of ADB for the implementation of this initiative. The Tata Consultancy Services (TCS) which was engaged for the Technical Assistance has submitted their final report on 25th June 2004. The MGP Steering Committee held on 8.7.2004 has approved the report and one copy of the report has already been forwarded to ADB. Now a proposal for Technical Assistance for the implementation of the report is being considered by the MGPS. During the course of formulation of the Functional Review Methodology, training programmes on functional review for Senior Secretariat Officials were also conducted.

#### B. E-Governance

24.19 The MGP initiatives would be complemented by a series of E-Governance projects. Government of Kerala has given major thrust to the E-Governance projects during the past Five years. The underlying yardstick in all the E-Governance initiatives of the Government of Kerala is to impart transparency, ensure speed and correctness etc. in various governmental activities/procedures that has a direct impact on the citizen. For achieving the E-Governance initiatives, computerization is underway in a majority of the State Government departments.

The major initiatives are outlined below:

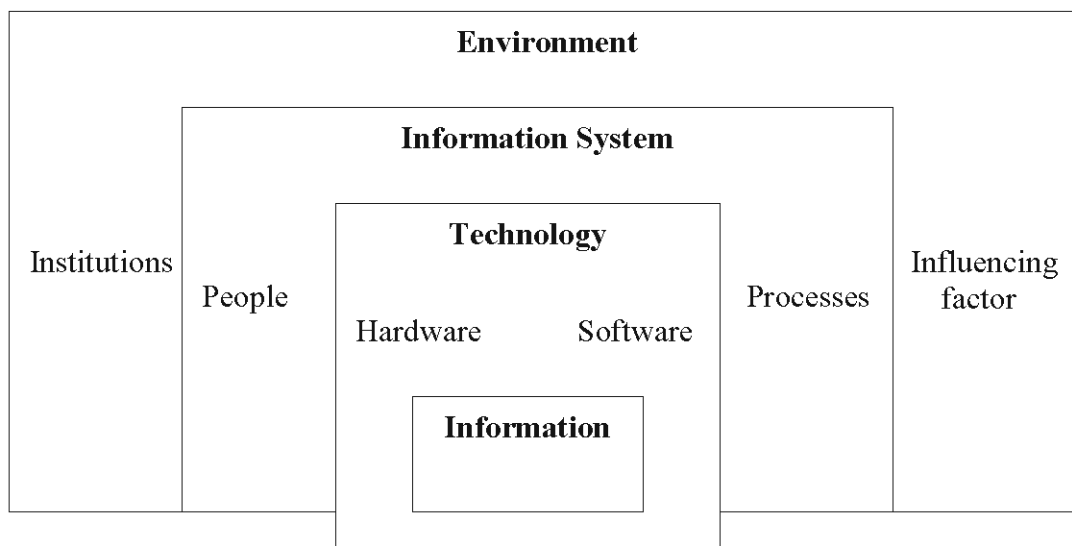
##### Agriculture

24.20 Computerization of the department is in progress and a Web site has been developed. The KISSAN Project is also nearing completion. The project envisages to computerize all the Krishi Bhavans in the state and network these offices to the administrative department. The process of integration of various offices is also envisaged under the scheme. A web portal has been developed and Agriculture related query-answering mechanism has been implemented.

##### Motor Vehicles Department

24.21 Computerization of motor vehicles department is being implemented on Build, Operate, Maintain and Transfer (BOMT) basis.

## BOX- 25.4



**A Systematic view of the E-governance Model**

*Source: Good Governance Initiatives in India by E.vayunandan and Dolly Mathew*

A Website of the Motor Vehicles Department has been launched. Computer aided driving license issue system has been introduced in Thiruvananthapuram and is being extended to Ernakulam and Kozhikode. The required software has been developed by NIC and is successfully tested in Thiruvananthapuram RTO. Integration of the department with the FRIENDS through dedicated data line connectivity is in the process of testing. The total computerization of the Motor Vehicles Department named as FAST project is in the implementation stage.

#### Civil Supplies Departments

24.22 For the effective management of Public Distribution System (PDS) in Kerala, Software package namely Targeted Efficient Transparent Ration Allocation Public Distribution System (TETRA - PDS) has been developed by the NIC and data base of ration cards has been created. Under this application, the process of issue of ration card is made transparent and addition/deletions in a ration card can be done quickly. In this process transfer of ration cards from one place to another is made easy and ration allocation, indents etc. can be made automatically.

#### Kerala Water Authority

24.23 The ABACUS (Advanced Billing, Accounting, Collection and Utility Services) computerized system has been evolved in KWA

as a full-fledged workable online software covering almost all functions of consumer billing (Bimonthly) and Revenue collection of KWA. Around 65% of consumers are benefited from the computerized system that is fully operational at most of the collection centres in Kerala. The software provides an interface for the allocations made from 'FRIENDS Centres' and also from selected banks, for providing better service to the customers.

#### Registration Department

24.24 Computerisation of Registration Department is undertaken with four primary objectives namely 1) Directly beneficial to the public (Registration process and encumbrance certificate made fast) 2) Beneficial to the staff (Index made automatic and reduced workload) 3) Beneficial to the document writer and 4) increase revenue collection. It was decided to implement the pilot project in 4 Sub Registry Offices with the software named PEARL (Package for Effective Administration of Registration Laws), developed by NIC, Kerala. Now 114 SRO's have been fully computerized and the remaining are in the final phase of completion.

#### Treasury Department

24.25 All major treasuries have been computerized. Networking of these treasuries is

proposed to be implemented along with State Information Infrastructure Project. Pilot project has been implemented. With the completion of the project the up-to-date financial position of the State can be viewed in the Finance Department of the Secretariat.

#### **Legal Metrology Department**

24.26 'METRIS' is the software developed for the Legal Metrology department. The said computerized system has made the verification process more efficient and due to the resultant accuracy of the weighing & measuring instruments, exact quantity of items will be thereby made available to the public.

#### **Rural Development Department**

24.27 'Rural Soft' is a Web enabled E-Governance application developed on LAMP (Linux Apache/My Sql/PHP) for the effective monitoring of the SGRY and SGSY schemes of the Government of India. This software also enables citizens to monitor various schemes implemented at the Grama Panchayats and Block Panchayats.

#### **Revenue Departments (Taluks)**

24.28 By launching the project SWIFT (Single Window Interface for Taluks) in all Taluk Offices public get various types of certificates and application forms easily.

#### **Employment Exchange**

24.29 'Thozhil', a software developed as a part of total computerization of Employment Exchanges of Kerala, covers the registration process as well as the selection process in the Employment Exchanges.

24.30 The computerisation of Regional Professional Exchange at Thiruvananthapuram, Ernakulam and Kozhikode has been completed and the data of professional and executive standard candidates are available on the department website. The computerisation of District Employment Exchange, Thiruvananthapuram and Town Employment Exchange at Nedumangad, Neyyattinkara and Special Employment Exchange for Physically handicapped has been completed. A computer cell is working the Directorate of Employment and Training. It is also proposed to computerise Town Employment Exchange, Attingal, Kattakkada and Kilimanoor. Thiruvananthapuram Rural Employment Exchange (Ulloor), District

Employment Exchange, Kollam and Town Employment Exchange, Punaloor and Kadakkal will be computerised during the financial year itself.

#### **Finance**

24.31 Finance department, Government of Kerala has implemented the package BOUGETTE for the computerization of Pre-Budget and Post - Budget activities of Budget preparation.

#### **Law Department**

24.32 As part of the modernization of Law Department, automation has introduced information systems in Administration, Leg - Publication, Notaries, Monitoring Cell, Parliamentary, Law (H), Law (G) and inspection section of Law Department as phase I. The Phase II, having a three years, programme consists of completion of data entry and fine tuning of Phase I modules.

#### **Computerization of District Collectorates**

24.33 Palakkad district is the first district in the country by connecting District Collector and his subordinate officers viz. Deputy Collectors, Dist. Planning Officer, District Heads of various departments, Superintendents etc. through computer networks. The District Collector can deal easily with variety of subjects relating to the people of the district.

#### **Secretariat Wide Area Network**

24.34 Government have already decided to set up a Secretariat Wide Area Network (SWAN) connecting Secretariat, Secretariat Annex, Vikas Bhavan and Public Offices in phased manner. As part of this project, networking Secretariat and Secretariat Annex is envisaged in the first phase. At present there is a network of lower capacity named as Secretariat Internet Communication System (SICS) and is using in its full capacity for communication process. An Internet based communication system is used in the Secretariat for communication to the offices outside Secretariat. There are around 800 computers in the Secretariat and out of this 500 numbers are working in networked environment. With the enhancement of the power supply the number of computers will be increased to around 2000 numbers and at a later stage to 3000 numbers. Action has been initiated to procure readymade software for file flow management.

### **The First Computerised Panchayat**

24.35 Government have declared Vellanad Panchayat in Thiruvananthapuram District as the first fully computerised Panchayat in the country. The software 'Sulekha' is used for the operation of services at Panchayat level and 'Sevena' for Social Security Schemes. It is now decided to replicate this scheme to other Panchayats of the state. The achievements are in the speedy issue of pensions, birth and death certificates etc., and plan co-ordination activities at Panchayat level.

### **State Information Infrastructure**

24.36 The work relating to the establishing the State Wide Area Network linking the various District Headquarters with Thiruvananthapuram for various e-Governance activities is in progress. This infrastructure will also constitute the platform for delivering various e-Governance services. As part of this project it is decided to establish an e-Governance accelerated data centre at Kochi and Kozhikode. The objective of the phase-1 of the project is to set up an e-Governance centre at Thiruvananthapuram. Implementation of the project is in progress with the setting up of Infrastructure at the three Network Centers (Thiruvananthapuram, Kochi and Kozhikode) and will be completed soon.

### **Call Centres**

24.37 The process of setting up of a Call Centre, attached to the FRIENDS Centre at Thiruvananthapuram, which would provide information relating to common citizens' transaction over the phone to the citizens of the State is complete.

### **Computerisation of Land Records**

24.38 The basic objectives of the project include issuance of the computerised record of right to the public, the total computerisation of Land Revenue department and digitization of survey records. Hardware procurement for all the 63 taluks has been made. Data entry and training have been completed. Plan of action for the computerisation of 200 villages is progressing with the help of MGP activities. Integration of the project with the computerisation of Registration Department is also planned.

### **Information Kerala Mission**

24.39 The project, Information Kerala Mission,

seeks to computerise and establish a Wide Area Network (WAN) to connect all the Local Self-Government Institutions through out the state. One of the unique features of the IKM project is the extensive effort taken in the system documentation and the overall emphasis on business process reengineering and development of an integrated service backend data base. Software preparation for various modules of the project has been completed. Pilot project has been implemented in certain identified local self-governments. As mentioned before Vellanad Grama Panchayat is declared as a fully computerised panchayat. In order to replicate the activities, it was decided to replicate the project in a BMT model

### **Commercial Taxes**

24.40 Computerisation of Commercial Taxes Department is nearing completion. Activities are going on for issue of smart cards to the taxpayers. The smart card will contain all the details of the cardholder with PIN for identification. With the help of the card reader required details may be obtained and the payment received from the cardholder can be entered in the computer system.

### **Health**

24.41 The activities have been started to computerise various hospitals in Thiruvananthapuram and to network them. The vision is to have an integrated supply of medicine, infrastructure, human resources etc. C-DAC is the agency appointed for implementing this project. Health content dissemination programme has also been started.

### **Integrated Decision Support System**

24.42 Integrated decision support system has three components- Knowledge Archive for Secretariat, Secretariat WAN and Decision Support System (Sutharya). The knowledge Archive for secretariat has been completed and is in the final evaluation stage. The project named 'Sutharya' has been implemented in Chief Minister's Office.

### **Computerisation of Kerala Public Service Commission**

24.43 Modernisation of recruitment activities in the Kerala Public Service Commission (KPSC) began in 1999. It is a three-phased project. Implementation of the first and second phase has

already been completed and the third phase is going on as envisaged. The first OMR Machine was installed in 1999 for valuation purpose. The second phase began in 2002-2003 and during this period Regional and District Offices were also computerised. The Website: [www.keralapsc.org](http://www.keralapsc.org) was hosted during this year. During the Ist and IInd phases softwares required for OMR Valuation, Admission Ticket Generation, Processing of Applications and Preparation of Results were developed.

#### **Conclusion**

24.44. Wide-ranging initiatives have been taken in e-Governance and the programmes are under implementation for some years. What is needed now is to ensure that they are all completed and become fully functional in the coming year and are mutually compatible, so that the benefits are actually desired by the public and the next steps in e-Governance can be taken.

## Annexure

## MGP INITIATIVES APPROVED FOR IMPLEMENTATION

SL. NO.	DEPARTMENT	INITIATIVE
I	Personnel & Administrative Reforms Department	<ol style="list-style-type: none"> <li>1. Simplification of Rules for faster implementation of decisions in government.</li> <li>2. Service Delivery Policy for Secretariat and selected Departments.</li> <li>3. Monitoring of approved recommendations of the Administrative Reforms Committee with fast track implementation of selected initiatives on Service Delivery Improvements.</li> <li>4. Performance Based Systems in Civil Service.</li> <li>5. Design and Implementation of State Civil Service.</li> <li>6. Functional Review.</li> </ol>
II	Food Civil Supplies and Consumer Affairs Department	<ol style="list-style-type: none"> <li>1. Fostering quality consciousness amongst consumers.</li> </ol>
III	General Administration Department.	<ol style="list-style-type: none"> <li>1. Information access integrated into workflow in Secretariat and other offices with supporting working environment.</li> <li>2. Implementation of Integrated Payroll and Personnel Management System (PPMIS)</li> </ol>
IV	General Education Department.	<ol style="list-style-type: none"> <li>1. Community led Quality Monitoring in Government and Aided Schools with built in accreditation systems to reflect quality of education.</li> <li>2. Reassessment of Student strength in Government and Aided Educational institutions.</li> <li>3. Impact of aided school teachers simultaneously functioning in elected political positions and as teachers on quality in the education system.</li> <li>4. Strengthening Vocational Education – Trade upgradation and teachers' skill improvement.</li> <li>5. Quality improvement issues in Higher Secondary Education.</li> </ol>

V	Industries Department	<ol style="list-style-type: none"> <li>1. Implementation of SLPE reforms.</li> <li>2. Estimation of demand supply gap.</li> <li>3. Regulatory environment.</li> <li>4. Capacity building for project preparation in departments.</li> <li>5. Public awareness campaigns.</li> <li>6. Entrepreneurship development at School/College levels.</li> <li>7. Recognizing successful entrepreneurs in the state.</li> <li>8. Fostering quality consciousness among producers.</li> <li>9. Review of licensing and regulatory framework.</li> <li>10. Simplification of procedures.</li> <li>11. Setting up of business promotion/guidance cells.</li> </ol>
VI	Health & Family Welfare	<ol style="list-style-type: none"> <li>1. Review of Procurement Practices and introduction of computerised inventory management system.</li> <li>2. Greater financial autonomy for health institutions.</li> <li>3. Community led social monitoring in public health institutions.</li> <li>4. Training for health professionals as institution managers and creating a special cadre in the health services.</li> <li>5. Strengthening health extension interface with Self Help Groups.</li> <li>6. Study for setting minimum standards and costing in government health institutions.</li> <li>7. Finalization of referral protocol.</li> <li>8. Formulary for drug prescription.</li> </ol>
VII	Information & Public Relations Department	<ol style="list-style-type: none"> <li>1. Right to Information Act and Rules.</li> </ol>
VIII	Information Technology Department	<ol style="list-style-type: none"> <li>1. IT based information exchange through Akshaya centres.</li> <li>2. Knowledge based Decision Support System for a transparent e-Governance in Kerala.</li> <li>3. Creation of knowledge archive for government secretariat.</li> <li>4. Human resources for e-Governance.</li> </ol>

IX	Institute of Management in Government.	1. Comprehensive training programme for civil servants.
X	Labour and Rehabilitation Department.	1. Design and Implementation of Measures.
XI	Local Self Government (Rural) Department.	<ol style="list-style-type: none"> <li>1. Action Research Project through Beacon Panchayats.</li> <li>2. Empowering/enabling Community Development Societies to assist in poverty database and anti-poverty sub plan.</li> <li>3. Asset Management Plans.</li> <li>4. Guidelines for Public Private Partnerships.</li> <li>5. District Level Sectoral Plans for Health and Education.</li> <li>6. Community Rehabilitation Plans for Physically and Mentally challenged.</li> <li>7. Special Plan with focus on connectivity.</li> <li>8. Service and Performance Standards Integrated into Citizens' Charters.</li> <li>9. Designing and Establishing Monitoring Systems.</li> <li>10. Replication of best practices.</li> <li>11. Specialisation of Extension Machinery.</li> <li>12. Incentives for good service delivery in LSG institutions.</li> <li>13. Identification of opportunities for LED and implementation in LSGs.</li> <li>14. Identification of micro enterprise opportunities for poor.</li> <li>15. Guidelines on capacity building for LED.</li> <li>16. Social audit – design and implementation.</li> <li>17. Fund releases linked to compliance with audit findings.</li> <li>18. New office management system.</li> <li>19. Management manuals.</li> <li>20. Procure manual.</li> <li>21. Public work manual for LSGs.</li> <li>22. IT plans for LSGs.</li> <li>23. Budgeting in LSGs.</li> <li>24. Accounting in LSGs.</li> <li>25. Resource mobilisation by LSGs.</li> <li>26. Revamping administrative arrangements and designing of a senior management model for LSGs.</li> <li>27. Training Needs assessment for elected members and officials and action plan with resource requirements produced.</li> <li>28. Road map for LSG, personnel policy with specific referrals to recruitment, assignment of work, performance reviews control, placement and capacity building.</li> <li>29. Rationalisation of LSG and RD Functions.</li> <li>30. Integrated policy framework for LSGs.</li> <li>31. Parallel schemes and structures brought within LSG framework.</li> </ol>



XII	Local Self-Government (Urban) Department.	<ol style="list-style-type: none"> <li>1. Propagation of holistic waste management system with emphasis on incentives mechanisms.</li> <li>2. R&amp;D for appropriate technologies.</li> <li>3. Regulation for management of institutional waste change.</li> <li>4. Accreditation and training of rag pickers.</li> <li>5. Town and country planning legislation.</li> </ol>
XIII	Planning & Economic Affairs Department.	<ol style="list-style-type: none"> <li>1. Development and application of Entitlement Index.</li> <li>2. Public monitoring of poverty levels and tracing of fund flows with the poor.</li> <li>3. Design &amp; Implementation of Result based Planning system.</li> <li>4. Enhancing entitlements based on severity of poverty reflected through the index.</li> <li>5. Implementing approved policy on long pending infrastructure projects.</li> </ol>
XIV	Social Welfare Department.	<ol style="list-style-type: none"> <li>1. Social Security Schemes for destitute and disabled.</li> </ol>
XV	Store Purchase Department.	<ol style="list-style-type: none"> <li>1. New procurement procedures.</li> </ol>
XVI	T r a n s p o r t Department.	<ol style="list-style-type: none"> <li>1. Public Transport policy.</li> <li>2. Safety considerations in road transport.</li> </ol>
XVII	Water Resources Department	<ol style="list-style-type: none"> <li>1. Integration policy for sanitation and water resources.</li> <li>2. Unified water resources policy in the context of decentralisation.</li> <li>3. Deployment and capacity building for WATSAN unit in water resources sector.</li> <li>4. Popularisation of rain water harvesting.</li> <li>5. Special projects in difficult areas.</li> <li>6. WATSAN facilities for unauthorised occupants of public lands.</li> <li>7. Framework for cost estimation and determination of user charges.</li> </ol> <p>Management of drinking water wells in local communities.</p>

## CHAPTER - 25

# WORLD TRADE AGREEMENT

The Uruguay Round of multilateral trade talks leading to World Trade Agreement (WTA) concluded in 1994 after eight years of negotiations was a land mark in the history of the trading system. Agriculture and textiles and clothing, two sectors that had been removed from the GATT were brought back. The system of multilateral rules was extended to intellectual property rights and services. The WTO was created on January 1, 1995 by the Final Act of the Uruguay Round of negotiations.

25.2 The World Trade Agreement (WTA) contains 29 individual legal texts and more than 23 additional Ministerial declarations, decisions and understandings which spell out further obligations and commitments for WTO members (Appendix-25.1) The WTO replaced GATT as an international organisation in 1995. As on 31<sup>st</sup> October 2004, it had 148 members. A synoptic brief about WTO is presented in Box -25.1.

Some of the major agreements and issues are shown below.

### Agreement on Agriculture (AoA)

25.3 The WTO Agreement on Agriculture was a significant step towards reforming agricultural trade. It brought agricultural products under multilateral rules and paved the way for further liberalisation of agricultural trade. The Doha Ministerial Declaration of 2001 launched new negotiations on a range of subjects. The key components of Agreement on Agriculture (AoA) are shown in Appendix-25.2

25.4 The Uruguay Round Agreement on Agriculture 'tariffied' and bound many non-tariff barriers and some progress was made in reducing tariffs. However much remains to be done including reducing peak tariffs and tariff escalation.

#### BOX-25.1

##### WTO - A Synoptic brief

Planners for the post Second World War reconstruction and economic co-operation set up the International Trade Organisation (ITO) to oversee the operation of a multilateral code of conduct of trade. The 1947 Geneva trade conference resulted in a trade accord - the GATT 1947 - signed by 23 countries. The combined package of trade rules and tariff concessions became known as the General Agreement on Tariffs and Trade (GATT). The first round negotiations in 1947 resulted in 45,000 tariff concessions affecting \$ 10 billion of world trade.

After almost half a century, the GATT's basic legal principles remained much as they were in 1948. There were additions in the form of a section on development added in the 1960s and plurilateral agreements in the 1970s efforts to reduce tariffs further continued. Much of this was achieved through a series of multilateral trade negotiations known as trade rounds. The Tokyo Round during the seventies was the first major attempt to tackle trade barriers that do not take the form of tariffs and to improve the system. The Uruguay Round of 1986-94 - the eighth round at Punta del Este, Uruguay was the last and most extensive of all. It led to the establishment of WTO and a new World Trade Agreement (WTA) as on 1<sup>st</sup> January 1995. On 15<sup>th</sup> April 1994, the deal was signed by Trade Ministers of 123 participating countries at a meeting in Marrakesh, Morocco.

The WTO replaced GATT as an international organisation, but the General Agreement still exists as the WTO's Umbrella treaty for trade in goods, updated as a result of the Uruguay Round negotiations. GATT has been relegated to the status of one of the 13 Multilateral Agreements on Trade in goods included in Annex 1 A of WTA.

WTA is much wider in scope with a stronger institutional basis and with treaty status, compared to GATT. The WTA consists of the Agreement establishing the WTO and its four Annexure ( see Appendix)

The apex decision making body of the WTO is the Ministerial Conference. There is a General Council below the Ministerial Conference. Under the General Council, there are three councils for trade in Goods, Services and TRIPS. The General Agreement on Trade in Services (GATS) is the first set of multilaterally agreed and legally enforceable rules and disciplines ever negotiated to cover international trade in services.

25.5 The structure of border protection in developed countries continues to be high, non-transparent and anti development. About 28 percent of domestic production of OECD countries is protected by Tariff Rate Quotas (TRQs). tariff peaks as high as 500 per cent confront imports from developing countries. Tariffs also increase by degree of processing, creating a highly escalating tariff structure that limits access for processed foods.

25.6 In many industrial countries, the average income of farmers is higher than the national average, reaching almost 250 per cent of average income for the Netherlands, 175 per cent for Denmark, 160 per cent for France and 110 per cent for the United States and Japan. The average agricultural tariff of developing countries declined from almost 30 percent in 1990 to about 18 per cent in 2000, a decline of 35 per cent. An extensive network of subsidies has evolved to support agriculture particularly in rich countries. The support accorded to OECD country producers through higher domestic prices and direct production subsidies was \$ 248 billion in 1999-2001. Protection rates for producers in the OECD decreased from 62.5 per cent in 1986-88 to 49 per cent in 1999-01. Agricultural support tends to be counter cyclical in rich countries, pushing price adjustments into the global market and accentuating price drops. In European Union farmers prices were 34 per cent higher than the international prices in 1999-01.

25.7 The Uruguay Round and World Trade Agreement yielded no significant reduction in protection in developed countries. The reason includes weaknesses in specific aspects of the agreement such as high baseline support levels from which reductions were made. In US, measures undertaken before the negotiations were adequate to fulfil the new rules on reducing domestic support. Now protection in agriculture takes different forms, like tariff protection, subsidies, tariff peaks, Tariff Rate Quotas (TRQ), tariff escalation and opaque tariffs.

25.8 Some countries used the simple border

protection method of tariffs while other methods used were more complicated such as EU variable levy system. This system maintained a stable price within the EU by using the same post customs duty price for all imports.

25.9 Tariffs in agriculture are still significant, even high in some producing areas. (Table-25.1)

25.10 The World Trade Agreement contains a

**Table-25.1**  
**Bound and applied tariffs on agricultural products (per cent)**

Group	MFN bound tariff	Applied tariff
Developed countries	51	48
Developing countries	57	20
Least developed countries	79	17

*Source: UNCTAD, 2004*

definition of agricultural products which includes a number of manufactured products as well, such as manufactured food products. At the same time, the definition excludes fish and fish products and natural rubber, which are grouped under industrial products.

25.11. The total of Green and Amber box supports in the OECD countries was higher in 1996 in nominal terms (US\$ 259 billion) than during the base period (US\$ 221 billion) The total transfers to agriculture in OECD amounted to \$ 327 billion in 2000 compared to \$ 298 billion in 1986-88 and exceeded the value of world trade in agricultural products. It is in this background that developing countries took their stand at Doha and Cancun

25.12 The specific implications in agriculture and strategies to be adopted in Kerala were explained in the report of the Commission on WTO concerns submitted by Dr. M.S. Swaminathan in 2003. The state government has taken steps for the implementation of the major recommendations of the Commission. A Virtual University on Agrarian prosperity was set up in 2003-04 by the Kerala Agricultural University in collaboration with the Indian Institute of Information Technology Management, Kerala.

#### **Tariff escalations and tariff peaks**

25.13 Tariff escalation hinders diversification into value added and processed products in which

trade is expanding rapidly, but such escalation directly penalises investors in developing countries who seek to add value to production for export. For example the EU applied tariff is 18 per cent for fresh grapes but 215 per cent for grape juice.

25.14. Current tariff levels for value added teas are higher in major markets while those for bulk

teas are very low or even zero. Value addition is significant in international trade. Tariff peaks defined as rates exceeding 15 per cent of three times the average nominal tariff. In some of the commodities in European countries tariff peaks in some commodities are very high affecting the export from developing countries.

#### BOX-25.2

##### Trade policies of the European Union for fresh fruit and Vegetables

Before the AoA, external protection to EU producers of all Fruit and vegetables was obtained by means of tariffs. Imports of the main products were also subject to reference prices. When the import prices of products originated from non-EU countries fell below the reference prices, they were also subject to the payment of countervailing duty. The extra duty was only charged on imports from that country. Reference prices were worked on minimum import prices.

The AoA eliminated all Non Tariff Barriers (NTBs) such as reference prices. In Fruit and vegetables, reference price was replaced with entry prices. If the import price of a product is above the entry price, it only pays the tariff. When the import price is lower than the entry price by a percentage no greater than 8%, the import incurs an extra duty whose amount is equal to the difference between the entry price and the import price. If the percent exceed 8%, the extra duty is the maximum tariff equivalent (MTE). Tariffs, entry prices, and MTEs change during the year according to the seasonality of EU production. For many Fruit and vegetable products the entry prices operate only for a limited period when internal supply is marketed. The amount of MTEs is so high that it can be seen on a prohibitive tariff.

Entry prices works on consignment basis. The EU Commission calculates on a daily basis a standard import value for every Fruit and vegetable production subject to entry price according to its origin.

##### Skimmed Milk Powder

33<sup>rd</sup> Dairy industry Conference has recommended that India should renegotiate at the WTO the bound rate of import duty on Skimmed Milk Powder (SMP) and butter oil. Efforts should be made to raise to 100%. At present the bound rates are 60% for SMP and 40% for butter oil.

Domestic dairy industry should pay attention for improving the quality of milk and milk products right from primary production to finished products stage. The industry should adopt ISO-HACCP quality management approach to achieve this objective. It underscored the need for investment in productivity enhancement and cost reduction for long term competitiveness.

It has identified the South Asian Countries and the Pockets of ethnic Indian Population in the Gulf region and the US as the priority destination for the Indian dairy product export.

## Issues in Fisheries

### 1. Subsidies in fisheries

25.15 Subsidy reform in the fisheries sub sector forms part of the multilateral trade negotiations agreed by the members at the Fourth Ministerial Conference held at Doha. Significant work on the relationship between fisheries subsidies and overfishing has been done by various international organisations in recent years.

25.16 Most of the literature on subsidies in fisheries focuses on marine capture fisheries rather than aquaculture. The Doha Agenda is especially concerned with the use of subsidies in fisheries and members of the OECD account for at least 15 per cent of all subsidies in the fishing sector. WWF (2001) estimates global subsidies to be in the region of \$ US 15 billion to cover all fishermen. The subsidies in developing countries include port facilities owned and managed by public sector, sales tax exceptions for imports used by the fishing industry, subsidised fishing inputs etc.

25.17 The last two years has seen a great deal of effort being devoted to defining fisheries subsidies and developing framework for categorizing and measuring subsidies. The WTO provides an internationally agreed process for notifying fisheries subsidies, although the extent to which this has complied with is open to question. Article 25 of the WTO , SCM Agreement provides for notification of specific subsidies. More international work is needed to develop broadly accepted definition of subsidies and methodologies for measurement.

### 2. SPS measures

25.18 The SPS measures introduced (eg. Shrimp Ban from Bangladesh, Nile Perch Ban for Uganda, Ban in European Union for some shipments from India etc.) represent major shocks for fish exporting developing countries.

25.19 A large number of countries now have specific Hazard Analysis and Critical Control Point (HACCP) based regulations regarding the safety of fish products.

25.20 A recent study in India has shown that

installation cost of HACCP plants varies from Rs. 10 million to Rs. 25 million. On an average an export processing firm has to spend about Rs. 2 million/year to maintain HACCP system. On an average HACCP implementation has led to Pre export and handling cost of Rs. 7 per kg. Small firm has to incur Rs. 10 /kg. on pre export processing of fish. State has to move towards international standards of product hygiene in order to retain the market share in future which entails heavy investment.

### The Sanitary and Phytosanitary (SPS) Agreement

25.21 The SPS Agreement is linked to the Agreement on Agriculture (AoA). The SPS Agreement contains specific rules for countries which want to restrict trade to ensure safety and the protection of human life from plant or animal carried diseases. These include the setting of technical regulations and standards governing quality requirements for food, and phytosanitary measures to protect animal and plant life and health.

25.22 SPS Agreement encourages members to use international standards, guidelines and recommendations where they exist.

#### Some important elements in the Agreement

- (a) Requires animals and animal products to come from disease free areas
- (b) Inspection of products for microbiological contaminants
- (c) Mandating a specific fumigation treatment for products
- (d) Setting maximum allowable levels of pesticide residues in food.

25.23 The SPS norms in US differ from that in EU to a great extent. The permissible limit for total aflatoxin in food and feed is 20 ppb in US and Australia while in EU it is 1 ppb. The EU norms are higher than the Codex norms. Even EU member countries follow their own norms which vary greatly. Though Codex standards are considered as base, the norm set by the importing countries matters most in disputes.

25.24 The SPS norms are gradually emerging as trade barriers. The developing countries need to actually participate in global standard setting bodies. Expert groups of scientists, and food technologists should be identified and database has to be created with associated infrastructure. The SPS and TBT agreements contain promises of financial and technical assistance for the developing countries. However, translating these promises into action has not yet been achieved. Further conforming to EU and other norms entails massive investments in Hazard Analysis and Critical Control Points (HACCP) methods which are capital intensive.

25.25 Developing countries in general are experiencing difficulties in meeting the SPS requirements of developed countries and concerns have been expressed about the way in which SPS agreement has been implemented. The additional cost involved include increase in production costs of respecting SPS requirements and conformity costs like Certification and control. The access to technical know-how is also restricted and even the Private sector certification is under developed.

25.26 Major findings of a study on coffee farms conducted in Karnataka are shown in Box-25.3. Out of 282 farms surveyed, 149 are SPS complying farms. Partial financial support could speed up adoption of SPS norms by the farms.

**BOX-25.3****Major Findings of a Study on SPS in Coffee**

- SPS complying farms experienced an increase in labour input per unit of land. The mandays per hectare was 575 for non-SPS complying units and 878 for SPS complying units.
- SPS complying farms experienced 43% increase in labour costs over non-SPS complying coffee farms in pre harvest operations. The increase experienced by these farms in the matter of harvesting operations was 33%.
- The full SPS compliant farms included in the sample uprooted 90% of their old coffee plants and partial SPS compliant units undertook only non-replanting based SPS measures.
- The incremental costs and cash crunch faced by SPS complying farms increased the risk of non-repayment of loans.

*Source: Damodaran, 2002*

**Pesticide Residues**

25.27 Fixation of Maximum Residue Limits (MRL) in food and commodities are prescribed by the Ministry of Health and Family Welfare under PFA Act . MRL is fixed by taking into account the toxicological data of the pesticides. For about 32 pesticides, tolerance limits are to be fixed. This has to be done on a priority basis. The findings of a study on pesticide residues conducted in various states including Kerala are shown in Box-25.4.

**BOX-25.4****Major Findings of the Research Study on pesticide residues in agricultural produce**

The Indian Council of Agricultural Research (ICAR) is undertaking an All India Network Project (AINP) on pesticide residue. In Kerala, the project functions under the Department of Agricultural Entomology, College of Agriculture, Vellayani. The Major findings of the studies conducted in the different centres of AINP on Pesticide Residues during 2003 are :

- Out of the total 666 different vegetable samples analysed by multi residue method, 56.5% samples were contaminated with residues of different groups of insecticides like organichlorines, organophosphates and synthetic pyrethroides.
- The main contaminants identified were Endosulphan, Cypermethrin, Cyhalothrine, Fenvalerate, Chlorpyrifos, DDVP, Phorate and Lindane.
- Among different states, maximum contamination was observed in Uttar Pradesh and Delhi, where all the samples analyzed were contaminated.
- Samples contaminated above the tolerance limit/maximum residue limit were more in Punjab (30%) and Karnataka (20%)
- Extent of contamination was low in fruit samples compared to vegetables. Among 317 fruit samples viz mango, orange, grapes and apple, pesticide residues were detected in 37% of samples. Extent of contamination was

maximum in Andhra Pradesh (78.3%) and Bihar (56.3%).

➤ Analysis of market samples of commonly used vegetables in Kerala, viz. Cowpea, Amaranthus, Cucurbits, Brinjal, Bhindi, Tomato, Cauliflower, Capsicum, Green Chillies, Bittergourd and snake guard indicated that 96.7% of the samples were contaminated with residues of insecticides belonging to organochlorides, organophosphates and systemic pyrethroid groups.

➤ In the samples above, residues of banned/restricted pesticides such as HCH were also detected.

➤ Monitoring of fruit samples revealed that mango, banana, grapes apple, and pomegranate collected from Thiruvananthapuram were not contaminated with insecticidal residues.

➤ Studies on the extent of removal of residues by some house hold practices revealed that washing the vegetables thoroughly along with scrubbing in tap water followed by cooking can remove pesticide residue up to 71%. Other decontamination techniques like dipping and washing in tamarind water, turmeric suspension, lime water, salt water, vinegar, peeling, cooking, sun drying, dehydration etc. can also be adopted

*Source: Kerala Calling, October 2004*

25.28 State has already taken steps to establish disease free zone for cattle modernisation of agriculture through the establishment of laboratories, popularisation of organic farming etc.

#### Issues

1. The SPS Agreement encourages the use of **Equivalence** and mutual recognition of Agreements in Article 4. Developing countries frequently complained about the lack of implementation of Article 4. Some of the importing countries are demanding **sameness** instead of equivalence. The former implying that the measures must be identical not only in outcome but in formulation too which is unacceptable.
2. The infrastructure support as well as technical competency in developing

3. countries are quite inadequate  
One of the main problems of the various SPS measures applied today is the lack of transparency.
4. The dispute settlement process is lengthy and very demanding in terms of financial capacity and human resources.
5. Developing countries may end up with standards set at levels inappropriate to their situation and which require standards infrastructure which simply does not exist in these countries. As pointed out by a World Bank study, the various standards already set in the international organizations were not developed as part of the WTO process and left out the developing countries.
6. Likewise standards will be slow to develop in areas where developed countries have few interests like lack of international standards for pesticide residues for tropical fruits.
7. Very high investment for establishing the infrastructure for quality control

#### Agreement on Rules of Origin (ARO)

25.29 The raw materials produced in one country are moved to another for processing and to yet another as an export product. Imported low quality pepper and tea are reported to be blended with Indian varieties and exported as Indian varieties. The provisions in the rules for such products with multi country origin need be enforced strictly to protect Kerala's traditional markets, especially for tea, coffee and pepper. Consumer Ministry's recent stipulation of multi country origin declaration mandated for tea should be extended to other commodities also. This is more urgent for protecting Kerala's market share especially in spices in the international market.

25.30 The Agreement is important in the textiles sub sector also. Rule of origin can be designated to shut out textile imports by requiring that all intermediary inputs originate among member states of a free trade area. If preferential trade agreements continue to proliferate and make use of restrictive rules of origin in Textiles and Apparel

then the elimination of quota will deliver smaller benefits to Asian Pacific developing countries suppliers.

25.31 Even though India challenged the rule of origin of US on textiles and apparels, the judgement of the WTO panel was against India. Systematic monitoring of import of various commodities as well as rules in exporting countries are essential to present the case before the Dispute settlement body.

### Trade Related Intellectual Property Rights (TRIPS)

25.32 Trade Related Aspects of Intellectual Property Rights Agreement (TRIPS) was incorporated as one of the core agreements. All the IPR instruments, viz., patent, copyrights, trademarks, geographical indications, industrial designs and trade secrets are covered under TRIPS. The plant varieties must be protected by patents or by a *sui generis* system. The TRIPS Agreement is a comprehensive multilateral agreement on intellectual property. The agreement sets minimum standards of national protection of intellectual property rights for all categories except for expression of folklore, utility models, breeder's rights and community's rights to traditional knowledge.

25.33 A Council for TRIPS was established to monitor the operation of the agreement and government's compliance with it. No provision is included in TRIPS about IPR related to internet data transmission and e-commerce. Assessment of national IPR laws should be undertaken in order to consider their consistency with the standard of TRIPS Agreement. The salient features of TRIPS as compared to previous international co-operation treaties in IPRs such as those managed by WIPO is that it makes an extensive set of IPR Protection Standards mandatory for WTO members. The agreement explicitly maintain three organizations that are involved in setting standards. The Codex Alimentarius, the International Office of Epizootic (OIE) and the International Plant Protection Convention (IPPC).

25.34 TRIPS figured prominently in the Doha WTO Ministerial meeting in November 2001 and resulted in the Doha Declaration on the TRIPS Agreement and Public Health. Patent protection

is likely to lead to higher prices of drugs. The public health aspects of TRIPS requirement have yet to be fully assessed. TRIPS rules require WTO members to provide patent protection for any invention, whether a product (such as a medicine) or a process (such as method of production of chemical ingredients for a medicine) for a period of 20 years.

25.35 The Doha Declaration mandated that the Council for TRIPS examine the relationship between TRIPS, the Convention on Biological Diversity (CBD) and the protection of traditional knowledge and folklore.

25.36 Consideration should be given to the possible impact of the adoption of patents and plant breeders rights on biodiversity. Several studies have suggested that such regimes may reduce biodiversity particularly through the replacement of farmers varieties by commercial uniform varieties.

25.37 TRIPS agreement provides for a minimum term of protection of 20 years counted from the date of filing. A bill to amend the Patent Act 1970 was introduced in Parliament on 20 December 1999. The Act was amended in 1999 and 2002 to meet India's obligations under TRIPS. The third Amendment bill was put in place for introducing product Patent regime in the last session and it was lapsed with the change of Government. To meet WTO commitment, India has brought in an ordinance to support the product patent regime in December 2004. The Ordinance of 26<sup>th</sup> December 2004 paved the way for product patent for inventions in the fields of food, chemicals and pharmaceuticals.

25.38 TRIPS agreement provides a higher level of protection to wines and spirits and India has proposed to extend such higher level of protection to basmati rice, Darjeeling tea, alphonso mango, kolhapuri slippers etc.

25.39 In the area of agriculture, an important policy issue is the extent to which the protection of plant varieties as required by the TRIPS Agreement which may hinder or foster local innovations while some countries have opted to follow the model of the International Union for the Protection of New Varieties of Plants (UPOV); New approaches may also be



developed in the form of *Sui generis* system. The development of a *sui generis* system for the protection of traditional knowledge including farmer's varieties is an important policy issue. The protection of plant varieties is legally introduced in the country by Protection of Plant Varieties and Farmers' Rights Act 2001 (PPVFR Act).

### Traditional Knowledge (TK)

25.40 Indigenous Knowledge (TK) has been used for centuries by indigenous and local communities. Despite the growing recognition of Indigenous Knowledge as a valuable source of knowledge, western intellectual property laws continues to treat it as a component of Public domain.

25.41 The importance of IK has gained recognition in International fora. Thus, in 1981, a WIPO - UNESCO Model Law on Folklore was adopted, In 1992, the Convention on Biological Diversity specifically addressed the issue. In 2000, an intergovernmental committee on Intellectual Property and Genetic Resources, Indigenous Knowledge and Folklore was established under the auspices of WIPO. A large number of patents have been granted on genetic resources and knowledge obtained from developing countries without the consent of the possessors of the resources and knowledge. The CSIR asked for a reexamination of the patent granted for the Wound Healing property of turmeric. The US patent and Trademark office revoked this patent. In 2000, the patent granted to WR Greece Company and USDA on bio pesticide property of Neem was also revoked.

25.42 The global market for herbal products is expanding very fast. It is estimated to touch \$ 5 billion by 2020. China and India are major sources of medicinal plants. Local tribal communities have the exclusive rights of collecting Non-timber forest produce (NTFP) like nuts, flower, gum, resins, medicinal and aromatic plants, honey, wax etc. Action plan has to be prepared to exploit the market with appropriate protection of traditional knowledge.

25.43 The importance of protecting the knowledge innovations and practices of indigenous and local communities is increasingly recognized in the international forums. Developing countries

seek to ensure that the benefits of consultative innovation associated with TK accrue to its holders while enhancing their socio economic development. Protection of TK is a necessary but not a sufficient requirement for its preservation and further development. Developing institutional and consultative mechanism on TK protection , innovation and facilitating TK based products marketing and commercialization of TK based products are also important

25.44 Preparation of village wise community Bio diversity Registers has been undertaken in some panchayats in Kerala. The Traditional Knowledge Digital Database (TKDL) project has been initiated at Government of India level. TKDL is based on software which facilitates classification of traditional knowledge. making it compatible with international patent classification. In India, a National Innovation Foundation has been set up. This foundation with an initial corpus of Rs. 20.00 crores is intended to build a national register of innovation, mobilize IPR protection, set up incubation centres for converting innovations into viable business opportunities. It has established four incubation centres across the country. A project on documenting IKs in the state has been initiated. This is more relevant in the context of TRIPS.

### Geographical Indicators (GI)

25.45 The specific regulation covering GIs are addressed in the TRIPS Agreement. Outside the WTO negotiations many countries are negotiating GIs in bilateral trade agreements.

25.46 Since 1992, the European Union has protected high quality agricultural products based on geographical origin using designation of geographical indications.

25.47 Geographical indications especially appellations of origin, could be used to protect products of a special region like Basmati rice, Darjeeling Tea, Alphonso mango, Kolhapur slippers, Malabar pepper, Alleppey Finger turmeric, Cochin Ginger etc.

25.48 Kerala should embark on to a major project for the protection of traditional products with geographic appellation for the exploitation in

the international market. The following steps may have to be completed for the optimum advantage for the state.

- (1) Gather information and prepare state level inventories of products which could be protected by GIs.
- (2) Prepare, set up and implement technical norms that would guarantee the quality of specific products.
- (3) Analyse the international market possibilities of national products protected by GIs.

#### Agreement on Textiles and Clothing (ATC)

25.49 Multi Fibre Arrangement (MFA) was created in 1974 to facilitate the process of structural adjustment in the industrial countries in the phase of rapid shift in comparative advantage in textiles and clothing production towards the developing countries. MFA provided rules for the imposition of quotas either through bilateral agreement or unilateral action. In 1994, MFA had 44 members. The Agreement on Textiles and Clothing (ATC) is a WTO Agreement and is an attempt to correct the violation of the GATT principles of nondiscrimination and transparency in respect of Multi Fibre Arrangement that governed textile trade from 1974 to 1994. The ATC provides for continuation of the former MFA quotas until the products are integrated. The agreement provides a balanced transitional programme for the progressive integration of products over a ten year period from 1995. By 1 January 2005, the sector is to be fully integrated into normal WTA rules, ending the quota system. A 10 year transition phase was allowed in four steps. In the first phase from January 1995 to December 1997, percentage of products to be brought under GATT was 6.96% per year, in the second phase from January 1998 to December 2001, it was increased to 8.7% per annum, in the third phase from January 2002 to December 2004, it was increased to 11.05% and from 1 January 2005, no quotas are allowed.

25.50 Liberalisation in Textiles and Clothing has been a key concern of the developing countries in relation to the implementation of the Uruguay Round Agreements. In March 2001, EU had

removed quotas on imports from Sri Lanka in return for it bringing down a range of tariffs and binding all its tariffs for textiles and clothing. The bilateral pact gave Sri Lanka an emerging advantage in the lucrative EU market

25.51 ATC promised to benefit exporters in Asia and the Pacific by improving Market access for exports of textiles and apparel in the large EU and US markets. However, since 1995, both the EU and the US have signed and implemented numerous Preferential Trade Agreements (PTA) including reciprocal Free Trade Agreements and non-reciprocal Preferential Arrangements such as African Growth and Opportunity Agreement. These trade agreements impose distortions on market access. In addition newly emerging exporters particularly China and Vietnam have entered global markets.

25.52 The elimination of quota and the accession of China to the WTO, means that textile and clothing trade is likely to shift toward both China and also the Indian sub continent in the optimistic scenario. Considering that out of US \$ 353 billion in World Textiles and Clothing exported in 2002, Asia (excluding Japan, Australia and New Zealand) accounted for 42.6 per cent. The International Textiles and Clothing (ITC) monograph says that in abide to retain a share of textiles production and trade for their domestic industry, the US and the EU have designed methods to put the Rules of Origin to their advantage. The distorted trade policy adopted in developed countries in textiles will have an adverse impact for the developing countries in the quota free regime. Rule of Origin can be designed to shut out textile imports by requiring that all intermediate inputs (Yarn-Ferro rule) - originate in any member states of a Free Trade Area.. The North American Free Trade Area (NAFTA) adopted a rule, making it more difficult for competitive East Asian Suppliers of textile intermediate production to access the North American Market. If Preferential Trade Agreements continue to proliferate and make use of restrictive Rule of Origin in textile and apparel (as is highly likely) then the elimination of quotas will deliver smaller benefits to Asian pacific developing country suppliers.

25.53 In June 2003, the first WTO Panel report was adopted on the interpretation of the Agreement on Rules of origin. The dispute was brought to the WTO by India about the new US Rules of Origin on textiles and apparel. The new US rules concern fabrics and certain made up non apparel articles assembled in a single country from single country fabric. India's exports of flat goods (eg. bed linen and home furnishing articles) were affected by the modification.

25.54 India's share in global exports is only three per cent compared to China's 14 per cent. China is stated to be a serious competitive threat to India. The export share of Korea (6%) and Taiwan (5.5%) are ahead of India while Thailand (2.3%) and Indonesia (2%) are close to India

25.55 The total apparel market in India including tailored and ready made goods is estimated to be US \$ 20 billion. Readymade apparel accounts for only 20 per cent of the domestic market. However brands accounts for nearly 2/3 of readymade apparel. The estimated branded apparel market was Rs. 52 billion in 1998-99 which increased to Rs. 90.04 billion in 2001-02.

25.56 Overall there is low level of modernisation in most levels of the clothing and textiles value chain especially in weaving and garmentry. Among Powerlooms which produce 60 per cent of fabric output, less than 2 per cent are shuttle less looms. In the apparel sector also, India has a much lower investment especially in special purpose machines. More investment is needed in cutting and finishing machineries as shown by a recent study (Box 25.5)

25.57 The textile Upgradation fund scheme was launched by the Ministry of Textiles in 1999 with a corpus of Rs. 25000 crores. Some textile firms in India are upgrading capability by not only diversifying product portfolios but moving to high value added cloth such as technical textiles (heat resistant, acid resistant etc). The emergence of branding is also taking place. Branding which began in men's wear is slowly moving into women's wear and sports wear areas.

#### BOX-25.5

##### Major Findings of a Study on Textiles

A recent study by United States International Trade Commission (USITC, 2004) covering the 35 major foreign supplies from developing countries to the US market for textiles and clothing predicts that the US clothing imports will largely come from two types of suppliers once quotas are removed. First - the most competitive Asian suppliers - China, India and potentially Indonesia. The second tier - Mexico, Caribbean etc.

Low cost suppliers such as China and Vietnam have emerged recently as powerful competitors for US market in clothing. The total production of fabrics in all the three sectors combined was 42 billion square meters with 59% of the total fabric production produced by the Powerloom sector, 19% by handloom sector and 17% by the knit (hosiery) yarn sector.

Cotton is the predominant fabric used in the Indian textile industry. Nearly 60% of overall consumption in textiles and 75% in spinning mills is cloth. In 2001 cotton fibre production was of the order of 14 million bales and was declining steadily. In 2000 and 2001, India imported 2 million bales of cotton fibre.

Silk - India is the largest producer of Silk, constituting 18% of World production.

Apparel/Clothing: The total apparel market in India including tailored and ready made goods is estimated to be US \$ 20 billion.

More than 50% of Indian market is for traditional wear (Sari, dhoti, Salwar etc.). The Western apparel sector market is around \$ US 9 billion, of which exports account for about US \$ 5.5 billion

in 2000-01. The \$ 3.5 billion domestic market is eventually urban areas, where the consignment of readymade apparel has risen significantly in recent years.

Ready made apparel accounts for only 20% of the domestic market. However brands account for nearly 2/3 of ready made apparel.

China is moving to high value processed fabrics with sizeable investment in value added products. India is still in the phase of upgrading the commodity end (yarn & grey fabric). China and other developing countries are emerging as serious competitors to India.

Process	Determinants of competitive Advantage	India's Competitive Position	Emerging Competition
Spinning	Quality, cotton price	Medium	India, Turkey
Weaving	Technology, automation, power, finance	Low	Vietnam, Philippines
Processing	Scale economy, technology, environment issues, finance	China, Vietnam, Low	Philippines
Garmentry	Labour cost, productivity, brand fashion design	Medium	Bangladesh, Sri Lanka, Morocco, East Europe, Mexico, East Europe

Overall there is low level of modernisation in clothing and textiles and in weaving and in garmentry. Among Powerlooms which produce around 60% of fabric output, less than 1% are shuttleless looms. Even in Pakistan 63% of its looms are Shuttleless

In the apparel sector as well, India has a much lower investment . More investment is needed in cutting machine and finishing machines. Textile industry which has the potential to emerge as global player.

*Source : Washington State University*

### General Agreement on Trade in Services (GATS)

25.58 Like other WTO agreements, GATS is a framework agreement. Its actual content, and hence its implication, at the national level largely depends on individual country's commitments. Unless explicitly indicated other wise, commitments are bound, which means that their modification or withdrawal may give rise to requests for compensation from affected countries. As a result, commitments virtually guarantee a minimum level of market access to foreign service providers.

25.59 The General Agreement on Trade in Services (GATS) classifies services into 155 service types, and differentiates between four Modes of supply (Box- 25.6)

### Health Services

25.60 It is often claimed that health services represent an area in which developing countries have the potential to become major exporters either by attracting foreign patients to domestic hospitals and health care facilities or by sending health workers abroad temporarily. Cuba provides an example for this. There, Government policy is to make Cuba into a World medical lender. A trading company, SERVIMED, was created by the government to offer tourism/health packages. In 1995-96, it was reported that 25000 patients and 1500 students went to Cuba for treatment and training generating revenue for Cuba of \$ 25 million in the year. Cost savings for both patients and insurers can be very significant. It was

**BOX-25.6****Modes of supply**

**Mode 1** - Cross border supply - service is supplied directly to a consumers' country of residence from a supplier's country of residence (eg. legal advice given from abroad by letter or telephone, Provision of diagnosis or treatment planning services in country A by suppliers in country B via telemedicine)

**Mode 2** - Consumption abroad - a service is supplied to a consumer by the consumer physically moving to the suppliers country of residence to receive the serve (eg. Visit to a low office abroad, movement of patients from country A to country B for treatment)

**Mode 3** - Commercial presence: This is where supply of service by a commercial organisation involves moving to a consumer's country of residence (FDI for instance, establishment of or investment in hospitals in country A whose owners are from country B)

**Mode 4** - Presence of natural persons: This is where a service is supplied by the (typically temporary) movement of service provided to the consumer' country of residence (eg. labour mobility of the service provided, service provision in country A by health professionals who are nationals of country B)

reported that cost of coronary bypass surgery in India is about five percent of that in developed countries. The UN and WHO estimate the cost of liver transplants in India to be about one tenth of that in the US.

25.61 There are many barriers to international trade in health services, not the least of which is Portability of health insurance coverage. For instance, US Government employee coverage is limited to certified practitioners in the US for a specified state. Another barrier is Visa and house purchase/registration restrictions in the developing world. UN and WHO estimate that three percent of elderly living in OECD countries retiring to developing countries would bring revenues of perhaps \$ 10-15 billion a year in medical expenses to developing countries.

**India's Commitment under the GATS**

25.62 India has scheduled only nine service sectors in the past round of negotiations. These include engineering service, computer and related services, research and development services and technical analysis and testing services under the category of business services, telecommunication services and audiovisual services under the category of communication services, construction and related engineering services, financial services, health related and social services and tourism and related services. In most of the sectors, the specific commitments cover only some of the sub sectors. In health and related services, only hospital services are covered.

25.63 India has made unbound commitments on Mode 1 across the scheduled sectors. Under Mode 4, it is unbound in the sectoral schedules and refer to the horizontal commitments on Mode 4. The latter are in turn subject to the usual conditions on entry and stay and are bound only to business visitors, intra corporate transfers and professionals.

25.64 Mode 4 is the predominant form of India's exports particularly Kerala's in health services and thus should play a central role in India's negotiating strategy in this sector. India should obtain sector specific commitments in addition to the horizontal commitments in Mode 4, and also negotiate for improved market access for specific categories of service providers, with clear specification of educational and other qualifications that must be satisfied. Major limitations in this negotiation are the qualification related conditions and requirement for registration with professional associations. In some EU countries, the market access commitment in Mode 4 for nurses restricts entry to those licensed by domestic professional associations, which in turn require conditions of residency.

25.65 Kerala should take active interaction in formulating a national country position strategy in service sector especially in health sector. Detailed data has to be generated for supporting the argument. This is one of the areas of strength for the state.

25.66 Mode 4 will remain important for a range of services. Even in software industry, the means of service supplying personnel remains crucial. Although the share of onshore services has declined nearly half of Indian software exports are still supplied through the temporary movement of programmers to the client's site overseas. There is no substitute for human labour, at least in some occupation, eg. the caring occupation, personnel services and a range of professional services) and the demand for Mode 4 is likely to increase over time.

#### Barriers

- a) **Visa formalities**
  - One source of problem is that the temporary movement of service providers invariably comes under the purview, not of international trade policy, but of immigration legislation and labour market policy.
- b) **Prohibition and quotas**
  - On foreign providers are imposed either explicitly or through requirements of a prior adequate search for national service provided. (eg. France in construction, research and development, higher education)
- c) **Wage parity conditions**
  - Imply that wages paid to foreign workers should be similar to the existing wages paid to nationals in that Profession. (eg. in the US). It erodes the cost advantages of hiring foreigners and works like a de facto quota.
- d) **Discriminating treatment**
  - Residency or citizenship requirements are frequently imposed as eligible conditions, fully foreign procedures at a disadvantage.
- e) **Non recognition of professional degrees**
  - and licensing requirements in the US, a powerful and diverse lobby used the GATS negotiation to generate a US binding of the HIB Visa provision covering the temporary employment of highly skilled foreign workers in US firm.

25.67 In the case of US , in practice HIB worker can stay for an initial period of three years as committed, but can extend their stay for a maximum of six years. There is an annual cap on the number. of approved HIB Visa, totaling 1,95,000 for the 2001-02 fiscal period, but in the absence of new legislation the cap will reach to only 65000 from 2004 onwards limiting the advantage for the developing countries..

25.68 There are atleast three dimensions to the movement of an individual from one country to another for economic reasons - the length of stay, the level of skills and the nature of the contract. The legal and economic implication of each type of movement are different

25.69 Nothing in the GATS limits the scope of natural persons to particular levels of skill, but the agreement is less clear on other dimension. Japan allows foreign business travellers to stay for a maximum of 90 days but certain categories of intra-corporate transferees can stay as long as 5 years. A clear duration distinction is needed under 'temporary'.

25.70 Most existing commitments under the GATS favours to business travellers and intra corporate transfers who must be managers, executives or specialists. Such commitments are of limited interest to countries that are not significant foreign investors, contracts are often qualified by other restriction, prior employment, navigational quotation, economic needs tests and residency requirements. Several European countries have programmes for less skilled, short term foreign workers - eg. general workers in agriculture, tourism and the hotel trade, project workers in construction etc. These programmes are not included in the GATS commitments.

#### New initiatives for monitoring and promotion of trade in Services

25.71 Timely and more disaggregated information on international transactions in services assumes vital importance for effective monitoring. A Technical group on status of international trade in services appointed by the Reserve Bank of India submitted its report in 2002. Based on the recommendations of the group, the purpose codes for capturing data on international trade in services were revised. The Foreign Trade Policy 2004 suggested the establishment of a Services Export Promotion Council in order to give proper direction, guidance and encouragement to the service sector.

## Regional Trading Agreements (RTAs)

25.72 Along with the evolution of multilateral system, there has also been a parallel movement towards the formation of RTAs. The proliferation of Regional Trade Agreements is fundamentally altering the world trade. The number of RTAs has risen six fold in just two decades. According to WTO, 43 per cent of global merchandise trade is channelised through RTAs and this is expected to cross 50 per cent by 2005. The number of these agreements has more than quadrupled since 1990 rising to about 230 by late 2004. Another 60 agreements are in various stages of negotiation. The European Union and US are playing a prominent role in this proliferation. As agreements proliferate a single country become a member in several different agreements. The average African country belongs to four different agreements and the average Latin American Country belongs to seven agreements.

25.73 Disciplines are lacking with respect to preferential rules and WTO has no mandate to monitor the trade effects of RTAs. Multilateralism will dominate in World trade along with proliferation of RTAs.

25.74. The Indo Sri Lankan Free Trade Agreement allowing free import of pepper has to be modified to safeguard the interest of Kerala farmers. The import of pepper from Sri Lanka has shown a steady increase during the last three years. Indo-ASEAN Negotiations are in an advanced stage in establishing an FTA. Kerala also could exploit the possibilities of these agreements. However more transparency at GOI level is needed to involve state governments also in the negotiation process since trade liberalisation with these countries may have an impact on the economy of the state, especially in rubber, palm oil, marine products and pepper. India's current Regional Trade Engagements at different levels of negotiation / modification are shown in BOX 25.7

25.75 The South Asian Preferential Trade Agreement (SAPTA) among the SAARC countries (Bangladesh, Bhutan, India, Maldives,

Nepal, Pakistan and Sri Lanka) which was signed in April 1993, became operational in December 1995. The Governments of these countries transferred SAPTA into the South Asian Free Trade Agreement (SAFTA) in 2004.

25.76 Government of India and Thailand signed a framework agreement to establish an India-Thailand FTA. The key elements of the agreement cover FTA in Goods, Services and investment and area of economic cooperation. The framework agreement also provides for an Early Harvest Scheme under which common items of exports interest to both sides have been agreed and identified a list of 82 items for exchange of tariff concessions. Tariffs on these items will be phased out in 2 years time frame starting from 1<sup>st</sup> March 2004. The protocol was signed on 30<sup>th</sup> August 2004 in New Delhi. Under FTA in goods, negotiations commenced in January 2004 and expected to conclude by March 2005, FTA in services and investments to conclude by January 2006.

25.77 The tariff reduction envisaged are 50 per cent of applied MFN tariff rates as on 1<sup>st</sup> January 2004 by 28.2.2005, 75 per cent reduction by 28.2.2006 and 100 per cent reduction from 1.3.2006. The major items covered under EHS include mango, marine products (Salmon, Sardine, Mackerel, Crab), Pumps, ball bearings, industrial circuits, disc harrows, diamonds, salt, polyurethanes etc.

**25.78 The fisheries sub sector is likely to be affected adversely from the Indo Thailand Agreement. The matter has to be taken up with Government of India for a possible change in duty structure for fisheries products.**

25.79 RTA represents a fundamental departure from the WTO principle of non discrimination even though it is allowed under the World Trade Agreement. The rules, basket of commodities, nature of agreement and other regulatory frame work will vary for different agreements throwing challenges to the economy of the states in the country. Along with preparation for the multilateral trade, the opportunities as well as threats of regionalism must be tackled effectively at the state level.

**BOX-25.7****India's Current Regional Trade Agreement Engagements**

1. Framework Agreement on Comprehensive Economic Co-operation with ASEAN countries
2. Bangladesh-India-Sri Lanka - Thailand Economic co-operation (BIMST EC FTA)
3. India Singapore Comprehensive Economic Co-operation Agreement (CECA)
4. Framework Agreement for establishing Free trade between India and Thailand
5. India-SriLanka Bilateral Free Trade Areas and the Proposal for Comprehensive Economic Partnership Agreement.
6. Agreement on South Asia Free Trade Area (SAFRA)
7. India -Mercosur FTA
8. India-Southern African Customs Union Framework Agreement

Joint Study group with Mauritius

India-GCC Framework Agreement

Joint Study group with China

Joint study group between India, Korea, Japan

Bangkok Agreement

**WTO and Environment**

25.80 Environmental issues began to be systematically addressed in the WTO following the decisions on Trade and Environment taken towards the end of the Uruguay Round at Marrakesh in 1994. The Committee on Trade and Environment was established in the same year. In 2001, environment was explicitly put on the negotiating agenda in the Doha Ministerial Declaration and today environment has been mainstreamed into the multilateral trading system. The important multilateral Environmental Agreements include the convention on International trade in Endangered species of Wild

flora and fauna, the Montreal Protocol on substances that deplete the ozone layer, the Basel Convention on the control of Transboundary Movement of Hazardous Wastes and their disposal, the Cartagena Protocol on Biosafety, the Rotterdam convention on the prior informed consent procedure for certain Hazardous chemicals and pesticides in International Trade and the Stockholm Convention on persistent organic pollutants.

25.81 There are 238 international environmental agreements under the UNEP, with 28 of them containing a trade measure or provision that can impact trade.

**BOX-25.8****Asbestos Case**

A French Decree (EU) prohibiting the manufacture, sale, export, import and use of asbestos fibers was challenged by Canada in 1998 on the grounds of less favored treatment of imported asbestos as compared to domestic substances for asbestos, contrary to Article III,4 of GATT, 1994. In September 2000, the WTO dispute panel ruled in favour of EU clarifying the following.

- WTO members have the undisputed right to determine the level of health protection they deem appropriate.

**Framework Agreement ( Geneva)**

25.82 The framework agreed by trade Ministers of 147 WTO member countries in Geneva on July 31, 2004 has helped salvage the Doha Development Agenda. The developing countries can derive some satisfaction from the fact that the Geneva accord reflects advances in at least two major areas. First, the developed countries including the EU and the US, have agreed to the eventual elimination of all export subsidies and major cuts in domestic support to their farm sector. In the first year it would be reduced by 20 per cent. Second, three most contentious out of four Singapore issues - investment, competition policy and transparency in Government procurement have been dropped. The only Singapore issue that has been retained is trade facilitation.



25.83 A year long impasse that threatened to derail the Doha round of negotiations finally ended in July 2004 in Geneva, when member countries reached a compromise. The Doha round launched in Qatar in 2001, ground to a halt in Cancun, Mexico in September 2003 over a series of disagreements. The developing countries demanded elimination of subsidies on cotton and other key agricultural exports, while industrial countries insisted on introducing into the round a set of four completely new areas. However the present agreement reached is only a framework agreement, details of which have to be worked out where statistical *tools* may perhaps clog the expected advantage for the developing countries. Again some of the reduction commitments are from the bound rate not from the applied rate leading to no change in price levels.

**BOX-25.9****Salient features of Geneva Ministerial Meeting.**

- ◆ What appears on paper to be significant commitments. EU to eliminate agricultural subsidies.
- ◆ In the first year of implementation of the agreements of the Doha round, it would reduce by 20 per cent, its trade distorting agricultural supports.
- ◆ Drop three out of four Singapore issues. The talks on agreement on trade facilitation to lower the costs and simplify customs procedures will alone continue.
- ◆ In the first year of implementation, the subsidies would be reduced by 20%, with a harmonizing effect. Blue box support will not exceed 5% of members average total value of agricultural production. Green box criteria will be reviewed.
- ◆ Developing country members may designate an appropriate number of special products to be negotiated for treating as sensitive products.
- ◆ Tariff escalation to be addressed through a formula to be agreed.
- ◆ A special safeguard mechanism will be established for use by developing countries.
- ◆ Article 18 of AoA will be amended to ensure full transparency.
- ◆ Members must intensify their efforts to conclude the negotiations on rule making under GATS.

**Future negotiations?**

25.84 India must press for the formula approach to be the core modality in future negotiations. The formula to be preferred must be a non-linear harmonization formula such as the Swiss formula and not a linear formula as only a non-linear formula can reduce higher tariffs by a greater percentage.

- ◆ India must maintain the stand that the agreed formula must be applied to all bound tariffs without exceptions so that the products of interest to the developing countries are not left out.
- ◆ For bound tariffs, the base rate must be the level at which the binding was made in the Uruguay Round. For unbound tariffs, India must press for the rate prevailing in April 1994 to be the bound rate.

**Immediate State level initiatives needed in the following areas**

- ◆ A WTO unit with professionals including legal experts should be put in place for covering issues in agricultural and industrial products trade, TRIPS, GATS and other areas.
- ◆ A study series should be commenced to analyze the implications for the State as well as to prepare sector specific action plans in the post WTO context.
- ◆ Action plan for Modernisation of Agriculture has to be prepared based on the recommendations of the Report of the Commission on WTO concerns in Agriculture submitted by Dr.M.S.Swaminathan
- ◆ Extensive documentation of ITKs and preparation of Biodiversity Registers to be given top priority. An effective TRIPS cell may be constituted to address comprehensively various areas included in the TRIPS Agreement.
- ◆ Measures to be taken to get protection for various indigenous products with GI appellation like Malabar Pepper, Cochin Ginger, Alleppey finger turmeric, selected handicrafts etc.

- ◆ A Consultative forum to be established for discussing various issues on bilateral trade and WTO.
- ◆ Since regional trading blocks are increasing very fast, State must press the Centre for consultation in the preliminary stage itself. State may have to generate extensive database on regional trading blocks for preparing position papers.
- ◆ Some specialized academic institutions to be identified for providing inputs to Government for Policy decisions and framing State specific views.
- ◆ Development projects have to be initiated immediately for modernization of laboratories for quality checking of products and inputs. Good laboratory practices and good manufacturing practices to be implemented in a phased manner.
- ◆ A proper database on Service sector has to be generated. A system has to be put in place to monitor the service sector. The Foreign Trade Policy 2004 has already announced the establishment of Services Export Promotion Council. Since this is an important area for the state top priority should be given.
- ◆ A modernisation plan suited to the Post WTO context for the apparel industry to be put in place.
- ◆ Quality literacy movement to be put across the supply chain to retain the market share of our exports.
- ◆ New set of income/price stabilisation schemes to be tried out on an experimental basis instead of continuing the traditional procurement operations for price stabilisation. The support price, procurement schemes etc., seems less effective for the stabilisation of prices.
- ◆ Technical assistance for modernisation of fish processing/pre processing units for upgradation to HACCP levels to be given thrust.
- ◆ Experimental database to be created for generating support base for fixing Maximum Residue Levels of various pesticides used in the state.
- ◆ SPS and TBT agreements are potential threats for the export of traditional products from our state. Investment for quality upgradation, packaging units, etc with Private participation in combination with support from GOI and financial institutions should be initiated.

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## Appendix 3.1

Gross National Product at Factor Cost - All India,  
1970-71 to 2002-03

(Rs. crore)

Year	At Current Prices		At Constant Prices	
	Amount	% change	Amount	% change
<i>Old Series (Base 1980-81)</i>				
1970-71	39424	6.4	89465	5.1
1980-81	122772	19.7	122772	7.3
1990-91	470269	16.7	208481	5.2
1991-92	542691	15.4	209621	0.5
1992-93	618969	14.1	220461	5.2
<i>New Series (Base 1993-94)</i>				
1993-94	769265	16.4	769265	6.2
1994-95	901111	17.1	822619	6.9
1995-96	1053736	16.9	884380	7.5
1996-97	1224208	16.2	953667	7.8
1997-98	1376943	12.0	1005750	5.1
1998-99	1583110	15	1070498	6.4
1999-2000	1740207	9.9	1136898	6.2
2000-01@	1900310	9.2	1186246	4.3
2001-02*	2081350	9.5	1257043	6
2002-03**	2224151	6.9	1309531	4.2

@- Provisional, \* - Quick Estimates

\*\* - Revised advance Estimate

Source: - Central Statistical Organisation

## Appendix 3.2

## Net National Product at Factor Cost - All India

(Rs. crore)

Year	At Current Prices			At Constant Prices		
	Rs.Crore	% change	Per Capita NNP (Rs.)	Rs.Crore	% change	Per Capita NNP (Rs.)
<i>Old Series (Base 1980-81)</i>						
1970-71	36503	6.0	674.7	82211	5.2	1519.6
1980-81	110685	19.9	1630.1	110685	7.5	1630.1
1990-91	418074	17.0	4983.0	186446	5.1	2222.2
1991-92	479612	14.7	5602.9	186191	-0.1	2175.1
1992-93	546023	13.8	6261.7	195602	5.1	2243.1
<i>New Series (Base 1993-94)</i>						
1993-94	685912	17.0	7698.2	685912	6.1	7698.2
1994-95	803090	17.1	8844.6	732651	6.8	8068.8
1995-96	936548	16.6	10103.0	785990	7.3	8478.9
1996-97	1089563	16.3	11554.2	847511	7.8	8987.4
1997-98	1224946	12.0	12706.9	890890	4.9	9241.6
1998-99	1415044	15.5	14395.2	948305	6.4	9647
1999-2000	1564048	10.5	15625	1008115	6.3	10071
2000-01	1687818	7.9	16563	1050891	4.2	10313
2001-02	1861117	10.3	17947	1117282	6.3	10774
2002-03*	1995229	7.2	18912	1156714	3.5	10964
2003-04**	2238246	12.2	20860	1253732	8.4	11684

\*- Quick Estimate

\*\*- Advance Estimate

Source: - Central Statistical Organisation

## Appendix 3.3

## Gross Domestic Product at Factor Cost by Economic Activity-All India (at Current Prices)

(Rs crore)					
Sl. No.	Industry	1993-94	2000-01	2001-02	2002-03*
1	2	3	4	5	6
1	Agriculture, Forestry & Fishing	241967	468479	521907	509907
2	Mining & Quarrying	20092	45399	47878	61684
3	Manufacturing	125493	301628	320216	350848
4	Electricity, Gas & Water Supply	18984	43024	44432	47564
5	Construction	40593	116238	124371	138443
6	Trade, Hotels and Restaurant	99369	271511	299512	321994
7	Transport, Storage and Communication	51131	140826	157348	173391
8	Financing, Insurance, Real Estate & Business Services	90084	238860	270251	310358
9	Community, Social & Personal services	93632	277033	305042	335304
<b>Gross Domestic Product at Factor Cost</b>		<b>781345</b>	<b>1902998</b>	<b>2090957</b>	<b>2249493</b>

\* - Quick Estimate

Source: Central Statistical Organisation

## Appendix 3.4

## Gross Domestic Product at Factor Cost by Economic Activity-All India (at 1993-94 prices)

(Rs crore)					
Sl. No.	Industry	1993-94	2000-01	2001-02	2002-03*
1	2	3	4	5	6
1	Agriculture, Forestry & Fishing	241967	286666	305263	289386
2	Mining & Quarrying	20092	27919	28545	31047
3	Manufacturing	125493	206189	213681	227035
4	Electricity, Gas & Water Supply	18984	29632	30692	31861
5	Construction	40593	62651	64562	69273
6	Trade, Hotels and Restaurant	99369	174927	190128	198627
7	Transport, Storage and Communication	51131	98329	106777	119161
8	Financing, Insurance, Real Estate & Business Services	90084	150907	157733	171645
9	Community, social & Personal services	93632	161372	170452	180286
<b>Gross Domestic Product at Factor Cost</b>		<b>781345</b>	<b>1198592</b>	<b>1267833</b>	<b>1318321</b>

\* - Quick Estimate

Source: Central Statistical Organisation

## Appendix 3.5

Gross Domestic Product (Kerala) at Factor Cost by Industry of Origin from 1998-99 to 2003-04 (At Current Prices) (Rs. Lakh)

Sl. No	Industry of Origin	1998-99	1999-2000	2000-01	2001-02	2002-03	2003-04
						(Provisional)	(Quick)
1	2	3	4	5	6	7	8
1	Agriculture	1162233	1270793	1116493	1074685	1088911	1087478
2	Forestry and Logging	104358	122311	196373	119884	116863	111763
3	Fishing	126496	153325	155234	158951	159192	169944
4	Mining and Quarrying	13025	14679	19994	19373	20458	22586
<b>Sub Total: Primary</b>		<b>1406112</b>	<b>1561108</b>	<b>1488094</b>	<b>1372893</b>	<b>1385424</b>	<b>1391771</b>
5	Manufacturing	645220	700918	699137	666504	701236	736817
5.1	Registered	365455	408329	410165	394216	426416	459683
5.2	Un-registered	279765	292589	288972	272288	274820	277134
6	Electricity, Gas & Water Supply	82741	104370	167076	189068	236169	291144
6.1	Electricity	75599	95779	155628	175221	219727	271143
6.2	Gas	1109	1251	1322	1542	1679	1835
6.3	Water Supply	6033	7340	10126	12305	14763	18166
7	Construction	556848	514915	680073	729710	847573	968000
<b>Sub total : Secondary</b>		<b>1284809</b>	<b>1320203</b>	<b>1546286</b>	<b>1585282</b>	<b>1784978</b>	<b>1995961</b>
8	Transport, Storage & Communication	491807	557636	650252	723282	839841	963105
8.1	Railways	19581	21571	18934	22528	24953	27762
8.2	Transport by other means	372295	434417	503899	536959	618065	697055
8.3	Communication	98780	100544	126130	162285	195142	236392
8.4	Storage	1151	1104	1289	1510	1681	1896
9	Trade, Hotel & Restaurants	1187409	1317402	1559009	1566089	1777507	1993379
10	Banking and Insurance	277067	306734	344325	400052	444858	509292
11	Real estate ownership, Business, legal	306129	351569	426012	512267	532644	689920
12	Public Administration	252750	340249	352779	351748	403327	457924
13	Other Services	418612	496543	610235	723306	855849	1015800
<b>Sub Total: Tertiary</b>		<b>2933774</b>	<b>3370133</b>	<b>3942612</b>	<b>4276744</b>	<b>4914026</b>	<b>5629420</b>
<b>Gross State Domestic Product</b>		<b>5624695</b>	<b>6251444</b>	<b>6976992</b>	<b>7234919</b>	<b>8084428</b>	<b>9017152</b>
Mid Year Population('000)		31856	32145	31935	32226	32519	32816
<b>Per capita Income (Rs.)</b>		<b>17657</b>	<b>19448</b>	<b>21847</b>	<b>22451</b>	<b>24861</b>	<b>27478</b>

Source : Department of Economics & Statistics



## Appendix 3.6

**Gross Domestic Product (Kerala) at Factor Cost by Industry of Origin  
(At Constant prices) for the Years From 1998-99 to 2003-04**

[Base year 1993-94]

(Rs.in lakh)

Sl.No	Industry of Origin	1998-99	1999-2000	2000-01	2001-02	2002-2003	2003-04
1	2	3	4	5	6	Provisional	Quick
						7	8
1	Agriculture	721098	733584	576701	562236	569124	547472
2	Forestry and Logging	76121	80620	69423	83026	85185	88337
3	Fishing	68012	73582	73462	74310	75126	77870
4	Mining and Quarrying	8876	9161	10816	10403	11254	12111
	<b>Sub Total: Primary</b>	<b>874107</b>	<b>896947</b>	<b>730402</b>	<b>729975</b>	<b>740689</b>	<b>725790</b>
5	Manufacturing	405645	435887	410022	378872	380263	383514
5.1	Registered	235007	260075	248585	233263	240947	249637
5.2	Un-registered	170638	175812	161437	145609	139316	133877
	Electricity, Gas & Water						
6	Supply	51428	66544	101258	111874	132804	156628
6.1	Electricity	46956	61072	94320	103681	123484	145711
6.2	Gas	725	797	801	912	949	998
6.3	Water Supply	3747	4675	6137	7281	8371	9910
7	Construction	262920	229873	287801	301633	325311	348707
	<b>Sub total : Secondary</b>	<b>719993</b>	<b>732304</b>	<b>799081</b>	<b>792379</b>	<b>838378</b>	<b>888849</b>
8	Transport, Storage & Communication	335720	376540	424216	449490	500763	553497
8.1	Railways	13198	14382	15672	16620	17572	18922
8.2	Transport by other means	236610	265763	305128	315867	349130	381126
8.3	Communication	85159	95678	102567	115843	132771	151981
8.4	Storage	753	717	849	1160	1290	1468
9	Trade, Hotel & Restaurants	614013	665954	786849	766812	824450	888627
10	Banking and Insurance	225614	253597	274620	314134	351372	405600
11	Real estate ownership, Business, Legal	215128	226279	235869	239710	249177	258424
12	Public Administration	157506	205105	204997	197036	212993	228334
13	Other Services	264343	294867	311010	333989	359280	385291
	<b>Sub Total: Tertiary</b>	<b>1812324</b>	<b>2022342</b>	<b>2237561</b>	<b>2301171</b>	<b>2498035</b>	<b>2719773</b>
	<b>Gross State Domestic Product</b>	<b>3406424</b>	<b>3651593</b>	<b>3767044</b>	<b>3823525</b>	<b>4077102</b>	<b>4334412</b>
	Population('000)	31856	32145	31935	32226	32519	32816
	<b>Per capita Income (Rs.)</b>	<b>10693</b>	<b>11360</b>	<b>11796</b>	<b>11865</b>	<b>12538</b>	<b>13208</b>

Source : Department of Economics &amp; Statistics

## Appendix 3.7

**Net Domestic Product (Kerala) at Factor Cost by Industry of Origin  
(At Current Prices) for the Years from 1998-99 to 2003-04**

Sl.No	Industry of Origin	1998-99	1999-2000	2000-01	2001-02	(Rs.in lakh)	
						2002-03 (Provisional)	2003-04 (Quick)
1	2	3	4	5	6	7	8
1	Agriculture	1114695	1222120	1067820	1026498	1040724	1038268
2	Forestry and Logging	103613	121479	195541	118930	115838	110625
3	Fishing	111189	135343	136319	138132	138587	147128
4	Mining and Quarrying	9634	11249	15752	15299	18523	22646
	<b>Sub Total: Primary</b>	<b>1339131</b>	<b>1490191</b>	<b>1415432</b>	<b>1298859</b>	<b>1313672</b>	<b>1318667</b>
5	Manufacturing	558175	612334	603075	550833	571778	592406
5.1	Registered	301905	344959	342089	308834	330224	350854
5.2	Un-registered	256270	267375	260986	241999	241554	241552
6	Electricity, Gas & Water Supply	57794	77090	137799	151264	201144	260205
6.1	Electricity	51536	69490	127404	138551	185381	240068
6.2	Gas	1109	1251	1322	1542	1679	1835
6.3	Water Supply	5149	6349	9073	11171	14084	18302
7	Construction	534385	490976	651710	701567	816259	933928
	<b>Sub total : Secondary</b>	<b>1150354</b>	<b>1180400</b>	<b>1392584</b>	<b>1403664</b>	<b>1589181</b>	<b>1786539</b>
8	Transport, Storage & Communication	324347	376451	448039	508635	596679	699094
8.1	Railways	11155	12818	9170	12364	14102	16100
8.2	Transport by other means*	245683	298910	353109	381115	440329	505474
8.3	Communication	66440	63709	84565	113737	140661	175720
8.4	Storage	1069	1014	1195	1419	1587	1800
9	Trade, Hotel & Restaurant	1167492	1295247	1534603	1470945	1657130	1841859
10	Banking and Insurance	270687	300062	337028	391791	435946	499645
11	Real estate ownership, Business, legal	232654	269437	342265	389379	452497	527419
12	Public Administration	222145	307385	317024	313409	361982	414380
13	Other Services	399286	473431	584536	605045	699281	805710
	<b>Sub Total: Tertiary</b>	<b>2616611</b>	<b>3022013</b>	<b>3563495</b>	<b>3679204</b>	<b>4203515</b>	<b>4788107</b>
	<b>Net State Domestic Product</b>	<b>5106096</b>	<b>5692604</b>	<b>6371511</b>	<b>6381727</b>	<b>7106368</b>	<b>7893313</b>
	Population('000)	31856	32145	31935	32226	32519	32816
	Per capita Income (Rs.)	16029	17709	19951	19803	21853	24053

Source : Department of Economics &amp; Statistics

**Appendix 3.8**  
**Net Domestic Product (Kerala) at Factor Cost by Industry of Origin at constant**  
**prices from 1998-99 to 2003-04**

[Base year 1993-'94]

(Rs.in lakh)

Sl. No	Industry of Origin	1998-99	1999-2000	2000-01	2001-02	2002-03		2003-04
						Provisional	Quick	
1	2	3	4	5	6	7	8	
1	Agriculture	689962	701705	544822	531156	538045		516465
2	Forestry and Logging	75683	80182	68985	82588	84735		87870
3	Fishing	57329	62300	62180	63028	63715		66040
4	Mining and Quarrying	6520	6781	8436	8023	8248		8726
<b>Sub Total: Primary</b>		<b>829494</b>	<b>850968</b>	<b>684423</b>	<b>684795</b>	<b>694743</b>		<b>679101</b>
5	Manufacturing	350458	369687	353129	312153	308808		306700
5.1	Registered	193471	209064	207327	182741	186345		189998
5.2	Un-registered	156987	160623	145802	129412	122463		116702
6	Electricity, Gas & Water Supply	35933	48518	82447	89505	112875		139542
6.1	Electricity	32010	43589	76080	81983	103954		128591
6.2	Gas	725	797	801	912	949		998
6.3	Water Supply	3198	4132	5566	6610	7972		9953
7	Construction	252240	219186	266421	281305	301733		321232
<b>Sub total : Secondary</b>		<b>638631</b>	<b>637391</b>	<b>701997</b>	<b>682963</b>	<b>723416</b>		<b>767474</b>
8	Transport, Storage & Communication	223784	249511	286707	401698	475341		568482
8.1	Railways	6873	7933	8714	9338	9821		10656
8.2	Transport by other means*	152362	167971	200844	305371	363790		439583
8.3	Communication	63855	72954	76362	85920	100541		116890
8.4	Storage	694	653	787	1069	1189		1353
9	Trade, Hotel & Restaurants	598017	648161	768898	725975	775583		829208
10	Banking and Insurance	220560	248188	269289	308500	345526		399668
11	Real estate ownership, Business, legal	165724	171367	167903	148862	149538		148300
12	Public Administration	137964	184368	183591	174767	190108		205227
13	Other Services	250192	281661	293708	323375	349444		376239
<b>Sub Total: Tertiary</b>		<b>1596241</b>	<b>1783256</b>	<b>1970096</b>	<b>2083177</b>	<b>2285540</b>		<b>2527124</b>
<b>Net State Domestic Product</b>		<b>3064366</b>	<b>3271615</b>	<b>3356516</b>	<b>3450935</b>	<b>3703699</b>		<b>3973699</b>
<i>Population('000)</i>		31856	32145	31935	32226	32519		32816
<b>Per capita Income (Rs.)</b>		<b>9619</b>	<b>10178</b>	<b>10510</b>	<b>10709</b>	<b>11389</b>		<b>12109</b>

Source : Department of Economics &amp; Statistics

**Appendix 3.9**

**District wise Distribution of Net State Domestic Product and Per Capita Income of Kerala at Factor Cost  
by Industry of Origin for the year 2001-2002 (at Current Prices)**

(Rs. in Lakh)

Sl.No	Industry of Origin	TVM	KLM	PTA	ALPA	KTM	IKI	EKM	TSR	PLKD	MLPM	KKD	WYD	KNR	KSD	STATE
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	Agriculture	91358	90332	58510	41060	89305	125235	88279	68775	79040	67749	80067	33874	66722	46192	1026498
2	Forestry and Logging	5483	8955	17066	0	892	28687	892	11393	14985	11370	4555	8670	5364	61.8	118930
3	Fishing	6271	29726	166	12501	1022	69	27074	8716	525	12694	27558	0	5373	6437	138132
4	Mining and Quarrying	823	762	327	511	551	182	1550	1112	883	1680	2737	225	2992	964	15299
	<b>Sub Total: Primary</b>	<b>103935</b>	<b>129775</b>	<b>76069</b>	<b>54072</b>	<b>91770</b>	<b>154173</b>	<b>117795</b>	<b>89996</b>	<b>95433</b>	<b>93493</b>	<b>114917</b>	<b>42769</b>	<b>80451</b>	<b>54211</b>	<b>1298859</b>
5	Manufacturing	49796	59655	10576	64007	26385	6995	72599	72544	39715	27286	39881	3250	45885	32279	550833
5.1	Registered	27919	33447	5930	35887	14793	3922	40703	40673	22267	15287	22360	1822	25726	18008	308634
5.2	Unregistered	21877	26208	4646	28120	11592	3073	31896	31871	17448	11979	17521	1428	20159	14181	241999
6	Electricity, Gas & Water supply	25698	14328	7354	12651	13583	12245	17942	13715	9614	5255	10924	1022	4782	2151	151264
6.1	Electricity	21545	13786	6955	11749	12719	12137	16197	12843	9241	4628	9796	928	4157	1870	138551
6.2	Gas	157	133	67	113	103	59	153	148	124	146	136	34	117	52	1542
6.3	Water Supply	3996	409	332	789	761	49	1592	724	249	481	992	60	508	229	11171
7	Construction	75278	44830	21398	42094	39919	13260	131965	74506	38726	54722	77874	8138	57880	20977	701567
	<b>Sub total : Secondary</b>	<b>150772</b>	<b>118813</b>	<b>39328</b>	<b>118752</b>	<b>79887</b>	<b>32500</b>	<b>222506</b>	<b>160765</b>	<b>88055</b>	<b>87243</b>	<b>128679</b>	<b>12410</b>	<b>108547</b>	<b>55407</b>	<b>1403664</b>

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
8	Transport, Storage & Communication	68608	34400	18950	30223	40337	7757	74206	60614	31598	47102	42680	20217	19194	12751	508635	
8.1	Railways	1135	1083	93	846	753	0	1187	878	1847	1270	1104	0	1073	1095	12364	
8.2	Transport by other means	55605	25611	15511	22067	32547	5602	54271	47144	20504	37044	27936	18865	9642	8766	381115	
8.3	Communication	11738	7564	3332	7154	6767	2127	18549	12534	9133	8701	13626	1297	8360	2855	113737	
8.4	Storage	128	142	14	156	270	28	199	58	114	87	14	55	119	35	1419	
9	Trade, Hotel & Restaurants	138122	107820	43246	103407	99730	34567	186957	163570	112821	118264	157097	23241	129296	52807	1470945	
10	Banking and Insurance	40315	24448	22410	27151	30951	13047	56771	41961	30403	24291	30834	8698	26759	13752	391791	
11	Real estate ownership, business & legal	43610	34577	18262	28619	25562	16471	39289	36874	31423	33681	32280	9540	26205	12966	389379	
12	Public Administration	74466	26546	13884	21280	23098	5203	33815	24321	20654	16987	24634	3667	20278	4576	313409	
13	Other Services	78353	44652	21056	44834	48041	17304	62320	58447	41748	56088	57116	13553	42353	19180	605045	
	<b>Sub Total: Tertiary</b>	<b>443472</b>	<b>272443</b>	<b>137808</b>	<b>255514</b>	<b>267739</b>	<b>94349</b>	<b>453358</b>	<b>385787</b>	<b>268647</b>	<b>296413</b>	<b>344641</b>	<b>78916</b>	<b>264085</b>	<b>116032</b>	<b>3679204</b>	
	<b>Net State Domestic Product</b>	<b>698179</b>	<b>521021</b>	<b>253205</b>	<b>428338</b>	<b>439396</b>	<b>281022</b>	<b>793659</b>	<b>636548</b>	<b>452135</b>	<b>477149</b>	<b>588237</b>	<b>134095</b>	<b>453083</b>	<b>225650</b>	<b>6381727</b>	
	<b>Population ('000)</b>	<b>3275</b>	<b>2609</b>	<b>1237</b>	<b>2120</b>	<b>1970</b>	<b>1136</b>	<b>3138</b>	<b>3009</b>	<b>2660</b>	<b>3707</b>	<b>2915</b>	<b>803</b>	<b>2435</b>	<b>1222</b>	<b>32226</b>	
	<b>Per capita Income (Rs.)</b>	<b>21318</b>	<b>19971</b>	<b>20469</b>	<b>20205</b>	<b>22304</b>	<b>24738</b>	<b>25292</b>	<b>21155</b>	<b>17062</b>	<b>12872</b>	<b>20180</b>	<b>16699</b>	<b>18607</b>	<b>18466</b>	<b>19803</b>	

Source : Department of Economics &amp; Statistics

### Appendix 3.10

#### District wise Distribution of Net State Domestic Product and Per Capita Income of Kerala at Factor Cost by Industry of Origin for the year 2001-2002 (at Constant Prices)

Sl.No	Industry of Origin	(Rs. in Lakhs)														Total
		TVM	KLM	PTA	ALPA	KTM	IKI	EKM	TSR	PLKD	MLPM	KKD	WYD	KNR	KSD	
1	Agriculture	47273	46742	30276	21246	46211	64802	45679	35587	40899	35056	41430	17528	34525	23902	531156
2	Forestry and Logging	3807	6219	11851	0	619	19922	619	7912	10406	7895	3163	6021	3725	429	82588
3	Fishing	2861	13564	76	5704	466	32	12353	3977	240	5792	12574	0	2452	2937	63028
4	Mining and Quarrying	432	400	172	268	289	95	813	583	463	881	1435	118	1569	505	8023
	<b>Sub Total: Primary</b>	<b>54373</b>	<b>66925</b>	<b>42375</b>	<b>27218</b>	<b>47585</b>	<b>84851</b>	<b>59464</b>	<b>48059</b>	<b>52008</b>	<b>49624</b>	<b>58602</b>	<b>23667</b>	<b>42271</b>	<b>27773</b>	<b>684795</b>
5	Manufacturing	28219	33806	5994	36273	14952	3955	41138	41111	22507	15452	22599	1842	26002	18293	312153
5.1	Registered	16520	19791	3509	21235	8753	2321	24084	24067	13176	9046	13230	1078	15222	10709	182741
5.2	Unregistered	11699	14015	2485	15038	6199	1644	17054	17044	9331	6406	9369	764	10780	7584	129412
6	Electricity, Gas & Water Supply	15206	8478	4352	7486	8037	7246	10618	8115	5688	3109	6463	605	2829	1273	89505
6.1	Electricity	12748	8157	4116	6952	7526	7182	9585	7600	5468	2738	5796	549	2459	1107	81983
6.2	Gas	94	79	40	67	61	35	91	87	73	86	80	20	69	30	912
6.3	Water Supply	2364	242	196	467	450	29	942	428	147	285	587	36	301	136	6610
7	Construction	30184	17975	8580	16878	16006	5317	52913	29875	15528	21942	31225	3263	23208	8411	281305
	<b>Sub total : Secondary</b>	<b>73609</b>	<b>60259</b>	<b>18926</b>	<b>60637</b>	<b>38995</b>	<b>16528</b>	<b>104669</b>	<b>79101</b>	<b>43723</b>	<b>40503</b>	<b>60287</b>	<b>5710</b>	<b>52039</b>	<b>27977</b>	<b>682963</b>

Sl.No	Industry of Origin	TVM	KLM	PTA	ALPA	KTM	IKI	EKM	TSR	PLKD	MLPM	KKD	WYD	KNR	KSD	Total
8	Transport, Storage & Communication	54372	27160	15027	23842	31961	6117	58546	47949	24809	37279	33522	16137	14942	10035	401698
8.1	Railways	857	818	70	639	569	0	896	663	1395	959	834	0	811	827	9338
8.2	Transport by other means	44552	20521	12429	17681	26079	4489	43485	37774	16429	29682	22384	15116	7726	7024	305371
8.3	Communication	8867	5714	2517	5404	5112	1607	14015	9468	6899	6573	10293	979	6315	2157	85920
8.4	Storage	96	107	11	118	201	21	150	44	86	65	11	42	90	27	1069
9	Trade, Hotel & Restaurants	68169	53214	21344	51036	49221	17060	92273	80728	55682	58368	77534	11470	63813	26063	725975
10	Banking and Insurance	31745	19250	17646	21379	24372	10273	44702	33040	23940	19127	24279	6849	21070	10828	308500
11	Real estate ownership, business & legal	16673	13219	6982	10941	9780	6297	15020	14097	12013	12677	12341	3647	10018	4957	148862
12	Public Administration	41525	14803	7742	11867	12880	2901	18857	13562	11517	9472	13737	2045	11307	2552	174767
13	Other Services	41877	23865	11253	23962	25676	9249	33307	31238	22313	29977	30527	7244	22636	10251	323375
	<b>Sub Total: Tertiary</b>	<b>254361</b>	<b>151511</b>	<b>79994</b>	<b>143027</b>	<b>153890</b>	<b>51897</b>	<b>262705</b>	<b>220614</b>	<b>150274</b>	<b>167100</b>	<b>191940</b>	<b>47392</b>	<b>143786</b>	<b>64686</b>	<b>2083177</b>
	<b>Net State Domestic Product</b>	<b>382343</b>	<b>278695</b>	<b>141295</b>	<b>230882</b>	<b>240470</b>	<b>153276</b>	<b>426838</b>	<b>347774</b>	<b>246005</b>	<b>257227</b>	<b>310829</b>	<b>76769</b>	<b>238096</b>	<b>120436</b>	<b>3450935</b>
	<b>Population('000)</b>	<b>3275</b>	<b>2609</b>	<b>1237</b>	<b>2120</b>	<b>1970</b>	<b>1136</b>	<b>3138</b>	<b>3009</b>	<b>2650</b>	<b>3707</b>	<b>2915</b>	<b>803</b>	<b>2435</b>	<b>1222</b>	<b>32226</b>
	<b>Per capita Income (Rs.)</b>	<b>11675</b>	<b>10682</b>	<b>11422</b>	<b>10891</b>	<b>12207</b>	<b>13493</b>	<b>13602</b>	<b>11558</b>	<b>9283</b>	<b>6939</b>	<b>10663</b>	<b>9560</b>	<b>9778</b>	<b>9856</b>	<b>10709</b>

Source : Department of Economics & Statistics

**Appendix 3.11**

**District wise Distribution of Net State Domestic Product and Per Capita Income of Kerala at Factor Cost by Industry of Origin for the year 2002-03 (at Current Prices) \***

(Rs. In lakhs)

Sl.No	Industry of Origin	TVM	KLM	PTA	ALPA	KTM	IKI	EKM	TSR	PLKD	MLPM	KKD	WYD	KNR	KSD	STATE
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	Agriculture	92624	91584	59321	41629	90543	126968	89502	69729	80136	68688	81176	34344	67647	46833	1040724
2	Forestry and Logging	5340	8723	16623	0	869	27939	869	11097	14596	11074	4437	8445	5224	602	115538
3	Fishing	6292	29824	166	12542	1026	69	27163	8745	527	12736	27648	0	5391	6458	138587
4	Mining and Quarrying	997	922	396	619	667	220	1876	1347	1069	2034	3314	272	3623	1167	18523
	<b>Sub Total: Primary</b>	<b>105253</b>	<b>131053</b>	<b>76506</b>	<b>54790</b>	<b>93105</b>	<b>155196</b>	<b>119410</b>	<b>90918</b>	<b>96328</b>	<b>94532</b>	<b>116575</b>	<b>43061</b>	<b>81885</b>	<b>55060</b>	<b>1313672</b>
5	Manufacturing	51688	61923	10978	66441	27388	7262	75361	75304	41225	28303	41397	3373	47629	33506	571778
5.1	Registered	29852	35763	6340	38372	15818	4194	43524	43491	23809	16346	23908	1948	27508	19351	330224
5.2	Unregistered	21836	26160	4638	28069	11570	3068	31837	31813	17416	11957	17489	1425	20121	14155	241554
6	Electricity, Gas & Water Supply	34038	19105	9797	16837	18089	16365	23846	18259	12814	6957	14505	1355	6329	2848	201144
6.1	Electricity	28827	18445	9306	15720	17018	16239	21672	17185	12365	6192	13106	1242	5561	2503	185381
6.2	Gas	173	145	73	123	112	64	167	161	135	158	148	37	127	56	1679
6.3	Water Supply	5038	515	418	994	959	62	2007	913	314	607	1251	76	641	289	14084
7	Construction	87585	52159	24896	48976	46445	15427	153538	86687	45057	63668	90605	9469	67341	24406	816259
	<b>Sub total : Secondary</b>	<b>173311</b>	<b>133187</b>	<b>45671</b>	<b>132254</b>	<b>91922</b>	<b>39054</b>	<b>252745</b>	<b>180250</b>	<b>99096</b>	<b>98928</b>	<b>146507</b>	<b>14197</b>	<b>121299</b>	<b>60760</b>	<b>1589181</b>
8	Transport, Storage & Communication	80198	40338	22164	35483	47132	9135	87220	71036	37219	55106	50402	23462	22836	14948	596679
8.1	Railways	1295	1235	106	965	859	0	1354	1001	2107	1448	1259	0	1224	1249	14102
8.2	Transport by other means	64244	29590	17921	25495	37604	6473	62703	54469	23690	42800	32276	21796	11140	10128	440320
8.3	Communication	14516	9354	4121	8848	8369	2630	22941	15501	11295	10761	16851	1604	10339	3531	140661
8.4	Storage, Hotel & Restaurants	143	159	16	175	300	32	222	65	127	97	16	62	133	40	1587
9	Banking and Insurance	155605	121468	48720	116496	112353	38943	210621	184273	127102	133232	176981	26183	145662	59491	1657130
10	Real estate ownership, business & legal	44859	27203	24936	30211	34440	14517	63168	46690	33829	27029	34309	9678	29775	16302	436946
11	Public Administration	50680	40182	21222	33259	29729	19141	45657	42851	36517	39141	37512	11086	30453	15067	462497
12	Other Services	86007	30660	16036	24579	26678	6009	39057	28090	23855	19619	28452	4235	23420	5285	361982
13		90557	51607	24335	51817	55523	19999	72026	67551	48250	64823	66012	15664	48950	22167	699281
	<b>Sub Total: Tertiary</b>	<b>507906</b>	<b>311458</b>	<b>157413</b>	<b>291845</b>	<b>305855</b>	<b>107744</b>	<b>517749</b>	<b>440491</b>	<b>306772</b>	<b>338950</b>	<b>393668</b>	<b>90308</b>	<b>301096</b>	<b>132260</b>	<b>4203515</b>
	<b>Net State Domestic Product</b>	<b>786470</b>	<b>575698</b>	<b>279590</b>	<b>478889</b>	<b>490882</b>	<b>301994</b>	<b>889904</b>	<b>711659</b>	<b>502196</b>	<b>532410</b>	<b>656750</b>	<b>147566</b>	<b>504280</b>	<b>248080</b>	<b>7106368</b>
	Population('000)	3306	2627	1242	2130	1983	1141	3168	3035	2675	3767	2942	816	2451	1236	32519
	Per capita Income (Rs.)	23789	21915	22511	22483	24755	26467	28090	23448	18774	14134	22323	18084	20574	20071	21853

\* Provisional Estimate Source : Department of Economics & Statistics



**Appendix 3.12**  
**District wise Distribution of Net State Domestic Product and Per Capita Income**  
**of Kerala at Factor Cost by Industry of Origin for the year 2002-2003 (at Constant Prices)(Rs.in Lakh)**

<b>Base Year 1993-94</b>																
Sl.No	Industry of Origin	TVM	KLM	PTA	ALPA	KTM	IKI	EKM	TSR	PLKD	MLPM	KKD	WYD	KNR	KSD	STATE
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	Agriculture	47886	47348	30669	21522	46810	65641	46272	36049	41429	35511	41968	17755	34973	24212	538045
2	Forestry and Logging	3906	6381	12159	0	636	20436	636	8118	10677	8101	3245	6177	3822	441	84736
3	Fishing	2893	13711	76	5766	471	32	12488	4020	242	5855	12713	0	2479	2989	63715
4	Mining and Quarrying	444	411	177	275	297	98	836	600	476	906	1476	121	1611	520	8248
	<b>Sub Total: Primary</b>	<b>55129</b>	<b>67851</b>	<b>43081</b>	<b>27563</b>	<b>48214</b>	<b>86207</b>	<b>60232</b>	<b>48787</b>	<b>52824</b>	<b>50373</b>	<b>59402</b>	<b>24053</b>	<b>42885</b>	<b>28142</b>	<b>694743</b>
5	Manufacturing	27917	33444	5929	35883	14792	3922	40701	40670	22265	15286	22357	1822	25724	18096	308808
5.1	Registered	16846	20181	3578	21653	8926	2367	24560	24542	13435	9224	13491	1099	15523	10920	186345
5.2	Unregistered	11071	13263	2351	14230	5866	1555	16141	16128	8830	6062	8866	723	10201	7176	122463
6	Electricity, Gas & Water Supply	19115	10717	5496	9448	10149	9177	13380	10245	7188	3906	8142	760	3554	1598	112875
6.1	Electricity	16165	10343	5218	8815	9543	9106	12153	9637	6934	3472	7350	696	3119	1403	103954
6.2	Gas	98	82	41	70	63	36	93	91	76	90	84	21	72	32	949
6.3	Water Supply	2852	292	237	563	543	35	1134	517	178	344	708	43	363	163	7972
7	Construction	32376	19281	9203	18104	17169	5703	56756	32043	16656	23535	33492	3500	24893	9022	301733
	<b>Sub total : Secondary</b>	<b>79408</b>	<b>63442</b>	<b>20628</b>	<b>63435</b>	<b>42110</b>	<b>18802</b>	<b>110837</b>	<b>82958</b>	<b>46109</b>	<b>42727</b>	<b>63991</b>	<b>6082</b>	<b>54171</b>	<b>28716</b>	<b>723416</b>
8	Transport, Storage & Communication	64462	32112	17838	28190	37874	7252	69309	56827	29207	44133	39600	19200	17546	11791	475341
8.1	Railways	902	860	74	672	598	0	943	697	1467	1009	877	0	852	870	9821
8.2	Transport by other means	53077	24447	14806	21063	31068	5348	51803	45001	19572	35360	26666	18008	9204	8367	363790
8.3	Communication	10376	6686	2946	6324	5982	1880	16398	11080	8073	7691	12045	1146	7390	2524	100541
8.4	Storage	107	119	12	131	226	24	165	49	95	73	12	46	100	30	1189
9	Trade, Hotel & Restaurants	72827	56850	22802	54523	52585	18226	98578	86245	59487	62357	82832	12254	68174	27843	775583
10	Banking and Insurance	35555	21561	19764	23945	27297	11506	50065	37006	26813	21423	27193	7671	23599	12128	345526
11	Real estate ownership, business & legal	16748	13279	7013	10991	9825	6325	15088	14161	12068	12935	12397	3664	10064	4980	149538
12	Public Administration	45170	16102	8422	12908	14011	3156	20513	14752	12528	10304	14942	2224	12300	2776	190108
13	Other Services	45252	25789	12161	25894	27746	9994	35993	33756	24112	32393	32988	7828	24461	11077	349444
	<b>Sub Total: Tertiary</b>	<b>280014</b>	<b>165693</b>	<b>88000</b>	<b>156451</b>	<b>169338</b>	<b>56459</b>	<b>289546</b>	<b>242747</b>	<b>164215</b>	<b>183545</b>	<b>209952</b>	<b>52841</b>	<b>156144</b>	<b>70595</b>	<b>2285540</b>
	<b>Net State Domestic Product</b>	<b>414551</b>	<b>296986</b>	<b>151709</b>	<b>247449</b>	<b>259662</b>	<b>161468</b>	<b>460615</b>	<b>374492</b>	<b>263148</b>	<b>276645</b>	<b>333345</b>	<b>82976</b>	<b>253200</b>	<b>127453</b>	<b>3703699</b>
	Population('000)	3306	2627	1242	2130	1983	1141	3168	3035	2675	3767	2942	816	2451	1236	32519
	<b>Per capita Income (Rs.)</b>	<b>12539</b>	<b>11305</b>	<b>12215</b>	<b>11617</b>	<b>13094</b>	<b>14151</b>	<b>14540</b>	<b>12339</b>	<b>9837</b>	<b>7344</b>	<b>11331</b>	<b>10169</b>	<b>10330</b>	<b>10312</b>	<b>11389</b>

Source : Department of Economics & Statistics



## Appendix 3.14

**District wise Distribution of Net State Domestic Product and Per Capita Income of Kerala at Factor Cost by Industry of Origin for the Year 2003-04 (at constant prices)**  
**Base Year 1993-94**  
**(Rs. In lakhs)**

Sl.No	Industry of Origin	TVM	KLM	PTA	ALPA	KTM	IKI	EKM	TSR	PLKD	MLPM	KKD	WYD	KNR	KSD	STATE
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	Agriculture	45965	45449	29439	20659	44932	63009	44416	34603	39768	34087	40284	17043	33570	23241	516465
2	Forestry and Logging	4051	6617	12609	0	659	21194	659	8418	11072	8400	3365	6406	3963	457	87870
3	Fishing	2998	14212	79	5977	489	33	12944	4167	251	6089	13175	0	2569	3077	66040
4	Mining and Quarrying	469	435	187	291	314	104	884	634	503	958	1561	128	1708	550	8726
	<b>Sub Total: Primary</b>	<b>53483</b>	<b>66713</b>	<b>42314</b>	<b>26927</b>	<b>46394</b>	<b>84340</b>	<b>58903</b>	<b>47822</b>	<b>51594</b>	<b>49514</b>	<b>58385</b>	<b>23577</b>	<b>41810</b>	<b>27325</b>	<b>679101</b>
5	Manufacturing	27726	33216	5889	35639	14691	3895	40421	40392	22113	15182	22205	1810	25548	17973	306700
5.1	Registered	17176	20577	3648	22078	9101	2413	25040	25023	13699	9405	13756	1121	16827	11134	189898
5.2	Unregistered	10550	12639	2241	13561	5590	1482	15381	15369	8414	5777	8449	689	9721	6839	116702
6	Electricity, Gas & Water Supply	23658	13245	6784	11681	12550	11347	16548	12661	8879	4818	10063	938	4387	1973	139542
6.1	Electricity	19995	12785	6455	10905	11805	11265	15032	11820	8577	4295	8091	862	3658	1736	128591
6.2	Gas	103	86	43	73	67	38	99	96	80	94	88	22	76	33	998
6.3	Water Supply	3560	364	296	703	678	44	1417	645	222	429	884	54	453	204	9853
7	Construction	34468	20527	9798	18274	18278	6071	60423	34115	17732	25056	35657	3728	26502	9605	321232
	<b>Sub total: Secondary</b>	<b>85852</b>	<b>66988</b>	<b>22481</b>	<b>66594</b>	<b>45519</b>	<b>21313</b>	<b>117392</b>	<b>87168</b>	<b>48724</b>	<b>45056</b>	<b>87925</b>	<b>6474</b>	<b>56437</b>	<b>29551</b>	<b>767474</b>
8	Transport, Storage & Communication	77289	38381	21410	33682	45400	8675	82876	68069	34738	52846	47190	23145	20751	14022	568482
8.1	Railways	978	833	80	729	649	0	1023	757	1592	1094	952	0	825	944	10656
8.2	Transport by other means	64135	29540	17881	25452	37540	6482	62599	54376	23650	42727	32221	21759	11121	10110	438583
8.3	Communication	12064	7773	3425	7352	6955	2186	18065	12881	8386	8942	14003	1333	6591	2934	116890
8.4	Storage	122	135	14	148	256	27	189	55	108	83	14	53	114	34	1353
9	Trade, Hotel & Restaurants	77863	60781	24379	58293	56220	19486	105392	92210	63600	66668	88559	13101	72887	29769	829208
10	Banking and Insurance	41126	24939	22861	27697	31574	13309	57913	42804	31014	24779	31454	8873	27297	14028	399668
11	Real estate ownership, business & legal	16610	-13169	6855	10900	9743	6273	14884	14044	11968	12828	12294	3633	9981	4938	148300
12	Public Administration	48782	17383	8082	13935	15125	3407	22144	15926	13524	11123	18131	2401	13278	2996	205227
13	Other Services	48723	27766	13083	27879	29873	10780	38753	36345	25960	34878	35517	8428	26337	11927	376839
	<b>Sub Total: Tertiary</b>	<b>310383</b>	<b>182419</b>	<b>97790</b>	<b>172386</b>	<b>187935</b>	<b>61910</b>	<b>322042</b>	<b>289398</b>	<b>180902</b>	<b>203122</b>	<b>231145</b>	<b>59581</b>	<b>170531</b>	<b>77680</b>	<b>2527124</b>
	<b>Net State Domestic Product</b>	<b>449718</b>	<b>316120</b>	<b>162585</b>	<b>265907</b>	<b>279848</b>	<b>167583</b>	<b>498337</b>	<b>404388</b>	<b>281120</b>	<b>287692</b>	<b>357455</b>	<b>89932</b>	<b>268778</b>	<b>134556</b>	<b>3973699</b>
	Population('000)	3337	2646	1248	2141	1896	1148	3198	3059	2700	3829	2970	829	2468	1251	32816
	<b>Per capita Income (Rs.)</b>	<b>13477</b>	<b>11947</b>	<b>13048</b>	<b>12420</b>	<b>14020</b>	<b>14622</b>	<b>15583</b>	<b>13220</b>	<b>10412</b>	<b>7775</b>	<b>12036</b>	<b>10812</b>	<b>10891</b>	<b>10756</b>	<b>12109</b>

Source : Department of Economics &amp; Statistics

**Appendix 3.15**  
**Population of States/Union Territories by sex and percentage share of population in total population - 2001**

Sl.No.	India/State/Union Territory	Total population			Percentage share in total population	Population density (per sq.km.)
		Persons	Males	Females		
1	2	3	4	5	6	7
	<b>INDIA</b>	1027015247	531277078	495738169	100	324
1	Andaman & Nicobar Islands	356,265	192,985	163,280	0.03	43
2	Andhra Pradesh	75,727,541	38,286,811	37,440,730	7.37	275
3	Arunachal Pradesh	1,091,117	573,951	517,166	0.11	13
4	Assam	26,638,407	13,787,799	12,850,608	2.59	340
5	Bihar	82,878,796	43,153,964	39,724,832	8.07	880
6	Chandigarh	900,914	508,224	392,690	0.09	7903
7	Chatisgarh	20,795,956	10,452,426	10,343,530	2.03	154
8	Dadra & Nagar Haveli	220,451	121,731	98,720	0.02	449
9	Daman & Diu	158,059	92,478	65,581	0.02	1411
10	Delhi	13,782,976	7,570,890	6,212,086	1.34	9294
11	Goa	1,343,998	685,617	658,381	0.13	363
12	Gujarat	50,596,992	26,344,053	24,252,939	4.93	258
13	Haryana	21,082,989	11,327,658	9,755,331	2.05	477
14	Himachal Pradesh	6,077,248	3,085,256	2,991,992	0.59	109
15	Jammu & Kashmir	10,069,917	5,300,574	4,769,343	0.98	99
16	Jharkhand	26,909,428	13,861,277	13,048,151	2.62	338
17	Karnataka	52,733,958	26,856,343	25,877,615	5.14	275
18	<b>Kerala</b>	<b>31,838,619</b>	<b>15,468,664</b>	<b>16,369,955</b>	<b>3.1</b>	<b>819</b>
19	Lakshadweep	60,595	31,118	29,477	0.01	1894
20	Madhya Pradesh	60,385,118	31,456,873	28,928,245	5.88	196
21	Maharashtra	96,752,247	50,334,270	46,417,977	9.42	314
22	Manipur	2,388,634	1,207,338	1,181,296	0.23	107
23	Meghalaya	2,306,069	1,167,840	1,138,229	0.22	103
24	Mizoram	891,058	459,783	431,275	0.09	42
25	Naagaland	1,988,636	1,041,686	946,950	0.19	120
26	Orissa	36,706,920	18,612,340	18,094,580	3.57	236
27	Pondicherry	973,829	486,705	487,124	0.09	2029
28	Punjab	24,289,296	12,963,362	11,325,934	2.37	482
29	Rajasthan	56,473,122	29,381,657	27,091,465	5.5	165
30	Sikkim	540,493	288,217	252,276	0.05	76
31	Tamil Nadu	62,110,839	31,268,654	30,842,185	6.05	478
32	Tripura	3,191,168	1,636,138	1,555,030	0.31	304
33	Uttar Pradesh	1,66,052,859	87,466,301	78,586,558	16.17	689
34	Uttaranchal	8,479,562	4,316,401	4,163,161	0.83	159
35	West Bengal	80,221,171	41,487,694	38,733,477	7.81	904

Source: Census of India - 2001

**Appendix 3.16**  
**District-wise Population, Decadal Growth Rate, Sex-ratio and Population Density**

Sl.No.	State/District	Population 2001			Percentage decadal growth rate			Sex-ratio (No.of females per 1000 males)			Population density per sq.km.		
		Persons	Males	Females	1981-91	1991-01	1991-01	1991	2001	1991	2001	1991	2001
1	2	3	4	5	6	7	8	9	10	11	12	13	14
	<b>Kerala</b>	<b>31838619</b>	<b>15468664</b>	<b>16367955</b>	<b>14.32</b>	<b>9.42</b>	<b>1036</b>	<b>1058</b>	<b>749</b>	<b>819</b>			
1	Kasaragod	1203342	587763	615579	22.78	12.3	1026	1047	538	604			
2	Kannur	2412365	1154144	1258221	16.63	7.13	1049	1090	759	813			
3	Wayanad	786627	393397	393230	21.32	17.04	966	1000	315	369			
4	Kozhikode	2878498	1398674	1479824	16.69	9.87	1027	1058	1118	1228			
5	Malappuram	3629640	1759479	1870101	28.87	17.22	1053	1063	872	1022			
6	Palakkad	2617072	1265794	1351278	16.52	9.86	1061	1068	532	584			
7	Thrissur	2975440	1422047	1553393	12.2	8.7	1085	1092	903	981			
8	Ernakulam	3098378	1535881	1562497	11.42	9.09	1000	1017	963	1050			
9	Idukki	1128605	566405	562200	10.45	6.96	975	999	236	252			
10	Kottayam	1952901	964433	988468	7.71	6.76	1003	1025	828	884			
11	Alappuzha	2105349	1012572	1092777	7.28	5.21	1051	1079	1415	1489			
12	Pathanamthitta	1231577	588035	643542	5.6	3.72	1062	1094	450	467			
13	Kollam	2584118	1248616	1335502	10.68	7.33	1035	1070	967	1038			
14	Thiruvananthapuram	3234707	1571424	1663283	13.5	9.78	1036	1058	1344	1476			

Source: Census of India - 2001

Appendix 3.17  
Total Workers, Main Workers and Marginal Workers in Kerala

Year	Total/Rural/Urban	Persons/Males/Females	Total Population		Total Workers		Main Workers		Marginal Workers		Non Workers	
			No.	%	No.	%	No.	%	No.	%	No.	%
1971	Total	Persons	21347375	6358814	29.79	6216459	29.12	142355	0.67	14988561	70.21	
		Males	10587851	4787702	45.22	4764582	45.00	23120	0.22	5800149	54.78	
		Females	10759524	1571112	14.60	1451877	13.49	119235	1.11	9188412	85.40	
	Rural	Persons	17880926	5407634	30.24	5281004	29.53	126630	0.71	12473292	69.76	
		Males	8852350	4030385	45.53	4009495	45.29	20890	0.24	4821965	54.47	
		Females	9028576	1377249	15.25	1271509	14.08	105740	1.17	7651327	84.75	
	Urban	Persons	3466449	951180	27.44	935455	26.99	15725	0.45	2515269	72.56	
		Males	1735501	757317	43.64	757087	43.62	2230	0.13	978184	56.36	
		Females	1730948	193863	11.20	180368	10.42	13495	0.78	1537085	88.80	
1981	Total	Persons	25453680	7771220	30.53	6791175	26.68	980045	3.85	17682460	69.47	
		Males	12527767	5623916	44.89	5141149	41.04	482767	3.85	6903851	55.11	
		Females	12925913	2147304	16.61	1650026	12.77	497278	3.85	10778609	83.39	
	Rural	Persons	20682405	6462871	31.25	5605055	27.10	857816	4.15	14219534	68.75	
		Males	10167417	4599166	45.23	4188182	41.19	410984	4.04	5568251	54.77	
		Females	10514988	1863705	17.72	1416873	13.47	446832	4.25	8651283	82.28	
	Urban	Persons	4771275	1308349	27.42	1186120	24.86	122229	2.56	3462926	72.58	
		Males	2360350	1024750	43.42	952967	40.37	71783	3.04	1335600	56.58	
		Females	2410925	283599	11.76	233153	9.67	50446	2.09	2127326	88.24	
1991	Total	Persons	29098518	9146118	31.43	8301087	28.53	845031	2.90	19952400	68.57	
		Males	14288995	6798850	47.58	6404458	44.82	394392	2.76	7490145	52.42	
		Females	14809523	2347268	15.85	1896529	12.81	450639	3.04	12462255	84.15	
	Rural	Persons	21418224	6872107	32.09	6176865	28.84	695242	3.25	14546117	67.91	
		Males	10512788	5033254	47.88	4721497	44.91	311757	2.97	5479534	52.12	
		Females	10905436	1838853	16.86	1455368	13.35	383485	3.52	9066583	83.14	
	Urban	Persons	7680294	2274011	29.61	2124222	27.66	149789	1.95	5406283	70.39	
		Males	3776207	1765596	46.76	1682961	44.57	82635	2.19	2010611	53.24	
		Females	3904087	508415	13.02	441261	11.30	67154	1.72	3395672	86.98	
2001	Total	Persons	31838619	10291258	32.32	8236741	25.87	2054517	6.45	21547361	67.68	
		Males	15468664	7790522	50.36	6479350	41.89	1311172	8.48	7678142	49.64	
		Females	16369955	2500736	15.28	1757391	10.74	743345	4.54	13869219	84.72	
	Rural	Persons	23571484	7675096	32.56	5996288	25.44	1678808	7.12	15896388	67.44	
		Males	11450785	5750087	50.22	4689974	40.96	1060113	9.26	5700698	49.78	
		Females	12120699	1925009	15.88	1306314	10.78	618695	5.10	10195690	84.12	
	Urban	Persons	8267135	2616162	31.65	2240453	27.10	375709	4.54	5650973	68.35	
		Males	4017879	2040435	50.78	1789376	44.54	251059	6.25	1977444	49.22	
		Females	4249256	575727	13.55	451077	10.62	124650	2.93	3673529	86.45	

% indicates to total Population  
Source: Census of India 1981-2001

**Appendix 4.1**  
**Number of Operational Holdings and Area Operated by Size Class in Kerala (1995-96)**

Sl. No.	Size of Holding (ha)	Number	Area (ha)	Average Size (ha)
1	2	3	4	5
1	Below 0.50	5453211	587542	0.11
2	0.50-1.00	464714	324907	0.70
	<i>Marginal (1+2)</i>	5917925	912449	0.15
3	1.00 to 2.00 (Small)	262291	349541	1.33
4	Above 2.00	118173	450233	3.81
	<b>Total</b>	<b>6298389</b>	<b>1712223</b>	<b>0.27</b>

Source: Directorate of Economics and Statistics

**Appendix 4.2**  
**Percentage Distribution of Main Workers in Kerala (1991 and 2001)**

Sl.No.	Item	1991	2001
1	2	3	4
1	Cultivators	12.24	7.20
2	Agricultural labourers	25.55	16.07
3	Household industry workers	2.58	3.54
4	Livestock, Forestry, Fishing, Plantation, Mining, Quarrying and allied sectors	10.23	} 73.19
5	Other workers	49.40	

Source: Census Reports.

**Appendix 4.5**  
**District-wise Monthly Actual Rainfall for 2004**

Sl.No.	District	( in mm)											
		January	February	March	April	May	June	July	August	September	October		
1	2	3	4	5	6	7	8	9	10	11	12		
1	Thiruvananthapuram	0.0	7.3	31.4	141.8	429.7	298.5	266.7	108.0	218.7	225.4		
2	Kollam	2.3	56.6	47.9	151.8	613.8	405.9	303.3	207.1	211.6	281.4		
3	Alappuzha	2.9	1.0	50.1	97.9	685.1	502.2	351.4	310.8	216.2	414.5		
4	Pathanamthitta	14.1	12.5	123.3	159.6	723.6	549.8	270.6	274.3	257.5	373.6		
5	Kottayam	11.8	10.0	89.0	183.7	720.5	465.8	377.8	301.6	234.9	408.3		
6	Idukki	0.8	10.3	59.6	156.3	645.6	889.6	577.8	686.4	344.5	374.0		
7	Ernakulam	2.5	8.4	36.9	87.0	711.6	650.0	424.4	424.6	215.1	507.2		
8	Thrissur	0.0	0.6	16.9	73.9	596.1	752.3	362.3	399.8	157.3	450.5		
9	Palakkad	1.0	2.6	28.8	80.9	389.4	590.4	331.9	401.7	95.1	217.5		
10	Kozhikode	0.9	0.1	1.0	84.9	732.7	935.0	388.0	467.1	279.3	349.2		
11	Malappuram	0.0	0.0	0.4	126.6	552.1	674.8	331.4	379.3	153.4	320.8		
12	Wayanad	1.5	3.8	28.8	149.1	404.5	791.2	321.7	551.6	144.6	163.8		
13	Kannur	0.0	0.0	20.9	48.8	772.3	1033.6	463.1	565.8	129.4	260.6		
14	Kasargode	0.0	0.0	3.3	48.0	734.0	775.3	527.2	607.1	97.5	224.2		
<b>State Average</b>		<b>2.7</b>	<b>8.1</b>	<b>38.5</b>	<b>113.6</b>	<b>622.2</b>	<b>665.3</b>	<b>378.4</b>	<b>406.1</b>	<b>196.8</b>	<b>326.5</b>		



## Appendix 4.6

## Area, Production and Productivity of Principal Crops

Sl. No.	Crops	Area (Ha.)			Production (MT)			Productivity (Kg./Ha.)		
		2001-02	2002-03	2003-04 <sup>a</sup>	2001-02	2002-03	2003-04 <sup>a</sup>	2001-02	2002-03	2003-04 <sup>a</sup>
1	Rice	322368	310521	287340	703504	688859	570045	2182	2218	1984
2	Jowar	2902	2571	2365	1480	1311	1187	510	510	502
3	Ragi	1947	1320	1360	1575	1068	1100	809	809	809
4	Other Cereals	2658	2121	-	2065	1645	-	777	776	-
5	Pulses	8191	5764	5604	6281	4615	4272	767	801	762
6	Sugarcane	3267	3758	3442	26978	31283	28651	8258	8324	8324
7	Pepper	203956	208607	206902	58240	67358	56842	286	323	275
8	Chilies	692	783	697	692	787	551	1000	1005	791
9	Ginger	10706	8998	8923	40181	32412	29714	3753	3602	3330
10	Turmeric	3558	3140	3047	7895	6938	6653	2219	2210	2183
11	Cardamom	41336	41412	41782	8380	8680	8709	203	210	208
12	Arecanut	93193	97485	93380	84681	107279	83749	909	1100	897
13	Banana	50871	55668	51892	375903	421809	386382	7389	7577	7446
14	Other Plantains	55183	54811	55258	393182	409282	389034	7125	7467	7040
15	Cashewnut	89718	88548	88438	65867	66087	65195	734	746	737
16	Tapioca	111189	104179	111348	2455880	2413217	2503558	22087	23164	22484
17	Sweet Potato	747	850	752	8672	10463	8769	11609	12309	11661
18	Groundnut	2437	2422	2277	1812	1801	1698	744	744	746
19	Sesamum	878	811	839	284	260	241	323	321	287
20	Coconut *	905718	899198	906207	5479	5709	5484	6049	6349	6052
21	Cotton **	3760	3400	3165	6069	5488	5104	1614	1614	1613
22	Tobacco	71	90	45	395	501	250	5563	5567	5556
23	Coffee***	84795	83113	84684	66690	63322	63850	786	762	754
24	Tea***	36899	37068	36944	66090	55348	55887	1791	1493	1513
25	Rubber***	475039	476047	478402	580350	594917	655750	1222	1250	1371

Source : Directorate of Economics and Statistics & Directorate of Cashew and Cocoa

\* All the figures of the crops except rice on 2003-04 are provisional

\* Production in million nuts & Productivity in nuts/ha.

\*\* Production in bales of 170 kg & Productivity in bales/ha.

\*\*\* Coffee, Tea and Rubber board figures

**Appendix 4.7**  
**Index of Area, Production and Productivity of Crops in Kerala**  
**Base - Average of Triennium ending 1993-94**

Sl.No.	Crops	2001-02	2002-03	2003-04
1	2	3	4	5
<b><u>AREA</u></b>				
<b>A</b>	<b>All Crops</b>	93.96	93.25	92.36
<b>B</b>	<b>Food Grains (1+2)</b>	<b>60.28</b>	<b>57.47</b>	<b>52.9</b>
	1 Cereals	61.26	58.78	54.05
	2 Pulses	36.72	25.84	25.12
<b>C</b>	<b>Non-Food Grains (3to8)</b>	<b>103.14</b>	<b>103.00</b>	<b>103.11</b>
	3 Oil Seeds	101.28	100.56	101.07
	4 Fibres	29.74	26.89	25.03
	5 Plantation Crops	107.76	107.67	107.93
	6 Condiments & Spices	112.93	115.36	113.25
	7 Fruits and Vegetables	93.17	91.96	93.14
	8 Other Crops	52.37	60.37	54.71
<b><u>PRODUCTION</u></b>				
<b>A</b>	<b>All Crops</b>	249.13	249.82	237.56
<b>B</b>	<b>Food Grains(1+2)</b>	<b>67.11</b>	<b>65.62</b>	<b>53.91</b>
	1 Cereals	67.12	65.63	54.21
	2 Pulses	38.79	28.50	26.38
<b>C</b>	<b>Non-Food Grains</b>	<b>98.36</b>	<b>98.82</b>	<b>100.39</b>
	3 Oil Seeds	108.17	112.70	108.2
	4 Fibres	29.75	26.92	25.02
	5 Plantation Crops	152.32	152.42	165.54
	6 Condiments & spices	123.02	137.41	114.51
	7 Fruits & Vegetables	96.39	96.57	98.3
	8 Other Crops	56.78	65.93	59.95
<b><u>PRODUCTIVITY</u></b>				
<b>A</b>	<b>All Crops</b>	265.14	267.9	257.21
<b>B</b>	<b>Food Grains (1+2)</b>	<b>111.33</b>	<b>114.18</b>	<b>101.91</b>
	1 Cereals	109.57	111.65	100.3
	2 Pulses	105.64	110.29	105.02
<b>C</b>	<b>Non-Food Grains (3to8)</b>	<b>95.37</b>	<b>95.94</b>	<b>97.36</b>
	3 Oil Seeds	106.80	112.07	107.05
	4 Fibres	100.03	100.11	99.96
	5 Plantation Crops	141.35	141.56	153.47
	6 Condiments & spices	108.93	119.22	101.11
	7 Fruits and Vegetables	103.46	105.01	105.54
	8 Other Crops	108.42	109.21	109.58

**Appendix 4. 8**  
**Season-wise Area, Production and productivity of Rice in Kerala (2001-02 to 2003-04)**

Season	Area (Ha)*				Production (MT)				Productivity (kg/ha)			
	2001-02	2002-03	2003-04	2003-04	2001-02	2002-03	2003-04	2003-04	2001-02	2002-03	2002-03	2003-04
1	2	3	4	5	6	7	8	9	10			
Virippu	116540	112438	102770	235838	233217	220132	2024	2074	2142			
Mundakan	161978	157004	147384	362634	343792	266674	2239	2190	1809			
Puncha	43850	41079	37186	105032	111850	83239	2395	2723	2238			
<b>All Seasons</b>	<b>322368</b>	<b>310521</b>	<b>287340</b>	<b>703504</b>	<b>688859</b>	<b>570045</b>	<b>2182</b>	<b>2218</b>	<b>1984</b>			

Source: Directorate of Economics and Statistics

\* Including flood affected area

**Appendix 4.9**  
**Season-wise Coverage of HYV of Rice in Kerala**

Year	Coverage of HYV (Ha.)						Total Area under Rice (Ha)						% of HYV over Total Area under Rice									
	Virippu (Autumn)		Mundakan (winter)		Puncha (Summer)		Virippu (Autumn)		Mundakan (winter)		Puncha (Summer)		Total		Virippu (Autumn)		Mundakan (winter)		Puncha (Summer)		Total	
	3	4	5	6	7	8	9	10	11	12	13	14	11	12	13	14	11	12	13	14		
1990-91	80025	40005	42786	162816	236078	258564	64808	559450	33.90	15.47	66.02	29.10	33.90	15.47	66.02	29.10	33.90	15.47	66.02	29.10		
1991-92	73304	49745	43287	166336	218767	253981	68579	541327	33.51	19.59	63.12	30.73	33.51	19.59	63.12	30.73	33.51	19.59	63.12	30.73		
1992-93	78090	45417	51589	175096	218751	244096	74761	537608	35.70	18.61	69.01	32.57	35.70	18.61	69.01	32.57	35.70	18.61	69.01	32.57		
1993-94	73243	51192	47983	172418	203776	236757	67299	507832	35.94	21.62	71.30	33.95	35.94	21.62	71.30	33.95	35.94	21.62	71.30	33.95		
1994-95	74478	55576	44391	174445	198725	237788	66777	503290	37.48	23.37	66.48	34.66	37.48	23.37	66.48	34.66	37.48	23.37	66.48	34.66		
1995-96	71027	51602	41247	163876	186676	224643	59831	471150	38.05	22.97	68.94	34.78	38.05	22.97	68.94	34.78	38.05	22.97	68.94	34.78		
1996-97	61532	54725	37072	153329	163893	210309	56624	430826	37.54	26.02	65.47	35.59	37.54	26.02	65.47	35.59	37.54	26.02	65.47	35.59		
1997-98	69306	50693	48680	168679	144743	180701	61678	387122	47.88	28.05	78.93	43.57	47.88	28.05	78.93	43.57	47.88	28.05	78.93	43.57		
1998-99	62346	66338	48414	177098	120217	174714	57700	352631	51.86	37.97	83.91	50.22	51.86	37.97	83.91	50.22	51.86	37.97	83.91	50.22		
1999-00	70948	85936	54106	210990	121525	170228	58021	349774	58.38	50.48	93.25	60.32	58.38	50.48	93.25	60.32	58.38	50.48	93.25	60.32		
2000-01	83868	89927	52892	226687	129752	162445	55258	347455	64.64	55.36	95.72	65.24	64.64	55.36	95.72	65.24	64.64	55.36	95.72	65.24		
2001-02	78753	102714	40621	222088	110556*	161978	43850	316384	71.23	63.41	92.64	70.20	71.23	63.41	92.64	70.20	71.23	63.41	92.64	70.20		
2002-03	98381	112271	40152	250804	112438	157004	41079	310521	87.50	71.51	97.74	80.77	87.50	71.51	97.74	80.77	87.50	71.51	97.74	80.77		
2003-04	92667	109316	36563	238546	102770	147384	37186	287340	90.17	74.17	98.32	83.02	90.17	74.17	98.32	83.02	90.17	74.17	98.32	83.02		

**Appendix 4.10**  
**District-wise Area , Production and Productivity of Rice in Kerala**

Sl. No.	District	Area (Ha)			Production (MT)			Productivity (kg/ha)		
		2001-02	2002-03	2003-04	2001-02	2002-03	2003-04	2001-02	2002-03	2003-04
1	2	3	4	5	6	7	8	9	10	11
1	Thiruvananthapuram	6810	6423	5371	14686	14119	11278	2157	2198	2100
2	Kollam	11459	11457	10187	24933	24204	22419	2176	2113	2201
3	Pathanamthitta	5218	5431	5262	12855	13521	12641	2464	2490	2402
4	Alappuzha	33111	29635	32083	72799	91561	63008	2199	3090	1964
5	Kottayam	15250	12264	11502	34651	30884	26195	2272	2518	2277
6	Idukki	4388	3785	3228	10726	8574	7526	2444	2265	2331
7	Ernakulam	32905	32072	29495	59723	60886	54044	1815	1898	1832
8	Thrissur	37012	37274	34158	84281	87272	79842	2277	2341	2337
9	Palakkad	115904	115910	105131	269302	243926	189443	2323	2104	1802
10	Malappuram	22654	19678	17671	44059	38981	36744	1945	1981	2079
11	Kozhikode	6402	5085	5185	8313	7167	7579	1299	1409	1462
12	Wayanad	12855	12988	12343	32076	31326	28421	2495	2412	2303
13	Kannur	10987	11323	9461	19463	20794	16518	1771	1836	1746
14	Kasaragod	7413	7196	6263	15637	15644	14387	2109	2174	2297
<b>State</b>		<b>322368</b>	<b>310521</b>	<b>287340</b>	<b>703504</b>	<b>688859</b>	<b>570045</b>	<b>2182</b>	<b>2218</b>	<b>1984</b>

Source: Directorate of Economics & Statistics

**Appendix 4.11**  
**District-wise and Season-wise Area, Production and Productivity of Rice for 2003-04**

Name of District	Autumn						Winter						Summer						Total	
	Area (Ha)	Production (MT)	Production (kg/ha)	Area (Ha)	Production (MT)	Production (kg/ha)	Area (Ha)	Production (MT)	Production (kg/ha)	Area (Ha)	Production (MT)	Production (kg/ha)	Area (Ha)	Production (MT)	Production (kg/ha)	Area (Ha)	Production (MT)	Production (kg/ha)		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18		
Thiruvananthapuram	2551	5666	2221	2802	5586	1994	18	26	1444	5371	11278	2100								
Kollam	3412	7693	2255	6755	14726	2180	20	0	0	10187	22419	2201								
Pathanamthitta	683	1437	2104	2570	5905	2298	2009	5299	2638	5262	12641	2402								
Alappuzha	5650	11736	2077	16706	30092	1801	9727	21180	2177	32083	63008	1964								
Kottayam	2564	6823	2661	5218	11394	2184	3720	7978	2145	11502	26195	2277								
Idukki	1201	2844	2368	1950	4580	2349	77	102	1325	3228	7526	2331								
Emakulam	11291	20467	1813	12049	22749	1888	6155	10828	1759	29495	54044	1832								
Thrissur	8016	18023	2248	19825	42925	2165	6317	18894	2991	34158	79842	2337								
Paiakkad	52811	114479	2168	48353	68413	1415	3967	6551	1651	105131	189443	1802								
Malappuram	5032	10792	2145	10953	20569	1878	1686	5383	3193	17671	36744	2079								
Kozhikode	516	710	1376	3611	5054	1400	1058	1815	1716	5185	7579	1462								
Wayanad	0	0	0	10175	23549	2314	2168	4872	2247	12343	28421	2303								
Kannur	5287	10147	1919	3983	6169	1549	191	202	1058	9461	16518	1746								
Kasaragode	3756	9315	2480	2434	4963	2039	73	109	1493	6263	14387	2297								
<b>STATE</b>	<b>102770</b>	<b>220132</b>	<b>2142</b>	<b>147384</b>	<b>266674</b>	<b>1809</b>	<b>37186</b>	<b>83239</b>	<b>2238</b>	<b>287340</b>	<b>570045</b>	<b>1984</b>								

Source: Directorate of Economics and Statistics

Appendix 4.12

Area, Production and Productivity of HYV of Rice (2001-02 to 2003-04)

District	Area			Production			Productivity		
	2001-02	2002-03	2003-04	2001-02	2002-03	2003-04	2001-02	2002-03	2003-04
1	2	3	4	5	6	7	8	9	10
Thiruvananthapuram	5593	5539	4426	12437	12317	9427	2224	2224	2130
Kollam	6895	7024	6015	15308	15371	13603	2220	2188	2262
Pathanamthitta	4173	4438	4900	10606	11468	11774	2542	2584	2403
Alappuzha	26157	27871	30333	70917	89237	60771	2711	3202	2003
Kottayam	14484	12130	11104	33315	30635	25449	2300	2526	2292
Idukki	3723	3379	2835	9201	7718	6528	2471	2284	2303
Ernakulam	28457	28076	26529	52421	54403	49662	1842	1938	1872
Thrissur	24067	27873	26980	60305	70642	66989	2506	2534	2483
Palakkad	72611	100055	92758	173787	217998	171180	2393	2179	1845
Malappuram	13022	11863	11385	28635	26064	26701	2199	2197	2345
Kozhikode	2110	1441	1744	3457	2665	3070	1638	1849	1760
Wayanad	9166	9524	9473	23954	24455	22608	2613	2568	2387
Kannur	7431	7587	6463	13984	14660	12248	1882	1932	1895
Kasaragode	4199	4004	3601	9851	9667	9113	2346	2414	2531
<b>STATE</b>	<b>222088</b>	<b>250804</b>	<b>238546</b>	<b>518178</b>	<b>587300</b>	<b>489123</b>	<b>2333</b>	<b>2342</b>	<b>2050</b>

Source: Directorate of Economics & Statistics

Appendix 4.13

Plantation Crops - Area, Production and Productivity (1999-2000 to 2003-04)

	1999-2000		2000-01		2001-02		2002-03		2003-04	
	Kerala	India	Kerala	India	Kerala	India	Kerala	India	Kerala	India
1	2	3	4	5	6	7	8	9	10	11
<b>AREA (Ha.)</b>										
Tea	34793	437857	36847	438000	36899	438000	37068	511940	36944	512000
Coffee	84139	340306	84735	347000	84795	347000	83113	355102	84684	355102
Rubber	472900	558592	474364	562670	475039	566558	476047	569667	478402	573980
Cardamom	41491	72444	41288	72000	41336	72000	41412	73125	41782	73237
<b>PRODUCTION (MT)</b>										
Tea	61955	810767	69132	846500	66090	854000	55348	837602	55887	850490
Coffee	60470	292000	70550	301200	66690	300600	63322	275275	63850	270500
Rubber	572820	622265	579866	630405	580350	631400	594917	649435	655750	711650
Cardamom	6585	9290	7580	10489	8380	11365	8680	11920	8709	11580
<b>PRODUCTIVITY (kg/ha)</b>										
Tea	1780	1852	1876	1933	1791	1950	1493	1636	1513	1661
Coffee	719	858	833	868	786	866	762	775	754	761
Rubber	1211	1114	1222	1120	1222	1114	1250	1140	1371	1240
Cardamom	159	128	184	146	203	158	210	163	208	158

Sources: UPASI, Rubber Board and Directorate of Economics & Statistics



## Appendix 4.14

## Import of Rubber (1990-91 to 2003-04)

Year	Import (MT)		Total
	Natural Rubber	Synthetic Rubber	
1	2	3	4
1990-91	49013	51715	100728
1991-92	15070	39210	54280
1992-93	17884	47362	65246
1993-94	19940	64338	84278
1994-95	8093	73860	81953
1995-96	51635	71735	123370
1996-97	19770	91050	110820
1997-98	32070	86389	118459
1998-99	29534	97548	127082
1999-00	20213	104842	125055
2000-01	8970	106923	115893
2001-02	49590	111323	160913
2002-03	26229	124475	150704
2003-04	44199	173784	217983

Source: Rubber Board, Kottayam.

**Appendix 4.15**  
**Consumption of Rubber in Kerala & India (1994-95 to 2003-04)**

(in MT)

Sl.No	Year	Kerala			India		
		N.R	S.R	R.R	N.R	S.R	R.R
1	2	3	4	5	6	7	8
1	1994-95	64660	18984	6100	237440	70035	38215
2	1995-96	75200	22727	6232	525465	134085	65775
3	1996-97	67144	24575	5968	561765	142810	66585
4	1997-98	68542	27825	6270	571820	160915	70085
5	1998-99	77583	29074	6245	591545	156395	63095
6	1999-00	86849	31068	6820	628110	167220	63450
7	2000-01	88221	32978	6773	631475	170670	62260
7	2001-02	100163	32114	6583	638210	174530	63875
8	2002-03	126100	36438	6861	695425	194850	67320
9	2003-04	124630	46921	7367	719600	210200	70460

NR- Natural Rubber

SR-Synthetic Rubber

RR- Reclaimed Rubber

Source: Rubber Board, Kottayam.

**Appendix 4.16**

**Production, Consumption, Export and Auction Price of Tea**

Year	Production			Consumption ( <sup>'000</sup> MT)	Exports		Cochin Auction Price (Rs/kg)
	India ( <sup>'000</sup> MT)	Kerala ( <sup>'000</sup> MT)	% of Kerala		India ( <sup>'000</sup> MT)	Percentage of Production	
1	2	3	4	5	6	7	8
1980	569.00	54.00	9.49	346.00	224.00	39.37	13.14
1981-85	600.00	50.00	8.33	387.00	214.00	35.67	20.50
1986-90	679.00	57.00	8.39	464.00	204.00	30.04	27.54
1991-95	740.00	65.00	8.78	567.00	174.00	23.51	38.14
1996	780.10	61.60	7.90	618.00	162.00	20.77	44.42
1997	810.00	69.80	8.62	633.00	203.00	25.06	61.57
1998	874.10	65.90	7.54	664.00	210.00	24.02	73.39
1999	824.40	67.80	8.22	650.00	192.00	23.29	62.04
2000	846.50	69.30	8.20	653.00	207.00	24.45	51.34
2001	853.70	66.10	7.70	673.00	183.00	21.44	52.21
2002	826.20	59.70	7.20	693.00	198.00	23.98	47.21
2003	857.10	56.60	6.60	--	173.10	20.20	45.78

Source : Association of Planters of Kerala

## Appendix 4.17

**Average Market Price  
of Natural Rubber in Domestic (Kottayam)  
and international (Bangkok) markets**

Year	Kottayam (RSS - 4)	Bangkok (RSS - 3)
1	2	3
1992-93	2550	2608
1993-94	2569	2510
1994-95	3638	4171
1995-96	5204	5016
1996-97	4901	4509
1997-98	3580	3221
1998-99	2994	2885
1999-00	3099	2704
2000-01	3036	2958
2001-02	3228	2793
2002-03	3919	4111
2003- 04	5040	5278
2004-05*	5660	5841

\*Up to December 2004

Source: Rubber Board, Kottayam.

## Appendix 4.18

## Price Trend of Rubber

Month & Year	India (Rs. per 100 kg. of RSS 4) (Kottayam)	World (Rs. per 100 kg. of RSS 3) (Bangkok)
<i>1</i>	<i>2</i>	<i>3</i>
<b>2003</b> April	5074	4755
May	4851	4628
June	4829	4786
July	4453	4590
August	4693	4763
September	4849	5032
October	5155	5737
November	5346	5954
December	5315	5661
<b>2004</b> January	5153	5672
February	5192	5745
March	5567	6008
<b>Average (2003-04)</b>	<b>5040</b>	<b>5278</b>
April	5779	5973
May	5855	6289
June	6343	6237
July	6560	5929
August	5572	5772
September	5163	5710
October	5277	5800
November	5207	5615
December	5181	5248
<b>Average 2004-05*</b>	<b>5660</b>	<b>5841</b>

\*up to December 2004

Source: Rubber Board, Kottayam

Appendix 4.19

Monthly Average Farm Price of Important Agricultural Commodities

Commodities	Unit	2003												2004			
		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
1	2	3	4	5	6	7	8	9	10	11	12	13	14				
Paddy	Qtl.	689.57	687.76	681.59	676.32	685.88	688.33	690.00	688.15	698.22	708.77	716.02	721.50				
Coconut with husk	100 Nos.	499.05	526.75	546.67	592.30	619.37	627.38	611.39	590.00	588.02	586.79	596.90	610.99				
Areca nut	100 Nos.	36.53	32.39	31.03	30.30	27.79	27.55	29.88	34.25	34.79	37.11	43.33	50.21				
Pepper	Qtl.	7339.51	6972.77	6857.27	6687.96	6243.00	6389.00	6699.54	6504.63	6975.00	6923.77	6897.17	6888.70				
Tapioca	Qtl.	390.83	389.41	389.64	387.98	386.01	383.03	382.89	382.59	383.86	392.73	383.55	378.75				
Ginger - dry	Qtl.	4156.00	4228.57	4344.44	4414.29	4778.85	5850.00	7087.50	7874.11	8967.24	8987.90	10299.17	10558.62				
Banana	100 Nos.	994.71	1050.63	1130.83	1024.21	1109.00	1144.29	1198.96	1212.75	1196.50	1217.29	1313.42	1436.96				
Cashewnut	Qtl.	2300.00	-	-	-	-	-	3081.94	3123.44	3096.99	2966.56	2268.75	2300.00				

**Appendix 4.20**  
**Consumption of Fertilizers/Ha. of gross cropped area in Kerala**  
**( 1995-96 To 2002-03)**

*(in Kg.)*

Year	N	P	K	Total (N+P+K)		N:(P+K)% (Kerala)
				Kerala	India	
1	2	3	4	5	6	7
1995-96	28.62	14.15	24.11	66.88	74.38	75
1996-97	28.33	13.59	19.60	61.52	75.49	85
1997-98	29.29	15.23	29.40	73.92	84.98	66
1998-99	29.50	14.58	18.14	62.22	87.08	90
1999-00	29.85	15.08	27.54	72.47	93.81	70
2000-01	28.43	12.66	20.82	58.32	86.34	85
2001-02	25.54	12.44	21.21	59.19	NA	76
2002-03	29.18	13.53	26.19	68.90	NA	73

Source: Directorate of Agriculture and CMIE.

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Appendix 4.21

**Selected Indicators of Agricultural Development in Kerala  
(2001-02 to 2002-03)**

Sl.No	Particulars	Unit	2001-02	2002-03
1	2	3	4	5
<b>1</b>	<b>Fertilizer consumption</b>			
	a) Nitrogen	MT	76417	86659
	b) Phosphorus	MT	37737	40212
	c) Potash	MT	63471	77786
	<b>Total</b>	<b>MT</b>	<b>177625</b>	<b>204657</b>
<b>2</b>	<b>Plant protection measures</b>			
	a) Fungicide (Liquid& Solid) in terms of technical grade	MT	608.4	157.535
	b) Insecticides (Liquid& Solid) in terms of technical grade	MT	568.29	112.563
	c) Weedicide (in terms of technical grade)	MT	142.79	8.279
	d) Rodenticides(in terms of technical grade)	MT	8.63	3.354
	e) Area under Plant Protection coverage	Lakh Ha.	8.65	0.785
	f) Rodent control operation	Lakh Ha.	0.09	0.32
	g) Biological control of Nephantic Serinopa-parasites liberated	Lakh No.	66.35	72.41
	h) Weed control	Lakh Ha.	0.71	0.02759
<b>3</b>	<b>High Yeilding Varieties of paddy seeds</b>	MT	854.49	357.47
<b>4</b>	<b>Quality planting materials distributed</b>			
	a) Coconut seedings	Lakh No.	4.77	3.548
	b) Rooted pepper cuttings	Lakh No.	43.63	71.69
	c) Cashew grafts	Lakh No.	4.95	5.14
<b>5</b>	<b>Soil testing</b>			
	Soil samples analysed	No.	253602	219052

Source: Directorate of Agriculture

**Appendix 4.22**

**Average Price of Agricultural Inputs (2001-02 to 2002-03)**

( in Rs. )

Sl No	Item	2001-02	2002-03
1	2	3	4
<b>I</b>	<b>Ferilitizer (Price/MT)</b>		
a	Urea	4830.00	4830.00
b	Ammonium sulphate	-	-
c	Super Phosphate	3060.00	3080.00
d	Muriate of Potash	4455.00	4455.00
<b>II</b>	<b>Paddy Seed</b>		
a	Average NSC Price (per Qtl)	1200.00	1500.00
b	State Seed Farm Price (per Qtl)	1200.00	1200.00
<b>III</b>	<b>Green manure seed( per Kg.)</b>		
a	Daincha	14.00	17.00
b	Sannhemp	-	25.00
<b>IV</b>	<b>Coconut Seedlings (Per seedling)</b>		
a	WCT	18.00	20.00
b	Hybrids	20.00	25.00
<b>V</b>	<b>Cashew grafts</b>	<b>20.00</b>	<b>20.00</b>
<b>VI</b>	<b>Rooted pepper cuttings(price per cuttings)</b>	<b>1.50</b>	<b>1.50</b>
<b>VII</b>	<b>Pesticides (price per litre/kg)</b>		
a	Phosphamidon (per lit)		
b	Quinal phos (per lit)	315.00	318.00
c	Monocrotophos (per lit)	380.00	380.00
d	Copper sulphate (per kg)	47.25	47.25

Source: Directorate of Agriculture

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**Appendix 4.23**

**Composition of Cattle Population (1977 to 2003)**

(No. in 000's)

Year	Composition		Male		Female		Total	
			Nos.	%	Nos.	%	Nos.	%
1	2	3	4	5	6	7	8	9
1977	Crossbred	No	217	16.01	1138	83.99	1355	100
		%	28.82	-	50.51	-	45.08	-
	Indegenous	No	536	32.47	1115	67.53	1651	100
		%	71.18	-	49.49	-	54.92	-
	<b>Total</b>	<b>No</b>	<b>753</b>	<b>25.05</b>	<b>2253</b>	<b>74.95</b>	<b>3006</b>	<b>100</b>
		<b>%</b>	<b>100</b>	<b>-</b>	<b>100</b>	<b>-</b>	<b>100</b>	<b>-</b>
1982	Crossbred	No	217	14.93	1236	85.07	1453	100
		%	32.93	-	50.70	-	46.92	-
	Indegenous	No	442	26.89	1202	73.11	1644	100
		%	67.07	-	49.30	-	53.08	-
	<b>Total</b>	<b>No</b>	<b>659</b>	<b>21.28</b>	<b>2438</b>	<b>78.72</b>	<b>3097</b>	<b>100</b>
		<b>%</b>	<b>100</b>	<b>-</b>	<b>100</b>	<b>-</b>	<b>100</b>	<b>-</b>
1987	Crossbred	No	199	11.69	1503	88.31	1702	100
		%	39.17	-	51.54	-	49.71	-
	Indegenous	No	309	17.94	1413	82.06	1722	100
		%	60.83	-	48.46	-	50.29	-
	<b>Total</b>	<b>No</b>	<b>508</b>	<b>14.84</b>	<b>2916</b>	<b>85.16</b>	<b>3424</b>	<b>100</b>
		<b>%</b>	<b>100</b>	<b>-</b>	<b>100</b>	<b>-</b>	<b>100</b>	<b>-</b>
1996	Crossbred	No	232	10.14	2055	89.86	2287	100
		%	60.42	-	68.23	-	67.34	-
	Indegenous	No	152	13.73	957	86.27	1109	100
		%	39.58	-	31.77	-	32.66	-
	<b>Total</b>	<b>No</b>	<b>384</b>	<b>11.31</b>	<b>3012</b>	<b>88.69</b>	<b>3396</b>	<b>100</b>
		<b>%</b>	<b>100</b>	<b>-</b>	<b>100</b>	<b>-</b>	<b>100</b>	<b>-</b>
2000	Crossbred	No	144	7.36	1813	92.64	1957	100
		%	66.98	-	79.69	-	78.59	-
	Indegenous	No	71	13.32	462	86.68	533	100
		%	33.02	-	20.31	-	21.41	-
	<b>Total</b>	<b>No</b>	<b>215</b>	<b>8.63</b>	<b>2275</b>	<b>91.37</b>	<b>2490</b>	<b>100</b>
		<b>%</b>	<b>100</b>	<b>-</b>	<b>100</b>	<b>-</b>	<b>100</b>	<b>-</b>
2003	Crossbred	No	135	8.00	1600	92.00	1735	100
		%	74	-	82	-	82	-
	Indegenous	No	47	12.00	340	88.00	387	100
		%	26	-	18	-	18	-
	<b>Total</b>	<b>No</b>	<b>182</b>	<b>9.00</b>	<b>1940</b>	<b>91.00</b>	<b>2122</b>	<b>-</b>
		<b>%</b>	<b>100</b>	<b>-</b>	<b>100</b>	<b>-</b>	<b>100</b>	<b>-</b>

Source : Livestock Census Report



Appendix 4.24  
Livestock and Poultry Population in India and Kerala - a Comparison  
(Lakh Nos)

Species	1987		1996		2000		2003					
	India	Kerala	% share of Kerala	India (1992)	Kerala	% share of Kerala	India (1997)	Kerala	% share of Kerala			
Cattle	1958.70	34.24	1.75	2045.16	33.96	1.61	1988.82	24.91	1.25	1873.80	21.22	1.13
Buffalo	769.70	3.29	0.43	842.39	1.65	0.20	899.18	1.11	0.12	966.20	0.65	0.07
Goats	994.10	15.81	1.59	1162.81	18.61	1.61	1227.21	15.98	1.30	1201.00	12.13	1.01
pigs	107.60	1.37	1.27	127.88	1.43	1.12	132.91	0.88	0.66	141.40	0.76	0.54
Poultry	2583.40	175.55	6.80	2840.25	295.25	10.40	3476.11	169.08	5.16	NA	131.89	
Ducks	234.90	8.46	3.60	220.86	11.87	5.37		10.43			6.61	

Source: Livestock Census - All India and Livestock Census - Kerala and

Conference of State Ministers of AH and DD, December 2004

\*Provisional

## Appendix 4.25

## Trend in Livestock and Population of Kerala, Over the Census Periods 1966 to 2003

(No. in lakhs)

Year of Census	Cattle			Buffaloes			Goats			Pigs			Poultry**			Duck			Livestock		
	No.	% variation		No.	% variation		No.	% variation		No.	% variation		No.	% variation		No.	% variation		No.	% variation	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15							
1966	28.57	0	4.71	0	11.89	0	1.12	0	95.87	0	3.19	0	46.41	0							
1972	28.56	-0.04	4.72	0.21	14.68	23.47	1.29	15.18	118.44	23.54	3.62	13.48	49.36	6.36							
1977	30.06	5.25	4.54	-3.81	16.83	14.65	1.72	33.33	120.56	9.39	4.3	18.78	53.19	7.76							
1982	30.97	3.03	4.09	-9.91	20.04	19.07	1.27	-26.16	146.29	12.91	5.3	23.26	56.45	6.13							
1987	34.24	10.56	3.29	-19.56	15.81	-21.11	1.37	7.87	175.55	20.00	8.46	59.62	55.01	-2.55							
1996	33.96	-0.82	1.65	-49.85	18.6	17.65	1.43	4.38	295.25	68.19	11.87	40.31	55.77	1.38							
2000	24.91	-26.65	1.11	-32.73	15.98	-14.09	0.88	-38.46	169.08	-42.73	10.43	-12.13	42.94	-23.01							
2003*	21.22	-14.81	0.65	-41.44	12.13	-24.09	0.76	-13.64	131.89	-22.00	6.61	-36.63	34.81	-18.93							

\*Provisional

\*\* Excluding Turkey &amp; ducks

Source: Livestock Census report 1966, 1972, 1977, 1982, 1987, 1996, 2000 &amp; 2003

**Appendix 4.26**  
**Sex-wise Classification of Bovine Population**  
**and Trend over the previous Census (1956 to 2003)**

(Nos. in '000s)

Year	Cattle Population			Buffaloe Population			Total Bovine Population			
	Male	Female	Total	Male	Female	Total	Male	Female	Total	
1956	No.	954	1556	2510	302	185	487	1256	1741	2997
1961	No.	973	1713	2686	320	165	485	1293	1878	3171
	Variation %	1.99	10.09	7.01	5.96	(-)10.81	(-)0.41	2.95	7.87	5.81
1966	No.	913	1943	2856	295	177	472	1208	2120	3328
	Variation %	(-)6.17	13.43	6.33	(-)7.81	7.27	2.68	(-)6.57	12.89	4.95
1972	No.	780	2075	2855	269	203	472	1049	2278	3327
	Variation %	(-)14.57	6.79	(-)0.04	(-)8.81	14.69	..	(-)13.16	7.45	(-)0.03
1977	No.	753	2253	3006	254	200	454	1007	2453	3460
	Variation %	(-)3.46	8.6	5.29	(-)5.58	(-)1.48	(-)3.81	(-)4.00	7.68	4
1982	No.	659	2438	3097	217	192	409	176	2630	3506
	Variation %	(-)12.48	8.21	3.03	(-)14.57	(-)4.00	(-)9.91	(-)13.01	7.22	1.33
1987	No.	508	2916	3424	131	198	329	639	3114	3753
	Variation %	(-)22.91	19.61	10.56	(-)39.63	3.13	(-)19.56	(-)27.05	18.4	7.05
1996	No.	384	3012	3396	67	98	165	451	3110	3561
	Variation %	(-)24.41	3.29	(-)0.82	(-)48.85	(-)50.51	(-)49.85	(-)29.42	(-)0.13	(-)5.12
2000	No.	215	2275	2490	57	54	111	272	2329	2601
	Variation %	(-)44.01	(-)24.47	(-)26.55	(-)14.93	(-)44.89	(-)32.73	(-)39.69	(-)25.11	(-)26.96
2003	No.	182	1940	2122	24	40	64	206	1980	2186
	Variation %	(-)15.34	(-)14.73	(-)14.78	(-)14.93	(-)25.93	(-)42.34	(-)24.26	(-)14.98	(-)15.96

Source : AH. Department - Livestock Census Reports of Various Years.

Appendix 4.27  
Trend in Poultry Poppulation over Census Periods from 1982 to 2003

(No. in Lakhs)

Category	1982		1987		1996		2000		2003	
	No	% variation	No	% variation	No	% variation	No	% variation	No	% variation
1	2	3	4	5	6	7	8	9	10	
Broiler Fowls	1.11	4.63	317.00	38.79	738	34.71	(-)10.52	21.97	(-) 36.70	
Desi Fowls	65.65	153.35	134	134.93	(-)12.01	110.24	(-)18.29	77.36	(-) 29.83	
Improved Fowls	79.53	17.57	(-) 77.91	121.53	592	24.13	(-)80.14	32.56	34.94	
<b>Total Fowls</b>	<b>145.18</b>	<b>170.92</b>	<b>17.12</b>	<b>256.46</b>	<b>50.05</b>	<b>134.37</b>	<b>(-)34.07</b>	<b>109.92</b>	<b>(-) 18.20</b>	
Ducks	5.30	8.46	59.53	11.87	40.35	10.43	(-)12.13	6.61	(-) 36.63	
Other Poultry(Turkey)	0.22	0.58	167.43	1.12	93.69	4.33	286.61	5.63	30.32	
<b>Total-Poultry</b>	<b>151.81</b>	<b>184.59</b>	<b>21.59</b>	<b>308.24</b>	<b>66.99</b>	<b>183.84</b>	<b>(-)31.77</b>	<b>144.13</b>	<b>(-) 21.60</b>	

Source: Livestock Census Reports

**Appendix 4.28**  
**Distribution of Working Bullocks\* and Male calves over the Five Census Periods and Percentage Variation over Previous Census from 1982 to 2003**

(In ' 000 Nos )

Category	1982	% variation	1987	% variation	1996	% variation	2000	% variation	2003	% variation
1	2	3	4	5	6	7	8	9	10	11
<b>Working Bullocks</b>	240.94	-29.96	120.66	-49.92	57.50	-52.35	17.46	-69.63	12.06	(-) 30.93
Indigenous										
Cross bred	14.33	-26.89	18.70	30.50	63.88	241.60	17.13	-73.18	7.54	(-) 55.98
<b>Total</b>	<b>255.27</b>	<b>-29.79</b>	<b>139.36</b>	<b>-45.41</b>	<b>121.38</b>	<b>-12.90</b>	<b>34.59</b>	<b>-71.50</b>	<b>19.60</b>	<b>(-) 43.34</b>
<b>Male calves</b>	135.30	8.04	112.14	-17.12	52.36	-53.31	29.63	-43.41	17.91	(-) 39.55
Indigenous										
Cross bred	165.55	21.26	132.76	-19.81	111.30	-16.10	89.99	-19.15	92.79	3.11
<b>Total</b>	<b>300.85</b>	<b>14.93</b>	<b>244.90</b>	<b>-18.60</b>	<b>163.66</b>	<b>-33.17</b>	<b>119.62</b>	<b>-26.91</b>	<b>110.70</b>	<b>7.46</b>

Source: Livestock Census Report -1996 & 2000

\* Includes bullocks used for work & those used for work and br

## Appendix 4.29

## Trend in Distribution of Adult Female Cattle over the Census Periods from 1982 to 2003, their Percentage Distribution and Percentage Variation over the Previous Census

(In '000 numbers)

Category	1982		1987		1996		2000		2003 (provisional)					
	No.	% distribution	No.	% distribution	No.	% distribution	No.	% distribution	No.	% distribution				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
<b>Cattle in Milk</b>														
Indigenous	392.79	45.45	451.80	44.51	15.02	329.66	29.57	-27.03	195.66	20.56	-40.64	106.64	14.94	(-) 45.49
Cross bred	471.48	54.55	563.17	55.49	19.45	785.36	70.43	39.45	756.01	79.44	-3.74	607.37	85.06	(-) 19.66
<b>Adult Female Cattle</b>														
Indigenous	785.71	51.94	812	47.73	3.35	569.53	31.71	-29.86	340.56	22.36	40.2	173.29	16.57	(-) 49.12
Cross bred	726.91	48.06	889.33	52.27	22.34	1226.36	68.29	37.89	1182	77.63	-3.62	872.54	83.43	(-) 26.18

Source: Livestock Census Reports - 1996

**Appendix 4.30**  
**Production of Milk and Egg in the Major States of India**  
**(1999-2000, 2000-01 & 2001-02)**

State	Milk				Egg					
	Production ('000 MT)		% increase over 1999-00		Production (Million Nos.)		% increase over 1999-00			
	1999-00*	2000-01*	2001-02**	2000-01**	2001-02**	1999-00*	2000-01*	2001-02**	2000-01**	2001-02**
Andhra Pradesh	5122	5521	5145	7.79	0.45	6345	6800	6316	7.18	-0.46
Assam	733	738	894	0.68	21.96	488	505	558	3.48	14.34
Bihar	3740	3878	4068	3.69	8.77	1436	1445	1566	0.63	9.05
Gujarat	5255	5317	5573	1.18	6.05	477	346	692	-27.46	45.07
Haryana	4679	4849	4976	3.63	6.35	759	1085	1166	42.91	53.62
Jammu & Kashmir	1286	1037	1088	-19.36	-15.40	559	657	487	17.55	-12.88
Karnataka	4473	4598	5357	2.79	19.76	1992	1992	2325	-0.02	16.72
<b>Kerala</b>	<b>2673</b>	<b>2771</b>	<b>2907</b>	<b>3.67</b>	<b>8.75</b>	<b>2054</b>	<b>2034</b>	<b>2466</b>	<b>-0.95</b>	<b>20.06</b>
Madhya Pradesh	5600	5806	6091	3.68	8.77	1412	1446	1545	2.41	-9.42
Maharashtra	5706	5850	6024	2.52	5.57	3039	3097	3249	1.90	6.91
Orissa	847	875	865	3.31	2.13	648	730	1173	12.67	81.02
Punjab	7700	7984	8375	3.69	8.77	2782	2964	3346	6.54	20.27
Rajasthan	7260	7455	6330	2.69	-12.81	558	572	591	2.42	5.91
Tamil Nadu	4574	4899	4629	7.11	1.20	3845	3929	3699	2.20	-3.80
Uttar Pradesh	14153	14840	16506	4.85	16.63	802	729	998	-9.06	24.44
West Bengal	3465	3470	4079	0.14	17.72	2678	2682	3057	0.15	14.15
<b>All India</b>	<b>78779</b>	<b>79888</b>	<b>84570</b>	<b>1.41</b>	<b>7.35</b>	<b>30629</b>	<b>31013</b>	<b>31770</b>	<b>1.25</b>	<b>3.73</b>

Source: Animal Husbandry Department of States

\* Provisional \*\* Anticipated Achievement

## Appendix 4.31

## Per Capital Availability of Milk in Major States of India (gms/day)

State	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00*	2000-01*	2001-02*
Andhra Pradesh	121	126	151	167	167	173	170	182	190	202	186
Assam	78	79	80	81	80	80	79	79	78	77	92
Bihar	102	99	97	96	96	96	94	92	98	99	102
Gujarat	238	247	251	278	282	290	289	291	296	294	302
Haryana	593	603	610	628	611	618	627	634	639	646	647
Jammu & Kashmir	183	324	263	210	277	308	353	363	369	290	296
Karnataka	151	155	161	174	182	195	220	231	240	243	296
Kerala	168	176	185	194	199	203	209	214	214	220	234
Madhya Pradesh	199	198	198	197	196	195	197	195	197	200	206
Maharashtra	137	140	142	157	160	161	160	169	168	169	171
Orissa	44	46	47	48	53	55	53	57	65	66	65
Punjab	727	741	778	795	807	834	869	880	900	917	945
Rajasthan	279	278	294	295	307	323	348	362	370	371	307
Tamil Nadu	165	168	169	176	178	185	187	195	206	218	204
Uttar Pradesh	201	205	207	208	214	218	222	229	232	238	259
West Bengal	121	120	121	125	126	125	125	123	122	120	139
<b>All India</b>	<b>180</b>	<b>184</b>	<b>189</b>	<b>195</b>	<b>198</b>	<b>203</b>	<b>208</b>	<b>213</b>	<b>218</b>	<b>221</b>	<b>226</b>

\* Provisional (except Kerala)

Source: National Statistics, NDDB, NSS Report of AH Department, Kerala

Note: Population figures are taken from Census of India, 1991, 2001 and interpolated based on 1991-2001 growth rate



## Appendix 4. 32

Details of milk production in the state - Results of Integrated Sample Survey (1992-93 to 2003-04)

Particulars	1992-93	1993-9	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04
1	2	3	4	5	6	7	8	9	10	11	12	13
Estimated no. of animals in milk (lakh)	ND* 4.764	4.688	4.681	4.072	3.905	3.105	2.927	2.496	2.132	1.698	1.892	1.428
	CB* 6.887	7.41	8.027	8.108	8.478	8.346	8.557	8.942	9.297	9.688	8.293	7.236
<b>Total</b>	<b>11.651</b>	<b>12.129</b>	<b>12.708</b>	<b>12.18</b>	<b>12.383</b>	<b>11.451</b>	<b>11.484</b>	<b>11.438</b>	<b>11.429</b>	<b>11.386</b>	<b>10.185</b>	<b>8.664</b>
Estimated no. of milch animals (lakh)	ND 7.256	7.338	7.641	5.418	5.133	5.057	3.995	3.385	2.841	2.216	2.455	1.885
	CB 9.651	10.701	11.614	11.058	11.448	11.877	12.241	11.793	12.388	12.698	10.778	9.769
<b>Total</b>	<b>16.907</b>	<b>18.039</b>	<b>19.255</b>	<b>16.476</b>	<b>16.581</b>	<b>16.934</b>	<b>16.236</b>	<b>15.178</b>	<b>15.229</b>	<b>14.914</b>	<b>13.233</b>	<b>11.654</b>
Average milk yield/animal in milk (kg.)	ND 1.863	1.864	1.864	2.208	2.216	2.282	2.552	2.502	2.506	2.527	2.547	2.608
	CB 5.372	5.385	5.388	5.625	5.63	6.201	6.234	6.433	6.556	6.733	6.901	7.007
<b>Total</b>	<b>3.938</b>	<b>4.024</b>	<b>4.089</b>	<b>4.482</b>	<b>4.553</b>	<b>5.138</b>	<b>5.295</b>	<b>5.575</b>	<b>5.800</b>	<b>6.106</b>	<b>6.092</b>	<b>6.300</b>
Average milk yield of milch animal/day (kg.)	ND 1.223	1.191	1.142	1.662	1.686	1.401	1.869	1.845	1.879	1.936	1.963	1.976
	CB 3.483	3.745	3.724	4.124	4.169	4.357	4.358	4.878	4.920	5.137	5.310	5.190
<b>Total</b>	<b>2.713</b>	<b>2.666</b>	<b>2.700</b>	<b>3.314</b>	<b>3.4</b>	<b>3.474</b>	<b>3.746</b>	<b>4.201</b>	<b>4.353</b>	<b>4.662</b>	<b>4.683</b>	<b>4.683</b>
Annual milk production in the State (lakh tonnes)	ND 3.240	3.190	3.185	3.282	3.158	2.586	2.726	2.280	1.950	1.566	1.759	1.363
	CB 13.507	14.626	15.786	16.641	17.420	18.889	19.471	20.996	22.247	23.810	20.889	18.557
<b>Total</b>	<b>16.748</b>	<b>17.815</b>	<b>18.971</b>	<b>19.923</b>	<b>20.578</b>	<b>21.475</b>	<b>22.197</b>	<b>23.276</b>	<b>24.197</b>	<b>25.376</b>	<b>22.648</b>	<b>14.920</b>
Buff.	1.0930	1.1023	1.0589	0.8529	0.8182	0.7405	0.7481	0.7003	0.635	0.630	0.480	0.398
Goat	1.0534	1.0956	1.1254	1.1467	1.1844	1.2140	1.2557	1.2772	1.221	1.173	1.062	0.788
<b>Grand Total</b>	<b>18.894</b>	<b>20.013</b>	<b>21.182</b>	<b>21.922</b>	<b>22.581</b>	<b>23.430</b>	<b>24.200</b>	<b>25.253</b>	<b>26.053</b>	<b>27.179</b>	<b>24.200</b>	<b>21.110</b>
Per capita per day availability of milk (gm)	<b>176</b>	<b>185</b>	<b>194</b>	<b>199</b>	<b>203</b>	<b>209</b>	<b>214</b>	<b>214</b>	<b>220</b>	<b>234</b>	<b>205</b>	<b>176</b>

\* ND - Non-descript, CB - Cross bred

Source: Animal Husbandry Department

**Appendix 4.33**  
**Index of Milk and Egg production in Kerala & India**  
**(Base Year 1984-85)**

Year	Index of Milk Production		Index of Egg Production	
	Kerala	India	Kerala	India
1	2	3	4	5
1984-85	100.00	100.00	100.00	100.00
1985-86	105.16	106.02	103.66	113.16
1986-87	109.34	111.08	106.48	121.46
1987-88	116.89	112.53	109.76	124.86
1988-89	124.02	116.63	111.89	133.17
1989-90	131.15	123.85	114.41	141.76
1990-91	138.52	129.88	118.14	148.06
1991-92	146.31	134.22	130.34	154.24
1992-93	154.84	141.20	135.21	160.88
1993-94	164.02	146.02	140.55	169.56
1994-95	173.61	153.73	146.04	182.25
1995-96	179.67	159.76	151.45	191.44
1996-97	186.08	164.58	154.27	192.90
1997-98	192.05	169.88	154.95	199.27
1998-99	198.36	181.20	155.79	206.82
1999-00	206.97	188.19	156.56	213.64
2000-01	213.52	194.70	155.03	257.04
2001-02	222.79	204.34	152.59	274.35
2002-03	197.54	210.36	102.67	282.77
2003-04	173.03	219.52	97.33	302.41

Source: Animal Husbandry Department & Economic Survey

Appendix 4.34

Activities in the Animal Husbandry Sector (1995-96 to 2003- 2004)

SI.No	Activities	'000	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04
1	2	3	4	5	6	7	8	9	10	11	12
1	Cases treated	Nos.	3441	3851	3725	3893	3738	3885	4161	4925	4629
2	Operations Performed	Nos.	121	116	115	119	97	117	123	145	136
3	Castration done	Nos.	12	9	8	7	6	7	6	6	6
4	Vaccination done										
	1. Livestock	Nos.	2502	355	285	691	530	461	524	1211	4414
	2. Poultry	Nos.	4864	1828	1794	1235	2073	1888	1995	3194	4554
5	Anti Rabies Vaccinations done in Dogs	Nos.	49	96	45	132	127	102	65	116	132
6	Artificial Inseminations done	Nos.	1240	1151	1259	1251	1391	1372	1249	1369	1231
7	Calvings recorded	Nos.	324	318	327	314	349	361	333	402	354
8	Chicks hatched out in Department Poultry Farms	Nos.	947	651	915	1057	1619	533	566	707	977
9	Vaccines produced in Veterinary Biologicals										
	1. Poultry	Doses	5702	4543	787	2645	5561	3627	5410	8318	17967
	2. Livestock	Doses	732	1026	254	303	250	202	230	203	534

Source: Animal Husbandry Department.

## Appendix 4.35

Production and Distribution of Frozen Semen in Kerala  
(1993-94 to 2003-2004)

(In lakh doses)

Year	Production of Frozen Semen	Distribution Inside the State	Distribution Outside the State	Total Distribution
1	2	3	4	5
1993-94	26.81	14.99	9.99	24.98
1994-95	24.85	15.36	10.97	26.33
1995-96	14.93	16.27	6.61	22.88
1996-97	24.78	15.39	7.83	23.22
1997-98	24.49	15.04	7.95	22.99
1998-99	25.57	15.75	7.70	23.45
1999-00	26.17	15.74	6.80	22.54
2000-01	20.13	15.83	7.60	23.43
2001-02	28.94	15.52	5.50	21.02
2002-03	23.79	15.32	6.45	21.77
2003-04	24.33	15.05	1.24	16.29

Source: KLD Board

## Appendix 4.36

## Artificial Insemination Centres in the State, as on 31.03.2004

Sl.No	Department/ Institutions	No. of A.I Centres
1	2	3
1	Department of Animal Husbandry (Both ICDP and Non-ICDP)	2538
2	Department of Dairy Development	11
3	Other Voluntary Organisations (Private)	211
4	APCOS	215
5	Tata Tea	27
	<b>Total:</b>	<b>3002</b>

Source: Animal Husbandry Department &amp; KLD Board

## Appendix 4.37

## Other Important Activities of KLD Board During 2002-03 and 2003-04

Sl.No	Name of Programme	Achievement	
		2002-03	2003-04
1	2	3	4
1	Liquid Nitrogen (Lakh litres)	1.49	13.3
2	Quantity of basic fodder seeds produced (kg.)	946.50	991.2
3	Quantity of fodder seed supplied (MT)	12.57	15.654
4	No. of kids produced		
	(i) Malabari	244	177
	(ii) Bper	57	79
5	No. of Malabari kids distributed:	243	146
6	No. of personnel trained	292	1562
7	No. of embryos collected	34	38
8	Premium bull semen distributed		
9	No. of pigs distributed:	6560	6045
	For breeding and rearing	4412	5285
	For meat	252	279

Source: KLD Board.

Appendix 4.38  
Average Price of Livestock Products and Feeds in the State  
(1997-98 to 2003-2004)

Item	Unit	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2002-03 increase over 2001-02	2003-04 increase over 2002-03	
1	2	3	4	5	6	7	8	9	10	11	12
<b>Meat</b>											
Chicken	Kg.	62.57	57.69	59.03	57.63	55.6	3.52	55.25	-0.63	55.04	-0.38
			Broiler ..								
			Desi ..								
Mutton	Kg.	99.12	106.20	107.00	109	113	3.67	113.06	0.05	126.82	12.17
Beef	Kg.	41.36	46.30	48.62	50	51	2.00	51.31	0.61	55.37	7.91
Pork	Kg.	50.53	56.33	57.00	60	63	5.00	62.58	-0.67	64.34	2.81
<b>Egg</b>											
Fowl	100Nos.	155	135	145.00	152	140	-7.89	137	-2.14	146	6.57
			White ..								
			Brown ..								
Duck	100Nos.	217	228.00	245.00	260	252	-3.08	266	5.56	295	10.90
<b>Milk</b>											
Cow	Litre	11.87	12.00	12.66	12.80	12.70	-0.78	12.84	1.10	13.13	2.26
Buffalo	Litre	13.24	14.00	14.56	15.32	15.10	-1.44	16.31	8.01	16.73	2.58
<b>Feeds (price)</b>											
Groundnut cake	Kg.	10.95	11.00	11.20	12.57	12.20	-2.94	11.11	-8.93	12.49	12.42
Coconut cake	Kg.	10.70	10.83	11.21	10.80	9.84	-8.89	10.16	3.25	12.57	23.72
Gingely oil cake	Kg.	10.01	10.00	10.93	11.50	11.45	-0.43	12.43	8.56	13.56	9.09
Straw	Kg.	3.44	4.04	4.19	4.04	3.61	-10.64	3.49	-3.32	3.54	1.43
Grass	Kg.	1.99	2.87	2.88	3.32	2.96	-10.84	2.18	-26.35	2.52	15.60

Source: Animal Husbandry Department.

**Appendix 4.39**  
**Dairy Cooperatives of India at a Glance**

State	1980-81	1990-91	2002-03	2003-04*
<i>(in numbers+)</i>				
<b>North</b>				
Haryana	505	3,229	3,963	4,219
Himachal Pradesh		210	235	283
Jammu & Kashmir		105	**	**
Punjab	490	5,726	7,108	6,892
Rajasthan	1,433	4,976	8,364	9,643
Uttar Pradesh	248	7,880	17,429	18,104
<b>Sub Total</b>	<b>2676</b>	<b>22126</b>	<b>37099</b>	<b>39141</b>
<b>East</b>				
Assam		117	54	65
Bihar	118	2,060	4,008	4,657
Jharkhand				80
Nagaland		21	77	76
Orissa		736	1,483	1,654
Sikkim		134	185	189
Tripura		73	84	84
West Bengal	584	1,223	2,012	2,287
<b>Sub Total</b>	<b>702</b>	<b>4364</b>	<b>7903</b>	<b>9092</b>
<b>West</b>				
Chhattisgarh				424
Gujarat	4,798	10,056	11,112	11,400
Goa		124	164	169
Madhya Pradesh	441	3,865	4,911	4,699
Maharashtra	718	4,535	17,376	18,349
<b>Sub Total</b>	<b>5957</b>	<b>18580</b>	<b>33563</b>	<b>35041</b>
<b>South</b>				
Andhra Pradesh	298	4,766	5,007	5,072
Karnataka	1,267	5,621	9,050	9,293
Kerala		1,016	3,114	3,208
Tamil Nadu	2,384	6,871	7,452	7,631
Pondicherry		71	93	96
<b>Sub Total</b>	<b>3949</b>	<b>18345</b>	<b>24716</b>	<b>25300</b>
<b>All India</b>	<b>13284</b>	<b>63415</b>	<b>103281</b>	<b>108574</b>

+ Organised (Cumulative)

\* Provisional, includes conventional societies and Taluka unions formed earlier  
Chattisgarh and Jharkhad reported separately from 2003-04

\*\* Not reported

Source: NDDB Annual Report 2003-04

**Appendix 4.40**  
**Performance of Kerala Co-operative**  
**Milk Marketing Federation (1997 to 2004)**

Sl. No	Particulars	1997	1998	1999	2000	2001	2002	2003	2004*
1	2	3	4	5	6	7	8	9	10
1	No. of Apcos registered (Cumulative)	1983	2149	2235	2308	2424	2464	2535	2577
2	No. of Apcos functional (Cumulative)	1826	1985	2040	2092	2130	2250	2308	2341
3	No. of members in apcos (Cumulative) (Lakh Nos)	5.27	5.72	5.99	6.25	6.53	6.79	6.97	7.28
4	No. of Women in Apcos (Lakh Nos)	0.75	0.81	0.83	0.84	1.03	1.09	1.15	1.24
5	No. of SC/ST members in Apcos (Lakh Nos)	0.31	0.34	0.40	0.39	0.42	0.40	0.40	0.44
6	Average milk marketed/day by KCMMF (MT)	529	568	611	629	659	699	737	766
7	Average milk procured per day (MT) - Apcos	465	477	536	689	714	708	6.72	7.05
8	Direct employment generated (No. of persons)	5242	5565	5709	5844	7060	7210	7484	7580
9	No. of Veterinary routes.	25	51	43	41	18	13	13	12
10	No. of cases treated (Lakh Nos)	0.71	0.14	0.09	0.06	0.05	0.04	0.03	0.02
11	No. of emergency veterinary routes	17	19	19	17	20	38	39	39
12	No. of cases treated (Lakh Nos)	0.36	0.36	0.43	0.28	0.31	0.40	0.42	0.34
13	Cattle feed sold (MT)	38743	43480	83071	121629	116790	102626	104016	84175
14	Quantity of ghee produced (MT)	1213	1220	1562	1613	1709	1832	2299	1883
15	Quantity of ghee sold (MT)	1055	1181	1435	1493	1786	1934	2258	1710

Source: KCMMF

\* as on September 2004

Appendix 4.41

Performance of the Dairies under Kerala Co-operative Milk Marketing Federation (2001 to 2004)

Sl.No	Dairy	Capacity lakh ltr./day	Procurement (lakh ltrs.)							Sales (lakh ltrs.)			
			2001	2002	2003	2004*	2001	2002	2003	2004*			
1	2	3	4	5	6	7	8	9	10	11			
1	Thiruvananthapuram	2.00	449.97	428.55	356.54	273.51	458.67	552.11	551.31	440.60			
2	Kollam	1.00	432.95	431.68	281.83	151.78	304.55	340.95	407.19	318.57			
3	Alappuzha	0.66	96.37	91.51	68.33	45.58	160.54	193.91	206.15	166.84			
4	Kottayam	0.40	86.92	79.82	67.38	57.25	99.13	119.02	124.22	100.74			
5	Ernakulam	1.50	403.52	377.62	353.34	287.85	316.68	381.14	401.10	331.20			
6	Thrissur	0.60	175.97	149.82	137.69	85.25	101.98	121.92	122.15	91.00			
7	Palakkad	1.00	358.90	342.23	331.8	287.98	132.96	160.24	165.00	134.71			
8	Kannur	1.00	296.14	336.67	343.66	279.68	248.54	284.64	238.85	189.18			
9	Kozhikode	1.50	183.17	169.64	156.4	121.24	257.12	309.03	331.81	244.60			
10	Kasaragod	0.30	0.00	4.47	23.61	20.99	0.00	15.69	102.71	80.36			
	<b>Total</b>	<b>9.96</b>	<b>2483.91</b>	<b>2412.01</b>	<b>2120.58</b>	<b>1611.11</b>	<b>2080.17</b>	<b>2478.65</b>	<b>2650.49</b>	<b>2097.80</b>			

Source : KCMMF

\* as on September 2004



## Appendix 4.42

Average Quantity of Milk Procured per day by APCOS  
(1994 to 2004)

Year	No. of Societies (Functional)	Total Procurement/day (ltr.)	Procurement per Society/day (ltr.)
1	2	3	4
1994	1621	414730	256
1995	1722	465294	270
1996	1784	484969	272
1997	1826	464998	255
1998	1985	566247	285
1999	2040	629114	308
2000	2092	688864	329
2001	2130	714301	335
2002	2250	708137	315
2003	2308	671720	291
2004 *	2341	704716	301

Source: KCMMF

\* As on September 2004

**Appendix 4.43**  
**Price Revision Details of Milk**

Date of Revision/Region	FAT(Rs./Kg)	SNF(Rs/Kg)	Purchase Price(Rs./kg) (Average rate)	Sales price(Rs/ltr) Toned Milk
1	2	3	4	5
01/04/84	30.00	21.00	2.67	4.00
01/10/85	31.00	24.00	2.97	4.50
11/08/87	34.00	27.50	3.36	5.00
21/07/89	35.00	31.10	3.69	5.50
15/02/91	39.00	34.90	4.14	6.00
21/11/91	42.80	42.80	4.92	7.00
01/11/92	49.25	49.25	5.66	8.00
01/02/94	55.50	55.50	6.38	9.00
21/01/95	62.50	62.50	7.19	10.00
31/01/96	69.90	69.90	8.04	11.00
01/01/97	80.15	77.01	8.95	12.00
01/04/99	95.70	78.30	9.73	13.00
From 2000-01 onwards different Price Structures were adopted in the different Regional Milk Unions				
<b>TRCMPU</b>				
01/04/01	95.70	78.30	9.73	13.00
01/07/01	91.30	74.70	9.09	13.00
11/08/01	95.70	78.30	9.73	13.00
01/11/01	95.70	79.55	9.71	13.00
21/11/03	103.34	85.90	10.40	14.00
<b>ERCMPU</b>				
11/05/00	95.70	78.3	9.23	13
11/07/01	91.30	74.7	9.09	13
21/11/03	98.99	80.99	9.85	14
<b>MRCMPU</b>				
21/05/00	95.7	78.3	9.23	13
11/10/00	95.7	78.3	9.23	12.5
21/05/01	95.7	78.3	8.63	12.5
01/10/01	95.7	79.55	9.21	12.5
21/11/03	103.34	85.9	10.4	14

Source: KCMMPF

**Appendix 4.44**  
**Price Spread of Milk (1993-94 to 2003-04)**

*(Average price per lit. in Rs.)*

Year	Producer	Society	Consumer	Difference in price between producer & consumer
1	2	3	4	5
1993-94	6.14	6.56	9.00	2.86
1994-95	7.44	7.80	10.00	2.56
1995-96	8.31	8.81	11.00	2.69
1996-97	9.42	9.91	12.00	2.58
1997-98	9.22	9.64	12.00	2.78
1999-2000	9.93	10.33	13.00	3.07
2000-01	9.93	10.33	13.00	3.07
<b>2002-03*</b>				
TRCMPU&MRCMPU	10.71	10.33	14.00	3.29
ERCMPU	10.15	10.33	14.00	3.85

\*From 01/11 2003  
Source: KCMMF

## Appendix 4.45

## Sale of Milk and Milk Products by KCMMF (2001-02 to 2003-04)

Sl. No	Product	2001-02	2002-03	% change over 2001-02	2003-04	% change over 2001-02
1	2	3	4	5	6	7
1	Milk(Lakh Litr)	2408.	2663	10.59	2675	11.09
2	Ghee (MT)	1834	1992	8.62	2256	23.01
3	Butter (MT)	270	377	39.63	296	9.63
4	Ice-cream (Ltrs)	229191	310351	35.41	311204	35.78
5	Peda (Kg.)	62168	79025	27.12	65304	5.04
6	SFM (Bottles)	353124	0	-100.00		-100.00
7	Refresh/Trays	52815	31924	-39.56	24080	-54.41
8	Card Milk/ trays	2689	1055	-60.77		-100.00
9	Sambharam (lakh ltrs.)	15.31	14.92	-2.55	72.99	376.75
10	Curd (lakh ltr.)	85.38	103.99	21.80	116.37	36.30
11	Lassy (Ltr.)	25386	17076	-32.73	2076	-91.82
12	Kulfi (Cups)	17299	14475	-16.32	12563	-27.38
13	Sip up (lakh nos.)	32.11	39.4	22.70	26.05	-18.87
14	Cream (Kg.)	429734	146298	-65.96	1011	-99.76
15	Dairy Whitener (MT)	129	63	-51.16	16	-87.60
16	Cream Roll (Nos.)	9799	5419	-44.70		-100.00
17	Palada (Kg.)	5138	3078	-40.09	2709	-47.28
18	Milma Plus (Bot.)	23329	1107892	4648.99	755947	3140.37
19	Pāneer (Kg.)	2400	4620	92.50		-100.00
20	Chocolik (No.)	54394	135361	148.85		-100.00
21	Yoghurt(Kgs)	0	22005			
22	Skimmed Milk Powder (MT)	0	1			

Source: KCMMF - Annual Reports

Appendix 4.46  
District-wise Distribution of Fishermen Population in Kerala (2003-04)

Sl. No.	District	Marine						Inland				Marine & Inland Total		
		Male		Female		Children	Total	Male		Female			Children	Total
		3	4	5	6			7	8	9	10			
1	Thiruvananthapuram	53090	51402	72996	177488	462	486	483	1431	178919				
2	Kollam	32122	29409	38360	99891	11623	11078	13651	36352	136243				
3	Alappuzha	36916	35705	45937	118558	21794	21033	23248	66075	184633				
4	Pathanamthitta	0	0	0	0	616	750	1096	2462	2462				
5	Kottayam	0	0	0	0	8728	8532	9201	26461	26461				
6	Idukki	0	0	0	0	334	255	238	827	827				
7	Emakulam	25077	24277	27823	77177	23268	22628	22397	68293	145470				
8	Thrissur	22861	23142	28258	74261	6959	6826	7341	21126	95387				
9	Palakkad	0	0	0	0	768	868	1133	2769	2769				
10	Malappuram	25111	25689	34370	85170	1475	1467	1705	4647	89817				
11	Wayanad	0	0	0	0	96	90	101	287	287				
12	Kozhikode	33021	31826	40261	105108	4063	3941	4836	12840	117948				
13	Kannur	18308	17385	23676	59369	2370	2307	2264	6941	66310				
14	Kasaragod	15008	14459	17098	46565	341	325	344	1010	47575				
	<b>State</b>	<b>261514</b>	<b>253294</b>	<b>328779</b>	<b>843587</b>	<b>82897</b>	<b>80586</b>	<b>88038</b>	<b>251521</b>	<b>1095108</b>				

Source: Directorate of Fisheries

**Appendix 4.47**  
**Species wise composition of Marine fish landings in Kerala**  
**(2001-2002 to 2003-04)**

(In MT)

Sl. No	Species	2001-02	2002-03	2003-04
1	Elasmobranchs	2991	3197	3066
2	Eels	143	181	147
3	Cat Fish	150	121	154
4	Chirocentrus	252	293	258
5(a)	Oil Sardine	169851	180443	174464
	(b) Lesser Sardine	96831	28658	99539
	(c) Anchovilla	34925	29173	35869
	(d) Trissoels	2254	4366	2320
	(e) Other Clupeids	12694	10731	13024
6	Saurida & Saurus	5856	6817	6021
7	Hemirhamphus & Belone	632	970	647
8	Flying fish			
9	Perches	30212	40119	31020
10	Red Mullet	1545	144	1584
11	Polynemids	21	159	22
12	Sciaenids	8863	6093	9056
13	Ribbon fish	18364	16082	18815
14(a)	Caranx	25110	24855	25721
	(b) Chorinemus	1022	536	1051
	(c) Other Carangids	23977	19118	24618
15	Leiognathus	5046	8619	5186
16	Lactrious	3839	2106	3938
17	Pomfrets	1379	2557	1412
18	Mackerel	42446	54537	43551
19	Seerfish	2326	3499	2389
20	Tunnies	11014	15444	11314
21	Sphyraena	1562	3209	1610
22	Mugil	28	89	28
23	Soles	7946	14781	8174
24(a)	Penaid Prawn	53219	53627	53361
	(b) Non Penaid Prawn	3226	3350	3370
	(c) Lobsters		891	344
	(d) Crabs	3343	7772	3446
	(e) Stomatopods	335	16689	
26	Cephalopods	15698	26665	16147
27	Miscellaneous	6683	17395	6859
	<b>TOTAL</b>	<b>593783</b>	<b>603286</b>	<b>608525</b>

Source: Directorate of Fisheries

Appendix 4.48

Species-wise Inland Fish Production in Kerala (1999-00 to 2003-04)

(In MT)

Sl. No	Species	1999-2000		2000-01		2001-02		2002-03		2003-04	
		Production	%	Production	%	Production	%	Production	%	Production	%
1	2	5	6	7	8	9	10	11	12	13	14
1	Prawns	16459	22.2	18315	21.5	16388	21.0	16178	21.6	16136	20.35
2	Etroplus	4860	6.56	4963	5.8	6998	9.0	4394	5.9	4510	5.69
3	Murrels	4596	6.2	4600	5.4	4306	5.5	4460	5.9	3657	4.61
4	Tilapia	8510	11.48	8336	9.8	6868	8.8	7449	9.9	7739	9.76
5	Catfish	4816	6.5	5276	6.2	4517	5.8	4367	5.8	4359	5.50
6	Jew Fish	3054	4.12	3078	3.6	2426	3.1	2677	3.6	2795	3.53
7	Others	31835	42.94	40666	47.7	36536	46.8	35511	47.3	40083	50.56
	<b>Total</b>	<b>74130</b>	<b>100</b>	<b>85234</b>	<b>100</b>	<b>78039</b>	<b>100</b>	<b>75036</b>	<b>100</b>	<b>79279</b>	<b>100.00</b>

Source: Directorate of Fisheries

**Appendix 4.47**  
**Species wise composition of Marine fish landings in Kerala**  
**(2001-2002 to 2003-04)**

(In MT)

Sl. No	Species	2001-02	2002-03	2003-04
1	Elasmobranchs	2991	3197	3066
2	Eels	143	181	147
3	Cat Fish	150	121	154
4	Chirocentrus	252	293	258
5(a)	Oil Sardine	169851	180443	174464
	(b) Lesser Sardine	96831	28658	99539
	(c) Anchovilla	34925	29173	35869
	(d) Trissoels	2254	4366	2320
	(e) Other Clupeids	12694	10731	13024
6	Saurida & Saurus	5856	6817	6021
7	Hemirhamphus & Belone	632	970	647
8	Flying fish			
9	Perches	30212	40119	31020
10	Red Mullet	1545	144	1584
11	Polynemids	21	159	22
12	Sciaenids	8863	6093	9056
13	Ribbon fish	18364	16082	18815
14(a)	Caranx	25110	24855	25721
	(b) Chorinemus	1022	536	1051
	(c) Other Carangids	23977	19118	24618
15	Leiognathus	5046	8619	5186
16	Lactrius	3839	2106	3938
17	Pomfrets	1379	2557	1412
18	Mackerel	42446	54537	43551
19	Seerfish	2326	3499	2389
20	Tunnies	11014	15444	11314
21	Sphyraena	1562	3209	1610
22	Mugil	28	89	28
23	Soles	7946	14781	8174
24(a)	Penaid Prawn	53219	53627	53361
	(b) Non Penaid Prawn	3226	3350	3370
	(c) Lobsters		891	344
	(d) Crabs	3343	7772	3446
	(e) Stomatopods	335	16689	
26	Cephalopods	15698	26665	16147
27	Miscellaneous	6683	17395	6859
<b>TOTAL</b>		<b>593783</b>	<b>603286</b>	<b>608525</b>

Source Directorate of Fisheries



Appendix 4.48

Species-wise Inland Fish Production in Kerala (1999-00 to 2003-04)

(In MT)

Sl. No	Species	1999-2000		2000-01		2001-02		2002-03		2003-04	
		Production	%	Production	%	Production	%	Production	%	Production	%
1	2	5	6	7	8	9	10	11	12	13	14
1	Prawns	16459	22.2	18315	21.5	16388	21.0	16178	21.6	16136	20.35
2	Etroplus	4860	6.56	4963	5.8	6998	9.0	4394	5.9	4510	5.69
3	Murrels	4596	6.2	4600	5.4	4306	5.5	4460	5.9	3657	4.61
4	Tilapia	8510	11.48	8336	9.8	6868	8.8	7449	9.9	7739	9.76
5	Catfish	4816	6.5	5276	6.2	4517	5.8	4367	5.8	4359	5.50
6	Jew Fish	3054	4.12	3078	3.6	2426	3.1	2677	3.6	2795	3.53
7	Others	31835	42.94	40666	47.7	36536	46.8	35511	47.3	40083	50.56
	<b>Total</b>	<b>74130</b>	<b>100</b>	<b>85234</b>	<b>100</b>	<b>78039</b>	<b>100</b>	<b>75036</b>	<b>100</b>	<b>79279</b>	<b>100.00</b>

Source: Directorate of Fisheries

**Appendix 4.49**  
**Welfare Activities of Fisheries Department (2001-02 to 2003-04)**

SI.No	Particulars	2001-02		2002-03		2003-04	
		Financial (Lakh Rs.)	Physical (No.)	Financial (Lakh Rs.)	Physical (No.)	Financial (Lakh Rs.)	Physical (No.)
1	2	5	6	7	8		
1	NFWF Housing	800.00	1,592	177.87	445	600	1500
2	Danida Model Sanitation	50.00	2,000	-	-	-	-
3	Theerajyothei (Electrification)	50.00	5,000	-	-	-	-
4	Group Accident Insurance Scheme for fishermen	30.6	54	57.9	128	66.15	138
5	G.A.Is for allied workers	3	3	5.64	22	5	5
6	Fishermen Oldage Pension	180.97	27,240	472.19	27,240	459.07	25268
7	Pension for wives of deceased fishermen	9.41	1,380	22.57	1,380	4.45	2220

Source: Fisheries Directorate

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Appendix 4.50

**Details of Welfare Relief Schemes implemented by  
The Kerala Fishermen's Welfare Fund Board, 2003-04**

(Amount in Rs.)

Sl. No	Details of Schemes	No of beneficiaries	Amount spent
1	2	3	4
1	Group Insurance Scheme		
	a) Accident Death (started on 10.09.1996)	64	6405000
	b) Permanent total disability	-	-
	c) Permanent partial disability	2	100000
	d) Medical Expenses (Hospitalisation)	72	110060
2	Death while fishing or immediately there after not due to accident	33	655000
3	Financial assistance for the marriage of daughters of fishermen	2880	4320000
4	Financial assistance for the death of dependents	1209	686200
5	Old age pension	25268	45907449
6	Temporary disability	807	347170
7	Financial assistance to the dependents for the death of fishermen	456	2240000
8	SSLC cash award to the dependants for the death of fishermen	16	30000
9	Family welfare schemes	722	360950
10			
	a)		
	Financial assistance for treatment of fatal diseases	260	1874025
	b) Invalid pension	-	16500
11	Widow pension	2220	4450200
12	Chairman's Relief Fund	154	152750
13	Special cases sanctioned by the Board	2	20000
14	Maternity benefit scheme	1118	838500
15	Matsya Board Guidance Centre	-	9250
16	Cash award for Higher Education	15	51000
17	Extension	296	376455
18	Insurance Premium	-	6828649
<b>Total</b>		<b>35594</b>	<b>75779158</b>
<b>Allied Workers Welfare Scheme</b>			
1	Financial assistance to the dependents for the death of allied workers	67	335000
2	Maternity benefit scheme	44	33000
	a) Accidental death	5	500000
4	Old age pension	623	410850
5	Medical Expenses (Hospitalisation)	21	25521
6	SSLC cash award to the students who score highest marks	16	36532
7	Special cases sanctioned by the Board	1	3000
8	Fatal disease	49	252813
9	Marriage assistance	36	54000
10	Sterilisation Operators	9	4500
11	Insurance Premium	-	1334829
<b>Total</b>		<b>871</b>	<b>2990045</b>
<b>GRAND TOTAL</b>		<b>36465</b>	<b>78769203</b>

Source: National Fishermen's Welfare Fund Board

Appendix 4.51

Details on Fishery Harbours in Kerala

(Amount in Lakh Rs.)

Sl.No.	Name of Fishing Harbour	Total Estimated Cost		Year of Starting	Year of Completion targeted	Expenditure up to March 2004 - Progressive Total	Amount Sanctioned by GOI	Amount Released by GOI
		Original	Revised					
1	2	3	4	5	6	7	8	9
1	Vizhinjam	704.00	1583.00 *	1987 - stage II	2004	1501.988	704.00	690.50
2	Muthalapozhi	1366.00	-	2000	2005	495.822	1366.00	300.00
3	Thangassery	1980.50	4385.50 *	1991	Commissioned in 2001	4041.401	1980.50	990.25
4	Neendakara	622.00	-	1982	Commissioned in 1988	821.989	622.00	311.00
5	Kayamkulam	624.60	1770	1994	2005	971.425	624.60	300.00
6	Munambam	1167.20	1985.80 *	1998	Commissioned in 2000	1784.811	1167.20	683.60
7	Puthiyappa	527.00	962.5	1988	Commissioned in 1996	1185.112	982.50	481.25
8	Chombal	556.00	975.00 *	1992	Commissioned in 1999	898.301	556.00	370.00
9	Mopla bay	564.00	816	1992	Commissioned in 1999	1055.048	816.00	408.00
10	Ponnani	2759.40	-	2001	2005	471.306	2759.40	350.00
11	Thalai	1370.00	1970*	-	-	47.266	-	-
12	Thottappally	1458.30	-	2004	2007	-	1458.30	100.00

\* Revised Estimate submitted to Government for sanction

Source : Harbour Engineering Department

**Appendix 4.52**  
**Details of Revenue Collection**  
**in various Fishing Harbours/Fish Landing Centres**

(Rs. in lakhs)

Sl.No.	Name of Harbour or Landing Centre	Up to 2000-02	2002-03	2003-04	Total
1	2	3	4	5	6
<b>I</b>	<b>FISHING HARBOURS</b>				
1	Neendakara	663.20	76.81	114.75	854.76
2	Puthiyappa	117.64	37.57	40.62	195.83
3	Munambam	21.88	21.98	16.10	59.96
4	Mopla Bay	2.78	2.73	3.94	9.45
5	Chompal	32.63	9.73	14.55	56.91
6	Azheekal	11.89	0.75	1.66	14.30
7	Beypore	12.03	4.90	9.34	26.27
8	Thangassery	88.91	16.08	24.07	129.06
9	Vizhinjam	-	3.31	27.74	31.05
<b>II</b>	<b>FISH LANDING CENTRES</b>				
1	Munakkadavu	2.03	0.01	0.1	2.14
2	Thottappaly	4.72	0.26	0.25	5.23
3	Neeleswaram	1.37	0.42	0.07	1.86
4	Dharmadam	2.54	0.44	0.46	3.44
5	New Mahe	1.26	1.87	1.16	4.29
6	Vellayil Beach	5.12	0.44	1.15	6.71
7	Cheruvathoor	3.76	0.91	0.12	4.79
8	Chalilgopalapettah	0.36	0.35	0.26	0.97
9	Quilandy	1.04	0.48	0.3	1.82
10	Chettuva	4.92	1.00	1.66	7.58
11	Palacode	0.32	0.62	0.00	0.94
12	Arthungal	1.57	1.58	0.29	3.44
13	Punnappra	1.48	1.55	0.00	3.03
14	Ponnani	0.00	0.00	0.45	0.45
15	Kattoor	0.00	0.00	0.10	0.10
<b>TOTAL</b>		<b>981.45</b>	<b>183.79</b>	<b>259.14</b>	<b>1424.38</b>

Source: Harbour Engineering Department

## Appendix 4.53

## Activity-wise Cumulative Sanction/Release of Funds to Kerala by NCDC

(Rs In Crore)

Sl.No	Scheme	Total Release from 1962-63 to 2000-01	% to Total release	Total release 2001-02	% to Total release	Total release during 2002-03	% to Total release	Total release during 2003-04	% to Total release
1	2	3	4	5	6	7	8	9	10
1	Mktg. & Input Distribution	40.57	9.17	8.75	16.95	14.98	29.85	2.08	2.16
2	Agro- Processing								
	a) Sugar	1.39	0.31	-	-	-	-	-	-
	b) Spinning Mills	10.05	2.27	-	-	-	-	8.04	8.33
	c) Oil Processing	74.25	16.79	-	-	-	-	-	-
	d) Powerlooms	18.53	4.18	0.95	1.86	2.46	4.90	-	-
	e) Rubber/others	34.30	7.75	0.55	1.07	1.57	3.13	5.80	6.00
3	Storage	13.54	3.06	0.81	1.57	2.41	4.80	0.02	0.02
4	Rural consumer / Student stores	20.68	4.67	1.96	3.8	10.67	21.26	1.69	1.75
5	ICDP	66.19	14.95	20.95	40.58	7.63	15.21	16.10	16.67
6	Weaker Section								
	a) Fisheries	88.92	20.08	16.59	32.15	5.63	11.22	15.21	15.75
	b) Handloom	15.72	3.55	0.72	1.39	1.11	2.21	-	-
	c) Coir	48.75	11.01	0.09	0.18	1.23	2.45	-	-
	d) SC-ST Co-ops.	2.18	0.49	-	-	0.09	0.18	-	-
	e) Poultry	0.10	0.02	-	-	-	-	-	-
	f) Dairy	0.03	0.01	-	-	-	-	-	-
7	Promotional/Development Projects	4.76	1.08	-	-	-	-	-	-
9	Credit to Co-operative Development	-	-	-	-	-	-	46.55	48.20
10	Computerisation	2.71	0.61	0.24	0.46	2.40	4.79	1.08	1.12
<b>Total:</b>		<b>442.67</b>	<b>100</b>	<b>51.61</b>	<b>100</b>	<b>50.18</b>	<b>100</b>	<b>96.57</b>	<b>100.00</b>

**Appendix 4.54**  
**NCDC Release of Fund for Kerala**  
**(1998-99 to 2003-2004)**

Sl.No.	Name of Schemes	1998-99	1999-2000	2000-01	2001-02	2002-03	2003-04
1	2	3	4	5	6	7	8
1	Marketing Co-operatives						
	(a) Margin Money to Federation	167.000	203.000	-	300.000	1090.000	-
	(b) Share Capital to PAMS	11.000	134.270	53.630	413.130	260.060	140.000
	(c) Agro Custom Hiring-cum-service Centre of RAIDCO (Margin Money)	120.000	70.000	-	-	-	-
	(d) Farmers Service Centre	-	142.400	544.400	161.850	99.400	58.530
	(e) Agricultural Implements/ Organic manure	-	-	-	-	49.080	8.940
2	Processing Unit						
	(a) Rubber	62.075	319.025	1967.06	55.145	156.530	580.300
	(b) Spices Powdering Unit	37.764	58.800	49.055	-	-	-
3	Storage	29.200	79.000	36.407	81.276	241.071	2.175
4	Credit for Co-operative Development	-	-	-	-	-	4655.325
5	Fisheries						
	(a) Marine	653.881	1335.484	1143.72	1659.36	562.500	1521.430
	(b) Inland	239.363	208.466	-	-	-	-
	(c) Fish marketing cell	-	42.200	-	-	-	-
6	Coir Co-operatives	371.847	397.826	1057.087	9.320	123.349	-
7	Handloom Co-operatives	141.849	264.173	74.140	71.593	111.250	-
	(a) Spinning Mills	220.810	150.000	107.990	-	-	804.020
	(b) Powerloom	117.790	382.850	551.555	95.620	245.630	-
8	SC/ST Co-operatives	23.840	51.965	68.310	-	8.890	-
9	Sugar Factory	24.000	-	-	-	-	-
10	Computerisation	-	249.660	270.520	23.730	240.130	107.589
11	Tech/Promo Cell	-	-	-	-	-	-
12	Project Reports Study etc. Others	0.500	-	-	-	-	-
13	EEC-Coconut Development Project (KERAFED Project)	439.100	120.850	-	-	-	-
14	INTE-Co-operative Development Project (I.C.D.P)	1228.010	945.517	773.632	2094.527	763.063	1610.198
15	Consumer Schemes	826.900	443.130	205.050	188.800	1066.580	169.390
16	Student Stores	2.120	7.140	1.500	7.130	0.650	-
17	Animal Husbandry Department	-	-	-	-	-	-
	Poultry Co-operatives	-	-	-	-	-	-
18	Godown to dairy	9.800	2.500	-	-	-	-
	<b>Total:</b>	<b>4726.849</b>	<b>5608.256</b>	<b>6904.056</b>	<b>5161.481</b>	<b>5018.183</b>	<b>9657.897</b>

Appendix 4. 55

Selected Indicators of Performance of the Primary Agricultural Credit Societies

Sl.No.	Indicators	Unit	2001	2002	2003	2004
1	2	3	4	5	6	7
1	Average membership per society	No.	12671	13377	13882	14420
2	Average Share Capital per Society	Lakh Rs.	20.00	21.00	31.00	24
3	Average deposit per society	Lakh Rs.	386.00	427.00	536.00	579
4	Average deposit per member	Rs	3043.16	3192.4	3860.08	4012.27
5	Average working capital per society	Lakh Rs.	507.05	555	653.04	772.5
6	Average loan per member	Rs	2593.24	2599.54	3871.90	3788.38
7	Percentage of borrowing members to total	%	44.44	42.09	44.13	40.15
8	Average loan advanced per advancing society	Lakh Rs.	328.58	347.75	537.5	546.28
9	Average loan advanced per borrowing members	Rs	5835.03	6175.93	8215.21	9037.1
10	Percentage of overdue to demand	%	21.87	23.84	25.36	34.8
11	Percentage of overdue to outstanding	%	25.67	23.54	25.36	28.73

Source: Registrar of Co-operative Societies, Kerala.



**Appendix 4.56**  
**Selected indicators of the Credit Operations of the**  
**Primary Agricultural Credit Societies**

Sl.No.	Indicators	Unit	2001	2002	2003	2004
1	2	3	4	5	6	7
1	No. of Societies	Nos.	1682	1685	1628	1655
2	No. of Members	No. in crores	2.1312	2.2541	2.26	2.30
	(i) of which SC	No. in lakhs	8.429	8.951	9.69	12.48
	(ii) of which ST	No. in lakhs	1.0198	1.1987	1.31	1.46
3	Paid up share capital	Rs. in crores	337.0195	361.3958	506.35	409.44
4	Reserves	Rs. in crores	320.999	372.2008	925.34	569.87
5	Deposits	Rs. in crores	6485.577	7195.995	8723.77	9811.41
6	Working Capital	Rs. in crores	8528.576	9351.775	10631.50	13233.32
7	Loans Issued	Rs. in crores	5526.709	5859.624	8750.50	8984.99
	(i) short-term	Rs. in crores	3549.578	3746.013	6301.10	5742.51
	(ii) Medium-term	Rs. in crores	1498.429	1606.113	1859.43	2873.49
	(iii) Long - term	Rs. in crores	478.702	507.498	589.97	368.99
8	Loan Outstanding	Rs. in crores	5774.563	6267.657	6802.23	7901.65
9	Loan Overdue	Rs. in crores	1482.206	1475.175	1724.97	2260.25
10	S.T Loan for agricultural purpose alone	Rs. in crores	1263.284	1401.557	3739.29	1839.75
11	S.T Loan for non- agricultural purpose	Rs. in crores	2290.688	2583.476	2561.81	3505.28
12	M.T loan for Agricultural purpose	Rs. in crores	455.879	504.465	560.89	650.72
13	M.T loan for non-Agricultural purpose	Rs. in crores	1014.01	1125.818	1298.54	1541.96
14	L.T. Loan for Agricultural purpose	Rs. in crores	181.383	194.66	254.79	173.95
15	L.T. Loan for non-agricultural purpose	Rs. in crores	260.449	310.048	335.18	287.68
16	Value of Fertilizers Sold	Rs. in crores	179.803	284.793	52.26	194.10
17	Value of Agricultural Produce Marketed	Rs. in crores	84.974	74.506	206.17	85.66
18	Dormant Societies	No.	126	109	27	26
19	Societies on Profit	No.	654	663	754	745
20	Profit Amount	Rs. in crores	101.004	116.063	94.27	123.53
21	Societies on loss	Nos.	1134	913	874	940
22	Loss Amount	Rs. in crores	307.501	397.443	203.70	388.40
23	Societies without profit or loss ( U/L )*	No.	1	0	0	17
24	Societies having paid Secretaries	No.	1559	1558	1560	1573
25	Societies having own Godowns	No.	1302	1309	1313	1309
26	Societies having Hired Godowns	No.	169	176	172	157
27	Viable Societies	No.	1334	1347	754	1483
28	Computerised societies	No.	289	426	452	576
29	Self Help Group Formed by PACS	No.	5905	5878	7384	9046
30	State Contribution to Agri. Credit	Rs. in Lakhs	96.2	90.93	31.30	356.92
31	Assistance for insurance	Rs. in Lakhs	0.002	0	0	-

\*U/L: Under Liquidation

Source: Registrar of Co-operative Societies, Kerala.

## Appendix 4.57

## Operations of CAMPCO (1997-98 to 2003-2004)

(Quantity in MT, Value in Lakh Rs.)

Sl. No.	Commodity	1997-98		1998-99		1999-2000		2000-01		2001-02		2002-03		2003-04	
		Qty	Value	Qty	Value	Qty	Value	Qty	Value	Qty	Value	Qty	Value	Qty	Value
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	<b>Areca nut</b>														
	a) Procurement	27172	22142	28693	28246	23576	30930	35049	32491	41242	23859	44990	27809	43877	29146
	b) Sales	26990	23217	31323	31614	20940	29813	34451	33598	38370	24948	42400	28273	43860	30483
2	<b>Cocoa Procurement</b>														
	a) Cocoa Pods	17	1	14	1	98	6	13	0.52	13	0.39	6	0.20	2.30	0.12
	b) Wet Beans	6339	1255	4851	960	5203	1008	3565	550	4769	717	5621	1392.00	7677.40	1718.26
	c) Dry Beans	18	13	17	12	0	0	3	2	82	51	128	85.65	471.50	432.83
3	<b>Copper Sulphate Sales</b>	289	155	253	124	221	117	301	146	366	188	252	138.26	199.00	101.70

Source : CAMPCO

## Appendix. 5.1

## Water Resources Potential of the River Basins of India

Sl No.	Name of the River Basin	Average annual potential in river (BCM)	Utilisable Surface flow (BCM)	Replenishable Ground flow (BCM)
1	Indus (up to border)	73.31	46.0	26.49
2	a) Ganga	525.02	250.0	170.99
	b) Bhramaputra Barak & Others	585.60	24.0	26.55
3	Godavari	110.54	76.3	40.65
4	Krishna	78.12	58.0	26.41
5	Cauvery	21.36	6.8	12.30
6	Pennar	6.32	6.9	4.93
7	East Flowing Rivers Between Mahanandi & Pennar	22.52	13.1	18.84
8	East Flowing Rivers Between Pennar and Kanyakumari	16.46	16.7	18.22
9	Mahanadi	66.88	50.0	16.46
10	Brahmani & Baitarni	28.48	18.3	4.05
11	Subernarekha	12.37	6.8	1.82
12	Sabarmati	3.81	1.9	..
13	Mahi	11.02	3.1	8.52
14	West Flowing Rivers of Kutch, Sabarmati including Luni	15.10	15.0	11.23
15	Narmada	45.64	34.5	10.83
16	Tapi	14.88	14.5	8.27
17	West Flowing Rivers from Tapi to Tadri	87.41	11.9	
18	West Flowing Rivers from Tadri to Kanyakumari	113.53	24.3	17.69
19	Minor River Basin Drainage into Bangladesh & Burma	31.00	..	..
<b>TOTAL</b>		<b>1869.37</b>	<b>690.3</b>	<b>431.42</b>

Source: Ministry of Water Resources

**Appendix 5.2**  
**Central Loan Assistance Released under AIBP to States from 1996-97 to 2003-04**

Sl. No.	State	CLA Released during											Total
		1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04			Total	
1	Andhra Pradesh	35.25	74	79.67	65.015	95.02	281.66	33.186	205.53	869.331			
2	Arunachal Pradesh	0	0	0	7.5	7.5	15	1.5	20	51.5			
3	Assam	5.23	12.4	13.95	14.54	24.077	14.521	16.274	19.2015	120.1935			
4	Bihar	13.5	5.15	36.185	129.695	148.44	3.42	14.481	74.644	425.515			
5	Chhattisgarh	0	4.5	9.5	10.52	13.93	48.2	104	74.63	265.28			
6	Goa	0	5.25	0	3.5	61.65	58	0	2	130.4			
7	Gujarat	74.773	196.9	423.82	272.7	421.85	581.69	1000.33	650.359	3622.422			
8	Haryana	32.5	12	0	0	0	0	18	7.735	70.235			
9	Himachal Pradesh	0	6.5	5	11.047	18.015	3.244	8.15	14.692	66.648			
10	Jammu & Kashmir	1.3	0	0	4.68	10.46	11.07	34.999	21.545	84.054			
11	Jharkhand	0	8.89	11.64	14.345	9.05	10.82	9.67	1.833	66.248			
12	Karnataka	61.25	90.5	94.5	157.14	171	492.5	620.85	266.478	1954.218			
13	Kerala	3.75	15	0	0	22.4	11.275	5.665	31	89.09			
14	Madhya Pradesh	63.25	110	81.25	95.325	151.328	215.41	220	568.44	1505.003			
15	Maharashtra	14	55	50.86	49.875	97.02	39.1	133.134	164.395	603.384			
16	Manipur	4.3	26	10.78	21.81	1.5	9.36	19.5	15.5	108.75			
17	Meghalaya	0	0	0	2.694	5.512	4.47	1.5	1.088	15.264			
18	Mizoram	0	0	0	1.433	1.433	2	0.75	9.3	14.916			
19	Nagaland	0	0	0	2.73	5	5	2.659	8	23.389			
20	Orissa	48.45	85	71.5	90.25	100.32	168.475	179.57	154.685	898.25			
21	Punjab	67.5	100	0	42	55.62	113.69	36.66	0	415.47			
22	Rajasthan	2.675	42	140.05	106.665	78.467	96.315	174.385	499.837	1140.394			
23	Tripura	3.773	5.1	3.975	34.653	13.883	21.063	13.395	13.377	109.219			
24	Tamilnadu	20	0	0	0	0	0	0	0	20			
25	Uttar Pradesh	43.5	78	76.5	286	315.9	354.69	359	274.785	1788.375			
26	Uttaranchal	0	0	0	0	0	0	25.163	25.5525	50.7155			
27	West Bengal	5	20	10	25	26.825	38.608	28.133	3.144	156.71			
28	Sikkim	0	0	0	1.36	0	2.4	0.75	0.75	5.26			
	<b>Total</b>	<b>500.001</b>	<b>952.19</b>	<b>1119.18</b>	<b>1450.477</b>	<b>1856.2</b>	<b>2601.981</b>	<b>3061.704</b>	<b>3128.501</b>	<b>14670.23</b>			

## Appendix 5.3

## Physical Achievements under Minor Irrigation Schemes

(Area in Ha.)

Sl.No.	Name of Schemes	Physical Achievement (net area)				
		1999-2000	2000-01	2001-02	2002-03	2003-04
1	2	3	4	5	6	7
1	Minor Irrigation - class -I	2766	924	714	1630	2947
2	Minor Irrigation - class -II	2458	821	587	834	1758
3	Lift Irrigation	943	512	160	458	181
4	Jaladhara Padhathy	--	--	--	557	--
5	EEC assisted M.I Programme	932	881	--	--	--

Source : Department of Water Resources

**Appendix 5. 4**  
**Ground Water Resources of Kerala as on 31.03.1999 (GEC-1997 Methodology)**

(Figures in MCM)

Sl. No.	District	Total Annual Ground Water Recharge	Natural Discharge during Non-Monsoon Season	4	5	6	7	8	9	10	11
				Net Annual Ground Water Availability	Existing Gross Ground Water draft for Irrigation	Existing Gross Ground Water for Domestic and Industrial uses	Existing Gross Ground Water draft for all uses	Allocation for domestic and Industrial water supply for next 25 years	Net Ground Water Availability for future irrigation development	Existing stage of Ground Water Development (%)	
1	Thiruvananthapuram	308.51	30.48	278.03	84.20	94.59	178.79	111.58	82.25	64.31	
2	Kollam	495.61	47.36	448.25	114.03	88.75	202.78	111.94	222.28	45.24	
3	Pathanamthitta	347.00	30.44	316.56	49.66	42.03	91.69	58.05	208.85	28.96	
4	Alappuzha	466.08	46.62	419.46	61.06	67.46	128.52	92.37	266.03	30.64	
5	Kottayam	521.06	50.20	470.86	62.89	67.43	130.32	92.52	315.45	27.68	
6	Idukki	269.04	22.72	246.32	41.77	41.64	83.41	57.08	147.47	33.86	
7	Ernakulam	618.43	50.59	567.84	197.59	86.44	284.03	112.21	258.04	50.02	
8	Thrissur	774.99	72.19	702.80	228.27	101.36	329.63	130.24	344.29	46.90	
9	Palakkad	823.92	73.55	750.37	140.47	159.85	300.32	191.81	418.09	40.02	
10	Malappuram	557.29	49.66	507.63	165.45	115.23	280.68	156.50	185.68	55.29	
11	Kozhikod	366.41	21.60	344.81	104.86	86.80	191.66	112.63	127.32	55.58	
12	Wayanad	324.39	32.44	291.95	34.40	28.67	63.07	40.40	217.15	21.60	
13	Kannur	591.89	51.27	540.62	107.29	76.52	183.81	101.38	331.95	34.00	
14	Kasargod	376.18	32.64	343.54	204.08	40.59	244.67	43.08	96.38	71.22	
<b>TOTAL</b>		<b>6840.80</b>	<b>611.76</b>	<b>6229.04</b>	<b>1596.02</b>	<b>1097.36</b>	<b>2693.38</b>	<b>1411.79</b>	<b>3221.23</b>	<b>43.24</b>	

Source: Water Resources Department (GWD)

## Appendix 5.5

## Physical Achievements under Ground water development Schemes (2000-2001 to 2003-04)

Sl.No	Items	Unit	2000-01	2001-02	2002-03	2003-04
1	2	3	5	6	7	7
1	Detailed hydrological survey(Site selection)	No.	2491	1757	3058	5423
2	Siting and providing technical assistance for open wells	No.	245	142	850	882
3	Siting and construction of different types of drilled wells	No.	554	460	510	934
4	Creation of additional irrigation facilities	ha.	1214	...	1027	2637
5	Training of personnel	No.	7	2	108	41
6	Failed well compensation	No.	3	5	...	...
7	Water sample analysis	No.	1531	1283	2160	2545

Source: Water Resources Department (GWD)

Appendix 5.6

Details of Allocation & Expenditure and Reimbursement Status under National Hydrology Project

(Lakhs Rs.)

Sl No.	Item	Surface Water Component						Ground Water Component					
		Financial			Reimbursement Status			Financial			Reimbursement Status		
		Revised allocation	%	Exptr. Cum.	%	Claimed	Received	Revised allocation	%	Exptr. Cum.	%	Claimed	Received
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.	Civil Works	1111.84	69	951.26	67.82	760.96	760.10	384.91	28.74	383.94	29.62	312.20	302.88
2.	Goods	352.14	22	284.24	20.26	229.9	201.39	557.76	41.65	635.00	48.97	515.89	500.72
3.	Training & Studies	36.29	2	49.74	3.55	49.12	46.08	22.20	1.65	32.15	2.48	32.15	32.15
4.	Recurrent cost on Incremental staff and other recurring items	114.83	7	117.47	8.37	65.20	63.09	374.43	27.96	245.42	18.93	141.90	137.93
	<b>Total</b>	<b>1615.10</b>	<b>100</b>	<b>1402.7</b>	<b>100</b>	<b>1104.77</b>	<b>1070.66</b>	<b>1339.30</b>	<b>100</b>	<b>1296.51</b>	<b>100</b>	<b>1002.14</b>	<b>973.68</b>

Source: Water Resources Department



## Appendix 5.7

## Physical Achievements under National Hydrology Project

(In Nos.)

Sl. No.	Item	Surface Water		Ground Water	
		Target	Achievement	Target	Achievement
1.	River Gauge sites (New/existing)	43	43	-	-
2.	Meteorological station(New /existing)	59	59	-	-
3.	Observation Wells	-	-	459	444
4.	Water quality (Lab Level I)	10	10	2	2
5.	Buildings (Level II)	1	1	1	1
6.	Office Quarters	14	14	6	1
	State level Data Centre	1	1	-	-
	Minor buildings				
	Site equipment store	33	33	-	-
	Lab Level I	10	10	-	-
	Building for new site	1	1	-	-
7.	Equipments				
a)	Hydrological				
	AWLR	45	45	-	-
	Current meter	90	90	-	-
	Cable way with Winch & Cradle	21	21	-	-
	Bridge outfits	18	18	-	-
	DWLR	-	27	304	304
	Portable Compressor/Submersible Pump	-	-	15	15
	Ground water monitoring kits	-	-	30	30
b)	Meteorological				
	Automatic rain gauge(ARG)	33	33	-	-
	Standard rain gauge (SRG)	106	106		
	FCS	9	9	8	8
c)	Lab equipment				
	Level - I	10	10	-	-
	Level II	1	1	2	2
	Silt analysis	10	10	-	-
d)	Office equipments				
	Scientific instrument sets	-	-	2	1
8.	Computer package	24	24	30	29
7.	Vehicles	12	12	21	21
8.	Training (No. of persons)				
a)	Data collection	605	576	329	257
b)	Water Quality data collection	51	33	120	115
c)	Data entry & processing	105	88	179	159
d)	HIS Management & IT	113	64	56	54
e)	Basic Computer Training	231	208	299	299
f)	PG Training & Study tours	36	12	23	9
g)	HP Workshops, Seminars etc.	15	15	15	15

Source: Water Resources Department

**Appendix 5.8**  
**Physical Achievements Under Command Area Development Programme**  
**(2000-01 to 2003-04)**

SI No.	Item	Achievement									
		Unit	2000-01	2001-02	2002-03	2003-04	2000-01	2001-02	2002-03	2003-04	
1	2	3	5	6	7	8	3	5	6	7	8
1	Construction of field channels	ha.	2858	926	776	2170.65	ha.	2858	926	776	2170.65
2	Construction of field drain	ha.	18456	8207	15580	8368.34	ha.	18456	8207	15580	8368.34
3	Warabandhi works	ha.	994	-	678	-	ha.	994	-	678	-
4	Training Programme for farmers	No.	400	129	298	64	No.	400	129	298	64
5	Adaptive Trials	ha.	102.5	-	635	122	ha.	102.5	-	635	122
6	Large scale demonstration	ha.	10896	5201	8045	1994	ha.	10896	5201	8045	1994
7	Subsidy to small & marginal farmers	No.	104	40	456	-	No.	104	40	456	-
8	Beneficiary farmers associations organised and registered	No.	26	2	5	64	No.	26	2	5	64
9	Detailed Soil survey conducted	ha.	1750	-	1320	-	ha.	1750	-	1320	-
10	Land levelling & shapping	ha.	111.5	31.75	52	23	ha.	111.5	31.75	52	23
11	Bench mark and Evaluation Survey conducted	ha.	309.28	1262.8	1167.27	1691.62	ha.	309.28	1262.8	1167.27	1691.62
12	Crop Estimation Survey	ha.	3243.2	7248	-	-	ha.	3243.2	7248	-	-
13	Yield Estimation survey on Principal Crops	No.	1857	1348	1111	-	No.	1857	1348	1111	-
14	Evaluation Reports published	No.	1	3	4	-	No.	1	3	4	-
15	Reclamation of water logged areas	ha.	3649	1635	3462	4409.2	ha.	3649	1635	3462	4409.2

Source : CADA

**Appendix 5.9**  
**Major Physical Cumulative Achievements under CAD Programme**  
**as on March 2004**

(in Ha.)

SI No	Name of Project	Total CCA	Physical Achievements				Reclamation
			Field Channel	Field drain	Warabandhi		
1	2	3	4	5	6	7	
1	Mangalam	3639.00	3639.00	3490.00	3639.00	378.67	
2	Peechi	18623.00	18623.00	18623.00	18623.00	3001.89	
3	Vazhani	5182.00	5182.00	5182.00	5182.00	281.70	
4	Cheerakuzhy	1619.00	1349.00	1188.00	1619.00	-	
5	Chalakudy	19696.00	19696.00	14910.81	19696.00	1045.83	
6	Neyyar	12013.00	12013.00	7853.72	11655.00	2085.18	
7	Chitturpuzha	15700.00	15700.00	15638.00	10975.00	1389.38	
8	Kuttiyadi	15540.00	15249.40	14214.00	12776.00	2439.30	
9	Periyar Valley	32800.00	32800.00	20875.00	32800.00	1195.39	
10	Pamba	21135.00	6459.50	145.00	13348.00	790.35	
11	Malampuzha	21732.00	21732.00	18969.00	21732.00	2215.59	
12	Walayar	4122.00	4122.00	2387.00	-	506.00	
13	Pothundy	5466.00	5466.00	5185.00	5466.00	381.81	
14	Gyathri	5466.00	5466.00	4902.00	5466.00	431.95	
15	Kanhirapuzha	9710.00	1732.55	495.00	-	350.00	
16	Pazhassi	11530.00	64.00	495.00	-	30.00	

Source: CADA

## Appendix 5.10

## District-wise population covered by Water Supply Schemes as on 1/4/2004

Sl.No	District	Rural Population covered	% to Total Rural population	Urban population covered	% to Total Urban Population	Total Population covered	% to Total population
1	2	3	4	5	6	7	8
1	Thiruvananthapuram	1493303	69.69	916344	83.86	2409647	74.5
2	Kollam	1117050	52.71	453781	97.41	1570831	60.76
3	Pathanamthitta	604224	54.42	107700	87.15	711924	57.69
4	Alappuzha	1171767	78.76	521854	84.43	1693621	80.29
5	Kottayam	844983	51.09	292663	97.63	1137646	58.23
6	Idukki	534246	49.85	55262	96.54	589508	52.2
7	Ernakulam	1487368	91.32	1303990	88.31	2791358	89.88
8	Thrissur	1573701	73.72	711687	84.78	2285388	76.84
9	Palakkad	1185640	52.44	267564	75.04	1453204	55.52
10	Malappuram	1701402	52.04	344860	96.88	2046262	56.44
11	Kozhikode	611993	34.42	795762	72.27	1407755	48.89
12	Wayanad	560354	74.61	14835	50.11	575189	73.68
13	Kannur	584487	48.87	708332	58.2	1292819	53.67
14	Kasaragod	647342	66.71	143298	61.3	790640	65.66
15	<b>TOTAL</b>	<b>14117860</b>	<b>59.89</b>	<b>6637932</b>	<b>80.29</b>	<b>20755792</b>	<b>65.18</b>

Source Kerala Water Authority

**Appendix 5.11**  
**District - wise and Category-wise Number of Water Supply schemes**  
**in Operation as on 1/4/2004**

Sl.No.	Name of District	No. of Urban Water Supply Schemes	Rural Water Supply Schemes		Total
			Multi Panchayat	Single Panchayat	
1	2	3	4	5	6
1	Thiruvananthapuram	5	41	80	126
2	Kollam	3	32	57	92
3	Pathanamthitta	3	16	33	52
4	Alappuzha	5	1	72	78
5	Kottayam	5	51	97	153
6	Idukki	1	98	88	187
7	Eranakulam	12	53	81	146
8	Thrissur	6	141	93	240
9	Palakkad	3	130	33	166
10	Malappuram	5	105	27	137
11	Kozhikode	2	108	61	171
12	Wayanad	0	29	28	57
13	Kannur	7	49	88	144
14	Kasaragod	2	55	49	106
<b>Total</b>		<b>59</b>	<b>909</b>	<b>887</b>	<b>1855</b>

Source: Kerala Water Authority.

**Appendix 5.12**  
**District wise details of Service Connections and Street taps as on 1.4.2004**

Sl.No	Name of District	Water Supply Connections				Street taps		
		Domestic	Non-Domestic	Industrial	Total	Panchayat	Cor'/Mun'	Total
1	2	3	4	5	6	7	8	9
1	Thiruvananthapuram	192051	20636	72	212759	10338	4265	14603
2	Kollam	77373	4726	116	82215	12165	3263	15428
3	Pathanamthitta	19807	2669	18	22494	5700	796	6496
4	Alappuzha	59252	2538	41	61831	13066	4364	17430
5	Kottayam	53688	4559	33	58280	21082	2162	23244
6	Idukki	12164	1337	4	13505	4565	506	5071
7	Eranakulam	212392	16554	321	229267	18972	14111	33083
8	Thrissur	71521	3085	32	74638	24584	4856	29440
9	Palakkad	50349	3626	93	54068	4030	1738	5768
10	Malappuram	33674	2237	8	35919	7314	2835	10149
11	Kozhikode	41686	3123	41	44850	5136	2605	7741
12	Wayanad	5359	843	3	6205	2753	196	2949
13	Kannur	22366	3472	48	25886	3830	1669	5499
14	Kasaragod	12580	614	11	13205	3081	186	3267
<b>Total</b>		<b>864262</b>	<b>70019</b>	<b>841</b>	<b>935122</b>	<b>136616</b>	<b>43552</b>	<b>180168</b>

Source: Kerala Water Authority

## Appendix 5.13

## WATER TARIFF

CONSUMPTION PER MONTH	TARIFF FROM 01/04/1999
<b>A. DOMESTIC CATEGORY</b>	
Upto 10,000 litres	Rs. 20.00 per month Minimum charge
10,000 to 30,000 litres	Rs.20.00 plus Rs.3.00 per 1,000 litres in excess of 10,000 litres
30,000 to 50,000 litres	Rs.80.00 plus Rs.5.00 per 1,000 litres in excess of 30,000 liters.
Above 50,000 litres	Rs.180.00 plus Rs.7.35 per 1000 litres in excess of 50,000 litres
<b>B. NON-DOMESTIC CATEGORY</b>	
Up to 50,000 litres	Rs.7.35 per 1,000 litres Minimum charge Rs.100
Above 50,000 litres	Rs.368.00 plus Rs.10.60 per 1,000 litres in excess of 50,000 litres
<b>C. INDUSTRIAL CATEGORY</b>	
For entire consumption	Rs.10.60 per 1,000 litres Minimum Charge Rs.200
<b>D. LOCAL BODIES</b>	
Panchayat	Rs. 1750 per tap per year
Municipality	Rs.2628 per tap per year

Source: Kerala Water Authority

**Appendix 5.14**  
**Details of Income from Water Charges (1999-00 to 2003-04)**

		Urban Schemes				Rural Comprehensive Schemes				Rural Single Panchayat Schemes				(Rs. In lakhs)
Year		Domestic, Non-domestic & Industrial		Total	Domestic, Non-domestic & Industrial		Total	Domestic, Non-domestic & Industrial		Total	Domestic, Non-domestic & Industrial		Total	Grand Total
		2	3	4	5	6	7	8	9	10	11			
1999-00		3770	1096	4866 (62.45)	942	810	1752 (22.48)	471	703	1174 (15.07)	7792 (100)			
2000-01		4389	1393	5782 (61.83)	1097	1030	2127 (22.74)	549	894	1443 (15.43)	9352 (100)			
2001-02		5184	1011	6195 (64.96)	1296	748	2044 (21.44)	648	649	1297 (13.60)	9536 (100)			
2002-03		5633	1190	6823 (64.50)	1408	880	2288 (21.60)	704	763	1467 (13.90)	10578 (100)			
2003-04		6030	1370	7400 (63.97)	1520	1012	2532 (21.89)	759	877	1636 (14.14)	11568 (100)			

Note:- Figures in brackets denote percentage to total

Source:- Kerala Water Authority.



## Appendix 5.15

Receipts of Kerala Water Authority from various sources from  
1999-00 to 2003-04

(Rs. in Lakhs)

Year	Revenue from Water/ Sewerage rates	State Govt.		Govt. of India	Loan from LIC/ HUDCO	Others	Total
		Plan	Non-Plan				
1	2	3	4	5	6	7	8
1999-00	7794	15181	5513	3668	3621	313	36090
2000-01	9354	11460	4780	3846	2777	304	32521
2001-02	9537	9699	6186	5695	100	299	31516
2002-03	10580	10400	6186	6204	5029	302	38701
2003-04	11512	9738	6124	4341	1000	375	33090

Source: Kerala Water Authority

Appendix 5.16

District wise & category wise number of water supply schemes under implementation

Sl. No	Name of District	Rural Water Supply Schemes										Urban Water Supply Schemes				
		ARWSP	TM	PMGY	State Plan	LIC	NABARD	JBIC	AUWSP	State Plan	JBIC	LIC/ HUDCO	Others	Total		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15		
1	Thiruvananthapuram	14		13	70	13				3	1	3		117		
2	Kollam	3	1	15	30	7		1				2		59		
3	Pathanamthitta	24		32	40	3								99		
4	Alappuzha	146		34	162	6		1		1		1		351		
5	Kottayam	39		28	0	4						2		73		
6	Idukki	15		2	11	9	1			1			1	40		
7	Eranakulam	15		24	14	8	2					3	2	68		
8	Thrissur	11	2	15	36	4			5	2		3		78		
9	Palakkad	36	2	14	50	6				1		3		112		
10	Malappuram	63		23	131	8	1					3		229		
11	Kozhikode	120	1	19	46	3					1	3		193		
12	Wayanad	20		6	3		1					1		31		
13	Kannur	61		10	37		3	1				8		120		
14	Kasaragod	20	3	7	0	5			1			3		39		
15	<b>Total</b>	<b>587</b>	<b>9</b>	<b>242</b>	<b>630</b>	<b>76</b>	<b>8</b>	<b>3</b>	<b>6</b>	<b>8</b>	<b>2</b>	<b>35</b>	<b>3</b>	<b>1609</b>		

Source: Kerala Water Authority.

**Appendix 6.1**  
**Notified Wetlands in India**

Name of Wetland	State	Water Spread (Post Monsoon) Ha.
1	2	3
Bhoj	Madhya Pradesh	32.29
Harike	Punjab	8,280
Kanjli	-do-	3,79
Ropar	-do-	220,60
Wular	Jammu & Kashmir	11562.5
Tso Morari	-do-	12,838
Pichola	Rajsthan	604
Sambhar	-do-	2,270
Chilika	Orissa	9,400
Ujini	Maharashtra	27,935
<b>Ashtamudi</b>	<b>Kerala</b>	<b>5071.07</b>
<b>Sasthamkotta</b>	<b>-do-</b>	<b>354.69</b>
Kolleru	Andhra Pradesh	28,375
Loktak	Manipur	1,166
Sukhna	Chandigarh	153
Renuka and Pong dam (combined)	Himachal Pradesh	27,878
Chandratal	-do-	
Kabar	Bihar	82
Nalsarovar	Gujarat	14818.75
East Calcutta	West Bengal	11067.5

Source: Quoted in Parkih and Dalve, 2003.

## Appendix 6.2

## Area under Mangroves 2001

*(in Sq. Km.)*

State	Area
Andhra Pradesh	333
Goa	5
Gujarat	911
Karnataka	2
Maharashtra	118
Orissa	219
Tamil Nadu	23
West Bengal	2081
Andaman and Nicobar	789
Pondicheri	1
Total	4482

*Source: Forest Survey of India, 2002*

## Appendix 6.3

## Salient features of the Floristic 'Hot Spots' of Kerala

Agasthyamala	Anamali - High ranges	Silent Valley - Wayanad
1. Highest peak - Agastyakundom (1868 M)	1. Highest peak - Anamudi (2694 M)	1. Wet evergreen, moist deciduous, shola, and grasslands forests, the main types of vegetation.
2. Rainfall on the windward side - 3000 to 5000 mm/annum	2. Rainfall on the windward side - 3000 to 7000 mm/annum	2. Five endemic genera - <i>Chandrashekhariaea</i> , <i>Baeolepis</i> , <i>Kanjarum.</i> , <i>Megramyrtus</i> , and <i>Silent Valleya</i>
3. <i>Aenhenrya</i> , an endemic orchid genus - exclusively occurring in the region	3. Endemic genera - <i>Haplothismia</i> , <i>Pseudoglochidon</i> and <i>Uleria</i> .	3. Major centres of genetic resources of Turmeric, Pepper, Canes and Aroids
4. About 189 endemic species, occur in small population over narrow ranges	4. Mountain folds form a mosaic of microclimatic islands due to unique physiography, high latitude, heavy rainfall and diurnal temperature.	4. Area comprises of Palakkad gap, Silent Valley, Wayanad and adjacent forests of Kannore district.
5. Recent surveys have discovered 35 new species.	5. Plantation of Tea, Cardamom and Rubber, have destroyed major components of wet evergreen and deciduous forests.	5. About 40,000 Ha, of contiguous forests and one of few area in India with out human habitation and large-scale intervention.
6. 5 wild life sanctuaries in the region	6. Eravikulam National Park and 7 Wild Life Sanctuaries, in the region.	6. Wild life which has almost eliminated from other parts of the country such as the <i>Nilgiri Languor</i> , <i>Giant Squirrel</i> and <i>Lion tailed Macaque</i> being survived here.
7. Serious human interference due to poaching, smuggling and pilgrim influx.		

Source: STEC, 1997

## Appendix 6.4

## Details of River Sand Mining from Various River Basins of Greater Kochi Region

River Basin	River Length (Km.)	Drainage Area (Km. <sup>2</sup> )	Estimated Sand reserve (10 <sup>6</sup> m <sup>3</sup> )	Panchayats involved in Sand mining	Volume of Sand extracted (10 <sup>6</sup> m <sup>3</sup> /year)	Sustainable yield (M <sup>3</sup> /year)	No. of labourers
1	2	3	4	5	6	7	8
Periyar	244	5398	26.7	15	3.11	50708	7000
Pamba	176	2235	10.62	14	0.40	17883	995
Muvattupuzha	121	1554	7.56	12	0.33	41827	1147
Manimala	90	847	3.18	10	0.47	14200	1300
Chalakkudi	130	1704	4.91	5	0.15	7810	1200
Meenachil	78	1272	3.12	-	-	-	-
Achankoil	128	1484	5.8	-	-	-	-

Source: Quoted by NEERI, 2002

Appendix 6.5  
Water quality status in India (1998)

State	BOD (mg/l)			Total Coliform (MPN/100 ml)			Fatial Coliform (MPN/100 ml)		
	<3	3-6	>6	<500	500-5000	>5000	<500	500-5000	>5000
1	2	3	4	5	6	7	8	9	10
Andhra Pradesh	202	56	19	16	25	0	37	0	0
Assam	113	4	9	15	49	23	22	21	0
Bihar	146	3	1	15	48	82	35	106	2
Daman & Diu	28	0	0	11	13	0	12	9	0
D & N Haveli	16	0	0	3	11	0	6	7	0
Delhi	11	4	14	0	6	14	10	5	5
Goa	33	15	0	48	0	0	44	0	0
Gujarat	224	82	125	200	63	164	214	90	116
Haryana	28	4	9	0	0	0	0	0	0
Himachal Pradesh	88	1	0	61	27	1	83	6	0
Karnataka	247	49	52	94	283	0	113	136	1
Kerala	275	1	0	10	238	24	71	192	12
Lakshdweep	6	2	0	3	5	0	6	2	0
Maharashtra	0	326	123	375	73	0	391	0	0
Manipur	30	2	0	27	5	0	0	0	0
Madhya Pradesh	345	114	48	373	124	0	209	0	0
Meghalaya	0	4	16	12	6	2	9	8	0
Orissa	22	298	57	234	143	0	299	78	0
Pondicherry	15	1	3	0	0	0	0	0	0
Punjab	26	26	20	72	0	0	71	1	0
Rajasthan	71	5	2	36	42	0	78	0	0
Tamilnadu	260	38	6	168	72	63	219	53	31
Tripura	30	1	1	4	17	0	18	3	0
Uttar Pradesh	210	165	176	29	123	161	114	123	49
West Bengal	110	24	0	89	0	0	89	0	0
Total	2536	1225	681	1895	1373	534	2150	840	216

Source: CPCB 1999

## Appendix 6.6

## Details of industries in Periyar River Basin

Industry/location	Type/products	Wastewater generated
1	2	3
Travancore Rayons Ltd Perumbavur	Cellulose yarn & film	46,000 m <sup>3</sup> /d
Periyar Chemicals Ltd, Edayar	Formic acid, sodium sulphate	330 m <sup>3</sup> /d
Binani Zinc Ltd, Edayar,	Zinc, Cadmium, Sulphuric acid	550m <sup>3</sup> /d
FACT Ltd, Eloor	Nitrogen & Phosphorus Fertilisers, Oleum & Ammonium Sulphate	25,400 m <sup>3</sup> /d
FACT, Petrochemical	Caprolactam, Nitric acid, Ammonium sulphate, Soda ash	5,040 m <sup>3</sup> /d
Trancore Cochin Chemiclax	Hydrochloric acid	6,680 m <sup>3</sup> /d
Indian Aluminium Company, Eloor	Aluminium products,	2,700 m <sup>3</sup> /d
Trava Chemical & Mfg. Kalamassery	Copper products	720 m <sup>3</sup> /d
United Catalysts Ltd, Edayar	Chemicals, Catalyusts	537 m <sup>3</sup> /d
Hindustan Insecticides, Eloor	DDT, BHC, Endosulfan, Difocol	1,000 m <sup>3</sup> /d
Indian Rare Earths, Eloor	Rare earths, Tri sodium phosphate	3,000 m <sup>3</sup> /d

Source: Draft Status of the Environment in Kerala, KSPCB, 2000



**Appendix 6.7**  
**Environmental value of growing stock**

*(Rs. in Crores)*

Forest Division	Value of the growing stock	Environmental value	Total value
1	2	3	4
Ranni	5776.74	50603.48	56380.22
PTR	4501.52	42593.51	47101.03
Malalyattoor	3419.88	27910.68	31330.56
Vazhachal	2088.17	25872.7	27960.87
Munnar	3212.04	23983	27195.04
Kothamangalam	1271.48	5979.59	7251.07
Chalakkudy	819.51	6297.71	7117.22
Achancoil	1340.38	4381.4	5721.78
Parambikulam	1602.78	3757.84	5360.62
Mankulam	396.45	4069.62	4466.07
Kottayam	1383.99	2590.56	3974.55
Eravikulam	162.68	2402.99	2565.67
Idukki	438.38	1316.83	1755.21
Nenmara	1168.13	373.88	1542.01
Konni	1266.69	-	1266.69
Thattekkad	245.45	192.64	438.09

Source: Quoted in *Carrying Capacity based Development Planning*, NEERI, 2002

## Appendix 6.8

## Overview of Environmental Legislation and Executing Authorities

Legislation	Objective	Executing authority
1	2	3
Water Act (1974) and Rules	Prevention and control of water pollution	KSPCB
Water Cess Act (1977) and Rules	Cess on water consumption	KSPCB
Air Act (1981) and Rules	Prevention, control and abatement of air pollution	KSPCB
Environment Act (1986) and Rules	Protection and improvement of the environment Environmental Statement Environmental Standards Environmental Clearance	Govt of India and KSPCB
Hazardous Waste Rules	Control of hazardous wastes	KSPCB
Hazardous Chemical Rules	Control of hazardous chemical	KSPCB/F&B Dept
Hazardous micro-organism and cells rule	Control of Hazardous microorganism and cells	Central Government
Public Liability Insurance Act (1991) and Rules	Assistance to entities affected by accidents concerning hazardous substances handling	District Collector
Forest Act and Rules	Conservation of forests and connected matters	Govt. of India and State Forest Dept.
Biomedical waste (1998) rule	Control of biomedical waste	KSPCB
Recycle of plastic (1999) rules	Control of manufacture and use of plastic	KSPCB/District Collector
Motor Vehicle Act and Rules	Control of motor vehicle pollution	Motor vehicle dept.

Source: KSPCB

## Appendix 6.9

**Western Ghat Development Programme for Natural Resource Management  
(Physical and Financial Achievements, 2003-04)**

<b>I. Financial Achievement</b>			
<b>Sl. No.</b>	<b>Component</b>	<b>Expenditure (in lakh Rs. )</b>	
1	Soil Conservation	450.00	
2	Minor Irrigation		
3	Forestry Schemes	131.50	
4	Foot Bridges	70.00	
5	Others	661.50	
<b>TOTAL</b>		<b>1313.00</b>	
<b>II. Major Physical Achievements</b>			
<b>Sl. No</b>	<b>Component</b>	<b>Unit</b>	<b>Achievement</b>
1	Soil Conservation	Ha.	2500
2	Distribution of Milk Cows	Nos	600
3	Fodder Development	Ha.	500
4	Construction of Wells	Nos	500
5	Check Dams/Cross Bars/ Weirs	Nos	45
6	Foot Bridges	Nos	50

Source: Western Ghat Development Cell

## Appendix 6.10

## Division-wise Area of Forest in Kerala (as on 31-03-2004) - Provisional

(Area in Sq.kms)

Sl. No	Division	Reserve Forest	Proposed for Reserve Forest	Vested Forest	Total
1	2	3	4	5	6
1	Thiruvananthapuram	359.124	5.825	3.651	368.600
2	Thenmala	204.323	-	6.895	211.218
3	Achenkovil	268.794	-	0.206	269.000
4	Ranni	1,050.336	7.160	1.568	1059.064
5	Punalur	280.051	-	0.169	280.220
6	Konni	320.643	11.021	-	331.664
7	Kothamangalam	316.845	-	0.158	317.003
8	Munnar	662.750	60.073	7.367	730.190
9	Kottayam	655.477	5.257	31.952	692.686
10	Vazhachal	413.944	-	-	413.944
11	Chalakkudy	279.710	-	-	279.710
12	Malayattoor	617.241	0.525	-	617.766
13	Thrissur	204.293	-	5.715	210.008
14	Mannarkkad	209.982	-	319.578	529.560
15	Nilambur North	57.920	0.017	340.703	398.640
16	Nilambur south	267.389	-	97.763	365.152
17	Palakkad	73.410	-	162.342	235.752
18	Nenmara	205.517	-	150.603	356.120
19	Kozhikode	24.164	22.964	243.088	290.216
20	Wayanad North	134.024	15.064	66.062	215.150
21	Wayanad South	67.519	6.845	273.240	347.604
22	Kannur	206.389	5.497	90.196	302.082
23	Thiruvananthapuram WL	181.000	-	-	181.000
24	Idukki	130.524	-	-	130.524
25	Periyar East	620.000	-	-	620.000
26	Periyar West	157.000	-	-	157.000
27	Agasthyavanam	30.447	1.553	-	32.000
28	Parambikulam	274.141	-	-	274.141
29	Wayanad	344.440	-	-	344.440
30	Silent Valley	89.517	-	-	89.517
31	Sendurney	166.420	-	4.580	171.000
32	Eravikulam	187.442	-	-	187.442
33	Peechi	201.725	-	-	201.725
34	Aralam	22.357	-	32.643	55.000
<b>Total:</b>		<b>9284.8580</b>	<b>141.8010</b>	<b>1838.4790</b>	<b>11265.1380</b>

Source : Forest Department

**Appendix 6.11**  
**Species-wise Area Under Forest Plantation**

SI.No.	Name of Species	(in ha.)								% to total (2003-04)
		1999-00	2000-01	2001-02	2002-03	2003-04*	2003-04	2003-04	2003-04	
1	2	3	4	5	6	7	8	8		
1	Teak	75939.793	75443.147	74871.825	74777.939	74912.807	40.14			
2	Eucalyptus	24009.730	24268.775	23148.450	21927.942	21927.942	11.75			
3	Softwood	9035.620	8450.309	8349.954	11199.360	11144.760	5.97			
4	<b>Mixed Plantation</b>									
	Cashew	6243.770	6242.878	6258.961	6393.560	6393.560	3.43			
	Fuelwood	270.672	217.700	217.700	217.700	217.700	0.12			
	Agavu					46.700	0.03			
	Accacia					5005.850	2.68			
	Alnus					118.200	0.06			
	Palm trees					13.500	0.01			
	Others					54601.663	29.25			
	<b>Sub Total</b>	<b>6514.442</b>	<b>6460.578</b>	<b>6476.661</b>	<b>6611.260</b>	<b>66397.173</b>	<b>35.57</b>			
5	Bamboo	2662.724	2673.714	2387.714	2530.740	2614.740	1.40			
6	Wattle	3387.160	3387.160	3387.160	3387.160	3387.160	1.81			
7	Hardwood	786.608	1134.270	1575.273	1580.273	1462.670	0.78			
8	Pepper	309.980	309.940	309.940	309.940	309.940	0.17			
9	Mahogany	80.640	78.630	78.630	93.870	93.870	0.05			
10	Pine	222.400	182.400	182.400	182.400	182.400	0.10			
11	Rosewood	414.280	422.284	448.550	549.730	549.730	0.29			
12	Sandal wood	73.120	73.100	100.820	100.820	100.820	0.05			
13	Others	1941.585	2604.660	2767.840	3573.290	3565.290	1.91			
	<b>Total</b>	<b>125378.082</b>	<b>125488.967</b>	<b>124085.217</b>	<b>126824.724</b>	<b>186649.302</b>				

\* Provisional  
Source : Forest Department

Appendix 6.12

Production of Major Forest Produce (1994-95 to 2003-04)

Sl. No.	Item	Unit	1994-95	1995-96	1996-97	1997-98	1998-99	1999-2000	2000-01	2001-02	2002-03	2003-04
1	2	3	4	5	6	7	8	9	10	11	12	13
1	Timber(round logs)	Cum.	123501	61430	51972	19246	26664	44519	31299	38915	62591	6237
2	Timber(round poles)	No.	779507	361179	683391	287243	275050	455389	129349	245254	433670	715514
3	Timber(Swan & Squard)	Cum.	10	30	4	2	10	7	3	9	11	3
4	Fire wood	MT.	82888	45336	29877	11291	18424	14191	8105	11182	19085	27215
5	Cardamom	Kg.	4379	3155	1233	1717	2758	4249	4687	2911	3739	2805
6	Honey	Kg.	37512	74787	72161	71214	21376	41734	47976	57069	36310	27233
7	Reeds	No.	57647490	49615070	56840410	63239268	62708610	39576143	49047940	32610487	33076299	18290235
8	Bamboc	No.	1596297	1339741	4829421	2338472	2088407	627805	1390456	1305620	151722	616675
9	Jungle Wood Poles	No.	5282	64	289	7054	670	....	212	2397	7696	4273
10	Sandal wood	Kg.	112726	133847	103523	171252	17762	97028	405	23968	10099	116

Source : Forest Department

**Appendix 6.13**  
**Status of Diversion of Forest Land for Non-Forest Purposes & Compensatory Afforestation done under Forest (Conservation) Act, 1980**  
**1980 to March 2004**  
**As on 31.08.2004**

Sl. No	State/Ut	No. of Approved Cases	Area Diverted (Ha.)	Compensatory afforestation (CA) in hectares											
				Stipulated						Achieved					
				Forest Land	Non Forest Land	Penal CA	Total	Forest land	Non Forest Land	Total	% of CA Achieved				
5	6	7	8	9	10	11	12								
1	A&N Island	65	2,630.02	602.46	1,969.90	0.00	2,572.36	142.93	1,699.47	1,842.40	71.62				
2	Andhra Pradesh	310	17,656.70	3,197.96	9,397.76	3,511.29	16,107.01	1,143.97	1,900.95	3,044.92	18.90				
3	Arunachal Pradesh	100	43,403.83	16,053.24	6,157.5	6,149.92	22,818.91	3,230.77	54.00	3,284.77	14.39				
4	Assam	140	6,321.80	5,856.67	1,496.37	328.95	7,681.99	0.00	0.00	0.00	0.00				
5	Bihar	43	2,132.09	1,352.05	680.61	336.14	2,368.80	0.00	0.00	0.00	0.00				
6	Chandigarh	15	34.76	6.48	11.00	0.00	17.48	0.00	0.00	0.00	0.00				
7	Chattisgarh	247	65,232.71	18,963.92	58,407.61	9,089.19	86,460.72	0.00	0.00	0.00	0.00				
8	D & N Haveli	145	266.33	356.15	7.35	0.00	363.50	0.00	0.00	0.00	0.00				
9	Delhi	3	3.97	0.00	5.46	0.00	5.46	0.00	0.00	0.00	0.00				
10	Goa	69	1,340.79	522.37	482.40	283.33	1,288.10	0.00	0.00	0.00	0.00				
11	Gujarat	852	57,734.65	4,002.35	51,196.43	23,700.31	78,899.09	6,359.16	11,391.36	17,750.52	22.50				
12	Haryana	381	7,971.86	1,743.77	1,942.77	0.00	3,686.54	0.00	0.00	0.00	0.00				
13	Himachal Pradesh	586	8,553.69	13,445.17	743.81	271.23	14,460.21	0.00	0.00	0.00	0.00				
14	Jammu & Kashmir	8	1,500.09	1,124.94	0.00	0.00	1,124.94	0.00	0.00	0.00	0.00				
15	Jharkhand	137	6,443.30	8,198.54	2,174.79	3,227.82	13,601.15	0.00	0.00	0.00	0.00				
16	Karnataka	451	36,577.48	5,481.66	27,696.57	5,173.82	38,352.05	0.00	0.00	0.00	0.00				
17	Kerala	183	40,727.73	740.92	14,364.63	29.96	15,135.51	0.00	0.00	0.00	0.00				
18	Madhyapradesh	726	385,601.59	116,603.72	212,045.07	89,374.46	418,023.25	0.00	0.00	0.00	0.00				
19	Maharashtra	1,280	82,208.11	17,709.57	29,087.60	18,318.36	65,115.53	0.00	0.00	0.00	0.00				
20	Manipur	18	986.85	237.72	681.27	0.00	918.99	0.00	0.00	0.00	0.00				
21	Meghalaya	79	297.27	138.58	344.90	0.00	483.48	0.00	0.00	0.00	0.00				
22	Mizoram	24	25,276.93	19,260.95	13,459.25	224.00	32,944.20	7.00	5,509.00	5,516.00	16.74				
23	Orissa	344	36,072.26	7,806.90	34,163.07	7,608.35	49,578.32	4,472.11	16,123.24	20,595.35	41.54				
24	Punjab	797	10,102.56	5,214.48	1,799.07	329.06	7,342.61	3,365.06	889.27	4,254.33	57.94				
25	Rajasthan	448	16,655.77	1,521.48	13,212.16	10,464.36	25,198.00	0.00	0.00	0.00	0.00				
26	Sikkim	157	1,429.12	1,737.19	178.61	153.41	2,069.21	0.00	0.00	0.00	0.00				
27	Tamil Nadu	346	4,483.73	583.93	1,712.56	1,069.95	3,366.44	975.30	594.58	1,569.88	46.63				
28	Tripura	174	4,205.25	3,393.79	739.09	2,063.85	6,196.73	0.00	0.00	0.00	0.00				
29	Uttar Pradesh *	250	13,819.13	1,758.79	6,537.73	2,289.99	10,586.51	1,415.52	4,409.42	5,824.94	55.02				
30	Uttaranchal*	2,361	72,094.12	20,173.11	13,324.60	1,639.69	35,137.40	7,541.74	0.00	7,541.74	21.46				
31	West Bengal	68	3,074.55	1,548.41	1,086.82	2.69	2,637.92	0.00	0.00	0.00	0.00				
<b>Total</b>		<b>10,807</b>	<b>954,839.03</b>	<b>279,337.27</b>	<b>499,565.01</b>	<b>185,640.13</b>	<b>964,542.41</b>	<b>28,653.56</b>	<b>42,571.29</b>	<b>71,224.85</b>					

## Appendix 6.14

## Forest Revenue in Kerala

(Rs. in Lakhs)

Sl.No.	Items	Sale Proceeds						
		1999-00	2000-01	2001-02	2002-03	2003-04		
1	2	3	4	5	6	7		
I	Revenue from Forests							
	1. Timber	9932.44	11393.74	9121.82	12761.967	16025.63		
	2. Firewoods & Charcoal	112.41	110.89	20.90	60.331	110.18		
	3. Livestock	65.27	2.70	6.56	9.131	8.93		
	4. Others	954.33	1437.08	1619.69	1708.190	1960.31		
	<b>Sub total</b>	<b>11064.45</b>	<b>12944.41</b>	<b>10768.97</b>	<b>14539.619</b>	<b>18105.05</b>		
II	Other receipts	376.50	1201.86	605.16	462.514	638.61		
	<b>Total Receipts</b>	<b>11440.95</b>	<b>14146.27</b>	<b>11374.13</b>	<b>15002.133</b>	<b>18743.66</b>		
III	Refunds	113.54	22.40	3.81	44.896	25.33		
	<b>Net Revenue</b>	<b>11327.41</b>	<b>14123.87</b>	<b>11370.32</b>	<b>14957.237</b>	<b>18718.33</b>		

Source : Forest Department



## Appendix 6.15

## Physical Targets &amp; Achievements under General Forestry (2001-02 to 2003-04)

Sl. No.	Item	Unit	2001-02		2002-03		2003-04	
			Target	Achievement	Target	Achievement	Target	Achievement
1	2	3	4	5	6	7	8	9
<b>1</b>	<b>Survey of Forest Boundaries</b>							
a	Boundary Demarkation	km	-	-	-	-	-	-
b	Cairns constructed	Nos	10430	434	10170	4617	5000	9145
<b>2</b>	<b>Fire Protection Works</b>							
a	Fireline	km	1440	747.7	1145.99	772.13	2743	1995
b	Fire Watch Tower	Nos	4	1	-	-	-	-
c	Check dam	Nos.	-	-	-	-	9	5
d	Shed	Nos.	4	-	-	-	-	-
e	Pump set	Nos.	-	-	-	-	-	-
<b>3</b>	<b>Cultural Operations</b>							
a	Special tending	Ha.	555	66.36	-	-	100	30
b	Chimber cutting	Ha.	-	-	-	-	-	-
c	Loranthus cutting	No	-	-	-	-	-	-
<b>4</b>	<b>Roads</b>							
a	Metalling and Tarring	Km	25	4	114.25	67.95	-	33.56
b	Other Road Works	Km	29.9	6	-	-	148.14	105.842
c	Culvert	Nos.	2	-	2	1	-	-
<b>5</b>	<b>Buildings</b>							
a	Spill over works	Nos	11.5	-	1	1	-	-
b	Fire Watch Tower	Nos	1	1	-	-	5	5
c	Check Post	Nos	-	-	-	-	-	-
d	Other Buildings	Nos.	12	5	1	1	-	-
<b>6</b>	<b>Fast Growing Species (IRM)</b>							
a	Replanting Augmentation	Ha.	31	44	86	86	2637	2208
<b>7</b>	<b>Teak</b>							
a	Planting	Ha.	225	408	21.75	Nursery raised	500	542.89
<b>8</b>	<b>Soft Wood</b>							
a	Replanting Augmentation	Ha.	150	138.5	-	-	-	-
<b>9</b>	<b>Bamboo &amp; Reeds</b>							
a	Planting	Ha.	1090	1091	50	25.1	600	645.07
<b>10</b>	<b>Rosewood Project</b>							
a	Planting	Ha.	-	-	-	-	-	-
b	Rosewood Nursery	Nos.	10	10	-	-	-	-
<b>11</b>	<b>Fuelwood &amp; Fodder Development (50% CSS)</b>							
a	Planting Augmentation	Ha.	244	258	193.6	179.95	-	-
b	Nursery beds	Nos.	170	169	80	80	-	-
<b>12</b>	<b>Regeneration of denuded Forests</b>							
a	Planting	Ha.	120	45	25	25	-	-
<b>13</b>	<b>Regeneration of desired species</b>							
a	Planting	Ha.	57	30	75.5	52.4	-	-

Source: Forest Department

**Appendix 6.16**  
**KERALA FORESTRY PROJECT**  
**Year-wise Financial Achievement**

Sl. No.	Items / Components of Project	2001-02	2002-03	2003-04 (up to 31.12.03)	TOTAL
1	2	3	4	5	6
1	Institutional Development & Human Resource Development	50.69	108.68	122.14	281.51
2	FMIS	159.54	261.15	330.66	751.35
3	Project Management	223.68	181.17	453.81	858.66
4	Management of Natural Forests	989.26	831.63	680.39	2501.28
5	Sustainable Management of Teak Plantation	181.21	255.94	389.61	826.76
6	Productivity Improvement of Pulpwood Plantation	305.18	277.25	253.62	836.05
7	Participatory Management of Degraded Natural Forest areas	144.40	189.56	381.00	714.96
8	Quality improvement of Seed Handling	7.84	31.40	17.50	56.74
9	Quality and Quantity improvement of Planting Stock	217.95	216.35	125.73	560.03
10	Research application in improving Seed Handling and Plant Quality	122.73	3.46	9.50	135.69
11	KFDC Clonal Planting	158.00	158.25	188.52	504.77
12	Extension and Information Services	36.69	26.85	80.72	144.26
13	Tree Management in Public Institutions	-0.15	0.00	0.00	-0.15
14	Improvement of fire protection system	136.20	185.50	133.99	455.69
15	Strategy Establishment on Statewide Biodiversity Conservation	0.30	5.56	18.69	24.55
16	Strengthening of Sustainability of PA System	93.20	56.20	37.82	187.22
17	Expansion of Village Eco Development	42.07	24.71	72.89	139.67
18	Understanding public support for Biodiversity Conservation	53.16	34.77	68.52	156.45
19	Others	0.00	1.30	0.00	1.30
<b>Total:</b>		<b>2,921.95</b>	<b>2,849.73</b>	<b>3,365.11</b>	<b>9,136.79</b>

Source : Kerala Forest Department

**Appendix 6.17**  
**Kerala Forestry Project**  
 (Yearwise Physical Achievements)

Sl. No.	Items/Components of the Project	Unit	2001-02	2002-03	2003-04 (up to 31.12.03)
1	2	3	4	5	6
<b>1</b>	<b>Treatment Areas</b>				
	Assisted Natural Regeneration (ANR)	Ha	2601	3941	0
	Reeds, Rattons & Bamboos (RRB)	Ha	1103	1636	645
	Rehabilitation of Degraded Forest (RDF)	Ha	1643	1983	1061
	Plantation Teak P1	Ha	408	642	543
	Plantation Pulpwood P2	Ha	866	966	988
	<b>Sub Total</b>		<b>6621</b>	<b>9168</b>	<b>3237</b>
<b>2</b>	<b>Civil Works</b>				
	Quarters	No	45	3	13
	Office Buildings	No	0	0	0
	Roads / Trekpaths	Km	0	0	0
	<b>Sub Total</b>		<b>45</b>	<b>3</b>	<b>13</b>
<b>3</b>	<b>Consultant Studies</b>	No			
<b>4</b>	<b>Training /Workshops/Study tour</b>	No	52	190	86
<b>5</b>	<b>Equipments (Computers &amp; Accessories)</b>	No	235	712	572
<b>6</b>	<b>Vehicles</b>	No	11	0	67

Source : Kerala Forest Department

**Appendix 6.18**  
**Wastelands in Kerala**

*( in Ha.)*

Sl. No.	District	Wasteland Area
1	Thiruvananthapuram	6658
2	Kollam	8072
3	Alappuzha	1550
4	Pathanamthitta	7731
5	Kottayam	4880
6	Idukki	34813
7	Emakulam	8454
8	Thrissur	7198
9	Palakkad	28356
10	Malappuram	12367
11	Wayanad	5184
12	Kozhikode	2761
13	Kannur	6980
14	Kasaragod	9814
<b>KERALA</b>		<b>144818</b>

*Source: Land Use Board & KSIRES*

Appendix 6.19  
State-wise Wastelands of India

(Area in Sq.Kms.)

Sl. No	State	No. of Districts Covered	Total Geog. Area of distts. Covered	Total Wasteland area in distts. Covered	% of Wastelands to total Geog. Area
1.	Andhra Pradesh	23	275068.00	51750.19	18.81
2	Arunachal Pradesh	13	83743.00	18326.25	21.88
3	Assam	23	78438.00	20019.17	25.52
4	Bihar	55	173877.00	20997.55	12.08
5	Goa	02	3702.00	613.27.00	16.57
6	Gujarat	25	196024.00	43021.28	21.95
7	Haryana	19	44212.00	3733.98	8.45
8	Himachal Pradesh	12	55673.00	31659.00	56.87
9	Jammu & Kashmir *	14	101387.00	65444.24	64.55
10	Karnataka	27	191791.00	20839.28	10.87
11	<b>Kerala</b>	14	38863.00	1448.18	3.73
12	Madhya Pradesh	62	443446.00	69713.75	15.72
13	Maharashtra	32	307690.00	53489.08	17.38
14	Manipur	09	22327.00	12948.62	58.00
15	Meghalaya	07	22429.00	9904.38	44.16
16	Mizoram	03	21081.00	4071.68	19.31
17	Nagaland	07	16579.00	8404.10	50.69
18	Orissa	30	155707.00	21341.71	13.71
19	Punjab	17	50362.00	2228.40	4.42
20	Rajasthan	32	342239.00	105639.11	30.87
21	Sikkim	04	7096.00	3569.58	50.30
22	Tripura	04	10486.00	1276.03	12.17
23	Tamil Nadu	29	130058.00	23013.90	17.70
24	Uttar Pradesh	83	294411.00	38772.80	13.17
25	West Bengal	18	88752.00	5718.48	6.44
26	Union territories	20	10973.00	574.30	5.23
<b>TOTAL</b>		<b>584</b>	<b>3166414.00</b>	<b>638518.31</b>	<b>20.17</b>

Source: 1:50,000 scale wasteland maps prepared from Landsat Thematic Mapper/IRS LISS II/III

Data

- Un-surveyed area (J&K) 120849.00
  - Total geographical area 3287263.00
- 10,000 sq.kms = 1 Million Ha.

## Appendix 6.20

## Central Rural Sanitation Programme: TSC

Sl. No.	Name of district	Date of sanction	Project cost (in lakhs)	Approved Share (Rs. in lakhs)			Components Sanctioned (Units)					
				Central	State	Bene	IHHL	WC	School Toilets	Balavadi toilets	RSM	
1.	Alappuzha	29.1.02	1656.13	1100.05	322.2	233.88	161871	125	377	0	10	
2.	Ernakulam	12.3.03	1058.43	514.16	274.1	270.17	54585	100	450	565	9	
3.	Idukki	12.3.03	622.19	266.75	167.4	188.04	44896	16	103	0	4	
4.	Kannur	12.3.03	804.18	349.09	219.29	235.8	559.14	14	327	0	5	
5.	Kasaragod	15.1.01	1111.86	429.26	261.98	420.62	82200	100	281	0	4	
6.	Kollam	10.1.01	895.00	597.7	174.55	122.75	85000	400	225	0	10	
7.	Kozhikkode	12.3.03	833.86	374.81	225.67	233.38	54024	21	444	0	7	
8.	Malappuram	29.1.02	759.86	510.98	152.36	96.52	69217	80	380	0	10	
9.	Palakad	12.3.03	1177.89	499.85	320.42	357.62	83059	49	289	0	7	
10.	Pathanamthitta	12.3.03	773.96	336.29	208.53	229.14	53799	25	172	100	5	
11.	Thiruvananthapuram	29.1.02	749.61	506.90	149.76	92.95	67320	60	350	0	10	
12.	Thrissur	12.3.03	546.46	258.45	144.83	143.18	33216	10	316	0	9	
13.	Wayanad	29.1.02	535.19	355.32	103.25	76.62	54927	40	78	0	3	
<b>Total</b>				<b>11524.62</b>	<b>6099.61</b>	<b>2724.34</b>	<b>2700.67</b>	<b>900028</b>	<b>1040</b>	<b>3792</b>	<b>665</b>	<b>93</b>

Source: Commissionate of Rural Development, Thiruvananthapuram

Abbreviations: IHHL: Individual Household Latrines, WC: Women Complex,

RSM: Rural Sanitary Marts

## Appendix 6.21

## Capital Cost for Introduction of MSW System

Sl. No.	Item	Number	Amount Rs. in lakhs
01.	House hold bins (@ Rs. 50	60,000	30.00
02.	Hand cart of 300 lit. capacity (@ Rs. 0.15 lakhs	60	9.00
03.	Tricycle for house to house collection @ Rs. 0.20 lakhs	40	8.00
04.	Community bin		
	i) Dumper container of 25000 lit. (@ Rs. 0.01 lakhs	85	0.85
	ii) Containers 2.5 m3 (@ Rs. 0.30 lakh	24	7.20
	iii) Litter bins (@ Rs. 0.01 lakhs	50	0.50
05.	Cost of sweeping tools		
	i) Containerised cart (@ Rs. 3000	75	2.25
06.	Transportation		
	Dumper plcer (@ Rs. 10 lakhs	2	20.00
	Dual loader (@ Rs. 8 lakhs	1	8.00
07.	Home Vermi Composting for a family of five members (@ Rs. 600/pit (90cm dia of 45 cm deep, 1:2:4 concrete 2 pits)	20,000 x 2	24.00
08.	Aerobic Composting 50 tonnes/day	-	60.00
	Processing area 100 x 90m 21 windrows each of 50 tonnes and maturity yard of 600 m2 for storing raw compost (30 days storage) capital cost		
09.	Sanitary land fill	-	20.00
10.	Bio medical waste treatment common facility	1	
	i) Incinerator of double chamber of capacity 30 Kg/hr, 3 shifts		15.00
	ii) Autoclave of capacity 30 Kg/hr, 2 shifts		15.00
	iii) Shredder, 3000 Kg/hr		3.00
	iv) Land development and civil works		15.00
	v) Sundries		2.00
11.	Civil work – flooring container stations, bin locations; Processing/Disposal plant accessories		5.00
	1. Site development		
	Weigh Bridge		15.00
	Compost Plant		8.00
	Vermi Compost Unit		4.00
	Support to home composting - vermi kits		2.00
			3.00
12.	Setting up basic tools for vehicle repair		3.00
13.	Community awareness/ Training for staff		3.00
14.	Sundries		1.20
	<b>Sub Total</b>		<b>284.00</b>
	Less Cost of home composting unit/ household bins and bio-medical waste		104.00
	<b>Total</b>		<b>180.00</b>

(Abstract of cost excluding land cost)

## Appendix 6.22

## Operation and Maintenance

(Cost per annum)

Sl. No.	Item	Amount Rs. in lakhs
i)	House to house collection (@ Rs. 20 per month in 20,000 households)	48.00
ii)	Street Sweeping 152 labour (@ Rs. 4,000 per month	72.90
	i) Containerised cart 6 bins, 50 lit. = 75 No. (@ Rs.3000	2.25
	ii) Long handle broom 100 nos. (@ Rs. 75 each	0.075
	iii) Metal tray, fork and metal plate 100 nos (@ Rs. 200/set	0.05
	iv) Shovel for drain cleaning, wheel barrow (@ Rs. 400/100 nos	0.10
	v) Protective gear such as gloves, boots etc. 16 nos. (@ Rs. 500 per set	0.8
iii)	Transportation (@ Rs. 1000 per day vehicle	7.20
iv)	Aerobic Composting	
	a) Labour	
	i) Turning, breaking windrows, sorting 30 men (@ 50,000/year/head	15.00
	ii) Plant operation, 7 men (@ 50,000/year/head	3.50
	iii) Driver/@ 80,000/year	
	b) Tools and equipment	0.80
	i) Maintenance replacement	
	ii) Fuel, power	1.00
	iii) Packing, marketing	1.50
	iv) Management supervision	3.00
	c) Amortisation @ 20% of capital cost	5.00
		12.00
v)	<b>Sanitary Landfill</b>	
	i) Cell formation - internal road	2.00
	ii) Cover material	3.25
	iii) Labour for leveling, covering	3.50
	iv) Hiring of dozer for immediate compaction intermediate cover twice annually	3.00
	Leachate control monitoring - cut off drains	2.25
vi)	Bio-medical Waste treatment at common facility center	30.00
vii)	Sundries	6.90
	<b>Sub Total</b>	<b>221.00</b>
	Less House to house collection and biomedical waste management	78.00
	<b>Total</b>	<b>143.00</b>

Source: S.W.M.: Reading Material, 2002 KTS/111



**Appendix 6.23**  
**Own Funds of Urban Local Governments**

Population	No. of Urban Local Governments	Own Revenue (A)	Expenditure on Salary, OE, Street light, Water supply Public Health		Balance funds (A-B)
			(B)		
>72 lakhs	5	7693.37	4135.67		3557.7
1-2 lakhs	2	864.26	545.35		318.91
50000 - 1 lakh	21	4171.13	2283.39		1887.74
25000-50000	30	3767.78	2265.54		1502.24
<b>Grand Total</b>	<b>58</b>	<b>16496.54</b>	<b>9229.95</b>		<b>7266.59</b>

Source: Directorate of Urban Affairs

**Appendix 6.24**  
**Bio-medical Waste Management System: Capital Cost**

Sl. No.	Facility	Amount in
1	Incinerator (2 chamber 30 Kg/hr. Capacity)	15.00
2	Autoclave (30 Kg/hr. Capacity)	15.00
3	Shredder 3,000 KG/hr. Capacity	3.00
4	Land Development and Civil Works	15.00
5	Other items	2.00
<b>Total</b>		<b>50.00</b>

(Land requirement: 2 acres)

Source: State Pollution Control Board

**Appendix 6.25**  
**Per capita Consumption of Plastic in some selected**

(in kg.)

Sl. No.	Country	Per capital Consumption
1	India	1.60
2	Vietnam	1.50
3	China	6.00
4	Indonesia	8.00
5	Mexico	13.00
6	Thailand	18.00
7	Malaysia	22.00
8	Western Europe	60.00
9	Japan	70.00
10	North America	78.00

Source: Central Pollution Control Board

**Appendix 6.26**  
**Waste Water Generation, Collection, Treatment in Metro Cities: Status**

Sl. No.	Name of Metro City	Total Population	Municipal Population	Volume of Waste Water Generated (mid)		Waste Water Collected	Capacity (mid)	Treatment		Mode of Disposal	
				Total				Primary	Secondary		
				Domestic	Industrial						Volume (mid)
1	Ahmedabad	3312216	2876610	520.00	36.00	556.00	445.00	80.04	Y	Y	Sabarmathi River
2	Banglore	4130288	4130288	375.00	25.00	400.00	300.00	75.00	Y	Y	V. Valley, Ksc. Valley
3	Bhopal	1062771	1062771	189.30		189.30	94.60	49.97	Y	Y	Agriculture
4	Bombay	12596243	12288519	2228.10	227.90	2456.00	2210.00	89.98	Y	Y	Sea
5	Kolkata	11021918	9643211	1383.80	48.40	1432.20	1074.90	75.05	-	-	Hugly River/Fish farm
6	Coimbatore	1100746	816321	60.00		60.00	45.00	75.00	-	-	Nayal River, Irrigation
7	Delhi	8419084	8419084	1270.00		1270.00	1016.00	80.00	Y	Y	Agriculture, Yamuna River
8	Hydrabad	4344437	4098734	348.30	25.00	373.30	299.00	80.10	Y	-	River, Irrigation
9	Indore	1109056	1091674	145.00		145.00	116.00	80.00	Y	-	Khan River, Irrigation
10	Jaipur	1518235	1458483	220.00		220.00	165.00	75.00	Y	Y	Agriculture
11	Kanpur	2029889	1874409	200.00		200.00	150.00	75.00	Y	Y	Ganga, Sewage Farm
12	Kochi	1140605	670009	75.00		75.00	45.00	60.00	-	-	Cochin Back Water
13	Lucknow	1669204	1619115	106.00		106.00	80.00	75.47	-	-	Gomati River
14	Ludhiana	1042740	1042740	94.40		94.40	47.00	49.79	-	-	Agriculture
15	Madras	5421985	4752974	276.00		276.00	257.00	93.12	Y	Y	Agriculture, Sea
16	Madurai	1085914	940989	8.00		8.00	33.60	420.00	-	-	Agriculture
17	Nagpur	1664006	1624752	204.80		204.80	163.00	79.59	Y	Y	Agriculture
18	Patna	1099647	917243	219.00		219.00	164.00	74.89	Y	N	River, Fisheries
19	Pune	2493987	2244196	432.00		432.00	367.00	84.95	Y	Y	River
20	Surat	1518950	1498817	140.00		140.00	112.00	80.00	Y	-	Garden/Creek
21	Vadodara	1126824	1031346	120.00	20.00	140.00	105.00	75.00	Y	Y	River, Agriculture
22	Varanasi	1030863	1030863	170.00		170.00	127.00	74.71	Y	Y	Ganga, Agriculture
23	Vishakhapatnam	1057118	752037	68.00		68.00	55.00	80.88	-	-	-
<b>Total</b>		<b>70996726</b>	<b>65885185</b>	<b>8852.70</b>	<b>382.30</b>	<b>9235.00</b>	<b>7471.10</b>	<b>80.90</b>	<b>2923.00</b>		

Source: Central Pollution Control Board  
Note: Data collected during 1995-96  
Y = Yes  
N = No

## Appendix 7.1

## Growth of Kerala Power System at a Glance - 2003 and 2004

Sl. No.	Particulars	Position as on	
		31.3.2003	31.3.2004
1	2	3	4
1	Installed Capacity -MW	2601.62	*2615.71
2	Maximum Demand _ (System) MW	2347.00	2426.00
3	Generation Per Annum-M.U	5475.74	4488.06
4	Import Per Annum -M.U	7330.80	8015.41
5	Export Per Annum - M.U	121.20	0.00
6	Energy Sales Per Annum-M.U	8752.07	8910.84
7	Energy Losses of Percentage of Energy Available for Sales	30.41	28.46
8	Per capita Consumption- Kwh	392.00	386.00
9	220 K.V Lines- CT Km	2577.89	2582.15
10	110 K.V Lines- CT Km	3554.94	3730.64
11	66K.V Lines- CT Km	2933.08	2943.33
12	11 K.V Lines- CT Km	32054.42	33280.22
13	L.T. Lines- CT Km	196974.02	201637.62
14	Step up Transformer Capacity -MVA	2346.48	2363.63
15	No. of EHT Sub Stations	198.00	205.00
16	Step down Transformer Capacity -MVA	11095.00	11826.90
17	Distribution Transformers		
	a) Numbers	33455.00	34758.00
	b) Capacity - MVA	4436.99	4710.78
18	No. of Villages Electrified	1384.00	1384.00
19	No. of Consumers(in lakhs)	69.48	73.00
20	Connected Load -M.W	9394.40	9910.15
21	No.of Street Lights	820201.00	854584.00
22	No.of irrigation pumps	417640.00	430449.00
23	Total Revenue per Annum(Rs. Lakhs)	372253.08	406890.99
24	Sale of Power per annum	248068.91	275609.27

\* Including Chempukadavu I & II & Urumi I & II

Source : KSEB

**Appendix 7.2**  
**Profile of on-Going Hydro-Electric Projects in the State**

Sl No	Name of Schemes	District	Energy Potential (MU)	Project Sanctioned on	Major works commenced on	Original Estimated cost (Rs. in lakhs)	Latest Estimated cost (Rs. in lakhs)	Expenditure upto 3/2004 (Rs. in lakhs)	Outlay for '04-'05 (Rs. in lakhs)	Expected Year of commissioning
1	2	3	4	5	6	7	8	9	10	11
1	Malankara 10.5 MW	IDK	65	1986	Oct-99	780	4113.00	1770.65	280.00	Jun-05
2	Chembukadavu I SHE scheme 2.75 MW	KKD	6.59	1989	Apr-00		1138.00			
3	Chembukadavu II (3.75 MW)	KKD	9.03	1989	Jul-01		1272.00	5128.96	187.00	Commissioned on 25.1.2004
4	Urumi I -3.75 MW	KKD	9.72		Apr-01		1320.00			
5	Urumi II -2.40 MW	KKD	6.28		Jun-01		1095.00			
6	Vadakkapuzha Diversion	IDK	12	1985		131	514.00	406.3	185.00	31.7.2003
7	Vazhikkadavu Diversion	IDK	24	1989	23-2-00	185	1599.00	1623.14	8.00	commissioned on May 2002
8	Kuttiyadi Tail Race-3.75 MW	KKD	15	1989	19-10-2000	397	1494.00	838.33	515.00	Jun-05
9	Kuttiyar Diversion	IDK	37	1989	May-92	214	880.00	507.28	0.00	Jun-05
10	Athirapally HE project-163 MW	TCR	386	1999		10254	31590.00	266.05	16.00	The clearance revoked by MOE&F.Fresh clearance to be obtained
11	Bhothathankettu (Private)-16MW	IDK	61.5	1994	30-12-94	3283	3283.00			2006
12	Karikkayam(SHEP) (pvt)-15MW	PTA	72.5	1994	Dec-04	3860				
13	Kuttiyadi Addl.Extension(100MW)	KKD	240	1998	Apr-00	6200	22050.00	25948.21	3035.00	2005
14	Kuttiyadi Augementation	KKD	223	1980		1305	19294.00	13596.25	400.00	2005
15	Lower Meenmutty(3.5 MW)	TVM	7.63	1994		495		140.20	645.00	2005

Source:KSEB

**Appendix 7.3**  
**Power Projects and Power Generation as on 31-3-2004**

Sl. No.	Name of Projects and Districts	Installed Capacity (MW)	Firm Power (MW)	Units Generated during 2003-04 (M.U) Gross Energy
1	Pallivasal - Idukki	37.50	32.5	193.74
2	Sengulam- Idukki	48.00	20.8	127.38
3	Neriamangalam- Idukki	45.00	27.0	197.06
4	Panniyar -Idukki	30.00	18.0	75.56
5	Peringalkuthu + LBE Thrissur	48.00	29.4	231.3
6	Sabarigiri- Pathanamthitta	300.00	153	697.03
7	Sholayar- Thrissur	54	20.6	200.78
8	Kuttiady - + Kuttiyadi Extension-KZD	125	39.2	257.97
9	Idukki - Idukki	780	280.2	1244.44
10	Idamalayar-Ernakulam	75	43.3	150.81
11	Kallada- Mini-Kollam	15	6.05	35.72
12	Kanjikode Wind Farm - Palakkad	2	0.4	2.49
13	Peppara- TVPM	3	1.30	4.46
14	Lower Periyar- Idukki	180	56.3	363.32
15	Brahmapuram- Ernakulam	107	73	262.94
16	Madupetty - Idukki	2	0.7	3.54
17	Kakkad- Pathanamthitta	50	30	127.47
18	Kayamkulam (NTPC)-Alappuzha	359.58	0	2107.62
19	KDPP-Kozhikode	128	102.4	311.38
20	KPCL. (IPP)-Kasargode	21.90	0	77.17
21	Maniyar (Private)Pathanamthitta	12	3.70	21.05
22	Kuthunal (Hydro-Captive)- Idukki	21		19.46
23	BSES(-IPP) -Ernakulam	157		991.90
24	Malampuzha- Palakkad	2.5	0.64	0.18
25	Urumi I & II - Kozhikode	6.15		
26	Chembukadavu I & II - KOzhikode	6.45		2.00
<b>Grand Total</b>		<b>2615.71</b>	<b>947.5</b>	<b>7706.77</b>

Source KSEB

**Appendix 7.4**  
**Average Tariff Rate**

Sl.No	Consumer Category	Average Tariff(in paise/unit)	
		2002-03	2003-04
1	2	3	4
1	Domestic	146.57	176.13
2	Commercial	623.41	658.54
3	Public Lighting	163.44	170.00
4	Agriculture	96.74	97.43
5	Public Water Works	}	}
6	Industry (LT)		
7	Industry (HT & EHT)		
8	Railway Traction	314.55	364.42
9	License (HT & EHT)	205.27	307.72
Inter State		391.97	
Overall Average		279.81	309.67

Source: KSEB

**Appendix 7.5**  
**Average Realisation from Sale of Power**

Sl.No	Category of Consumer	Average Realisation (in paise per unit) (Including Electricity duty)	
		31-3-2003	31-3-2004
1	2	3	4
1	Domestic		
	(a) Paying Group	161.04	191.01
	(b) Non-paying Group	0.00	0
2	Commercial	677.39	713.37
3	Public lighting	163.57	170.13
4	Irrigation and Dewatering	106.32	106.01
5	Public works	}	}
6	Industrial		
	(a) LT		
7	(b) HT & EHT	353.34	399.5
8	Bulk Supply	205.28	307.72
9	Outside Supplies		
10	Railway Traction	314.55	364.22
Inter State		391.97	
Overall Average		296.45	327.28

Source: KSEB

**Appendix 7.6**  
**Pattern of Power Consumption and Revenue Collected During 2003-04**

Sl. No.	Category	No. of Consumers as on 31-3-2004	Connected Load as on 31-3-2004 (M.W)	Energy Sold (M.U)	Consumption as % to total	Revenue Collected (Rs. Lakhs)	Revenue As percentage to Total
1	2	3	4	5	6	7	8
1	Domestic						
	(a) Paying Group	5705904	5949.21	3995.52	44.84	70372.04	25.53
	(b) Non-paying Group	46212	15.06	8.36	0.09		
2	Commercial L.T.+HT Non Industrial HT	1037815	1280.48	1312.75	14.73	57861.13	20.99
3	Public lighting	2325	83.61	165.68	1.86	2816.56	1.02
4	Irrigation&Dewatering-LT+HT	399044	721.78	211.03	2.37	1967.85	0.71
5	Public Water Works.L.T. *						
6	Industrial						
	(a) LT	107754	1173.95	750.51	8.42	30550.76	11.08
	(b)HT & EHT	1011	635.15	2232.50	25.05	104564.67	37.93
7	Railway Traction	4	24.50	46.12	0.52	1679.80	0.61
8	Bulk Supply to licensee	9	26.41	188.37	2.11	5796.45	2.10
9	Outside Supply(TNEB Sales					73.61	
10	Miscellaneous						
	<b>Total</b>	<b>7300078</b>	<b>9910.15</b>	<b>8910.84</b>	<b>100</b>	<b>275682.87</b>	<b>100</b>
	<b>Total excluding NPG</b>	<b>7253866</b>	<b>9895.09</b>	<b>8902.48</b>	<b>99.91</b>	<b>275682.87</b>	

Source: KSEB

\* Industrial L T includes Public Water works

## Appendix 7.7

## Sources of Funding of the Power Programmes of K.S.E.B. for the year 2003-04

(Rs. Lakhs)

No.	Particulars	2002-03	2003-04
1	2	3	4
1. a)	Loan from State Government under Section 64 of Electricity Supply Act 1948	1900.00	
b)	Loan from Rural Electrification Corporation Ltd.	78817.67	46812.1
2	Borrowings under Section 65		
a)	Loan from LIC of India	3000	0
b)	Assistance from IDBI	5151.28	3153.23
c)	Loan from PFC		21815.68
d)	Loans from Banks through REC		55500
e)	Loan from SIDBI	618.68	370.05
f)	Foreign Currency Loan	2537.25	651.11
g)	OEFC		
3	Non-SLR Bonds	19061	
4	Receipts under OYEC Scheme/Service Connection Charges/Contribution from Panchayats	11887.96	14699.99
5	Medium Term Loan		
6	Borrowings and Reserves		
a)	Pension Fund/Provident Fund *	(-)2689.31	960.5
b)	Deposits and other Debit Heads	12057.12	4589.23
7	Other Internal Resources		
8	Loan from Kerala PFC	23088.41	71416
9	EDC Kuttiyadi		
10	EDC-PSP	434.59	56.44
11	Loan from State Government for APD R P	3000	1564.5
12	Loan from State Government for PMGY (RE)	416.15	
	<b>Total</b>	<b>159280.80</b>	<b>221588.83</b>

\*Payment of GFP advance is more than the recovery of PF subscription  
Source .KSEB



## Appendix 8.1

Index of Industrial Production 2001-2002 &amp; 2002-03 : Base (1980-81=100)

Sl. No.	Item	Weight	Index for	
			2001-02	2002-03
1	2	3	4	5
	<b>General Index</b>	<b>100.00</b>	<b>302.29</b>	<b>267.355</b>
1	Manufacture of food products	8.82	119.18	130.38
2	Manufacture of beverages, tobacco and related products	1.46	191.50	230.71
3	Manufacture of cotton textiles	8.02	151.69	113.81
4	Manufacture of wool, silk and man made fibre textiles	1.26	33.05	32.92
5	Manufacture of textile products	3.26	17.21	18.72
6	Manufacture of wood and wood products	1.35	31.52	39.74
7	Manufacture of paper and paper products	3.16	0.00	0.00
8	'Manufacture of basic chemicals and chemical products (Except Petroleum and Coal)	19.78	427.00	274.85
9	'Manufacture of rubber, plastic, petroleum and coal products and processing of unclear fuels.	10.06	178.00	197.99
10	Manufacture of non-metallic mineral products	3.42	267.23	176.35
11	Basic metals and alloys industries	3.43	79.94	77.90
12	Manufacture of metal products and parts except machinery and equipment	0.50	660.36	646.38
13	Manufacture of machinery and equipment other than transport equipment	9.46	1226.27	1240.27
14	Manufacture of transport equipment and parts	2.67	9.82	19.41
15	Other manufacturing industries	1.42	28.65	28.65
16	Electricity generation, transmission and distribution	21.93	187.81	172.18

Source : Directorate of Economics &amp; Statistics, Tvpm.

## Appendix 8.2

## Growth of Working Factories and Average Daily Employment in Kerala - 1990-2003

Year	No. of Factories			No. of Employment		
	Private	Public	Total	Private	Public	Total
1	2	3	4	5	6	7
1990	12035	413	12448	239562	115988	355550
1991	12800	455	13255	243211	125527	368738
1992	14113	495	14608	248198	127538	375736
1993	14646	486	15132	277266	111492	388758
1994	14824	481	15305	281669	108591	390260
1995	14840	491	15331	263878	111270	375148
1996	15906	528	16434	293923	111144	405067
1997	16803	533	17336	317592	111248	428840
1998	17177	542	17719	334143	109698	443841
1999	17955	549	18504	318729	117747	436474
2000	17956	558	18544	336895	101855	438750
2001	18001	553	18554	329230	107180	436410
2002*	17727	535	18262	313260	95553	408813
2003 (p)	17838	538	18376	316169	95580	411749

\* Revised

(p) provisional

Source : Directorate of Economics and Statistics , Thiruvananthapuram

## Appendix 8.3

Districtwise Distribution of Registered Working Factories in Kerala from 1990 to 2003

No	Districts	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002*	2003(p)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Thiruvananthapuram	655	606	712	864	855	809	850	868	892	923	898	897	890	895
2	Kollam	1179	1188	1415	1440	1425	1498	1654	1735	1787	1899	1927	1905	1899	1928
3	Pathanamthitta	292	586	329	366	442	363	382	430	470	498	526	532	504	504
4	Alappuzha	750	802	901	921	1098	1024	1059	1111	1140	1194	1211	1213	1214	1225
5	Kottayam	963	799	1098	1127	1126	1180	1247	1283	1293	1302	1294	1297	1258	1262
6	Idukki	278	289	292	302	251	290	303	305	303	341	325	326	332	339
7	Ernakulam	1931	1933	2274	2299	2294	2364	2543	2686	2700	2924	2931	2937	2928	2961
8	Thrissur	1692	1591	1939	1986	1987	1944	2084	2188	2364	2547	2557	2559	2519	2527
9	Palakkad	1220	1330	1574	1638	1692	1620	1774	1972	1966	2028	1993	1975	1893	1893
10	Malappuram	672	650	816	856	857	815	894	912	924	963	995	1003	1014	1023
11	Wayanad	122	125	129	126	128	128	151	180	176	139	140	141	134	134
12	Kozhikode	1386	1981	1565	1635	1703	1582	1656	1778	1777	1749	1764	1768	1723	1727
13	Kannur	1137	1182	1359	1369	1296	1473	1579	1614	1636	1738	1716	1729	1694	1698
14	Kasaragod	171	193	205	203	151	241	258	274	291	259	267	272	260	260
	<b>Total</b>	<b>12448</b>	<b>13255</b>	<b>14608</b>	<b>15132</b>	<b>15305</b>	<b>15331</b>	<b>16434</b>	<b>17336</b>	<b>17719</b>	<b>18504</b>	<b>18544</b>	<b>18554</b>	<b>18262</b>	<b>18376</b>

\* Revised

(p) Provisional

Source: Directorate of Economics &amp; Statistics, Thiruvananthapuram

**Appendix 8.4**  
**Districtwise Distribution of Employment in Kerala - 1995 to 2003**

Sl.No.	District	No. of Employment										
		1995	1996	1997	1998	1999	2000	2001	2002*	2003(p)		
1	2	3	4	5	6	7	8	9	10	11		
1	Thiruvananthapuram	28431	29013	28300	29582	29502	29123	29188	30129	31125		
2	Kollam	103706	120973	139283	143957	134112	137014	135518	128322	130216		
3	Pathanamthitta	8522	9302	9863	10880	11873	12325	12660	9429	9669		
4	Alappuzha	22366	23719	24058	24839	25149	26359	26216	25432	25586		
5	Kottayam	17482	17544	17692	18389	17436	17504	17508	16674	16892		
6	Idukki	6269	7668	7958	7887	7982	8032	7842	8343	8566		
7	Ernakulam	65626	70117	70340	71988	64949	64815	64102	64315	63838		
8	Thrissur	40376	36361	38261	41338	37599	36206	36213	35287	35010		
9	Palakkad	19552	23036	24329	24442	24425	24462	24337	24811	24453		
10	Malappuram	9144	9869	9954	10344	12917	13357	13409	9861	10227		
11	Kozhikode	30358	31506	28978	29371	26653	25822	17004	21902	21486		
12	Wayanad	2377	2759	3387	2600	16983	17001	25722	6546	6516		
13	Kannur	18595	20286	23278	23807	23810	23562	23484	24658	25061		
14	Kasaragod	2344	2914	4159	4417	3084	3168	3207	3104	3104		
<b>TOTAL:</b>		<b>375148</b>	<b>405067</b>	<b>429840</b>	<b>443841</b>	<b>436474</b>	<b>438750</b>	<b>436410</b>	<b>408813</b>	<b>411749</b>		

\* Revised

(P) Provisional

Source:- Directorate of Economics and Statistics, Thiruvananthapuram

## Appendix 8.5

## Industrial Disputes Arose, Handled, Settled etc. in Kerala (1998-99 to 2003-04)

Sl.No.	Particulars	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04
1	2	3	4	5	6	7	8
1	No. of disputes pending at the beginning of the year	3844	3287	2409	2241	2263	2768
2	No. of disputes that arose during the year	5272	5339	4123	3356	4005	4555
3	No. of disputes handled during the year (1+ 2)	9116	8626	6532	5597	6268	7323
4	No. of disputes settled during the year						
	a. By voluntary negotiation between parties	1228	1310	791	578	866	883
	b. By conciliation	1520	1630	1210	922	1391	1876
	c. By withdrawal	2575	2603	1834	1428	1230	1376
	d. Referred for Arbitration	0	0	0	0	0	521
	e. Referred for Adjudication	506	674	456	406	392	0
	f. Total number of disputes settled ( a to e)	5829	6217	4291	3334	3879	4656
5	Number of disputes pending at the year (3 - 4)	3287	2409	2241	2263	2389	2667
6	Number of disputes led to						
	a. Strike (including pending previously)	16	28	21	9	7	22
	b. Lockout including pending previously	23	45	40	38	49	35
	c. Total ( a + b )	39	73	61	47	56	57
7	No. of workers affected due to						
	a. Strike	4754	166603	198040	29827	403510	47887
	b. Lockout	7316	13661	8553	6700	12412	8858
	c. Total ( a + b )	12070	180264	206593	36527	415922	56745
8	Mandays lost						
	a. Strike	369234	1507008	279914	392172	6404348	93854
	b. Lockout	719419	813197	0	1405805	1772811	1799224
	c. Total ( a + b )	1088653	2320205	279914	1797977	8177159	1893078

## Appendix 8.6

## Central Sector Investment in Kerala

(Rs. crore)

Years as on 31st March	Investment Gross Block		% of column(3) to column(2)
	All India	Kerala	
1	2	3	4
1970	3795	116	3.06
1975	6242	202	3.24
1980	18161	423	2.33
1985	47323	831	1.76
1990	113430	1701	1.5
1995	227349	2906	1.28
1996	256200	3390	1.32
1997	284330	3992	1.40
1998	319829	4717	1.50
1999	353660	5962	1.69
2000	381365	6828	1.79
2001	411865	9893	2.4
2002	490397*	13504	2.81
2003	525303	14548	2.77

\* Revised

Source: Reports of the Public Enterprises Survey, Government of India.

**Appendix 8.7**  
**Central Sector Investment in Selected States as**  
**on 31-03-2003**

Name of State	As on 31-03-2003	
	Gross Block (Rs. Crores)	Employment (Nos)
1	2	3
Kerala	14548	47971
Karnataka	27040	90820
Andhra Pradesh	40198	105037
Madhya Pradesh	23542	118433
West Bengal	27834	269938
Rajasthan	12808	32010
Gujarat	29284	47005
Maharashtra	91246	235664
Orissa	29936	71432
Uttarpradesh	37161	94002
Assam	22678	59649
Tamilnadu	37641	110146
<b>All India</b>	<b>525303</b>	<b>1870685</b>

Source: Survey of Public Enterprises, 2002-03

**Appendix 8.8**  
**Capital Investment and Employment in respect of Government of India Companies**

(Rs. Lakh)

Sl.No	Name of Company	Investment in capital as on		Employment as on	
		31-3-2003	31-3-2004	31-3-2003	31-3-2004
1	2	3	4	5	6
1	Hindustan Organic Chemicals Ltd.	3342	3342	466	451
2	Hindustan Newsprint Ltd.	8254	8254	1125	1125
3	Cochin Refineries Ltd.	74464	60824	1976	1947
4	Hindustan Latex Ltd.	1635.52	1553.50	1837	1873
5	Hindustan Machine Tools Ltd.	4046.43	4976.35	870	863
6	Fertilizers and Chemicals Travancore Ltd.	91919.95	97420.15	5788	4402
7	Alagappa Textiles(Cochin) Mills	918	915	815	792
8	Instrumentation Ltd.	3262.15	3343.08	351	346
9	Cannanore Spinning & Weaving Mills	660.15	757.23	179	411
10	Indian Rare Earths Limited	13299.74	13920.04	1024	1039
11	Hindustan Insecticides Ltd.	6293.29	6593.8	534	514
12	Cochin Shipyard Ltd.	37696.96	38118.29	2189	2175

Source: Reports of Companies Concerned

**Appendix 8.9**  
**Performance of Government of India Companies in Kerala in Terms of Value of  
 Production and Sales Turnover**

(Rs. Lakh)

Sl.No.	Name of Company	Value of Production		Total Sales Turnover	
		2002-03	2003-04	2002-03	2003-04
1	2	3	4	5	6
1	Hindustan Organic Chemicals Ltd.	27777	27760	28079.37	28628.07
2	Hindustan Newsprint Ltd.	20405	25099	21457	25268
3	Cochin Refineries Ltd.	947190	984770	1058877	1151315
4	Hindustan Latex Ltd.	14674	16286	14102	16254
5	Hindustan Machine Tools	4373	4651	4419	4410
6	Fertilisers and Chemicals Travancore Ltd.	99296	97594	118150	96791
7	Algappa Textiles (Cochin) Mills Ltd.	1293	1306	1305	1316
8	Instrumentation Ltd.	3150	3554	3765	4127
9	Cannanore Spinning and Weaving Mills	1495	1737	1413.00	1503
10	Indian Rare Earths Limited	4135	3967	12954.78	11923.57
11	Hindustan Insecticides Ltd.	8569	7367.3	6069	6092
12	Cochin Shipyard Ltd.	24234	22188	23516	22844

\* Revised

Source: Reports of Companies Concerned



**Appendix 8.10**  
**Production and Capacity Utilisation in Government of India Companies Functioning in Kerala**

Sl.No.	Name of Company	Name of Product	Unit	Installed capacity as on					Production during					Capacity utilisation %		
				31-03-2003	31-03-2004	31-03-2003	31-03-2004	31-03-2003	31-03-2004	31-03-2003	31-03-2004	31-03-2003	31-03-2004			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
1	Hindustan Organic Chemicals Ltd.	Phenol	M.T.	40000	40000	42431.00	40094.00	106.08	100.00							
		Acetone	M.T.	24640	24640	26513.00	25057.00	107.60	102.00							
		H2O2(100%)	M.T.	5225	5225	5903.00	5979.00	112.98	114.00							
		Propylene	MT	..	..	26855.00	27744.00	..	..							
		Cumene	MT	..	..	51981.00	60538.00	..	..							
2	Hindustan News Print Limited	Newsprint	MT	100000	100000	100495.00	112555.00	100.00	113.00							
3	Cochin Refineries Ltd.	Petroleum/Petrochemica I Products- Crude, Thruput(MMT)	Million MT	7.5	7.5	7.58	7.85	101.00	105.00							
4	Hindustan Latex Ltd.	1. Condom 2. B.Bags 3. Saheli(Non Steroidal O C P) 4. Mala-D/N (Steroidal OCP) 5. CU.T 6. Hydrocephalus Shunt 7. Emergency Pills 8. Suture	MPcs MPcs M.Tab M.cycles MPcs Nos Pcs M. Tabs M.Pcs Nos.	670 2 30 30 4 5000 .. .. 338	670 2 30 30 4 5000 .. 1.5 368	812.52 2.58 14.99 50.00 1.29 2886.00 1.40 .. 263.00	856.12 3.64 12.78 55.00 0.34 1730.00 2.00 0.17 233.00	121.27 129.00 49.97 167.00 32.00 58.00 .. .. 78.00	127.78 182.00 42.60 183.00 8.50 35.00 .. 11.30 63.00							
5	HMT Ltd.	Machine Tools,Printing and cutting machines, accessories and spares Udyogamandal division														
6	Fertilizers & Chemicals Travancore Ltd.	1. Amonium Sulphate 2. Factamfos Cochin division 3. Urea Petrochemical division 4. Caprolactam	MT. MT MT MT	225000 633500 330000 50000	225000 633500 330000 50000	182222.00 673678.00 9590.00 40409.00	190268.00 567678.00 0.00 41794.00	81.00 106.00 3.00 81.00	85.00 90.00 .. 84.00							

Sl.No.	Name of Company	Name of Product	Unit	Installed capacity as on			Production during			Capacity utilisation %	
				31-03-2003	31-03-2004	31-03-2004	31-03-2003	31-03-2004	31-03-2004	31-03-2003	31-03-2004
1	2	3	4	5	6	7	8	9	10	10	
7	Alagappa Textiles(Cochin) Mills	Cotton, Yarn/Blended yarn	Kgs(Lakh)	42752 (Spindles)	42753 (Spindles)	15.95(L)	14.31	..	..	..	
8	Instrumentation Ltd.	1.Process control valves 2.Safety relief valves & Pr.Reducing Valves 3.Orifice plates & Flow measuring Devices	Nos	7500	7500	3643.00	4199.00	49.00	56.00	56.00	
			Nos	2000	2000	426.00	245.00	21.00	12.00	12.00	
			Nos	500	500	139.00	246.00	28.00	49.00	49.00	
9	Cannanore Spinning & Weaving mills	Yarn in different counts	Kgs(Lakhs)	24800 (spindles)	24800 (spindles)	16.36	13.20	..	..	..	
10	Indian Rare Earths Limited	Ilmanite	MT	154440	154440	104374.00	108466.00	68.00	70.00	70.00	
		Zircon	MT	11220	11220	11782.00	8638.00	105.00	77.00	77.00	
		Rutile	MT	9900	9900	5736.00	4505.00	58.00	46.00	46.00	
		Sillimonite	MT	7080	7080	4406.00	5022.00	62.00	71.00	71.00	
		Lecoxene	MT	1440	1440	208.00	0.20	14.00	0.01	0.01	
		Zirflor	MT	5000	5000	4062.00	3816.00	81.00	76.00	76.00	
		Microzir	MT	800	800	115.00	0.00	14.00	0.00	0.00	
		Monozite	MT	4200	4200	2851.00	2893.00	68.00	69.00	69.00	
11	Hindustan Insecticides Ltd.	Tech. DDT	MT	..	..	667.23	676.62	..	..	..	
		Form DDT	MT	..	..	1193.00	1191.00	..	..	..	
		Tech. Endosulphan	MT	..	..	1532.20	1549.18	..	..	..	
		Form Endosulphan	KL	..	..	967.48	782.40	..	..	..	
		Dicofol Tech.	MT	..	..	95.00	91.50	..	..	..	
		Dicofol Form	MT	..	..	32.31	55.08	..	..	..	
		Hilban	MT	..	..	142.62	163.45	..	..	..	
		Mancozeb	MT	..	..	45.58	195.57	..	..	..	
12	CochinShipyard Ltd.	Ship (Building)	DWT	150000	150000	68166.00	25125.00	45.00	17.00	17.00	

Source: Reports from Companies concerned

## Appendix 8.11

District-wise break up of Medium and Large Scale Industries in Kerala as on 31-03-2004

Sl.No.	Districts	Central Sector	State Sector	Co-operative Sector	Joint Sector	Private Sector	Total
1	2	3	4	5	6	7	8
1	Trivandrum	2	14	2	4	67	89
2	Kollam	2	7	2	..	20	31
3	Alappuzha	1	7	..	3	28	39
4	Kottayam	1	2	2	..	28	33
5	Pathanamthitta	..	1	1	1	5	8
6	Idukki	..	..	1	1	15	17
7	Eranakulam	12	8	2	4	228	254
8	Thrissur	2	8	1	7	47	65
9	Palakkad	2	2	2	6	72	84
10	Malappuram	..	5	1	2	22	30
11	Kozhikode	..	3	1	1	24	29
12	Wayanad	..	..	..	..	7	7
13	Kannur	1	7	4	..	17	29
14	Kasargod	..	1	1	..	2	4
<b>Total</b>		<b>23</b>	<b>65</b>	<b>20</b>	<b>29</b>	<b>582</b>	<b>719</b>

Source: Kerala State Industrial Development Corporation (KSIDC), Thiruvananthapuram

## Appendix 8.12

Units Assisted by K.S.I.D.C as on 31-3-2004

Sl.No.	Districts	No. of Units		Project Cost	
		Public Sector	Private Sector	Public Sector	Private Sector
1	2	3	4	5	6
1	Thiruvananthapura	9	38	14646	20606
2	Kollam	4	10	3297	2899
3	Alappuzha	3	28	2165	25975
4	Pathanamthitta	..	6	..	981
5	Idukki	..	14	..	6530
6	Kottayam	1	17	644	20014
7	Ernakulam	4	161	21063	200175
8	Thrissur	4	37	1753	27525
9	Palakkad	1	73	1373	101978
10	Malappuram	..	21	..	6206
11	Kozhikode	3	16	1593	5362
12	Wayanad	..	6	..	1132
13	Kannur	1	10	148	17891
14	Kasargode	1	1	87	178
<b>TOTAL:</b>		<b>31</b>	<b>438</b>	<b>46769</b>	<b>437452</b>

Source : KSIDC, Thiruvananthapuram

**Appendix 8.13**  
**Capital Invested and Employment in Respect of Govt. Owned Companies in Kerala**

Sl.No.	Name of Company	Capital Invested (Rs.lakh)		Employment (Nos.)	
		as on 31-3-2003	as on 31-3-2004	as on 31-3-2003	as on 31-3-2004
1	2	3	4	5	6
1	Kerala Electrical and Allied Engineering Co. Ltd, Kochi	8060.73	8256.17	1278	1038
2	Kerala State Electronics Development Corporation Ltd, Thiruvananthapuram	28486.34	30534.5	1540	1521
3	Malabar Cements Ltd, Palakkad	2973.86	3037.71	1075	1072
4	Kerala Clays & Ceramics Products Ltd, Kannur	131.82	131.82	366	348
5	Sitaram Textiles Ltd, Thrissur	3024.83	3024.83	682	369
6	Kerala Hitech Industries Ltd, Thiruvananthapuram (KELTEC)	2056	2056	247	243
7	Kerala Automobiles Ltd, Thiruvananthapuram	1110.92	1110.92	377	370
8	Steel Industrials Kerala Ltd, Thrissur	7065.78	7111.26	343	328
9	Kerala State Textile Corporation Ltd, Thiruvananthapuram	3407.8	3986.21	1166	918
10	Kerala Minerals and Metals Ltd, Kollam	3491.4	3093.27	1380	1426
11	Steel and Industrial Forgings Ltd, Thrissur	1461	1461	257	262
12	Foam Mattings India Ltd. Alappuzha	515.23	515.23	NA	176
13	Kerala Garments Limited	239.91	239.91	266	266
14	Kerala Agro Machinery Corporation Limited	161.46	161.46	418	419
15	Kerala State Cashew Development Corporation	25076.7	26314.7	15841	15841
16	Trivandrum Rubber Works, Thiruvananthapuram	213.62	213.62	..	186
17	Meat Products of India	271.99	281.09	105	105

Sources:- Reports of Companies Concerned

## Appendix 8.14

## Performance of Govt. Owned Companies in Kerala in Terms of Value of Production and Sales Turnover

Sl. No.	Name of Company	Value of Production				Sales Turnover	
		2002-03	2003-04	2002-03	2003-04		
1		3	4	5	6		
1	Kerala Electrical and Allied Engineering Co. Ltd, Kochi	5655.29	4918.63	4942.25	5393.53		
2	Kerala State Electronics Development Corporation Ltd, Thiruvananthapuram	3307.71	3784.17	6819.84	8023.65		
3	Malabar Cements Ltd, Palakkad	10418.34	16402.56	10946.4	16487.41		
4	Kerala Clays & Ceramics Products Ltd, Kannur	271.03	276.22	370.08	354.19		
5	Sitaram Textiles Ltd, Thrissur	337.1	555.29	329.9	562.64		
6	Kerala Hitech Industries Ltd, Thiruvananthapuram	NA	NA	897.13	1099.89		
7	(KELTEC) Kerala Automobiles Ltd, Thiruvananthapuram	7448.58*	4266.06	4607.71	4462.62		
8	Steel Industrials Kerala Ltd, Thrissur	NA	NA	1980.33	1292.04		
9	Kerala State Textile Corporation Ltd, Thiruvananthapuram	4068	3126.36	3953.51	3328.69		
10	Kerala Minerals and Metals Ltd, Kollam	20395.43	23346.63	26144.03	26689.2		
11	Steel and Industrial Forgings Ltd, Thrissur	1704	2085	1961	2287		
12	Foam Matings India Ltd, Alappuzha	NA	NA	525.75	535.91		
13	Kerala Garments Limited	40	60	8.32	9.5		
14	Kerala Agro Machinery Corporation Limited	7330.73	7100.8	7342.89	6815.4		
15	Kerala State Cashew Development Corporation	..	1221.73	164.61	1222.31		
16	Trivandrum Rubber Works, Thiruvananthapuram	107.57	61.17	111.68	45		
17	Meat Products of India	336.83	404.65	..	..		

\* Revised

Source:- Reports of Companies Concerned

**Appendix 8.15**  
**Production and Capacity Utilisation of Government Owned Companies in Kerala during 2002-03 and 2003-04**

SI. No.	Name of Company	Name of products	Unit	Installed Capacity as on				Production During				Capacity Utilization (%)		
				31-3-2003	2003-04	2002-03	2003-04	2002-03	2003-04	2002-03	2003-04			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	
1	Kerala Electrical and Allied Engineering Co. Ltd, Kochi	Distribution of Transformers Steel Structures HRC Fuses Cast Iron Specials Alternators (TL) Electrical & Wiring Accessories Alternators(G.P) & D.G Sets Various Electronic Products	KVA Tonnes Nos Tonnes Nos Nos Nos	120000 1200 120000 1500 6750 133000 3000	120000 1200 120000 1500 6750 133000 3000	228411 1037 .. .. 5144 232580 778	299240 698 .. .. 8325 96147 872	190 86 .. .. 76 175 26	249 58 .. .. 123 72 29					
2	Kerala State Electronics Development Corporation Ltd, Thiruvananthapuram													
3	Malabar Cements Ltd, Palakkad	Portland Cement	M.Ts	420000	620000	410439	536330	98	87					
4	Kerala Clays and Ceramic Products Ltd, Kannur	ChinaClay Bricks Laterite	M.Ts Nos M.Ts	N.A N.A N.A	N.A N.A N.A	10286 192732 16917	10348 242169 12564	.. .. ..	.. .. ..					
5	Sitaram Textiles Ltd, Thrissur	Cotton Yarn Cotton Fabrics	Kg mts.	12064 10000	12064 10000	320920 ..	427980 ..	.. ..	.. ..					
6	Kerala Hitech Industries Ltd, Thiruvananthapuram (KELTEC)													
7	Kerala Automobiles Ltd, Thiruvananthapuram	Autorickshaw	Nos	7200	..	6900	6005	96	..					
8	Steel Industrials Kerala Ltd, Thrissur	Structural Steel Fabrication Cast Iron	M.Ts M.Ts	3000 1200	3000 1200	148 153	121.96 904	5 13	4 75					

Production is reported in terms of value and not in terms of quantity

Not available

Sl. No.	Name of Company	Name of products	Unit	Installed Capacity as on				Production During				Capacity Utilization (%)			
				31-3-2003	2003-04	2002-03	2003-04	2002-03	2003-04	2002-03	2003-04	2002-03	2003-04		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
9	Kerala State Textile Corporation Ltd, Thiruvananthapuram	Colton/Blended Yarn	Spindles	86236	86236	26.34 (Kg. lakh)	16.93	..	..	..	..	..	..	..	
10	Kerala Minerals & Metals Ltd, Kollam	Titanium Dioxide Ilmenite Rutile Zircon	M Ts M.Ts M.Ts M.Ts M.Ts	22000 51600 2400 1500 7500	22000 51600 2400 1500 7500	28136 30819 1117 600 2115	25467 50554 3894 1629 2471	128 60 47 40 28	116 98 162 109 33						
11	Steel and Industrial Forgings Ltd, Thrissur	Steel Forgings	M.Ts	7500	7500	2115	2471	28	33						
12	Foam Mattings (India) Ltd, Alappuzha	Mattings plant	M2	475000	475000	88000	136000	18.52	28.63						
13	Kerala Garments Limited	Latex backing plant	M2	1200000	1200000	492000	322000	41	27						
14	KAMCO	Dyeing Plant	M.Ts	840	840	626.75	896.76	75	107						
15	Kerala State Cashew Development Corporation	Powerloom Plant	M2(Lac)	1.9	1.9	0.47	0.57	28	30						
16	Trivandrum Rubber Works	Ready-made Garments	Nos	315000	315000	60872	80000	19	25						
		Power Tiller	Nos	6000	6000	7544	6775	126	113						
		Kernals	MTs	12000	12000	..	758.6	..	6						
		Procured Tread	Kg	684000	684000	24111	22006	3.53	3.21						
		Bonding Gum	Kg	360000	360000	109749	3340	30.48	0.93						
		Vulcanising Cement	Lts	90000	90000	2665	2331	2.96	2.59						
		Foam Products	Nos	54000	54000	155	..	0.29	..						
		Rubber Sheeting	Tbns	120000	120000	2906kg	1507kg	..	..						
		Retreaded Tyre	Nos	10800	10800	2857	5320	24.45	49.26						
17	Meat Products of India	Meat	MTs	300	300	305.29	332.80	101.67	110.93						
		Feed	MTs	7200	7200	1191.40	1140.00	16.55	15.83						

Source: Reports of the Companies Concerned

**Appendix 8.16**  
**Capital Invested and Employment in respect of Govt. Majority Companies in Kerala**

Sl. No.	Name of Company	Capital Invested (Rs. Lakh)			Employment (Nos.)	
		2002-03	2003-04	2002-03	2003-04	
1	2	3	4	5	6	
1	Traco Cable Company Ltd, Kochi	2496.64	2496.43	635	641	
2	Travancore Titanium Products Ltd, Thiruvananthapuram	176.75	176.75	1293	1257	
3	The Travancore Cochin Chemicals Ltd, Kochi	6990.58	7020.57	962	870	
4	Keltron Electroceramics Ltd, Malappuram	495.38	492.01	100	93	
5	The Travancore Cements Ltd, Kottayam	913.92	1138.00	540	591	
6	The Metal Industries Ltd, Shoranur	215.86	260.96	98	94	
7	The Travancore Sugars and Chemicals Ltd.	229.51	256.05	152	123	
8	Forest Industries (Travancore) Ltd, Aluva	314.39	390.62	140	130	
9	Keltron Magnetics Ltd, Kannur	380.93	373.09	29	29	
10	Transformers and Electricals Kerala Ltd.	1383.84	1385.81	1342	1236	
11	Keltron Resisitors Ltd, Cannanore	255.10	276.80	47	47	
12	Keltron Component Complex Ltd.	3284.64	2461.91	320	315	
13	Keltron Crystals Ltd.	1128.40	1268.95	85	84	
14	Kerala State Handloom Development Corporation	2621.61	2652.91	418	405	
15	Kerala Ceramics Ltd.	1462.89	1895.75	240	243	

Source: Reports of the Companies Concerned



## Appendix 8.17

## Performance of Government Majority Companies in Kerala in Terms of Value of Production and Sales Turnover

Sl. No	Name of Company	(Rs.Lakh)					
		Value of Production		Sales Turnover			
		2002-03	2003-04	2002-03	2003-04	2002-03	2003-04
1	2	3	4	5	6	6	
1	Traco Cable Company Ltd, Kochi	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
2	Travancore Titanium Products Ltd, Thiruvananthapuram	6783.55	11420.37	6802.00	12896.00		
3	The Travancore Cochin Chemicals Ltd, Kochi	8705.00	10440.00	8672.09	10928.65		
4	Keltron Electroceramics Ltd, Malappuram	352.23	239.21	376.14	323.52		
5	The Travancore Cements Ltd, Kottayam	30462.00	27082.00	2936.00	2835.00		
6	The Metal Industries Ltd, Shoranur	265.79	202.66	269.00	211.90		
7	The Travancore Sugars and Chemicals Ltd.	297.87	N.A.	161.46	174.10		
8	Forest Industries (Travancore) Ltd, Aluva	388.57	589.98	388.57	589.98		
9	Keltron Magnetics Ltd, Kannur	209.09	232.42	255.78	291.23		
10	Transformers and Electricals Kerala Ltd.	7930.00	8404.00	8290.60	9332.94		
11	Keltron Resisters Ltd., Cannanore	138.66	97.65	154.20	96.62		
12	Keltron Component Complex Ltd.	2822.39	2518.04	3014.21	3089.85		
13	Keltron Crystals Ltd.	61.47	87.83	68.30	86.74		
14	Kerala State Handloom Development Corporation	347.00	517.00	1366.54	1701.88		
15	Kerala Ceramics Ltd.	561.84	546.02	675.56	602.13		

Source: Reports of companies concerned.

Appendix 8.18

Production and Capacity Utilisation of Government Majority Companies in Kerala during 2002-03 and 2003-04

Sl. No.	Name of Company	Name of Products	Unit	Installed Capacity as on			Quantity of Production			Capacity Utilization %		
				31-3-2003	31-3-2004	31-3-2003	31-3-2004	31-3-2003	31-3-2004	31-3-2003	31-3-2004	
1	2	3	4	5	6	7	8	9	10			
1	Forest Industries (Travancore) Ltd, Aluva	Wooden Furniture and Joineries	m <sup>3</sup>	1500	1500	360.04	418.42	24.00		28		
2	The Travancore Cements Ltd	1.White Cement 2.Cement Paint	M.T M.T	30000 1050	30000 1050	26945 1483	23123 1541	90 141.00		77 147		
3	Keltron Magnetics Ltd, Kannur	1.Servo Controlled Voltage Stabilizer 2.Uninterrupted Power Supply Systems	Nos. Nos.	100 50	100 50	.. ..	.. ..	.. ..		.. ..		
4	Travancore Titanium Products Ltd, Thiruvananthapuram	3.MPPCAPS Titanium Dioxide	Nos. M.T	720000 15000	720000 15000	909691 11137	1151259 16261	126.35 74.25		159.90 108.41		
5	Travancore Sugars & Chemicals Ltd	1.Spirit 2. I.M.F.L.(lakh)	B.L B.L	2820000 6.21	N.A. N.A.	483844 3.05	N.A. N.A.	17 49		.. ..		
6	Traco Cable Company Ltd, Kochi	1.AAC / ACSR 2.PVC Covered Conductors	MT MCM	1500.00 32.92	1500 32.92	1074.61 0.34	1395.5 0.332	71.64 1.02		93.03 1		
7	The Metal Industries Ltd, Shoranur	3.JFTC (IBM) 4.JFTC (TVLA) 1.Mammatties 2.All Axes 3.Pick Axes 4.Crow Bar 5.Sledge Hammer 6.Others	LCKM LCKM MT MT MT MT MT MT	2.50 15.00 272.00	2.50 15.00 272.00	0.18 2.36 75.8 8.35 29.59 5.31 128.3 15.74	0.002 0.87 86.57 10.65 34.47 7.16 95.46 10.72	7.20 15.73 97 90		0.08 5.8		

Sl. No.	Name of Company	Name of Products	Unit	Installed Capacity as on			Quantity of Production			Capacity Utilization %	
				31-3-2003	31-3-2004	31-3-2004	31-3-2003	31-3-2004	31-3-2004	31-3-2003	31-3-2004
1	2	3	4	5	6	7	8	9	10		
8	The Travancore Cochin Chemicals Ltd, Kochi	1.Caustic Soda Lye	MT	74250	74250	47263	55285	64	74		
		2.Chlorine Products	MT	65785	65785	41875	48983	64	74		
9	Transformers and Electricals Kerala Ltd, Ernakulam	1.Power Transformer	MVA	4500	4500	3451	3159	77	70		
		2.Current and Potential Transformers	No	1000	1000	473	294	47	29		
		3.Gas Circuit Breakers	No	100	100	53	36	53	36		
10	Keltron Electroceramics Ltd, Malappuram	1.Ceramic Capacitors	Lakh Nos	1100	1100	945.55	353.62	85.96	32.15		
		2.N.T.C.Thermistors	Lakh Nos	10	10	3.08	3.5	30.80	35		
		3.Buzzers/Ringers/Flasher	Lakh Nos	5	5	1.52	1.57	30.40	31.4		
		4.Metaloxide varistors	Lakh Nos	20	20	23.33	12.26	116.65	61.3		
11	Keltron Crystals Ltd., Cannanore	1.Piezo Electric Quartz Crystals	Nos (000)	2084	2084	128	421	6.14	20.2		
		2.Lead Taps for aluminium electrolytic capacitors	M.Nos	240	240	170	196	70.83	81.67		
12	Keltron Resistors Ltd., Cannanore	Carbon & Metal Film Resistors	M.Nos	217	217	123.97	90.09	57	42		
13	Keltron Component Complex Ltd.	Alu. Electrical Capacitors	M.Nos.	150	150	178.81	204.47	119	136.31		
14	Kerala State Handloom Development Corporation	Handloom Fabrics	Metres	2000 (looms)	2500 (looms)	7.79 (lakh metres)	12 (lakh metres)	..	..		
15	Kerala Ceramics Ltd.	Kaoplex	MT	18000	18000	10356	10288	57.53	57.15		

Source: Reports of the companies concerned

## Appendix 8.19

## Details of Joint Stock Companies Working in Kerala

Sl.No	Particulars	Private Limited	Public Limited	Total
1	2	3	4	5
1	Number of Joint Stock Companies in Kerala as on 31.3.2003	11528	1437	12965
2	Number of Companies newly registered during 2003-04	909	35	944
3	Number of Companies transferred from other States during 2003-04	3	2	5
4	Number of Companies wound up dissolved / struck off/amalgamated during 2003-04	56	9	65
5	Number of Companies transferred to other States during 2003-04	8	2	10
6	Net addition to the total No.of Joint Stock Companies in Kerala during 2003-04 [(2+3)-(4+5)]	848	26	874
A	No.of companies converted from public to private	...	...	13
B	No.of companies converted from private to public	...	...	11
7	Total No.of Joint Stock Companies in Kerala as on 31.3.2004 (Item 1+6)	12376	1463	13839
8	Total No.of Government Companies registered in Kerala as on 31-3-2004	60	51	111
9	Total No.of Government Companies registered in Kerala during 2003-04	...	...	...
10	No.of government Companies wound up during 2003-04	...	...	...
11	Net addition to the total No.of Government Companies in Kerala during 2003-04 (Item 9-10)	...	...	...
12	Total No.of Government Companies in Kerala as on 31.3.2004 (Item 8+11)	60	51	111
13	Name of Government Companies, newly registered in Kerala during 2003-04	...	...	...
14	Name of Government Companies, wound up during 2003-04	..	...	...
15	No.of other major companies wound up during 2002-03	...	...	...

Source : Registrar of Joint Stock Companies, Kochi.

**Appendix 8.20**  
**District-wise Details of Small Scale Industrial Units Registered in Kerala During the Year 2003-04**

District -	Number of SSI units promoted by						Investment( Rs. lakhs)	Value of goods and services produced (Rs. lakhs)	Employment provided (Nos.)	Total no. of units commenced commercial operations
	SC	ST	Women	Other	Total					
1	2	3	4	5	6	7	8	9	10	
Thiruvananthapuram	...	...	17	462	479	1581.77	9876.64	2284	479	
Kollam	5	...	327	393	725	1111.79	4607.09	2616	725	
Pathanamthitta	33	...	149	121	303	687.00	3063.00	923	303	
Alapuzha	1	1	162	320	484	808.51	4482.94	2231	484	
Kottayam	4	...	144	267	415	855.87	4005.10	1761	415	
Idukki	2	...	60	162	224	307.08	1201.78	883	224	
Ernakulam	...	...	116	310	426	985.14	1415.60	2792	426	
Thrissur	...	...	209	592	801	1730.57	5714.34	2868	801	
Palakkad	1	1	19	93	114	713.14	1123.86	482	114	
Malappuram	...	1	38	209	248	798.20	3709.44	1080	248	
Kozhikode	6	...	103	368	477	1168.89	4461.58	1799	477	
Wayanad	...	...	...	34	34	182.81	42.96	250	34	
Kannur	...	...	30	402	432	501.34	1851.41	1337	432	
Kasaragod	...	...	18	125	143	589.08	1115.11	584	143	
<b>Total</b>	<b>52</b>	<b>3</b>	<b>1392</b>	<b>3858</b>	<b>5305</b>	<b>12021.19</b>	<b>46670.85</b>	<b>21890</b>	<b>5305</b>	

Source : Directorate of Industries & Commerce, Tvppm.

**Appendix 8.21**  
**District-wise Details of Small Scale Industrial Units Registered in Kerala as on 31st March 2004**

District	Number of SSI units promoted by				Total	Total Investment (Rs lakhs)	Value of goods and services produced (Rs lakhs)	Employment provided (Nos)
	2	3	4	5				
Thiruvananthapuram	1323	6082	21992	29397	34208.35	121233.24	116570	
Kollam	1872	6535	18475	26882	34472.38	87252.98	170367	
Pathanamthitta	781	2897	9737	13415	12665.40	29692.49	44922	
Alapuzha	762	5459	18754	24975	27720.81	104608.72	114999	
Kottayam	584	4699	22873	28156	32389.97	73868.74	93003	
Idukki	460	2395	4450	7305	9128.56	26810.53	25859	
Ernakulam	855	5123	29631	35609	88210.68	482477.30	167148	
Thrissur	1205	4435	23433	29073	54610.61	163776.04	117462	
Palakkad	710	3897	17023	21630	31377.16	59955.95	100153	
Malappuram	876	1918	10178	12972	21328.33	77994.93	51643	
Kozhikode	459	2856	17057	20372	22700.25	89972.00	85493	
Wayanad	308	1639	2639	4586	5377.14	10673.73	16863	
Kannur	338	1676	12198	14212	19931.67	102896.27	94615	
Kasaragod	165	882	6018	7065	9018.41	23830.62	38325	
<b>Total</b>	<b>10698</b>	<b>50493</b>	<b>214458</b>	<b>275649</b>	<b>403139.72</b>	<b>1455043.54</b>	<b>1237422</b>	

Source : Directorate of Industries & Commerce

**Appendix 8.22**  
**Working Status of Small Scale Units as on 31st March 2004**

District	Total No. of Units	Number of units identified as			Units revived by DIC during 2003-04
		Sick	Registered	Revived	
1	2	3	4	5	6
Thiruvananthapuram	29397	506	273	122	...
Kollam	26882	531	288	131	6
Pathanamthitta	13415	266	59	55	...
Alappuzha	24975	482	229	193	2
Kottayam	28156	640	324	254	...
Idukki	7305	172	50	25	2
Ernakulam	35609	1761	288	125	1
Trissur	29073	539	149	66	3
Palakkad	21630	393	124	62	10
Malappuram	12972	267	67	11	5
Kozhikode	20372	440	256	109	3
Wayanad	4586	86	50	17	...
Kannur	14212	274	121	42	4
Kasaragod	7065	120	4	5	...
<b>Total</b>	<b>275649</b>	<b>6477</b>	<b>2282</b>	<b>1217</b>	<b>36</b>

Source : Directorate of Industries & Commerce

**Appendix 8.23**  
**Achievement under Self Employment Programme during 2003-04(PMRY)**

District	Target	Applications sanctioned and amount disbursed			
		Sanctioned		Disbursed upto 9/04	
		Number	Amount (Rs. lakhs)	Number	Amount (Rs. lakhs)
1	2	3	4	5	6
Thiruvananthapuram	1900	1849	901.25	1496	758.43
Kollam	1825	1928	998.32	1593	698.35
Pathanamthitta	825	836	510.50	696	398.30
Alappuzha	1325	1399	726.43	1361	702.00
Kottayam	1875	1693	893.53	1368	571.98
Idukki	650	688	371.39	603	266.74
Ernakulam	2100	2175	1347.03	1746	990.69
Trissur	2000	2095	1065.71	1646	824.19
Palakkad	2200	2425	1062.63	2190	942.52
Malappuram	1900	1485	978.08	941	612.11
Kozhikode	1750	1795	925.40	1246	594.20
Wayanad	450	410	142.30	335	101.58
Kannur	1050	1082	656.29	962	523.20
Kasaragod	500	517	321.15	423	262.12
<b>TOTAL</b>	<b>20350</b>	<b>20377</b>	<b>10900.01</b>	<b>16606</b>	<b>8246.41</b>

Source : Directorate of Industries & Commerce

## Appendix 8.24

## Industrial Co-operative Societies in Kerala as on 30.6.2004

District	Industrial Co-operative societies registered during 2003-04 (7/03 to 6/04)	Total Number of Industrial Co-operative Societies as on 30-6-2004			
		SC/ST	Women	Others	Total number of societies
1	2	3	5	6	7
Thiruvananthapuram	5	52	69	101	222
Kollam	...	72	34	41	147
Pathanamthitta	3	8	33	10	51
Alappuzha	1	35	42	43	120
Kottayam	...	8	39	5	52
Idukki	...	19	1	21	41
Ernakulam	...	11	56	17	84
Trissur	5	13	33	26	72
Palakkad	...	35	25	15	75
Malappuram	...	24	32	21	77
Kozhikode	...	17	13	28	58
Wayanad	...	41	61	63	165
Kannur	3	11	11	9	31
Kasaragod	...	1	14	28	43
<b>TOTAL</b>	<b>17</b>	<b>347</b>	<b>463</b>	<b>428</b>	<b>1238</b>

Source : Directorate of Industries &amp; Commerce



**Appendix 8.25**  
**Outstanding Credit to Various Sectors by Banks in Kerala**

(Rs. Crores)

Year	Total Credit	Primary Sector	Secondary Sector	Tertiary Sector	Credit to SSI Sector
1	2	3	4	5	6
1999	13995	1951	1827	2219	1827
2000	15940	2230	1991	2618	1991
2001	19180	2747	2262	3884	2262
2002	22061	3034	2539	4558	2539
2003	27006	3507	2561	5799	2561
2004	31867	4502	2617	8606	2617

Source : State Level Bankers' Committee.

**Appendix 8.26**  
**District-wise Number of Handloom Co-operative Societies in the State**

Sl. No.	District	No. of societies	
		2002-03	2003-04
1	2	3	4
1	Thiruvananthapuram	363	363
2	Kollam	79	79
3	Pathanamthitta	9	9
4	Alappuzha	26	26
5	Kottayam	16	16
6	Idukki	12	12
7	Ernakulam	32	32
8	Thrissur	31	31
9	Palakkad	46	46
10	Malappuram	13	13
11	Kozhikode	43	43
12	Wayanad	4	4
13	Kannur	73	73
14	Kasaragod	11	11
	<b>Total</b>	<b>758</b>	<b>758</b>

Source : Directorate of Handlooms &amp; Textiles, Tvpm.

## Appendix 8.27

## Production and Productivity under Handloom Industry in Kerala

Sl.No	Item	2002-03	2003-04
1	2	3	4
<b>1</b>	<b>Co-operative Sector</b>		
i	Number of looms	45788	46024
ii	Production of Handloom cloth (M.M)	54.95	58.38
iii	Value of Production (Rs. crores)	247.25	262.71
iv	Productivity (M/L/A)	1200.10	1268.5
v	No. of weavers in the co-operative sector	129000	129025
vi	Employment generated (mandays in lakhs)	423	448
vii	No. of women employed	27500	27548
<b>2</b>	<b>Corporate sector/ unorganised/ private sector</b>		
i	Number of looms	2500	2800
ii	Production of Handloom cloth (M.M)	1.87	2.1
iii	Value of production (Rs. crores)	8.41	9.45
iv	Productivity (M/L/A)	748	750
v	No. of weavers	5900	6100
vi	Employment generated (mandays in Lakhs)	23	24.64
vii	No. of women employed	1142	1188
<b>3</b>	<b>Total: Co-operative, corporate and unorganised sector</b>		
i	Number of looms	48288	48824
ii	Production of Handloom cloth (M.M)	56.82	60.48
iii	Value of Production (Rs. crores)	255.66	272.16
iv	Productivity (M/L/A)	1176.69	1238.74
v	No. of weavers	134900	135125
vi	Employment generated (mandays in Lakhs)	446.00	472.64
vii	No. of women employed	28642	28736
<b>4</b>	<b>Assistance Extended by way of loan and grant for the development of Handloom industry (Rs. lakhs)</b>		
<b>a</b>	<b>Loan</b>		
i	State Government	90.00	65.00
ii	Central Government	0.00	0.00
iii	N.C.D.C. NABARD, HUDCO	320.66	0.00
	Total (a)	410.66	65.00
<b>b</b>	<b>Grant</b>		
i	State Government	338.50	1166.24
ii	Central Government	249.67	1150.12
iii	N.C.D.C. NABARD, HUDCO	4.29	0.00
	Total (b)	592.46	2316.36
<b>c</b>	<b>Amount spent as Rebate on the sale of Handloom cloth</b>		
i	State Government	836.53	149.99
ii	Central Government (MDA) 50% CSS	732.86	0.00
	Total (c)	1569.39	149.99
<b>5</b>	<b>Value of unsold stock (Rs. crores)</b>		
i	In the Cooperative Sector	94.50	107.38
ii	In the Corporate Sector	16.06	18.87
iii	Unorganised/ private sector	NA	NA
<b>6</b>	<b>Number of Co-operative Societies</b>		
<b>a</b>	<b>Factory type:</b>		
i	working	112	112
ii	Dormant	26	26
iii	Under liquidation	11	11
iv	Not started working	6	6
	Total (a)	155	155
<b>b</b>	<b>cottage type:</b>		
i	Working	440	440
ii	Dormant	60	60
iii	Under liquidation	81	81
iv	Not started working	22	22
	Total (b)	603	603
	Total (6)	758	758

Source Directorate of Handlooms &amp; Textiles

## Appendix 8.28

## Working Results of Handloom Apex Society (Hantex)

SI.No	Particulars	2002-03	2003-04
1	2	3	4
1	Sales turnover (Rs. crores)	18.00	17.75
2	Value of cloth produced (Rs. crores) (Procured)	5.30	10.64
3	Value of Yarn Purchases (Rs. Crores)	1.25	6.71
4	Value of Yarn distributed (Rs. crores)	1.35	7.13
5	No. of Exhibitions conducted	32	15
6	No. of primary societies registered as members (cumulative)	450	458
7	Paid up share capital (Rs. lakhs)	1287.27	1311.33

Source: HANTEX

## Appendix 8.29

## Working Results of Kerala State Handloom Development Corporation (HANVEEV)

(Rs lakhs)			
SI.No	Particulars	2002-03	2003-04
1	2	3	4
1	Paid up capital (as at the end of the year)	1315.48	1331.48
2	Total Borrowing (as at the end of the year)	1306.43	1321.43
3	Gross Block (as at the end of the year)	2621.91	2652.91
4	Value of production through clusters and sponsored societies (as at the end of the year)	335.00	511.05
5	Income through sales of products (as at the end of the year)	990.00	1627.37
6	Other income:-		
a	Export of handloom cloth by KSHDC	...	...
b	Grants, MDA, Interest, Processing charges etc.	177.53	137.10
7	Expenditure on Raw Materials		
a	Yarn	165.00	506.56
b	Dyes and Chemicals	16.00	17.50
c	Fabrics	42.00	9.28
8	Expenditure on personal payments	348.40	382.30
9	Provision of Depreciation	16.50	13.55
10	Expenditure towards interest and bank charges	176.60	182.50
11	Other Expenses		
a	Trading Expenses	83.50	108.99
b	Administration and Selling Expenses	285.27	178.88
12	Stock differential	(-) 147.90	(-) 240.10
13	Net Profit (+)/Net loss(-)	(-) 448.64	(-) 652.18
14	Accumulated loss at the end of the year	1441.29	2052.80

Source : Directorate of Handlooms &amp; Textiles, Tvpm.

## Appendix 8.30

## Production and Productivity under Powerloom Industry

Sl.No	Items	2002-03	2003-04
1	2	3	4
1	Total no. of powerlooms in the State	3900	3800
2	No. of looms in the co-operative sector	1481	1381
3	Percentage of (2) to (1)	37.97	36.34
4	No. of powerloom co-operative societies in the State	33	33
5	No. of members in the co-operative sector	6600	6600
6	No. of women employed in powerloom sector	1223	1223
7	Co-operative sector		
a	Production of cloth ( lakh metres)	112.56	60.00
b	Value of production (Rs. Lakh)	1378.86	735.00
c	Productivity (Metre/loom)	7600.27	4344.68
8	Unorganised/private sector	NA	NA
9	Total (Co-operative and Unorganised/private sectors)		
a	Production of cloth (lakh metres)	112.56	60.00
b	Value of production (Rs. Lakh)	1378.66	735.00
c	Productivity (Meter/loom)	7600.27	4344.68

Source : Directorate of Handlooms & Textiles, Tvpm.

## Appendix 8.31

## Coir Co-operative Societies in Kerala

Sl.No	Type of Society	No.of Societies as on 31-3-2003	No. of Societies as on 31-3-2004
1	2	3	4
<b>1</b>	<b>Primary Coir Co-operative Societies</b>		
	a) Working	394	362
	b) New Societies which have not started working	8	8
	c) Dormant societies	154	177
	<b>Total (1)</b>	<b>556</b>	<b>547</b>
<b>2</b>	<b>Manufacturing Societies</b>		
	a) Working (Started production)	42	42
	b) New Societies which have not started working	16	16
	c) Dormant societies	3	3
	<b>Total (2)</b>	<b>61</b>	<b>61</b>
<b>3</b>	<b>Small Scale Producers Co-operative Societies</b>		
	a) Working	16	16
	b) New Societies which have not started working	6	10
	c) Dormant societies	0	0
	<b>Total (3)</b>	<b>22</b>	<b>26</b>
<b>4</b>	<b>Husk Procurement and Distribution Societies</b>		
	a) Working	0	0
	b) New Societies which have not started working	1	1
	c) Dormant societies	1	1
	<b>Total (4)</b>	<b>2</b>	<b>2</b>
<b>5</b>	<b>Fibre Societies (Defibering Mill Societies)</b>		
	a) Working	12	31
	b) New Societies which have not started working	31	16
	c) Dormant societies	4	4
	<b>Total (5)</b>	<b>47</b>	<b>51</b>
<b>6</b>	<b>Co-operative Coir Marketing Federation</b>	<b>1</b>	<b>1</b>
<b>7</b>	<b>Total number of coir Co-operative societies</b>		
	a) Working	464	451
	b) New Societies which have not started production	62	51
	c) Dormant societies	162	185
	d) Societies under liquidation	161	166
	<b>Grand Total</b>	<b>849</b>	<b>853</b>

**Appendix 8.32**  
**Activities of Coir Co-operative Societies**

<b>a. Yarn Sector</b>											
Year	No. of working Societies	No. of Workers (1000)	Husk purchased		Fibre purchased		Yarn produced		Wages paid (Rs. lakhs)	Wages paid (Rs. lakhs)	Wages paid (Rs. lakhs)
			Number (in lakhs)	Value (Rs.lakhs)	Qty (Tonnes)	Value (Rs.lakhs)	Qty (Tonnes)	Value (Rs.lakhs)			
2002-03	394	163.80	261.30	126.86	1349.47	428.67	2918.83	3691.82	522.04		
2003-04	362	152.00	266.37	113.90	1300.5	412.95	3389	4179.76	591.06		
<b>b. Product Sector</b>											
Year	No. of working Societies	No. of Workers	Value of Production (Rs. lakhs)		Value of Production (Rs. lakhs)		Wages paid (Rs. lakhs)				
2002-03	72	1572	397.64		341.25		469.85				
2003-04	89	2113	534.48								

Source : Directorate of Coir Development, Tvpm.

## Appendix 8.33

## District-wise Details of Coir Co-operative Societies

Sl. No	District	Project Offices	No. of Coir Societies as on 31-3-2004		
			Working & New	Dormant	Total
1	2	3	4	5	6
1	Thiruvananthapuram	Chirayinkil	42	23	65
2	Kollam	Kollam	89	40	129
3	Alappuzha	Alappuzha	131	19	150
4		Kayamkulam	51	30	81
5	Kottayam	Vaikom	26	5	31
6	Ernakulam	North Paravoor	12	15	27
7	Thrissur	Thrissur	18	12	30
8	Malappuram	Ponnani	24	5	29
9	Kozhikode	Kozhikode	68	21	89
9	Kannur	Kannur	41	15	56
<b>Total</b>			<b>502</b>	<b>185</b>	<b>687</b>

Source : Directorate of Coir Development, Tvpm.

## Appendix 8.34

## Export of Coir and Coir Products from India during 2002-03 &amp; 2003-04

Sl.No.	Items	2002-03		2003-04	
		Qty(Tonnes)	Value(Rs. Lakh)	ty(Tonnes)	Value(Rs. Lakh)
1	2	3	4	5	6
1	Curled Coir	492.37	80.05	76.54	14.02
2	Coir Fibre	1036.87	103.81	1120.75	142.44
3	Coir Rugs	1327.08	932.42	1694.56	1071.36
4	Coir Pith	21064.20	1493.01	29179.35	1975.92
5	Coir Rope	332.40	102.05	308.88	111.46
6	Coir( other sorts)	372.85	138.56	490.21	196.90
7	Coir Yarn	11482.47	2996.76	12364.43	3498.71
8	Geo-textiles	2140.69	985.23	2599.54	1184.74
9	Handloom Mat	33058.75	20711.79	36303.99	22133.69
10	Handloom Matting	4772.62	3191.44	4545.56	2838.66
11	Powerloom Mat	954.85	585.52	1026.28	672.13
12	Powerloom Matting	183.18	111.79	309.04	215.44
13	Rubberised Coir	535.22	403.43	461.78	334.67
14	Tufted Mat	6429.03	3434.71	11772.50	6359.52
<b>Total</b>		<b>34182.58</b>	<b>35270.57</b>	<b>102253.41</b>	<b>40749.66</b>

Source : Coir Board, Kochi.

**Appendix 8.35**  
**Foregin Exchange Earnings of India from Cashew Industry**

(Rs. Crore)

Year	Export Value			Total	Import Value of Cashewnuts	Net Foreign Exchange earned
	Cashew Kernels	Cashewnut shell liquid	Cashewnut			
1	2	3	4	5	6	
1998-99	1630.10	4.21	1634.31	958.03	676.31	
1999-2000	2569.50	3.74	2573.24	1186.16	1387.04	
2000-2001	2049.60	3.89	2053.49	960.84	1092.65	
2001-02	1788.68	5.93	1794.61	949.25	844.60	
2002-03 *	1933.02	9.26	1942.28	1236.60	705.68	
2003-04	1804.43	7.03	1811.46	1400.90	410.56	

\* Revised

Source: Cashew Export Promotion Council, Kochi

**Appendix 8.36**  
**Import of Raw Cashewnuts into India**

Year	Kerala		India	
	Quantity (MTs)	Value (Rs. crores)	Quantity (MTs)	Value (Rs. crores)
1	2	3	4	5
1998-99	109660	448.83	241161	958.03
1999-2000	156488	736.63	253577	1186.16
2000-01	152516	552.74	249318	960.84
2001-02	191579	502.46	355443	949.25
2002-03 *	249910	772.47	400659	1236.60
2003-04	294552	909.45	452398	1400.90

\* Revised

Source: Cashew Export Promotion Council, Kochi.



**Appendix 8.37**  
**Production, Sales, Employment, and Wages paid during 2002-03 & 2003-04**

Sl. No.	Name of Industry	Value of production		Value of sales		Employment(Nos)		Wages paid	
		2002-03	2003-04	2002-03	2003-04	2002-03	2003-04	2002-03	2003-04
1	2	3	4	5	6	7	8	9	10
I	Khadi	539.48	494.46	1201.60	1130.53	5644	4860	354.00	311.99
II	<i>Village Industries</i>								
1	Cottage Match	1008.00	995	1020.00	1000	6592	6592	393.60	410
2	Agarbathy	273.00	256	280.00	265	1435	1394	78.60	72
3	Village leather	1645.00	1674	1714.00	1747	1635	1605	186.50	370
4	Fibre & screwpine	559.39	551	560.60	552	59706	57198	461.09	463.5
5	Rubber based industry	1666.00	1723	1717.00	2221	1885	1608	240.00	233
6	Handmade paper	316.00	323	349.00	346	514	481	59.00	61
7	Village pottery	2136.00	1964	2496.00	2407	21262	21050	816.34	800
8	Gurkhandasari	168.00	182	174.00	181	2250	2050	76.30	74
9	Service Industry	435.00	425	435.00	440	949	920	364.00	350
10	Non-edible oil & Soap	781.00	814	947.00	969	1234	1202	120.00	123
11	Village oil	1010.00	1372	1046.00	1610	1076	1050	149.00	172
12	Textile	1021.00	1009	1023.00	1014	6142	6142	292.00	390
13	Palmgur	171.10	194	171.20	193	8255	8130	82.28	83
14	Bee-keeping	224.50	222.85	279.00	284	17961	17754	155.00	151.5
15	Processing of cereals & pulses	835.00	766	842.00	776	14450	14450	662.00	669
16	Ayurvedic medicines	158.30	168	166.65	175	1107	1088	32.05	34
17	Fruits & vegetable preservation	580.00	549	584.00	560	3104	3104	154.50	170
18	Lime	1527.70	1586	1530.90	1596	9171	9095	794.40	783
19	Carpentry & Blacksmithy	1696.32	1712	1731.00	1738	6481	6405	1138.10	1140
20	Aluminium industry	697.20	687	698.10	700	899	880	142.13	140
21	Cane & Bamboo	250.00	239	260.00	243	3118	3118	150.00	155
22	Electronics	358.40	363	379.50	380	883	880	44.30	46
23	Polyvastra	66.57	64.25	90.95	71.77	578	725	39.35	50.94
24	PVC	136.15	140	135.60	141	222	226	26.18	28
	<b>Total II</b>	<b>17719.63</b>	<b>17979.10</b>	<b>18630.50</b>	<b>19609.77</b>	<b>170909</b>	<b>167147</b>	<b>6656.72</b>	<b>6968.94</b>
	<b>Grand Total</b>	<b>18259.11</b>	<b>18473.56</b>	<b>19832.10</b>	<b>20740.30</b>	<b>176553</b>	<b>172007</b>	<b>7010.72</b>	<b>7280.93</b>

Source: Khadi & Village Industries Board, Thiruvananthapuram.

## Appendix 8.38

Districtwise number of sales outlets & sales under Board  
during 2003-04

Sl. No.	Name of project	No. of sales outlets	Sales during 2003-04 (Rs. Lakh)
1	Thiruvananthapuram	16	68.23
2	Kollam	19	50
3	Pathanamthitta	10	17.78
4	Alappuzha	19	45.35
5	Kottayam	14	55.73
6	Idukki	4	12.71
7	Ernakulam	11	45.48
8	Thrissur	17	26.73
9	Palakkadu	18	57.24
10	Malappuram	12	17.24
11	Kozhikkodu	29	90.08
12	Wayanad	2	0.83
13	Kannur	1	23.43
14	Payyannur Khadi Centre	68	293.73
<b>Total</b>		<b>240</b>	<b>804.56</b>

Source: Khadi & Village Industries Board, Thiruvananthapuram.

## Appendix 8.39

## Physical Achievement under Sericulture for the year 2002-03 &amp; 2003-04

Sl. No.	District	Mulberry Cultivation (acres) (Cumulative)				No. of farmers (Cumulative)				DFLs supplied (Nos.)				Cocoon Production (in Kg.)				Silk production (in Kg.)			
		2002-03	2003-04	2002-03	2003-04	2002-03	2003-04	2002-03	2003-04	2002-03	2003-04	2002-03	2003-04	2002-03	2003-04	2002-03	2003-04	2002-03	2003-04		
1	2	3	4	5	6	7	8	9	10	11	12										
1	Thiruvananthapuram	77.38	96.73	144.00	180.00	2075.00	4220.00	571.60	772.35												
2	Kollam	94.49	131.54	154.00	199.00	3090.00	5965.00	662.94	1646.80												
3	Pathanamthitta	73.00	98.90	110.00	156.00	2015.00	4095.00	414.00	1093.35												
4	Alappuzha	114.65	150.90	242.00	298.00	5335.00	6275.00	1143.28	1535.63										1394.20		
5	Kottayam	83.50	120.65	157.00	225.00	3835.00	5070.00	940.00	1602.95												
6	Ernakulam	70.45	101.00	134.00	204.00	4940.00	11340.00	1740.95	4236.48												
7	Idukki	222.85	344.60	291.00	433.00	7829.00	9830.00	3189.20	3483.20												
8	Thrissur	102.27	136.22	187.00	251.00	8490.00	21645.00	4058.90	10022.70												
9	Palakkad	130.75	187.00	160.00	222.00	10665.00	21265.00	4750.75	9338.83										974.00		
10	Malappuram	58.40	162.60	128.00	262.00	4000.00	17275.00	884.10	6738.05												
11	Kozhikkodu	132.50	88.45	208.00	170.00	15175.00	4340.00	4678.30	1789.90												
12	Kannur	93.10	125.40	196.00	264.00	14535.00	17460.00	4652.25	7090.25												
13	Wayanadu	108.85	159.75	178.00	237.00	12875.00	19500.00	4511.05	7725.50												
14	Kasaragod	52.00	77.15	79.00	115.00	3510.00	5845.00	1031.80	2037.40										1673.50		
<b>Total</b>		<b>1414.19</b>	<b>1980.89</b>	<b>2368.00</b>	<b>3216.00</b>	<b>98369.00</b>	<b>154125.00</b>	<b>33229.12</b>	<b>59113.39</b>	<b>2602.52</b>	<b>4041.70</b>										

Source: SERIFED, Thiruvananthapuram.

## Appendix 8.40

Kerala State Industrial Development Corporation - Physical  
& Financial Performance 2003-04

(Rs. Crores)

Sl. No.	Particulars	2003-04
<b>Physical</b>		
	1 Projects Completed	
a.	No. of projects	19
b.	Aggregate cost	74
c.	Employment (Nos. )	899
	2 Projects under implementation	
a.	No. of projects	30
b.	Aggregate cost	728
c.	Employment (Nos. )	4063
	3 Projects cleared by KSIDCB	
a.	No. of projects	19
b.	Aggregate cost	70
c.	Employment (Nos. )	2502
	4 MOU signed with private parties	
a.	No. of projects	5
b.	Estimated aggregate cost	6626
<b>Financial</b>		
a	Gross sanction	44
b	Disbursement	27
c	Recovery	62
d	Operating profit	8

Source : Kerala State Industrial Development Corporation, Thiruvananthapuram

**Appendix 8.41**  
**Kerala Financial Corporation: Loan Operations as on 31.3.2004**

(Rs.Lakhs)

Sl.No	Particulars	During the year 2003-04							Since Inception upto 31.3.2004						
		S.S.I		Others		Total		S.S.I		Others		Total			
		No.	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount		
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>		
1	Application pending as on 1.4.2003	22	510.36	11	1580.00	33	2090.36	0	0.00	0	0.00	0	0.00		
2	Application Received during 2003-04	318	7653.58	280	12135.57	598	19789.15	28285	184082.71	17862	156476.10	46147	340558.81		
3	Total application for consideration	340	8163.94	291	13715.57	631	21879.51	28855	195099.85	18274	163164.39	47129	358264.24		
4	Application withdrawn/ rejected or otherwise disposed off	7	1311.28	22	2472.82	29	3784.10	4358	31474.38	1496	20757.03	5854	52231.41		
5	Application Sanctioned (Gross)	320	6477.26	261	10480.75	581	16958.01	23293	136065.52	16834	136439.79	40127	272505.31		
6	A. Application cancelled/reduced out of current year's sanction	6	65.80	6	97.93	12	163.73	0	0.00	0	0.00	0	0.00		
	B. Application cancelled/reduced out of previous year's sanction	42	1411.17	27	1027.51	69	2438.68	0	0.00	0	0.00	0	0.00		
	C. Total cancellation/ reduction (6A+B)	48	1476.97	33	1125.44	81	2602.41	3110	17207.85	1343	9172.40	4453	26380.25		
7	Application sanctioned effectively (5-6A)	314	6411.46	255	10382.82	569	16794.28	0	0.00	0	0.00	0	0.00		
8	Net Sanctioned (5-6C)	272	5000.29	228	9355.31	500	14355.60	20183	118857.67	15491	127267.39	35674	246125.06		
9	Amount disbursed along with number of newly assisted units	262	4570.12	196	7332.03	458	11902.15	20977	105671.94	14922	104378.78	35899	210050.72		
10	Application pending sanction as on at the end of the period	13	375.40	8	762.00	21	1137.40	0	0.00	0	0.00	0	0.00		

Source : Kerala Financial Corporation, Tvpm

**Appendix 8.42**  
**District-wise details of Disbursement of Loan by KFC 2003-04**

Particulars	(Rs.lakhs)									
	Effective Sanction					Disbursement				
	No.	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	
Backward Districts										
Category - A		12	207.46	4	158.43	9	197.54	13	355.97	
	Wayanad	32	171.65	13	82.42	16	145.05	29	227.47	
Category - B										
	Alappuzha	23	164.53	15	105.95	7	52.85	22	158.80	
	Malappuram	43	876.99	16	91.04	14	872.75	30	963.79	
	Kannur	14	289.42	4	70.38	9	377.90	13	448.28	
	Kasaragod	15	327.37	2	24.18	12	248.87	14	273.05	
Category - C										
	Thiruvananthapuram	26	1680.06	6	73.65	18	1046.90	24	1120.55	
	Thrissur	103	2095.53	51	1213.32	20	953.35	71	2166.67	
<b>Total</b>		<b>268</b>	<b>5813.01</b>	<b>111</b>	<b>1819.37</b>	<b>105</b>	<b>3895.21</b>	<b>216</b>	<b>5714.58</b>	
Non Backward Districts										
	Pathanamthitta	13	278.81	6	59.93	2	159.13	8	219.06	
	Kollam	43	1113.42	13	232.63	15	555.85	28	788.48	
	Kottayam	23	531.83	22	202.62	0	306.17	22	508.79	
	Ernakulam	92	5328.25	43	1207.11	21	1163.05	64	2370.16	
	Palakkad	20	1015.21	7	177.55	7	201.27	14	378.82	
	Kozhikode	69	1074.12	35	373.51	36	746.22	71	1119.73	
	Thodupuzha	10	1027.85	3	59.10	7	275.27	10	334.37	
	Perumbavoor	31	611.78	22	438.30	3	29.86	25	468.16	
<b>Total</b>		<b>301</b>	<b>10981.27</b>	<b>151</b>	<b>2750.75</b>	<b>91</b>	<b>3436.82</b>	<b>242</b>	<b>6187.57</b>	
<b>GRAND TOTAL</b>		<b>569</b>	<b>16794.28</b>	<b>262</b>	<b>4570.12</b>	<b>196</b>	<b>7332.03</b>	<b>458</b>	<b>11902.15</b>	

Source - Kerala Financial Corporation, Tvpm.

## Appendix 8.43

Industry-wise Classification of Loan sanctioned and Disbursed by the Kerala Financial Corporation as on 31-3-2004 (Rs. Lakh)

Sl.No	Type of Industry	Amount Sanctioned	% of total loans sanctioned	Amount disbursed	% of total loan Disbursed
1	2	3	4	5	6
1	Mining	8199.12	3.15	6979.42	3.32
2	Crude Petroleum	264.39	0.10	119.73	0.06
3	Petroleum Refining	13.37	0.01	11.31	0.01
4	Other Food Products	21351.39	8.21	19218.18	9.15
5	Textiles	7600.10	2.92	4970.08	2.37
6	Paper & Paper Products	5788.02	2.23	4938.82	2.35
7	Leather & Leather Products	566.33	0.22	544.40	0.26
8	Rubber Products	17823.70	6.85	14578.62	6.94
9	Chemical & Chemical Products	6875.96	2.64	5574.51	2.65
10	Cement	110.20	0.04	84.07	0.04
11	Basic Metals				
	a) Iron & Steel	4444.96	1.71	2317.48	1.10
	b) Non Ferrous	773.11	0.30	603.58	0.29
12	Metal Products	6110.63	2.35	3903.09	1.86
13	Capital Goods				
	a) Non-Electrical Machinery	1968.79	0.76	1660.84	0.79
	b) Electrical Machinery	2463.81	0.95	1966.11	0.94
	c) Transport Equipment	1574.82	0.61	1037.62	0.49
14	Electricity Generation	114.04	0.04	35.24	0.02
15	Services				
	a) Motels & Shopping Complex	58334.16	22.43	44495.41	21.18
	b) Hospitals	10476.48	4.03	7970.39	3.79
	c) Others	43133.76	16.59	42091.05	20.04
16	Others	62089.69	23.87	46950.77	22.35
	<b>Total</b>	<b>260076.83</b>	<b>100.00</b>	<b>210050.72</b>	<b>100.00</b>

Source : Kerala Financial Corporation, Tvpm.

**Appendix 8.44**  
**Progress of the Working of Kerala Financial Corporation at a Glance**

Year	(Rs.lakh)					
	Loans sanctioned cumulative	Loans disbursed cumulative	Loans -outstanding	Profit before taxation	Profit after taxation*	
1	2	3	4	5	6	
1995-1996	95479.97	73745.32	38160.86	978.51	693.85	
1996-1997	114654.93	92606.32	47689.69	1453.30	1070.07	
1997-1998	138787.45	112550.05	58812.83	1148.22	900.66	
1998-1999	158218.83	131663.26	66852.52	1148.49	922.58	
1999-2000	173205.80	146634.75	68229.39	719.22	553.40	
2000-2001	202451.78	169324.19	76660.33	1801.50	1353.99	
2001-2002	216851.40	186917.81	78517.40	104.81	81.67	
2002-2003	231669.46	198148.57	74552.92	115.49	89.37	
2003-2004	246025.06	210050.72	69534.83	952.93	743.97	

\* Revised

Source : Kerala Financial Corporation, T/vpm.



**Appendix 8.45**  
**Selected Indicators of the Activities of SIDCO**

Sl. No.	Activities	Unit	Period	
			2002-03	2003-04
1	2	3	4	5
<b>1 Raw Material Distribution</b>				
1.1	SSI units assisted for procurement of raw materials	Nos	2400	2400
1.2	Quantity of Raw Materials Distributed			
a	Iron and Steel including pig iron	M.T	4102.000	4556.000
b	Cement	M.T	1302.000	1345.000
c	Coal	M.T	...	...
d	Paraffin wax	M.T	935.000	965.305
e	Titanium Dioxide	M.T	378.500	43.525
f	Others			
	i) Pipe	Mtrs	2979.000	429.740
	ii) IPCL	M.T	1242.000	690.250
	iii) Aluminium sheet	M.T	...	...
	iv) IOC products			
a	Lubricants	Litre	52553.000	21756.500
b	Bitumen	M.T	1114.152	4077.026
<b>2 Over dues</b>				
a	No. of Units	Nos.	...	...
b	Amount of over dues	Rs. Lakhs	...	...
<b>3 Marketing of SSI products</b>				
3.1	SSI Units assisted in marketing of products	Nos	68/month	72/month
3.2	Value of SSI products marketed through SIDCO			
a	Domestic	Rs. Lakhs	960	1533
b	Export	Rs. Lakhs	Nil	Nil
c	Total	Rs. Lakhs	960	1533
<b>4 Industrial Estates &amp; Infrastrucutre Development</b>				
4.1	Major Estates			
a	Major Estates	Nos	17	17
b	Sheds available	Nos	527	527
c	Shed occupied	Nos	513	503
d	SSI Units	Nos	769	769
	i) Working	Nos	694	692
	ii) Defunct, Idling or closed	Nos	75	77

Source: SIDCO, Thiruvananthapuram

## Appendix 8.46

## Small Industries Service Institute (SISI) - Achievement during 2003-04

Sl.No	Name of Activity	Unit	Achievement
1	2	3	4
1	Units visited for providing technical assistance	Nos	428
2	Visitors rendered assistance at SISI premises		
	a. Assistance to prospective entrepreneurs	Nos	4010
	b. Assistance to existing entrepreneurs	Nos	428
	c. Manangement and Marketing Related Assistance	Nos	211
3	Preparation of State profile	Nos	1
4	Preparation of Industrial Potential survey report for Kerala	No. of Districts	3
5	project profiles	Nos	28
6	Ancillary Development Programmes - No. of Units registered under KSX	Nos	22
7	Motivation campaigns	Nos	9
8	EDPs - 4/6 weeks duration		
i	Courses undertaken	Nos	9
ii	Persons trained	Nos	236
9	Management Development Programmes		
i	Courses undertaken	Nos	9
ii	Persons trained	Nos	211
10	Common Facility Workshop/Lab performance		
i	Training (including skill development programme)	Nos	20
ii	Persons trained	Nos	154
11	Export Packaging Training		
i	Courses undertaken	Nos	1
ii	Persons trained	Nos	36
12	PMRY Beneficiaries Training	Nos	Nil
13	Computer Training Programme		
i	Courses undertaken	Nos	3
ii	Persons trained	Nos	14

Source : Small Industries Service Institute, Trissur.

**Appendix 8.47**  
**Small Industries Development Bank of India's Assitance to Small Scale Industries**  
 (Rs. Crore)

year	Sanction and Disbursement				Performance of Kerala as % of All India	
	All India		Kerala		Sanction	Disbursement
1	2	3	4	5	6	7
1998-1999	8880	6285	348	205	3.92	3.26
1999-2000	10265	6964	356	317	3.47	4.55
2000-2001	10821	6441	556	389	5.14	6.04
2001-2002	9026	5919	535	396	5.93	6.69
2002-2003	10904	6789	615	214	5.6	3.2
2003-2004	8246	4414	162	133	1.96	3.00

Source : SIDBI, Ernakulam.

**Appendix 8.48**  
**DA/DP under DIC as on 6/2004**

Sl: No:	District	Name of DA/DP	Total area acquired (acres)	Allotable area (acres)	Area allotted (acres)	No. of working units	No. of closed units	Total no. of units
1	2	3	4	5	6	7	8	9
1	Thiruvananthapuram	DA, Veli	109.64	89.29	89.28	91	15	106
2		DP, Manvila	27.53	22.69	22.69	49	8	57
3	Kollam	DP, Mundakkal	20.67	18.09	18.09	43	10	53
4	Alappuzha	DA, Kollakkadavu	16.22	15.47	15.47	34	6	40
5		DP, Chengannur		4.28	4.27	19	4	23
6		DA, Punnapra	57.28	53.00	53.00	54	2	56
7		Cherthala	23.40	21.20	21.20	10	2	12
8		Cherthala	17.06	16.54	16.54	3	...	3
9		DA, CIE, Aroor	15.80	12.33	12.33	18	1	19
10		DA, Aroor	47.17	41.78	41.78	46	2	48
11	Kottayam	DP, Poovanthuruth	41.25	37.40	37.40	166	39	205
12		DP, Athirampuzha	1.00	0.86	0.86	10	...	10
13		DP, Vaikom	3.75	3.25	3.25	11	3	14
14	Pathanamthitta	DP, Kunnamthanam	20.94	17.32	17.32	...	...	...
15	Idukki	DA, Muttom	5.00	4.58	4.58	12	1	13
16		DP, Thundanganad	17.50	17.50	2.50	...	...	...
17	Ernakulam	DA, Aluva	64.41	59.15	59.15	75	15	90
18		DA, Edayar	435.24	376.70	376.70	212	41	253
19		DA, Angamally	219.52	214.52	214.52	29	14	43
20		DA, Vazhakkulam	15.26	12.16	12.16	26	17	43
21		DP, Angamally	31.91	26.62	26.62	51	9	60
22		DP, Kalamassery	78.12	64.74	64.74	146	32	178
23	Thrissur	DP, Athani	48.29	43.29	43.29	71	13	84
24		DP, Kunnankulam	3.04	2.21	2.10	19	4	23
25		DP, Ayyankunnu	24.07	20.87	...	...	...	...
26		DP, Vellakkod	24.07	21.94	5.00	...	...	...
27	Palakkad	DP, Pudussery	134.15	125.99	125.99	48	12	60
28		DA, Kanjikkod	532.80	514.44	512.66	248	22	270
29		DA, Umminikkulam	90.96	40.00	3.00	...	...	...
30	Malappuram	DP, FIE, Payyanadu	16.19	6.60	6.60	16	...	16
31	kozhikkode	DP, West Hill	12.63	10.33	10.33	31	3	34
32	Kannur	DP, Andoor-I	21.31	17.98	17.98	} 132	} 26	} 158
33		DP, Andoor-II	38.00	28.63	28.63			
34	Kasragod	DA, Ananthapuram	108.00	103.89	22.20	2	...	2
35		DP, Ananthapuram	104.50	97.69	30.87	2	10	12
36		DP, Chattanchal	28.50	25.66	22.51	2	1	3
<b>TOTAL</b>			<b>2455.17</b>	<b>2188.99</b>	<b>1945.61</b>	<b>1676</b>	<b>312</b>	<b>1988</b>

Source: DIC, Tvpm.

**Appendix 8.49**  
**Mini Industrial Estates under DIC**

District	No. of industrial estates	Total No. of SSI units	No. of working units	No. of employees	No. of sheds allotted to working units	Total No. of sheds
1	2	3	4	5	6	7
Thiruvananthapuram	6	38	23	128	35	60
Kollam	5	39	29	171	33	50
Pathanamthitta	2	14	10	45	12	20
Alappuzha	6	45	37	186	48	60
Kottayam	10	95	91	482	91	100
Idukki	4	33	28	116	34	40
Ernakulam	13	109	87	479	97	130
Thrissur	7	84	70	401	77	95
Palakkad	6	44	37	201	46	60
Malappuram	4	29	24	113	31	40
Kozhikode	8	69	58	251	64	77
Kannur	4	28	23	66	24	36
Kasaragod	4	31	18	85	22	41
<b>Total</b>	<b>79</b>	<b>658</b>	<b>535</b>	<b>2724</b>	<b>614</b>	<b>809</b>

Source: DIC, Tvpm.

**Appendix 8.50**  
**Major Industrial Estates under SIDCO**

District	Name of Industrial Estate	Total area acquired (Acres)	Allotable area (acres)	Total area allotted (acres)	No. of working Units	No. of closed Units	Total No. of Units
2	3	4	5	6	7	8	9
Thiruvananthapuram	Pappanamcode	18.5397	13.7549	13.2789	53	13	66
Kollam	Umayanallur	26.0343	21.8233	19.4533	51	7	58
	Karunagappally	8.7000	8.0981	5.5151	10	2	12
Alappuzha	Cherthala	8.9378	6.5478	6.5478	17	1	18
	Kollakadavu	19.4387	12.5887	10.0159	37	7	44
Kottayam	Changanacherry	13.2478	10.8983	10.8390	69	0	69
	Ettumanoor	30.5664	22.0326	21.6471	69	0	69
Ernakulam	Palluruthy	1.8600	1.4521	1.4521	7	1	8
	Mudickal	4.5851	4.1474	4.0773	16	1	17
Trissur	Ollur	27.5025	24.0725	23.2425	110	16	126
	Kallettumkara	5.0099	2.9299	2.8299	12	5	17
Palakkad	Karakkad	10.9600	7.7088	7.3088	38	1	39
	Olavakkod	21.9300	14.3369	10.5948	37	6	43
Malappuram	Manjeri	4.9200	4.2681	4.2681	21	4	25
Kozhikkode	West hill	12.4351	9.1331	9.1331	56	4	60
Kannur	Palayad	8.4200	8.1540	7.8740	40	7	47
Kasaragod	Kasaragod	16.8423	12.5923	11.5923	49	2	51
<b>TOTAL</b>		<b>239.9296</b>	<b>184.5388</b>	<b>169.6700</b>	<b>692</b>	<b>77</b>	<b>769</b>

Source: SIDCO

## Appendix 8.51

## Mini Industrial Estates under SIDCO

Sl. No.	District	Name of Industrial Estate	Total area of IE (Acres)	Total area allotted (acres)	No. of working Units	No. of closed Units	Total no. of Units
1	2	3	4	5	6	7	8
1	Thiruvananthapuram	Ulloor	0.9413	0.9413	5	6	11
2		Vellanad	0.7638	0.7638	5	1	6
3		Anad	1.0000	0.9999	8	1	9
4		Varkala	1.0000	1.0000	7	0	7
5	Kollam	Chithara	1.0000	0.5294	3	1	4
6		Thrikovilvattom	1.0000	0.5137	2	5	7
7		Chadayamangalam	0.8300	0.4559	4	1	5
8	Alappuzha	Kadakarapally	1.2500	1.2499	8	1	9
9		Mararikulam	1.0600	1.0600	5	3	8
10	Pathanamthitta	Pandalam	1.0000	0.9000	4	4	8
11	Kottayam	Nattakam	1.0000	0.3756	10	0	10
12		Pampady	1.0000	0.6453	6	0	6
13		Ayarkunnam	1.0000	1.0000	8	1	9
14	Ernakulam	Edathala	0.7000	0.7000	8	0	8
15		Piravom	1.0000	1.0000	5	4	9
16		Kothamangalam	1.0000	1.0000	2	7	9
17		Rayamangalam	1.0000	1.0000	8	1	9
18		Vazhakulam	1.0000	1.0000	8	3	11
19	Idukki	Kodikulam	1.0000	0.5900	4	0	4
20		Adimali	1.0000	0.3850	5	0	5
21		Olamattom	0.7998	0.7656	7	0	7
22	Thrissur	Mala	1.0000	1.0000	9	0	9
23		Kattoor	1.0000	1.0000	10	0	10
24		Arimbur	1.0000	1.0000	10	1	11
25	Palakkad	Pattambi	1.4000	1.4000	9	0	9
26		Vaniyamkulam	1.0000	1.0000	11	0	11
27		Ottapalam	1.0000	1.0000	10	1	11
28	Malappuram	Edavanna	1.2060	1.0913	6	1	7
29		Kokkur	0.9300	0.8448	7	1	8
30		Oorakam	1.1069	1.0632	8	1	9
31	Kozhikode	Perambra	1.0000	0.6000	9	1	10
32		Kadalundi	1.0000	1.0000	9	1	10
33	Wayanad	Sulthan Bathery	1.0000	1.0000	11	0	11
34	Kasaragod	Thaliparambu	1.0000	1.0000	10	0	10
35		Baliyapattom	1.0000	1.0000	8	0	8
36		Kanhangad	1.0000	1.0000	7	2	9
Total			35.9877	31.8747	256	48	304

Source: SIDCO

## Appendix 8.52

## Total Area Covered by Mining Leases

Sl. No.	Minerals	Area in Ha.
1	Clay	91.2872
2	Silica Sand	27.7766
3	Bauxite	1.5661
4	Limeshell	513.8246
5	Limestone	245.69
6	Mineral Sand	260.419
7	Quartz	1.4953
Total		1142.0588

Source : Directorate of Mining &amp; Geology

## Appendix 8.53

## Production and Sale of Major Minerals other than Mineral Sand in Kerala 2003-04

(In Tonnes)

Sl. No.	Mineral	Production		Sales	
		Raw	Processed	Raw	Processed
1	2	3	4	5	6
1	China Clay	320750	22775	112525	11725 consumption
2	Silica Sand	150447	...	129883	...
3	Bauxite	26827	...	26827	...
4	Limeshell	78680	...	49005	27400 consumption
5	Limestone	192823	...	...	192823 consumption
6	Quartz	50	...	50	...

Source : Directorate of Mining &amp; Geology

## Appendix 8.54

## Production and Sale of Mineral Sand in Kerala - 2003-04

Sl. No.	Mineral	Production (Tonnes)	Sales (Rs. Crores)
1	2	3	4
1	Zircon	10900	Not available
2	Rutile	7500	"
3	Ilmenite	164640	"
4	Siliminite	10658	"
5	Brown Ilmenite	300	"

Source : Directorate of Mining &amp; Geology

**Appendix 9.1**  
**Foreign Tourist Arrivals in Kerala – District wise (2002 & 2003)**

District	No. of foreign Tourist	
	2002	2003
1	2	3
Thiruvananthapuram	65240	94835
Kollam	8478	8620
Pathanamthitta	177	287
Alappuzha	17261	26157
Kottayam	20488	21897
Ernakulam	87357	99987
Idukki	24692	31831
Thrissur	1979	2667
Palakkad	611	661
Malappuram	1048	1402
Wayanad	563	621
Kozhikode	3076	3529
Kannur	1014	1438
Kasaragod	580	689
<b>Kerala</b>	<b>232564</b>	<b>294621</b>

*Source: Department of Tourism*

**Appendix 9.2**  
**Growth of Foreign Tourist Arrivals in India and Kerala (1999-2003)**

Year	India (Nos.)	Percentage change	Kerala (Nos)	Percentage change	Kerala's share (%) in country's tourism
1	2	3	4	5	6
1999	2481928	5.23	202173	6.44	8.15
2000	2649378	6.7	209893	3.82	8.00
2001	2537282	(-)4.2	208830	(-)0.53	8.23
2002	2361587	(-)6.92	232564	11.37	9.85
2003	2752293	16.54	294621	26.68	10.70

*Source: Department of Tourism*

**Appendix 9.3**  
**Flow of Domestic Tourist to Kerala (1999 –2003)**

Year	Number of Tourist	Percentage Variation over the previous year
1	2	3
1999	4888287	9.07
2000	5011221	2.51
2001	5239692	4.52
2002	5568256	6.27
2003	5871228	5.44

*Source: Department of Tourism*



**Appendix 9.4**  
**Earnings from Tourism (1999-2003)**

Year	Earnings (Rs. Crores)
1999	416.07
2000	525.30
2001	535.00
2002	705.67
2003	983.37

*Source: Department of Tourism*

**Appendix 9.5**  
**Details of Availability of Accommodation Facility in classified Hotels 2002 and 2003**

Category of Hotels	2002			2003		
	Number of hotels	Number of Rooms	Number of beds	Number of hotels	Number of Rooms	Number of beds
1	2	3	4	5	6	7
5 Star Deluxe	2	247	494	2	246	494
5 Star	5	373	752	5	373	752
4 Star	10	544	1108	9	456	942
3 Star	60	2374	4571	66	2363	4519
2 Star	41	1130	2219	40	1109	2185
1 Star	21	681	1208	11	268	489
Heritage Resort	9	234	423	9	234	423
<b>Total</b>	<b>148</b>	<b>5583</b>	<b>10775</b>	<b>142</b>	<b>5049</b>	<b>9804</b>

*Source: Department of Tourism*

**Appendix 9.6**  
**State Plan allocation for Tourism (1999-2004)**

Year	Allocation (Rs Crores)
1999-2000	36.00
2000-2001	46.00
2001-2002	40.00
2002-2003	80.00
2003-2004	74.25

*Source: Department of Tourism*

**Appendix 9.7**  
**Central Financial Assistance for Tourism (1999-2004)**

Year	Allocation (Rs crores)
1999-2000	9.30
2000-2001	5.93
2001-2002	4.40
2002-2003	8.61
2003-2004	12.40

**Appendix 9.8**  
**Kerala Tourism Development Corporation Ltd. - Performance for the year 2003--2004**

Sl. No.	Name of Units	Bed Available	Bed Occupancy %	Domestic Tourists	Foreign Tourists	Total Income	Operational		Total		Net Income
							Expenditure before Interest and Depreciation	Administrative Expenditure	Expenditure before interest Depreciation	Net Income	
1	2	3	4	5	7	8	9	10	11	12	
1	Mascot Hotel, TVM.	10950	43.68	3138	643	123.04	166.22	24.15	190.37	(-67.33)	
2	Hotel Chaithram, TVM.	63360	50.67	12324	502	222.01	206.16	27.49	233.65	(-11.64)	
3	Hotel Samudra, Kovalam.	46080	27.83	3201	496	231.50	211.00	9.85	220.85	10.65	
4	Aranya Nivas & Lake Palace, Thekkady	25920	63.54	2356	940	354.14	139.58	8.07	147.65	206.49	
5	Periyar House, Thekkady	31680	43.45	11645	955	111.3	80.70	5.95	86.65	24.65	
6	Bolgatty Palace Hotel, Kochi.	18720	31.93	1550	882	170.65	150.66	12.42	163.08	7.57	
7	Garden House, Malampuzha.	11520	20.80	3005	15	37.86	35.95	0.53	36.48	1.38	
8	Hotel Nandanam, Guruvayoor.	29520	28.64	6002	12	30.2	37.58	1.1	38.68	(-8.48)	
9	Mangalya, Guruvayur	12960	38.37	6918	0	66.39	59.76	6.89	66.65	(-0.26)	
10	Water Scapes, Kumarakom	29280	34.32	11202	1354	250.7	198.41	11.45	209.86	40.84	
11	Malabar Mansion, Kozhikode.	18720	26.5	2548	210	87.91	69.27	13.76	83.03	4.88	
12	Tea County, Munnar	30960	45.87	14573	1285	265.25	167.97	10.46	178.43	86.82	
13	Anjanam, Guruvayur.	7920	47.35	4100	0	5.38	2.18	1.63	3.81	1.57	
14	Agasthya House, Neyyadam	2880	11.42	765	55	26.92	21.38	3.89	25.27	1.65	
15	Motel Arams	15840	197.71	3101	88	362.78	282.29	44.37	326.66	36.12	
16	Yatri Nivases	58320	202.9	22112	1645	264.93	224.17	23.03	247.20	17.73	
17	Sabala Restaurants & Beer Parlours	0	0	0	0	721.22	491.89	115.21	607.10	114.12	
18	Miscellaneous Group	0	0	0	0	233.22	213.3	14.350	227.65	5.57	
19	Head Office	0	0	0	0	48.96	310.02	44.37	354.39	(-305.43)	
<b>Grand Total</b>		<b>414630</b>		<b>108540</b>	<b>9082</b>	<b>3614.36</b>	<b>3068.49</b>	<b>378.97</b>	<b>3447.46</b>	<b>560.04</b>	
Interest Charge										139.04	
Depreciation Charge										243.22	
Net Profit /(-) Loss										<b>-215.36</b>	

(Amount Rs. in lakhs)

**Appendix 10.1**  
**Growth of Transport & Communications in Kerala since 1999 compared to 1975**

Sl. No.	Item	Unit	1975	1999	2000	2001	2002	2003	2004
1	2	3	4	5	6	7	8	9	10
1	Road Length (PWD)	Kms.	14870	21938	21731	21508	21347	21467	21467
2	Road Length (PWD) per sq.km.	"	0.38	0.56	0.56	0.55	1.8*	1.81	1.81
3	Road Length (Panchayats)	"	54812	77356	81790	87094	92084	95516	98973
4	Motor Vehicles	Nos.	119720	1708938	1910237	2111885	2315372	2552171	2792094
5	Motor Vehicles per 100 sq.km.	"	308	4397	4945	5434	5958	6567	7184
6	Buses & Stage Carriages	"	7828	48884	58888	65681	71966	79713	87447
7	Good Vehicles	"	15875	151082	163443	173856	184176	195363	211798
8	Buses owned by KSRTC	"	2212	3928	4093	4562	4421	4302	4319
9	Railway route length	Kms.	896	1198	1119	1148	1148	1148	1148
10	Post Offices	Nos.	4024	5051	5070	5071	5073	5077	5083
11	Telephone Exchanges	"	286	850	924	988	1088	1179	1195
12	Total Equipped Capacity	"	70410	1704395	2203954	2584236	3153418	3653413	4070934
13	Public Call Offices	"	2352	23485	27388	36926	48321	59444	81917

\* Revised

**Appendix 10.2**  
**District-wise and Category-wise Length of Roads Maintained by PWD (R&B) as on 31-3-2004**

Sl.No	Name of District	(In Km)					Total
		State Highways	Major District Roads	Other District Roads	Village Roads	Total	
1	2	3	4	5	6	7	
1	Thiruvananthapuram	169.360	704.123	899.907	80.067	1853.457	
2	Kollam	90.682	1265.883	123.462	6.902	1486.929	
3	Alappuzha	138.121	837.131	79.991	80.614	1135.857	
4	Pathanamthitta	207.268	553.677	598.755	48.555	1408.255	
5	Kottayam	378.006	1643.577	135.686	16.158	2173.427	
6	Idukki	880.593	495.573	278.606	16.250	1671.022	
7	Ernakulam	289.113	908.349	867.370	118.385	2183.217	
8	Thrissur	322.391	1088.000	161.000	15.000	1586.391	
9	Palakkad	373.079	794.026	436.910	42.390	1646.405	
10	Malappuram	208.867	1278.341	198.143	143.140	1828.491	
11	Kozhikode	160.833	454.643	746.934	..	1362.410	
12	Wayanad	97.165	315.015	65.935	37.782	515.897	
13	Kannur	241.754	1062.103	445.776	2.960	1752.593	
14	Kasaragode	227.485	310.823	277.043	47.790	863.141	
<b>Total</b>		<b>3784.717</b>	<b>11711.264</b>	<b>5315.518</b>	<b>655.993</b>	<b>21467.492</b>	

Source : P.W.D. (R & B)

### Appendix 10.3

#### District-wise, Surface-wise & Category-wise length of roads maintained by Kerala PWD as on 31-03-2003

(In Kms)

Sl. No.	District	State Highways			Major District Roads			Other District Roads			Village Roads			Total Roads				
		CC	BT	WBM	CC	BT	WBM	CC	BT	WBM	CC	BT	WBM		Others			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1	Thiruvananthapuram	--	169.360	--	--	--	704.123	--	--	--	896.757	0.600	2.550	--	28.420	15.360	36.287	1853.457
2	Kollam	--	90.682	--	--	--	1265.883	--	--	--	123.462	--	--	--	6.902	--	--	1486.929
3	Alappuzha	--	138.121	--	--	--	750.871	16.998	69.262	--	71.787	0.270	7.934	--	37.258	12.921	30.435	1135.857
4	Pathanamthitha	--	207.268	--	--	--	553.677	--	--	--	598.147	--	0.608	--	45.055	0.700	2.800	1408.255
5	Kottayam	--	378.006	--	--	--	1585.151	17.960	40.466	--	120.571	8.459	6.656	--	13.272	2.886	--	2173.427
6	Idukki	--	714.923	--	165.670	--	456.473	--	39.100	--	113.699	6.446	158.461	--	--	--	16.250	1671.022
7	Ernakulam	--	289.113	--	--	0.464	907.885	--	--	--	817.259	12.398	37.713	--	108.645	9.740	--	2183.217
8	Thrissur	3.391	319.000	--	--	--	1088.000	--	--	--	161.000	--	--	--	15.000	--	--	1586.391
9	Palakkad	--	323.479	1.250	48.350	--	794.026	--	--	--	419.610	17.300	--	--	33.590	6.000	2.800	1646.405
10	Malappuram	--	208.867	--	--	--	1268.341	10.000	--	--	198.143	--	--	--	19.355	52.795	70.990	1828.491
11	Kozhikkode	--	154.228	--	6.605	--	417.853	6.310	30.480	--	712.624	6.310	28.000	--	--	--	--	1362.410
12	Wayanad	--	82.625	2.000	12.540	--	315.015	--	--	--	59.935	6.000	--	--	30.982	6.800	--	515.897
13	Kannur	2.800	238.954	--	--	0.250	1060.677	--	1.176	--	445.776	--	--	--	--	--	2.960	1752.593
14	Kasaragode	--	198.820	--	28.665	--	303.323	--	7.500	--	267.050	--	9.993	--	41.340	--	6.450	863.141
<b>Total</b>		<b>6.191</b>	<b>3513.446</b>	<b>3.250</b>	<b>261.830</b>	<b>0.714</b>	<b>11471.298</b>	<b>51.268</b>	<b>187.984</b>	<b>0.000</b>	<b>5005.820</b>	<b>57.783</b>	<b>251.915</b>	<b>0.000</b>	<b>379.819</b>	<b>107.202</b>	<b>168.972</b>	<b>21467.492</b>

Source : PWD (R&B)

## Appendix 10.4

Surface-wise and Category-wise Length of P.W.D. Roads added during 2003-2004  
(in Kms.)

Item	State Highways	Major District Roads	Other District Roads	Village Roads	Total
1	2	3	4	5	6
<b>Cement Concrete</b>					
Length as on 31.3.2003	6.191	0.714	0	0	6.905
Length added in 03-04	..	0	0	0	6.905
Length as on 31.3.2004	6.191	0.714	0	0	6.905
<b>Black topped</b>					
Length as on 31.3.03	3513.446	11471.298	5005.82	379.819	20370.383
Length added in 03-04	0	0	0	0	0
Length as on 31.3.2004	3513.446	11471.298	5005.82	379.819	20370.383
<b>Water Bound Macadom</b>					
Length as on 31.3.2003	3.250	51.268	57.783	107.202	219.503
Length added in 03-04	0.000	0	0.000	0.000	0
Length as on 31.3.2004	3.250	51.268	57.783	107.202	219.503
<b>Others</b>					
Length as on 31.3.03	261.83	187.984	251.915	168.972	870.701
Length added in 03-04	0	0	0	0	0
Length as on 31.3.04	261.830	187.984	251.915	168.972	870.701
<b>Total</b>					
Length as on 31.3.03	3784.717	11711.264	5315.518	655.993	21467.492
Length added in 03-04	0.000	0	0.000	0	0
<b>Length as on 31.3.04</b>	<b>3784.717</b>	<b>11711.264</b>	<b>5315.518</b>	<b>655.993</b>	<b>21467.492</b>

Source : PWD (R&B)

## Appendix 10.5

District-wise and Surface-wise Length of Roads Maintained by P.W.D. as on 31.3.2004

(in Kms.)

Sl.No	Name of District	Cement Concrete	Black Topped	Water Bound Macadam	Others	Total
1	2	3	4	5	6	7
1	Thiruvananthapuram	-	1798.660	15.960	38.837	1853.457
2	Kollam	-	1486.929	0.000	0.000	1486.929
3	Alappuzha	-	998.037	30.189	107.631	1135.857
4	Pathanamthitta	-	1404.147	0.700	3.408	1408.255
5	Kottayam	-	2097.000	29.305	47.122	2173.427
6	Idukki	-	1285.095	6.446	379.481	1671.022
7	Ernakulam	0.464	2122.902	22.138	37.713	2183.217
8	Thrissur	3.391	1583.000	..	..	1586.391
9	Palakkad	-	1570.705	24.550	51.150	1646.405
10	Malappuram	-	1694.706	62.795	70.990	1828.491
11	Kozhikode	-	1284.705	12.620	65.085	1362.410
12	Wayanad	-	488.557	14.800	12.540	515.897
13	Kannur	3.050	1745.407	0.000	4.136	1752.593
14	Kasaragode	..	810.533	0.000	52.608	863.141
<b>Total</b>		<b>6.905</b>	<b>20370.383</b>	<b>219.503</b>	<b>870.701</b>	<b>21467.492</b>

Source: P.W.D. (R &amp; B)

**Appendix 10.6**  
**No. of Bridges and Culverts in P.W.D. Roads as on 31.3.2004**

SI. No.	Item	SH	MDR	ODR	VR	Total
1	2	3	4	5	6	7
1	Total Number of bridges	627	947	395	55	2024
2	Number of unsafe bridges	68	79	30	5	182
3	Total Number of culverts	11454	21892	12808	1451	47605
4	Number of unsafe culverts	743	604	253	54	1654

Source : P.W.D. (R & B)



## Appendix 10.7

## District-wise details of vehicles newly registered in the State during the year 2003-2004 (Provisional)

Sl.No	District	Goods Vehicles			Buses		Cars and Station Wagons			Three wheelers			Two Wheelers		Tractor		Tractors			Total
		Four wheelers & above	Three wheelers including Tempos	Stage carriage	Contract Carriages/ Omni Buses	Cars	Station wagons	Taxis	Jeeps	Auto rickshaws	Motorised Cycle rickshaws	Motorised cycles	Motorised cycles	Scooter/ Motor cycles	Trailor Articulated	Tractors	Tillers	Trailers	Others	
1	Thiruvananthapuram	13410	6424	6855	8531	51889	0	11164	7130	29993	6	0	249811	0	205	85	136	3124	388763	
2	Kollam	11153	2347	869	3721	37725	0	4748	4443	26144	13	1110	118697	0	325	233	332	389	212249	
3	Pathanamthitta	9112	2288	832	2180	22100	0	7984	3470	13209	0	0	68974	0	126	167	37	775	131254	
4	Alappuzha	7009	6137	972	3606	24575	0	4397	563	13128	5	6	114365	0	221	108	245	959	176296	
5	Kottayam	12551	3296	2041	5888	39833	0	7766	11036	27689	37	0	117771	0	438	102	45	2704	230997	
6	Idukki	3274	535	608	742	5992	0	1564	6199	4715	0	0	18284	0	192	114	11	1238	43468	
7	Ernakulam	32578	7296	3622	7309	68047	0	10362	2039	35511	0	3	285218	0	745	1284	127	10781	464922	
8	Thrissur	16953	5715	3803	10002	32568	0	10148	4342	28493	0	0	180366	0	622	433	591	2727	296763	
9	Palakkad	11577	2628	1864	3352	13456	0	6000	3406	16297	0	0	100169	0	3681	935	61	1646	165072	
10	Malappuram	14971	6766	3527	4887	22746	0	12759	8264	43752	2	5	92953	0	703	501	70	2221	214127	
11	Kozhikode	13667	3290	2890	2269	34590	0	6410	8197	23243	0	0	129927	0	291	172	73	2106	227125	
12	Wayanad	2240	492	418	350	2818	0	2394	3485	5652	0	0	16171	0	91	230	24	1661	36026	
13	Kannur	9791	2141	2803	2553	13800	0	6159	6010	21946	0	0	74332	0	1327	252	94	1691	142899	
14	Kasarode	3027	1100	785	368	8816	0	1603	3072	13320	0	0	28899	0	35	364	67	657	62113	
	<b>Total</b>	<b>161313</b>	<b>50455</b>	<b>31889</b>	<b>55558</b>	<b>378955</b>	<b>93458</b>	<b>71656</b>	<b>303082</b>	<b>63</b>	<b>1124</b>	<b>1595937</b>	<b>0</b>	<b>9002</b>	<b>4980</b>	<b>1913</b>	<b>32679</b>	<b>2792074</b>		

Source : Motor Vehicle Department

## Appendix - 10.8

## Number of Motor Vehicles Having Valid Registration as on 31.3.2004

Sl.No.	District	Goods Vehicles										Two Wheelers			Tractors			Total	
		Four wheelers and above	Three wheelers including Tempos	Stage Carriages	Buses	Contract Carriages / Omnibuses	Cars	Jeeps	Taxis	Stat-ions	Four Wheelers	Three Wheelers	Motorised Cycles	Motorised Rickshaws	Motorised Cycles	Motorised Tractors	Trailers		Others
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	Thruvananthapuram	754	620	549	975	6854	-	541	120	1957	0	0	25537	0	4	0	1	396	38308
2	Kollam	516	477	81	299	2971	-	487	84	1850	0	0	15974	0	16	0	14	134	22903
3	Pathanamthitta	326	273	79	293	2830	-	380	5	698	0	0	8560	0	10	0	7	89	13550
4	Alappuzha	395	737	135	390	3066	-	571	0	698	0	0	13229	0	23	0	5	86	19285
5	Kottayam	706	505	139	411	4488	-	715	71	1174	0	0	9569	0	12	0	4	199	17993
6	Idukki	230	137	58	102	547	-	230	55	379	0	0	1938	0	6	0	1	64	3747
7	Ernakulam	1753	1493	321	857	7926	-	1031	87	2033	0	0	1938	0	72	0	9	443	17963
8	Thrissur	595	901	157	528	3789	-	382	34	1567	0	0	21989	0	23	0	19	114	30098
9	Palakkad	573	398	201	360	937	-	259	123	906	0	0	9194	0	65	0	0	77	13093
10	Malappuram	961	761	267	265	2525	-	249	133	3033	0	0	12662	0	55	0	8	250	21169
11	Kozhikode	735	673	272	259	2667	-	278	51	1395	0	0	13568	0	9	0	0	101	20008
12	Wayanad	131	147	51	41	329	-	77	9	24	0	0	1644	0	1	0	0	22	2476
13	Kannur	669	588	259	265	2372	-	94	20	1352	0	0	7474	0	3	0	22	101	13219
14	Kasaragode	167	184	71	49	1071	-	94	0	984	0	0	3378	0	3	0	0	90	6091
	<b>Total</b>	<b>8511</b>	<b>7894</b>	<b>2640</b>	<b>5094</b>	<b>42372</b>	<b>0</b>	<b>5388</b>	<b>792</b>	<b>18050</b>	<b>0</b>	<b>0</b>	<b>146654</b>	<b>0</b>	<b>302</b>	<b>0</b>	<b>90</b>	<b>2166</b>	<b>239903</b>

Source : Motor Vehicle Department

## Appendix 10.9

## District-wise Growth of Motor Vehicles in Kerala and Their Index (Base 1990-91 =100)

Sl. No	District	1990-91		1999-00		2000-01		2001-02		2002-03		2003-04	
		Motor Vehicles (Nos)	Index	Motor Vehicles (Nos)	Index	Motor Vehicles (Nos)	Index	Motor Vehicles (Nos)	Index	Motor Vehicles (Nos)	Index	Motor Vehicles (Nos)	Index
1	2	3	4	5	6	7	8	9	10	11	12	13	14
	Thiruvananthapuram												
1		101980	100	266174	261	293199	287	320061	314	350455	344	388763	381
2	Kollam	57694	100	137020	237	152526	264	168907	293	189346	328	212249	368
3	Pathanamthitta	35555	100	86776	244	96241	271	106070	298	117704	331	131254	369
4	Alappuzha	39545	100	111346	282	125327	317	139551	353	157011	397	176296	446
5	Kottayam	39758	100	172040	433	183614	462	196400	494	213004	536	230997	581
6	Idukki	12812	100	31015	242	33477	261	36359	284	39721	310	43468	339
7	Ernakulam	105622	100	333022	315	369168	350	405661	384	446959	423	464922	468
8	Thrissur	70831	100	200542	283	220607	311	241560	341	266665	376	296763	419
9	Palakkad	37623	100	112213	298	123526	328	134854	358	151979	404	165072	439
10	Malappuram	30671	100	138434	451	157240	513	174504	569	192958	629	214127	698
11	Kozhikode	55939	100	154301	275	172387	308	190809	341	207117	370	227125	406
12	Wayanad	8379	100	26712	319	29737	355	31553	377	33550	400	36026	430
13	Kannur	36540	100	98023	268	108022	296	118115	323	129680	355	142899	392
14	Kasaragode	14793	100	42619	288	46814	316	50968	345	56022	379	62113	420
	<b>Total</b>	<b>647742</b>	<b>100</b>	<b>1910237</b>	<b>295</b>	<b>2111885</b>	<b>326</b>	<b>2315372</b>	<b>357</b>	<b>2552171</b>	<b>394</b>	<b>2792074</b>	<b>436</b>

Source : Motor Vehicle Department.

Appendix 10.10

Category-wise Growth of Motor Vehicles in Kerala since 1999 compared to 1990

Sl. No	Type of Vehicles	1990	1999	2000	2001	2002	2003	2004
1	2	3	4	5	6	7	8	9
I	GOODS VEHICLES							
1	Four Wheelers and above	51530	126908	135058	142168	146719	152802	161343
2	Three Wheelers including Tempos	9576	24174	28385	31688	37457	42561	50455
II	BUSES							
1	Stage Carriages	15056	22809	23537	25161	26899	29249	31889
2	Contract Carriages/ Omni buses	5234	26075	35351	40520	45067	50464	55558
III	CARS AND STATION WAGONS							
1	Cars	116676	228824	257796	282996	305887	336583	378955
2	Station Wagons	849	0	0	0	0	0	0
3	Taxi Cars	37638	59724	71581	75628	82236	88070	93458
4	Jeeps	24351	82416	67497	69261	70212	70864	71656
IV	THREE WHEELERS							
1	Authorickshaws	58165	197595	227895	248350	265767	285092	303092
2	Motorised Cycle rickshaws	62	64	58	58	163	63	63
V	TWO WHEELERS							
1	Motorised Cycle	70	1159	1124	1124	1124	1124	1124
2	Scooter/ Motor Cycles	248374	904961	1020797	1151735	1289035	1449283	1595937
VI	Tractor Trailer, Articulated	2661	4890	0	0	0	0	0
VII	Tractors	4115	5801	7782	8177	8459	8700	9002
VIII	Tillers	1927	5098	4763	4763	4979	4980	4980
IX	Trailers	580	728	1506	1576	1771	1823	1913
X	Others	4190	17712	27107	28680	29697	30513	32679
	<b>Total</b>	<b>581054</b>	<b>1708938</b>	<b>1910237</b>	<b>2111885</b>	<b>2315372</b>	<b>2552171</b>	<b>2792074</b>
	Per centage increase over the previous year	<b>11.03</b>	<b>13.32</b>	<b>11.78</b>	<b>10.56</b>	<b>9.63</b>	<b>10.23</b>	<b>10.58</b>

Source: Motor Vehicle Department

**Appendix 10.11**

**District-wise Road Accidents in Kerala in which number of persons held during 2002-03, 2003-2004**

Sl.No	Name of District	No. of Accidents		Increases / Decreases %		No. of Persons injured		Increases/ Decreases %		No. of persons Killed		Increases / Decrease %
		2002-03	2003-04	2002-03	2003-04	2002-03	2003-04	2002-03	2002-03	2002-03	2002-03	
1	2	3	4	5	6	7	8	9	10	11	11	
1	Thiruvananthapuram	4662	5095	8.50	6037	5800	-4.1	289	334	13.5		
2	Kollam	3146	3292	4.43	3779	3776	-0.08	287	274	-4.7		
3	Pathanamthitta	1550	1554	0.26	2111	2105	-0.29	119	109	-9.2		
4	Alappuzha	3059	2967	-3.10	3740	3461	-8.06	241	228	-5.7		
5	Kottayam	3116	3237	3.74	3584	3579	-0.14	187	187	0.0		
6	Idukki	1035	1059	2.27	1419	1106	-28.30	67	65	-3.1		
7	Ernakulam	7048	7361	4.25	7915	8408	5.86	405	402	-0.8		
8	Trissur	4452	4836	7.94	5490	5711	3.87	305	311	1.9		
9	Palakkad	2080	2167	4.01	3111	3157	1.46	232	267	13.1		
10	Malappuram	2399	2476	3.11	3754	3830	1.98	222	272	18.4		
11	Kozhikode	3521	3309	-6.41	4114	3918	-5.00	236	226	-4.4		
12	Wayanad	525	578	9.17	780	1021	23.60	43	56	23.2		
13	Kannur	1593	1594	0.06	2441	2468	1.09	135	137	1.5		
14	Kasaragode	781	787	0.76	1175	1162	-1.12	71	75	5.3		
<b>Total</b>		<b>38967</b>	<b>40312</b>	<b>3.34</b>	<b>49450</b>	<b>49502</b>	<b>0.11</b>	<b>2839</b>	<b>2943</b>	<b>3.5</b>		

Source : Director General of Police, Thiruvananthapuram

## Appendix 10.12

## Motor Vehicle Accidents in Kerala by Primary Causes of Accidents during 2003-2004

Sl.No	Name of District	Fault of Driver of motor vehicles	Fault of driver other than motor vehicles	Fault of Cyclist	Fault of Pedestrian	Fault of passengers	Defect of Motor vehicles	Defect of road surface	Bad weather condition	Other causes	Causes not known	Total
1	2	3	4	5	6	7	8	9	10	11	12	13
1	Thiruvananthapuram	5047	1	0	0	2	23	2	1	10	9	5095
2	Kollam	3276	0	0	0	0	9	1	1	3	2	3292
3	Pathanamthitta	1542	0	0	0	0	6	0	1	3	2	1554
4	Alappuzha	2959	3	0	0	2	0	1	1	1	0	2967
5	Kottayam	3232	0	0	0	0	2	1	2	0	0	3237
6	Idukki	1042	0	0	0	0	5	5	3	2	2	1059
7	Ernakulam	7287	1	0	0	0	39	2	4	9	19	7361
8	Trissur	4828	0	0	0	0	1	3	2	2	0	4836
9	Palakkad	2164	0	0	0	0	2	0	1	0	0	2167
10	Malappuram	2474	0	0	0	0	1	1	0	0	0	2476
11	Kozhikode	3305	0	0	0	1	0	2	0	1	0	3309
12	Wayanad	573	0	0	0	0	0	3	1	1	0	578
13	Kannur	1593	0	0	0	0	1	0	0	0	0	1594
14	Kasaragode	787	0	0	0	0	0	0	0	0	0	787
	<b>Total</b>	<b>40109</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>89</b>	<b>21</b>	<b>17</b>	<b>32</b>	<b>34</b>	<b>40312</b>

Source : Director General of Police, Thiruvananthapuram

## Appendix 10.13

## Type-wise details of Motor Vehicles Involved in Road Accidents in Kerala during 2003-2004

Sl.No	District	KSRTC Buses	Other Buses	Goods Vehicles	Motor Cars	Jeeps	Autoricks	Two wheelers	Miscellaneous vehicles	Class not known	Total
1	2	3	4	5	6	7	8	9	10	11	12
1	Thiruvananthapuram	346	180	600	807	141	883	2006	76	56	5095
2	Kollam	131	270	386	562	178	598	1039	108	20	3292
3	Pathanamthitta	59	144	190	241	118	290	452	23	37	1554
4	Alappuzha	113	192	364	561	46	456	1136	44	55	2967
5	Kottayam	91	337	355	438	158	707	1075	27	49	3237
6	Idukki	20	99	67	102	199	290	224	45	13	1059
7	Ernakulam	155	833	702	1075	211	983	2799	350	253	7361
8	Trissur	79	609	666	662	131	747	1849	29	64	4836
9	Palakkad	32	342	380	234	159	351	613	40	16	2167
10	Malappuram	26	362	283	259	221	581	627	71	46	2476
11	Kozhikode	35	641	402	333	275	574	952	57	40	3309
12	Wayanad	29	62	45	45	100	99	170	24	4	578
13	Kannur	20	324	239	163	150	334	318	28	18	1594
14	Kasaragode	22	73	87	94	68	219	191	23	10	787
<b>Total</b>		<b>1158</b>	<b>4468</b>	<b>4766</b>	<b>5576</b>	<b>2155</b>	<b>7112</b>	<b>13451</b>	<b>945</b>	<b>681</b>	<b>40312</b>
<b>Percentage to Total</b>		<b>2.87</b>	<b>11.08</b>	<b>11.82</b>	<b>13.83</b>	<b>5.34</b>	<b>17.64</b>	<b>33.36</b>	<b>2.34</b>	<b>1.68</b>	

Source : Director General of Police, Thiruvananthapuram

## Appendix 10.14

## Motor Vehicle Accidents by time of day during 2003-2004

SI.No	District	Day light	Darkness	Time not known	Total
1	2	3	4	5	6
1	Thiruvananthapuram	3422	1257	416	5095
2	Kollam	2313	952	27	3292
3	Pathanamthitta	1114	401	39	1554
4	Alappuzha	1901	908	158	2967
5	Kottayam	2124	1045	68	3237
6	Idukki	714	228	117	1059
7	Ernakulam	4860	2347	154	7361
8	Thrissur	3345	1450	41	4836
9	Palakkad	1578	572	17	2167
10	Malappuram	1639	557	280	2476
11	Kozhikode	2052	771	486	3309
12	Wayanad	409	153	16	578
13	Kannur	1101	402	91	1594
14	Kasaragode	556	203	28	787
<b>Total</b>		<b>27128</b>	<b>11246</b>	<b>1938</b>	<b>40312</b>
Percentage to Total					

Source : Director General of Police, Thiruvananthapuram



## Appendix 10.15

Age-Wise Details of Vehicles Owned by KSRTC as on 30-3-2004&amp;31.08.04

Sl. No.	Age-Wise Classification	Numbers as on	
		31-3-2004	31-8-2004
1	2	4	4
1	10 Years and above	394	545
2	Above 7 Years and below 10 Years	1477	1311
3	Above 5 Years and below 7 Years	693	852
4	Below 5 Years	1610	1491
	<b>Total</b>	<b>4174</b>	<b>4199</b>

Source : KSRTC

## Appendix 10.16

Major indicators showing operational efficiency of KSRTC

Sl. No.	Items	Year		Increase / Decrease
		2002-03	2003-04	
1	2	3	4	5
1	Fleet strength (Nos)	4260	4340	(+)1.88
2	Gross revenue earnings (Rs. in crores)	647.31	668.09	(+)3.21
3	Gross revenue expenditure (Rs. in crore)	777.35	826.22*	(+)6.29
4	Gross operating loss (Rs. in Crores)	130.04	132.22*	(+)1.68
5	No. of schedules operated as on 31st March 2003 (Nos.)	3651	3768	(+)3.20
6	Average earnings per vehicle on road per day (Rs.)	5264	5527	(+)5.00
7	Average earnings per Km. of bus operated (Paise)	1570	1661	(+)5.80
8	Average earnings per passanger (Paise)	591	583	(-)1.35
9	Average route length (Kms.)	50.01	49.06	(-)0.01
10	Average Kms. run per bus per day	335.00	333	(-)0.60
11	Average number of buses held daily (No)	4338	4258	(-)1.84
12	Passangers carried (Lakhs)	11096.76	11435.15	(+)3.38

\* Budget estimate

Source : KSRTC

**Appendix 10.17**  
**K.S.R.T.C. Operational Statistics during 2003-04**

Sl.No	Name of Transport Unit	No. of buses held as on		No. of schedules as on	No. of routes as on	Route Distance (kms)	Gross Kms. Operated	Effective Kms. Operated	Passengers carried	Average carrying capacity per bus
		31.3.04	31.3.04							
1	2									
1	Parassala	69	59	106	5796	6292950	6290434	100.07	55	
2	Neyyattinkara+ Vellarada	137	119	243	7829	10511946	10507743	392.8	55	
3	Poovar	69	58	64	2440	5640576	5638321	187.7	55	
4	Vizhinjam	70	58	38	1524	4942524	4940548	181.44	55	
5	Kattakada	76	69	84	2980	6345616	6343079	227.02	55	
6	Thiruvananthapuram City	119	106	227	2528	7052626	7049806	363.33	44	
7	Pappanamcode	109	107	199	2202	6406687	6404125	366.1	44	
8	Thiruvananthapuram Central	112	85	38	11705	17151726	17144868	202.4	55	
9	Vikas Bhavan	82	79	127	2877	5312575	5310450	255.14	44	
10	Peroorkada	74	76	169	2721	5005311	5003310	316.73	44	
11	Nedumangad+Palode+ Anyanad+Vithura	164	143	317	10385	11791513	11786798	397.49	55	
12	Vellanadu	52	45	69	1672	3280076	3278764	154.31	44	
13	Kaniyapuram	64	48	38	1572	3846056	3844518	152.02	55	
14	Venjaramoodu	41	29	98	7738	2371570	2370622	84.61	55	
15	Chathanur	36	36	127	4952	3471403	3470015	11.68	55	
16	Attingal	83	69	71	1422	7597025	7593987	233.98	55	
17	Kilimanoor+Chadaya-mangalam, Pathanapuram	147	129	225	7589	11840940	11836206	463.22	55	
18	Kollam	91	84	120	6870	9736912	9736912	349.97	55	
19	Kottarakkara	113	116	134	8457	11405104	11400544	304.68	55	
20	Punaloor+Kulathupuzha	78	63	232	6882	5932438	5930066	269.53	55	
21	Karunagapally	66	59	143	2855	6128876	6126425	221.71	55	
22	Edathuva + Mallappally	31	29	20	1120	2420312	2419344	46.48	55	
23	Pathanamthitta	64	51	75	4880	6988371	6985577	153.84	55	
24	Adoor, Pandalam	57	47	77	4849	4896417	4894459	202.95	55	
25	Thiruvalla	42	38	72	3498	3973906	3972317	98.31	55	
26	Kayamkulam	67	60	112	5059	6632962	6630310	202.06	55	
27	Harippad	39	36	69	3234	3430656	3429284	96.51	55	
28	Mavelikkara	42	37	26	1323	3639439	3637904	113.93	55	
29	Alappuzha	94	88	66	3198	8839200	8835666	242.11	55	
30	Cherthala	93	85	32	1699	8496916	8493516	247.06	55	

1	2	3	4	5	6	7	8	9	10
31	Chengannur	51	48	33	1550	5169536	5167469	205.92	55
32	Changanassery	52	43	23	1679	5014469	5012457	149.06	55
33	Kottayam	100	82	59	5183	12479388	12474398	280.69	55
34	Ponkunnam + Erumelly	36	30	77	3012	3541707	3540291	85.9	55
35	Pala	61	58	56	3890	6381418	6378866	155.35	55
36	Erautupetta	56	50	21	2962	4966949	4964963	133.54	55
37	Vaikom	38	34	15	1114	3652957	3651496	84.35	55
38	Muvattupuzha	55	50	48	2215	5140782	5138726	147.99	55
39	Thodupuzha, Moolamattom	58	51	46	4093	6036414	6034000	139.09	55
40	Kothamangalam + Munnar	42	33	42	3897	4562100	4560276	72.54	55
41	Ernakulam	82	57	49	4634	9769216	9765310	211.79	55
42	Aluva	67	55	37	2960	5931594	5929222	182.82	55
43	Ankamaly	37	33	40	1200	3185050	3183776	109.77	55
44	North Paravoor	61	54	91	3422	5447814	5445636	149.64	55
45	Perumbavoor	45	39	21	2139	3818898	3817371	167.53	55
46	Chalakkudy	47	41	36	1245	4358903	4357160	107.06	55
47	Iringalakuda	13	14	9	372	1328397	1327866	21.39	55
48	Malai + Kodungalloor	54	48	93	3372	4985668	4983674	104.2	55
49	Thrissur + Amballur	93	77	37	3990	11400549	11395990	210.4	55
50	Puthukkad	14	10	22	726	1089737	1089301	39.23	55
51	Guruvayoor	41	36	24	4563	49981187	4996188	80.6	55
52	Ponnani	26	21	29	2448	3084785	3083551	63.67	55
53	Perinthalmanna	27	23	17	2164	3404678	3403316	49.71	55
54	Malappuram + Nilambur Palakkad, Vadakkanchery.	59	51	68	2075	7304880	7301959	111.91	55
55	Chittoor	106	120	62	7171	15854948	15848608	462.31	55
56	Mannarkadu	15	13	18	4945	1749621	1748921	24.73	55
57	Thottipalam	22	21	26	1566	2390084	2389128	41.64	55
58	Kozhikode, Vadakara	86	68	48	3955	9706126	9706126	204.02	55
59	Thamarassery	43	37	48	2860	4025796	4024186	96.15	55
60	Kannur	97	82	52	6867	10712928	10708644	197.07	55
61	Payyannur	65	52	38	2551	6072736	6070307	161.39	55
62	SulthanBathery	69	56	25	2621	6430006	6427435	123.25	55
63	Kasarigode	88	80	44	3397	8536785	8533371	218.17	55
64	Mananthavady	58	48	41	2644	4978852	4976861	106.28	55
65	Kalpetta	33	29	39	2122	2816842	2815715	84.79	55
66	Kumily (W.E.F.7.2.04)	41	34	44	2741	833984	533770	12.02	55
	<b>Total</b>	<b>4319</b>	<b>3786</b>	<b>4896</b>	<b>240201</b>	<b>447728413</b>	<b>402292252</b>	<b>11435.15</b>	

Source: KSRTC

## Appendix 10.18

Fare structure of KSRTC during 2004 (with effect from 1.10.2001)

SI.No	Type of service	Basic fare per KM (paise)	Minimum fare (paise)
1	2	3	4
1	City	35	200
2	Ordinary	35	200
3	City Fast Passenger	43	200
4	Fast Passenger	43	300
5	Super Fast	46	600
6	Express	54	1000
7	Super Express	54	1000
8	Super Deluxe Service	63	2000
9	High Tech luxury (VOLVO)	75	3000

Source : K.S.R.T.C.

**Appendix 10.19**  
**K.S.R.T.C Operational Ratios during 2003-04**

Sl No	Name of Transport Unit	Average No of buses held daily	Average Kms run per day per bus	Percentage vehicular utilisation	Average route length (Kms)	Average earning per passengers(In Ps)	Average distance travelled by a passenger (Kms)	Earning per Vehicle on road per day (in Rs)	Earning per km of buses operated (in Ps)
		3	4	5	6	7	8	9	10
1	Parassala	67	339	77	54.70	1028	34.60	5542	1635
2	Neyyattinkara + Vellarada	124	312	73	32.20	445	14.70	5284	1707
3	Poovar	64	316	77	38.10	505	16.50	5301	1682
4	Vizhinjam	63	296	73	40.10	469	15.00	5084	1722
5	Kaitakada	74	294	81	35.50	467	15.40	4906	1670
6	Thiruvananthapuram City	124	216	73	11.10	339	8.50	3763	1747
7	Pappanamcode	105	204	82	11.10	302	7.70	3520	1727
8	Thiruvananthapuram Central	114	496	83	308.00	1671	47.00	9818	1982
9	Vikas Bhavan	85	230	75	22.70	344	9.20	3793	1651
10	Regattipalayam + Palod + Aryanad	77	209	86	16.10	270	7.00	3553	1706
11	+Vilthura	145	294	75	32.80	493	16.30	4843	1666
12	Vellanadu	47	246	78	24.20	390	9.40	4509	1835
13	Kanyapuram	50	288	73	41.40	393	13.90	4473	1554
14	Venjaramoodu	32	276	74	79.00	428	15.40	4210	1528
15	Chathanur	38	305	84	40.00	483	16.40	4931	1617
16	Alingalloor + Chadaya-	81	330	78	20.00	587	17.90	5959	1808
17	mangalam, Pathanapuram	134	304	81	33.80	396	14.10	4652	1539
18	Kollam	93	345	84	57.30	497	15.30	6157	1785
19	Kottarakkara,	125	320	79	63.10	607	20.60	5193	1623
20	Punaloor + Kulethupuzha	70	299	76	29.70	363	12.10	4868	1629
21	Kanunegapally	65	306	85	20.00	483	15.20	5339	1748
22	Edathuva + Malleppally	31	291	74	56.00	844	28.60	4650	1602
23	Pathanamihitta	68	390	75	65.10	761	25.00	6529	1676
24	Adoor + Pandalam	58	305	75	63.00	392	13.30	4861	1625
25	Thiruvalla	44	338	75	48.60	675	22.20	5632	1672
26	Kayankulam	67	338	81	45.20	580	18.10	5758	1706
27	Harippad	38	324	78	46.90	627	19.50	5704	1765
28	Mavelikkara	43	347	71	50.90	534	18.50	5485	1586
29	Alappuzha	93	323	81	48.50	626	20.10	5536	1716
30	Cherthala	94	320	78	53.10	557	18.90	5175	1620
31	Changanur,	60	293	82	47.00	443	13.80	5158	1765
32	Changanassery	57	315	77	73.00	577	16.50	5385	1715
33	Kottayam	129	383	74	87.90	772	24.40	6308	1738

1	2	3	4	5	6	7	8	9	10
34	Ponkunnam + Erumelly	45	347	57	39.10	644	22.70	5495	1634
35	Pala	64	346	79	69.50	674	22.60	5680	1641
36	Erattupetta	54	333	79	141.10	649	20.60	5759	1733
37	Valkom	41	339	74	74.30	667	23.80	5210	1541
38	Muvattupuzha	55	324	81	46.20	620	19.10	5784	1786
39	Thodupuzha, Moolamattom	57	362	79	89.00	740	23.90	6228	1691
40	Koithamangalam + Munnar	42	367	82	92.80	1036	34.60	6097	1656
41	Ernakulam	84	424	76	94.60	796	25.40	7312	1726
42	Aluva	65	304	84	80.00	524	17.80	4898	1615
43	Ankamaly	36	301	82	30.00	476	16.00	4930	1640
44	North Paravoor	59	306	83	37.60	558	20.00	4688	1534
45	Perumbavoor	42	301	84	101.90	377	12.50	4984	1656
46	Chalakkudy	47	324	80	34.60	724	22.40	5762	1778
47	Iringalakuda	12	372	82	41.30	1072	34.20	6421	1727
48	Mala + Kodungalloor	50	339	81	36.30	802	26.30	5862	1692
49	Thrissur + Amballur	93	446	76	107.80	919	29.80	7564	1696
50	Puthukkad	12	312	80	33.00	439	15.30	4930	1581
51	Guruvayoor	42	436	76	190.10	1049	34.10	7365	1692
52	Ponnani	28	393	77	84.40	727	26.60	5899	1502
53	Pennithalmanna	26	455	80	127.30	1052	37.70	6983	1536
54	Malappuram, Nilambur	61	430	78	30.50	993	35.90	6081	1491
55	Vadakkanchery	131	456	71	115.70	574	18.90	6612	1530
56	Mannarkadu	15	428	77	274.70	1090	38.90	6582	1541
57	Thottipalam	25	343	77	60.20	857	31.60	5116	1493
58	Kozhikode, VDRA	89	401	64	82.40	752	26.20	5154	1467
59	Thamarassery	42	324	82	59.60	608	23.20	4695	1452
60	Kannur	102	376	77	132.10	817	29.90	5649	1503
61	Payyannur	63	369	73	67.10	525	20.70	5138	1395
62	SulthanBathery	67	325	82	104.80	779	28.70	4850	1493
63	Kasarode	87	342	79	77.20	576	21.50	5040	1474
64	Mananthavady	53	355	73	64.50	739	25.80	5601	1579
65	Kalpetta	31	312	81	54.40	493	18.30	4623	1485
66	Kumily*	34	400	74	62.30	557	24.40	5014	1254
	<b>Total</b>	<b>4311</b>	<b>22164</b>	<b>5129</b>	<b>4433</b>	<b>42233</b>	<b>1413</b>	<b>359805</b>	<b>107961</b>

\*With effect from 7.02.2004

Source KSRTC

**Appendix 10.20**  
**Category-wise Staff Position of K S R T C**

SI.No.	Category	As on 1.4.2003	As on 1.4.2004	As on 31.10.2004
1	2	3	4	5
1	Administrative Staff (including watch and ward)	2893	2721	2535
2	Traffic personnel	18450	15946	15199
3	Maintenance personnel	4221	3607	3348
	<b>Total</b>	<b>25564</b>	<b>22274</b>	<b>21082</b>

Source : K S R T C

**Appendix 10.21**  
**NO. OF SHIPS CALLED AT COCHIN PORT DURING 2002-03 AND 2003-04**

SI.No	Types of Vessel	No. of Ships		% variation		Net Registered Tonnage		% Variation	
		2002-03	2003-04	Increase (+)	Decrease (-)	2002-03	2003-04	Increase (+)	Decrease (-)
1	2	3	4	5	6	7	8		
1	Container	433	381	(-)12		2119209	2040622	(-)3.7	
2	Break Bulk	129	136	5.4		242415	238814	(-)1.5	
3	Dry Bulk	52	52	0		536102	390937	(-)27.1	
4	Liquid Bulk	330	338	2.4		4781222	4901374	2.5	
5	Passenger	11	18	63.6		52122	268146	414.5	
6	Others	219	208	(-)5		84174	104016	23.6	
	<b>Total</b>	<b>1174</b>	<b>1133</b>	<b>(-)3.5</b>		<b>7815244</b>	<b>7943909</b>	<b>1.6</b>	

## Appendix 10.22

Commodity - wise cargo handled at the Intermediate and Minor ports of Kerala during 2003-04

(in tonnes)

Name of Port	Commodity	Imports			Exports			Grand Total
		Coastal	Foreign	Total	Coastal	Foreign	Total	
1	2	3	4	5	6	7	8	9
Beyppore	Copra	159	0	159	0	0	0	159
	Empty barrel	1988	0	1988	0	0	0	1988
	Soda Ash	18341	0	18341	0	0	0	18341
	Wheat and wheat products	0	0	0	0	0	0	0
	Ground nut extract	0	0	0	0	0	0	0
	Coir and fiber	0	0	0	0	0	0	0
	Chalk powder	966	0	966	0	0	0	966
	Fish	69	0	69	0	0	0	69
	Miscellaneous	1478	0	1478	1883	0	1883	3360
	Timber	4	0	4	214	0	214	218
	Machinery and vehicles	284	0	284	184	0	184	468
	Bauxite	0	0	0	0	0	0	0
	Cement	0	0	0	2849	0	2849	2849
	Iron & Steel	0	0	0	450	0	450	450
	Vegitable and fruits	0	0	0	252	0	252	252
	provision and Stationery	1010	0	1010	282	0	282	1292
	Granite Metal & Jelly	0	0	0	4772	0	4772	4772
	Pol. Products	0	0	0	3078	0	3078	3078
	Sand	0	0	0	26	0	26	26
	Food and foodgrains	4886	0	4886	175	0	175	5061
	Furniture and house hold articles	63	0	63	307	0	307	370
	Salt	3	0	3	116	0	116	119
	Edible oil	0	0	0	140	0	140	140
	Tiles & Bricks	693	0	693	2613	0	2613	3306
	Oil cake	1107	0	1107	0	0	0	1107
	Pig Iron	3461	0	3461	0	0	0	3461
	Scrap	146	0	146	0	0	0	146
Cow	0	0	0	28	0	28	28	
Hardware Items	0	0	0	197	0	197	197	
LPG	0	0	0	267	0	267	267	
<b>Sub Total</b>		<b>34657</b>	<b>0</b>	<b>34657</b>	<b>17832</b>	<b>0</b>	<b>17832</b>	<b>52489</b>
Kovalam/ Vizhinjam	Food Items	0	0	0	7418	0	7418	7418
<b>Grand Total</b>		<b>34657</b>	<b>0</b>	<b>34657</b>	<b>25250</b>	<b>0</b>	<b>25250</b>	<b>59907</b>

Source: Directorate of Ports



## Appendix 10.23

Number and Tonnage of steamers and sailing Vesels which called at the Intermediate and Minor Ports of Kerala during 2003-04.

Name of Port	Coastal / Foreign	Steamers		Sailing Vessles		Total No. of Vessels	Total Tonnage
		No.	Tonnage	No.	Tonnage		
1	2	3	4	5	6	7	8
Kasaragod	0	0	0	0	0	0	0
Azhikkal	0	0	0	0	0	0	0
Kannur	0	0	0	0	0	0	0
Thalassery	0	0	0	0	0	0	0
Vadakara	0	0	0	0	0	0	0
Kozhikode / Beypore	0	93	51126.9	190	48028.22	283	99155.14
Ponnani	0	0	0	0	0	0	0
Munambam	0	0	0	0	0	0	0
Alappuzha	0	0	0	0	0	0	0
Neendakara	0	0	0	0	0	0	0
Valiyathura	0	0	0	0	0	0	0
Kovalam / Vizhinjam	0	42	5250	36	5296.19	78	10546.19
<b>Grand Total</b>	<b>0</b>	<b>135</b>	<b>56376.9</b>	<b>226</b>	<b>53324.41</b>	<b>361</b>	<b>109701.3</b>

Source: Directorate of Ports.

## Appendix 10.24

Number of Harbour Crafts registered at the Intermediate and Minor Ports of Kerala during 2003-04

Name of Port	Cargo boats including Barges	Canoes including boats	Mechanised fishing vessels	Others	Total
1	2	3	4	5	6
Kasaragod	0	116	14	0	130
Azhikkal	0	0	0	0	0
Kannur	0	0	0	0	0
Thalassery	0	122	1	0	123
Vadakara	0	0	0	0	0
Kozhikode / Beypore	0	0	2	0	2
Ponnani	0	0	0	0	0
Munambam	0	0	254	0	254
Alappuzha	0	0	1516	0	1516
Neendakara	0	0	164	0	164
Valiyathura	0	0	0	0	0
Kovalam / Vizhinjam	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>238</b>	<b>1951</b>	<b>0</b>	<b>2189</b>

Source: Directorate of Ports.

**Appendix 10.25**  
**Category - wise break up of Revenue Collected at the Intermediate and**  
**Minor Ports of Kerala during 2003-04**

1	2	3	4	5	6	Miscellaneous			9
						7	8	9	
Name of Port	Port dues	Export / Import dues	Tughire charges	Pilotage fees	Registration and other fees	Ground rent, shed rent etc.	Private dredging charges	Total	
Kasaragod	0	0	0	0	18170	691837	0	710007	
Azhikkal	2683	984	2820	0	2960	139595	0	149042	
Kannur	3575	0	0	0	0	112916	0	116491	
Thalassery	0	0	0	0	0	901190	0	901190	
Vadakara	0	0	0	0	0	0	0	0	
Kozhikode/									
Beypore	96636	691533	725262	133370	18796	2118271	0	3783868	
Ponnani	0	0	0	0	442	24658	0	25100	
Munambam &									
Alappuzha	0	0	0	0	687794	267340	0	955134	
Neendakara	0	0	0	0	70900	238333	0	309233	
Valiyathura/Thiru									
vananthapuram	0	0	0	0	0	567505	0	567505	
Kovalam /									
Vizhinjam	33369	79375	0	0	0	284222	0	396966	
<b>Total</b>	<b>136263</b>	<b>771892</b>	<b>728082</b>	<b>133370</b>	<b>799062</b>	<b>5345867</b>	<b>0</b>	<b>7914536</b>	

Source : Directorate of Ports

## Appendix 10.26

## Operational Statistics of Inland Water Transport Agencies in Kerala

Particulars	State Water Transport Department		Kerala Shipping and Inland Navigation Corporation	
	2002-03	2003-04	2002-03	2003-04
1	2	3	4	5
No. of boats/Jhankars	85 (Total)	84	(12+2) 14	13
Boat in operation	Nil	Nil	(9+2) 12	11
No. of trips on Schedule	646	646	47729	43800
No. of passengers carried (in lakhs)	188 (approximate)	214 (approximate)	58	53
Gross Route Distance (in KM)	6775	6775	491896	552600
Volume of Cargo Carried (000 tonnes)	Nil	Nil	604	623
Total Revenue Receipts (in lakhs)	500.29	530.38	629.35	752.79
Total Revenue Expenditure (Rs lakhs))	1278.46	1304.7	579.91	680.92
No. of Employees (Total)	957	960	312	299
Net Profit/Loss (in lakhs)	(-)778.17	(-)774.32	31.31	*46.71

\* Provisional

**Appendix 10.27(A)**  
**Details of flights operated by various agencies from Thiruvananthapuram**  
**International Airport**

Sl.No.	Airlines	2002-2003				2003-04			
		No. of Flights		No of Passengers		No. of Flights		No of Passengers	
		DOM	INT	DOM	INT	DOM	INT	DOM	INT
1	2	3	4	5	6	7	8	9	10
1	Air India	0	1616	0	180268	48	2950	4535	310364
2	Indian airlines	2556	1072	163010	89866	3654	1970	297320	162433
3	Gulf Air	0	668	0	135967	0	1098	0	223577
4	Oman Air	0	712	0	90577	0	1100	0	134,817
5	Kuwait Airways	0	412	0	58686	0	632	0	91,800
7	Air Lanka	0	828	0	94430	0	1232	0	1,51,211
8	Qatar Airways	0	790	0	87755	0	1098	0	1,39,356
9	Jet Airways	1458	0	76896	0	1120	0	88752	0
10	Chartered Flt.	0	28	0	7869	0	30	0	3849
11	Cargo Frieghters	0	72	0	0		108		
12	Silk Air	0	312	0	27438		470	0	40525
13	Others	0	0	0	0	0	0	0	0
<b>Total</b>		<b>4014</b>	<b>6510</b>	<b>239906</b>	<b>772856</b>	<b>4822</b>	<b>10688</b>	<b>390607</b>	<b>967365</b>

Source: Airport Authority of India

**Appendix 8.27 (B)**  
**Details of flights operated by various agencies from Kozhikode Airport**

Sl.No.	Name of Operator	2002-03				2003-04			
		No. of Flights		Passengers		No. of Flights		Passengers	
		DOM	INT	DOM	INT	DOM	INT	DOM	INT
1	2	3	4	5	6	7	8	9	10
1	Indian Airlines	2030	1563	79896	146702	1961	1727	67567	176381
2	Air India	451	271	64086	55877	651	579	71708	95164
3	Jet Airways	724	..	53937	..	730	..	48657	..
4	Skycabs (Cargo)	..	..	..	..	..	..	..	..
5	Usbekistan Airways	..	..	..	..	..	..	..	..
6	IAC, AIC Joint Venture	..	1172	..	80771	..	1009	..	52543
7	Expo Cargo	..	..	..	..	26	..	..	..
8	Others	..	..	..	..	188	..	..	..
<b>Total</b>		<b>3205</b>	<b>3006</b>	<b>197919</b>	<b>283350</b>	<b>3556</b>	<b>3315</b>	<b>187932</b>	<b>324088</b>

Source: Airport Authority of India, Kozhikode.

**Appendix 8.27 (C)**  
**Details of flights operated by various agencies from**  
**Nedumbassery International Airport**

Sl.No	Airlines	2002-03				2003-04			
		No. of Flights		Passengers		No. of Flights		Passengers	
		DOM	INT	DOM	INT	DOM	INT	DOM	INT
1	2	3	4	5	6	7	8	9	10
1	Air India	..	1368	..	214229	..	2537	..	301131
2	Indian Airlines	4211	1086	154434	82029	3542	1359	135033	71729
3	Jet Airways	3636	..	300882	..	3628	..	278532	..
4	Oman Air	..	..	..	..	..	266	..	34544
5	Silk Air	..	..	..	..	..	140	..	10625
6	Kuwait Airways	..	..	..	..	..	6	..	1277
<b>Total</b>		<b>7847</b>	<b>2454</b>	<b>455316</b>	<b>296258</b>	<b>7170</b>	<b>4308</b>	<b>413565</b>	<b>419306</b>

Source: Cochin International Airport

## Appendix 10.28

## Number of Passports issued from the Passport Offices in Kerala from 2000-01 to 2003-2004

Year	No. of Application Received			No. of Passports issued				
	Thiruvananthapuram	Kochi	Kozhikode	Total	Thiruvananthapuram	Kochi	Kozhikode	Total
1	2	3	4	5	6	7	8	9
2000-01	84609	111974	147831	344414	76454	101356	141169	318979
2001-02	97952	134863	182604	415419	90969	130084	181880	402933
2002-03	100525	136971	168922	406418	93696	136766	164126	394588
2003-04	125517	133754	238543	497814	120907	126965	199680	447552

Source: Passport Offices Thiruvananthapuram Kochi and Kozhikode

## Appendix 10.29

## Growth of Post Offices in Kerala During the Last Six Years

Year	HOs	DSOs	EDSOs	EDBOs	Total
1999	51	1460	529	3025	5065
2000	51	1462	528	3028	5069
2001	51	1461	528	3031	5071
2002	51	1462	527	3034	5074*
2003	51	1463	527	3036	5077
2004	51	1464	526	3042	5083

\* Revised

Source: Chief Post Master General Kerala Circle

## Appendix 10.30

## Category - wise Offices in Postal and other Postal Services in Kerala.

Category of Office	As on 31st March	
	2003	2004
1	2	3
<b>(a) Postal Services</b>		
1. Head Post Offices	51	51
2. Sub Post Offices	1463	1464
ii) Extra Departmental Sub Post Offices	527	526
3. Branch Offices	3036	3042
<b>Total (a)</b>	<b>5077</b>	<b>5083</b>
<b>(b) Speed Post Centres National</b>		
National	9	9
State	35	35
<b>Total</b>	<b>44</b>	<b>44</b>
<b>(c) Other Postal Services</b>		
1. Head Record Office	3	3
ii) Sorting Mail Offices	29	29
iii) Sub Record Office	26	26
iv) Transist Mail Offices	11	11
v) R.M.S. Sections	19	19
vi) Press Sorting Office	2	2
vii) Parcel Sorting Office	3	3
Patrika Channel Office	5	5
Mail Motor Service Division unit	1	1
Central Stamp Depot	1	1
<b>Total (C)</b>	<b>100</b>	<b>100</b>

\* Revised

Source : CPMG, Kerala Circle, Thiruvananthapuram.

**Appendix 10.31**  
**Division-wise and Category -wise Post Offices under Kerala Circle**  
**as on 31.3.2004**

Sl.No.	Name of Division	Head Offices	Sub Offices			Total
			SO	EDSO	EDBO	
1	2	3	4	5	6	7
1	Trivandrum (N)	2	75	8	113	198
2	Trivandrum (S)	2	70	15	135	222
3	Quilon	3	91	28	122	244
4	Pathanamthitta	3	77	48	184	312
5	Thiruvalla	2	64	30	63	159
6	Alappuzha	2	48	30	44	124
7	Mavelikara	2	52	22	51	127
8	Changanacherry	2	47	12	105	166
9	Idukki	2	52	13	223	290
10	Kottayam	3	79	44	132	258
11	Ernakulam	2	72	5	60	139
12	Aluva	3	72	32	148	255
13	Thrissur	3	106	32	156	297
14	Irinjalakuda	2	63	21	107	193
15	Lakshadweep	0	6	3	1	10
16	Palakkad	3	85	21	127	236
17	Ottappalam	1	55	20	143	219
18	Manjeiri	2	46	21	191	260
19	Tirur	2	53	21	98	174
20	Kozhikode	3	73	14	217	307
21	Vadakara	2	41	37	146	226
22	Thalassery	1	44	8	155	208
23	Kannur	2	63	25	139	229
24	Kasaragod	2	30	16	182	230
<b>Total - (Kerala Circle)</b>		<b>51</b>	<b>1464</b>	<b>526</b>	<b>3042</b>	<b>5083</b>

Source : CPMG, Kerala Circle, Thiruvananthapuram.

**Appendix 10.32**  
**Urban/Rural Split of Post Offices as on 31-3-2004**

	Head Office		Sub Office				EDSO				EDBO				Grand Total	
	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Urban	Total
TV North	0	2	44	31	7	1	94	19	145	53	198					
TV South	0	2	39	31	15	0	130	5	184	38	222					
Kollam	2	1	66	25	26	2	117	5	211	33	244					
Pathanamthitta	0	3	69	8	46	2	178	6	293	19	312					
Thiruvalla	0	2	53	11	29	1	58	5	140	19	159					
<b>Total SR</b>	<b>2</b>	<b>10</b>	<b>271</b>	<b>106</b>	<b>123</b>	<b>6</b>	<b>577</b>	<b>40</b>	<b>973</b>	<b>162</b>	<b>1135</b>					
Alappuzha	0	2	23	25	24	6	32	12	79	45	124					
Mavelikara	0	2	45	7	22	0	48	3	115	12	127					
Changanacherry	1	1	43	4	12	0	103	2	159	7	166					
Kottayam	0	3	56	23	39	5	129	3	224	34	258					
Idukki	1	1	48	4	13	0	221	2	283	7	290					
Ernakulam	0	2	19	53	2	3	43	17	64	75	139					
Aluva	0	3	40	32	29	3	142	6	211	44	255					
Thrissur	1	2	68	38	22	10	136	20	227	70	297					
Irinjalakuda	0	2	39	24	19	2	89	18	147	46	193					
Lakshadweep	0	0	6	0	3	0	1	0	10	0	10					
<b>Total SR</b>	<b>3</b>	<b>18</b>	<b>387</b>	<b>210</b>	<b>185</b>	<b>29</b>	<b>944</b>	<b>83</b>	<b>1519</b>	<b>340</b>	<b>1859</b>					
Palakkad	2	1	66	19	21	0	120	7	209	27	236					
Ottappalam	0	1	44	11	18	2	133	10	195	24	219					
Manjeri	0	2	38	8	20	1	178	13	236	24	260					
Tirur	0	2	46	7	21	0	98	0	165	9	174					
Kozhikode	0	3	20	53	10	4	176	41	206	101	307					
Vadakara	1	1	36	5	33	4	143	3	213	13	226					
Thalassery	0	1	15	29	2	6	126	29	143	65	208					
Kannur	0	2	24	39	10	15	101	38	135	93	228					
Kasargod	0	2	20	10	14	2	176	6	210	20	230					
<b>Total NR</b>	<b>3</b>	<b>15</b>	<b>309</b>	<b>181</b>	<b>149</b>	<b>34</b>	<b>1251</b>	<b>147</b>	<b>1712</b>	<b>377</b>	<b>2089</b>					
<b>Grand Total</b>	<b>8</b>	<b>43</b>	<b>967</b>	<b>497</b>	<b>458</b>	<b>69</b>	<b>2722</b>	<b>270</b>	<b>4204</b>	<b>879</b>	<b>5083</b>					

Source: CPMG, Kerala Circle



## Appendix 10.33

District - wise details of area and population served by one post office during 2003-2004

Sl.No.	Name of district	Post Office (Nos.)	Area (Sq.Km.)	Area served by One post office (Sq.Kms)	Population (2001 census)	Population served by one post office
1	2	3	4	5	6	7
1	Thiruvananthapuram	420	2192	5.22	3234707	7701
2	Kollam	365	2491	6.82	2584118	7080
3	Pathanamthitta	312	2642	8.47	1231577	3947
4	Alappuzha	297	1256	4.23	2105349	7089
5	Kottayam	412	2203	5.35	1952901	4740
6	Idukki	293	5019	17.13	1128605	3852
7	Ernakulam	395	2408	6.1	3098378	7844
8	Thirussur	489	3032	6.20	2975440	6085
9	Palakkad	456	4480	9.82	2617072	5739
10	Malappuram	438	3548	8.08	3629640	8268
11	Kozhikode	413	2345	5.68	2878498	6970
12	Wayanad	163	2132	13.08	786627	4826
13	Kannur	380	2997	7.89	2412365	6348
14	Kasaragod	235	4992	21.24	1203342	5121
	<b>Kerala</b>	<b>5069</b>	<b>41737</b>	<b>8.23</b>	<b>31838619</b>	<b>6281</b>
	UT of Lakshadweep	10	32	3.20	60595	6060
	UT of Pondichery	4	2.18	0.54	35119	8780
	<b>Total</b>	<b>5083</b>	<b>41771.2</b>	<b>8.22</b>	<b>31934333</b>	<b>6283</b>

Source: CPMG Kerala Circle, Thiruvananthapuram

## Appendix 10.34

District - wise details of Telephone net work during 2003-04.

Sl.No.	Name of District	No. of Exchanges	Equipped Capacity	Working connections	Area (sq.Kms.)	No. of Telephone (sq.Kms.)	No. of Telephone per 1000 Population.
1	2	3	4	5	6	7	8
1	Alleppey	68	255764	218106	1414	154	103.61
2	Calicut	90	334054	246902	2344	105	85.79
3	Cannanore	113	310242	237663	2966	80	98.53
4	Ernakulam	125	497206	410794	2407	171	132.6
5	Idukki	80	122942	95427	5019	19	84.52
6	Kasaragod	58	149569	109981	1992	55	91.42
7	Kottayam	94	300591	258565	2203	117	132.46
8	Lakshadweep	10	11776	8651	32	270	141.82
9	Malappuram	81	337222	263510	3550	74	72.59
10	Palakkad	104	220462	175234	4480	39	66.96
11	Pathanamthitta	77	216400	195781	2642	74	158.91
12	Pondicherry (Mahe)	1	6750	5133	10	513	171.1
13	Quilon	83	329814	257082	2491	103	99.49
14	Trichur	83	434826	350969	3032	116	117.97
15	Trivandrum	96	438172	371576	2192	170	114.86
16	Wayanad	31	70992	52790	2131	25	67.08
	<b>Total</b>	<b>1194</b>	<b>4036782</b>	<b>3258164</b>	<b>38905</b>	<b>84</b>	<b>102.05</b>

Source : CGMT, Kerala.

**Appendix 11.1**  
**Literacy rate by Sex for State and Districts 1991 and 2001 -Kerala**

Sl. No	States/District	Literacy rate					
		Persons		Male		Female	
		1991	2001	1991	2001	1991	2001
1	2	3	4	5	6	7	8
	<b>Kerala</b>	89.81	90.92	93.62	94.2	86.17	87.86
1	Thiruvananthapuram	89.22	89.36	92.84	92.68	85.76	86.26
2	Kollam	90.47	91.49	94.09	94.63	87.00	88.6
3	Pathanamthitta	94.86	95.09	96.56	96.62	93.29	93.71
4	Alappuzha	93.87	93.66	96.79	96.42	91.12	91.14
5	Kottayam	95.72	95.9	97.46	97.41	94.00	94.45
6	Idukki	86.97	88.58	90.89	92.11	82.97	85.04
7	Emakulam	92.3	93.42	95.4	95.95	89.22	90.96
8	Thrissur	90.18	92.56	93.77	95.47	86.94	89.94
9	Palakkad	81.27	84.31	87.24	89.73	75.72	79.31
10	Malappuram	87.94	88.61	92.08	91.46	84.09	85.96
11	Kozhikode	91.10	92.45	95.58	96.3	86.79	88.86
12	Wayanad	82.73	85.52	87.69	90.28	77.69	80.8
13	kannur	91.48	92.8	95.54	96.38	87.65	89.57
14	Kasargod	82.51	85.17	88.97	90.84	76.29	79.80

Note:- Literacy rate is the percentage of literates to population aged 7 years and above

\* Provisional

**Appendix 11.2**  
**Management-wise Number of Schools in Kerala 1998-99 to 2003-04**

Year	Management	LP Sections in UPSchools in High Schools					UP Sections in High Schools		
		1	2	3	4	5	6	7	8
1998-99	Govt.			2555	901	434	962	835	976
	Aided			4039	1279	191	1871	1040	1394
	Unaided			161	61	105	133	171	215
	<b>Total</b>			<b>6755</b>	<b>2241</b>	<b>730</b>	<b>2966</b>	<b>2046</b>	<b>2585</b>
1999-2000	Govt.			2552	899	436	959	838	979
	Aided			4035	1279	191	1873	1043	1397
	Unaided			161	61	105	134	171	220
	<b>Total</b>			<b>6748</b>	<b>2239</b>	<b>732</b>	<b>2966</b>	<b>2052</b>	<b>2596</b>
2000-01	Govt.			2565	898	438	960	844	985
	Aided			4035	1296	183	1873	1051	1412
	Unaided			158	56	101	124	172	218
	<b>Total</b>			<b>6758</b>	<b>2250</b>	<b>722</b>	<b>2957</b>	<b>2067</b>	<b>2615</b>
2001-02	Govt.			2565	899	439	960	846	986
	Aided			4031	1304	185	1874	1051	1415
	Unaided			158	58	99	125	171	217
	<b>Total</b>			<b>6754</b>	<b>2261</b>	<b>723</b>	<b>2959</b>	<b>2068</b>	<b>2618</b>
2002-2003	Govt.			2551	888	440	957	845	984
	Aided			4003	1308	178	1870	1038	1409
	Unaided			158	68	100	124	164	215
	<b>Total</b>			<b>6712</b>	<b>2264</b>	<b>718</b>	<b>2951</b>	<b>2047</b>	<b>2608</b>
2003-04	Govt.			2551	888	440	956	848	991
	Aided			3993	1308	188	1872	1049	1422
	Unaided			172	74	108	136	178	229
	<b>Total</b>			<b>6716</b>	<b>2270</b>	<b>736</b>	<b>2964</b>	<b>2075</b>	<b>2642</b>

Source: Directorate of Public Instruction, Thiruvananthapuram.

**Appendix 11.3**  
**District-wise/ Management-wise Number of Schools in Kerala - 2003-04**

Sl. No.	District	High Schools						U.P.Schools						L.P.Schools						H.S+U.P.S+L.P.S					
		G	A	UA	T	G	A	G	A	UA	T	G	A	UA	T	G	A	UA	T						
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20						
1	Thiruvananthapuram	121	95	30	246	98	102	15	215	299	181	13	493	518	378	58	954	58	954						
2	Kollam	75	128	10	213	62	139	7	208	268	189	16	473	405	456	33	894	33	894						
3	Pathanamthitta	48	111	7	166	43	87	14	144	166	237	13	416	257	435	34	726	34	726						
4	Alappuzha	58	129	9	196	67	77	11	155	193	198	21	412	318	404	41	763	41	763						
5	Kottayam	59	166	16	241	67	128	8	203	169	268	21	458	295	562	45	902	45	902						
6	Idukki	56	73	10	139	40	63	3	106	85	136	5	226	181	272	18	471	18	471						
7	Ernakulam	87	175	34	296	91	103	11	205	182	272	21	475	360	550	66	976	66	976						
8	Thrissur	80	150	30	260	55	162	11	228	115	382	24	521	250	694	65	1009	65	1009						
9	Palakkad	59	78	16	153	63	159	13	235	198	346	9	553	320	583	38	941	38	941						
10	Malappuram	82	83	29	194	113	223	14	350	349	478	8	835	544	784	51	1379	51	1379						
11	Kozhikodu	69	98	16	183	74	240	10	324	181	530	4	715	324	868	30	1222	30	1222						
12	Wayanadu	40	23	4	67	34	39	3	76	91	53	4	148	165	115	11	291	11	291						
13	Kannur	83	80	10	173	77	278	12	367	114	608	6	728	274	966	28	1268	28	1268						
14	Kasaragod	74	33	8	115	72	72	4	148	141	115	7	263	287	220	19	526	19	526						
<b>Total</b>		<b>991</b>	<b>1422</b>	<b>229</b>	<b>2642</b>	<b>956</b>	<b>1872</b>	<b>136</b>	<b>2964</b>	<b>2551</b>	<b>3993</b>	<b>172</b>	<b>6716</b>	<b>4498</b>	<b>7287</b>	<b>537</b>	<b>12322</b>	<b>537</b>	<b>12322</b>						

Source: Directorate of Public Instruction, Thiruvananthapuram.

## Appendix 11.4

District wise Number of Schools (other than state syllabus) in Kerala  
2004

Sl.No.	District	CBSE	ICSE	Kendriya Vidyalaya	Jawahar Navodaya
1	2	3	4	5	6
1	Thiruvananthapuram	33	11	4	1
2	Kollam	19	10	0	1
3	Pathanamthitta	17	13	1	1
4	Alappuzha	27	10	1	1
5	Kottayam	33	5	1	1
6	Idukki	10	4	0	1
7	Ernakulam	65	11	6	1
8	Thrissur	28	5	1	1
9	Palakkad	29	2	3	1
10	Malappauram	35	2	1	1
11	Kozhikode	24	1	2	1
12	Wayanadu	9	1	1	0
13	Kannur	29	1	3	1
14	Kasaragod	15	2	2	1
<b>Total</b>		<b>373</b>	<b>78</b>	<b>26</b>	<b>13</b>

Source: Directorate of Public Instruction , Thiruvananthapuram.

**Appendix 11.5**  
**District - wise Details of Govt.Schools having Building Facilities - Kerala**  
**(2004)**

Sl. No.	District	No.of Schools having Thatched Sheds				No.of Schools working in Rented Building.			
		L.P	U.P	H.S	Total	L.P	U.P	H.S	Total
1	2	3	4	5	6	7	8	9	10
1	Thiruvananthapuram	17	14	60	91	0	0	0	0
2	Kollam	0	0	9	9	2	0	0	2
3	Pathanamthitta	2	0	0	2	1	0	0	1
4	Alappuzha	8	12	15	35	0	0	0	0
5	Kottayam	0	0	0	0	0	0	0	0
6	Idukki	0	0	0	0	0	0	0	0
7	Ernakulam	0	0	1	1	2	0	0	2
8	Thrissur	1	0	18	19	19	0	1	20
9	Palakkad	0	0	0	0	47	2	0	49
10	Malappuram	3	12	0	15	108	30	2	140
11	Kozhikode	1	0	0	1	60	12	1	73
12	Wayanad	1	2	10	13	0	3	1	4
13	Kannur	1	3	16	20	34	21	3	58
14	Kasaragod	0	1	5	6	22	9	5	36
<b>Total</b>		<b>34</b>	<b>44</b>	<b>134</b>	<b>212</b>	<b>295</b>	<b>77</b>	<b>13</b>	<b>385</b>

Source: Directorate of Public Instruction, Thiruvananthapuram.

**Appendix 11.6**  
**District - wise Details of Govt. Schools having Drinking water/Latrines/Urinal**

No.	District	No. of Schools not having							
		Drinking Water				Urinals / Latrines			
		L.P	U.P	H.S	Total	L.P	U.P	H.S	Total
1	2	3	4	5	6	7	8	9	10
1	Thiruvananthapuram	16	5	0	21	23	9	0	32
2	Kollam	42	7	2	51	58	11	1	70
3	Pathanamthitta	2	1	0	3	6	0	0	6
4	Alappuzha	11	8	12	31	13	3	16	32
5	Kottayam	5	1	1	7	16	8	0	24
6	Idukki	9	3	6	18	8	2	11	21
7	Ernakulam	8	6	0	14	23	9	3	35
8	Thrissur	14	3	9	26	10	5	0	15
9	Palakkad	45	11	14	70	59	15	1	75
10	Malappuram	45	3	7	55	74	10	5	89
11	Kozhikode	13	4	8	25	31	7	8	46
12	Wayanad	27	5	2	34	25	0	0	25
13	Kannur	16	6	7	29	13	4	10	27
14	Kasaragod	38	23	18	79	18	6	7	31
<b>TOTAL:</b>		<b>291</b>	<b>86</b>	<b>86</b>	<b>463</b>	<b>377</b>	<b>89</b>	<b>62</b>	<b>528</b>

Source: Directorate of Public Instruction, Thiruvananthapuram.

**Appendix 11.7**  
**Enrolment of Students in Schools- District-wise and Stage-wise (2003- 04)**

Sl.No	Districts	L.P.S						U.P.S						H.S						TOTAL		
		Boys		Girls		Total		Boys		Girls		Total		Boys		Girls		Total		Boys	Girls	Total
		3	4	5	6	7	8	9	10	11	12	13	14									
1	Thiruvananthapuram	81592	84368	165960	69972	68193	138165	74021	72936	146957	225585	225497	451082									
2	Kollam	63620	64230	127850	57286	54664	111950	60413	56966	117379	181319	175860	357179									
3	Pathanamthitta	28410	28432	56842	25394	23810	49204	29720	28085	57805	83524	80327	163851									
4	Alappuzha	48123	47845	95968	43047	40443	83490	48382	45005	93387	139552	133293	272845									
5	Kottayam	49215	48596	97811	40642	38258	78900	42492	42332	84824	132349	129186	261535									
6	Idukki	28153	27270	55423	23802	20644	44446	22551	21246	43797	74506	69160	143666									
7	Ernakulam	72089	71334	143423	62001	59096	121097	64501	63754	128255	198591	194184	392775									
8	Thrissur	89160	87200	176360	72403	67799	140202	71076	70079	141155	232639	225078	457717									
9	Palakkad	87069	85214	172283	70127	65543	135670	70838	69944	140782	228034	220701	448735									
10	Malappuram	149471	142511	291982	123395	113331	236726	118561	115704	234265	391427	371546	762973									
11	Kozhikode	88428	85555	173983	75928	70456	146384	77203	74813	152016	241559	230824	472383									
12	Wayanad	26832	25498	52330	19725	18447	38172	19297	19017	38314	65854	62962	128816									
13	Kannur	73252	70272	143524	62375	57043	119418	62640	60531	123171	198267	187846	386113									
14	Kasaragod	37595	36431	74026	30559	28159	58718	31764	29827	61591	99918	94417	194335									
<b>Total</b>		<b>923009</b>	<b>904756</b>	<b>1827765</b>	<b>776656</b>	<b>725886</b>	<b>1502542</b>	<b>793459</b>	<b>770239</b>	<b>1563698</b>	<b>2493124</b>	<b>2400881</b>	<b>4894005</b>									

Source: Directorate of Public Instruction, Thiruvananthapuram.



## Appendix 11.8

## Management-wise/Standard-wise enrolment of Students in Schools -Kerala-2003-04 (Students in Nos.)

Management	Standards														Total to X
	LP				UP				HS				Total		
	I	II	III	IV	V	VI	VII	VIII	Total	IX	X	Total			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
<b>Govt.</b>															
Boys	74974	81209	81305	82634	320122	73450	76065	85183	234698	97805	97993	82966	278764	833584	
Girls	73724	78930	78600	79363	310617	69124	71443	77613	218180	88261	92028	85921	266210	795007	
<b>Sub-Total</b>	<b>148698</b>	<b>160139</b>	<b>159905</b>	<b>161997</b>	<b>630739</b>	<b>142574</b>	<b>147508</b>	<b>162796</b>	<b>452878</b>	<b>186066</b>	<b>190021</b>	<b>168887</b>	<b>544974</b>	<b>1628591</b>	
<b>Aided</b>															
Boys	131349	141273	137730	135275	545627	157386	163610	179026	500022	173391	166708	135056	475155	1520804	
Girls	131898	138851	133860	132112	536721	150716	155315	164525	470556	160392	163462	143830	467684	1474961	
<b>Sub Total</b>	<b>263247</b>	<b>280124</b>	<b>271590</b>	<b>267387</b>	<b>1082348</b>	<b>308102</b>	<b>318925</b>	<b>343551</b>	<b>970578</b>	<b>333783</b>	<b>330170</b>	<b>278886</b>	<b>942839</b>	<b>2995765</b>	
<b>UnAided</b>															
Boys	14779	14478	14081	13922	57260	13984	14050	13902	41936	13800	13824	11916	39540	138736	
Girls	14601	14459	14328	14030	57418	12449	12378	12323	37150	12187	12658	11500	36345	130913	
<b>Sub-Total</b>	<b>29380</b>	<b>28937</b>	<b>28409</b>	<b>27952</b>	<b>114678</b>	<b>26433</b>	<b>26428</b>	<b>26225</b>	<b>79086</b>	<b>25987</b>	<b>26482</b>	<b>23416</b>	<b>75885</b>	<b>269649</b>	
<b>Total-Boys</b>	<b>221102</b>	<b>236960</b>	<b>233116</b>	<b>231831</b>	<b>923009</b>	<b>244820</b>	<b>253725</b>	<b>278111</b>	<b>776656</b>	<b>284996</b>	<b>278525</b>	<b>229938</b>	<b>793459</b>	<b>2493124</b>	
<b>-Girls</b>	<b>220223</b>	<b>232240</b>	<b>226788</b>	<b>225505</b>	<b>904756</b>	<b>232289</b>	<b>239136</b>	<b>254461</b>	<b>725886</b>	<b>260840</b>	<b>268148</b>	<b>241251</b>	<b>770239</b>	<b>2400881</b>	
<b>Grand Total</b>	<b>441325</b>	<b>469200</b>	<b>459904</b>	<b>457336</b>	<b>1827765</b>	<b>477109</b>	<b>492861</b>	<b>532572</b>	<b>1502542</b>	<b>545836</b>	<b>546673</b>	<b>471189</b>	<b>1563698</b>	<b>4894005</b>	

Source: Directorate of Public Instruction, Thiruvananthapuram.

**Appendix 11.9**  
**Standard -wise Strength of SC/ST Students - 2003-04**

(Students in Nos)

Standard	Government Schools			Private Aided Schools			Private Unaided Schools		
	Total	SC	ST	Total	SC	ST	Total	SC	ST
1	2	3	4	5	6	7	8	9	10
I	148698	21659	4180	263247	29117	3398	29380	1002	77
II	160139	23297	4434	280124	30383	3542	28937	1041	89
III	159905	22266	3805	271590	28706	2881	28409	985	88
IV	161997	21600	3458	267387	26707	2628	27952	967	89
V	142574	18099	3181	308102	31271	2758	26433	726	155
VI	147508	18294	3244	318925	32066	2552	26428	690	118
VII	162796	20177	3306	343551	35149	2623	26225	669	130
VIII	186066	23699	3261	333783	33485	2084	25987	610	106
IX	190021	23869	2815	330170	32175	1840	26482	657	119
X	168887	19307	2082	278886	25113	1233	23416	556	63
<b>Total</b>	<b>1628591</b>	<b>212267</b>	<b>33766</b>	<b>2995765</b>	<b>304172</b>	<b>25539</b>	<b>269649</b>	<b>7903</b>	<b>1034</b>

Source: Directorate of Public Instruction, Thiruvananthapuram.

## Appendix 11.10

Stage-wise and Management-wise number of Teachers in Schools in Kerala - 2003-04.

Stage	Government			Aided			Unaided			Total Teachers		
	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total
1	2	3	4	5	6	7	8	9	10	11	12	13
Lower Primary School Teachers	4145	9479	13624	6821	19005	25826	184	911	1095	11150	29395	40545
Upper Primary School Teachers	4962	8218	13180	9527	21305	30832	234	764	998	14723	30287	45010
High School Teachers	11628	19195	30823	15304	35160	50464	1362	4732	6094	28294	59087	87381
TTI	195	204	399	90	382	472	--	--	0	285	586	871
<b>Total</b>	<b>20930</b>	<b>37096</b>	<b>58026</b>	<b>31742</b>	<b>75852</b>	<b>107594</b>	<b>1780</b>	<b>6407</b>	<b>8187</b>	<b>54452</b>	<b>119355</b>	<b>173807</b>

Source: Directorate of Public Instruction, Thiruvananthapuram.

**Appendix 11.11**  
**Uneconomic Schools in Kerala (District wise and stage wise – 2003) (in Nos.)**

Sl.No.	District	Government						Aided						Total			Grand Total
		LPS		HS		Total	LPS		HS		Total	LPS	UPS	HS			
		3	4	5	6	7	8	9	10	11	12	13	14				
1	Thiruvananthapuram	89	16	10	115	16	2	4	22	105	18	14	137				
2	Kollam	77	3	--	80	18	14	--	32	95	17	--	112				
3	Pathanamthitta	104	25	12	141	187	23	2	212	291	48	14	353				
4	Allepuzha	99	25	2	126	67	13	4	84	166	38	6	210				
5	Kottayam	99	41	11	151	91	31	3	125	190	72	14	276				
6	Idukki	55	22	16	93	51	11	3	65	106	33	19	158				
7	Ernakulam	106	41	8	155	68	30	2	100	174	71	10	255				
8	Trissur	40	14	1	55	69	11	--	80	109	25	1	135				
9	Palakkad	59	6	--	65	34	2	--	36	93	8	--	101				
10	Malappuram	21	1	--	22	13	--	--	13	34	1	--	35				
11	Kozhikkode	69	11	4	84	152	10	--	162	221	21	4	246				
12	Wayanad	30	2	--	32	2	--	--	2	32	2	--	34				
13	Kannur	74	20	--	94	331	43	--	374	405	63	--	468				
14	Kasaragod	65	5	1	71	25	6	--	31	90	11	1	102				
<b>Total</b>		<b>987</b>	<b>232</b>	<b>65</b>	<b>1284</b>	<b>1124</b>	<b>196</b>	<b>18</b>	<b>1338</b>	<b>2111</b>	<b>428</b>	<b>83</b>	<b>2622</b>				

Source: Directorate of Public Instruction, Thiruvananthapuram.

Appendix 11.12

Protected Teachers in Kerala - 2003-2004

Sl. No	Name of District	Deployed in Govt. School			Retained in parent school			Deployed in other aided school			Undeclared				Total Number of Protected Teachers						
		HSA	PD	Spl.	Total	HSA	PD	Spl.	Total	HSA	PD	Spl.	Total	HSA	PD	Spl.	Total				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1	Thiruvananthapuram	3	14	-	17	-	1	-	1	-	2	3	5	2	-	-	2	5	17	3	25
2	Kollam	111	127	66	304	8	14	38	60	9	7	12	28	-	7	7	14	128	155	123	406
3	Pathanamthitta	11	24	4	39	1	-	-	1	-	-	-	-	-	-	-	-	12	24	4	40
4	Alappuzha	75	42	42	159	12	25	53	90	6	13	4	23	1	8	2	11	94	88	101	283
5	Kottayam	3	6	31	40	10	14	-	24	-	-	6	6	-	1	4	5	13	21	41	75
6	Idukki	7	6	2	15	-	2	5	7	1	3	12	16	2	-	1	3	10	11	20	41
7	Ernakulam	64	89	11	164	12	30	112	154	15	34	57	106	-	-	-	-	91	153	180	424
8	Thrissur	16	74	47	137	-	6	-	6	-	-	-	-	2	18	-	20	18	98	47	163
9	Palakkad	7	79	50	136	3	34	19	56	0	1	0	1	9	28	22	59	19	142	91	252
10	Malappuram	8	167	11	186	1	78	2	81	-	1	19	20	-	-	-	-	9	246	32	287
11	Kozhikkode	34	151	47	232	2	158	8	168	-	28	1	29	19	154	14	187	55	491	70	616
12	Wayanad	7	33	2	42	1	2	-	3	-	1	-	1	-	-	1	1	8	36	3	47
13	Kannur	63	198	26	287	43	142	29	214	2	1	-	3	5	205	52	262	113	546	107	766
14	Kasaragod	12	36	2	50	5	24	1	30	0	0	0	0	1	0	0	1	18	60	3	81
<b>TOTAL</b>		421	1046	341	1808	98	530	267	895	33	91	114	238	41	421	103	565	593	2088	825	3506

**Appendix-11.13**  
**District wise/Management-wise Number of Higher Secondary**  
**Schools in Kerala-2004**

Sl.No.	District/Taluk	Number of Higher Secondary Schools			
		Govt.	Aided	Unaided	Total
1	2	3	4	5	6
1	Thiruvananthapuram	73	46	37	156
2	Kollam	56	48	19	123
3	Pathanamthitta	25	36	26	87
4	Alappuzha	40	49	14	103
5	Kottayam	37	60	24	121
6	Idukki	24	26	14	64
7	Ernakulam	62	63	49	174
8	Thrissur	61	44	35	140
9	Palakkad	52	23	21	96
10	Malappuram	83	39	42	164
11	Kozhikode	56	39	24	119
12	Wayanad	20	11	7	38
13	Kannur	62	28	19	109
14	Kasaragod	51	11	9	71
<b>Total</b>		<b>702</b>	<b>523</b>	<b>340</b>	<b>1565</b>

Source: Directorate of Higher Secondary Education, Thiruvananthapuram.

**Appendix 11.14**  
**Higher Secondary Education - Enrolment of SC/ST Student in Plus Two course (Regular) as on 2003-04**  
**2003-2004**

SI.No	Revenue Districts	SC		ST		Others		Total	
		Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys
1	Thiruvananthapuram	1332	849	81	37	11021	8296	12434	9182
2	Kollam	1043	735	14	5	9962	7710	11019	8450
3	Pathanamthitta	595	425	17	12	5510	4416	6122	4853
4	Alappuzha	802	618	8	4	8170	6820	8980	7442
5	Kottayam	624	422	93	51	9379	7480	10096	7953
6	Idukki	286	215	97	84	3812	2908	4195	3207
7	Ernakulam	1050	764	37	29	12631	9981	13718	10774
8	Thrissur	1271	784	9	15	11645	8881	12925	9680
9	Palakkad	954	665	27	36	6043	5253	7024	5954
10	Malappuram	1085	800	13	19	11822	11335	12920	12154
11	Kozhikode	786	561	44	19	10905	9428	11735	10008
12	Wayanad	139	105	137	150	2299	1981	2575	2236
13	Kannur	458	328	88	42	11394	8924	11940	9294
14	Kasaragod	148	117	85	47	3866	3305	4099	3469
	<b>Total</b>	<b>10573</b>	<b>7388</b>	<b>750</b>	<b>550</b>	<b>118459</b>	<b>96718</b>	<b>129782</b>	<b>104656</b>

**Appendix.11.15**  
**Course wise Intake of students in VHSE- 2004-05**

Sl.No.	Name of Course	Sanctioned Intake (in Nos.)	Actual Intake (in Nos.)
1	2	3	4
1	Civil Construction and Maintenance	1188	1044
2	Maintenance and Repairs of Two Wheelers and Three Wheelers	429	397
3	Maintenance and Repairs of Automobiles	462	435
4	Maintenance and Repairs of Radio and Television	2541	2300
5	Maintenance and Repairs of Domestic Appliances	1881	1501
6	Mechanical Servicing (Agro Machinery)	99	91
7	Refrigeration and Air conditioning	627	574
8	Printing Technology	726	591
9	Rubber Technology	99	76
10	Textile B28Dyeing and Printing	33	15
11	Textile Weaving	33	--
12	Computer Science	1452	1338
13	Computer Application	1353	1094
14	Plant Protection	2079	1813
15	Fruits and Vegetables	759	762
16	Nursery Management and Ornamental Gardening	1716	1542
17	Sericulture	99	--
18	Livestock Management (Dairy Husbandry)	759	679
19	Livestock Management (Poultry Husbandary)	429	415
20	Dairying (Milk Products)	165	155
21	Aquaculture	297	272
22	Fishing Craft and Gear Technology	132	112
23	Maintenance and Operation of Marine Engines	198	159
24	Fish Processing Technology	429	406
25	Medical Laboratory Technician	4653	4279
26	Maintenance and Operation of Bio Medical Equipment	957	906
27	ECG and Audiometric Technician	297	273
28	Domestic Nursing	495	458
29	Dental Technology	99	58
30	Physiotherapy	33	35
31	Physical Education	132	120
32	Clothing and Embroidery	561	458
33	Cosmetology and Beauty Parlour Management	165	150
34	Creche and Pre-School Management	99	97
35	Travel and Tourism	792	728
36	Office Secretaryship	2211	2065
37	Accountancy and Auditing	2673	2509
38	General Insurance	462	411
39	Marketing and Salesmanship	825	743
40	Reception, Book-keeping and communication	165	144
41	Catering & Restaurant Management	99	95
42	Banking Assistance	297	275
<b>Total</b>		<b>33000</b>	<b>29575</b>

Source : Directorate of Vocational Higher Secondary Education.



**Appendix 11.16**  
**Details of B.A Degree Enrolment in Colleges during the year 2003-04+A122.**

Sl.No	Subject	First Year			Second Year			Third Year			
		Total	of which girls	4	Total	of which girls	5	Total	of which girls	6	7
1		3			5	6	7	8			
1	Economics	6785	4581	6452	4450	6098	4325				
2	History	3628	2232	3328	2160	2870	2098				
3	Sociology	988	828	878	710	425	515				
4	Politics	976	688	982	590	630	398				
5	Philosophy	590	425	425	415	400	400				
6	Geography	100	52	89	40	72	35				
7	Psychology	310	158	288	125	158	100				
8	English	4225	2310	4138	2220	3759	2103				
9	Malayalam	3398	2268	3288	2150	2642	2021				
10	Hindi	998	655	980	520	698	415				
11	Islamic History	305	210	299	195	215	190				
12	Arabic	396	310	382	285	287	250				
13	SansKript	315	105	298	95	190	88				
14	Kannada	30	20	24	12	20	15				
15	Tamil	68	25	48	20	35	18				
16	MUSIC	55	20	43	17	38	12				
	<b>Total</b>	<b>23167</b>	<b>14887</b>	<b>21942</b>	<b>14004</b>	<b>18537</b>	<b>12983</b>				

Source: Directorate of Collegiate Education

**Appendix 11.17**  
**Details of B.Sc.Degree Enrolment in Colleges during 2003- 2004**

Sl.No	Subject	First Year			Second Year			Final Year	
		Total	of which girls	4	Total	of which girls	6	Total	of which girls
		3	3	4	5	6	7	8	
1	Mathematics	5709	3660	5568	3543	5292	3200		
2	Physics	4355	3015	4225	2928	4010	2628		
3	Chemistry	4205	2895	4120	2640	3998	2445		
4	Zoology	3958	2718	3728	2705	3205	2345		
5	Botany	3615	2930	3458	2532	3115	2335		
6	Statistics	298	386	255	150	150	130		
7	Geology	188	184	160	80	140	78		
8	Homescience	85	79	80	65	70	62		
9	Bio Chemistry	142	48	130	45	115	40		
10	Polymer Chemistry	152	62	140	38	120	32		
11	Bio Technology	132	35	110	25	86	20		
12	Computer Science	125	88	108	66	93	62		
13	Industrial Fish and Fisheries	38	30	30	23	25	20		
14	Electronics	95	58	90	43	81	41		
15	Analytical Chemistry	17	20	15	15	10	12		
	<b>Total</b>	<b>23114</b>	<b>16208</b>	<b>22217</b>	<b>14898</b>	<b>20510</b>	<b>13450</b>		

Source: Directorate of Collegiate Education

**Appendix 11.18**

**Details of B.Com Degree Enrolment in  
 Colleges 2003-04**

Year	(Students in No.)	
	Boys	Girls
First Year	3851	4608
Second Year	3810	4257
Third Year	3376	3795
<b>Total</b>	<b>11037</b>	<b>12660</b>
<b>Total</b>	<b>8459</b>	<b>8067</b>
<b>Total</b>	<b>23697</b>	

Source: Directorate of Collegiate Education

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## Appendix 11.19

## Details of Enrolment of M.A. Students in Colleges during 2003- 2004 (In Nos.)

Sl. No	Subject	First Year			Second Year		
		Boys	Girls	Total	Boys	Girls	Total
1	2	3	4	5	6	7	8
1	Economics	198	726	924	165	728	893
2	History	118	425	543	95	415	510
3	Sociology	10	8	18	8	5	13
4	Politics	53	178	231	48	168	216
5	Philosophy	20	45	65	15	30	45
6	Geography	10	30	40	9	25	34
7	Psychology	15	45	60	12	40	52
8	English	185	489	674	173	459	632
9	Malayalam	88	388	476	78	363	441
10	Hindi	70	178	248	65	166	231
11	Geology	25	18	43	20	10	30
12	Arabic	118	55	173	85	58	143
13	Sanskrit	35	62	97	30	68	98
14	Kannada	8	10	18	5	8	13
15	Islamic History	32	52	84	29	65	94
16	Tamil	8	6	14	7	4	11
Total		993	2715	3708	844	2612	3456

Source: Directorate of Collegiate Education, Thiruvananthapuram

## Appendix 11.20

## Details of Enrolment of M.Sc. Students in Colleges during 2002 - 03(In Nos.)

Sl. No	Subject	First Year			Second Year		
		Boys	Girls	Total	Boys	Girls	Total
1	2	3	4	5	6	7	8
1	Mathematics	150	621	771	129	554	683
2	Statistics	120	320	440	104	325	429
3	Physics	152	455	607	123	430	553
4	Chemistry	128	428	556	115	403	518
5	Zoology	135	412	547	120	407	527
6	Botany	121	491	612	93	459	552
7	Home Science	8	15	23	5	10	15
8	Geology	16	12	28	14	8	22
9	Analytical Chemistry	10	18	28	7	12	19
10	Bio-Chemistry	8	9	17	--	6	6
Total		848	2781	3629	710	2614	3324

## Appendix 11.21

## Details of Enrolment of M.Com Students in Colleges during 2003-04(In Nos)

Sl. No	Category	Enrolment		
		Boys	Girls	Total
1	2	3	4	5
1	First Year	380	928	1308
2	Second Year	478	715	1193
Total		858	1643	2501

Source: Directorate of Collegiate Education, Thiruvananthapuram

## Appendix 11.22

## Year-wise Break up of Private Registration (2001 to 2004)

Year	Kerala University					Calicut University					Mahatma Gandhi University							
	BA	MA	B.Com	M.Com	M.Sc	Total	BA	MA	B.Com	M.Com	M.Sc	Total	BA	MA	B.Com	M.Com	M.Sc	Total
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
2001	9888	3949	12458	1952	565	28812	16822	6137	13779	2021	510	39269	3800	3500	10800	1600	300	20000
2002	8978	3640	10510	2625	1000	26753	18624	5930	18052	2734	483	45823	4450	3000	12800	2398	250	22898
2003	6466	N.A	9866	N.A	N.A	16332	16448	4643	19969	3205	570	44835	3047	2768	9031	2271	450	17567
2004	6172	N.A	7175	N.A	N.A	13347	18455	N.A	N.A	N.A	N.A	18455	2365	2014	7564	2693	359	14995

Source: Universities in Kerala

## Appendix 11.23

## University-wise Number of Teachers in Arts &amp; Science Colleges in Kerala (2001 to 2004)

Sl.No.	Name of University	Number of Teachers								
		2001-02		2002-03		2003-04				
		Men	Women	Total	Men	Women	Total	Men	Women	Total
1	2	3	4	5	6	7	8	9	10	11
1	Kerala	1799	1934	3733	1535	1634	3169	1526	1625	3151
2	Calicut	1548	1728	3276	1738	1985	3723	1720	1973	3693
3	Mahatma Gandhi	1354	1537	2891	1370	1458	2828	1351	1440	2791
4	Kannur	325	360	685	322	416	738	310	402	712
<b>TOTAL:</b>		<b>5026</b>	<b>5559</b>	<b>10585</b>	<b>4965</b>	<b>5493</b>	<b>10458</b>	<b>4907</b>	<b>5440</b>	<b>10347</b>

Source: Directorate of Collegiate Education, Thiruvananthapuram

## Appendix 11.24

## Branch-wise Distribution of Seats in Engineering Colleges-2004-05

SI.No	Name of Course/Branch	Total Sanctioned Seats
1	2	3
1	Civil Engineering	932
2	Mechanical Engineering	1791
3	Electrical Engineering	2550
4	Electronics and Communications	5025
5	Computer Science & Engineering	4560
6	Applied Electronics and Instrumentation	660
7	Architecture	80
8	Industrial Engineering	30
9	Chemical Engineering	150
10	Production cum Plant Engineering	30
11	Production Engineering	N.A
12	Instrumentation and Control Engineering	120
13	Computer Engineering	N.A
14	Electronics Engineering	N.A
15	Bio-medical Engineering	100
16	Mechanical Engineering (Automobile)	120
17	Mechanical Engineering (Production)	90
18	Polymer Engineering	60
19	Information Technology	2380
20	Electronics and Instrumentation	285
21	Bio-Technology	300
22	Printing Technology	30
23	Agriculture Engineering	30
24	Diary Science & Technology	23
<b>Total</b>		<b>19346</b>

## Appendix 11.25

**Course-wise Annual Intake of Students in Government and Aided Engineering  
Colleges at Post Graduate Level - 2003-2004 to 2004-05**

Sl.No.	Name of Course	Annual (Intake In Nos.)					
		2003-04			2004-05		
		Govt.	Aided	Aided	Govt.	Aided	Aided
1	2	3	4	5	6	6	
1	Civil Engineering	42	8	67	8	8	
2	Mechanical Engineering	36	7	46	7	7	
3	Electrical Engineering	26	--	36	--	--	
4	Electronics & Communication Engg.	10	--	24	--	--	
5	Architecture	5	--	7	--	--	
6	Chemical Engineering	6	--	8	--	--	
<b>Total</b>		<b>125</b>	<b>15</b>	<b>188</b>	<b>15</b>	<b>15</b>	

Source: Directorate of Technical Education, Thiruvananthapuram.

## Appendix 11.26

**Number of Students and Teachers in Polytechnics 2003 & 2004**

Type of Institutions	Students (in Nos)						Teachers (in Nos)					
	2003			2004			2003			2004		
	Boys	Girls	Total	Boys	Girls	Total	Male	Female	Total	Male	Female	Total
1	2	3	4	5	6	7	8	9	10	11	12	13
1. Government	15145	8895	24040	15321	8772	24093	1030	330	1360	1050	335	1385
2. Private (Aided)	2691	1449	4140	2634	1546	4180	240	79	319	246	73	319
<b>Total</b>	<b>17836</b>	<b>10344</b>	<b>28180</b>	<b>17955</b>	<b>10318</b>	<b>28273</b>	<b>1270</b>	<b>409</b>	<b>1679</b>	<b>1296</b>	<b>408</b>	<b>1704</b>

Source: Directorate of Technical Education, Thiruvananthapuram.

**Appendix 11.27**  
**Trade-wise Annual Intake of students in Polytechnics - 2004-05**

Sl.No.	Name of Trade	Sanctioned Intake	Actual Intake
1	Civil	980	980
2	Mechanical	1310	1310
3	Electrical	930	930
4	Electronics	1830	1830
5	Chemical	90	90
6	Automobile	360	360
7	Textile Technology	160	160
8	Computer Engineering	1760	1760
9	Instrument Technology	110	110
10	Polymer Technology	140	140
11	Computer hardware Maintenance	755	755
12	Tool & Die	90	90
13	Electronic Production Technology	120	120
14	Architecture	100	100
15	Electronics & Communication	490	490
16	Electrical & Instrumentation	320	320
17	Wood & Paper Technology	40	40
18	Painting Technology	70	70
19	Commercial Practice	300	300
20	Electronics & Avionics	50	50
21	CA & BM	260	260
22	Bio Medical Engineering	100	100
23	Information Technology	40	40
24	Quantity Surveying and Construction Management	30	30
25	Applied Electronics	185	185
26	Telecommunication	155	155
27	Medical Electronics	100	100
<b>Total</b>		<b>10875</b>	<b>10875</b>

Source: Directorate of Technical Education, Thiruvananthapuram.

**Appendix 11.28**  
**Department wise Details of Courses in Cochin University of**  
**Science & Technology- 2004**

Sl. No.	Name of the Courses	Duration of courses	Sanctioned Intake	Actual Intake
1	2	3	4	5
<b>FACULTY OF ENGINEERING</b>				
1	B.Tech Civil Engineering	8 Sem.	130	130
2	B.Tech Computer Science and Engg.	8 Sem.	150	150
3	B.Tech Electrical & Electronics Engg.	8 Sem.	120	120
4	B.Tech Electronics & Comm.Engineering	8 Sem.	150	150
5	B.Tech Mechanical Engineering	8 Sem.	150	150
6	5 year Integrated MSc Software Engg (No admissions in the current Year)	10 Sem.	40	40
7	B.Tech Information Technology	8 Sem.	90	90
8	B.Tech. Safety & Fire Engg.	8 Sem.	30	30
9	M.Tech Civil Engg. (No admissions in the current Year)	5 Sem.	15	15
10	M.Tech Mechanical Engg. (No admissions in the current Year)	5 Sem.	15	15
11	PG Diploma in Coir Technolgy	2 Sem.	20	20
12	M.E by research (admission only for Civil, Mechanical and Electronics Engg.)	5 Sem. (Part time)	Variable	Variable
<b>FACULTY OF ENVIRONMENTAL STUDIES</b>				
1	MSc Environmental Tech Stream I. Env. Engg.	4 Sem.	6	6
	Stream II Env.Bio tech	4Sem.	6	6
<b>FACULTY OF HUMANITIES</b>				
1	Certificate programmes in French/ German/Japanese/Russian	1 Year	25 each	25 each
2	Diploma in Communicative English	1 Years	25	25
3	Diploma Programmes in French/German/japanese/Russian	1 Years	10 each	10 each
5	Diploma in Functional Arabic	1 Years	20	20
6	Integrated Diploma in French/German/Japanese/Russian	1 Years	20 each	20 each
7	M.A Translation in German/Russian	4 Sem.	5each	5each
8	M.A Hindi Language and Literature	4 Sem.	28	28
9	M Phil Hindi	2 Sem.	10	10
10	PG Diploma in Translation, Administraative Drafting and Reporting in Hindi	1 Year	28	28
<b>FACULTY OF LAW</b>				
1	LLB	6 Sem.	60	60
2	LLM	4 Sem.	36	36
<b>FACULTY OF MARINE SCIENCES</b>				
1	MSc (Industrial Fisheries)	4 Sem.	16	16
2	MSc Meteorology	4 Sem.	12	12
3	M.Tech (Atmos.Sciences)	4 Sem.	10	10
4	MSc. Hydrochemistry	4 Sem.	12	12
5	M.Phil Chemical Oceanography	2 Sem.	6	6
6	MSc Marine Biology	4 Sem.	19	19
7	M.Phil Life Sciences	2 Sem.	6	6
8	MSc Marine Geology	4 Sem.	10	10
9	MSc Marine Geophysics	2 Years	10	10
10	PG Diploma in Coastal Zone Management (No admission in the current year)	4 Sem.	16	16
11	MSc Oceanogaphy	4 Sem.	12	12
12	M.Tech Ocen Technology	4 Sem.	8	8



Sl. No.	Name of the Courses	Duration of courses	Sanctioned Intake	Actual Intake
1	2	3	4	5
<b>FACULTY OF SCIENCE</b>				
1	MSc Applied Chemistry	4 Sem.	12	12
2	M Phil Chemistry	2 Sem.	9	9
3	M.Tech Industrial Catalysis	4 Sem.	10	10
4	M.Sc Biotechnology	4 Sem.	10	10
5	MSc Mathematics	4 Sem.	20	20
6	M.Sc (Operations Research & Computer Appins) (offered only odd years)	4 Sem.	15	15
7	MSc Physics	2 Sem.	25	25
8	M Phil Physics	4 Sem.	8	8
9	MSc Statistics (offered only in even years)	4 Sem.	15	15
10	M.Tech Engg. Statistics	4 Sem.	8	8
<b>FACULTY OF SOCIAL SCIENCES</b>				
1	M.Phil Applied Economics	2 Sem	10	10
2	MBE (Master of Business Economics)	4 Sem	15	15
3	MBA (Full time)	4 Sem	50	50
4	MBA (Part time)	6 Sem	30	30
5	MIB (Master of International Business)	4 Sem.	30	30
6	M.Phil (Commerce)	2 Sem	6	6
<b>FACULTY OF TECHNOLOGY</b>				
1	5 year Integrated MSc in Photonics	10 Sem.	20	20
2	BCA (Admission through DAT)	6 Sem.	50	50
3	MCA	6 Sem.	50	50
4	M Tech Electronics (with specialization in Digital Electronics Microwave and Radar Electronics)	4 Sem.	20	20
5	MSc Electronics Science (with specialization in Artificial Intelligence, Robotic Microwave Electronics and Computer Technology)	4 Sem.	25	25
6	B.Tech Instrumentation	8 Sem.	28	28
7	B.Tech Polymer Science & Rubber Technology	8 Sem.	20	20
8	M Tech Polymer Technology	4 Sem.	10	10
9	B Tech Naval Architecture & ship Building	8 Sem.	24	24
10	M Tech Computer Aided Structural analysis and Design	4 Sem.	15	15
11	M Tech Opto Electronics & Laser Technology	4 Sem.	10	10
12	M.Phil Photonics	2 Sem.	6	6
13	MCA	6 Sem.	30	30
14	M Tech Computer & Information Science	4 Sem.	14	14
15	M.Tech Software Engineering	4 Sem.	13	13
16	MCA	6 Sem.	60	60

Appendix 11.29							
Region-wise, Statewise and Union Territorywise number of Government ITIs & Private ITCs with seating capacity as on 24/7/2003							
Sl.No	Name of States/Uts	No. of Govt. ITIs	Seating Capacity (Govt)	No. of Pvt. ITCs	Seating Capacity (Pvt)	Total ITIs/ITCs	Total Seating Capacity
<b>NORTHERN REGION</b>							
1	Haryana	80	13301	25	1428	105	14729
2	Himachal Pradesh	55	5361	8	916	63	6277
3	Jammu & Kashmir	38	4332	0	32	38	4364
4	Punjab	108	14095	50	3036	158	17131
5	Rajasthan	90	9008	33	2572	123	11580
6	Uttar Pradesh	184	38468	123	12212	307	50680
7	Chandigarh	2	1016	0	0	2	1016
8	Delhi	14	9252	47	2052	61	11304
9	Uttaranchal	56	5912	16	1592	72	7504
	<b>Sub-Total</b>	<b>627</b>	<b>100745</b>	<b>302</b>	<b>23840</b>	<b>929</b>	<b>124585</b>
<b>SOUTHERN REGION</b>							
1	Andhra Pradesh	91	23679	465	85074	556	108753
2	Karnataka	114	19596	474	31120	588	50716
3	Kerala	32	13565	342	43584	398	57149
4	Tamil Nadu	67	23756	614	61471	681	85227
5	Lakshadweep	1	96	0	0	1	96
6	Pondicherry	7	1256	7	424	14	1680
	<b>Sub -Total</b>	<b>312</b>	<b>81948</b>	<b>1902</b>	<b>221673</b>	<b>2238</b>	<b>303621</b>
<b>EASTERN REGION</b>							
1	Arunachal Pradesh	2	368	0	0	2	368
2	Assam	24	4536	3	84	27	4620
3	Bihar	28	10256	19	3288	47	13544
4	Jharkhand	14	2564	19	2212	33	4776
5	Manipur	7	540	0	0	7	540
6	Meghalaya	5	622	2	304	7	926
7	Mizoram	1	294	0	0	1	294
8	Nagaland	3	404	0	0	3	404
9	Orissa	27	6544	150	14996	177	21540
10	Sikkim	1	140	0	0	1	140
11	Tripura	4	400	0	0	4	400
12	West Bengal	48	11924	16	836	64	12760
13	Anda&Nico. Island	1	220	0	0	1	220
	<b>Sub-Total</b>	<b>165</b>	<b>38812</b>	<b>209</b>	<b>21720</b>	<b>374</b>	<b>60532</b>
<b>WESTERN REGION</b>							
1	Goa	11	2652	4	420	15	3072
2	Gujarat	135	69140	119	15874	254	85014
3	Madhya Pradesh	136	19538	30	2604	166	22142
4	Chattishgarh	77	8456	57	6200	134	14656
5	Maharashtra	347	65582	266	29282	613	94864
6	D&N Haveli	1	228	0	0	1	228
7	Daman & Diu	2	388	0	0	2	388
	<b>Sub-Total</b>	<b>709</b>	<b>165984</b>	<b>476</b>	<b>54380</b>	<b>1185</b>	<b>220364</b>

Source:- Annual Report 2003-04, GOI

**Appendix 11.30**  
**District-wise Seat Strength in ITI's and ITC's (Nos)**

SI.No	District	Seat Strength		
		Total	Govt. ITI's	ITC's
1	2	3	4	5
1	Thiruvananthapuram	8228	3476	4752
2	Kollam	8064	1324	6740
3	Pathanamthitta	4127	209	3918
4	Alappuzha	6533	1109	5424
5	Kottayam	5007	1242	3765
6	Idukki	1102	251	851
7	Ernakulam	8015	991	7024
8	Trissur	5505	1328	4177
9	Palakkad	2644	1181	1463
10	Malappuram	1767	356	1411
11	Kozhikode	2185	527	1658
12	Wayanad	390	114	276
13	Kannur	2787	1162	1625
14	Kasaragod	795	295	500
<b>Total</b>		<b>57149</b>	<b>13565</b>	<b>43584</b>

Source:- Industrial Training Department

## Appendix 11.31

Trade wise intake and outturn in Govt. ITI's as on 30.11.2004 (1 Year Course) (in Nos.)

Sl.No.	Name of trade	Students admitted in 2003												students passed			
		Total		SC		ST		Total		SC		ST					
		Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls				
1	Plumber	435	--	29	--	6	--	238	--	11	--	1	--				
2	Mech. Diesel	243	--	33	--	7	--	191	--	26	--	4	--				
3	Secretarial Practice	--	47	--	2	--	--	21	--	--	1	--	--				
4	COPA	132	419	11	55	2	1	112	385	8	49	2	1				
5	Steno (English)	56	292	2	60	--	4	29	140	1	20	--	--				
6	Steno (Hindi)	5	78	--	13	--	4	51	51	--	2	--	--				
7	Dress Making	1	90	--	7	--	--	1	76	--	7	--	--				
8	Welder	735	--	48	--	3	--	561	--	24	--	1	--				
9	Foundrymen	121	--	7	--	--	--	62	--	2	--	--	--				
10	DTPO	--	69	--	5	--	--	68	--	--	5	--	--				
11	F.H.T	2	--	--	--	--	--	--	--	--	--	--	--				
12	Upholstery	33	--	3	--	1	--	21	--	1	--	--	--				
13	SMW	255	12	16	3	--	--	146	9	10	1	--	--				
14	Carpenter	343	--	14	--	1	--	175	--	8	--	--	--				
15	P.P.O	55	3	5	--	--	--	47	3	4	--	--	--				
16	Mech. Tractor	65	--	9	--	--	--	39	--	4	--	--	--				
	<b>Total</b>	<b>2481</b>	<b>1010</b>	<b>177</b>	<b>145</b>	<b>20</b>	<b>5</b>	<b>1626</b>	<b>753</b>	<b>99</b>	<b>85</b>	<b>8</b>	<b>1</b>				

Source: Industrial Training.

**Appendix 11.32**  
**Trade wise in take and out turn in Government ITI's during 2002-04 as on 30.11.2004 (two year course) ( in Nos)**

Sl.No	Name of Trade	Students admitted in 2002														Students passed					
		Total		SC		ST		Total		SC		ST		SC		ST					
		Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls				
1	2	3	4	5	6	7	8	9	10	11	12	13	14								
1	MRTV	269	104	56	26	--	--	202	71	32	10	--	--								
2	D/Civil	173	156	20	25	2	1	107	122	9	20	2	--								
3	D/Mech	58	10	2	3	--	--	32	6	1	1	--	--								
4	MRAC	259	1	47	1	2	--	196	--	29	--	1	--								
5	Surveyor	26	71	3	8	--	--	26	68	3	7	--	--								
6	Fitter	551	--	58	--	5	--	449	--	39	--	3	--								
7	Wireman	336	--	34	--	2	--	223	--	13	--	1	--								
8	Electronic Mech.	318	155	54	24	2	1	266	137	38	17	2	1								
9	Electrician	405	1	38	--	5	--	360	1	30	--	4	--								
10	MMV	441	--	55	--	10	--	401	--	48	--	6	--								
11	Turner	275	1	30	--	1	--	248	1	23	--	1	--								
12	Mechinist	253	1	25	1	--	--	227	1	19	1	--	--								
13	Painter General	53	1	13	1	--	--	50	1	11	1	--	--								
14	Instrument Mech.	77	--	6	--	2	--	77	--	6	--	2	--								
15	Watch and Clock Maker	--	32	--	9	--	--	--	14	--	5	--	--								
16	Mechanic/Agri. Mech.	11	1	2	1	--	--	9	--	2	--	--	--								
	<b>Total</b>	<b>3505</b>	<b>534</b>	<b>443</b>	<b>99</b>	<b>31</b>	<b>2</b>	<b>2873</b>	<b>422</b>	<b>303</b>	<b>62</b>	<b>22</b>	<b>1</b>								

Source: Industrial Training Department

## Appendix 11.33

## Institution Wise Details of Apprentices Under Industrial Training Department

Sl. No	Name of Insitutue	Seat Strength		Apprentices Trained			
		2002	2003	2002		2003	
				Boys	Girls	Boys	Girls
1	3	4	5	6	8	9	
1	Thiruvananthapuram R.I.C	1112	1100	1002	52	988	48
2	Kollam ..	683	683	556	78	630	28
3	Allapuzha ..	675	675	615	44	514	36
4	Kottayam ..	507	507	441	42	482	25
5	Kalamassery ..	1050	1050	941	64	1066	51
6	Thrissur ..	735	735	548	53	640	62
7	Palakkad ..	526	526	464	20	454	30
8	Kozhikode ..	560	560	452	27	424	17
9	Kannur ..	280	283	204	31	252	30
10	Chenneerkara I.T.I	308	302	146	17	172	17
11	Kattappana ..	218	218	115	10	124	6
12	Areacode ..	240	240	230	9	205	2
13	Kasaragode ..	69	69	41	3	32	15
14	Kalpatta ..	88	83	44	3	56	8
<b>Total</b>		<b>7051</b>	<b>7031</b>	<b>5799</b>	<b>453</b>	<b>6039</b>	<b>375</b>

Source:- Industrial Training Department

RIC- Related Instruction Centres

## Appendix 11.34

## KERALA STATE SPORTS COUNCIL'S - Activities

1	Support of Sports Hostels, Colleges, Schools and Centralised Sports Hostels
2	Maintenance of existing Sports Training Centres and Sports Infrastructure
3	Promotion of Sports Activities by District Sports Councils and Sports Associations
4	Women's Sports Festival
5	Conduct of State team coaching camp and participation of National Games
6	Support to State Sports Associations
7	Assistance to Sports Clubs
8	Conduct of State Mini Games and State Youth Games
9	Construction of Play Fields
10	Conduct of Rural Sports
11	Sports Academies
12	Computerisation of Kerala Sports Council
13	Advance Training to UP School Students

**Appendix 12.1**  
**DETAILS OF INFRASTRUCTURE UNDER CO-OPERATIVE SECTOR - 2004**

Sl.N o.	Name of District	No. of hospitals	No. of beds	No. of dispensaries	No. of doctors			No of other Paramedical Staff including Nurses			No. of patients treated during 2002			Remarks
					Hospital	Dispensaries	7	Hospital	Dispensaries	IP	OP			
1	2	3	4	5	6	7	8	9	10	11	12			
1	Thiruvananthapuram	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil			
2	Kollam	4	99	--	16	--	39		1601	10650				
3	Pathanamthitta	1	25		1		10		1050	11100				
4	Alappuzha	5	18	3	2		9		864	5200	4 hospitals and 3 dispensaries are not functioning			
5	Kottayam	2	25		7		19		1580	40486				
6	Idukki	1	100		11		25		1271	6139				
7	Ernakulam	7	710		65		111		21922	138596	3 hospitals are not functioning			
8	Thrissur	8	335	1	42	2	126	9	8806	71388	4 hospitals are not functioning			
9	Palakkad	2	110	--	20	--	35	--	7526	8096				
10	Malappuram	3	313	1	38	1	106	6	15974	165438				
11	Kozhikode	14	665	1	110	1	215	2	38903	234719	One hospital is not functioning			
12	Wayanad	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil				
13	Kannur	15	2055	2	386	1	1787	7	74482	682201	4 hospitals and 1 dispensary are not functioning			
14	Kasargode	15	111	--	14	--	55	--	14160	88047	5 hospitals are not functioning			
<b>TOTAL:</b>		<b>77</b>	<b>4566</b>	<b>8</b>	<b>712</b>	<b>5</b>	<b>2537</b>	<b>24</b>	<b>188139</b>	<b>1462060</b>				

**Appendix 12.2**  
**DETAILS OF INFRASTRUCTURE IN THE DIRECTORATE OF INSURANCE MEDICAL SERVICE - District wise as on 31-3-2004**

Name of District	No. of hospitals	No. of beds	No. of dispensaries	No. of doctors			No. of other Paramedical Staff including Nurses			No. of patients treated during 2002		
				Hospital	Dispensaries	Hospital	Hospital	Dispensaries	Hospital (OP)	Dispensaries (OP)	Hospital (IP)	
												5
1	2	3	4	5	6	7	8	11	12	13		
Thiruvananthapuram	1	128	11	29	25	39	35	25982	399776	2659		
Kollam	2	238	30	41	102	107	167	33321	1628929	7184		
Pathanamthitta	--	--	3	--	8	--	13	--	62869	--		
Alappuzha	1	60	14	17	24	22	43	8369	390622	1716		
Kottayam	1	65	7	18	14	25	24	21470	255288	972		
Idukki	--	--	1	--	1	--	2	--	5026	--		
Ernakulam	2	220	20	46	47	78	70	47138	545690	4134		
Thrissur	2	212	15	36	30	60	50	17493	289632	2475		
Palakkad	1	50	7	16	10	19	16	6870	61662	991		
Kozhikode	1	100	12	23	34	39	56	20521	197627	1469		
Malappuram	--	--	4	--	4	--	8	--	11971	--		
Kannur	1	50	11	17	16	20	31	7139	132872	864		
Kasargod	--	--	1	--	1	--	2	--	6814	--		
<b>TOTAL:</b>	<b>12</b>	<b>1123</b>	<b>136</b>	<b>243</b>	<b>316</b>	<b>409</b>	<b>517</b>	<b>188303</b>	<b>3988778</b>	<b>22464</b>		

Source: Directorate of Insurance Medical Services



**Appendix 12.3**  
**Medical Institutions and Beds in Kerala - Category-wise - 2003-04**

District	Hospitals		PHCs including MCH Centres		Community Health Centres		Dispensaries		T.B. Clinics/Centres		Sub centres	Leprosy Control Clinics/Units
	No.	Beds	No.	Beds	No.	Beds	No.	Beds	No.	Beds		
1	2	3	4	5	6	7	8	9	10	11	14	15
Thiruvananthapuram	17	3752	77	490	10	528	9	34	1	455	1	1
Kollam	9	1434	65	342	9	413	..	..	2	449	4	4
Pathanamthitta	7	648	51	504	4	217	1	..	1	260	..	..
Alappuzha	10	2457	65	451	8	307	1	..	2	368	1	1
Kottayam	11	1437	61	580	8	426	..	..	2	359	..	..
Idukki	3	328	52	524	6	176	2	..	1	231	..	..
Ernakulam	22	3010	77	935	10	485	5	80	1	40	351	..
Thrissur	16	2558	87	640	9	323	5	6	1	..	492	4
Palakkad	8	1147	82	804	12	537	8	..	1	..	471	1
Malappuram	7	1302	95	770	10	396	6	..	2	52	508	3
Kozhikode	8	2115	69	311	11	364	3	..	1	..	389	2
Wayanad	2	331	25	318	6	264	7	..	1	..	204	..
Kannur	9	1693	79	785	-7	244	9	70	1	..	352	..
Kasargode	3	433	46	262	5	160	3	..	1	..	205	2
<b>TOTAL:</b>	<b>132</b>	<b>22645</b>	<b>931</b>	<b>7716</b>	<b>115</b>	<b>4840</b>	<b>59</b>	<b>190</b>	<b>18</b>	<b>216</b>	<b>5094</b>	<b>18</b>

Source: Directorate of Health Services

Excluding Medical colleges and attached institutions

## Appendix 12.4

**DETAILS OF BLOOD UNITS COLLECTED IN BLOOD BANKS -  
KERALA**

Sl. No	Name of Category	Blood units collected (No.)		
		2002	2003	2004 till Aug
<b>A GOVERNMENT SECTOR</b>				
1	Medical College Hospitals	77825	78156	49626
2	General Hospitals	7312	7811	5630
3	District Hospitals	9678	10784	7185
4	Women and Children Hospitals	776	1049	511
5	Taluk Head Quarters Hospitals	12552	12832	8558
6	Other Hospitals	--	--	
<b>SUB TOTAL :</b>		<b>108143</b>	<b>110632</b>	<b>71510</b>
<b>B AUTONOMOUS INSTITUTIONS</b>				
1	Regional Cancer Centre	6383	7001	5787
2	Sree Chitra thirunal Institute of Science and Technology	6858	6375	4169
<b>SUB TOTAL :</b>		<b>13241</b>	<b>13376</b>	<b>9956</b>
<b>C PRIVATE SECTOR</b>		107998	114991	67477
<b>TOTAL : (A+B+C)</b>		<b>229382</b>	<b>238999</b>	<b>148943</b>

**Appendix 12.5**  
**District-wise distribution of Institutions, Beds and Patients treated under Ayurvedic system of Medicine in Kerala (2003 and 2004)**

Sl. No.	District	Hospitals		Beds		Dispensaries		Institutions		Patients treated in 2003		Doctors-2003
		2003	2004	2003	2004	2003	2004	2003	2004	Inpatients	Outpatients	
		3	4	5	6	7	8	9	10	11	12	
1	Thiruvananthapuram	14	14	285	285	63	63	77	77	3629	2157488	92
2	Kollam	9	9	190	190	51	52	60	61	3048	1478325	68
3	Pathanamthitta	5	5	100	150	38	40	43	45	514	903586	52
4	Alappuzha	10	10	180	180	55	55	65	65	2365	1897945	77
5	Kottayam	8	8	150	150	42	43	50	51	1498	396394	60
6	Idukki	3	3	160	160	31	33	34	36	1939	702490	47
7	Ernakulam	13	13	280	280	60	61	73	74	3381	2101205	91
8	Thrissur	15	15	273	273	79	80	94	95	2162	1953502	113
9	Palakkad	6	6	160	160	73	74	79	80	1424	1301370	92
10	Malappuram	11	11	220	220	65	65	76	76	1461	1630344	73
11	Kozhikode	7	7	210	210	52	53	59	60	1595	1486521	88
12	Wayanad	3	3	120	170	21	21	24	24	12452	521353	29
13	Kannur	6	6	216	216	61	61	67	67	1314	1185015	78
14	Kasargode	5	5	100	100	36	36	41	41	874	771049	46
<b>TOTAL:</b>		<b>115</b>	<b>115</b>	<b>2644</b>	<b>2744</b>	<b>727</b>	<b>737</b>	<b>842</b>	<b>852</b>	<b>37656</b>	<b>18486587</b>	<b>1006</b>

Source: Directorate of Ayurveda

## Appendix 12.6

## Annual intake of students and courses in Ayurveda Colleges

Sl.No.	Name of College	Annual intake of students	
		BAMS	P.G.Degree
<b>Government</b>			
1	Ayurveda Medical College, Thiruvananthapuram	70	47
2	Ayurveda Medical College, Trippunnithura	50	--
3	Ayurveda Medical College, Kannur	40	10
<b>Government aided</b>			
4	Vaidyaratnam Ayurveda college, Ollur	40	--
5	Vaidyaratnam P.S.Varrier Ayurveda college, Kottakkal	50	10
<b>Total</b>		<b>250</b>	<b>77</b>
<b>Self-financing</b>			
6	Pankajakasthuri Ayurveda Medical college, Kattakkada, Thiruvananthapuram	50	--
7	Parassinikadavu Ayurveda Medical College, Pappinisseri	50	--
8	Vishnu Ayurveda College, Shornur	50	--
9	Santhigiri Ayurveda Medical College, Palakkad	50	--
10	Nangelil Ayurveda Medical College, Kothamangalam	40	--
11	Santhigiri Siddha Medical College, Pothencode, Thiruvananthapuram	50	--
12	Amritha Ayurveda Medical College, Kollam	60	--
13	Sreenarayana Institute of Ayurveda studies and Research, Puthoor, Palakkad	50	--
<b>Total</b>		<b>400</b>	<b>--</b>
<b>Grand Total</b>		<b>650</b>	<b>77</b>

**Appendix 12.7**  
**District-wise Distribution of Institutions , Beds and patients treated under Government Homoeopathy (2003 & 2004)**  
 (Nos.)

Sl.No.	District	Hospitals		Beds		Dispensaries		Institutions		Patients treated in 2003		Doctors-2003
		2003		2004		2003		2004		Inpatients	Outpatients	
		3	4	5	6	7	8	9	10	11	12	
1	Thiruvananthapuram	4	4	185	185	50	51	54	55	4892	2388758	63
2	Kollam	3	3	75	75	37	37	40	40	1858	1807128	44
3	Pathanamthitta	1	1	25	25	25	25	26	26	NR	773755	26
4	Alappuzha	3	3	75	75	41	41	44	44	1911	2156890	48
5	Kottayam	3	3	175	175	44	44	47	47	2155	1332524	54
6	Idukki	2	2	50	50	33	33	35	35	1482	1045665	38
7	Ernakulam	3	3	85	85	51	51	54	54	1773	1201054	59
8	Thrissur	1	1	25	25	39	39	40	40	465	1319273	42
9	Palakkad	1	1	25	25	39	39	40	40	503	850715	42
10	Malappuram	2	2	50	50	42	42	44	44	1464	968492	47
11	Kozhikode	3	3	75	75	45	45	48	48	114	911595	52
12	Wayanad	1	1	25	25	19	19	20	20	422	230102	22
13	Kannur	1	1	25	25	38	38	39	39	151	623908	40
14	Kasargode	3	3	75	75	21	21	24	24	347	759247	27
<b>TOTAL:</b>		<b>31</b>	<b>31</b>	<b>970</b>	<b>970</b>	<b>524</b>	<b>525</b>	<b>555</b>	<b>556</b>	<b>17537</b>	<b>16369106</b>	<b>604</b>

Source: Directorate of Homoeopathy

## Appendix 12.8

## Annual intake of students and courses in Homoeo Colleges

Sl.No.	Name of College	Annual intake of students	
		BHMS	P.G.Degree
1	2	3	4
	<b>Government</b>		
1	Homoeopathic Medical college, Thiruvananthapuram	50	18
2	Homoeopathic Medical college, Kozhikode	50	18
	<b>Government aided</b>		
3	Dr.Padiyar memorial Homoeopathic Medical college, Ernakulam	50	--
4	Athurasramam N.S.S. Homoeopathic Medical college, Kottayam	50	--
5	Sree Vidhyadhiraja Homoeopathic Medical college, Nemom	50	--
	<b>Total</b>	<b>250</b>	<b>36</b>

**Appendix 12.9**  
**Medical and Para-medical courses conducted in the Medical College with an annual intake of Students**

Name of Courses	No. of seats in Medical Colleges					
	Thiruvananthapuram	Kozhikode	Kottayam	Alappuzha	Thrissur	Kannur
1	2	3	4	5	6	7
<b>Degree Courses</b>						
1. M.B.B.S.	200	200	100	100	100	100
2. B.D.S	40	40	50	--	--	--
3. B.Sc. Nursing	60	60	60	--	--	--
4. B.Pharm	28	20	--	--	--	--
5. B.Sc. MLT	24	--	--	--	--	--
<b>Sub - Total</b>	<b>352</b>	<b>320</b>	<b>210</b>	<b>100</b>	<b>100</b>	<b>100</b>
<b>Post Graduate Courses</b>						
1. M.Sc. Nursing	8	8	4	--	--	--
2. M.D.S.	18	10	--	--	--	--
3. M.D. Anaesthesia	7	5	3	1	--	--
4. M.D. Biochemistry	1	2	--	--	--	--
5. M.D. Forensic medicine	1	2	--	--	--	--
6. M.D. Dermatology and Venerology	3	3	2	1	--	--
7. M.D. General Medicine	10	9	6	1	4	--
8. M.D. Microbiology	2	1	--	--	--	--
9. M.D. Obstetrics and Gynaecology	8	8	4	1	--	--
10. M.D. Pathology	6	2	3	1	--	--
11. M.D. Pharmacology	4	1	--	--	--	--
12. M.D. Physiology	2	3	2	--	--	--
13. M.D. Paediatric	6	5	3	2	--	--
14. M.D. Psychiatry	1	2	4	--	--	--
15. M.D. Radio Diagnosis	2	2	--	--	2	--
16. M.D. Radiotherapy	2	--	--	--	--	--
17. M.D. Community Medicine	3	--	2	--	--	--
18. M.D.T.B. And Respiratory Diseases	3	3	2	--	--	--
19. M.S. Anatomy	2	2	2	--	--	--
20. M.S. ENT	2	2	2	--	--	--
21. M.S. General Surgery	20	12	8	2	--	--
22. M.S. Orthopaedics	4	4	3	--	--	--
23. Ophthalmology	6	4	2	--	--	--
24. M.O. Physical Medicine	2	1	--	--	--	--
25. M.Pharm	16	--	--	--	--	--
<b>Sub - Total</b>	<b>123</b>	<b>91</b>	<b>52</b>	<b>9</b>	<b>6</b>	<b>0</b>

Name of Courses	No.of seats in Medical Colleges					
	Thiruvananthapuram	Kozhikode	Kottayam	Alappuzha	Thrissur	Kannur
1	2	3	4	5	6	7
<b>Super Speciality course</b>						
1. Mch.Paediatric Surgery	2	2	--	--	--	--
2. Mch.Plastic Surgery	2	2	1	--	--	--
3. Mch. Genito Urinary surgery	2	2	1	--	--	--
4. Mch. Thorasic Surgery	2	2	1	--	--	--
5. Mch. Neuro Surgery	2	1	2	--	--	--
6. D.M.Gastro Enterology	2	1	--	--	--	--
7. D.M.Neurology	1	1	--	--	--	--
8. D.M.Cardiology	2	1	2	--	--	--
9. Mch.Gastro Enterology	2	--	--	--	--	--
10. D.M.Nephrology	1	1	1	--	--	--
<b>Sub - Total</b>	<b>18</b>	<b>13</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Diploma Courses</b>						
1. Diploma in Anaesthesia	8	6	6	2	--	--
2. Diploma in child Health	6	12	6	2	--	--
3. Diploma in Clinical Pathology	3	6	--	--	--	--
4. Diploma in Dermatology and Venerology	--	2	--	--	--	--
5. Diploma in Larynology and Otology	8	6	2	--	--	--
6. D.M.R.D	2	2	--	--	--	--
7. D.M.R.T.	2	2	--	--	--	--
8. Diploma in Obstetrics and Gynaecology	12	12	9	2	--	--
9. Diploma in Ophthalmology	3	6	4	--	--	--
10. Diploma in Orthopaedic Surgery	8	6	6	--	--	--
11. Diploma in Physical Medicine and Rehabilitation	4	4	--	--	--	--
12. Diploma in Psychiatric Medicine	6	--	--	--	--	--
13. Diploma in Public Health	12	--	--	--	--	--
14. D.T.C.D	3	3	--	--	--	--
<b>Sub - Total</b>	<b>77</b>	<b>67</b>	<b>33</b>	<b>6</b>	<b>0</b>	<b>0</b>
<b>Diploma / Certificate Courses.</b>						
4. MLT Certificate(2 years)	40+20*	50	15	15	15+20*	--
5. Diploma in Radiological Technology (2 Years)	10+30*	30	15	10	15+30*	--
6. Ophthalmic Assistant Certificate(2 Years)	10+20*	20	15	5	5+20*	--
7. D.Pharm(2 years)	20+30*	50	30	35	--	--
8. Dental Mechanic Certificate course(2 years)	5+10*	10	--	--	--	--
9. Dental Hygienist Certificate Course	10	--	--	--	--	--
10. Certificate Course in Nursing SC/St (3 Years)	30*	30*	20**	--	--	--
<b>Sub - Total</b>	<b>245</b>	<b>190</b>	<b>95</b>	<b>70</b>	<b>105</b>	<b>0</b>
<b>TOTAL:</b>	<b>815</b>	<b>681</b>	<b>398</b>	<b>185</b>	<b>211</b>	<b>100</b>

/SC/ST only, \*\*For ST only

Source: Directorate of Medical Education



## Appendix 12.10

## Details of Personnel ( Clinical/Non-clinical) in Medical Colleges -2000-2004

SI.No.	Category	No. of Clinical/Non Clinical personnel				
		2000	2001	2002	2003	2004
1	2	3	4	5	6	7
<b>Medical Education</b>						
1	Director and Professor					
2	Professor	202	207	207	189	189
3	Associate Professor	242	236	236	236	236
4	Assistant Professor	449	490	490	431	431
5	Tutor/Lecture	711	1877	1877		613
	<b>Sub Total</b>	<b>1604</b>	<b>2810</b>	<b>2810</b>	<b>856</b>	<b>1469</b>
<b>Nursing Education</b>						
6	Director	3	3	3	3	3
7	Professor	7	7	7	8	8
8	Associate Professor	18	17	17	16	16
9	Assistant Professor	27	25	25	23	23
10	Tutor	40	29	29	32	32
	<b>Sub Total</b>	<b>95</b>	<b>81</b>	<b>81</b>	<b>82</b>	<b>82</b>
<b>M.L.T. Course</b>						
11	Director	..	..	..	..	
12	Assistant Professor	3	..	..	..	
13	Tutor	5	3	5	9	
14	Tutor Technician	14	..	..	..	9
	<b>Sub Total</b>	<b>22</b>	<b>3</b>	<b>5</b>	<b>9</b>	<b>9</b>
<b>Dental</b>						
15	Principal	2	3	3	3	3
16	Professor	16	16	16	17	17
17	Associate Professor	12	4	4	8	8
18	Assistant Professor	25	24	24	20	20
19	Tutor/Lecture	44	43	43	45	45
	<b>Sub Total</b>	<b>99</b>	<b>90</b>	<b>90</b>	<b>93</b>	<b>93</b>
<b>Pharmacy</b>						
20	Director	1	5	5	5	5
21	Professor	3	4	4	4	4
22	Associate Professor	7	5	5	4	4
23	Assistant Professor	13	12	12	12	12
24	Lecture	30	27	27	28	28
	<b>Sub Total</b>	<b>54</b>	<b>53</b>	<b>53</b>	<b>53</b>	<b>53</b>
<b>TOTAL:</b>		<b>1874</b>	<b>3037</b>	<b>3039</b>	<b>1093</b>	<b>1706</b>

Source: Directorate of Medical Educat

## Appendix 12.11

## Annual intake in different Nursing courses - 2003-04

(Nos.)

Sl.No.	Name of Institutions	Institutions	Annual intake
1	2	3	4
	<b>Integrated General Nurse-cum-</b>		
<b>I</b>	<b>Midwives (3 year course)</b>		
a)	Government Nursing schools	12	323
b)	Private Nursing schools	163	4300
c)	Medical College, Kozhikode	1	30
d)	Medical College, Thiruvananthapuram	1	30
	<b>Junior Public Health Nurses</b>		
<b>II</b>	<b>(18 months)</b>		
a)	Government Nursing schools	4	180
b)	Private Nursing schools	16	388
<b>III</b>	<b>BSc. Nursing (4 Year course)</b>		
a)	Medical College, Kottayam	1	50
b)	Medical College, Thiruvananthapuram	1	50
c)	Medical College, Kozhikode	1	50
	<b>MSc. Nursing (2 Year course)</b>		
a)	Medical College, Thiruvananthapuram	1	16
b)	Medical College, Kozhikode	1	8

Source: Directorate of Health Services

**Appendix 12.12**  
**District-wise Number of Medical and Paramedical Personnel Under DHS - 2004**

District	Medical Officers	Dentists	Senior Nurses	Junior Nurses	Lady Health Inspectors	Pharmacists	JPHN (ANMS)	Junior Health Inspectors	Health Inspectors
1	2	3	4	5	6	7	8	9	10
Thiruvananthapuram	428	6	305	1099	71	194	527	296	75
Kollam	234	6	81	335	79	102	427	292	84
Pathanamthitta	156	4	27	180	44	70	266	184	43
Alappuzha	253	7	158	606	71	133	381	224	53
Kottayam	229	5	101	663	61	108	328	220	51
Idukki	116	4	24	129	59	63	315	223	56
Ernakulam	329	9	171	657	76	148	427	265	64
Thrissur	304	8	166	610	99	162	499	328	79
Palakkad	253	6	73	356	80	127	515	294	71
Malappuram	287	6	67	384	97	136	589	333	83
Kozhikode	267	6	203	887	67	156	419	272	66
Wayanad	110	3	28	142	34	46	205	126	30
Kannur	253	4	102	397	83	132	423	290	74
Kasargode	134	3	31	145	41	61	249	168	38
<b>TOTAL:</b>	<b>3353</b>	<b>77</b>	<b>1537</b>	<b>6590</b>	<b>962</b>	<b>1638</b>	<b>5570</b>	<b>3515</b>	<b>867</b>

Source: Directorate of Health Services

**Appendix 12.13**  
**Target and achievement of immunisation programme**

I.N	Item	Unit	2002-03		2003-04		9	
			Target	Achievement	Target	Achievement		
1	2	3	4	5	6	7	8	9
	<b>M.C.H. Programme</b>							
a)	Immunisation Programme							
(i)	D.P.T	Dose	577318	553212	95.8	582480	556582	95.6
(ii)	Polio	Dose	577318	550225	95.3	582480	552064	94.8
(iii)	B.C.G.	Dose	577318	594573	103.0	582480	576128	98.9
(iv)	Measles	Dose	577318	522961	90.6	582480	500260	85.9
(v)	T.T for Pregnant women	Dose	636708	548423	86.1	642678	574572	89.4
(vi)	T.T. for 5 Years	Dose	530012	472862	89.2	534759	431500	80.7
(vii)	T.T. for 10 Years.	Dose	562249	551384	98.1	534759	517899	96.8
(viii)	T.T. for 16 Years	Dose	554010	526192	95.0	578969	525534	90.8
b)	Prophylaxis against nutritional anaemia							
(i)	Women	Dose	636708	575086	90.3	642678	549477	85.5
(ii)	children'	Dose	..	..	..	..	..	..
c)	Prophylaxis against Blindness due to vitamin A deficiency in children	Dose	556697	509559	91.5	1491988	1473565	98.8

Source: Directorate of Health Services

## Appendix 12.14

## District wise details of Dengue fever - 2003

District	Patients treated	Patients cured	Death reported
1	2	3	4
Thiruvananthapuram	789	772	17
Kollam	186	177	9
Pathanamthitta	166	164	2
Alappuzha	220	215	5
Kottayam	191	186	5
Idukki	226	226	--
Ernakulam	319	317	2
Thrissur	363	359	4
Palakkad	147	139	8
Malppuram	545	539	6
Kozhikode	69	65	4
Wayanad	49	49	--
Kannur	150	145	5
Kasaragode	121	121	--
<b>Total</b>	<b>3541</b>	<b>3474</b>	<b>67</b>

Source: Directorate of Health Services

## Appendix 12.15

## District wise details of Leptospyrosis - 2003

District	Patients treated	Patients cured	Death reported
1	2	3	4
Thiruvananthapuram	80	79	1
Kollam	84	70	14
Pathanamthitta	122	119	3
Alappuzha	136	123	13
Kottayam	692	663	29
Idukki	249	247	2
Ernakulam	251	240	11
Thrissur	164	147	17
Palakkad	21	20	1
Malppuram	44	41	3
Kozhikode	101	101	--
Wayanad	104	104	--
Kannur	48	46	2
Kasaragode	66	64	2
<b>Total</b>	<b>2162</b>	<b>2064</b>	<b>98</b>

Source: Directorate of Health Services

## Appendix 12.16

## District-wise availability of Vehicles under DHS -2004

Sl.No.	Disrtict	Vehicles in Running condition	Vehicles in repair/ workshop	Unrepairabl	Total
1	2	3	4	5	6
1	Thiruvananthapuram	175	4	105	284
2	Kollam	61	6	2	69
3	Pathanamthitta	52	3	8	63
4	Alappuzha	54	2	23	79
5	Kottayam	68	5	5	78
6	Idukki	42	3	23	68
7	Ernakulam	56	4	20	80
8	Thrissur	48	3	24	75
9	Palakkad	55	4	33	92
10	Malappuram	67	11	8	86
11	Kozhikode	60	6	14	80
12	Wayanad	49	7	27	83
13	Kannur	37	9	12	58
14	Kasaragod	42	6	13	61
<b>TOTAL:</b>		<b>866</b>	<b>73</b>	<b>317</b>	<b>1256</b>

Source: Directorate of Health Services

**Appendix 12.17**  
**Statement showing No.of attack and death due to major**  
**principal diseases during 2002-03, 2003-04**

Sl.No.	Name of Diseases	Attack		Death	
		2002-03	2003-04	2002-03	2003-04
1	2	3	4	5	6
1	Acute Diarrhoeal Diseases	539863	506034	26	16
2	Diphtheria	2	3		
3	Acute Poliomyelitis	..	4		..
4	Tetanus-Others	7	24	1	3
5	Neonatal Tetanus	1		1	
6	Whooping Cough	237	198		
7	Measles	2170	4942	1	
	Chickenpox	8530	12936	5	9
8	Acute Respiratory Infection	7049771	8131103	228	216
9	Pneumonia	18972	29475	64	59
10	Enteric Fever	8408	12996	5	3
	Dengue Fever	163	3541	1	67
11	Viral Hepatitis-A	5333	7433	7	11
12	Viral Hepatitis-B	810	628	17	9
	Weils Disease(Leptospirosis)	2928	2162	199	97
13	Japanese Encephalitis	1	13	..	..
14	Menningococcal Menningitis	148	204	3	1
15	Rabies(Hydrobobia)	12	31	12	31
16	Syphillis	71	146	..	..
17	Gonococcal Infection	401	582	..	..
18	Pulmonary Tuberculosis	22325	21866	136	201
	Guinea worm				
	Anthrax		2		
	All Other Diseases (including				
	communicable and non				
22	communicable diseases	20391771	25202870	6983	8450
	<b>Total</b>	<b>28051924</b>	<b>33937193</b>	<b>7689</b>	<b>9173</b>

Source: Directorate of Health Services

## Appendix 12.18

District wise Couple protection rate and female reproductive age group -2003-04

District	Couple protection rate	Female reproductive age group (15-49) (nos.)
1	2	3
Thiruvananthapuram	96.66	487400
Kollam	79.5	358670
Pathanamthitta	89.44	185740
Alappuzha	66.86	288550
Kottayam	77.42	259500
Idukki	66.36	160000
Ernakulam	69.8	369470
Thrissur	71.01	426400
Palakkad	64.26	366280
Malppuram	49.49	577940
Kozhikode	62.05	433100
Wayanad	67.6	120320
Kannur	61.46	375350
Kasaragode	59.21	151010
<b>Total</b>	<b>72.23</b>	<b>4559730</b>

Source: Directorate of Health Services



**Appendix 12.19**  
**Achievement of Family Welfare Programme (2003-04) District -wise**

Sl.No.	District	Vasectomy	PPS	Minilap	Laprosopic	Total (3+4+5)	Cu -T	Nirodh			Induced Abortion
								supplied	Oral pills	CC	
1	2	3	4	5	6	7	8	9	10	11	
1	Thiruvananthapuram	47	11483	757	5126	17413	4836	1338239	24681	4410	
2	Kollam	16	9477	478	420	10391	4963	1290856	15312	2128	
3	Pathanamthitta	40	4006	210	1190	5446	3412	710288	17492	2455	
4	Alappuzha	104	6659	1159	102	8024	3805	730240	17811	2223	
5	Kottayam	424	6331	288	1003	8046	6265	655727	20563	3585	
6	Idukki	22	7897	559	866	9344	3350	568490	15472	561	
7	Ernakulam	204	16598	551	3164	20517	7395	341791	24757	2215	
8	Thrissur	45	8649	782	3362	12838	7429	1079607	31054	2456	
9	Palakkad	64	9115	589	2702	12470	8131	822235	18664	2574	
10	Malappuram	36	12940	476	388	13840	8384	1361070	35408	331	
11	Kozhikode	122	9290	1340	47	10799	5026	918730	14994	2637	
12	Wayanad	215	4399	651	561	5826	4706	1034919	12596	464	
13	Kannur	185	9862	570	651	11268	3587	35117	21322	2316	
14	Kasargode	31	3400	293	1243	4967	6107	161462	15162	849	
<b>TOTAL:</b>		<b>1555</b>	<b>120106</b>	<b>8703</b>	<b>20825</b>	<b>151189</b>	<b>77396</b>	<b>11048771</b>	<b>285288</b>	<b>29204</b>	

Source: Directorate of Health Services

## Appendix 12.20

## District wise medical institutions and beds - Government sector - 2003-04

Sl.No.	District	Allopathy		Ayurveda		Homoeopathy		Total		Beds per lakh of population
		Institutions	Beds	Institutions	Beds	Institutions	Beds	Institutions	Beds	
1	2	3	4	5	6	7	8	9	10	11
1	Thiruvananthapuram	116	7261	78	919	57	310	251	8490	262
2	Kollam	89	2189	61	190	40	75	190	2454	95
3	Pathanamthitta	64	1369	45	150	26	25	135	1544	125
4	Alappuzha	88	4322	65	180	44	75	197	4577	217
5	Kottayam	83	3771	51	150	48	175	182	4096	208
6	Idukki	64	1028	36	160	35	50	135	1238	110
7	Ernakulam	115	4550	75	419	55	185	245	5154	166
8	Thrissur	123	4514	96	426	40	25	259	4965	167
9	Palakkad	112	2488	80	160	40	25	232	2673	102
10	Malppuram	123	2520	77	370	44	50	244	2940	81
11	Kozhikode	95	5047	60	210	49	175	204	5432	189
12	Wayanad	41	913	24	170	20	25	85	1108	141
13	Kannur	105	2792	68	316	39	25	212	3133	130
14	Kasaragode	60	855	41	100	24	75	125	1030	86
<b>TOTAL</b>		<b>1278</b>	<b>43619</b>	<b>857</b>	<b>3920</b>	<b>561</b>	<b>1295</b>	<b>2696</b>	<b>48834</b>	<b>153</b>

NB. Including medical college hospitals  
Population based on 2001 Census

**Appendix 13.1**  
**Achievements under Major Housing Schemes (Nos)**

SI.NO.	Agency	Year				
		2001-02	2002-03	2003-04	2004-05 (up to 30-9-04)	
1	2	3	4	5	6	
1	Kerala State SC/ST Development Corporation	139	31	44	13	
2	SC Dev. Dept.	718	18764	2090	6184	
3	Fisheries Dept.	312	--	1500	227	
5	KS Co-op. Agril & RDB	13380	13448	14794	3719	
6	Sainik Welfare	--	69	77	9	
7	KPHCC	--	--	101	1006	
8	LIC Housing Finance	2350	3000	1023	433	
9	GIC Housing Finance	671	741	1345	378	
10	Commissionerate of Rural Developemnt	23892	32107	26375	7366	
11	Canfin Homes	--	413	156	102	
12	HOUSE FED	12311	7380	7562	2932	
12	KSHB	16614	8686	12933	1438	
13	Nationalised Scheduled Bank	8686	40620	54454	38064	
14	Kudumbasree	1220	1330	504	--	
15	HDFC	3009	4880	5474	--	
16	ST.Deve. Department	--	1759	1132	--	
	<b>Total</b>	<b>83302</b>	<b>133228</b>	<b>129564</b>	<b>61871</b>	

Source: Housing Commissioner

**Appendix 13.2**  
**Kerala State Housing Board: Mythri Housing Scheme**

SI.NO.	Name of District	Houses selected under Mythri scheme	Houses constructed & handed over to the beneficiaries	Houses partially completed	Capital subsidy distributed for completed houses (Rs.lakhs)
1	Thiruvananthapuram	11670	11351	319	1021.59
2	Kollam	14153	14152	1	1273.68
3	Alappuzha	29994	24498	5496	2204.82
4	Pathanamthitta	16044	15085	959	1357.65
5	Kottayam	29945	29734	211	2676.06
6	Idukki	26131	26120	11	2350.8
7	Ernakulam	36532	32463	4069	2921.67
8	Thrissur	16769	16225	544	1460.25
9	Palakkad	16934	16612	322	1495.08
10	Malappuram	17918	15390	2528	1385.1
11	Kozhikode	19866	18394	1472	1655.46
12	Wayanad	9218	8823	395	794.07
13	Kannur	22521	21743	778	1956.87
14	Kasargod	14543	13188	1355	1186.92
<b>State Total</b>		<b>282238</b>	<b>263778</b>	<b>18460</b>	<b>23740.02</b>

Source Kerala State Housing Board

**Appendix 13.3**  
**Houses Assisted and Amount disbursed by Kerala State Co-operative Housing Federation Limited**  
**(Rs. in lakhs)**

Sl.No.	Category	Amount distributed (Rs.lakhs)				Houses Assisted (Nos)			
		2002-03	2003-04	2004-05 upto 30.9.04	2004-05 upto 30.9.04	2002-03	2003-04	2004-05 upto 30.9.04	2004-05 upto 30.9.04
1	2	3	4	5	6	7	8		
1	EWS	957.86	949.84	425.57	3702	3144	880		
2	LIG	2078.47	1932.01	927.37	3953	3456	975		
3	MIG	1345.49	1247.86	656.92	1107	962	286		
4	Others (Repair)	1333.31	--	818.64	2064	--	791		
	<b>Total</b>	<b>5715.13</b>	<b>4129.71</b>	<b>2828.5</b>	<b>10826</b>	<b>7562</b>	<b>2932</b>		

Source:- Kerala State Co-operative Housing Federation.

## Appendix 13.4

Interest Rates of Different Financial Institutions on Housing loan  
as on 30/9/2004 (percentage)

Sl.No.	Name of Institution	Floating rate	Fixed rate	Primary	Individual
1	2	3	4	5	6
1	<b>State Bank of India</b>				
	upto 5 years	7.5	8		
	5 to15 years	8	8.75		
	15 to 20 years	8.25	9		
2	<b>Bank of Baroda</b>				
	upto 5 years	7.5	9.5		
	up to10 years	8	10		
	above 10 years	8.25	10.5		
3	<b>State Bank of Travancore</b>				
	upto 5 years	7	8		
	5 to10 years	8	9		
	above 10 years	8.25	9.25		
4	<b>Syndicate Bank</b>				
	Up to 6 years	7.25	8		
	6 to 12 years	7.75	8.5		
	12 to 18 years	8	8.75		
	18 to 25 years	8.25	9		
5	<b>Corporation Bank</b>				
	upto 5 years	7.5	--		
	5 to10 years	8	--		
	above 10 years	8.25	--		
6	<b>HUDCO</b>				
	EWS	8	8.5		
	Direct borrowinn by Govt. Dept. etc	8.25	8.75		
	Other Agencies	9.75	10.25		
7	<b>HDFC</b>	8.25	--		
8	<b>LIC</b>	7.5	--		
9	<b>HSBC</b>	7.25	--		
10	<b>Sundaram Home Finance</b>	8.25	--		
11	<b>GIC</b>				
	Up to 10 years	7.5	--		
	above 10 years	7.75	--		
12	<b>Dewan Housing Finance</b>	8.75	--		
13	<b>Bob Housing Finance</b>	9.75	--		
14	<b>Canfin Homes</b>				
	Up to 20 years	8.25			
	Up to 5 years (iirrespective of loan amount)	--	7.5		
	6 to 10 years	--	8		
	11 to 20 years	--	8.5		
15	<b>Dhanalekshmi Bank</b>				
	upto 5 years	8	10		
	5 to10 years	8.25	10		
	above 10 years	8.5	11		

Sl.No.	Name of Institution	Floating rate	Fixed rate	Primary	Individual
1	2	3	4	5	6
16	<b>House Fed</b>				
	EWS (up to 15 years)			8.25	9
	LIG (Up to 15 years)			8.5	9.5
	MIG (upto 15 years)			8.75	9.75
17	<b>Kerala State Co-op Agricultural and Rural Development Bank Ltd</b>				
	(a) NABARD up to Rs.50,000	9	-		
	Rs.50001 to Rs.1 lakh (15 years)	9.5	-		
	Rs.1 lakh to 2 lakh)	10	-		
	above 2 lakhs	11	-		
	Repair/Renovation (10 years)	-	-		
	upto 50000	9.5	-		
	50001 to 1 lakh	10	-		
	(b) NHB up to 2 lakhs (7 years)	9.5	-		
	up to 2 lakhs (above 7 years)	10	-		
	2 to 5 lakhs( 7 years)	10.5	-		
	3 to 5 lakhs( above 7 years)	11	-		
	Repair /Renovation				
	up to 2 lakhs( years)	10	-		
	up to 2 lakhs( above years)	10.5	-		
	2 lakh to 5 lakh (7 years)	11	-		
	3 lakh to 5 lakh (above 7 years)	11.5	-		
18	<b>Bank of India</b>				
	upto 5 years	7.5	-		
	5 to10 years	7.75	-		
	10 to 25 years	8.25	-		
19	<b>Kerala State Co-Op. Bank Ltd</b>				
	upto 5 years	-	10		
	5 to10 years	-	10.25		
	10 to 15 years	-	10.5		
20	<b>Canara Bank</b>				
	Up to 5 years	7.25	7.75		
	up to 20 years (10,lakhs)	8	8.75		
	up to 20 years (above 10,lakhs)	8.25	9		
21	<b>Kerala State Housing Board</b>				
	EWS	5	-		
	LIG	10-13.5	-		
	MIG	12-14.5	-		
	HIG	12.5 - 15.5	-		

Source:- Housing Commissioner

**Appendix 14.1**  
**Financial Achievements under IRDP/SGSY, IAY, EAS (SGRY Stream-I), JGSY (SGRY Stream-II)**

(Rs. Lakhs)

Sl. No.	Year	IRDP/SGSY		IAY		EAS (SGRY-I)		JGSY (SGRY-II)		SGRY (I+II)		Total	
		Total Fund	Expenditure	Total Fund	Expenditure	Total Fund	Expenditure	Total Fund	Expenditure	Total Fund	Expenditure	Total Fund	Expenditure
1	1997-98	2689.19	2531.96	2965.83	2975.18	6899.66	4371.43	5045.34	3851.76	11945	8223.19	17600	13730.33
2	1998-99	3093.78	2769.01	4081.49	3632.01	7238.97	5425.26	5500.44	4239.95	12739.41	9665.21	19914.7	16066.23
3	1999-00	4393.57	2506.81	4506.49	3990.7	5949.7	4688.09	4875.81	3703.75	10825.51	8391.83	19725.6	14889.35
4	2000-01	3692.73	3489.56	3807.05	3525.02	4201.34	3458.67	4818.7	3404.06	9020.04	6862.73	16519.8	13877.31
5	2001-02	2160.95	1998.68	4994.88	4618.14	5597.97	4987.47	5559.39	4904.7	11157.36	9892.17	18313.2	16508.99
6	2002-03	2103.3	2062.5	4940.7	4517.34	5741.01	4050.16	5440.51	3731.46	11181.52	7781.62	18225.5	14361.46
7	2003-04	2127.44	2054.13	6245.27	5767.77	7535.14	5628.49	6725.13	4496.65	14260.27	10125.1	22633	17947.04
8	2004-05	1271.85	1109.58	4319.88	2677.86	--	--	--	--	10946.98	4812.65	16538.7	8600.09
<b>Total</b>		<b>21532.8</b>	<b>18522.2</b>	<b>35861.59</b>	<b>31704</b>	<b>43163.8</b>	<b>32609.6</b>	<b>37965.3</b>	<b>28332.3</b>	<b>92076.09</b>	<b>65754.5</b>	<b>149470</b>	<b>115980.8</b>
		(86%)	(86%)	(88%)	(88%)	(75%)	(75%)	(74%)	(74%)	(71%)	(71%)	(78%)	(78%)

Source: Commissionerate of Rural Development, GOK, Trivandrum



**Appendix 14.2**  
**Number of NHGs and Thrift & Credit under Kudumbashree Rural**

Sl.No	District	No. of GPs.	No. of NHG formed	No. of ADS formed	No. of families covered	No. of families started Thrift	Amount of Thrift (Rs.)	Amount of Loan (Rs.)
1	2	3	4	5	6	7	8	9
1	Thiruvananthapuram	78	13884	1091	289909	294731	391875366	544050513
2	Kollam	69	11056	1031	219372	219372	251663612	355121894
3	Pathanamthitta	54	5425	626	116786	116786	181369775	283680517
4	Alappuzha	73	10191	931	207473	207473	278078407	541811892
	<b>Regional Total</b>	<b>274</b>	<b>40556</b>	<b>3679</b>	<b>833540</b>	<b>838362</b>	<b>1102987160</b>	<b>1724664816</b>
5	Kottayam	74	8611	946	184248	183142	197826100	258262081
6	Idukki	51	7867	606	142485	142251	278832334	594641368
7	Ernakulam	88	9770	1090	177170	174155	260752794	466362299
8	Thrissur	92	13078	1223	242525	241748	378947677	1302805339
9	Palakkad	90	13107	1178	254453	254453	278191831	358590101
	<b>Regional Total</b>	<b>395</b>	<b>52433</b>	<b>5043</b>	<b>1000881</b>	<b>995749</b>	<b>1394550736</b>	<b>2980661188</b>
10	Malappuram	100	9050	1460	222106	222106	239423575	263227852
11	Kozhikkode	77	11689	1090	250785	238168	382955088	864409437
12	Wayanad	25	6454	354	103514	103514	180990208	567752268
13	Kannur	81	8418	1045	181782	180668	289823015	712682060
14	Kasarode	39	4923	528	109126	108118	169973608	526971882
	<b>Regional Total</b>	<b>322</b>	<b>40534</b>	<b>4477</b>	<b>867313</b>	<b>852574</b>	<b>1263165494</b>	<b>2935043499</b>
	<b>Total</b>	<b>991</b>	<b>133523</b>	<b>13199</b>	<b>2701734</b>	<b>2686685</b>	<b>3760703390</b>	<b>7640369503</b>
15	Urban (58 ULBs)		8610	725	292207	292207	268584251	274608584
16	Tribal (5 Districts)		2049		24846	24846	35691344	42517566
	<b>Grand Total</b>		<b>144182</b>	<b>13924</b>	<b>3018787</b>	<b>3003738</b>	<b>4064978985</b>	<b>7957495653</b>

Source: State Poverty Eradication Mission, GOK, Trivandrum

**Appendix 14.3**  
**Linkage Banking - Target & Achievement**

(Rs. in Lakhs)

Cumulative Total

Sl.No.	Name of District	No. of NHGs Graded	No. of NHGs Linked	Amount of Loan Disbursed
1	2	3	4	5
1	Thiruvananthapuram	7534	2501	638.71
2	Kollam	6981	3489	1776.31
3	Pathanamthitta	2111	1076	471.33
4	Alappuzha	7032	4598	1530.06
5	Kottayam	4816	2798	673.00
6	Idukki	2521	1865	578.21
7	Ernakulam	4997	4415	922.22
8	Thrissur	4283	4283	2067.31
9	Palakkad	2687	1370	268.15
10	Malappuram	2569	2536	1032.08
11	Kozhikkode	7169	2555	728.16
12	Wayanad	5859	3520	1282.08
13	Kannur	5274	2262	712.00
14	Kasaragod	2670	2409	323.07
<b>Total</b>		<b>66503</b>	<b>39677</b>	<b>13002.69</b>

Source: State Poverty Eradication Mission, GOK, Trivandrum

**Appendix 14.4**

**District-wise details of Bhavanashree**

Sl.No.	District	No. of Borrowers identified	No. of applications collected by CDS	No. of applications forwarded to Banks	No. of applications sanctioned by Banks	No. of cases disbursed
1	2	3	4	5	6	7
1	Thiruvananthapuram	5000	2427	2427	0	0
2	Kollam	3139	3139	552	50	179
3	Pathanamthitta	755	515	176	69	60
4	Alappuzha	739	739	569	79	79
5	Kottayam	1708	1708	739	241	187
6	Idukki	2020	725	212	20	0
7	Ernakulam	1339	1339	834	193	144
8	Thrissur	1899	1899	834	193	144
9	Palakkad	5335	5335	1903	67	42
10	Malappuram	3010	3010	2079	0	0
11	Kozhikkode	2863	2863	410	25	25
12	Wayanad	1000	750	500	150	50
13	Kannur	2979	1553	321	75	75
14	Kasaragod	1253	520	150	50	50
<b>Total</b>		<b>33039</b>	<b>26522</b>	<b>11706</b>	<b>1212</b>	<b>1035</b>

Source: State Poverty Eradication Mission, GOK, Trivandrum

**Appendix 14.5**  
**DISTRICT-WISE DISTRIBUTION OF SURPLUS LAND FROM 1.4.2003 TO 31.10.2004**

District	No. of Beneficiaries				Land Distributed (Area in Acres)			
	Scheduled Caste	Scheduled Tribe	Others	Total	Scheduled Caste	Scheduled Tribe	Others	Total
Thiruvananthapuram	--	--	--	--	--	--	--	--
Kollam	4	14	--	18	1	12	--	13
Pathanamthitta	--	--	--	--	--	--	--	--
Alappuzha	--	18	--	18	--	5	--	5
Kottayam	8	--	--	8	1	--	--	1
Idukki	--	--	--	--	--	--	--	--
Ernakulam	11	--	7	18	1	--	1	2
Thrissur	--	--	--	--	--	--	--	--
Palakkad	4	--	--	4	1	--	--	--
Malappuram	161	--	114	275	25	--	19	44
Kozhikkode	--	--	--	--	--	--	--	--
Wayanad	--	--	21	21	--	--	1	1
Kannur	550	250	1078	1878	114	146	282	542
Kasaragod	61	224	90	175	16	5	18	39
<b>Total</b>	<b>799</b>	<b>506</b>	<b>1310</b>	<b>2415</b>	<b>159</b>	<b>168</b>	<b>321</b>	<b>648</b>

Source: Directorate of Survey and Land Records

**Appendix 14.6**  
**District-wise Urban Thrift Mobilisation upto 31.10.2004**

(Rs. in Lakhs)

Sl.No.	Name of District	No. of NHGs	No. of ADSs	No. of CDSs	Amount of Thrift	Amount of Loan
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	Thiruvananthapuram	1262	83	5	218.87	190.31
2	Kollam	466	33	3	234.99	248.03
3	Pathanamthi	254	23	3	59.90	59.08
4	Alappuzha	633	48	5	242.26	105.60
5	Kottayam	307	25	4	67.87	56.53
6	Idukki	54	5	1	18.55	13.12
7	Ernakulam	1788	147	10	1021.81	1281.51
8	Thrissur	619	55	7	145.60	137.15
9	Palakkad	888	73	4	145.41	196.16
10	Malappuram	490	89	5	117.11	65.88
11	Kozhikkode	1003	69	3	254.13	294.24
12	Wayanad	86	3	1	24.55	19.88
13	Kannur	542	52	6	91.46	68.84
14	Kasaragod	222	20	2	43.38	9.76
	<b>Total</b>	<b>8614</b>	<b>725</b>	<b>59</b>	<b>2685.89</b>	<b>2746.09</b>

Source: Directorate of Kudumbashree, GOK, Thiruvananthapuram

**Appendix 14.7**  
**District-wise Number of beneficiaries in Welfare Institutions - 2004**

Sl. No	Name of Welfare Institution	Thiruvananthapuram	Kollam	Alappuzha	Pathanamthitta	Kottayam	Idukki	Ernakulam	Thrissur	Palakkad	Malappuram	Kozhikode	Wayanad	Kannur	Kasaragod	Total	Sanctioned strength
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	Mahila Mandir	27	10	16	18	20	..	20	17	18	16	26	..	18	8	214	420
2	Home for Mentally Deficient children	..	..	..	..	..	..	..	..	..	..	24	..	..	..	24	50
3	Home for Physically Handicapped	27	..	..	..	..	..	13	..	..	..	17	..	..	..	57	175
4	Home for the cured mental patients (Asha Bhavan)	50	..	..	..	..	..	..	19	..	..	50	..	..	..	119	150
5	Care Home for Disabled Children	..	6	17	..	..	..	..	8	..	..	..	..	11	..	42	100
6	Old Age Home	94	28	..	29	29	..	41	11	..	18	23	..	19	27	319	1000
7	After Care Home for adolescents	..	11	..	..	..	..	..	..	..	..	52	..	8	..	71	250
8	Observation Home	4	5	1	1	3	..	2	3	4	2	5	5	3	3	41	375
9	Juvenile Homes	90	72	..	..	72	..	..	87	..	..	165	..	..	..	486	850
10	Government Balasadan	..	..	24	..	..	..	..	..	..	..	..	..	..	..	24	100
11	Rescue Home	..	..	6	..	..	..	..	..	..	16	..	..	..	..	22	200
12	Children's Home	..	..	29	..	..	..	..	..	..	..	..	..	..	..	29	50
13	Home for Physically Handicapped (Aged)	..	..	15	..	..	24	..	..	19	..	..	..	26	..	84	150
14	Day Care Centre & Old Age Home	17	..	..	..	..	..	..	..	..	..	..	..	..	..	17	50
15	Pratheeksha bhavan	..	..	..	..	..	..	..	..	..	24	..	..	..	..	24	50
16	Short Stay Homes	..	..	..	..	..	..	..	..	..	..	28	..	..	..	28	25
<b>Institutions run by NGO's</b>																	
17	Orphanages	2402	1908	1310	1412	3018	1236	4684	2816	1804	4812	4318	1008	2434	843	34005	54560
18	Fondling Home	50	..	..	..	50	..	42	23	60	15	20	12	18	..	290	460
19	Beggar Homes	120	125	..	..	120	..	..	..	..	..	..	..	54	..	419	419
20	Home for Aged Infirm	..	..	9	..	..	22	..	..	19	..	..	..	23	..	73	..
21	Oldage homes	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5814	9417

Source: Social Welfare Department

**Appendix 14.8**  
**Demographic Profile of aged in Kerala (Population in millions)**

Year	Total Population								Proportion to total Population							
	2	3	4	5	6	7	8	60 +	70 +	80 +	60 +	70 +	80 +			
1961	169.00	9.86	3.63	0.85	5.83	2.15	0.50									
1971	213.50	13.28	4.96	1.25	6.22	2.32	0.59									
1981	254.50	19.10	7.12	1.86	7.50	2.80	0.73									
1991	290.70	25.74	10.01	2.90	8.85	3.44	1.00									
2001	318.40	9.60	6.20	3.50	3.02	1.95	1.10									
2011	347.30	11.90	7.20	5.10	3.43	2.07	1.47									
2021	366.40	17.60	9.20	6.70	4.80	2.51	1.83									
2031	372.20	24.00	13.60	8.50	6.45	3.05	2.28									
2041	366.20	28.20	19.10	12.30	7.70	5.22	3.36									
2051	347.20	26.20	22.50	17.70	7.55	6.48	5.10									

Source: CDS.

**Appendix 14.9**  
**Disability in Kerala - 2001**

Type of Disability	Rural			Urban			Total						
	Person	Male	3	Female	Person	Male	6	Female	Person	Male	9	Female	10
	2	3	4	5	6	7	8	9	10				
Seeing	251284	124846	126438	83338	42506	40832	334622	167352	167270				
Speech	51003	28299	22704	16063	8880	7183	67066	37179	29887				
Hearing	61066	28145	32921	18647	8311	10336	79713	36456	43257				
Movement	178587	107646	70941	59120	34713	24407	237707	142359	95348				
Mental	105842	55555	50287	35844	19449	16395	141686	75004	66682				

Source: Census of India - 2001

**Appendix 14.10**  
**Disability in India - 2001**

Type of Disability	Rural			Urban			Total		
	Person	Male	Female	Person	Male	Female	Person	Male	Female
1	2	3	4	5	6	7	8	9	10
Seeing	7873383	4222717	3650666	2761498	1509621	1251877	10634881	5732338	4902543
Speech	1243854	713966	529888	397014	228129	168885	1640868	942095	698773
Hearing	1022816	549002	473814	238906	124795	114111	1261722	673797	587925
Movement	4654552	2975127	1679425	1450925	927625	523300	6105477	3902752	2202725
Mental	1593777	949373	644404	670044	405280	264764	2263821	1354653	909168

Source: Census of India - 2001

**Appendix 14.11**  
**Distribution of the total disabled by type of disability - 2001**

Item	Rural			Urban			Total		
	Person	Male	Female	Person	Male	Female	Person	Male	Female
1	2	3	4	5	6	7	8	9	10
Total	647782	344491	303291	213012	113859	99153	860794	458350	402444
Literates	426966	253258	173708	150079	87971	62108	577045	341229	235816
Illiterates	220816	91233	129583	62933	25888	37045	283749	117121	166628
Workers	166406	130657	35749	52906	42646	10260	219312	173303	46009
Cultivators	20150	17413	2737	934	765	169	21084	18178	2906
Agricultural									
Workers	33199	24455	8744	2631	1868	763	35830	26323	9507
Household									
Industries	6600	3909	2691	2239	1483	756	8839	5392	3447
Workers (Others)	106457	84880	21577	47102	38530	8572	153559	123410	30149
Non-workers	481376	213834	267542	160106	71213	88893	641482	285047	356435

Source: Census of India - 2001

**Appendix 14.12**  
**Details of Self-Employment Programme through Kerala State Handicapped Persons Welfare Corporation-(1994 -2004)**

Year	No. of Applicant	No. of Application Forwarded to Bank	No. of Applications Sanctioned	Amount Released by Corporation	No. of Aids & Appliances Distributed	Amount (Rs.in lakhs)
		3	4	5	6	7
1	2	3	4	5	6	7
1994-95	740	740	740	1480000	2635	45.82
1995-96	556	556	306	611500	2331	52.59
1996-97	709	709	709	1418000	2271	33.22
1997-98	988	988	401	80200	1588	25.94
1998-99	1963	1963	489	974500	2677	59.81
1999-2000	3317	3317	618	1231000	3861	67.49
2000-01	2326	2326	533	1059500	4002	66.42
2001-02	1348	1348	242	481000	1077	16.1
2002-03	1303	1303	281	562500	1644	33.07
2003-04	1256	1256	344	756535	1165	27.29

Source: KSHPW, Tvpw.

**Appendix 14.13**  
**Major Pension Schemes in Kerala - District-wise Beneficiaries - 2004**

Sl. No.	Name of Scheme	Thiruvananthapuram	Kollam	Alappuzha	Pathanamthitta	Kottayam	Idukki	Ernakulam	Thrissur	Palakkad	Malappuram	Kozhikodam	Wayanad	Kannur	Kasargod	State Total
1	Widow/Destitute Pension Scheme	26895	27393	13583	7434	10903	3080	17220	18651	21651	29599	24637	5251	14555	10095	230947
2	Special Pension for persons with disabilities	17363	15141	12486	5577	8151	2850	11680	13484	12934	16097	16702	2931	9906	5317	150619
3	Leprosy, Cancer patients	1452	2566	494	187	204	88	350	286	200	193	293	76	111	38	6538
4	Building and Construction Workers	9737	3940	3242	2677	2338	1567	6549	3631	4133	2733	3959	430	6630	1771	53337
5	Handloom Workers	1397	874	72	11	143	--	204	131	502	96	1448	--	2621	118	7617
6	Tailoring Workers	978	967	827	509	537	96	616	590	340	161	389	76	576	129	6794
7	Second World War Veterans	750	420	810	340	310	70	570	350	230	300	350	110	470	50	5130
8	Pension to Journalists	73	34	30	1	71	3	63	54	21	6	55	1	25	5	442
9	Fishermen	5329	4353	5234	--	1828	--	3693	1868	1535	1808	1808	--	1165	1317	28130
10	Pension to Toddy Workers	146	574	1564	491	2002	1150	3225	2796	1826	516	475	--	1378	357	16500
11	Ration Dealers	81	65	56	30	22	6	23	26	14	3	7	3	10	3	349
12	Coir Workers (2003)	8676	10659	30991	--	4067	--	3010	2533	612	400	4450	300	1100	202	67000
13	Abkari Workers	10	6	--	2	7	3	10	17	2	6	9	2	24	--	98
14	Cine Artists (2003)	72	4	17	5	12	0	13	10	5	2	5	0	1	0	146
15	Unemployment assistance	71648	61269	55258	12976	28209	3321	24323	30104	11818	21472	39899	3996	15623	7454	387370
16	Khadi Workers	1	--	1	--	--	--	--	1	--	1	1	--	1	--	6
17	Freedom Fighters	1488	478	1280	62	46	122	324	452	320	658	975	41	1432	157	7835
18	National Old Age Pension	10465	13192	7103	3704	9800	4260	13994	11323	18377	13820	7667	1671	9906	5187	130469
	Unmarried Women above 50 years	2363	753	2081	526	873	35	1568	3952	2066	1474	3935	54	2781	453	22914
20	Motor Transport Workers	117	198	153	59	125	45	163	57	46	70	205	31	161	52	1482
21	Cashew Workers	2807	31708	2883	1711	--	--	157	805	--	--	815	--	631	27	41544
22	Agricultural Workers							(District wise not available)								1668369
23	Lottery Workers							(District wise not available)								3947
24	Labour Welfare							(District wise not available)								508454
25	Artisans & Skilled Workers							(District wise not available)								211770
26	Authorikshaw Workers							(District wise not available)								18468
27	Anganwadi Workers							(District wise not available)								40698
28	Headload Workers							(District wise not available)								31263

Source: Different Welfare Fund Boards/Departments.





Sl. No.	Welfare Institution	Qualifying condition	Year	Year of Revision and Rate of assistance						
				5	6	7	8	9	10	11
9	Welfare Fund for Cine Artists	3 Cine Artists in distress. Annual family income Rs.12000	1981	Rs.300/m	Rs.400/m (1997)	Rs.500/m (1998)				
10	Kerala Cashew Workers Welfare Schemes	1. Cashew Workers above the age of 60. Incapacity to do work. 2. Death benefit to nominees	1989	Rs.75/m	Rs.100/m (1992)	Rs.125/m (1996)				
11	Kerala Coir Workers Welfare Scheme	1. Pension - Workers above the age of 60 years. 2. Family Pension - Death of the member worker	1989	Rs.250	Rs.500 (1995)	Rs.1000 (1998)				
12	Kerala Construction Workers Welfare Scheme	1. Pension - Workers having one year service, 60 years of age. 2. Disability pension - Medical Certificate 3. Family Pension - Death of the Pensioner	1991	Rs.75/m	Rs.100/m (1995)	Rs.150/m (1996)	Rs.200/m (2000)			
13	Kerala Khadi Workers Welfare Scheme	10 years service, 60 years of age	1990	Rs.100/m	Rs.180/m (1991)	Rs.100 to Rs.300 (1999)				
14	Kerala Handloom Workers Welfare Scheme	1. Pension - Above the age of 60 years, atleast 3 years service 2. Self employed person 3. Death Benefit	1989	Rs.75/m	Rs.100/m (1997)					
15	Kerala Abkari Workers Welfare Scheme	1. Pension - 60 years. Completed 3 years continuous service 2. Death benefit 3. Permanent Disability Benefit	1993	Rs.1000/m	Rs.5000/m (1999)					
16	Kerala Toddy Workers Welfare Scheme	1. Pension - Not less than 10 years membership 2. Assistance to Disabled workers	1997	Rs.115/m	Rs.200/m (1995)					
			1988	Rs.100/m	Rs.125/m (1992)	Rs.150/m (1994)				

Sl. No.	Welfare Institution	Qualifying condition	Year	Year of Revision and Rate of assistance						
				5	6	7	8	9	10	11
17	Kerala Head Load Workers Welfare Scheme	3 1. Death benefit 2. Invalid Pension	4 1987 1990	Normal death Rs.10000 Accidental death Rs.20000 Rs.150/m	Rs.15000 and Rs.30000 respectively Rs.200 to Rs.2400 (2000)					
18	Kerala Motor Workers Welfare Scheme	1. Death benefit - 3 months continuous service 2. Retirement benefit	1986	Rs.5000 Rs.12000 for 5 years service and Rs.60000 for 15 years service	Rs.25000 (2000)					
19	Kerala Fishermen Welfare Scheme	1. Pension - Completed 60 years. Annual Income Rs.5000 2. Accidental death/missing - 18 to 70 years. 3. Permanent disability	1987 1986 1986	Rs.75/m Rs.15000 Rs.7500	Rs.85/m (1992) Rs.21000 (1990) Rs.10500 (1990)	Rs.100/m (1996) Rs.25000 (1992) Rs.25000 (1992)	Rs.120/m (2000) Rs.50000 (1996) Rs.50000 (1996)	Rs.100000 (1999) Rs.100000 (1999)		
20	Kerala Tailoring Workers Welfare Scheme	1. Pension - Completed 60 years. Minimum 9 years service. 2. Disability Pension	2000 1997	Rs.100 to Rs.430/m Rs.100/m						
21	Kerala Artisans & Skilled Workers Welfare Scheme	1. 60 years and above and is a member 2. Death Benefit 3. Permanent disability	1986	Rs.50000 for 40 years of service. Rs.600 for 2 yrs service Rs.10000 Rs.1000						
22	Financial Assistance to Widows for the marriage of their daughter	Family annual Income Rs.10000, Individual Income Rs.6000.	1978	Rs.1000	Rs.1250 (1991)	Rs.2000 (1995)	Rs.2500 (1998)	Rs.5000 (2002)		

Sl. No.	Welfare Institution	Qualifying condition	Year	Year of Revision and Rate of assistance									
				4	5	6	7	8	9	10	11		
23	Tree Climbers Welfare Scheme	Workers in the event of total accidents and permanent total disability following the accidents	1980	Rs. 10000									
24	Kerala National Employment Services	1. Unemployment Assistance Passed SSLC registrant of employment exchange for more than 3 years. Age limit 18-35 years. Family Annual Income Rs. 12000 should not be a student. 2. Self Employment Scheme for the registered unemployed Persons between 21-40 years. Annual Family Income Rs. 24000	1982	Rs. 50/m	Rs. 60/m (1987)	Rs. 70/m (1991)	Rs. 80/m (1996)	Rs. 90/m (1997)	Rs. 100/m (1998)	Rs. 120/m (2000)			
25	National Old Age Pension Scheme	Above 65 years. Annual Family Income below Rs. 11000	1995	Rs. 100/m	Rs. 110/m (1996)								
26	Ration Dealers Welfare Fund Scheme	1. Pension - completed 65 years/ Minimum 10 years of service 2. Death Benefit - one year minimum membership	2000	Rs. 150/m									
27	Beedi and Cigar Workers Welfare Scheme	1. Pension - Completion of 60 years/Minimum 3 years service 2. Retirement benefit	1997	Rs. 100/m									
28	Pension to unmarried women	Above 50 years. Annual family income below Rs. 6000. Not covered under any other social security schemes	2001	Rs. 110/m									

Source: Different Welfare Fund Boards/Departments.

**Appendix 14.15**  
**Major Welfare Measures in the Welfare Fund Boards in Kerala - 2004**

Sl.No	Name of Welfare Fund Board	Maternity benefits	Marriage Assistance	Medical Assistance	Death Relief	Pension (per month)	Family Pension (per month)	Invalid Pension	Permanent disability	Educational Assistance	House Building Advance
1	2	3	4	5	6	7	8	9	10	11	12
1	Kerala Agricultural Workers Welfare Fund Board	1000	2000	1000	1000	-	-	-	-	-	-
2	Kerala Building and Other Construction Workers Welfare Board	2000	3000 (Daughters) 2000 (Sons)	300 to 5000	15000 to 100000	200	100	150	50000	N.A	50000
3	Kerala Handloom Workers Welfare Fund Board	-	2000	-	5000	100	-	-	-	0 to 2000	-
4	Kerala Fishermen's Welfare Fund Board	-	-	2000	100000	-	-	-	100000	-	-
5	Kerala Toddy Workers Welfare Fund Board	-	-	-	5000	150	-	-	150	-	-
6	Kerala Ration Dealers Welfare Fund	-	-	5000 to 15000	-	150	-	-	-	2500	-
7	Kerala Abkari Workers Welfare Fund Board	-	-	-	10000	200 to 300	-	-	10000	-	-
8	Kerala Tailoring Workers Welfare Scheme	-	-	-	-	100 to 430	-	-	-	-	-
9	Kerala Headload Workers Welfare Board	-	-	-	-	250 to 2400	125	250	-	-	-
10	Kerala Cashew Workers Relief Welfare Fund Board	-	-	-	1000 500 (pensioner)	125 to 200	-	-	-	-	-

Source: Different Welfare Fund Boards.

**Appendix 14.16**  
**District-wise ICDS beneficiaries in Kerala**

Sl. No	Name of District	0-3 years	3-6 years	Pregnant and lactating women
1	2	3	4	5
1	Thiruvananthapuram	41166	49465	17198
2	Kollam	32061	42559	13340
3	Pathanamthitta	10826	21016	4270
4	Alappuzha	26518	36988	11488
5	Kottayam	25595	37232	9696
6	Idukki	27943	27545	10305
7	Ernakulam	30655	49015	10841
8	Thrissur	26825	49455	11301
9	Palakkad	50486	42960	15390
10	Malappuram	52730	64451	17651
11	Kozhikkode	31065	49004	16852
12	Wayanad	7781	10790	3803
13	Kannur	17377	36747	7012
14	Kasaragod	4966	21933	4966
<b>Total</b>		<b>385994</b>	<b>539160</b>	<b>154113</b>

Source: Social Welfare Department

**Appendix 14.17**  
**ICDS PROJECTS (GENERAL) - 2004**

Sl.No.	Name of Project	Year of sanctioning	Type of project	No. of AWCs	
				Sanctioned	Operational
1	2	3	4	5	6
<b>Thiruvananthapuram</b>					
1	Thiruvananthapuram (UII)	94-95	Urban	106	106
2	Thiruvananthapuram (Rural)	82-83	Rural	114	114
3	Kilimanoor	93-94	Rural	165	164
4	Nemom	82-83	Rural	116	116
5	Perumkadavila	82-83	Rural	147	134
6	Vamanapuram	86-87	Rural	219	219
<b>Total</b>				<b>867</b>	<b>853</b>
<b>Kollam</b>					
7	Sasthamkotta	82-83	Rural	92	92
8	Ithikkara	83-84	Rural	141	141
9	Vettikavala	82-83	Rural	179	179
10	Chittumala	85-86	Rural	123	123
11	Pathanapuram	88-89	Rural	174	172
12	Anchal	93-94	Rural	198	190
13	Kottarakkara	93-94	Rural	144	144
14	Chadayamangalam	94-95	Rural	203	203
<b>Total</b>				<b>1254</b>	<b>1244</b>
<b>Pathanamthitta</b>					
15	Pulikeezhu	85-86	Rural	121	121
16	Elanthoor	94-95	Rural	105	105
17	Ranni	93-94	Rural	208	208
18	Pandalam	93-94	Rural	103	103
19	Konni	88-89	Rural	179	179
20	Kulanada	89-90	Rural	85	85
21	Paracode	82-83	Rural	153	153
<b>Total</b>				<b>954</b>	<b>954</b>
<b>Alappuzha</b>					
22	Mavelikkara	93-94	Rural	117	117
23	Bharanikave	93-94	Rural	183	183
24	Chengannoor	99-2000	Rural	171	171
<b>Total</b>				<b>471</b>	<b>471</b>
<b>Kottayam</b>					
25	Lalam	82-83	Rural	114	114
26	Pampady	82-83	Rural	130	130
27	Madappally	85-86	Rural	235	231
28	Kanjirappally	89-90	Rural	223	223
<b>Total</b>				<b>702</b>	<b>698</b>

1	2	3	4	5	6
	<b>Idukki</b>				
29	Adimali	90-91	Rural	143	143
30	Azhudai	86-87	Rural	192	184
31	Devikulam	83-84	Rural	116	116
32	Elamdesam	79-80	Rural	111	111
33	Idukki	82-83	Rural	124	124
34	Kattappana	88-89	Rural	209	207
35	Nedumkandam	91-92	Rural	170	170
36	Thodupuzha	93-94	Rural	105	103
		<b>Total</b>		<b>1170</b>	<b>1158</b>
	<b>Ernakulam</b>				
37	Vadavucode	82-83	Rural	128	128
38	Mulamthuruthy	89-90	Rural	142	138
39	Vytilla	93-94	Rural	50	50
		<b>Total</b>		<b>320</b>	<b>316</b>
	<b>Thrissur</b>				
40	Anthikad	80-81	Rural	101	101
41	Chavakkad	78-79	Rural	199	196
42	Chalakydy	83-84	Rural	154	154
43	Chowannoor	94-95	Rural	176	169
44	Irinjalakuda	89-90	Rural	135	132
45	Mala	82-83	Rural	118	118
46	Mullasserry	88-89	Rural	96	96
47	Pazhayannoor	86-87	Rural	166	166
48	Thalikulam	85-86	Rural	109	109
49	Vellangallur	93-94	Rural	98	96
50	Vadakkanchery	93-94	Rural	174	174
		<b>Total</b>		<b>1526</b>	<b>1511</b>
	<b>Palakkad</b>				
51	Kuzhalmannam	80-81	Rural	85	84
52	Kollengode	81-82	Rural	103	103
53	Alathur	83-84	Rural	145	138
54	Sreekrishnapuram	83-84	Rural	137	137
55	Chittur	86-87	Rural	160	160
56	Ottappalam	86-87	Rural	174	174
57	Mannarkad	88-89	Rural	275	250
58	Trithala	89-90	Rural	187	186
59	Palakkad	90-91	Rural	231	231
60	Pattambi	91-92	Rural	226	226
61	Nenmara	93-94	Rural	72	71
		<b>Total</b>		<b>1795</b>	<b>1760</b>



1	2	3	4	5	6
	<b>Malappuram</b>				
62	Andathode	93-94	Rural	134	134
63	Manjeri	83-84	Rural	182	150
64	Kondotty	81-82	Rural	165	138
65	Kuttippuram	91-92	Rural	196	157
66	Malappuram	93-94	Rural	174	174
67	Mankada	93-94	Rural	228	227
68	Nilambur	93-94	Rural	211	211
69	Perinthalmanna	83-84	Rural	168	134
70	Vengara	75-76	Rural	172	135
71	Wandoor	90-91	Rural	290	253
	<b>Total</b>			<b>1920</b>	<b>1713</b>
	<b>Kozhikode</b>				
72	Balusseri	89-90	Rural	227	227
73	Koduvally	82-83	Rural	133	123
74	Perambra	83-84	Rural	150	144
75	Kunnamangalam	83-84	Rural	152	139
	<b>Total</b>			<b>662</b>	<b>633</b>
	<b>Wayanadu</b>				
76	Sulthan Battery	82-83	Rural	166	138
77	Kalpatta	82-83	Rural	205	194
	<b>Total</b>			<b>371</b>	<b>332</b>
	<b>Kannur</b>				
78	Kannur (Urban)	82-83	Urban	34	34
79	Kuthuparamba	83-84	Rural	162	138
80	Peravoor	86-87	Rural	136	136
81	Irikkur	93-94	Rural	215	214
82	Edakkad	82-83	Rural	157	143
83	Iritty	93-94	Rural	163	163
	<b>Total</b>			<b>867</b>	<b>828</b>
<b>Grand Total</b>				<b>12879</b>	<b>12471</b>
<b>World Bank assisted strengthening Projects</b>					
	<b>Thiruvananthapuram</b>				
1	Thiruvananthapuram (UI)	77-78	Urban	103	103
2	Athiyannoor	82-83	Rural	147	147
3	Chirayinkeezhu	81-82	Rural	146	146
4	Kazhakuttam	94-95	Rural	230	230
5	Varkala	93-94	Rural	140	108
	<b>Total</b>			<b>766</b>	<b>734</b>
	<b>Kollam</b>				
6	Chavara	78-79	Rural	152	152
7	Ochira	80-81	Rural	110	110
8	Anchalummood	82-83	Rural	114	114
	<b>Total</b>			<b>376</b>	<b>376</b>

1	2	3	4	5	6
	<b>Alappuzha</b>				
9	Pattanakkad	81-82	Rural	195	195
10	Thycatusery	79-80	Rural	107	105
11	Kanjikuzhy	82-83	Rural	159	143
12	Alappuzha Urban	82-83	Rural	147	147
13	Champakulam	82-83	Rural	118	116
14	Ambalappuzha	81-82	Urban	117	117
15	Harippad	82-83	Rural	118	117
16	Muthukulam	83-84	Rural	182	182
	<b>Total</b>			<b>1143</b>	<b>1122</b>
	<b>Kottayam</b>				
17	Vaikom	79-80	Rural	108	108
	<b>Total</b>			<b>108</b>	<b>108</b>
	<b>Ernakulam</b>				
18	Vypin	83-84	Rural	125	122
19	North Paravoor	80-81	Rural	118	113
20	Mattanchery	79-80	Rural	110	110
21	Kochi (Urban)	94-95	Urban	179	177
	<b>Total</b>			<b>532</b>	<b>522</b>
	<b>Palakkad</b>				
22	Attappady	79-80	Tribal	126	123
	<b>Total</b>			<b>126</b>	<b>123</b>
	<b>Malappuram</b>				
23	Ponnani	80-81	Rural	113	108
24	Thanur	83-84	Rural	135	124
25	Thirur	82-83	Rural	149	137
26	Thirurangadi	85-86	Rural	204	192
	<b>Total</b>			<b>601</b>	<b>561</b>
	<b>Kozhikode</b>				
27	Melady	82-83	Rural	80	80
28	Calicut (UI)	77-78	Urban	101	101
29	Calicut (UII)	83-84	Urban	111	111
30	Mananthavady	78-79	Rural	206	184
	<b>Total</b>			<b>498</b>	<b>476</b>
	<b>Kannur</b>				
31	Kannur (Rural)	93-94	Rural	145	140
32	Payyannur	93-94	Rural	336	329
33	Thaliparamba	81-82	Rural	224	170
34	Thalassery	93-94	Rural	243	239
	<b>Total</b>			<b>948</b>	<b>878</b>
	<b>Kasaragod</b>				
35	Kanhangad	80-81	Rural	227	195
36	Kasaragod	85-86	Rural	268	216
37	Manjeshwar	93-94	Rural	260	211
	<b>Total</b>			<b>755</b>	<b>622</b>
	<b>Grand Total</b>			<b>5853</b>	<b>5522</b>

1	2	3	4	5	6
<b>World Bank Assisted Phase III Projects</b>					
<b>Thiruvananthapuram</b>					
1	Nedumangad	99-2000	Rural	150	150
2	Vellanad	2000-01	Rural	211	211
3	Parassala	2000-01	Rural	172	172
	<b>Total</b>			<b>533</b>	<b>533</b>
<b>Kollam</b>					
4	Karunagapally	99-2000	Rural	145	145
5	Mukhathala	2000-01	Rural	254	254
6	Kollam Punalur	2000-01	Urban	186	144
	<b>Total</b>			<b>585</b>	<b>543</b>
<b>Pathanamthitta</b>					
7	Mallappally	99-2000	Rural	116	115
8	Koipuram	2000-01	Rural	122	122
	<b>Total</b>			<b>238</b>	<b>237</b>
<b>Alappuzha</b>					
9	Ariad	99-2000	Rural	112	111
10	Veliyanad	99-2000	Rural	90	90
	<b>Total</b>			<b>202</b>	<b>201</b>
<b>Kottayam</b>					
11	Kaduthuruty	99-2000	Rural	157	156
12	Pallam	99-2000	Rural	234	234
13	Vazhoor	99-2000	Rural	111	108
14	Uzhavoor	2000-01	Rural	144	144
15	Ettumannur	2000-01	Rural	192	191
16	Erattupettah	2000-01	Rural	100	98
	<b>Total</b>			<b>938</b>	<b>931</b>
<b>Ernakulam</b>					
17	Koovappady	99-2000	Rural	133	133
18	Parakkadavu	99-2000	Rural	127	127
19	Vazhakullam	99-2000	Rural	179	176
20	Pampakuda	99-2000	Rural	92	92
21	Palluruthy	2000-01	Rural	60	58
22	Alangad	2000-01	Rural	114	114
23	Angamali	2000-01	Rural	192	180
24	Kothamangalam	2000-01	Rural	179	176
25	Edappally	2000-01	Rural	87	84
26	Muvattupuzha	2000-01	Rural	137	137
	<b>Total</b>			<b>1300</b>	<b>1277</b>
<b>Thrissur</b>					
27	Puzhakkal	99-2000	Rural	165	164
28	Ollukkara	99-2000	Rural	225	215
29	Cherpu	2000-01	Rural	165	165
30	Kodungallur	2000-01	Rural	124	94
31	Kodakara	2000-01	Rural	196	196
32	Mathilakam	2000-01	Rural	140	137
	<b>Total</b>			<b>1015</b>	<b>971</b>

1	2	3	4	5	6
	<b>Palakkad</b>				
33	Malampuzha	99-2000	Rural	167	167
		<b>Total</b>		<b>167</b>	<b>167</b>
	<b>Malappuram</b>				
34	Malappuram (U)	2000-01	Urban	150	148
		<b>Total</b>		<b>150</b>	<b>148</b>
	<b>Kozhikode</b>				
35	Chelannur	99-2000	Rural	183	183
36	Kunnummel	99-2000	Rural	175	173
37	Pathalayani	99-2000	Rural	165	165
38	Kozhikode (Rural)	99-2000	Rural	257	256
39	Kozhikode (U - III)	83-84	Urban	152	152
40	Thodannur	2000-01	Rural	119	119
41	Thuneri	2000-01	Rural	126	126
42	Vadakara	2000-01	Rural	114	113
		<b>Total</b>		<b>1291</b>	<b>1287</b>
	<b>Kasaragod</b>				
43	Neeleswaram	99-2000	Rural	242	237
		<b>Total</b>		<b>242</b>	<b>237</b>
	<b>Grand Total</b>			<b>6661</b>	<b>6532</b>

### ICDS PROJECTS IN KERALA - 2004

Sl.No.	Name of Project	No. of AWCs	
		Sanctioned	Operational
1	2	3	4
1	ICDS Projects - General	12879	12337
2	World Bank Assisted Strengthening Projects	5853	5554
3	World Bank Assisted Phase III Projects	6661	6532
	<b>Total</b>	<b>25393</b>	<b>24423</b>

**Appendix 14.18**  
District-wise Details of SC/ST population 2001 Census

Sl. No	India/State/District	Total Population				Scheduled Caste				Scheduled Tribe									
		3		4		5		6		7		8		9		10		11	
		Male	Female	Male	Female	Total	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Total
1	Kasargod	588083	615995	1204078	44904	45314	90218	15132	15206	30338									
2	Kannur	1152817	1256139	2408956	48275	50716	98991	9793	10176	19969									
3	Wayanad	391273	389346	780619	16738	16626	33364	67394	68668	136062									
4	Kozhikkode	1399358	1479773	2879131	98386	102597	200983	2924	3016	5940									
5	Malappuram	1754576	1870895	3625471	140535	144907	285442	5996	6271	12267									
6	Palakkad	1266985	1350497	2617482	210624	221954	432578	19990	19675	39665									
7	Thrissur	1422052	1552180	2974232	171443	182783	354226	2293	2533	4826									
8	Ernakulam	1538397	1567401	3105798	129706	133812	263518	5079	4967	10046									
9	Idukki	566682	562539	1129221	79389	79973	159362	25510	25463	50973									
10	Kottayam	964926	988720	1953646	73885	76397	150282	8972	9368	18340									
11	Alappuzha	1014529	1094631	2109160	96900	102331	199231	1565	1566	3131									
12	Pathanamthitta	589398	644618	1234016	78731	83271	162002	3184	3365	6549									
13	Kollam	1249621	1335587	2585208	156880	166007	322887	2447	2743	5190									
14	Thiruvananthapuram	1569917	1664439	3234356	178718	192139	370857	9890	11003	20893									
	<b>Kerala</b>	<b>15468614</b>	<b>16372760</b>	<b>31841374</b>	<b>1525114</b>	<b>1598827</b>	<b>3123941</b>	<b>180169</b>	<b>184020</b>	<b>364189</b>									
	Share of Kerala (Per cent)	2.91	3.31	3.1	1.77	1.98	1.88	0.43	0.45	0.44									

Source: Census 2001

Appendix 14.19  
POPULATION IN FIVE YEAR AGE-GROUP BY RESIDENCE AND SEX FOR SCHEDULED CASTES

Sl.No.	Age Groups	Total		Rural					Urban				
		Persons	Males	5	6	7	8	9	10	11	Persons	Males	Females
1	2	268058	136908	131150	222611	113729	108882	45447	23179	22268			
2	3	230469	117097	113372	190274	96803	93471	40195	20294	19901			
3	4	279559	142369	137190	230296	117293	113003	49263	25076	24187			
4	5	298655	147770	150885	246270	121691	124579	52385	26079	26306			
5	6	311857	148414	163443	254875	121096	133779	56982	27318	29664			
6	7	304133	144741	159392	248261	118290	129971	55872	26451	29421			
7	8	257788	126420	131368	208256	102179	106077	49532	24241	25291			
8	9	256474	123711	132763	208545	100787	107758	47929	22924	25005			
9	10	186274	92568	93706	150298	74758	75540	35976	17810	18166			
10	11	197957	98447	99510	159564	79242	80322	38393	19205	19188			
11	12	130134	65971	64163	104349	52814	51535	25785	13157	12628			
12	13	108179	51071	57108	87587	41270	46317	20592	9801	10791			
13	14	99455	44450	55005	81745	36642	45103	17710	7808	9902			
14	15	80629	34665	45964	66352	28707	37645	14277	5958	8319			
15	16	49304	21729	27575	40649	18115	22534	8655	3614	5041			
16	17	31277	14173	17104	25746	11782	13964	5531	2391	3140			
17	18	31294	13297	17997	26079	11265	14814	5215	2032	3183			
	Age not stated	2445	1313	1132	1968	1074	894	477	239	238			
19	All ages	3123941	1525114	1598827	2553725	1247537	1306188	570216	277577	292639			

Source: Census 2001

**Appendix 14.20**  
**POPULATION IN FIVE YEAR AGE-GROUP BY RESIDENCE AND SEX FOR SCHEDULED TRIBES**

Sl.No.	Age Groups	Total			Rural			Urban		
		Persons	Males	Females	Persons	Males	Females	Persons	Males	Females
1	2	3	4	5	6	7	8	9	10	11
1	0-4	37016	18775	18241	35863	18171	17692	1153	604	549
2	5-9	31389	15869	15520	30111	15228	14883	1278	641	637
3	10-14	35239	18213	17026	33330	17296	16034	1909	917	992
4	15-19	36891	18259	18632	35363	17570	17793	1528	689	839
5	20-24	39406	17804	21602	38082	17169	20913	1324	635	689
6	25-29	37380	18286	19094	36142	17736	18406	1238	550	688
7	30-34	27162	13514	13648	26049	12997	13052	1113	517	596
8	35-39	28078	13771	14307	26906	13181	13725	1172	590	582
9	40-44	19836	9949	9887	18919	9471	9448	917	478	439
10	45-49	20537	10270	10267	19663	9803	9860	874	467	407
11	50-54	13366	6942	6424	12862	6650	6212	504	292	212
12	55-59	10353	5088	5265	9997	4916	5081	356	172	184
13	60-64	9452	4642	4810	9165	4518	4647	287	124	163
14	65-69	7424	3488	3936	7225	3398	3827	199	90	109
15	70-74	4719	2297	2422	4580	2240	2340	139	57	82
16	75-79	2590	1332	1258	2519	1296	1223	71	36	35
17	80+	3006	1482	1524	2916	1448	1468	90	34	56
	Age not stated	345	188	157	327	179	148	18	9	9
<b>19</b>	<b>All ages</b>	<b>364189</b>	<b>180169</b>	<b>184020</b>	<b>350019</b>	<b>173267</b>	<b>176752</b>	<b>14170</b>	<b>6902</b>	<b>7268</b>

Source: Census 2001

**Appendix 14.21**  
**District-wise Details of Unemployed SC/ST persons in the Live Registers of Employment Exchange, 2003**  
**04 and 2004-05**

Sl.No.	District	2003				2004*			
		SC (3)	ST (4)	Others (5)	Total (6)	SC (7)	ST (8)	Others (9)	Total (10)
1	Thiruvananthapuram	74844	4121	502245	581210	74733	4147	489580	568460
2	Kollam	57871	405	342608	400884	51895	385	334775	387055
3	Pathanamthitta	24517	748	125394	150659	25883	635	121926	148444
4	Alappuzha	45195	707	306943	352845	44808	676	302925	348409
5	Kottayam	28716	3730	216677	249123	29411	3573	210774	243758
6	Idukki	14571	5538	106733	126842	14527	5485	105405	125417
7	Ernakulam	49896	1318	348453	399667	49687	1279	332483	383449
8	Thrissur	62936	525	282671	346132	58621	436	259828	318885
9	Palakkad	44583	1440	223773	269796	45695	1145	219466	266306
10	Malappuram	49797	597	186606	237000	50835	660	190275	241770
11	Kozhikode	47282	464	331518	379264	45719	944	316352	363015
12	Wayanad	4913	8363	67856	81132	5024	8243	66407	79674
13	Kannur	18006	1098	213907	233011	16986	1225	210147	228358
14	Kasaragod	8423	2915	81737	93075	8337	1351	82239	91927
<b>Total</b>		<b>531550</b>	<b>31969</b>	<b>3337121</b>	<b>3900640</b>	<b>522161</b>	<b>30184</b>	<b>3242582</b>	<b>3794927</b>

Source:- Directorate of Employment, Thiruvananthapuram

\*As on September 2004



**Appendix 14.22**  
**District-wise Financial Outlays and Achievements of LSG's on SC Schemes (SCP) - 2003-04**

(Rs. in Lakhs)

Sl. No	Name of District	Funds received							Expenditure							Percentage of Expenditure
		GPT	BPT	DPT	MUNI.	CORP.	Total	GPT	BPT	DPT	MUNI.	CORP.	Total			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15		
1	Thiruvananthapuram	1604.27	395.12	387.59	213.21	413.95	3014.14	1259.98	368.16	319.44	185.39	174.68	2307.65	76.56		
2	Kollam	1640.25	397.38	542.52	82.6	175.23	2837.98	1413.31	415.7	200.95	73.03	47.07	2150.06	75.76		
3	Pathanamthitta	894.11	229.69	290.26	125.35	--	1539.41	799.31	241.69	142.6	102.85	--	1286.45	83.57		
4	Alappuzha	1222.72	269.02	348.65	166.48	--	2006.87	821.03	254.42	211.75	135.44	--	1422.64	70.88		
5	Kottayam	752.02	198.99	279.82	111.36	--	1342.19	502.61	183.84	97.49	89.4	--	873.34	67.07		
6	Idukki	709.35	261.14	308.53	17.99	--	1297.01	602.26	157.71	243.27	15.87	--	1019.11	78.57		
7	Ernakulam	1371.99	309.67	410.83	200.27	179.08	2471.84	931.02	351.56	177.67	186.94	167.59	1814.78	73.4		
8	Thrissur	1755.20	450.73	586.77	189.46	345.7	3327.86	1356	504.6	146.7	189.3	345.7	2542.3	76.39		
9	Palakkad	2147.55	538.67	545.52	224.7	--	3456.44	1849.64	546.17	139.28	162.82	--	2697.91	78.05		
10	Malappuram	1435.74	362.15	471.59	214.18	--	2483.66	1089.44	388.95	318.27	161.08	--	1957.74	78.82		
11	Kozhikode	985.87	256.79	332.05	61.6	181.29	1817.60	688.37	288.61	147.39	59.89	119.11	1303.37	71.71		
12	Wayanad	155.83	40.51	52.63	15.74	--	264.71	124.18	38.98	32.09	4.25	--	199.5	75.37		
13	Kannur	473.86	123.24	159.66	161.3	--	918.06	258.74	132.96	53.97	76.81	--	522.48	52.16		
14	Kasaragod	479.49	101.07	157.34	37.68	--	775.58	254.07	74.84	97.37	39.56	--	465.84	60.58		
	<b>Total</b>	<b>15628.25</b>	<b>3934.17</b>	<b>4873.76</b>	<b>1821.92</b>	<b>1295.25</b>	<b>27553.35</b>	<b>11949.96</b>	<b>3948.19</b>	<b>2328.24</b>	<b>1482.63</b>	<b>854.15</b>	<b>20563.17</b>	<b>74.63</b>		

Source: District Planning Offices

**Appendix 14.23**  
**District-wise Financial Outlays and Achievements of LSG's on ST Schemes (TSP)- 2003-04 (Rs.Lakhs)**

Sl. No	Name of District	Funds received						Expenditure						Percentage of Expenditure
		GPT	BPT	DPT	MUNI.	CORP.	Total	GPT	BPT	DPT	MUNI.	CORP.	Total	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Thiruvananthapuram	134.89	34.04	54.07		--	223.00	96.18	30.77	64.45		--	191.40	85.8
2	Kollam	19.98	7.96	14.59	3.75	--	46.28	16.03	7.64	11.58	2.50	--	37.75	81.57
3	Pathanamthitta	38.96	15.74	23.21	--	--	77.91	36.29	7.82	24.16		--	68.27	87.6
4	Alappuzha	13.32	5.39	8.54	--	--	27.25	9.03	3.17	4.18		--	16.38	60.1
5	Kottayam	107.24	30.12	19.86	--	--	157.22	63.29	28.89	0.45		--	92.63	58.9
6	Idukki	284.04	113.40	170.21	1.00	--	568.65	225.78	69.30	140.40	1.00	--	436.48	76.76
7	Ernakulam	35.45	12.39	21.73	1.40	--	70.97	26.71	4.84	9.84	0.68	--	42.07	59.29
8	Thrissur	38.88	8.80	13.61	--	--	61.29	33.30	8.80	9.00		--	51.10	83.37
9	Palakkad	160.75	244.95	126.66	--	--	532.36	127.38	84.05	100.38		--	311.81	58.57
10	Malappuram	62.6	24.92	37.71	--	--	125.23	49.24	24.86	44.56	--	--	118.66	94.75
11	Kozhikode	29.37	11.61	24.03	--	--	65.01	23.16	6.55	14.22		--	43.93	67.57
12	Wayanad	676.60	268.78	402.39	29.17	--	1376.94	506.92	244.84	115.16	8.33	--	875.25	63.56
13	Kannur	106.79	44.91	64.32	--	--	216.02	53.38	56.56	12.57		--	122.51	56.67
14	Kasaragod	174.57	31.72	104.27	--	--	310.56	46.72	0.36	59.97		--	107.05	34.47
	<b>Total</b>	<b>1883.44</b>	<b>854.73</b>	<b>1085.20</b>	<b>35.32</b>	<b>--</b>	<b>3858.69</b>	<b>1313.41</b>	<b>578.45</b>	<b>610.92</b>	<b>12.51</b>	<b>--</b>	<b>2515.29</b>	<b>65.18</b>

Source: District Planning Offices

## Appendix 14.24

District-wise Details of Educational Institutions under Scheduled Castes and Scheduled Tribe Development Departments as on 31.10.2004.

Sl. No.	District	Bala Wadies/Nursery Schools		Boys Hostels		Girls Hostels		Model Residential Schools		Other Institutions	
		SC (3)	ST (4)	SC (5)	ST (6)	SC (7)	ST (8)	SC (9)	ST (10)	SC (11)	ST (12)
1	Thiruvananthapuram	16	7	5	1	5	1	1	2	8	6
2	Kollam	7	2	7	2	4	2	--	1	4	4
3	Pathanamthitta	9	1	2	1	4	1	--	1	2	3
4	Alappuzha	--	--	--	--	4	1	1	--	4	--
5	Kottayam	6	4	2	--	4	2	--	1	4	4
6	Idukki	5	8	2	8	3	6	1	2	1	10
7	Ernakulam	22	--	3	2	4	1	1	--	1	1
8	Thrissur	10	2	3	3	2	1	1	1	8	--
9	Palakkad	7	6	13	13	5	4	1	2	3	5
10	Malappuram	7	3	5	7	3	3	--	1	4	3
11	Kozhikode	4	2	5	3	4	1	1	--	2	--
12	Wayanad	--	17	1	22	--	8	--	5	--	13
13	Kannur	3	2	6	7	3	3	--	1	2	4
14	Kasaragod	6	4	6	2	2	--	1	1	2	1
<b>Total</b>		<b>102</b>	<b>58</b>	<b>60</b>	<b>71</b>	<b>47</b>	<b>34</b>	<b>8</b>	<b>18</b>	<b>45</b>	<b>54</b>

Note: Subsidised hostels for Scheduled Castes - 8 for girls and 6 for boys run by voluntary organisations were not included. There are 3 examination training centres under the SC Department.

Source: 1. Directorate of Scheduled Caste

2. Directorate of Scheduled Tribes

**Appendix 14.25**  
**Major Programmes & Achievements of Scheduled Tribes under ST Development**  
**Department during 2003-04**

Sl.No.	Name of Scheme	Unit	Physical Achievement	
			2003-04*	(4)
(1)	(2)	(3)	(4)	(4)
1	Tutorial scheme for school going & failed students	Students	10,000	
2	Providing better Education facilities to Talented students	Students	100	
3	Special Central Assistance to Tribal Sub Plan	Families	6000	
4	Bharat Dharshan	Students	60	
5	Incentive to specially Talented Youths in Arts and Sports	Youths	4	
6	Special Programme for primitive Tribal Groups	Beneficiaries	6000	
7	Provision for Additional Apprenticeship for ITC/ITI passed candidates	Students	1	
8	Tribal promoters	Promoters	1000	
9	Special Incentive to Brilliant sutudents	Students	600	
10	Assistance for marriage of ST Girls	Beneficiaries	100	
11	Enforcement of prevention of Atrocities Act 1989 (50% state share)	Persons		
12	Providing Health care package to Tribal Individuals affected by diseases	Beneficiaries	1615	
13	Food Support Programme	Beneficiaries	40131	
14	Training in Information Technology	Students	52	
15	Ayyankali Memorial Talent Search and Development Scheme	Students	315	
16	Organisation of Oorukoottom	Oorukoottoms	1422	
17	Opening of Grain Banks	Centres	39	
18	Model Residential Schools (18 Nos)	Students	3440	

Source: Directorate of ST Development Department

## Appendix 14.26

Physical Achievements of Major Schemes for Scheduled Castes under SC  
Development Department - 2003-04

Sl.No	Name of Scheme	Unit	Physical Achievement
			2003-04
(1)	(2)	(3)	(4)
1	Special Incentives to talented students	Student	4469
2	Post-Matric Hostels	"	989
3	Model Residential Schools	"	881
4	Financial Assistance to failed SC students for continuing education	"	5052
5	Upgradation of performance of SC students in sports & games	"	159
6	Apprenticeship to ITI/ITC/Diploma Degree holders in Technical Branches	"	482
7	Rehabilitation to Landless Book Bank to Medical and Engineering students (50% C.S.S)	Family	3107
8	Protection of Civil Rights & Enforcement of PCR Act (50% CSS)	Student	25
9	Development of dependents of SC who were engaged in unclean occupation in the past	Person	472
10	Implementation of prevention of Atrocities Act	Person	803
11	Pre-primary education to SC children	Person	63
12	Tuition system in Pre-Matric Hostels	Student	1813
13		Students	1409
14	Providing Better Education for Bright SC students	Students	474
15	SCA to SCP	Person	6518

Source: Directorate of SC Development Department

## Appendix 14.27

## Financial and Physical Achievements of Major Schemes implemented by the Kerala State Development Corporation for SC/ST, 2003-04 &amp; 2004-05

(Rs. Lakhs)

I.No.	Scheme	Financial Achievement		Physical	
		2003-04	2004-05*	2003-04	2004-05*
1	2	3	4	5	6
1	Agricultural Land purchase Scheme	139.72	35.46	111	28
2	Land purchase scheme for agricultural labourers II,III,IV, VI	277.58	94.12	209	36
3	Beneficiary oriented scheme	16.86	4.97	38	13
4	Education loan	17.74	9.52	41	23
5	Foreign Education loan	7.13	--	1	--
6	Foreign Employment Scheme	1.5	1.5	6	6
7	Micro credit schemes	93.43	22.42	679	159
8	Training Programme	0.59	0.15	31	6
9	Safai - Bos	3.55	--	12	--
10	Income Generation levied Housing Scheme	0.81	0.62	18	11
11	New Ambedkar Rural Housing Scheme	0.97	0.04	26	4
	<b>Total</b>	<b>559.88</b>	<b>168.8</b>	<b>1172</b>	<b>286</b>

\*Upto October 2004

Source: Kerala State Development Corporation for SC/ST

**Appendix 15.1**  
**Consumer Price Index (Cost of Living Index) Numbers for Agricultural and Industrial workers-Kerala : 2003 & 2004**  
 (Base:1998-99=100)

Sl. No.	Centre	2003												2004				
		Sept. 4	Oct. 5	Nov. 6	Dec. 7	Jan. 8	Feb. 9	March 10	April 11	May 12	June 13	July 14	Aug. 15	Sept 19				
1	Thiruvananthapuram	123	123	123	124	125	125	124	123	124	123	124	126	127	127	128		
2	Kollam	123	123	124	125	126	125	125	125	125	125	126	129	126	126	127		
3	Punalur	113	114	115	115	116	115	114	113	114	114	114	116	117	116	117		
4	Pathanamthitta	118	118	118	119	119	120	119	120	119	120	121	123	123	122	122		
5	Alappuzha	115	115	116	117	118	118	117	117	117	119	121	121	121	122	122		
6	Kottayam	117	117	118	119	119	120	119	119	119	120	122	122	121	122	122		
7	Mundakkayam	115	115	115	115	116	115	116	116	116	117	119	119	119	121	119		
8	Munnar	114	114	114	114	115	116	115	116	116	117	119	119	118	119	119		
9	Ernakulam	117	117	118	118	119	119	118	118	118	119	121	121	121	121	122		
10	Chalakudy	116	116	117	118	118	117	118	118	118	118	119	121	119	120	120		
11	Thrissur	117	117	118	119	119	118	117	118	118	119	119	119	120	120	120		
12	Palakkad	116	116	116	116	116	117	116	117	117	119	122	122	122	122	122		
13	Malappuram	118	118	119	120	120	120	119	119	119	121	124	124	121	122	123		
14	Kozhikode	116	116	117	118	118	117	117	118	118	120	123	120	120	120	120		
15	Meppady	113	114	115	116	116	115	114	115	115	117	119	119	117	118	118		
16	Kannur	118	117	119	120	121	121	120	120	120	122	125	126	126	127	127		
17	Kaseragod	120	120	122	123	124	125	124	123	124	124	128	128	128	127	127		
	<b>Average</b>	<b>117</b>	<b>117</b>	<b>118</b>	<b>119</b>	<b>119</b>	<b>119</b>	<b>118</b>	<b>119</b>	<b>119</b>	<b>120</b>	<b>122</b>	<b>122</b>	<b>122</b>	<b>122</b>	<b>122</b>		

Source: Directorate of Economic & Statistics

Sl. No.		Name of Commodity		Appendix 15.2 Month-end Average Retail Prices of Essential Commodities - 2003- 2004 (Rupees)											
				2003					2004						
				Unit	Oct.	Nov.	Dec.	Jan	Feb	Mar	Apr	May	June	July	Aug.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
<b>A. Cereals</b>															
1	Rice Matta(OM)	Kg	13.77	13.78	13.81	13.76	13.77	13.76	13.76	13.89	13.95	13.95	13.86	13.91	13.89
2	Rice White(OM)	Kg	13.10	12.96	12.89	12.86	13.04	12.88	13.07	13.35	13.43	13.24	13.20	13.31	13.27
<b>B. Pulses</b>															
3	Greengram	Kg	27.94	27.48	27.61	28.24	28.17	28.04	27.95	27.73	28.02	28.03	27.95	27.93	27.93
	Blackgram spilt (without husk)	Kg	25.34	25.46	25.00	26.24	26.47	26.31	26.47	26.53	26.88	27.06	26.65	26.78	26.73
5	Redgram	Kg	24.82	23.81	23.20	23.24	22.74	22.28	21.57	21.2	20.96	20.34	21.27	20.94	21.04
6	Dhall (Tur)	Kg	32.24	33.07	33.42	34.23	33.90	33.90	33.91	33.98	34.51	34.35	34.13	34.24	34.19
<b>C. Other Food Items</b>															
7	Sugar(OM)	Kg	14.59	14.45	14.04	14.08	15.65	15.44	16.18	16.68	16.75	16.57	16.32	16.58	16.51
8	Milk (Cow's)	Ltr	13.02	13.46	14.00	14.03	14.04	14.04	14.04	14.02	14.04	13.99	14.02	14.02	14.02
12	Egg(Hen's Nadan))	Dozen	25.75	26.73	27.08	27.65	27.19	26.41	25.16	26.14	26.60	27.87	26.44	26.76	26.49
13	Egg(Hen's White Legon)	Dozen	17.59	18.91	19.32	19.59	15.96	14.38	15.21	17.63	17.66	17.80	16.54	17.41	17.04
<b>D. Oil and Oil Seeds</b>															
14	Coconut oil	Kg	71.49	73.62	70.86	68.53	67.50	67.96	66.98	68.22	73.09	72.62	69.77	70.93	70.27
15	Groundnut Oil	Kg	68.16	68.11	68.20	69.90	70.02	69.4	69.01	69.02	68.88	68.27	68.91	68.77	68.81
16	Refined oil (Postman)	Kg	90.31	90.71	90.38	91.5	91.72	90.56	90.28	89.11	84.72	82.3	87.39	85.88	86.61
17	Gingelly oil	Kg	67.23	69.01	69.67	70.7	71.89	73.27	73.03	72.99	71.81	68.66	71.95	71.35	71.61
18	Coconut (without Husk)	100Nos	651.71	706.25	689.04	674.93	664.11	661.25	648.5	647.73	686.34	673.39	663.44	667.72	664.52

Sl. No.	Name of Commodity	Unit	Month															
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
<b>E. Spices and Condiments</b>																		
19	Coriander	Kg	41.98	40.34	38.50	37.54	36.43	35.38	33.86	32.24	31.42	31.37	32.86	31.97	32.29			
20	Chillies(dry)	Kg	52.27	52.45	53.73	56.76	53.98	47.02	42.51	39.28	39.14	40.79	41.75	40.24	40.62			
21	Onion (small )	Kg	13.77	13.66	13.66	11.24	10.94	11.36	13.64	15.26	18.71	14.05	14.6	15.65	15.32			
22	Tamarind (without seed)	Kg	24.03	24.55	25.19	25.03	25.77	27.55	27.52	27.98	30.3	33.41	29.35	30.26	29.80			
<b>F. Tubers</b>																		
23	Chennai (Elephant Foot)	Kg	10.29	10.55	11.74	12.2	13.22	13.50	15.33	17.09	15.92	12.49	14.87	15.09	15.13			
24	Tapioca(Raw)	Kg	5.74	5.65	5.62	5.65	5.57	5.68	5.89	5.85	5.67	5.65	5.75	5.73	5.76			
25	Potato	Kg	8.86	9.18	9.67	9.56	8.86	8.5	9.91	11.78	12.34	12.09	10.92	11.78	11.47			
26	Colocassia	Kg	15.19	14.45	14.02	13.66	13.96	14.26	15.69	18.32	18.3	16.85	16.68	17.54	17.23			
<b>G. Fruits and Vegetables</b>																		
27	Onion(Big)	Kg	12.5	12.11	11.31	12.75	11.45	8.51	7.90	7.87	8.31	8.16	8.15	8.12	8.08			
28	Brinjal	Kg	12.42	13.46	13.58	11.23	10.09	9.77	9.57	10	10.09	10.27	9.94	10.07	9.99			
29	Pumpkin	Kg	6.54	6.88	6.89	7.07	7.02	6.79	7.10	7.02	7.13	6.61	6.93	6.92	6.95			
30	Cucumber	Kg	6.89	7.41	8.00	8.83	7.09	6.63	7.75	8.36	8.2	7.14	7.61	7.83	7.82			
31	Lady's Finger	Kg	11.62	13.04	10.97	10.76	10.04	12.14	14.42	15.2	12.59	9.23	12.72	12.44	12.77			
32	Cabbage	Kg	9.88	9.14	9.24	8.4	7.79	7.93	8.23	8.52	9.11	8.42	8.44	8.62	8.56			
33	Bittergourd	Kg	13.98	13.73	13.83	14.24	13.73	13.7	15.92	18.78	19.96	15.29	16.73	17.69	17.4			
34	Ash gourd	Kg	6.87	6.95	7.42	7.84	7.96	7.36	7.51	7.29	6.98	6.82	7.19	7.07	7.14			
35	Snakegourd	Kg	11.31	10.73	10.8	9.93	9.20	8.86	9.99	12.47	12.8	10.69	10.96	11.73	11.44			
36	Chillies (Green)	Kg	14.15	13.02	14.11	14.11	12.46	12.8	17.21	15.72	14.8	16.65	15.44	15.65	15.91			
37	Banana(Green)	Kg	12.72	14.4	14.68	15.38	14.95	13.63	13.48	16.26	17.75	18.15	15.85	17.00	16.42			
38	Plantain(Green)	Kg	9.24	9.32	9.18	9.61	9.56	9.54	9.94	10.44	11.13	10.79	10.37	10.68	10.56			

Source : Department of Economics and Statistics



**Appendix 15.3**  
**Month-Wise Wholesale Price Index of Agricultural commodities - Kerala (2003 and 2004)**

( Base : 1952-53=100)

Crops	2003												2004		
	Jan.	Feb.	Mar.	April	May	June	July	August	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1 Rice	2450.0	2451.0	2401.0	2389.1	2429.0	2502.0	2571.00	2611.0	2611.0	2555.0	2543.0	2532.0	2590.8	2588.4	2544.4
2 Molasses	1726.9	1766.5	1824.9	1922.5	1857.6	1733.7	1772.3	1895.2	1895.2	2054.3	2176.4	2162.1	2264.9	2301.8	2315.0
3 Condiments & Spices	1868.0	1929.0	2128.8	2343.1	3067.4	3219.1	2604.0	2229.1	2229.1	2079.5	1920.1	1956.5	2199.5	2438.2	2471.2
4 Fruits & Vegetables	388.2	3949.3	3767.8	3616.0	3356.2	3710.0	3775.7	3741.8	3741.8	3761.0	3807.8	3800.1	3680.6	3822.2	3778.5
5 Food Crops	2574.2	2597.2	2569.2	2574.0	2671.5	2798.4	2754.4	2716.9	2716.9	2665.3	2643.5	2640.7	2704.0	2763.3	2733.7
6 Oil Seeds	3323.6	3481.9	3415.8	3398.0	3344.5	3134.1	3321.1	3562.3	3562.3	3996.2	4202.0	3867.4	3690.8	3539.5	3548.6
7 Plantation Crops	1360.3	1420.7	1400.3	1459.8	1421.2	1391.6	1355.9	1377.2	1377.2	1376.7	1366.8	1393.2	1459.0	1458.0	1569.4
8 Non-food Crops	2730.7	2859.4	2807.1	2812.7	2763.6	2607.9	2727.6	2902.4	2902.4	3205.1	3345.7	3120.2	3016.8	2910.9	2950.9
9 All crops	2631.3	2692.9	2656.0	2661.1	2705.1	2728.9	2744.6	2784.6	2784.6	2862.3	2899.8	2815.7	2818.2	2817.1	2813.0

Source : Department of Economics and Statistics

## Appendix 15.4

## RETAIL PRICE OF RATION COMMODITIES FROM 1997 TO 2003(Rs.)

Year and Date of Revision	Rice			Wheat			Sugar			Kerosene		
	BPL	APL (N)	APL (SS)	Min	Max	Year & Date of Revision	Price	Year & Date of Revision	Price	Price		
										Min	Max	
12/01/97	3.90	7.50	6.50	5.00	5.00	12.10.97	10.60	10.4.99	2.80	2.80	2.90	
01/01/98	3.90	7.50	6.50	5.00	5.00	10.10.97	11.50	23.3.00	5.80	5.80	5.90	
29/1/99	5.00	9.60	8.60	6.50	7.00	15.2.99	12.10	30.9.00	8.80	8.80	8.90	
29/10/99	4.00	9.60	8.60	7.35	7.35	3.1.00	13.10	22.11.00	7.80	7.80	7.90	
04/01/00	6.40	12.40	11.40	9.60	9.60	3.1.01	13.35	17.4.02	9.50	9.50	9.70	
06/11/00	6.40	12.40	10.40	9.60	9.60	1.3.02	13.50	1.4.03	9.30	9.30	9.50	
27/7/2000	6.20	11.90	10.00	8.90	8.90			1.7.03	9.50	9.50	9.70	
13/07/01	6.20	8.90	#	6.60	6.60							
01/04/02	6.20	7.90		5.70	5.70							
01/07/02	6.20	8.90		6.60	6.60							
15/12/02	6.20	8.90		6.70	6.70							

Source: Directorate of Civil Supplies

# - State Govt. stopped subsidy to APL card holders  
(N) Normal Rice (S) Subsidy Rice (SS) State Subsidy.

**Appendix 15.5**  
**Distribution of Rice through the Public Distribution**  
**System 1997-2003 (Qty in Metric Tonnes)**

	1998	1999	2000	2001	2002	2003	2004
JAN	136046	138232	88093	38929	36768	41066	45692
FEB	112660	108267	82613	35036	33049	40032	43404
MAR	131583	116805	98473	40502	33248	38903	44360
APR	119852	118740	46178	38348	34770	36025	45597
MAY	121130	113673	44304	32906	33079	39010	50004
JUN	133337	113699	43408	34160	33173	36680	49614
JUL	131529	123327	49007	37023	33802	42333	55019
AUG	150679	121994	42551	44021	38724	49927	56518
SEP	132660	99980	43199	43451	37014	48421	47838
OCT	159147	107977	39519	39507	35723	44218	-
NOV	156205	100746	36589	37645	38710	44426	-
DEC	154936	94322	42685	39231	35350	46539	-
<b>TOTAL</b>	<b>1639766</b>	<b>1357762</b>	<b>656619</b>	<b>460759</b>	<b>423410</b>	<b>507580</b>	<b>438048</b>

Source: Directorate of Civil Supplies

**Appendix 15.6**  
**Distribution of Wheat through Public Distribution**  
**System 1998-2004**

(Quantity in MT)

	1998	1999	2000	2001	2002	2003	2004
JAN	38063	27077	10858	2234	8481	17071	15599
FEB	43647	25649	10058	1791	8530	11296	14046
MAR	51298	26306	12107	1773	9447	15577	15085
APR	40209	21081	3457	1565	14551	8979	14678
MAY	39052	17974	4655	1509	21670	12403	18141
JUN	37880	21881	4339	1202	14560	13022	21665
JUL	37580	26542	3963	2689	5638	9123	23831
AUG	36832	25044	3855	10824	7404	11404	25868
SEP	31833	20325	3048	10860	10311	14074	26254
OCT	36819	22679	2880	12343	12094	13604	-
NOV	32678	22266	2577	16418	12670	12630	-
DEC	32128	14038	2481	15696	14309	10365	-
<b>TOTAL</b>	<b>458019</b>	<b>270862</b>	<b>64278</b>	<b>78904</b>	<b>139665</b>	<b>149548</b>	<b>175168</b>

Source: Directorate of Civil Supplies Directorate

## Appendix 16.1

### New Foreign Trade Policy (2004-2009) and the Opportunities for Kerala

#### Introduction

The Government of India has announced the Foreign Trade Policy for the country for the next five years (2004-2009) on 31<sup>st</sup> August 2004. The Policy came into force with effect from 1<sup>st</sup> September 2004 and remain in force upto 31<sup>st</sup> March 2009. It is significant that now the country has a Foreign Trade Policy in place of Export - Import Policy. The Government has tried to articulate trade policy in terms of our development objectives as hailed through the Common Minimum Programme. The major goal of the new- Foreign Trade Policy is to double India's share of global exports from the present 0.8 percent to 1.6 percent within the next five years. The context of the new Foreign Trade Policy as enunciated in the Policy document is that 'While incorporating the existing practice of enunciating an annual Exim Policy, it is necessary to go much beyond and take an integrated approach to the development requirements of India's foreign trade.' The opportunities emerged out of the new Foreign Trade Policy is of great relevance to States like Kerala; which are traditional export destinations.

#### Part-I

#### New Foreign Trade Policy

##### 1.1 Policy Objective

By treating trade as an engine of growth (Theory of Prof. Ragner Nurkse) and a means of national development the primary purpose of foreign trade is not merely earning of foreign exchange, but the stimulation of greater economic activity. The Foreign Trade Policy is rooted in the following two major objectives

1. To double the percentage share of global merchandise trade within the next five years, and
2. To act as an effective instrument of economic growth by giving a thrust to employment generation

##### 1.2 Policy Strategy

The objectives of doubling foreign trade and to accelerate economic growth through employment generation are proposed to be achieved by adopting, among others, the following strategy.

1. Unshackling of controls and creating an atmosphere of trust and transparency to unleash the innate entrepreneurship of our businessmen, industrialists and traders.
2. Simplifying procedures and bringing down transaction costs.
3. Neutralizing incidence of all levies and duties on inputs used in export products, based on the fundamental principle that duties and levies should not be exported.
4. Facilitating the development of the country as a global hub for manufacturing, trading and services.
5. Identifying and nurturing special focus areas which would generate additional employment opportunities, particularly in semi-urban and rural areas, and developing a series of 'initiatives' for each of these.

6. Facilitating technological and infrastructural upgradation of all the sectors of the economy, especially through impoli of capital goods and equipment, thereby increasing value addition and productivity, while attaining internationally accepted standards of quality.
7. A voiding inverted duty structures and ensuring that our domestic exports are not disadvantaged in the Free Trade Agreement/ Regional Trade Agreements/ Preferential Trade Agreements that we enter into in order to enhance our exports.
8. Upgrading the infrastructural network, both physical and virtual, related to the entire foreign trade chain, to international standards.
9. Revitalising the Board of Trade by redefining its role, giving it due recognition and inducting experts on Trade Policy.
10. Activating the Embassies as key players in the Country's export strategy and linking commercial wings abroad through electronic platform for real trade intelligence an enquiry dissemination.

### 1.3 Special Focus Initiatives

To double the share of global trade within 5 years and expanding employment opportunities, certain special focus initiatives have been identified in the following sectors.

#### 1.3.1 Agriculture:

- a. A new scheme called the Vishesh Krishi Upaj Yojana (Special Agricultural Produce Scheme) for promoting the export of fruits, vegetables, flowers, minor forest produce, and their value added products has been introduced.
- b. Funds shall be earmarked under.. Assistance to States for Infrastructure. Development of Exports (ASIDE) for development of Agri Export Zones (AEZ).
- c. Import of capital goods shall be permitted duty free under the Export Promotion Capital Goods (EPCG) Scheme.
- d. Units in AEZ shall be exempt from Bank Guarantee under the EPCG Scheme. Capital goods imported under EPCG Scheme will be permitted to be installed anywhere in the AEZ.
- f. Import of restricted items such as panels permitted under the various export promotion schemes and import of inputs such as pesticides permitted under the Advance License for agro-exports.
- g. New towns of export excellence with a threshold limit of Rs.250 Crores will be notified.

#### 1.3.2 Handloom:

- a. Specific funds would be earmarked under Market Access Initiative (MAI)/ Marketing Development Assistance (MDA) Scheme for promoting handloom exports.
- b. Duty free import entitlement of specified trimmings and embellishments shall be 5 percent of Freight on Board value (FOB value) of exports during the previous financial year and that of hand knotted carpet samples 1 percent of FOB value.
- b. Duty free import of old pieces of hand knotted carpets on consignment basis permitted
- c. for re-export after repair.
- d. New towns of export excellence with a threshold limit of Rs.250 Crores will be notified.

**1.3.3 Handicrafts:**

- a. New Handicrafts SEZs will be established which would procure products from the cottage sector and do the finishing for exports.
- b. Duty free import entitlement of trimmings and embellishments will be 5 percent of the FOB value of exports during the previous financial year. The entitlement is broad banded and shall extend also to merchant exporters tied up with supporting manufacturers.
- c. The Handicraft Export Promotion Council are authorised to import trimmings, embellishments and consumables on behalf of those exporters for whom direct importing may not be viable.
- d. Specific funds would be earmarked under MAI and MDA Schemes for promoting handicraft exports.
- e. Counter-Vailing Duty (CVD) is exempted on duty free import of trimmings, embellishments and consumables.
- f. New towns' of export excellence with a reduced threshold limit of Rs.250 Crores will be notified.

**1.3.4 Gems and Jewellery**

- a. Import of gold of 18 carat and above will be allowed under the replenishment scheme.
- b. Duty free import entitlement of consumables for metals other than gold and platinum will be 2 percent of Freight on Board value (FOB) value of exports during the previous financial year.
- c. Duty free import entitlement of commercial samples will be Rs. 1 lakh.
- d. Duty free re-import entitlement for rejected jewellery will be 2 percent of the FOB value of exports.
- e. Cutting and polishing of gems and jewellery treated as manufacturing for the purpose of exemption under section 10A of the Income Tax Act.

**1.3.5 Leather and Foot Wear**

- a. Duty free import entitlement of specified items- 5 percent of FOB value of exports during the preceding financial year.
- b. Duty free entitlement for the import of trimmings, embellishments and footwear components for footwear (leather as well as synthetic), gloves, travel bags and hand bags will be 3 percent of FOB value of exports of the previous financial year. The entitlement also covers packing material, such as printed and nonprinted boxes, small cartons made of wood, tin or plastic materials for packing footwear.
- c. Machinery and equipment for Effluent Treatment Plants exempted from basic customs duty.
- d. Re-export of unsuitable imported materials such as raw hides and skins and wet blue leathers permitted.

**1.4 Board of Trade**

The Board of Trade will be revamped and given a clear and dynamic role in advising Government on relevant issues connected with the Foreign Trade Policy. There would be a process of continuous interaction between the Board of Trade and Government

in order to achieve the desired objective of boosting the exports. The Board would advise the Government on Policy measures for preparation and implementation of both short and long-term plans for increasing exports in the light of emerging scenario. It also review the export performance of various sectors, policy instruments and examine the institutional framework for exports and imports.

## **Part-II**

### **Promotional Measures under the New Foreign Trade Policy**

#### **2.1 Promotional Measures**

##### **2.1.1 Assistance to States for Infrastructure Development of Exports (ASIDE)**

The Department of Commerce has formulated the Scheme to encourage the State Governments to participate in promoting exports. Suitable provision has been made in the Annual Plan of the Department of Commerce for allocation of funds to the States on the twin criteria of gross exports and the rate of growth of exports.

The States could utilise the amount for developing infrastructure such as roads connecting production centres with the ports, setting up of Inland Container Depots and Container Freight Stations, creation of new State level export promotion industrial parks/ zones', augmenting common facilities in the existing zones, equity participation in infrastructure projects, development of minor ports and jetties, assistance in setting up of common effluent treatment facilities, stabilizing power supply and any other activity as may be notified by Department of Commerce from time to time.

##### **2.1.2 Market Access Initiative (MAI):**

This scheme is intended to provide financial assistance for medium term export promotion efforts with a sharp-focus on a country and product. The financial assistance is available for Export Promotion Councils, Industry and Trade Associations, Agencies of State Governments, Indian commercial Mission abroad and other eligible entities as may be notified from time to time.

A whole range of activities are funded under the MAI scheme. It include market studies, setting up of show rooms/ warehouse, sales promotion campaigns, international departmental stores, publicity campaigns, participation in international trade fares, brand promotion, registration charges for pharmaceuticals, and testing charges for engineering products etc. Each of these export promotion activities can receive financial assistance from the government ranging from 25 percent to 100 percent of the total cost depending upon the activity and the implementing agency.

##### **2.1.3 Marketing Development Assistance (MDA):**

It is intended to provide financial assistance for a range of export promotion activities implemented by export promotion councils, industry and trade associations on a regular basis every year. As per the revised MD A guidelines with effect from 1 st April 2004 assistance under MDA is available for exporters with annual export turnover upto Rs.5 Crores. These include participation in Trade Fairs and Buyer Seller meets abroad or in India, export promotion seminars, etc.

#### **2.1.4 Towns of Export excellence:**

A number of towns in specific geographical locations have emerged as dynamic industrial clusters contributing to country's exports. This scheme is formulated to grant recognition to these industrial clusters with a view to maximising their potential and enabling them to move higher in the value chain and tap new markets. Selected towns producing goods of Rs.1000 Crore or more will be notified as Towns of Export Excellence on the basis of potential for growth in exports. However, for the Towns of Export excellence in the Handloom, Handicraft, Agriculture' and Fishery sector, the threshold limit would be Rs.250 Crores.

Common service providers in this area shall be entitled for the facility of the Export Promotion Capital Goods Scheme (EPCG). The recognised associations of units will be able to access funds under the Market Access Initiative (MAI) Scheme for creating focused technological services. Further such areas will receive priority for rectifying critical gaps from the ASIDE Scheme.

#### **2.1.5 Star Export houses:**

Merchant as well as Manufacturer exporters, Service Providers, Export Oriented Units (EOU) and Units located in Special Economic Zones (SEZs), Agri-Export Zone (AEZs), Electronic Hardware Technology Parks (EHTPs), Software Technology Parks (STPs) and Bio-Technology Parks (BTPs) are eligible for applying for status as Star Export Houses. They are categorized into five groups depending upon the export performance (Category I- Rs.15 Crores, Category II- Rs.100 Crores, Category III- Rs.500 Crores, Category IV - Rs.1500 Crores, and Category V - Rs.5000 Crores).

The Star Export Houses are eligible for the following facilities.

- a. Licence/ certificate/ permissions and customs clearances for both imports and exports on self-declaration basis.
- b. Fixation of input-output norms on priority within 60 days.
- c. Exemption from compulsory negotiation of documents through Banks, however, the remittance would continue to be received through banking channels.
- d. In the EEFC account 100 percent retention of foreign exchange.
- e. Enhancement of normal repatriation period from 180 days to 360 days.

#### **2.1.6 Service Exports**

Services include all the 161 tradable services covered under the General Agreement on Trade in Services (GATS), where payment for such services is received in free foreign exchange. All provisions of the Foreign Trade Policy are apply mutatis mutandi to export of services as they apply to goods, unless otherwise specified. Service exporters are required to register with the Federation of Indian Exporters Organisation; however, software exporters are register with the Electronic and Software Export Promotion Council It is proposed to setup an exclusive Export Promotion Council for Services to give proper guidance and encouragement to the service sector.

The Government will promote the establishment of Common Facility Centres for use by home-based service providers, particularly in areas likt: Engineering and Architectural design, Multi-media operations, software developers etc, in State and



District-level towns, to draw in a vast multitude of home-based professionals into the services export arena.

### **2.1.7 Served from India Scheme**

The objective of the Scheme is to accelerate the growth in export of services so as to create a powerful and unique 'Served from India' brand, instantly recognised and respected the World over. All service providers who have a total foreign exchange earning of at least Rs.10 lakhs in the preceding or current financial year are eligible to quantify for a duty credit entitlement. For individual service providers the total foreign exchange earned criteria would be Rs.5 lakhs in the preceding financial year. All service providers other than hotels and restaurants are entitled to duty credit equivalent to 10 percent of the foreign exchange earned by them in the preceding financial year. Duty credit entitlement may be used for import of any capital goods including spares, office equipment, professional equipment, office furniture and consumables.

Hotels and restaurants of one star and above (including managed hotels and heritage hotels) approved by the Department of Tourism and other Service providers in the tourism sector registered with the Department of Tourism are entitled to duty credit equivalent to 20 percent of the foreign exchange earned in the preceding financial year (Stand alone restaurants are eligible for 20 %).

In order to enable Healthcare and Educational Institutions to have world-class state-of-the-art infrastructure, service providers are entitled to duty credit equivalent to 10 percent of the foreign exchange earnings. The foreign exchange turnover for Healthcare Institutions include amounts earned through medical treatment, surgery, testing, consultancy and healthcare provided by the institution. For educational institutions it include amounts earned through the courses and consultancy provided by the institution.

### **2.1.8 Target Plus Scheme:**

The scheme is intended to accelerate growth in exports by rewarding Star Export Houses who have achieved a quantum growth in exports. Highs performing Star Export Houses are entitled for duty credit based on incremental exports substantially higher than the general annual export target fixed. All Star Export Houses which have achieved a minimum export turnover in free foreign exchange of Rs.10 Crores in the previous licensing year are eligible for consideration under the Target Plus Scheme. However, service exports and exports turnover of units operating under Special Economic Zones (SEZ)/ Export Oriented Units (EOU)/ Electronic and Hardware Technology Parks (EHTP)/ Software Technology Parks (STP)/ Bio- Technology Parks (BTP) Schemes or products manufactured are not taken account for calculation of export performance or for computation of entitlement under the scheme.

### **2.1.9 Vislesht Kri~lti Upaj Yojall (Special Agricultural Produce scheme):**

The objective of the Scheme is to promote exports of fruits, vegetables, flowers, minor forest produce, and their value-added products, by incentivising exporters of such products. Exporters of such products are entitled for duty credit scrip equivalent to 5 percent of the FOB value of exports for each licensing year commencing from 1<sup>st</sup> April 2004. The scrip and the items imported against it would be freely transferable. The duty credit may be used for import of inputs or goods including capital goods as may be specified, provided the same is freely importable under IIC (HS).

### **2.1.10 Test Houses:**

The Central Government will assist in the modernisation and upgradation of test houses and laboratories in order to bring them at par with international standards.

### **2.2 Export Oriented Units (EOU)/ Electronic and Hardware Technology Parks (EHTP)/ Software Technology Parks (STP)/ Bio-Technology Parks (BTP)**

Projects having a minimum investment of Rs.1 Crore in plant and machinery are considered for establishment as EODs under the Scheme. However, it is not applicable to existing units and units in EHTP/ STP/ BTP, handicrafts, agriculture, floriculture, aquaculture, animal husbandry, information technology, services, brass hardware, handmade jewellery, etc. Major entitlements include the following.

1. Exemption from payment of income tax as per the provisions of section 10A and 10B of Income Tax Act.
2. Exemption from industrial licensing for manufacture of items reserved for SSI sector.
3. Offshore Banking Unit can extend credit on the same terms and condition as extended to units in SEZ.
4. Export proceeds will be realised within a year.
5. Will be allowed to retain 100 percent of its export earnings in the EEFC account.
6. The units will not be required to furnish bank guarantee at the time of import or going for job work in Domestic Traffic Area (DT A).
7. 100 percent FDI investment permitted through Automatic Route similar to SEZ units.

### **2.3 Special Economic Zones (SEZ)**

SEZ is a specifically delineated duty free enclave and are deemed to be foreign territory for the purposes of trade operations and duties and tariffs. SEZ are growth engines that can boost manufacturing, augment exports and generate employment. The private sector has been actively associated with the development of SEZs. Goods and services going into the SEZ area from DT A are treated as exports and goods coming from the SEZ area into DT A are imports. SEZ units may be set up for manufacture of goods and rendering of services.

### **2.4 Free Trade and Warehousing Zones (FTWZ)**

The FTWZ are special category of SEZs with a focus on trading and warehousing. The objective is to create trade related infrastructure to facilitate the import and export of goods and services with freedom to carry out trade transactions in free currency. The Scheme envisages creation of world-class infrastructure for warehousing of various products, state-of-the-art equipment, transportation and handling facilities, commercial office space, water, power, communications and connectivity, with one-step clearance of import and export formality, to support the integrated Zones as 'international trading

hubs.' These zones would be established in areas proximate to seaports, airports or dry ports so as to offer easy access by rail and road. The units are entitled income tax exemption as per 80 IA of the Income Tax Act, exemption from service tax, free foreign exchange currency transaction, and other benefits of SEZs.

### **Part-III**

#### **Kerala's Foreign Trade Potential**

From the very early days itself foreign trade contributed an important element of economic activity in Kerala. Kerala's export sector was a major contributor of foreign exchange earnings in the country even before the advent of globalisation. Major exports from the State include coffee, tea, cashew kernels, coir products, spices and marine products. Kerala contributed 3 percent of the Indian exports. Kerala's exports amounted to Rs.7679 Crores during 2002-03. The export of cashew kernels through the Kochi port during 2002-03 was valued at Rs.1585.47 Crores, pepper Rs.633.69 Crores, sea-foods Rs.623.76 Crores, coir products Rs.428.92 Crores, coffee Rs.387.37 Crores, tea Rs.325.23 Crores, and others. In value terms Kerala contributed 15 percent of the marine exports from the country.

The relevance of foreign trade in goods and services in triggering economic growth has been well accomplished under the Foreign Trade Policy (2004-2009) announcement of the Union Government. To materialise the opportunities emerged under the Policy announcements, urgent initiatives are needed at the State level.

The opening up of the markets under the WTO era have given opportunities for the domestic industries and agro-sector along with the service sector to effectively integrate with the global markets. Facilitation of foreign trade to generate economic growth needs special attention in the following areas.

1. To boost agriculture exports, facilitation of Market Information Systems is necessary to educate farmers on the emerging markets and to propagate the best agriculture practices and agro-processing with special emphasis on organic farming.
2. To maintain international quality standards manufacturing units are to be encouraged to acquire ISO-certification.
3. To protect our agro-exports from sanitary and phyto-sanitary measures of WTO Rules, encourage Commodity Boards and other farmers' organisations to set up common facility centres, R&D Labs and quality testing centers for maintaining quality standards; sterilisation and cold storage plants are also needed for export of toxin and microbiological contaminant free exports.
4. Setting up of common-effluent treatment plants for coir manufacturing clusters to boost the exports of coir and coir products.
5. Promotion of sea foods export need setting up of hygienic fishing harbors and landing centres and setting up of desalination plants for fresh water supply to primary units.
6. Handloom sector needs common infrastructure facilities for manufacturing and exports.
7. Skill development training and common facility centres are needed to promote the export of handicrafts.
8. Promote eco-tourism and health tourism to tap the potentials of Ayurveda and our natural beauty.

9. Tapping the potential of IT and related exports need improved infrastructure backups along with HRD activities.
10. Promotion of Agro-Export Zones and Export Oriented Units.
- II . Development of minor ports.
12. Initiate steps to start inland container depots.
13. Improved banking facilities for speedy issue of bank realisation certificate.
14. Infrastructure development including power.
15. Co-ordinate efforts of the State Level Export Promotion Committee and the Departments are also necessary for the promotion of foreign trade.
16. Ensure participation of NRKs.
17. Regular monitoring and appraisal to protect domestic sector from the infirmities arising out of the FT As (including Sri Lanka and Thailand).

### **Part-IV**

### **Opportunities Emerged under the Foreign Trade Policy**

As enunciated in the Policy document the major objective of the Foreign Trade Policy is to act as an effective instrument of economic growth by giving thrust on employment generation. This is one area that the State is more interested through the promotion of commodity and service exports. The major Policy announcements related with Kerala included the formation of Town of Export Excellence for handloom at Kannur, Marine Export Zone at Aroor in Alappuzha and Bio Technology Park at Kochi. These potential sectors having locational advantages are expected to direct future exports from the State. The Cochin Special Economic Zone is already functional and the Vallarpadam/ Puthvypeen Special Economic Zone is under establishment. These are all new initiatives in the foreign trade front with which the State Government has to strengthen the linkages to leverage the externalities for the over all development of the State.

Other than these the trade promotional programmes unraveled through the Foreign Trade Policy also need special attention, in particular in the following areas.

#### **4.1 Vishesh Krishi Upaj Yojana (Special Agricultural Produce Scheme):**

***Objective:***

Promotion of exports of fruits, vegetables, flowers, minor forest produce, and their value added products.

***Strategy:***

Incentivising exporters of these products.

***Entitlements:***

1. Duty credit scrip equivalent to 5 percent of the Freight on Board value (FOB value) of exports for each licensing year commencing from 1<sup>st</sup> April 2004.
2. The scrip and the items imported against it would be freely transferable.
3. Duty credit may be used for import of inputs or goods including capital goods.

**Required Initiatives at the State level**

1. Promotion of fruits and vegetable cultivation, floriculture, etc, and facilitating agro processing.
2. Proper Market Information System to educate farmers on the emerging market trends and diversify the KISAN call centre situated at Kisan Operational Centre, at Technopark.
3. Infrastructure development through the ASIDE.
4. Machinery, implements and other capital goods needed for agro-processing and storage can be imported duty free through the EPCG Scheme.
5. Facilitation of quality literacy among the farmers.
6. Setting up common facility centres, R&D Labs and quality testing centers for maintaining quality standards; sterilisation and cold storage plants are also needed for export of toxin and microbiological contaminant free exports.
7. Promotion of export of organic grown fruits and vegetables.
8. Reorienting the Vegetable and Fruit Promotion Council's programme with an eye on the export market in particular through the SEZ at Kochi and through major airports.
9. Formation of a Sub-Committee under the State Level Export Promotion Committee by co-ordinating the Agriculture Department, Commodity Boards, Export Promotion Councils, and all the stakeholders including the leading exporters.
10. Ensure integrating the panchayat level efforts in the horticulture development with the export promotion packages.
11. As proposed in the State's draft Export Policy speed up the efforts in the development of Agro-Export Zones at Thrissur, Ernakulam, Kottayam, Alappuzha, Pathanathitta, Kollam, Thiruvananthapuram, Idukki and Palakkad.
12. Development of the proposed Bio- Technology Park at Kochi.
13. Persuade the Central Government to institute a 'Contingency Fund' to protect agro exports from the contingencies of global price fluctuations.

**4.2 Assistance to State's for Infrastructure Development of Exports (ASIDE):****Objective:**

To encourage the State Governments to participate in promoting exports.

**Strategy:**

Suitable provision has been made in the Annual Plan of the Department of Commerce for allocation of funds to the States on the twin criteria of gross exports and the rate of growth of exports.

**Entitlements:**

1. Developing infrastructure, such as roads connecting production centres with the ports.
2. Setting up of Inland Container Depots and Container Freight Stations.
3. Creation of new State level Export Promotion Industrial Parks/ Zones.
4. Augmenting common facilities in the existing zones.
5. Equity participation in infrastructure projects.
6. Development of minor ports and jetties.
7. Assistance in setting up of common effluent treatment facilities.
8. Stabilizing power supply and any other activity as may be notified by the Department of Commerce from time to time.

9. Tapping the potential of IT and related exports need improved infrastructure backups along with HRD activities.
10. Promotion of Agro-Export Zones and Export Oriented Units.
11. Development of minor ports.
12. Initiate steps to start inland container depots.
13. Improved banking facilities for speedy issue of bank realisation certificate.
14. Infrastructure development including power.
15. Co-ordinate efforts of the State Level Export Promotion Committee and the Departments are also necessary for the promotion of foreign trade.
16. Ensure participation of NRKs.
17. Regular monitoring and appraisal to protect domestic sector from the infirmities arising out of the FT As (including Sri Lanka and Thailand).

#### **Part-IV**

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2. The scrip and the items imported against it would be freely transferable.
3. Duty credit may be used for import of inputs or goods including capital goods.

**Required Initiatives at the State level**

1. Promotion of fruits and vegetable cultivation, floriculture, etc, and facilitating agro processing.
2. Proper Market Information System to educate farmers on the emerging market trends and diversify the KISAN call centre situated at Kisan Operational Centre, at Technopark.
3. Infrastructure development through the ASIDE.
4. Machinery, implements and other capital goods needed for agro-processing and storage can be imported duty free through the EPCG Scheme.
5. Facilitation of quality literacy among the farmers.
6. Setting up common facility centres, R&D Labs and quality testing centers for maintaining quality standards; sterilisation and cold storage plants are also needed for export of toxin and microbiological contaminant free exports.
7. Promotion of export of organic grown fruits and vegetables.
8. Reorienting the Vegetable and Fruit Promotion Council's programme with an eye on the export market in particular through the SEZ at Kochi and through major airports.
9. Formation of a Sub-Committee under the State Level Export Promotion Committee by co-ordinating the Agriculture Department, Commodity Boards, Export Promotion Councils, and all the stakeholders including the leading exporters.
10. Ensure integrating the panchayat level efforts in the horticulture development with the export promotion packages.
11. As proposed in the State's draft Export Policy speed up the efforts in the development of Agro-Export Zones at Thrissur, Ernakulam, Kottayam, Alappuzha, Pathanathitta, Kollam, Thiruvananthapuram, Idukki and Palakkad.
12. Development of the proposed Bio- Technology Park at Kochi.
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To encourage the State Governments to participate in promoting exports.

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**Entitlements:**

1. Developing infrastructure, such as roads connecting production centres with the ports.
2. Setting up of Inland Container Depots and Container Freight Stations.
3. Creation of new State level Export Promotion Industrial Parks/ Zones.
4. Augmenting common facilities in the existing zones.
5. Equity participation in infrastructure projects.
6. Development of minor ports and jetties.
7. Assistance in setting up of common effluent treatment facilities.
8. Stabilizing power supply and any other activity as may be notified by the Department of Commerce from time to time.

***Required Initiatives at the State level:***

1. Infrastructure development connecting major production centres and all the 14 ports including the major port of Cochin and intermediate ports (Neendakara, Alappuzha and Beypore).
2. As emphasized in the State's draft Export Policy priority should be given to, the development of five minor ports at Vihinjam, Azhikal, Beypore, Alappuha and Thankasseri, which enhance movement of exports to major ports.
3. Connectivity improvements to the major airports such as Thiruvananthapuram, Kochi and Kohikode.
4. Detailed plans are to be prepared by identifying major production centres for exports and the nearest ports.
5. As proposed in the State's draft Export Policy initiate steps to start inland container depots at Kollam and Cherthala with the assistance of the Commerce Ministry under the provisions of the ASIDE Scheme.
6. Setting up of common-effluent treatment plants for coir manufacturing clusters in the traditional coir producing areas.
7. Creation of new Export promotion industrial parks for traditional and farm products.
8. Special emphasis to the IT sector by improving the road infrastructure to the existing IT Parks at Thiruvananthapuram and Kochi.
9. Identify the location specific potential exports and development of Export Promotion Zones and Parks.
10. Detailed projects are to be prepared to develop facilities in the SEZ at Kochi and others.
11. Promoting private participation in infrastructure development

**4.3 Market Access Initiative (MAI):**

***Objective:***

To provide financial assistance for medium term export promotion efforts with a sharp focus on a country and product.

***Strategy:***

Financial assistance in the range of 25 to 100 percent of the total cost (depending up on the activity and implementing agency) available for Export Promotion Councils, Industry and Trade Associations, Agencies of State Governments, etc

***Entitlements:***

1. Support for market studies.
2. Setting up of show rooms and warehouses.
3. Sales promotion and publicity campaigns.
4. Setting up of International departmental stores.
5. Participation in International Trade Fares.
6. Brand promotion.



7. Registration charges for pharmaceuticals.
8. Testing charges for engineering products.

***Required Initiatives at the State level:***

1. Export promotion Councils and Industry and Trade Associations to approach the Commerce Ministry with detailed projects for the support of any of the entitlements mentioned above.
2. Government departments and agencies to set up Task Forces to avail necessary support from the MAI Scheme for the promotion of exports.
3. The State Level Export Promotion Council to co-ordinate the efforts of the various agencies and stakeholders.
4. As proposed in the State's draft Export Policy initiate action for setting up of permanent exhibition centres for display and promotion of exportables from the State.
5. IT and tourism sector to take special advantage of the MAI Scheme.

**3.4 Marketing Development Assistance (MDA):**

***Objective:***

To facilitate export promotion activities of Export Promotion Councils, and Industry/ Trade Associations.

***Strategy:***

As per the revised MDA guidelines (1 st April 2004 onwards) financial assistance available for exporters with annual export turnover up to Rs.5 Crores.

***Entitlements:***

1. Support for Participation in Trade Fairs both in India and abroad.
2. Participation in Buyer- seller meets.
3. Participation in Export promotion seminars

***Required Initiatives at the State level:***

All the initiatives mentioned in the MAI on a regular basis every year are applicable here.

**3.5 Towns of Export Excellence (TEE):**

***Objective:***

To grant recognition to those industrial clusters that have emerged as dynamic industrial clusters contributing to country's exports, with a view to maximising their potential and enabling them to move higher in the value chain and tap new markets.

***Strategy:***

Selected towns producing goods of Rs.1 000 Crores or more will be notified as Towns of Exports Excellence on the basis potential for growth in exports. However, for the Town of Export Excellence in the handloom, handicraft, agriculture and fishery sector, the threshold limit would be Rs.250 Crores.

**Entitlements:**

1. Entitled for the facility of Export Promotion Capital Goods Scheme (EPCG).
2. Recognised associations of units will be able to access the funds under the MAI Scheme for creating focussed technological services.
3. Receive priority for rectifying critical gaps from the ASIDE Scheme.

**Required Initiatives at the State level:**

1. Development of location specific traditional industries and formation of TEE at the district level.
2. Initiate follow up measures to develop Town of Export Excellence for handloom at Kannur, which the present Foreign Trade Policy has awarded.
3. As proposed in the State's draft Export Policy measures should be taken to promote Ayurveda, tourism, IT and traditional industries.

**4.6 Service Exports:**

**Objective:**

To promote service exports from the country that includes all the 161 tradable services covered under the GA TS. *Strategy:*

All provisions of the Foreign Trade Policy relating to goods are applicable to the services.

**Entitlements:**

1. All entitlements relating to the goods in the Foreign Trade Policy are applicable to the services.
2. Common facility centres for use by home-based service providers, particularly in areas like engineering and architectural design, multi-media operations, software developers, etc in State and District-level towns.

**Required Initiatives at the State level:**

1. In order to give proper guidance and encouragement to the service sector, just like national level Services Export Promotion Council, a State-level Services Export Promotion Committee is needed under the State-Level Export Promotion Council.
2. To improve the connectivity, power, road infrastructure, etc to the existing IT parks at Thiruvananthapuram and Kochi.
3. As referred in the State's draft Export Policy continue existing incentives and support joint initiatives for Quality Certification.
4. To promote HRD activities by setting up internationally competitive educational and research institutions to attract IT technocrats.
5. Measures to tap the opportunities emerged out of the ASIDE Scheme.

**4.7 Served from India Scheme:**

**Objective:**

To accelerate the growth of services exports.

**Strategy:**

To accelerate the growth in export of services so as to create a powerful and unique 'Served from India' brand, instantly recognised and respected the World over.

**Entitlements:**

1. All service providers, other than hotels and restaurants are entitled to duty credit equivalent to 10 percent of the foreign exchange earned in the preceding financial year.
2. Duty credit entitled may be used for import of any capital good~ including spares, office equipment, professional equipment, office furniture and consumables.
3. Hotels of one-star and above approved by the Department of Tourism and other service providers in the tourism sector registered with the Department of Tourism are entitled to duty credit equivalent to 5 percent of the foreign exchange earned.
4. Stand-alone restaurants are entitled to duty credit equivalent to 20 percent of the foreign exchange earned.
5. In order to enable health care and educational institutions to have world class state-of-the-art infrastructure, service providers in these sectors are entitled to duty credit equivalent to 10 percent of the foreign exchange earned.

**Required Initiatives at the State level:**

1. Attention to initiatives mentioned in the section on 'Services sector' above
2. Initiatives to promote tourism
3. Special focus on health tourism by leveraging the potentials of Ayurveda
4. IT initiatives

**4.8 Star Export Houses:**

**Objectives:**

To accelerate exports from the SEZs, Technology Parks and Export Zones.

**Strategy:**

Merchant as well as manufacturer exporters, Service Providers, Export Oriented Units located in SEZ and Parks are eligible for the status of Star Export Houses

**Entitlements:**

1. Licence/ certificate/ permissions and customs clearances for both imports and exports on self-declaration basis.
2. Fixation of input-output norms on priority within 60 days.
3. Exemption from compulsory negotiation of documents through Banks, however, the remittance would continue to be received through banking channels.
4. In the EEFC account 100 percent retention of foreign exchange.
5. Enhancement of normal repatriation period from 180 days to 360 days.

**Required Initiatives at the State level:**

1. Special packages for Cochin Special Economic Zone.
2. Action oriented programmes for the proposed Bio- Technology Park at Kochi.
3. Action oriented programmes for the Apparel Park at Kannur,
4. Action oriented programmes for the Marine Export Zone at Aroor in Alappuzha

5. Constitution of a Task Force of the authorities of SEZs, and all the stakeholders including industry and export organisations and Chamber of Commerce.
6. Special packages for cottage and SSIs, and units registered with KYIC/ KYIB.
7. Special packages for export of agro-products and services exports.

#### **4.9 Target Plus Scheme:**

**Objective:**

To promote exports of the Star Export Houses

**Strategy:**

To accelerate growth in exports by rewarding Star Export Houses who have achieved a quantum growth in exports.

**Entitlements:**

1. Entitled for duty credit based on incremental exports substantially higher than the general annual export targets fixed.
2. Exporters have the option to apply for benefit either under the Target Plus Scheme or under the Vishesh Krishi Upaj Yojana, but not both in respect of the same exported products.

**Required Initiatives at the State level:**

Initiatives mentioned in the 'Star Export Houses' above

#### **4.10 Test Houses:**

**Objective:**

To ensure quality of commodities exported

**Strategy:**

To modernise the standard of Test centres and laboratories

**Entitlements:**

Central Government will assist in the modernisation and upgradation of test houses and laboratories to bring them par with the international standards *Required Initiatives at the State level:*

1. Upgradation of the facilities in the existing quality testing centres and laboratories
  2. Setting up of new laboratories and testing centres.
  3. Export promotion Councils and Commodity Boards to prepare detailed project Reports.
- #### **4.11 Export Oriented Units (EOU)/ Electronic and Hardware Technology Parks (EHTP)/ Software Technology Parks (STP)/ Bio-Technology Parks (BTP)**

**Objective:**

To promote export of high value added products

**Strategy**

Projects having a minimum investment of Rs.1 Crore in plant and machinery are considered for establishment as EOUs under the Scheme. However, it is not applicable to existing units and units in EHTP/ STP/ BTP, handicrafts, agriculture, floriculture, aquaculture, animal husbandry, information technology, services, brass hardware, handmade jewellery, etc.

**Entitlement**

1. Exemption from payment of income tax as per the provisions of section 10A and 10B of Income Tax Act.
2. Exemption from industrial licensing for manufacture of items reserved for SSI sector.
3. Offshore Banking Unit can extend credit on the same terms and condition as extended to units in SEZ.
4. Export proceeds will be realised within a year.
5. Will be allowed to retain 100 percent of its export earnings in the EEFC account.
6. The units will not be required to furnish bank guarantee at the time of import or going for job work in Domestic Traffic Area (DT A).
7. 100 percent FDI investment permitted through Automatic Route similar to SEZ units.

**Required Initiatives at the State level:**

1. Improve the connectivity and infrastructure facilities of the IT Parks at Thiruvananthapuram and Kochi
2. Promotion of HRD activities for the development of Technology Parks.
3. Measures to use biotechnology to enhance the value of Kerala's export-oriented resources such as spices, seafood, plantation crops, etc.
4. Development of bio-technology Park at Kochi.
5. All benefits enjoyed by the SEZ are applicable
6. To use bio-technology to promote traditional tribal and ethnic knowledge, especially in medicine, by scientific validation and facilitating protection of patent rights.
7. As referred in the State's draft Export Policy initiate steps to set up jewellery parks at Thrissur and Kozhikode.

**4.12 Special Economic Zones (SEZ)****Objective:**

SEZ are growth engines that can boost manufacturing, augment exports and generate employment

**Strategy:**

SEZ is a specifically delineated duty free enclave and are deemed to be foreign territory for the purposes of trade operations and duties and tariffs.

**Entitlements:**

1. Goods and services going into the SEZ area from DT A are treated as exports and goods coming from the SEZ area into DT A are imports.

2. SEZ units may be set up for manufacture of goods and rendering of services.
3. Exemption from Central Sales Tax.
4. Exemption from payment of Central Excise Duty
5. Other entitlements indicated in the Appendix 1411 of the Policy Document.

***Required Initiatives at the State level:***

1. Refer all the initiatives mentioned above.
2. Development of Cochin Special economic Zone.
3. Development of similar SEZs in other major stations
4. As mentioned in the State's draft Export policy development of Agro-export Zones in Thrissur, Ernakulam, Kottayam, Alappuzha, Pathanathitta, Kollam, Thiruvananthapuram, Idukki and Palakkad.
5. Formation of a Co-ordination Committee under the State Export Promotion Council to monitor the progress of actions.
6. Ensure the participation of NRKs.

**4.13 Free Trade and Warehousing Zones (FTWZ)**

***Objective:***

To create trade related infrastructure to facilitate the import and export of goods and services with freedom to carry out trade transactions in free currency.

***Strategy:***

The FTWZ are special category of SEZs with a focus on trading and warehousing. These zones would be established in areas proximate to seaports, airports or dry ports so as to offer easy access by rail and road.

***Entitlements***

1. The Scheme envisages creation of world-class infrastructure for warehousing of various products, state-of-the-art equipment, transportation and handling facilities, commercial office space, water, power, communications and connectivity, with one-step clearance of import and export formality, to support the integrated Zones as international trading hubs.'
2. The units are entitled income tax exemption as per 80 IA of the Income Tax Act.
3. Exemption from service tax.
4. Free foreign exchange currency transaction.
5. Other benefits of SEZs.
6. FDI would be permitted up to 100 percent in the development and establishment of the zones and their infrastructural facilities

***Required Initiatives at the State level:***

1. All those mentioned in the SEZ above
2. Development of FTWZ at Kochi and other major stations nearest to ports, including airports.
3. Setting up of State-level Co-ordination committee.

4. Participation of NRKs and business organisations.

**Conclusion**

The opportunities emerged through the new Foreign Trade Policy are to be tapped at the earliest by giving priority to farm products, traditional exports, IT and tourism. At the same time the basic objective of the Policy of generating employment through improved exports are to be ensured. An integrated approach based on assessing the locational advantages need special emphasis. Promotion of cluster based industrial development are to be focused towards establishing Towns of Export Excellence in the future.

The magnitude and complexities of the WTO concerns are yet to be seized upon fully. The State has to prepare a blue print for the future to take advantage of the process of globalisation for which the domestic sectors and in particular the agriculture sector is capable of. The new Foreign Trade Policy has unraveled immense opportunities for the domestic sector to become more competitive to conquer the World markets. As stated in the draft Export Policy, to increase Kerala's share of Indian exports from the present 3 percent to 10 percent, concrete efforts are required.

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## Appendix 16.2

## Commodity-wise Export through Kochi Port, 2001-2002 to 2003-04 (Quantity in M.T)

Commodity	2001-02			2002-03			2003-04		
	Quantity	% to Total	Growth rate (%)	Quantity	% to Total	Growth rate (%)	Quantity	% to Total	Growth rate (%)
1	2	3	4	5	6	7	8	9	10
Tea	96155	4.9	1.4	103544	4.9	7.7	86794	3.4	(-)16.2
Cashew Kernels	66104	3.4	15.1	84764	4	28.2	88994	3.5	5.0
Sea Foods	111070	5.6	6.7	84216	4	-24.2	101517	4.0	20.5
Coir Products	60861	3.1	4.7	99319	4.7	63.2	113638	4.4	14.4
Spices	34031	1.7	4.4	46284	2.2	36	25419	1.0	(-)45.1
Coffee	146166	7.4	(-)13.7	115156	5.4	-21.2	119384	4.7	3.7
Miscellaneous	1453977	73.9	(-)7.2	1591876	74.9	9.5	2019910	79.0	26.9
<b>Total</b>	<b>1968364</b>	<b>100</b>	<b>(-)5.5</b>	<b>2125159</b>	<b>100</b>	<b>8</b>	<b>2555656</b>	<b>100</b>	<b>20.3</b>

Source:- Cochin Port Trust

## Appendix 16.3

## Commodity-wise Import through Kochi Port, 2001-02 to 2003-04 (Quantity in M.T)

Commodity	2001-02			2002-03			2003-04		
	Quantity	% to Total	Growth rate (%)	Quantity	% to Total	Growth rate (%)	Quantity	% to Total	Growth rate (%)
1	2	3	4	5	6	7	8	9	10
Fertilizers & Raw materials	645515	6.4	3.8	630778	5.79	-2.28	504264	4.58	20.06
Foodgrains	9218	0.1	40.93	0	0	-100	0	0.00	0.00
Iron, Steel & Machinery	144787	1.43	7.29	231033	2.12	59.6	61427	0.56	(-)73.41
Newsprint	36471	0.36	47.85	40682	0.37	11.6	67311	0.61	65.46
Cashewnut	217249	2.15	241.9	259736	2.38	19.6	309095	2.81	19.00
Miscellaneous	9037516	89.56	(-)11.4	9736627	89.34	7.74	10074562	91.45	3.47
<b>Total</b>	<b>10090756</b>	<b>100</b>	<b>(-)8.7</b>	<b>10898856</b>	<b>100</b>	<b>8.01</b>	<b>11016659</b>	<b>100</b>	<b>1.08</b>

Source: Cochin Port Trust



**Appendix 16.4**  
**Kerala's Share in the Export of Marine Products from India, 1990-91 to 2003-04**  
 (Qty. in Tonnes & Value in Rs. Crore)

Year	India		Kerala		Kerala's Share (%)	
	Quantity	Value	Quantity	Value	Quantity	Value
1	2	3	4	5	6	7
1990-91	139419	893.37	50997	313.79	36.58	35.12
1991-92	171820	1375.89	58743	444.47	34.19	32.3
1992-93	209025	1768.56	49094	414.25	23.49	23.42
1993-94	243960	2503.62	63848	622.12	26.17	24.85
1994-95	307337	3573.27	74653	817.09	24.29	22.85
1995-96	296277	3501.11	78895	856.9	26.63	24.48
1996-97	378199	4121.36	92288	936.22	24.4	22.72
1997-98	385818	4697.48	89366	948.02	23.16	20.18
1998-99	302934	4626.87	70641	816.55	23.32	17.65
1999-2000	343031	5116.67	92148	1146.96	26.86	22.42
2000-01	440473	6443.89	88852	1046.47	20.17	16.24
2001-02	424470	5957.05	72756	950.55	17.14	15.97
2002-03	467297	6881.31	81393	1045.82	17.42	15.2
2003-04	412017	6091.95	76627	1099.13	18.60	18.04

Source : Marine Products Export Development Author

**Appendix 16.5**  
**Market-wise Export of Marine Products from India, 2001-02 to 2003-04**  
 (Qty. in Tonnes & Value in Rs. Crore)

Sl.No.	Market	2001-02				2002-03				2003-04			
		Qty.	% to total	Value	% to total	Qty.	% to total	Value	% to total	Qty.	% to total	Value	% to total
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Japan	64905	15.29	1820.7	30.56	54916	11.75	1534.8	22.3	50020	12.14	1163.69	19.10
2	USA	49041	11.55	1421.4	23.86	61703	13.21	2051.1	29.81	53153	12.9	1682.06	27.61
3	European Union	82572	19.53	1145.5	19.31	94541	20.23	1388.5	20.18	96284	23.37	1470.99	24.15
4	China	134767	31.75	597.23	10.03	170811	36.55	762.48	11.08	123738	30.03	676.46	11.10
5	S.E. Asia	52424	12.35	538.75	9.04	44097	9.44	642.38	9.33	50670	12.30	545.77	8.96
6	Middle East	19159	4.51	181.06	3.04	19668	4.21	204.74	2.98	14711	3.57	201.52	3.31
7	Others	21602	5.02	252.45	4.16	21561	4.61	297.36	4.32	23441	5.69	351.46	5.77
	<b>TOTAL</b>	<b>424470</b>	<b>100</b>	<b>5957.1</b>	<b>100</b>	<b>467297</b>	<b>100</b>	<b>6881.3</b>	<b>100.00</b>	<b>412017</b>	<b>100.00</b>	<b>6091.95</b>	<b>100.00</b>

Source - Marine Products Export Development Authority

**Appendix 16.6**  
**Market-wise Export of Marine Products from Kerala, 2001-02 to 2003-04**  
 (Qty. in Tonnes & Value in Rs. Crore)

Sl.No.	Market	2001-02				2002-03				2003-04			
		Qty.	% to total	Value	% to total	Qty.	% to total	Value	% to total	Qty.	% to total	Value	% to total
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Japan	8939	12.29	178.2	18.75	5831	7.16	136.99	13.1	9008	11.76	206.58	18.79
2	USA	10435	14.34	166.3	17.5	10641	13.07	192.08	18.37	7709	10.06	142.50	12.96
3	European Union	32239	44.31	402.71	42.37	37853	46.51	505.62	48.35	38144	49.78	525.52	47.81
4	China & Hong Kong	5550	7.63	63.67	6.7	10848	13.33	74.67	7.14	5979	7.80	77.17	7.02
5	S.E. Asia	8774	12.06	61.78	6.5	7879	9.68	55.5	5.31	6045	7.89	48.94	4.45
6	Middle East	2190	3.01	27.03	2.84	2582	3.17	33.72	3.22	2657	3.47	36.55	3.33
7	Others	4629	6.36	50.86	5.36	5759	7.08	47.24	4.52	7085	9.25	61.87	5.63
	<b>TOTAL</b>	<b>72756</b>	<b>100</b>	<b>950.55</b>	<b>100.00</b>	<b>81393</b>	<b>100.00</b>	<b>1045.8</b>	<b>100.00</b>	<b>76627</b>	<b>100.00</b>	<b>1099.13</b>	<b>100.00</b>

Source - Marine Products Export Development Authority

## Appendix 16.7

## Item-wise Export of Marine Products from India, 2002-03 &amp; 2003-04

Item	% share to total	Quantity/Value	Quantity in MT, Value in Rs. Crore			
			2003-04	2002-03	Variation	%
Frozen Shrimp	31.50	Q	129768	134815	-5047	-3.74
	65.88	V	4013.07	4608.31	-595.24	-12.92
Frozen Fin Fish	33.50	Q	138023	196322	-58299	-29.70
	10.19	V	620.73	841.65	-220.92	-26.25
Frozen Cuttlefish	9.61	Q	39610	41381	1771	-4.28
	7.14	V	435.18	417.09	18.09	4.34
Frozen Squid	9.18	Q	37832	37838	-6	0.02
	6.12	V	372.92	384.37	-11.45	-2.98
Dried Items	3.05	Q	12574	8178	4396	53.75
	2.39	V	145.68	84.23	61.45	72.96
Live Items	0.57	Q	2341	2115	226	10.69
	0.84	V	51.10	53.66	-2.56	-4.77
Chilled Items	0.92	Q	3779	3350	429	12.81
	1.05	V	64.04	59.14	4.90	8.29
Others	11.67	Q	48090	43298	4792	11.07
	6.39	V	389.23	432.86	-43.63	-10.08
Total	100	Q	412017	467297	-55280	-11.83
	100	V	6091.95	6881.31	-789.36	-11.47

Q-Quantity, V-Value

Source: Marine Products Export Development Authority

**Appendix 16.8**  
**Item-wise Export of Marine Products from Kerala, 2001-02 to 2003-04**  
 (Qty. in M.T., Value in Rs. Crore)

Sl. No.	Item	2001-02			2002-03			2003-04					
		Quantity	Value	% to Total	Quantity	Value	% to Total	Quantity	Value	% to Total			
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Frozen Shrimp	28023	38.52	549.49	57.81	27496	33.78	543.19	51.94	29198	38.10	597.43	54.35
2	Frozen Fish	11351	15.60	57.32	6.03	18387	22.59	77.33	7.39	10543	13.76	49.56	4.51
3	Frozen Cuttle Fish	13819	18.99	153.21	16.12	16865	20.72	218.26	20.87	17657	23.04	240.65	21.89
4	Frozen Squid	12318	16.93	115.18	12.12	11903	14.62	138.11	13.21	10875	14.19	129.30	11.76
5	Dried Items	95	0.13	4.1	0.43	42	0.05	0.70	0.07	29	0.04	0.64	0.06
6	Live Items	272	0.37	12.32	1.30	156	0.19	12.14	1.16	278	0.36	12.82	1.17
7	Chilled Items	540	0.74	6.76	0.71	739	0.91	9.70	0.93	767	1.00	11.23	1.02
8	Others	6338	8.71	52.17	5.49	5805	7.13	46.39	4.44	7280	9.50	57.50	5.23
	<b>TOTAL</b>	<b>72756</b>	<b>100</b>	<b>950.55</b>	<b>100</b>	<b>81393</b>	<b>100</b>	<b>1045.82</b>	<b>100</b>	<b>76627</b>	<b>100</b>	<b>1099.13</b>	<b>100</b>

Source : Marine Products Export Development Authority

**Appendix 16.9**  
**Item-wise Exoort of Spices from India, 1999-00 to 2003-04**  
 (QTY in M.T.; Value in Rs. Lakhs)

Item	1999-2000		2000-01		2001-02		2002-03		2003-04	
	QTY	Value	QTY	VALUE	QTY.	VALUE	QTY.	VALUE	QTY.	VALUE
Pepper	42,824	88528.00	21,830	38081.57	22,877	20368.79	21,609	17887.98	16,700	14350.50
Cardamom (small)	676	3270.72	1,545	8468.02	1,031	6169.8	682	47.7.42	690	3301.00
Cardamom (large)	1,185	1762.24	1,506	2451.30	1,577	2391.66	1,450	2057.08	800	1107.00
Chilli	63,591	25471.55	62,448	22973.30	69,998	25244.02	81,022	31514.68	81,500	35511.25
Ginger	8,923	3253.55	6,288	2682.06	6,464	2311.47	8,461	2396.59	5,000	2340.50
Turmeric	37,776	12351.81	44,627	1157.62	37,778	9073.71	32,402	10337.99	34,500	12751.88
Coriander	14,971	3346.11	12,480	3736.43	15,925	4833.87	18,065	5564.64	21,000	7103.75
Cumin	7,575	4718.98	18,891	17835.28	17,248	14818.03	10,422	9326.33	6,700	4983.75
Celery	3,579	1086.98	4,565	1410.87	4,251	1236.59	3,960	1225.43	4,400	1389.00
Fennel	2,969	1449.80	4,417	1881.71	4,374	1695.82	4,160	1783.75	5,200	2143.00
Fenugreek	10,069	2161.50	9,353	1977.99	6,582	1617.14	13,193	2551.06	7,500	1660.75
Other										
Seeds (1)	2,100	876.65	3,708	1431.08	9,979	2790.79	14,920	3617.36	10,000	2324.75
Garlic	8,711	1304.45	11,087	1275.25	1,106	409.78	1,539	698.68	3,500	1321.13
Tamarind	12,998	2620	10,025	2248.60	7,707	1778.24	12,590	2275.35	12,000	2200.00
Nutmeg & Mace	94	127.84	856	1630.19	1,346	1990.19	1,381	2847.36	1,450	2731.53
Vanilla	12	105.37	22	505.14	27	1750.61	25	2225.72	26	3606.35
Other										
Spices (2)	5,029	2677.94	8,382	4037.38	12,822	4738.33	11,307	5107.76	12,000	5463.00
Curry Powder	5,557	3913.47	5,841	4299.56	6,305	5052.61	6,492	6893.67	7,600	6508.13
Mint Products	3,489	12590.13	4,185	15498.22	11,295	48474.34	13,589	56557.94	11,250	42505.00
Oils & Oleoresins	3,465	32750.10	3,860	39371.33	4,510	37311.10	4,839	39094.23	4,750	37206.25
Total	235,611	204367.9	235,917	183352.9	243,203	194054.9	264,107	208671	246,566	190508.50
Value in Milln. US\$		472.42		400.51		407.85		431.45		415.15

(1) Include Bishops Weed (Ajwanseed), Dill Seed, Poppy Seed, Aniseed, Mustard etc

(2) Include Tamarind, Asafoetida, Cinnamon, Cassia, Vanilla, Saffron etc.

Source: Spices Board.

## Appendix 16.10

## Export of Coir and Coir Products from India Year1: April - March

Q: Quantity in Tonnes, V: Value in Rs. lakh

Items	1990-00		2000-01		2001-02		2002-03		2003-04	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Coir Fibre	809.89	117.16	1053.98	148.18	1010.30	122.13	1036.87	103.80	1120.75	142.44
Curled Coir	657.28	114.58	533.56	80.33	572.52	80.63	492.37	80.05	76.54	14.02
Coir Pith	6501.60	562.78	9926.96	752.80	13725.65	1014.34	21064.19	1493.00	29179.35	1975.92
Coir Rope	286.63	73.42	482.12	145.21	348.64	108.04	332.4	102.05	308.88	111.46
Coir Yarn	13052.58	3738.42	14607.31	4187.49	13206.9	3728.60	11482.48	2996.78	12364.43	3498.71
Coir Geo-Textiles	1711.24	808.41	1402.3	625.38	1752.05	780.13	2140.68	985.22	2599.54	1184.74
Coir Rugs	2889.64	2259.63	2720.43	1958.64	1329.97	1039.77	1327.08	932.41	1654.56	1071.36
Hanloom Mats	24292.92	15688.72	24716.47	15917.67	26147.89	17009.85	33058.74	20711.80	36306.99	22133.69
Hanloom Mattings	6238.55	4338.56	6323.37	4287.86	4423.27	2921.03	4772.63	3191.41	4545.56	2838.66
Powerloom Mats	1042.61	699.13	606.95	442.73	686.51	458.19	954.85	585.52	1026.28	672.13
Powerloom Mattings	531.34	395.06	410.70	284.05	274.05	226.08	183.16	111.78	309.04	215.44
Tufted Mats	1567.69	793.77	3835.64	2104.17	7129.54	4112.36	6429.05	3434.74	11772.50	6359.52
Rubberised Coir	522.88	387.53	385.07	267.24	454.62	350.37	535.23	403.42	461.78	334.67
Coir Other Sorts	925.98	328.3	488.23	164.47	272.9	106.81	372.86	138.55	490.21	196.9
<b>Total</b>	<b>61030.83</b>	<b>30305.47</b>	<b>67493.09</b>	<b>31366.22</b>	<b>71334.81</b>	<b>32058.33</b>	<b>84182.59</b>	<b>35270.53</b>	<b>102253.41</b>	<b>40749.66</b>

Source:- Coir Board

## Appendix 16.11

## Leading Export Markets of Coir Products, 2003-04

Sl.No.	Countries	Quantity (MT)	Value (Rs.Lakhs)
1	U.S.A.	26893.82	14889.48
2	United Kingdom	8623.92	4524.60
3	Germany	5540.30	2824.62
4	Italy	5718.83	2385.22
5	Netherlands	17856.19	3204.93
6	France	3378.30	1664.12
7	Australia	4512.62	1188.10
8	Belgium	2983.95	1211.35
9	Portugal	755.09	301.66
10	Canada	1944.06	910.62
11	Greece	656.09	377.11
12	Irish Republic	185.32	114.16
13	Spain	5389.41	1690.33
14	Denmark	384.86	198.89
15	UAE	1903.85	343.72
16	Japan	1722.49	717.47
17	Sweden	1068.08	574.93
18	Israel	315.96	88.04
19	Saudi Arabia	443.85	129.8
20	Newland	419.91	194.31
21	Other Countries	11556.5	3216.21
<b>Total</b>		<b>102253.40</b>	<b>40749.67</b>

Source : Coir Board

## Appendix 17.1

State wise Financial Assistance Disbursed by NABARD and NCDC during 2003-04

(Amount Rs. Crore)

Sl. No.	Name of State	Disbursement by NABARD	% to Total	Disbursement by NCDC	% to Total	Total Disbursement	% to Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Andrapradesh	607.30	7.99	7.00	1.12	614.30	7.46
2	Assam	73.54	0.97	-	-	73.54	0.89
3	Bihar	96.71	1.27	8.63	1.37	105.34	1.28
4	Gujarat	324.54	4.27	50.55	8.07	375.09	4.56
5	Haryana	508.13	6.68	29.45	4.70	537.58	6.53
6	Karnataka	473.41	6.22	77.11	12.30	550.52	6.69
7	Kerala	342.05	4.50	96.58	15.41	438.63	5.33
8	Madyapradesh	370.35	4.87	41.02	6.55	411.37	5.00
9	Maharashtra	457.69	6.02	136.42	21.77	594.11	7.22
10	Orissa	308.39	4.05	6.05	0.96	314.44	3.82
11	Panjab	62.74	0.82	-	-	62.74	0.76
12	Rajasthan	361.71	4.76	3.47	0.55	365.18	4.43
13	TamilNadu	733.10	9.64	92.15	14.70	825.25	10.02
14	Uttarpradesh	1221.79	16.07	4.15	0.66	1225.94	14.89
15	WestBengal	613.23	8.06	22.44	3.58	635.67	7.73
	<b>Total</b>	<b>6554.68</b>	<b>86.19</b>	<b>575.02</b>	<b>91.76</b>	<b>7129.70</b>	<b>86.61</b>
	<b>All India Total</b>	<b>7605.29</b>	<b>100</b>	<b>626.62</b>	<b>100</b>	<b>8231.91</b>	<b>100</b>

Source: Annual Reports of NABARD and NCDC, 2003-04

## Appendix 17.2

State wise Financial Assistance Disbursed by NABARD and NCDC as at the end March 2004

(Amount Rs. Crore)

Sl. No.	Name of State	Disbursement by NABARD	% to Total	Disbursement by NCDC	% to Total	Total Disbursement	% to Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Andrapradesh	7316.88	10.08	360.60	4.67	7677.48	9.56
2	Assam	929.41	1.28	85.95	1.11	1015.36	1.26
3	Bihar	2366.43	3.26	148.23	1.92	2514.66	3.13
4	Gujarat	3800.26	5.24	254.94	3.30	4055.20	5.05
5	Haryana	4293.49	5.91	138.67	1.79	4432.16	5.52
6	Karnataka	5053.52	6.96	631.27	8.17	5684.79	7.08
7	Kerala	3127.59	4.31	641.06	8.30	3768.65	4.69
8	Madyapradesh	3981.35	5.49	550.77	7.13	4532.12	5.64
9	Maharashtra	6934.45	9.55	1835.90	23.77	8770.35	10.92
10	Orissa	2556.73	3.52	128.29	1.66	2685.02	3.34
11	Panjab	5440.47	7.50	291.42	3.77	5731.89	7.14
12	Rajasthan	4146.68	5.71	319.98	4.14	4466.66	5.56
13	TamilNadu	5701.29	7.85	584.87	7.57	6286.16	7.83
14	Uttarpradesh	11186.92	15.41	598.72	7.75	11785.64	14.68
15	WestBengal	3229.03	4.45	353.75	4.58	3582.78	4.46
	<b>Total</b>	<b>70064.50</b>	<b>96.52</b>	<b>6924.42</b>	<b>89.66</b>	<b>76988.92</b>	<b>95.86</b>
	<b>All India Total</b>	<b>72588.99</b>	<b>100</b>	<b>7723.28</b>	<b>100</b>	<b>80312.27</b>	<b>100</b>

Source: Annual Reports of NABARD and NCDC, 2003-04



**Appendix 17.3**  
**State wise Financial Assistance Disbursed by All India Financial Institutions during 2003-04 (Rs. Crore)**

Sl. No	State	IDBI	%	4	5	6	7	8	9	10	13	14	15	16	17	18	19	20
1	Andhra Pradesh	647.4	13.9	7.4	2.6	1734.3	6.7	194.3	1.23	607.3	8.0	7.0	1.1	3197.7	5.7			
2	Assam	39.0	0.8							73.5	1.0			112.5	0.2			
3	Bihar	2.9	0.1			32.0	0.1			96.7	1.3	8.6	1.4	140.2	0.3			
4	Gujarat	456.8	9.8	37.1	13.2	1162.5	4.5	373.2	2.36	324.5	4.3	50.6	8.1	2404.7	4.3			
5	Haryana	50.5	1.1	26.7	9.5	1105.8	4.3	20.0	0.13	508.1	6.7	29.4	4.7	1740.5	3.1			
6	Karnataka	689.2	14.8	2.6	0.9	1455.4	5.6	178.9	1.13	473.4	6.2	77.1	12.3	2876.6	5.2			
7	Kerala	25.2	0.5			118.8	0.5	80.0	0.51	342.1	4.5	96.6	15.4	662.7	1.2			
8	Madhya Pradesh	78.1	1.7			127.9	0.5	88.9	0.56	370.4	4.9	41.0	6.5	706.3	1.3			
9	Maharashtra	1039.9	22.3	100.6	35.8	5792.1	22.4	7097.3	45	457.7	6.0	136.4	21.8	14679.0	26.3			
10	Orissa	108.1	2.3	10.9	3.9	341.3	1.3			308.4	4.1	6.0	1.0	774.7	1.4			
11	Panjab	58.6	1.3	4.2	1.5	120.5	0.5			62.7	0.8			246.0	0.4			
12	Rajasthan	124.0	2.7			325.9	1.3	75.0	0.48	361.7	4.8	3.5	0.6	890.1	1.6			
13	Tamil Nadu	259.9	5.6	2.3	0.8	1025.7	4.0	477.0	3.02	733.1	9.6	92.2	14.7	2590.2	4.6			
14	Uttar Pradesh	99.9	2.1	19.2	6.8	720.9	2.8	71.2	0.45	1221.8	16.1	4.2	0.7	2137.2	3.8			
15	West Bengal	156.5	3.4	26.4	9.4	734.0	2.8	360.4	2.28	613.2	8.1	22.4	3.6	1912.9	3.4			
			0.0															
	<b>Total</b>	<b>3836.0</b>	<b>82.4</b>	<b>237.4</b>	<b>84.4</b>	<b>14797.1</b>	<b>57.3</b>	<b>13.3</b>	<b>55.0</b>	<b>6554.6</b>	<b>86.2</b>	<b>575.0</b>	<b>91.8</b>	<b>35071.3</b>	<b>62.8</b>			
	<b>All India Total</b>	<b>4656</b>	<b>100.0</b>	<b>281.2</b>	<b>100.0</b>	<b>25831.0</b>	<b>100.0</b>	<b>100.0</b>	<b>414.7</b>	<b>7605.3</b>	<b>100.0</b>	<b>626.6</b>	<b>100.0</b>	<b>55196.4</b>	<b>98.8</b>			

Source: Annual Reports of IDBI, NABARD & NCDC 2003-04

## Appendix 17.4

State wise Financial Assistance Disbursed by All India Financial Institutions as at the end of March 2004 (Rs.Crore)

Sl. No	State	IDBI	%	4	5	6	7	8	9	10	11	12	13	14	15	16	19	20
1	Andhra Pradesh	15019.7	8.9	3590.3	8.1	9452.7	5.5	531.5	1.2	1539.0	2.4	7316.9	10.1	360.6	4.7	37810.7	6.6	
2	Assam	687.8	0.4	305.2	0.7	540.7	0.3	50.2	0.1	32.8	0.05	929.4	1.3	86.0	1.1	2632.1	0.5	
3	Bihar	1025.7	0.6	103.8	0.2	459.9	0.3	189.5	0.4	355.7	0.56	2366.4	3.3	148.2	1.9	4649.2	0.8	
4	Gujarat	22812.9	13.5	6905.2	15.6	23141.0	13.5	2711.1	5.9	3725.7	5.82	3800.2	5.2	254.9	3.3	63351.0	11.0	
5	Haryana	4571.7	2.7	1147.4	2.6	4536.3	2.6	79.4	0.2	112.4	0.18	4293.5	5.9	138.7	1.8	14879.4	2.6	
6	Karnataka	12072.7	7.1	2726.6	6.1	11308.6	6.6	999.1	2.2	899.9	1.41	5053.5	7.0	631.3	8.2	33691.7	5.8	
7	Kerala	2459.6	1.5	344.0	0.8	1174.9	0.7	56.3	0.1	559.8	0.87	3127.6	4.3	641.1	8.3	8363.3	1.5	
8	Madhya Pradesh	7228.9	4.3	2133.2	4.8	3827.8	2.2	364.3	0.8	535	0.84	3981.4	5.5	550.8	7.1	18621.4	3.2	
9	Maharashtra	36400.3	21.5	8022.9	18.1	48053.8	28.0	6730.5	14.6	26791.8	41.8	6934.5	9.6	1835.9	23.8	134769.7	23.4	
10	Orissa	3083.3	1.8	941.7	2.1	2317.2	1.3	188.7	0.4	339.0	0.53	2556.7	3.5	128.3	1.7	9554.9	1.7	
11	Panjab	5612.1	3.3	2115.0	4.8	2042.3	1.2	213.8	0.5	344.1	0.54	5440.5	7.5	291.4	3.8	16059.2	2.8	
12	Rajasthan	8024.6	4.7	1710.5	3.9	4324.8	2.5	298.6	0.6	701.0	1.09	4146.7	5.7	320.0	4.1	19526.2	3.4	
13	Tamil Nadu	14746.3	8.7	3265.8	7.4	12806.0	7.5	679.8	1.5	2001.0	3.12	5701.3	7.9	584.8	7.6	39785.0	6.9	
14	Uttar Pradesh	11136.9	6.6	4433.0	10.0	7374.6	4.3	866.8	1.9	827.9	1.29	11186.9	15.4	598.7	7.8	36424.8	6.3	
15	West Bengal	7173.3	4.2	1678.5	3.8	8617.3	5.0	530.5	1.2	2380.7	3.72	3229	4.4	353.7	4.6	23963.0	4.2	
<b>Total</b>		<b>152055.8</b>	<b>89.7</b>	<b>39423.1</b>	<b>88.8</b>	<b>139977.9</b>	<b>81.5</b>	<b>14490.1</b>	<b>31.5</b>	<b>41145.8</b>	<b>64.2</b>	<b>70064.5</b>	<b>96.5</b>	<b>6924.4</b>	<b>89.7</b>	<b>464081.6</b>	<b>80.6</b>	
<b>All India Total</b>		<b>169514.7</b>	<b>100.0</b>	<b>44399</b>	<b>100.0</b>	<b>171698.3</b>	<b>100.0</b>	<b>46003.6</b>	<b>100.0</b>	<b>64045.2</b>	<b>100</b>	<b>72589.0</b>	<b>100.0</b>	<b>7723.3</b>	<b>100.0</b>	<b>575973.5</b>	<b>100.0</b>	

Source: Annual Reports of IDBI, NABARD &amp; NCDC 2003-04

Appendix 17.5  
State-wise Percapita Assistance Disbursed by All India Financial Institutions During 1999-2000 to 2001-2002.

Sl.no.	States	IDBI				IFCI				ICICI				LIC				UTI				GIC				TOTAL							
		01-02	02-03	03-04	04-05	01-02	02-03	03-04	04-05	01-02	02-03	03-04	04-05	01-02	02-03	03-04	04-05	01-02	02-03	03-04	04-05	01-02	02-03	03-04	04-05	01-02	02-03	03-04	04-05				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30				
1.	Andhra Pradesh	92.6	24.4	85.5	12.2	1.6	1.0	229.1	122.4	4	25.7	1.6	1.6	1.6	0.6	0.5	457.9	30.6	112.7														
2.	Assam	12.7		14.6	4.8																												
3.	Bihar	0.7	1.5	0.3	0.1			3.9																									
4.	Gujarat	178.3	22.1	90.3	35.2	71.7	7.3	229.7	202.3	34	73.8						2.7	1.0	4.1	648.2	128.8	176.5											
5.	Haryana	113.8	46.7	23.9	54.0		12.7	524.1			9.5																						
6.	Karnataka	104.8	26.5	130.7	19.9	29.8	0.5	276.2	1250	17.1	33.9						2.8	5.3	12.1	1654.0	177.2	177.2											
7.	Kerala	33.0	13.3	7.9	10.4			37.4			3.1	25.1																					
8.	Madhya Pradesh	51.7	12.4	12.9	8.6			21.2	1.9	11.4	14.7																						
9.	Maharashtra	441.9	148.1	107.5	45.6	54.5	10.4	598.4	2273	248.2	733.6	14.8	5.7				12.4	6.4	30.6	3386.4	462.9	882.1											
10.	Orissa	13.4	1.8	29.4	3.6		3.0	93.0	15.6																								
11.	Punjab	250.3	25.6	24.1	103.0	82.0	1.7	49.6	66.1	18.5							1.8																
12.	Rajasthan	52.3	14.3	22.0	9.3			57.7	210.0		1.3																						
13.	Tamil Nadu	89.6	55.0	41.8	14.4	2.8	0.4	165.2	199.3	7.6	76.8						2.0	1.6	6.9	470.5	67.1	125.9											
14.	Uttar Pradesh	12.7	4.7	6.0	0.8	2.4	1.2	43.4	61.6	6.1	4.3	0.6					2.5																
15.	West Bengal	46.2	11.1	19.5	5.8	7.1	3.3	91.5	294.7	38.0	44.9	5.1																					
<b>All India Total</b>		<b>103.3</b>	<b>36.5</b>	<b>45.3</b>	<b>1.0</b>	<b>17.5</b>	<b>2.7</b>	<b>251.5</b>	<b>88.8</b>	<b>60.4</b>	<b>153.7</b>	<b>12.4</b>	<b>4.0</b>	<b>16.6</b>	<b>3.2</b>	<b>6.4</b>	<b>471.7</b>	<b>121.62</b>	<b>208.1</b>														

Source : Report on Development Banking in India (various issues)  
(Values of 2001-02 - Provisional). ICICI has been merged with ICICI bank on 3.5.2002,dl

**Appendix 17.6**  
**State wise distribution of commercial bank branches and population per bank office.**

States	Number of Banks as at the end of																			Average Population per bank branch (in '000s)																		
	as at the end of																			as at the end of																		
	Jun-69	Jun-00	Jun-01	Jun-02	Jun-03	Jun-04	Jun-04	Jun-69	Jun-00	Jun-01	Jun-02	Jun-03	Jun-04	Jun-04	Jun-69	Jun-00	Jun-01	Jun-02	Jun-03	Jun-04																		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20																			
1. Andhra Pradesh	567	5112	5171	5207	5267	5284	6.9	7.8	7.8	7.8	7.9	7.9	7.9	7.4	15	15	15	15	15	20																		
2. Assam	74	1234	1237	1223	1220	1221	0.9	1.9	1.9	1.8	1.8	1.8	1.8	193	21	22	22	22	22	14																		
3. Bihar	273	5008	3561	3564	3564	3569	3.3	7.6	5.4	5.4	5.3	5.3	5.3	207	20	21	21	21	21	22																		
4. Gujarat	852	3642	3670	3657	3670	3668	10.3	5.6	5.6	5.5	5.5	5.5	5.5	34	13	13	14	14	14	23																		
5. Haryana	172	1494	1516	1551	1591	1615	2.1	2.3	2.3	2.3	2.4	2.4	2.4	97	13	13	13	13	13	14																		
6. Karnataka	756	4720	4761	4779	4804	4834	9.2	7.2	7.2	7.2	7.2	7.2	7.2	37	11	11	11	11	11	13																		
7. Kerala	601	3255	3298	3334	3370	3404	7.3	5.0	5.0	5.0	5.1	5.1	5.1	34	10	10	10	10	10	11																		
8. Madhya Pradesh	343	4497	3456	3458	3450	3453	4.2	6.9	5.2	5.2	5.2	5.2	5.2	116	18	18	18	18	19	10																		
9. Maharashtra	1118	6224	6294	6320	6317	6334	13.5	9.5	9.5	9.5	9.5	9.5	9.5	43	15	15	15	15	15	18																		
10. Orissa	100	2218	2220	2227	2227	2240	1.2	3.4	3.4	3.4	3.3	3.3	3.3	211	16	5	16	17	17	15																		
11. Punjab	346	2508	2534	2573	2615	2641	4.2	3.8	3.8	3.9	3.9	3.9	3.9	42	9	9	9	9	9	17																		
12. Rajasthan	364	3321	3323	3336	3342	3350	4.4	5.1	5.0	5.0	5.0	5.0	5.0	68	16	17	17	17	17	9																		
13. Tamil Nadu	1060	4767	4785	4748	4746	4757	12.8	7.3	7.2	7.2	7.1	7.1	7.1	37	13	13	13	13	13	17																		
14. Uttar Pradesh	747	8909	8155	8169	8212	8213	9.0	13.6	12.3	12.3	12.3	12.3	12.3	114	19	20	20	20	20	13																		
15. West Bengal	504	4394	4424	4430	4446	4466	6.1	6.7	6.7	6.7	6.7	6.7	6.7	85	18	18	18	18	19	20																		
<b>TOTAL</b>	<b>7877</b>	<b>61303</b>	<b>58405</b>	<b>58576</b>	<b>58841</b>	<b>59049</b>	<b>95.3</b>	<b>93.4</b>	<b>88.3</b>	<b>88.3</b>	<b>88.2</b>	<b>88.2</b>	<b>88.2</b>	-	-	-	-	-	-	<b>18</b>																		
<b>All India Total</b>	<b>8262</b>	<b>65621</b>	<b>66119</b>	<b>66355</b>	<b>66692</b>	<b>66970</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>65</b>	<b>15</b>	<b>15</b>	<b>16</b>	<b>16</b>	<b>16</b>	<b>15</b>																		

Source: CMIE, Banking Statistics Quarterly (various issues)

**Appendix 17.7**  
**Deposits, Credits and Credit-Deposit Ratio of Public Sector Banks. (Rs. Crore)**

States/Months	Jun-09			Mar-02			Jun-02			Mar-03			Jun-03			Mar-04			Jun-04		
	Deposi	Credit	C-D Ratio	Deposi	Credit	C-D Ratio	Deposi	Credit	C-D Ratio	Deposi	Credit	C-D Ratio	Deposi	Credit	C-D Ratio	Deposi	Credit	C-D Ratio	Deposi	Credit	C-D Ratio
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19			
1. Andhra Pradesh	121	122	100.8	50080	32120	64.1	50699	31646	62.4	57384	37308	65.0	57108	37353	65.4	71489	48399	67.7	71951	48431	67.3
2. Assam	33	13	39.4	10042	3221	32.1	10022	2926	29.2	11204	3186	28.4	10909	3456	31.7	14543	4543	31.2	14413	4578	31.8
3. Bihar	169	53	31.4	25577	5468	21.4	24770	5379	21.7	26067	6100	23.4	26898	6334	23.5	35697	9224	25.8	34048	8718	25.6
4. Gujarat	401	195	48.6	56990	24614	43.2	57039	24050	42.2	63546	27153	42.7	64636	25570	39.6	74128	31093	41.9	74804	30101	40.2
5. Haryana	49	23	46.9	20241	9289	45.9	20729	8647	41.7	22628	10888	48.1	22795	10742	47.1	26527	16627	62.7	26495	14002	52.8
6. Karnataka	188	143	76.1	44128	28126	63.7	45538	27086	59.5	50493	33981	67.3	51703	34485	66.7	67246	46823	69.6	69070	48019	69.5
7. Kerala	117	77	65.8	34192	14418	42.2	34227	14300	41.8	38611	16883	43.7	38803	16933	43.6	45193	22553	49.9	44329	23529	53.1
8. Madhya Pradesh	107	63	58.9	28859	13766	47.7	29111	13614	46.8	32404	15668	48.4	32107	15159	47.2	42120	20156	47.9	44269	19827	44.8
9. Maharashtra	903	912	101	1E+05	1E+05	92.7	1E+05	1E+05	95.0	1E+05	1E+05	88.8	1E+05	1E+05	83.0	188022	139852	74.4	200238	139404	69.6
10. Orissa	29	15	51.7	15601	6510	41.7	15179	6506	42.9	16805	7713	45.9	16191	7673	47.4	21947	12148	55.4	21584	12244	56.7
11. Punjab	185	50	27	47099	20400	43.3	47712	19543	41.0	52357	22417	42.8	52409	21500	41.0	57098	25227	44.2	55995	24435	43.6
12. Rajasthan	74	38	51.4	24707	12650	51.2	24668	12523	50.8	27441	14851	54.1	27281	14736	54.0	33366	19943	59.8	32932	20132	61.1
13. Tamil Nadu	233	311	133.5	52661	40929	77.7	53639	40840	75.8	59971	48246	80.4	60249	48760	80.9	69841	58053	83.1	70370	58201	82.7
14. Uttar Pradesh	337	154	45.7	84258	25196	29.9	83359	24630	29.5	92065	28381	30.8	90671	27926	30.8	113502	38616	34	111950	37910	33.9
15. West Bengal	456	526	115.4	61965	29018	46.8	62986	28302	44.9	69379	33443	48.2	70150	31640	45.1	81948	40330	49.2	84699	39697	46.9
<b>TOTAL</b>	<b>3402</b>	<b>2695</b>	<b>79.2</b>	<b>7E+05</b>	<b>4E+05</b>	<b>56.1</b>	<b>7E+05</b>	<b>4E+05</b>	<b>55.4</b>	<b>8E+05</b>	<b>4E+05</b>	<b>56.9</b>	<b>8E+05</b>	<b>4E+05</b>	<b>55.2</b>	<b>942667</b>	<b>533587</b>	<b>56.6</b>	<b>957147</b>	<b>529228</b>	<b>55.3</b>
<b>All India Total</b>	<b>3897</b>	<b>3035</b>	<b>77.9</b>	<b>8E+05</b>	<b>5E+05</b>	<b>58.5</b>	<b>9E+05</b>	<b>5E+05</b>	<b>55.2</b>	<b>1E+06</b>	<b>5E+05</b>	<b>56.4</b>	<b>1E+06</b>	<b>5E+05</b>	<b>54.3</b>	<b>1175439</b>	<b>648912</b>	<b>55.2</b>	<b>1193914</b>	<b>645593</b>	<b>54.1</b>

Source: Banking Statistics : Quarterly Handout (various issues)

**Appendix 17.8**  
**Banking Statistics of Kerala – 1990-2004. (Rs. Crore)**

Ending March	State Bank Group				Other Nationalised Banks				Gramin Bank			
	Total Deposit	Of which NRE Deposits	Total Advance	CD Ratio	Total Deposit	Of which NRE Deposits	Total Advance	CD Ratio	Total Deposit	Of which NRE Deposits	Total Advance	CD Ratio
1	2	3	4	5	6	7	8	9	10	11	12	13
1990	2406.71	800.3	1551.12	64.45	2718.06	832.34	1595.29	58.69	87.74	Nil	179.83	204.96
1991	2854.66	949.58	1797.91	62.98	3205.41	997.48	1749.2	54.57	109.78	Nil	195.81	178.37
1992	3410.27	1196.69	1850.95	54.28	3865.81	1262.86	1830.93	47.36	142.3	Nil	213.37	149.94
1993	4285.29	1779.54	2146.1	50.08	4743.08	1815.06	2064.89	43.53	171.56	Nil	232.16	135.32
1994	5312.22	2369.6	2404.91	45.27	5753.17	2418.4	2126.1	36.96	211.59	Nil	262.75	124.18
1995	6154.52	2696.96	2934.99	47.69	6516.3	2806.37	2387.69	36.64	260.7	Nil	313.9	120.41
1996	6935.66	3059.13	3135.42	45.21	7261.92	3140.39	2890.17	39.8	263.39	Nil	351.71	133.53
1997	7736.39	3648.94	3604.73	46.59	8380.93	3872.82	3262.32	38.93	334.85	Nil	439.27	131.18
1998	8965.43	4310.78	4131.4	46.08	9728.35	4763.39	4084.84	41.99	404.99	Nil	515.73	127.34
1999	10498.2	5299.59	4670	44.48	10141.6	4491.7	4082.02	40.25	510.72	Nil	613.52	120.13
2000	12617.3	6755.85	5580.48	44.23	13536.2	6708.45	5192.63	38.36	649.00	Nil	755.89	116.47
2001	14663.5	7588.28	6508.93	44.39	15175.6	7786.79	5868.13	38.67	796.85	21.53	967.16	121.37
2002	16894.7	8874.44	7660.15	45.34	17081	8032.07	6973.01	40.82	1000.1	70.36	1086.68	108.65
2003	19510.6	10124.4	9040.24	46.33	19944.9	9506.81	8744.2	43.84	1271.1	165.45	1202.23	94.58
2004	21473.4	10764.6	10544.34	49.10	21712.6	9778.45	10716.95	49.36	1511.5	198.96	1456.07	96.33
Sept03	20081	10439	9249.43	46.06	20517.2	9317.67	9294.26	45.30	1366.7	224.94	1306.60	95.60
4-Sep	21656	10565	11377	52.5	21407	9158.4	11715	54.7	1596	193.64	1612.3	101

## Appendix 17.8 Contd.)

Ending March	Total Public Sector Banks				Private Banks			
	Total Deposit	Of which NRE Deposits	Total Advance	CD Ratio	Total Deposit	Of which NRE Deposits	Total Advance	CD Ratio
1	14	15	16	17	18	19	20	21
1990	5212.51	1632.64	3326.24	63.81	1407.58	286.09	791.92	56.26
1991	6169.85	1947.06	3742.92	60.66	1687.81	357.29	895.27	53.04
1992	7418.38	2459.55	3895.25	52.51	2252.55	579.33	1107.71	49.18
1993	9199.93	3594.6	4443.15	48.30	2912.31	904.31	1374.84	47.21
1994	11276.98	4788	4793.76	42.51	3664.17	1226.63	1647.79	44.97
1995	12931.52	5503.33	5636.58	43.59	4526.39	1382.71	2159.94	47.72
1996	14460.97	6199.52	6377.3	44.10	5710.33	1903.88	2583.61	45.24
1997	16452.17	7521.76	7306.32	44.41	6576.22	2434.92	3175.5	48.29
1998	19098.77	9074.17	8731.97	45.72	8065.02	3385.64	3542.4	43.92
1999	21150.48	9791.29	9365.54	44.28	9914.39	3204.45	4107.97	41.43
2000	26802.55	13464.3	11529	43.01	11442.39	4948.17	4312.79	37.69
2001	30635.91	15396.6	13344.22	43.56	13848.15	5791.53	5741.5	41.46
2002	34975.84	16976.87	15719.84	44.94	16302.23	7329.28	6248.91	38.33
2003	40726.58	19796.67	18986.67	46.62	18293.05	8641.09	7875.67	43.05
2004	44697.53	20741.98	22717.36	50.82	20891.72	9146.59	8981.31	42.99
Sep-03	41964.97	19981.58	19850.29	47.30	18778.86	8830.48	8512.55	45.33

## Appendix 17.8 Contd.)

Ending March	Foreign Banks				Grand Total			
	Total Deposit	Of which NRE Deposits	Total Advance	CD Ratio	Total Deposit	Of which NRE Deposits	Total Advance	CD Ratio
1	22	23	24	25	26	27	28	29
1990	39.47	14.19	68.97	174.74	6659.56	1932.92	4187.13	62.87
1991	77.12	12.25	77.15	100.04	7934.78	2316.6	4715.34	59.43
1992	115.82	77.12	90.43	78.08	9786.75	3116	5093.39	52.04
1993	149.2	100.48	42.52	28.5	12261.44	4599.39	5860.51	47.80
1994	197.19	137.73	43.31	21.96	15138.34	6152.36	6484.86	42.84
1995	236.39	157.67	46.04	19.48	17694.3	7043.71	7842.56	44.32
1996	247.66	152.93	45.75	18.47	20418.96	8256.33	9006.66	44.11
1997	324.48	221.41	83.28	25.67	23352.87	10178.09	10565.1	45.24
1998	408.27	275.17	89.87	22.01	27572.06	12734.98	12364.24	44.84
1999	466.97	332.79	103.16	22.09	31531.84	13328.53	13576.67	43.06
2000	373.9	311.14	99.07	26.5	38618.84	18723.61	15940.86	41.28
2001	366.09	242.7	94.55	25.83	44850.15	21430.83	19180.27	42.77
2002	377.71	227.56	93.19	24.67	51655.78	24533.71	22061.94	42.71
2003	379.73	257.81	144.19	37.97	59399.36	28695.57	27006.53	45.47
2004	371.86	211.82	168.64	45.35	65961.11	30100.39	31867.31	48.31
Sep-03	376.06	224.94	173.62	46.17	61118.87	28997.84	28535.46	46.69
Sep-04	381.34	202.23	206.32	54.1	65851.5	29088.64	36877.57	56.00

Source: Banking Statistics of Kerala, Reported by State Level Bankers' Committee.

Note: As on September 2004, Co-operative banks had a total deposit of Rs. 168.57 crore and an advance of Rs. 1803.12 crore. Corresponding CD Ratio is 1069.66.

**Appendix 17.9**  
District Wise distribution of number of branches, aggregate deposits, gross bank credit and CD Ratio of sheduled commercial banks-Kerala, March 2004

SI.No.	District	Public Sector Banks				Regional Rural Banks				All Commercial Banks			
		No. Of Branches (3)	Deposits (4)	Credits (5)	CD Ratio (6)	No. Of Branches (7)	Deposits (8)	Credits (9)	CD Ratio (10)	No. Of Branches (11)	Deposits (12)	Credits (13)	C D Ratio (14)
1	Thiruvananthapura	263	7033	4799	68.2	-	-	-	-	350	9863	5937	60.2
2	Kollam	131	2711	1477	54.5	-	-	-	-	189	3990	2017	50.6
3	Pathanamthitta	140	4563	864	18.9	-	-	-	-	236	6909	1247	18.0
4	Alappuzha	138	3081	1272	41.3	-	-	-	-	217	4583	1746	38.1
5	Kottayam	163	3250	1636	50.3	8	34	14	41.1	273	5199	2222	42.7
6	Idukki	68	491	464	94.5	-	-	-	-	99	715	665	93.0
7	Emakulam	300	7122	4927	69.2	12	48	17	35.4	500	12260	7913	64.5
8	Thrissur	165	4363	1317	30.2	22	108	59	54.6	381	8246	2559	31.0
9	Palakkad	162	2417	1122	46.4	14	38	39	102.6	255	3078	1523	49.5
10	Malapuram	96	2257	551	24.4	81	410	363	88.5	224	3270	1156	35.4
11	Kozhikode	140	2507	1182	47.1	69	313	326	104.2	259	3487	1976	56.7
12	Wayanad	38	218	313	143.6	28	62	167	269.4	74	331	541	163.4
13	Kannur	113	2746	862	31.4	75	333	272	81.7	221	3561	1422	39.9
14	Kasaregod	62	910	325	35.7	48	179	185	103.4	126	1204	624	51.8

Source Banking Statistics of Kerala: Reported by SLBC.



**Appendix 17.10**  
**DISTRICT WISE FLOW OF CREDIT**  
**(2001-02 to 2003-04 March)**

(Rs. in lakhs)

DISTRICT	Agriculture Advances			Total Advances to Priority Sector		
	2001-02	2002-03	2003-04	2001-02	2002-03	2003-04
1	2	3	4	5	6	7
Thiruvananthapuram	23144	28566	36334	69066	82685	121738
Kollam	20524	26125	22013	120217	159642	175378
Pathanamthitta	11632	14445	19450	28245	35814	53984
Alappuzha	13312	20093	25198	47506	69055	88033
Kottayam	29177	30099	40568	69720	76590	109217
Idukki	14217	18962	24807	30903	46534	60248
Ernakulam	19344	20517	33063	103615	136672	160205
Thrissur	18712	26839	44726	72390	95168	142111
Palakkad	26302	27905	34868	54159	63057	76285
Malappuram	25712	32638	48990	50143	61764	88233
Kozhikode	27728	30503	41669	48842	64098	87041
Wayanad	24516	31201	30802	31902	40666	40273
Kannur	16077	25029	29325	70199	92582	115724
Kasaragod	15707	18495	23099	27174	31990	41127
<b>STATE TOTAL</b>	<b>286104</b>	<b>351417</b>	<b>454912</b>	<b>824081</b>	<b>1056317</b>	<b>1359597</b>

Source: SLBC

**Appendix 17.11**  
**Operations of the Kerala State Co-operative Bank Limited (1995-96 to 2003-04)**

(Rs. in Lakhs)

SI.No	Particulars	1995-96	1996-97	1997-98	1998-99	1999-2000	2000-01	2001-02	2002-03	2003-04
1	2	3	4	5	6	7	8	9	10	11
1	Share Capital	1801.46	1851.46	2073.53	2073.53	2127.85	2195	2268	2269	2269
2	Reserves	2500.00	2656.07	2846.91	3081.50	3633.25	4174	5131	6994	5025
3	Deposits	47461.64	57915.93	77522.27	123616.97	153972.09	168724	191501	232676	242747
4	Borrowings	19973.73	22960.66	19984.82	9351.17	8440.35	14598	20973	8779	16430
5	Working Capital	71249.39	84893.35	101957.59	137566.39	180810.00	189174	216173	250179	280676
6	Loans & Advances	53566.00	52219.64	51809.69	46811.19	101905.94	117931	122643	123713	111750
7	Investments	18832.96	19093.64	23549.84	41738.70	45581.24	52004	54691	71233	69298
8	Net Profits	136.90	69.55	81.38	126.13	25.06	50	71	612	505
9	Total Assets	-	-	-	-	-	204894	235400	263421	281071
10	Own fund	-	-	-	-	-	6369	7400	9263	7029
11	Interest spread	-	-	-	-	-	0.98%	1.22%	1.46%	0.07
12	Operational expenses	-	-	-	-	-	1156	1222	1438	1275

Source: Kerala State Co - operative Bank Ltd.

**Appendix 17.12**  
**Purpose - wise Outstanding Loans in the Kerala State**  
**Co-operative Bank Limited (1996-97 to 2003-04)**

SI.No.	Purpose	(Rs.in Crores)									
		1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04		
1	2	3	4	5	6	7	8	9	10		
1	Agriculture	151.09	167.61	155.36	175.72	120.69	79.88	114.39	113.85		
2	Procurements/Marketing/ Distribution	109.70	102.69	98.59	103.71	176.47	84.89	82.74	219.04		
3	Cottage and Small Scale Industries	58.94	68.47	70.65	53.01	66.65	66.22	58.12	60.12		
4	Other Industries	42.67	22.68	15.67	11.49	30.11	33.95	40.70	68.55		
5	Consumer Activities	2.06	1.91	6.43	1.02	0.12	2.92	13.96	5.70		
6	Consumption Purpose	77.01	59.21	29.69	42.00	110.45	115.74	136.92	184.14		
7	Housing	43.59	50.04	55.83	23.58	113.99	128.82	140.21	192.32		
8	Other Purposes	37.14	45.49	35.89	608.52	560.83	714.00	650.09	273.78		
	<b>Total</b>	<b>522.20</b>	<b>518.10</b>	<b>468.11</b>	<b>1019.05</b>	<b>1179.31</b>	<b>1226.42</b>	<b>1237.13</b>	<b>1117.50</b>		

Source: Kerala State Co - operative Bank Ltd.

## Appendix 17.13

## Operational indicators of District Co-operative Banks during 2003-04

(Rs. In lakhs)

District	Paid of Share Capital		Reserves and Other Funds	Deposits	Borrowings	Working Capital	Investments in Govt. & Other Securities	Investments in Share of Other Institutions	Loan & Advances	Total NPA	Net Profit
	2	3									
Thiruvananthapuram	1700.16	10944.86	90064.71	3087.76	109262.35	27183.42	210.90	69171.71	11648.52	441.58	
Kollam	643.27	3047.80	44778.34	7290.07	52993.76	75.00	87.84	35186.39	7792.12	308.98	
Alappuzha	612.30	2483.08	35475.44	1793.02	40238.07	1069.12	65.80	25517.43	4666.38	-	
Pathanamthitta	324.88	1361.00	29170.40	125.73	29934.88	215.00	40.59	14175.84	104.84		
Kottayam	674.79	1772.58	52521.03	2974.78	56574.76	325.00	131.66	31303.62	5543.87	86.12	
Idukki	968.35	2680.21	24508.54	9470.63	35967.80	12028.97	296.44	24938.38	3636.49	231.43	
Trichur	654.22	3563.53	71982.68	155.88	73266.34	1295.22	68.55	32936.07	9783.55	26.61	
Ernakulam	1021.80	6674.77	102258.35	475.67	121376.04	5863.25	121.21	58262.19	5364.87	2001.40	
Palakkad	751.40	5287.17	32520.79	2604.63	44638.53	460.23	20.23	23027.00	4698.59	122.40	
Malappuram	574.50	4277.22	43895.62	6838.96	51603.10	240.00	115.02	27889.99	3868.33	84.88	
Kozhikod	417.65	2227.69	32321.95	3713.68	36549.32	9604.10	135.95	24958.80	6151.72	74.39	
Kannur	1125.07	4196.91	45143.05	7116.23	38694.56	930.10	350.44	44683.54	7774.94	338.06	
Kasargod	525.02	1283.49	15226.65	2510.47	19464.69	40.00	158.38	12401.54	752.81	70.67	
Wayanad	473.73	1804.73	10649.82	3057.57	14180.94	10012.00	95.38	11626.30	1294.38	18.11	

**Appendix 17.14**  
**Annual Long Term Loan Disbursement and Debentures floated by**  
**Kerala State Co-operative Agricultural and Rural Development Bank Ltd.**

(Rs in Crores)

Year	Loan advanced						Debenture floated													
	Ordinary		Scheme		NFS*		Rural Housing		Total		Ordinary		Scheme		NFS		Rural Housing		Total	
	1	2	3	4	5	6	7	8	9	10	11	7	8	9	10	11				
1993-94	11.80	31.76	27.64	13.71	84.91	11.50	30.65	26.92	24.32	93.39										
1994-95	10.63	45.60	30.77	24.31	111.31	10.00	30.46	25.07	14.86	80.39										
1995-96	10.44	67.54	40.53	35.49	154.00	11.00	45.78	37.65	40.53	134.96										
1996-97	17.96	80.93	61.51	47.06	207.46	12.00	90.19	51.09	24.32	177.60										
1997-98	10.84	79.38	51.01	95.07	236.30	17.25	102.82	61.33	60.98	242.38										
1998-99	4.64	94.75	45.85	86.70	231.93	4.10	80.28	37.22	69.07	190.67										
1999-2000	4.44	100.97	72.84	123.03	301.28	4.24	95.59	66.61	98.66	265.11										
2000-01	6.65	121.51	81.37	123.79	333.32	3.25	104.31	77	86.18	270.74										
2001-02	7.66	117.4	74.2	119.81	319.07	9.85	146.89	86.83	133.64	377.21										
2002-03	7.67	98.77	65.72	121.15	293.31	2.40	104.89	69.76	187.76	364.81										
2003-04	6.56	86.05	49	126.95	268.56	-	82.72	48.86	118.72	250.30										

\*NFS - Non Farm Sector

Source Kerala State Co-Operative Agricultural and Rural Development Bank Ltd

**Appendix 17.15**  
**Purpose-wise Classification of Long Term Loans Issued by**  
**Primary Co-operative Agricultural & Rural Development Banks (1997-98 to 2003-04)**

SI.No	PURPOSE	(Rs. In Lakhs)								
		1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04		
1	2	3	4	5	6	7	8	9		
<b>I</b>	<b>Ordinary Loan</b>									
1	Construction of Wells/Tanks	4.27	11.41	20.63	55.34	149.91	17.33	20.12		
2	Renovation of Wells/Tanks	-	0.40	1.10	9.31	2.34	4.71	0.37		
3	Pumpsets	2.86	2.44	1.98	9.71	8.79	2.10	-		
4	Plantation & Horticulture	130.19	93.49	141.33	217.05	114.44	186.22	163.86		
5	Agricultural Machinery	-	-	-	-	-	-	0.45		
6	Animal Husbandary	214.29	109.90	46.12	74.92	48.09	80.93	57.27		
7	Land Development	386.62	133.05	105.26	107.49	160.30	231.61	120.48		
8	Construction of Godowns/Cattle	132.98	42.81	57.86	92.83	178.49	110.53	157.33		
9	Barbed wire or stonefencing	75.62	12.95	18.28	36.51	42.36	61.84	33.21		
10	Construction of drainage channels	3.96	1.50	0.15	3.62	3.83	-	5.01		
11	Loans for Redemption of prior debts	-	-	-	-	-	-	-		
12	Others	142.42	62.18	70.84	46.06	83.70	66.61	53.34		
	<b>Total</b>	<b>1093.21</b>	<b>470.13</b>	<b>463.55</b>	<b>652.84</b>	<b>792.25</b>	<b>761.88</b>	<b>611.44</b>		
<b>II</b>	<b>Scheme Loan</b>									
1	Minor Irrigation	1178.60	1496.15	1572.75	1899.84	2086.31	2094.05	1314.021		
2	Plantation & Horticulture	3861.87	3613.84	4276.50	4637.57	5187.60	3186.15	2242.39		
3	Agricultural Machinery	582.01	676.34	890.04	1268.60	337.74	653.93	78.54		
4	Dairy & Animal Husbandary	12.46	24.65	23.14	24.70	12.55	15.40	850.27		
5	Land Development	1047.87	1688.53	1471.79	2308.23	2360.40	2204.50	2478.27		
6	Poultry	991.58	1477.73	1554.53	1585.21	1228.97	1042.31	-		
7	Fisheries	97.32	202.82	200.32	229.85	375.44	176.15	172.25		
8	Others	158.35	342.43	235.49	194.41	169.92	522.40	1518.26		
	<b>Total</b>	<b>7930.06</b>	<b>9522.49</b>	<b>10224.56</b>	<b>12148.41</b>	<b>11758.93</b>	<b>9894.89</b>	<b>8654.00</b>		

Source: Kerala State Co-operative Agricultural

**Appendix 17.16**  
**Agency-wise Disbursement of Refinance Assistance by NABARD in Kerala (1995-96 to 2003-04)**

Sl. No.	Agency	1995-96		1996-97		1997-98		1998-99		1999-2000		2000-01		2001-02		2002-03		2003-04	
		Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	KSCARD Bank Ltd.	78.50	61.80	131.97	71.70	153.67	75.20	110.00	69.30	153.44	72.10	172.47	72.90	303.36	81.30	264.66	86.00	225.90	66.00
2	Commercial Banks	23.62	18.60	9.26	5.00	8.26	4.00	21.55	13.60	16.30	7.70	32.72	13.80	22.66	6.10	9.53	3.00	27.40	8.00
3	State Co-op. Banks	12.24	9.60	15.21	8.30	18.91	9.30	1.49	0.90	18.59	8.70	-	-	24.29	6.50	12.10	4.00	67.18	20.00
4	Regional Rural Banks	12.66	10.00	27.62	15.00	23.55	11.50	25.74	16.20	24.49	11.50	31.46	13.30	22.98	6.10	21.41	7.00	21.57	6.00
<b>Total:</b>		<b>127.02</b>	<b>100.00</b>	<b>184.06</b>	<b>100.00</b>	<b>204.39</b>	<b>100.00</b>	<b>158.78</b>	<b>100.00</b>	<b>212.82</b>	<b>100.00</b>	<b>236.65</b>	<b>100.00</b>	<b>373.29</b>	<b>100.00</b>	<b>307.70</b>	<b>100.00</b>	<b>342.05</b>	<b>100.00</b>

Source: NABARD (Statistical Statement)

**Appendix 17.17**  
**Purpose-wise Refinance by NABARD (1995-96 to 2003-04)**

Sl. No.	Purpose	1995-96		1996-97		1997-98		1998-99		1999-2000		2000-2001		2001-2002		2002-03		2003-04	
		Refinanc	%	efinanc	%	efinanc	%	efinanc	%	efinanc	%	efinanc	%	efinanc	%	efinanc	%	efinanc	%
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	Minor Irrigation	23.04	18.10	26.09	14.20	25.92	12.70	15.30	9.60	22.70	10.70	18.52	7.80	28.99	7.80	19.40	6.30	13.59	4.00
2	Land Development	3.97	3.10	9.24	5.00	16.29	8.00	14.02	8.80	16.18	7.60	23.56	10.00	27.16	7.30	29.57	9.60	28.63	8.00
3	Farm Mechanisation	3.78	3.00	3.79	2.10	7.41	3.60	2.12	1.30	3.76	1.80	3.12	1.30	1.69	0.40	1.22	0.50	0.63	0.20
4	Plantation & Horticulture	24.33	19.20	42.17	22.90	43.53	21.30	34.94	22.00	41.35	19.40	39.49	16.70	53.54	14.30	30.68	10.00	19.94	6.00
5	Dairy Development	6.74	5.30	10.42	5.70	12.73	6.20	12.45	7.80	13.49	6.30	14.16	6.00	14.49	3.90	8.04	2.60	4.87	1.40
6	Fisheries	2.09	1.60	2.22	1.20	2.10	1.00	2.56	1.60	2.22	1.00	2.79	1.10	2.55	0.70	2.47	0.80	1.61	0.50
7	Poultry	3.81	3.00	8.42	4.60	6.46	3.20	4.94	3.30	6.55	3.10	5.96	2.50	7.12	1.70	3.86	1.00	2.67	0.80
8	Bio-gas	0.11	0.10	0.10	0.10	0.11	0.10	0.16	0.10	0.06	0.00	0.21	0.10	0.71	0.20	0.49	0.30	0.29	0.10
9	I.R.D.P.	6.33	5.00	8.67	4.70	9.55	4.70	8.62	5.40	8.26	3.90	-	-	-	-	-	-	-	-
10	Non Farm Sector	51.87	40.60	72.33	39.30	78.84	38.60	59.13	37.20	88.28	41.50	110.25	46.60	210.57	56.40	187.76	61.00	226.96	66.40
11	SC & ST Action Plan	-	-	-	-	-	-	-	-	-	-	0.01	-	-	-	-	-	-	-
12	SGSY	-	-	-	-	-	-	-	-	-	-	5.64	2.40	7.40	2.00	2.67	0.90	0.97	0.30
13	Self Help groups	-	-	-	-	-	-	-	-	-	-	4.39	1.90	6.56	1.70	11.27	4.00	9.98	3.00
11	Agro Processing	0.84	0.70	0.46	0.20	0.53	0.20	1.09	0.70	0.06	0.00	-	-	-	-	-	-	-	-
12	Others	0.11	0.10	0.15	0.10	0.92	0.40	3.45	2.20	9.91	4.70	8.55	3.60	12.51	3.40	10.27	3.00	31.91	9.30
<b>Total</b>		<b>127.02</b>	<b>100.00</b>	<b>184.06</b>	<b>100.00</b>	<b>204.39</b>	<b>100.00</b>	<b>158.78</b>	<b>100.00</b>	<b>212.82</b>	<b>100.00</b>	<b>236.65</b>	<b>100.00</b>	<b>373.29</b>	<b>100.00</b>	<b>307.70</b>	<b>100.00</b>	<b>342.05</b>	<b>100.00</b>

Source: NABARD

**Appendix 18.1**  
**District-wise Details of Female Population, Female Children and Female**  
**Literates in Kerala-2001 Census**

Sl. No	District	Population			Child Population			Literates		
		Total	Female	Percentage	Total	Female	Percentage	Total	Female	Percentage
1	2	3	4	5	6	7	8	9	10	11
	<b>Kerala</b>									
1	Kasaragod	1203342	615579	51.16	150907	74836	49.59	896367	431523	48.14
2	Kannur	2412365	1258221	52.16	270200	132031	48.86	1988014	1008774	50.74
3	Wayanad	786627	393230	49.99	100231	48923	48.81	587030	278199	47.39
4	Kozhikode	2878498	1479824	51.41	334924	164606	49.15	2351548	1168642	49.70
5	Malappuram	3629640	1870161	51.52	531256	262774	49.46	2745398	1381751	50.33
6	Palakkad	2617072	1351278	51.63	302511	148441	49.07	1951428	953925	48.88
7	Thrissur	2975440	1553393	52.21	321910	157093	48.80	2456081	1255834	51.13
8	Ernakulam	3098378	1562497	50.43	327058	159192	48.67	2589038	1276381	49.30
9	Idukki	1128605	562200	49.81	129367	63711	49.25	885166	423906	47.89
10	Kottayam	1952901	988468	50.62	206769	101089	48.89	1674592	838101	50.05
11	Alappuzha	2105349	1092777	51.9	217442	106617	49.03	1768261	898821	50.83
12	Pathanamthitta	1231577	643542	52.25	122235	60134	49.20	1054837	546684	51.83
13	Kollam	2584118	1335502	51.68	283010	138670	49.00	2105396	1060387	50.37
14	Thiruvananthapura	3234707	1663283	51.42	355758	173792	48.85	2572542	1284807	49.94
	<b>Total</b>	<b>31838619</b>	<b>16369955</b>	<b>51.42</b>	<b>3653578</b>	<b>1791909</b>	<b>49.05</b>	<b>25625698</b>	<b>12807735</b>	<b>49.98</b>

Source: Census of India, 2001



**Appendix 18.2**  
**Enrolment of Girl students in Kerala at various stages (in 000's)- 1999-2004**

Year	L.P.Section		U.P.Section		H.S.Section		Pree degree/ +2		Degree		Post graduate	
	Total	Female	Total	Female	Total	Female	Total	Female	Total	Female	Total	Female
1	2	3	4	5	6	7	8	9	10	11	12	13
1999	2010	985	1720	834	1599	806	288	160	131	83	12	9
2000	1932	948	1705	821	1612	809	263	150	145	93	15	11
2001	0	0	0	0	0	0	0	0	0	0	0	0
2002	1880	927	1614	777	1608	796	169	97	145	89	15	10
2003	1853	915	1561	752	1588	785	-	-	144	88	15	10
2004	1828	908	1503	726	1564	770	234	130	153	99	16	12

Source: D Directorate of Public Instruction

Directorate of Collegiate Education

Directorate of Higher Secondary

**Appendix 18.3**  
**District-wise and Stage-wise Enrolment of Girl Students in Schools- (2003-04)**

SI.No	Districts	LPS			UPS			HS			(Nos.) Total		
		Girls		Total	Girls		Total	Girls		Total	Girls		Total
		3	4	5	6	7	8	9	10				
1	Thiruvananthapuram	84368	165960	68193	138165	72936	146957	225497	451082				
2	Kollam	64230	127850	54664	111950	56966	117379	175860	357179				
3	Pathanamthitta	28432	56842	23810	49204	28085	57805	80327	163851				
4	Alappuzha	47845	95968	40443	83490	45005	93387	133293	272845				
5	Kottayam	48596	97811	38258	78900	42332	84824	129186	261535				
6	Idukki	27270	55423	20644	44446	21246	43797	69160	143666				
7	Ernakulam	71334	143423	59096	121097	63754	128255	194184	392775				
8	Thrissur	87200	176360	67799	140202	70079	141155	225078	457717				
9	Palakkad	85214	172283	65543	135670	69944	140782	220701	448735				
10	Malappuram	142511	291982	113331	236726	115704	234265	371546	762973				
11	Kozhikode	85555	173983	70456	146384	74813	152016	230824	472383				
12	Wayanad	25498	52330	18447	38172	19017	38314	62962	128816				
13	Kannur	70272	143524	57043	119418	60531	123171	187846	386113				
14	Kasaragod	36431	74026	28159	58718	29827	61591	94417	194335				
	<b>Total</b>	<b>904756</b>	<b>1827765</b>	<b>725886</b>	<b>1502542</b>	<b>770239</b>	<b>1563698</b>	<b>2400881</b>	<b>4894005</b>				

Source: Directorate of Public Instruction, Thiruvananthapuram.

## Appendix 18.4

## Stage-wise and Management-wise Female School Teachers in Kerala - 2003-04.

Stage	Government			Aided			Unaided			(Nos.)												
	Women	Total	3	Women	Total	4	Women	Total	5	Women	Total	6	Women	Total	7	Women	Total	8	Women	Total	9	
	2	3		4	5		6	7		8	9		10	11		12	13		14	15		
Lower Primary School Teachers	9479	13624		19005	25826		911	1095		29395	40545											
Upper Primary School Teachers	8218	13180		21305	30832		764	998		30287	45010											
High School Teachers	19195	30823		35160	50464		4732	6094		59087	87381											
TTI	204	399		382	472		--	0		586	871											
<b>Total</b>	<b>37096</b>	<b>58026</b>		<b>75852</b>	<b>107594</b>		<b>6407</b>	<b>8187</b>		<b>119355</b>	<b>173807</b>											

Source: Directorate of Public Instruction, Thiruvananthapuram.

## Appendix 18.5

## University-wise Female Teachers in Arts &amp; Science Colleges in Kerala (2001 to 2004)

Sl.No.	Name of University	2001-02			2002-03			2003-04			(Nos.)						
		Women	Total	4	Women	Total	5	Women	Total	6	Women	Total	7	Women	Total	8	
		2	3		4	5		6	7		8	9		10	11		
1	Kerala	1934	3733		1634	3169		1625	3151								
2	Calicut	1728	3276		1985	3723		1973	3693								
3	Mahatma Gandhi	1537	2891		1458	2828		1440	2791								
4	Kannur	360	685		416	738		402	712								
	<b>TOTAL:</b>	<b>5559</b>	<b>10585</b>		<b>5493</b>	<b>10458</b>		<b>5440</b>	<b>10347</b>								

Source: Directorate of Collegiate Education, Thiruvananthapuram.

**Appendix 18.6**  
**Womens Autonomy Levels by State**

Si.No	State	% not involved in any decision making	% involved in decision making on:				% who do not need permission to		% with access to money
			What to Cook	Own Health Care	Purchasing Jewellery etc.	Staying with her parents/sibling	Go to the market	Visit friends/relatives	
1	2	3	4	5	6	7	8	9	10
1	Andhra pradesh	7.4	86.2	56.1	61.4	57.7	20.1	14.6	57.7
2	Arunachal Pradesh	1.4	93.6	70.0	76.5	74.8	46.8	53.7	78.6
3	Assam	4.6	88.4	65.1	54.3	45.4	13.2	13.9	35.0
4	Bihar	13.5	82.4	47.6	42.9	44.0	21.7	20.5	66.7
5	Delhi	5.3	83.0	68.7	58.5	46.5	51.7	33.9	82.3
6	Goa	3.6	89.9	61.6	62.5	72.4	66.7	58.7	82.4
7	Gujarat	4.1	90.4	71.4	73.6	65.1	55.1	50.6	73.6
8	Haryana	3.4	93.5	67.2	77.8	64.5	36.7	20.8	70.8
9	Himachal Pradesh	0.8	95.1	80.8	93.4	91.4	32.5	31.1	80.1
10	Jammu & Kashmir	12.4	80.0	55.5	58.2	48.9	12.0	7.8	58.1
11	Karnataka	8.1	88.4	49.3	47.3	44.5	43.0	34.3	67.0
12	Kerala	7.2	80.9	72.6	63.4	59.7	47.7	37.9	66.2
13	Madhya Pradesh	12.5	81.7	36.6	44.3	38.1	21.0	19.5	49.3
14	Maharashtra	7.2	87.5	49.9	50.3	44.4	48.5	32.1	64.2
15	Manipur	3.3	87.4	43.3	66.3	63.2	28.6	28.3	76.8
16	Meghalaya	2.6	91.7	78.9	70.6	78.4	46.5	48.5	81.5
17	Mizoram	5.8	88.2	73.2	77.8	77.0	64.2	59.5	55.0
18	Nagaland	0.4	97.4	69.4	77.3	80.0	17.3	20.1	27.9
19	Orissa	10.6	86.3	38.6	54.8	48.3	18.2	15.4	46.3
20	Punjab	1.0	96.7	78.5	75.3	67.6	50.1	28.0	78.3
21	Rajasthan	13.3	82.3	40.6	42.7	39.3	19.0	17.0	40.5
22	Sikkin	2.7	92.1	60.2	57.9	56.7	38.2	41.6	78.9
23	Tamil Nadu	2.4	92.1	61.1	67.4	62.4	78.5	55.9	79.0
24	Uttar Pradesh	16.4	77.8	44.8	41.4	36.1	17.4	12.4	52.3
25	West Bengal	8.0	87.4	45.1	48.4	46.7	17.8	14.1	51.4
	<b>India</b>	<b>9.4</b>	<b>85.1</b>	<b>51.6</b>	<b>52.6</b>	<b>48.1</b>	<b>31.6</b>	<b>24.4</b>	<b>59.6</b>

Source: National Family Health Survey-II, 1998-99

**Appendix 18.7**  
**Women's representation in Local Governments in Kerala - 2004**

SI.No	District	Grama Panchayat					Block Panchayat					District Panchayats					Municipalities	
		Total wards	Seats reserved for women	Seats reserved for women presidents	Total Wards	Seats reserved for women	No. of seats reserved for women presidents	Total wards	Seats reserved for women	Total wards reserved for women	Total wards	Seats reserved for women	Total wards reserved for women	Total wards	Seats reserved for women	Total wards	Seats reserved for women	
1	2	3	4	5	6	7	8	9	10	11	12							
1	Thiruvananthapuram	1096	394	28	129	48	5	25	9	120	42							
2	Kollam	1030	365	27	136	52	5	24	8	56	19							
3	Pathanamthitta	634	237	15	91	36	2	15	5	81	28							
4	Alappuzha	935	339	22	121	48	3	21	7	162	56							
5	Kottayam	950	344	22	116	45	3	21	7	109	38							
6	Idukki	612	228	14	80	32	2	15	5	28	10							
7	Ernakulam	1118	410	27	153	60	4	25	9	203	69							
8	Thrissur	1223	441	32	173	68	5	27	9	154	53							
9	Palakkad	1178	427	32	141	55	5	26	9	130	44							
10	Malappuram	1460	520	37	165	61	6	30	10	178	61							
11	Kozhikode	1090	395	27	135	51	4	25	9	78	27							
12	Wayanad	354	128	10	36	13	2	15	5	21	7							
13	Kannur	1049	382	24	109	40	3	23	8	211	73							
14	Kasaragod	528	190	14	53	20	2	15	5	66	23							
<b>Total</b>		<b>13255</b>	<b>4800</b>	<b>331</b>	<b>1638</b>	<b>629</b>	<b>51</b>	<b>307</b>	<b>105</b>	<b>1597</b>	<b>550</b>							

Note: Does not include wards and seats in Corporations.

Source:-State Election Commission

**Appendix 18.8**  
**Major Programmes of Kerala Women's Development Corporation during 2003-04.**

SI.No	Programmes/Schemes	No. of Units	No. of beneficiaries
1	2	3	4
1	NBCFDC Loan	--	264
2	NMDFC Loan	--	369
3	State Government Loan	--	74
4	Loan Scheme of Women Groups/NGO's	--	NA
5	Production cum Training Centres	9	830
6	STEP Project of GOI		
	a) Alappuzha	10	250
	b) Kasaragod	10	250
7	Working Women's Hostel		
	a) Ernakulam	2	110
	b) Kannur	1	60
	c) Malappuram	2	115
	d) Kozhikode	1	50
8	State Institute of Training for women	2	210
9	Marketing Centres	17	--
10	Energy Meter Repairing and Testing Centre	8	160
11	Exhibition cum Sales/Fairs	3	NA

Source: KSWDC Ltd, TVM.

## Appendix 18.9

## District-wise Distribution of Female Work Seekers- 2003

Sl. No.	District	Total Work seekers (Nos)	Female Work seekers (Nos)
1	2	3	4
1	Thiruvananthapuram	594644	354365
2	Kollam	410396	248870
3	Alappuzha	154801	93909
4	Pathanamthitta	361484	210706
5	Kottayam	256028	148806
6	Idukki	130428	74119
7	Ernakulam	409343	234710
8	Trissur	555215	221164
9	Palakkad	277975	144029
10	Malappuram	244934	126169
11	Kozhikkode	390089	221734
12	Wayanad	83624	44350
13	Kannur	240218	137074
14	Kasargode	95859	50147
	<b>TOTAL</b>	<b>4205038</b>	<b>2310152</b>

Source: Directorate of Employment, Thiruvananthapuram.

**Appendix 18.10**  
**DISTRICT-WISE COMPLAINTS RECEIVED BY KERALA WOMEN'S COMMISSION DURING 2004.**  
 (January 2004 to September 30, 2004). - (Nos.)

Sl.No	Item	Tvm:	Kollam	Pathanamthitta	Alappuzha	Idukki	Kottayam	Ernakulam	Thrissur	Palakkad	Malappuram	Wayanad	Kozhikode	Kannur	Kasaragod	Total
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	Harassment of Women	175	48	36	7	35	34	36	13	16	15	12	4		2	433
2	Dowry Harassment	60	32	28	15	8	8	12	15	16	15	11	7	6	4	237
3	Harassment by husband	191	61	41	75	30	55	47	20	43	23	12	35	17	18	668
4	Cheating	43	21	12	10	5	24	17	8	12	13	2	10	7	4	188
5	Divorced by husband	36	4	2			1	4	1	2	1	1				52
6	Suspicious death	9	6	3	13	5	11	11	10	12	7	1	9	5		102
7	Property related	105	26	18	37	8	39	35	20	17	20	10	24	12	10	381
8	Job related	30	2	1	7		19	12	15	8	7	2	6	5		114
9	Sexual harassment	46	8	5	6	1	11	9	5	7	15	12	2	1	2	130
10	Use of abusive language	68	52	31	18	11	29	12	12	10	10	3	9	4	6	275
11	Violence	96	33	18	39	10	89	67	20	20	25	15	10	13	4	459
12	Against Police	19	6	3	7	3	5	2	5	7	7	1	4	5	6	80
13	Nuisance of anti-social elements	29	38	27	8	3	10	9	1	1	1	3	2	2	8	142
14	To get divorce	20	4	2	3		2	2	1	2	3	1	1	1		42
15	Alimony	6		2	2	1	4	9	13	12	13	13	1			76
16	Economic help	1	2	1			2	1	3	5	3	2		1		21
17	Path Problems	48	19	14	10		6	9	2	2	2	1	6	2	4	125
18	Doctor's negligence	1	1			1	1	3								7
19	Child marriage	1														1
20	Miscellaneous	194	146	74	158	36	62	45	30	35	28	17	70	50	24	969
<b>Total</b>		<b>1178</b>	<b>509</b>	<b>318</b>	<b>415</b>	<b>157</b>	<b>412</b>	<b>342</b>	<b>194</b>	<b>227</b>	<b>208</b>	<b>119</b>	<b>200</b>	<b>131</b>	<b>92</b>	<b>4502</b>

Source: Kerala Vanitha Commission



## Appendix 18.11

## Incidence &amp; Rate of Crime Committed Against Women In States and UTs During 2001 - India

Sl. No.	State/UT	Incidence (Nos)	Percentage		Rate of Total Cognizable Crimes	Rank*	Rank**
			Contribution to All India Total	Population @ (in Lakhs)			
1	2	3	4	5	6	7	8
<b>STATES</b>							
1	Andhra Pradesh	16477	11.5	757.3	21.8	2	2
2	Arunachal Pradesh	180	0.1	10.9	16.5	8	23
3	Assam	4243	3	266.4	15.9	12	13
4	Bihar	5356	3.7	828.8	6.5	28	12
5	Chhattisgarh	3989	2.8	208	19.2	4	14
6	Goa	83	0.1	13.4	6.2	30	28
7	Gujarat	5805	4	506	11.5	20	9
8	Haryana	3393	2.4	210.8	16.1	11	15
9	Himachal Pradesh	890	0.6	60.8	14.6	13	20
10	Jammu & Kashmir	1656	1.2	100.7	16.4	9	19
11	Jharkhand	2229	1.6	269.1	8.3	26	18
12	Karnataka	6002	4.2	527.3	11.4	21	8
13	Kerala	5450	3.8	318.4	17.1	5	10
14	Madhya Pradesh	14549	10.1	603.9	24.1	1	3
15	Maharashtra	12524	8.7	967.5	12.9	17	4
16	Manipur	112	0.1	23.9	4.7	31	27
17	Meghalaya	66	0	23.1	2.9	33	29
18	Mizoram	126	0.1	8.9	14.1	15	25
19	Nagaland	30	0	19.9	1.5	34	31
20	Orissa	5357	3.7	367.1	14.6	14	11
21	Punjab	2361	1.6	242.9	9.7	22	16
22	Rajasthan	12175	8.5	564.7	21.6	3	5
23	Sikkim	24	0	5.4	4.4	32	32
24	Tamil Nadu	10111	7	621.1	16.3	10	6
25	Tripura	438	0.3	31.9	13.7	16	22
26	Uttar Pradesh	20227	14.1	1660.5	12.2	19	1
27	Uttaranchal	749	0.5	84.8	8.8	24	21
28	West Bengal	6570	4.6	802.2	8.2	27	7
<b>TOTAL (STATES)</b>		<b>141172</b>	<b>98.2</b>	<b>10105.62</b>	<b>14</b>		
<b>UNION TERRITORIES</b>							
29	A&N Islands	34	0	3.6	9.6	23	30
30	Chandigarh	150	0.1	9	16.6	6	24
31	D&N Haveli	19	0	2.2	8.6	25	33
32	Daman & Diu	10	0	1.6	6.3	29	34
33	Delhi	2291	1.6	137.8	16.6	7	17
34	Lakshadweep	0	0	0.6	0	0	0
35	Pondicherry	119	0.1	9.7	12.2	18	26
<b>TOTAL (UT's)</b>		<b>2623</b>	<b>1.8</b>	<b>164.53</b>	<b>15.9</b>		
<b>TOTAL (ALL-INDIA)</b>		<b>143795</b>	<b>100</b>	<b>10270.15</b>	<b>14</b>		

Source: National Crime Record Bureau.

**Appendix 18.12**  
**Crime Against Women Reported in Kerala State During 2003**

Sl. No.	District/City								(Nos.)
		Rape	Molestation	Kidnapping	Eve Teasing	Dowry Death	Torture	Others	Total
1	2	3	4	5	6	7	8	9	10
1	TVPM	45	326	20	9	9	314	117	850
2	PTA	13	94	0	0	2	116	20	245
3	KLM	53	317	11	0	5	365	37	788
4	ALPY	10	124	12	2	3	178	7	336
5	IDK	14	93	0	6	0	104	9	226
6	KTM	25	141	10	10	0	115	1	302
7	EKM	33	109	8	0	2	92	157	390
8	TSR	29	157	7	10	3	224	235	665
9	PKD	47	140	1	4	3	214	50	459
10	MPM	42	57	4	2	2	460	256	823
11	KKD	34	126	7	10	3	367	321	847
12	WYD	20	50	0	2	1	85	179	337
13	KNR	13	65	2	3	0	174	137	394
14	KSD	15	71	4	3	0	66	134	293
	<b>Others</b>								
15	Railways	0	0	0	0	0	0	8	8
16	CBCID	1	0	1	0	0	2	0	4
	<b>TOTAL</b>	<b>394</b>	<b>1870</b>	<b>87</b>	<b>61</b>	<b>33</b>	<b>2876</b>	<b>1668</b>	<b>6967</b>

Source: State Crime Record Beaurow.

**Appendix 18.13**  
**Suicide cases by causes in Kerala for the period 2002 and 2003**

Sl. No	Causes	(Nos.)					
		2001			2002		
		M	F	T	M	F	T
1	2	3	4	5	6	7	8
1	Failure in examinations	39	50	89	35	53	88
2	Poverty	2	--	2	12	1	13
3	Love affairs	48	37	85	45	55	100
4	Insanity	694	319	1013	910	442	1352
5	Family Problems	1610	690	2300	1446	581	2027
6	Dispute over property	35	7	42	26	3	29
7	Deadful diseases	1080	423	1503	980	406	1386
8	Unemployment	89	10	99	126	4	130
9	Bankruptcy or sudden change in economic status	1000	135	1135	902	117	1019
10	Death of dear person	51	42	93	42	34	76
11	Fall in social reputation	17	6	23	78	14	92
12	Dowry dispute	--	22	22	3	7	10
13	Illegitimate pregnancy	--	6	6	0	4	4
14	Causes not known	1156	405	1561	1000	343	1343
15	Other causes	1344	493	1837	1102	374	1476
	<b>Total</b>	<b>7165</b>	<b>2645</b>	<b>9810</b>	<b>6707</b>	<b>2438</b>	<b>9145</b>

**Appendix 19.1**  
**Total Work Seekers in Kerala**

Year( at the end of December)	General Work Seekers	Professional/Technical Work Seekers	Total Work Seekers
1	2	3	4
1996	3158515	128959	3287474
1997	3412211	138597	3550808
1998	3629499	154750	3784249
1999	3748493	152148	3900641
2000	4049082	166201	4215283
2001	4254307	177032	4431339
2002	3499774	180118	3679892
2003	3845641	158897	4004538
2004(8/04)	3624907	170020	3794927

Source: Directorate of Employment and Training

**Appendix 19.2**  
**Distribution of Work Seekers in Kerala by Educational Level**

Year (at the end of December)	Below SSLC	SSLC	PDC	Degree	PG	SSLC & above	% to total work seekers	Total work seekers
1	2	3	4	5	6	7	8	9
1996	822183	1984136	287766	161962	31427	2465291	75	3287474
1997	858219	2144636	327753	182555	37645	2692589	76	3550808
1998	935092	2224481	372921	206243	45512	2849157	75	3784249
1999	904194	2300026	415298	228976	52147	2996447	77	3900641
2000	952434	2416709	530231	256772	59137	3262849	77	4215283
2001	966914	2574722	542815	280618	66270	3464425	78	4431339
2002	711714	2162627	510063	242060	53428	2968178	80	3679892
2003	746129	2364016	564939	268124	61330	3258409	81	4004538
2004(8/04)	676719	2271871	566585	235414	44338	3118208	82	3794927

Source: Directorate of Employment & Training

**Appendix 19.3**  
**Number of Professional and Technical Work Seekers**

Year (at the end of December)	Medical Graduates	Engineering Graduates	Diploma holders in Enggl	ITI Certificate Holders	Agricultural Graduates	Veterinary Graduates	Total
1996	1976	7274	28565	89847	1265	32	128959
1997	2158	7059	31787	96241	1327	25	138597
1998	2126	7314	37201	106690	1324	95	154750
1999	1698	8334	39408	101384	1205	119	152148
2000	2455	9858	42991	109592	1284	21	166201
2001	2691	10349	46377	115736	1496	383	177032
2002	3736	8506	43128	123387	881	480	180118
2003	3567	8116	40660	105221	897	436	158897
Aug-04	3344	7657	41654	115657	947	761	170020

Source: Directorate of Employment & Training

**Appendix 19.4**

**District-wise Distribution of Work Seekers (as on 31.12.2003)**

Sl.No.	District	General Work seekers			Professional/Technical Work seekers			Total Work Seekers		
		Men	Women	Total	Men	Women	Total	Men	Women	Total
1	Thiruvananthapuram	215657	349094	564751	24622	5271	29893	240279	354365	594644
2	Kollam	149414	243706	393120	12112	5164	17276	161526	248870	410396
3	Paithanamthitta	56064	92401	148465	4828	1508	6336	60892	93909	154801
4	Alappuzha	141362	207544	348906	9416	3162	12578	150778	210706	361484
5	Kottayam	98775	147479	246254	8447	1327	9774	107222	148806	256028
6	Idukki	52841	73083	125924	3468	1036	4504	56309	74119	130428
7	Eranakulam	154108	227505	381613	20525	7205	27730	174633	234710	409343
8	Thrissur	124226	219017	343243	9825	2147	11972	334051	221164	555215
9	Palakkad	128456	141431	269887	5490	2598	8088	133946	144029	277975
10	Malappuram	114134	124007	238141	4631	2162	6793	118765	126169	244934
11	Kozhikode	158717	218824	377541	9638	2910	12548	168355	221734	390089
12	Wayanad	37813	43933	81746	1461	417	1878	39274	44350	83624
13	Kannur	97732	135175	232907	5412	1899	7311	103144	137074	240218
14	Kasaragopd	44135	49508	93643	1577	639	2216	45712	50147	95859
	TOTAL	1573434	2272707	3846141	121452	37445	158897	1694886	2310152	4005038

Source: Directorate of Employment & Training

**Appendix 19.5**  
**Unemployment Assistance and Self Employment Scheme**

Year (at the end of December)	Unemployment Assistance			Self Employment Scheme		
	2 Application received	3 No of Beneficiaries	4 Amount Disbursed (Rs. Lakhs)	5 Application received	6 No of Beneficiaries	7 Amount Disbursed (Rs. Lakhs)
1996	140003	297253	1464.84	144	438	2.42
1997	138277	294568	3206.69	1985	26	0.03
1998	147380	271959	1926.89	3548	1582	9.52
1999	188584	369863	2366.09	3384	885	7.09
2000	56906	346114	3689.39	17097	469	29.75
2001	65245	351685	2175.97	7114	330	12.69
2002	180586	332287	2516.4	nil	416	29.69
2003	186029	348027	1423.10	7359	668	36.61
Aug-04	192221	344629	4329.90	1849	317	33.48

Source: Directorate of Employment & Training

**Appendix 19.6**  
**Employment in the Public and Private Sectors in Kerala Base Year 96**

Year	Public Sector			Private Sector			Total			Index	Total	Indus		
	Men	Women	Total	Men	Women	Total	Men	Women	Index					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Dec-96	440564	185402	625966	100.00	293918	255827	549745	100.00	441229	100.00	734482	100.00	1175711	100.00
Dec-97	433717	188258	621975	99.36	296343	259898	556241	101.18	448156	101.57	730060	99.40	1178216	100.48
Dec-98	452037	191747	643784	102.85	303529	272272	575801	104.74	464019	105.17	755566	102.87	1219585	104.02
Dec-99	452023	191904	643927	102.87	302377	285960	588337	107.02	477864	108.30	754400	102.71	1232264	105.51
Dec-00	457374	193867	651241	104.04	306901	293390	600291	109.19	487257	110.43	764275	104.06	1251532	107.24
Dec-01	450711	194959	645670	103.15	299235	289200	588435	107.04	484159	109.73	749946	102.11	1234105	105.92
Dec-02	445932	192064	637996	101.92	300768	281540	582308	105.92	473604	107.34	746700	101.66	1220304	104.50
Dec-03	429208	190055	619263	98.93	275407	274163	549570	99.97	464218	105.21	704615	95.93	1168833	100.57

## Appendix 19.7

Number of Placement through Employment Exchanges  
and Monthly Average No of Employers using Employment  
Exchanges in Kerala

Year	No. of Placements	Monthly average no. of Employers using employment Exchanges
1	2	3
1996	16996	486
1997	18268	374
1998	19375	350
1999	19661	447
2000	23012	388
2001	15750	376
2002	12409	312
2003	9902	223
2004/8	6317	236

Source: Directorate of Employment & Training

## Appendix 19.8

District-wise Employment both in Public and Private Sectors in  
Kerala as on 31st March

Sl.No	District	1999	2000	2001	2002	2003	2004(Provisional)
1	Thiruvananthapuram	181247	174370	179327	182508	185154	184977
2	Kollam	93749	103957	103746	101780	99232	93026
3	Pathanamthitta	39205	38592	42031	40937	42067	41422
4	Alappuzha	61361	60627	60415	59013	59347	38441
5	Kottayam	64738	63515	62445	61604	62028	61399
6	Idukki	78826	90044	92263	96761	97760	87536
7	Ernakulam	164524	166170	160995	159010	158835	162206
8	Thrissur	99362	98788	110252	107677	105898	106553
9	Palakkad	84636	83179	80150	79160	76393	46233
10	Malappuram	65851	69470	69600	67237	63399	63007
11	Wayanad	30120	31748	32250	18751	30537	30617
12	Kozhikode	99019	96405	95648	89755	88712	79523
13	Kannur	91024	93199	91331	89595	88679	81560
14	Kasargod	56152	55857	61241	60215	53388	52552
<b>State</b>		<b>1209814</b>	<b>1225921</b>	<b>1241694</b>	<b>1214003</b>	<b>1211399</b>	<b>1128852</b>

Source: Directorate of Employment



## Appendix 20.1

Sl. No.	States	Annual Ranking of Life & Work across India - India's Best and Worse States																				Overall Score		
		Overall Rank.		Agriculture		Consumer Market		Law and Order		Health		Education		Infra-structure		Investment Senario		Budget and		2003	2004			
		2003	2004	2003	2004	2003	2004	2003	2004	2003	2004	2003	2004	2003	2004	2003	2004	2003	2004					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22			
<b>Big States</b>																								
1	Andhra Pradesh	10	11	4	4	12	12	9	9	10	11	12	10	11	8	12	8	9	1.32	1.46				
2	Assam	14	15	17	18	13	16	16	18	15	14	8	10	16	15	9	16	15	18	0.68	0.87			
3	Bihar	17	20	14	11	17	20	17	19	14	20	17	20	17	20	17	20	16	20	0.24	0.41			
4	Chattishgarh	NR	16	NR	19	NR	17	NR	10	NR	15	NR	16	NR	16	NR	13	NR	16	NR	0.83	0.89		
5	Gujarat	6	7	5	5	7	6	5	7	7	9	9	11	7	5	2	5	2	3	1.83	1.79			
6	Haryana	5	5	2	2	2	3	10	13	11	13	10	9	5	6	1	3	3	2	1.84	1.93			
7	Himachal Pradesh	3	3	15	16	4	2	3	3	2	2	1	2	1	2	4	4	7	6	2.15	2.15			
8	Jammu & Kashmir	9	10	12	15	6	7	13	12	1	4	7	7	8	10	10	9	9	7	1.45	1.61			
9	Jharkhand	NR	19	NR	20	NR	18	NR	20	NR	19	NR	19	NR	19	NR	11	NR	17	NR	0.62	0.62		
10	Karnataka	8	8	6	7	9	9	6	5	6	5	6	8	9	9	6	10	6	10	1.57	1.69			
11	Kerala	2	2	13	12	5	4	1	1	3	1	2	1	3	7	12	14	10	8	2.23	2.34			
12	Madhya Pradesh	13	12	11	9	15	14	7	6	13	17	14	15	12	13	14	8	13	13	0.77	1.17			
13	Maharashtra	7	6	9	13	3	5	8	8	7	4	4	4	6	3	5	6	4	4	1.69	1.86			
14	Orrisa	16	18	16	17	16	19	11	15	16	16	15	14	15	18	16	19	17	19	0.46	0.71			
15	Punjab	1	1	1	1	1	1	12	11	4	6	5	6	2	1	3	1	1	1	2.52	2.46			
16	Rajasthan	11	13	10	10	11	11	4	4	12	12	15	17	11	12	11	15	11	12	1.00	1.14			
17	Tamil Nadu	4	4	3	3	8	8	2	2	5	3	3	3	4	8	7	7	5	5	1.95	2.07			
18	Uttaranchal	NR	9	NR	14	NR	10	NR	16	NR	8	NR	8	NR	4	NR	2	NR	11	NR	1.69	1.69		
19	Uttar Pradesh	15	17	7	6	14	15	15	17	17	18	16	18	14	17	13	17	14	15	0.57	0.80			
20	West Bengal	12	14	8	8	10	13	14	14	10	11	12	13	13	14	15	18	12	14	0.87	1.08			
<b>Small States</b>																								
1	Arunachal Pradesh	NR	6	NR	10	NR	8	NR	8	NR	6	NR	10	NR	6	NR	5	NR	6	NR	1.78	1.78		
2	Delhi	2	2	2	2	1	1	1	4	2	5	2	7	2	1	2	4	1	1	3.42	3.40			
3	Goa	1	3	1	3	2	2	2	5	1	2	1	3	1	2	1	3	2	2	3.85	3.33			
4	Manipur	NR	8	NR	4	NR	10	NR	7	NR	7	NR	5	NR	7	NR	8	NR	7	NR	1.65	1.65		
5	Meghalaya	NR	10	NR	7	NR	7	NR	10	NR	10	NR	9	NR	10	NR	10	NR	10	NR	1.18	1.18		
6	Mizoram	NR	3	NR	6	NR	5	NR	2	NR	1	NR	2	NR	4	NR	1	NR	5	NR	3.33	3.33		
7	Nagaland	NR	7	NR	8	NR	4	NR	9	NR	8	NR	6	NR	9	NR	7	NR	8	NR	1.68	1.68		
8	Pondichery	NR	1	NR	1	NR	3	NR	1	NR	4	NR	4	NR	3	NR	6	NR	3	NR	3.55	3.55		
9	Sikkim	NR	5	NR	9	NR	6	NR	3	NR	3	NR	1	NR	5	NR	2	NR	4	NR	3.10	3.10		
10	Tripura	NR	9	NR	5	NR	9	NR	6	NR	9	NR	8	NR	8	NR	9	NR	9	NR	1.47	1.47		
<b>Union Territories</b>																								
1	Andaman & Nicobar	NR	3	NR	1	NR	3	NR	3	NR	3	NR	2	NR	4	NR	5	NR	4	NR	NR	NR		
2	Chandigarh	NR	1	NR	2	NR	1	NR	2	NR	1	NR	3	NR	1	NR	1	NR	1	NR	NR	NR		
3	Dadra & Nagar Havel	NR	5	NR	5	NR	5	NR	4	NR	2	NR	5	NR	5	NR	2	NR	5	NR	NR	NR		
4	Daman & Diu	NR	4	NR	3	NR	2	NR	5	NR	4	NR	4	NR	2	NR	4	NR	2	NR	NR	NR		
5	Lakhadweep	NR	2	NR	4	NR	4	NR	1	NR	5	NR	1	NR	3	NR	3	NR	3	NR	NR	NR		

Source: India Today, Special Issue, August 2004

## Appendix 20.2

## Socially Most Developed and Least Developed Districts in States

Sl. No	States	Social Most Developed District	Socially Least Developed District
1	2	3	4
<b><i>Big States</i></b>			
1	Andhra Pradesh	West Godavari	Mahbubnagan
2	Assam	Sibsagan	hailakandi
3	Bihar	Patna	Sitamarli
4	Chattishargh	Durg	Dentewada
5	Gujarat	Navasari	Dohad
6	Haryana	Panchkula	Kaithal
7	Himachal Pradesh	Shimla	Kinnaur
8	Jammu & Kashmir	Pulwama	Poonch
9	Jharkhand	Ranchi	Sahibganj
10	Karnataka	Kodagai	Gulbanga
11	Kerala	Kollam	Malappuram
12	Madhya Pradesh	Bhopal	Tikkamganh
13	Maharashtra	Mumbai (Subarban)	Aurangabad
14	Orissa	Khordha	Raygada
15	Punjab	Hoshinapur	Mansa
16	Rajsthan	Kota	Sawai Madhopur
17	Tamil Nadu	Nilgiris	Dindigal
18	Uttaranchal	Garhaval	Champawat
19	Uttar Pradesh	Lucknow	Shavasti
20	West Bengal	Kolkotta	Purulia
<b><i>Small States</i></b>			
1	Arunachal Pradesh	East sang	Tirap
2	Delhi	Central Delhi	Northeast Delhi
3	Goa	North Goa	South goa
4	Manipur	Impahal West	Tamenglong
5	Meghalaya	Jaintia Hilla	South Garo Hills
6	Mizoram	Serchhip	Lawngtali
7	Nagaland	Kokokchung	Tuensang
8	Pndichery	Mahi	Pondicherry
9	Sikkim	South Sikkim	West Sikkim
10	Tripura	West Tripura	Dhali

Source: India Today, Special Issue, August 2004

Appendix 20.3

Indicators of Selected States

S.I.N o.	States	Spending Spree	Biggest State Economic-size of state GDP	10 states with richest population -per capita income		10 states with least number of poor population below poverty line		10 most literate states- Literacy Level		10 states with lowest infant mortality rates		10 states with highest life expectancy	
				Today	2020	Today	2020	Today	2020	Today	2020	Today	2020
3	4	5	6	7	8	9	10	11	12	13	14	15	
1	Andhra Pradesh	68	7.07 (5)	6.69 (7)	-	15.36 (6)	4.71 (8)	-	61 (9)	-	-	-	
2	Assam	224	-	-	-	-	-	-	63 (10)	30 (10)	-	-	
3	Bihar	268	-	-	-	-	-	-	55 (6)	23 (4)	62.81 (8)	71.90 (4)	
4	Delhi	-	-	4.89	26.616	1.06,837	-	81.8 (4)	90.12 (5)	-	-	-	
5	Goa	-	-	-	30.747	1,16,330	-	82.3 (3)	90.76 (3)	-	-	-	
6	Gujarat	57	6.40 (6)	7.22 (5)	15,151 (7)	47,142 (6)	13.13 (4)	1.75 (4)	45 (3)	15 (2)	62.15 (9)	67.48 (10)	
7	Haryana	57	-	-	15,615 (6)	41,198 (9)	7.94 (2)	0.17 (1)	56(6)	27(7)	65.63 (6)	68.83 (8)	
8	Himachal Pradesh	226	-	-	12,564(10)	-	-	-	-	-	-	-	
9	Jammu & Kashmir	312	-	-	-	-	-	75.9 (7)	89.83 (7)	-	-	-	
10	Karnataka	85	5.84 (7)	8.49 (3)	13,265 (9)	52,523 (4)	19.00 (7)	3.07 (6)	-	-	93.55 (7)	-	
11	Kerala	107	-	3.01 (10)	-	-	12.05 (3)	1.04 (3)	90.9 (1)	92.76 (2)	11 (1)	72.81 (1)	
12	Madhya Pradesh	105	3.95 (8)	-	-	-	-	-	-	-	8 (1)	73.72 (1)	
13	Maharashtra	67	13.94 (1)	13.43 (1)	17288 (5)	48312 (5)	24.58 (8)	6.32 (9)	77.3 (6)	90.51 (4)	46 (4)	25 (6)	
14	Mizoram	-	-	-	-	-	-	-	88.5 (2)	95.15 (1)	-	-	
15	Orissa	150	-	-	-	-	-	-	-	-	-	-	
16	Pondicherry	-	-	-	21072 (3)	138368 (1)	-	-	81.5 (5)	90.11 (8)	-	-	
17	Punjab	76	3.54 (10)	-	17450 (4)	40831 (10)	5.84 (1)	0.84 (2)	70 (10)	48 (5)	29 (8)	69.90(2)	
18	Rajasthan	102	4.23 (8)	4.58 (9)	-	-	14.78 (5)	1.88 (5)	-	-	30 (9)	-	
19	Sikkim	-	-	-	-	43174 (8)	-	-	-	-	-	-	
20	Tamil Nadu	89	7.43 (3)	8.27 (4)	14347 (8)	48576 (7)	20.95 (8)	3.66 (7)	85.02 (10)	44 (2)	20 (3)	66.4 (4)	
21	Tripura	-	-	-	-	-	-	-	73.5 (9)	86.62 (9)	66.4 (4)	72.36 (3)	
22	Uttar Pradesh	130	9.08 (2)	6.85 (6)	-	-	-	-	73.7 (8)	86.40 (8)	-	-	
23	West Bengal	150	7.17 (4)	8.86 (2)	-	-	28.01 (10)	11.15 (10)	-	-	25. (5)	6.15 (10)	
												65.85 (5)	71.83 (5)

Clm. 3. figures are for 2001-02, excludes share of taxes and grants from Centre  
 Clms 4&5. Figures are percentage share of GDP in India's GDP in 2000-01 and 2001-02 at 1993-94 prices  
 Clm 6 & 7. Per capita State gross domestic product at 1993-94 prices. Today's figures are for 2001  
 Clms 8 & 9 figures are percentage of population living below poverty line Today's figures are for 1998-2000.  
 Clms 10 & 11 Percentage of literate population (excluding 0-6 age); today's figures are for 2001.  
 Clms. 12 & 13 Infant deaths per 1000 live births. Today's figures are for 1998-01 and 2020's for 218-2020  
 Clms 14 & 15 Figures are average life span in years Today's figures are for 1998-01 and 2020's for 2018-2020.  
 Note: Figures in brackets gives ranks  
 Source: India Today, Special Issue, August 2004

Appendix 20.4  
Gross Enrolment Ratio in Classes I-V, VI- VIII and I-VIII

Sl.No.	States/UTs	2001-2002								
		Classes-V (6-11 yrs)		Classes VI-VIII (11-14 yrs)		Classes I-VIII (6-14 yrs)				
		Boys	Girls	Total	Boys	Girls	Total			
1		3	4	5	6	7	8	9	10	11
1	Andhra Pradesh	104.71	103.22	103.97	56.13	48.32	52.28	84.42	80.47	82.47
2	Arunachal Pradesh	125.03	103.84	114.43	73.77	65.97	70.02	106.55	90.87	98.82
3	Assam	127.18	107.42	117.43	78.73	62.27	70.63	108.63	90.2	99.54
4	Bihar	95.45	61.19	78.7	38.22	21.07	30.07	72.72	45.78	59.89
5	Chattisgarh	124.24	108.13	116.12	78.86	57.15	68.01	106.95	88.93	97.89
6	Goa	68.58	57.66	62.86	75.54	65.63	70.54	71.08	60.39	65.55
7	Gujarat	132.82	111.16	122.29	73.18	67.96	70.67	109.52	94.5	102.25
8	Haryana	76.33	76.54	76.43	68.04	63.32	65.84	73.27	71.68	72.53
9	Himachal Pradesh	99.16	81.87	90.01	99.35	86.67	92.88	99.23	83.52	91.02
10	Jammu&Kashmir	102.43	78.07	89.85	84.32	64.4	74.39	95.91	73.37	84.41
11	Jharkhand	100.51	76.34	88.56	43.86	30.76	37.56	78.02	58.83	68.63
12	Karnataka	116.8	108.57	112.74	77.73	70.07	73.93	101.54	93.42	97.53
13	Kerala	85.87	85.11	85.5	100.47	94.96	97.77	91.41	88.85	90.16
14	Madhya Pradesh	119.82	102.16	111.24	70.76	46.9	59.27	101.13	81.34	91.55
15	Maharashtra	110.57	105.86	108.27	94.4	85.71	90.14	104.54	98.32	101.5
16	Manipur	108.24	90.77	99.13	83.56	72.22	77.86	99.35	84.41	91.65
17	Meghalaya	117.79	107.5	112.42	60.16	61.49	60.83	97.07	91.64	94.26
18	Mizoram	132.14	106.67	119.07	81.45	78.45	79.95	113.87	96.84	105.21
19	Nagaland	110.7	100.75	105.7	59.15	61.43	60.26	92.19	87.22	89.72
20	Orissa	133.52	97.25	115.64	67.03	44.33	55.89	107.19	76.39	92.03
21	Punjab	76.49	77.38	76.91	65.16	64.57	64.88	72.41	72.72	72.55
22	Rajasthan	139.07	83.17	112.15	102.01	47.47	78.19	124.84	69.74	98.48
23	Sikkim	117.59	112.25	114.93	61.99	71.35	66.55	97.34	98.09	97.72
24	Tamil Nadu	9.89	97.72	97.81	93.43	91.67	92.57	96.12	95.32	95.73
25	Tripura	11.2	93.28	101.88	72.22	62.99	67.59	97.17	82.87	89.93
26	Uttar Pradesh	80.93	49.36	65.72	46.94	35.91	35.91	67.49	39.42	54.1
27	Uttaranchal	99.88	101.43	100.65	75.39	71.95	73.71	90.21	90.11	90.16
28	West Bengal	112.72	106.82	109.8	60.51	46.96	53.88	92.14	83.5	87.88
29	Andaman&Nicobar	87.12	86.88	87	87.83	85.62	86.77	87.37	86.43	86.92
30	Chandigarh	56.13	54.35	55.29	62.16	64.91	64.91	58.31	59.08	58.67
31	Dadra&Nagar Haveli	145.61	104.89	124.37	101.03	63.03	82.03	129.88	90.94	109.85
32	Daman&Diu	103.83	84.12	93.39	105.35	71.26	86.41	104.33	79.53	90.98
33	Delhi	85.36	80.85	83.14	88.15	82.37	85.41	86.37	81.38	83.94
34	Lakshadweep	107.53	92.53	100.03	105.06	89.67	97.51	106.58	91.45	99.07
35	Pondicherry	84.07	69.12	76.2	97.84	86.52	92.02	88.98	75.14	81.76
	India	105.29	86.91	96.3	67.77	52.09	60.2	90.69	73.56	82.35

Source : Economic Survey Report - 2003

**Appendix 22.1**  
**Physical Achievements for the Year 2003-2004 (Provisional)**  
**(All Kerala)**

Sl.No	Item	Unit	GEN	EFC	SCP	TSP	Total
1	Area brought under cultivation	Ha	8531	723	4121	240	26411
2	Beneficiaries of vegetable cultivation	No	197700	3910	9034	1295	211939
3	Beneficiaries who received /Pesticides distributed through integrated agricultural development programmes	No	311349	832	16393	1360	329934
4	Manures/distributed through integrated agricultural development programmes	Ton	10	8500	288960	1400	308365
5	Pesticides/distributed through integrated agricultural development programmes	Ton	0	681	10652	9000	20650
6	Seed distributed through integrated agricultural development programmes	Ton	1	0	21320	105	22623
7	Beneficiaries who received Planting materials distributed through integrated agricultural development programmes	No	185650	0	8858	316	194824
8	Pumpset distributed through integrated agricultural development programmes	No	224284	4	753	41	225082
9	Sprayers distributed through integrated agricultural development programmes	No	18338	8	165	73	18584
10	Agricultural implements distributed through integrated agricultural development programmes	No	2718	0	592	0	3310
11	Construction of bunds in Kole land	No	7051	0	9801	0	16852
12	Distribution of tractors Under agricultural development projects	No	61	0	6	0	67
13	Distribution of tillers under agricultural development projects	No	499	0	6	1	506
14	Removal of diseased coconut trees	No	268469	1808	5881	50	276208
15	Poultry-egg rearing units	No	26469	337	5151	547	32504
16	Poultry-broiler units	No	578	0	654	5	1237
17	Fresh water fish culture(Area)	Ha	547	0	0	0	547
18	Construction of cattlesheds	No	14659	14	1212	58	15943
19	Fodder production	Ton	3227	0	6	3	3236
20	Watershed development projects	No	1410	0	127	16	1553
21	Land brought under cultivation through watershed development projects	Ha	11401	0	305	24	11730
22	Distribution of sewing machines	No	609	0	108	13	730
23	New industrial units	No	1608	2	95	11	1716

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Sl.No	Item	Unit	GEN	EFC	SCP	TSP	Total
24	Rehabilitation of traditional industrialunits	No	3223	35	50	0	3308
25	Employment training programme for destitutes	No	357	11	20	6	394
26	Destitutes trained (Persons)	No	436	0	16	10	462
27	Computer training (Persons trained )	No	26606	119	4019	60	30804
28	Area of land distributed to landless	Ha	859	3	1732	69	2662
29	Houses constructed	No	36343	397	12309	1377	50426
30	Distribution of house plots	No	5793	7	4030	264	10094
31	Renovation of houses	No	14579	136	10020	1067	25802
32	shelter upgradation	No	4627	90	2160	150	7027
33	Renovation of SC/ST houses	No	0	20	6534	1116	7670
34	integrated development SC habitates	No	0	0	1176	4	1180
35	Hostals constructed for scheduled caste sections	No	1	78	43	0	122
36	Construction of sanitation units	No	130525	20019	21883	2262	174689
37	Electric wiring of houses	No	7093	121	3875	1259	12348
38	Drinking water projects	No	7476	2759	1608	83	11926
39	Beneficiaries of drinking water projects	No	208434	42409	48014	8633	307489
40	Drinking water projects implemented with beneficiary contribution	No	2010	276	716	33	3035
41	New wells	No	14835	1834	3942	422	21033
42	New public water tap connection installed	No	5416	3380	1618	233	10647
43	New water tap connection to households	No	4678	162	91	14	4945
44	Renovation of ponds	No	832	12	195	8	1047
45	Pump sets	No	3356	116	343	25	3840
46	New school buildings	Sq.M.	7397	408	0	3	7808
47	Anganwadi Buildings	No	878	14	36	14	942
48	Baby friendly toilets	No	461	23	0	57	541
49	Hospital buildings (extension)	Sq.M.	33158	1374	155	111	34798
50	Office buildings (extension)	Sq.M.	53796	3587.13	254.5	73	57711
51	Marketing complexes	Sq.M.	8461	2	98	0	8561
52	Markets renovated	Sq.M.	4892	3	0	0	4895
53	Renovation of school buildings	Sq.M.	3438	20	0	4	3462
54	Renovation of hospital buildings	Sq.M.	3839	813	0	1	4653
55	Renovation of drinking water projects	Sq.M.	14221	62	384	39	14706
56	Renovation of other institutons	Sq.M.	2544	1969	11	702	5225
57	Land acquired	Ha	1	2	26	1	1384
58	IT@School programme implemented (No of schools)	No	156	0	2	0	158
59	Computer installed under IT.@ School programme	No	247	4	0	0	251
60	Town planning projects	No	21	0	1	0	22
61	Solid waste disposal projects	No	377	6	0	0	383
62	Solid waste disposed(quantity)	Ton	1725	2	1	0	1728
63	Rehabilitation of puramboke dwellers (projects)	No	102	1	77	9	189

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Sl.No	Item	Unit	GEN	EFC	SCP	TSP	Total
64	Beneficiaries of rehabilitation of puramboke dwellers	No	1015	12	294	2	1323
65	Slum development projects	No	238	4	13	2	257
66	Mobility assistants devices, Crutches, Walkers	No	2152	14	98	1	2265
67	WheelChair, Tricycle, Mechanised threewheeler vehicles	No	2101	20	96	6	2223
68	Hearing aids	No	1656	16	96	3	1771
69	Braille kit, Study materials	No	590	15	148	4	757
70	Industrial workers who received job	No	38688	0	10306	60	49054
71	Persons who received industrial entrepreneurship training	No	8781	10	518	60	9369
72	Skill development(Persons trained)	No	25064	102	4764	284	30214
73	Micro enterprises started	No	5614	91	523	48	6276
74	Self employment units started	No	5157	0	328	36	5521
75	Self employed persons	No	22267	0	1938	696	24901
76	Self employment units started by poor people	No	3115	8	826	106	4055
77	Self employment units for destitutes	No	396	0	69	2	467
78	Distribution of land to land less(beneficiaries)	No	7010	140	8038	132	15320
79	Ordinary roads (Number)	No	12375	130	2818	332	15655
80	Ordinary roads (Length)	Km.	31523	664	6854	1288	40329
81	Other District Roads (Number)	No	261	0	71	0	332
82	Other District Roads(Length)	Km.	4168	0	1140	2	5310
83	Roads above 8M width(Number)	No	954	0	110	3	1067
84	Roads above 8M width(Length)	Km.	3699	1	1957	751	6409
85	Roads between 6 and 8 M width(Number)	No	3275	9	573	14	3871
86	Roads between 6 and 8 M width(Length)	Km.	8562	3	960	1278	10803
87	Roads below 6M width(Number)	No	5379	18	752	64	6214
88	Roads below 6M width(Length)	Km.	18268	15	3570	553	22406
89	Other roads (Number)	No	2745	13	150	12	2920
90	Other roads (Length)	Km.	22337	0	6654	248	29240
91	New culverts	No	826	8	69	11	914
92	New bridges	No	1161	6	37	5	1209

**Appendix 22.2**  
**Physical Achievements**  
**for the Anti Poverty Subplan Projects for the year 2003-2004 (Provisional)**  
**(All Kerala)**

Sl.No	Item	Unit	Anti Poverty Sub Plan
1	Area brought under cultivation	Ha	125
2	Beneficiaries of vegetable cultivation	No	21668
3	Beneficiaries who received /Pesticides distributed through integrated agricultural development programmes	No	16590
4	Beneficiaries who received Planting materials distributed through integrated agricultural development programmes	No	3693
5	Pumpset distributed through integrated agricultural development programmes	No	293
6	Sprayers distributed through integrated agricultural development programmes	No	137
7	Construction of bunds in Koleland	No	3
8	Distribution of tractors Under agricultural development projects	No	1
9	Distribution of tillers under agricultural development Projects	No	7
10	Removal of diseased coconut trees	No	1557
11	Poultry-egg rearing units	No	10543
12	Poultry-broiler units	No	42
13	Construction of cattlesheds	No	2437
14	Fodder production	Ton	1243
15	Watershed development projects	No	56
16	Land brought undercultivation through watershed development projects	Ha	179
17	Distribution of sewing machines	No	325
18	New industrial units	No	326
19	Rehabilitation of traditional industrialunits	No	41
20	Employment training programme for destitutes	No	186
21	Destitutes trained (Persons)	No	8
22	Computer training (Persons trained )	No	915



Sl.No	Item	Unit	Anti Poverty Sub Plan
23	Area of land distributed to landless	Ha	893
24	Houses constructed	No	15170
25	Distribution of house plots	No	7834
26	Renovation of houses	No	6668
27	shelter upgradation	No	2290
28	Renovation of SC/ST houses	No	2001
29	integrated development SC habitates	No	30
30	Hostals constructed for scheduled caste sections	No	114
31	Construction of sanitation units	No	58078
32	Electric wiring of houses	No	1976
33	Drinking water projects	No	220
34	Beneficiaries of drinking water projects	No	10574
35	Drinking water projects implemented with beneficiary contribution	No	2422
36	New wells	No	2673
37	New public water tap connection installed	No	574
38	New water tap connection to households	No	87
39	Renovation of ponds	No	17
40	Pump sets	No	262
41	Anganwadi Buildings	No	26
42	Baby friendly toilets	No	8
43	Hospital buildings (extension)	Sq.M.	24002
44	Office buildings (extension)	Sq.M.	103
45	Markets renovated	Sq.M.	1
46	Renovation of drinking water projects	Sq.M.	3
47	Land acquired(Area)	Ha	1
48	Rehabilitation of puramboke dwellers (projects)	No	30
49	Beneficiaries of rehabilitation of puramboke dwellers	No	51
50	Slum development projects	No	4
51	Mobility assistants devices,Crutches,Walkers	No	151
52	WheelChair,Tricycle,Mechanised threewheeler vehicles	No	144
53	Hearing aids	No	142
54	Braille kit, Study materials	No	150
55	Ordinary roads (Number)	No	302
56	Ordinary roads (Length)	Km.	13
57	Other District Roads(Length)	Km.	450
58	Roads between 6 and 8 M width(Number)	No	19
59	Roads between 6 and 8 M width(Length)	Km.	5
60	Roads below 6M width(Number)	No	32
61	Roads below 6M width(Length)	Km.	2852
62	Other roads (Number)	No	50
63	Other roads (Length)	Km.	34
64	New culverts	No	12
65	New bridges	No	5

**Appendix-25.1**

**World Trade Agreements**

**Annexure 1**

**Annex 1 A**

**Multilateral agreements on trade in goods**

1. General agreement on Tariffs and Trade 1994
2. Agreement on Agriculture
3. Agreement on the application of Sanitary and Phytosanitary measures
4. Agreement on Textiles and clothing
5. Agreement on Technical barriers to trade
6. Agreement on Trade related to investment measures
7. Agreement on implementation of Article VI of the General Agreement on Trade and Tariffs 1994
8. Agreement on implementation Article VII of GATT 1994
9. Agreement on Preshipment inspection
10. Agreement on rule of Origin
11. Agreement on import licensing procedure
12. Agreement on subsidies and countervailing measures
13. Agreement on safeguards

**Annex 1 B**

General Agreement on Trade in Services and Annexes

**Annex 1 C:** Agreement on TRIPS

**Annexure 2:**

Understanding on Rules and Procedures for the settlement of disputes

**Annexure 3:** Trade Policy Review procedure

**Annexure 4:** Plurilateral Trade Agreements  
Agreement on Trade in Civil Aircraft  
Agreement on Government Procurement  
International Dairy Agreement  
International Bovine Meat Agreement

## Appendix 25.2

**Key Components of Agreement on Agriculture**

The key components of Agreement on Agriculture (AoA) under WTO include improved market access for trading agriculture commodities in member countries and reduction in domestic support given to agriculture in the member countries and reduction in export subsidies

**1. MARKET ACCESS**

The agreement envisages tariffication of all non-tariff barriers. This includes tariffication, tariff reduction and market access opportunities. Non-tariff barriers such as quantitative restrictions are to be replaced by an equivalent tariff. The average reduction of tariff would be 36 per cent for developed countries with a minimum rate of reduction of 15 per cent for each tariff item over a six-year period (1995-2000) with base 1986-88. Developing countries are required to reduce tariff by 24 per cent with a minimum cut of 10 per cent for tariff items in 1995-2004. A minimum access equal to three per cent of domestic consumption in 1986-88 will have to be established for the year 1995 rising to five per cent at the end of the implementation period.

**2. DOMESTIC SUPPORT**

This envisages the reduction commitments of subsidies provided to domestic producers. It stipulates that the total support given in 1986-88 measured by the Total Aggregate Measure of Support (AMS) should be reduced by 20 per cent in developed countries and 13.3 per cent in developing countries. It is also stipulated that if domestic support is less than 5 per cent of the total value of production in developed countries and less than 10 per cent in developing countries, these countries are excluded from any reduction commitments. The domestic support is further classified into five categories. (a) Aggregate Measure of Support (AMS) which includes product specific and non-product specific support (b) green box support (c) blue box support (d) de-minimus support and (e) special and differential (S&D) treatment box support.

**3. EXPORT COMPETITION**

Developed countries are required to reduce their export subsidy expenditure by 36 per cent and volume by 21 per cent in six years in equal installments (from 1986-1990 levels) during 1995-2000. The percentage reductions are 24 and 14 per cent respectively in equal annual installments over 10 years for developing countries (1995-2004).

Subsidies were classified according to boxes using the traffic light approach, with red for prohibited subsidies, amber for subsidies that had to slow down and green for non-trade distorting subsidies. The negotiations denied to treat export subsidies separately, so the red box disappeared, while a new blue box covered direct payments to producers under production limiting programmes, considered to be less trade distorting than market price supports.

**Appendix -25.3**  
**Tariff Rates on Major Agricultural Commodities/Groups**

(As on 01.04.2004)

Sl.No	Item description	Basic Duty (%)	Bound Duty (%)
1	2	3	4
1	Pulses other than peas	10	100
2	Rice in the husk	80	80
3	Fresh milk and cream	30	100
4	Butter, dairy spreads and melted butter (ghee)	30	40
5	Milk powder	60	60
6	Yoghurt	30	150
7	Tea	100	150
8	Coffee	100	100
9	Coconut	70	100
10	Copra	70	100
11	Cloves	70	100
12	Cassia and cinnamon	30	100
13	Other spices	30/70	150/100
14	Chicken leg (processed); sausages	100	150
15	Fish	30	unbound
16	Sugar	60	150
17	Frozen vegetables-peas, beans, spinach, sweet corn etc.	30	150
18	Arecanut	100	100
19	Planting materials of oil seeds	5	10
20	Palm Oil (for manufacture of Vanaspathi)	75	300
21	Coconut Oil	85/100	300
22	RBD Palmolien	70	300
23	Palm Oil	70	300
24	Coconut Oil Edible grade	85	300
25	Coconut Oil Other	100	300

Source: Agricultural Statistics, Government of India