



GOVERNMENT OF KERALA

ECONOMIC REVIEW

2003

STATE PLANNING BOARD
THIRUVANANTHAPURAM
JANUARY 2004

TYPESET BY STATE PLANNING BOARD AND PRINTED BY THE SUPERINTENDENT OF GOVERNMENT PRESSES,
AT THE GOVERNMENT PRESS, MANNANTHALA, THIRUVANANTHAPURAM - 2004.



GOVERNMENT OF KERALA

ECONOMIC REVIEW

2003

STATE PLANNING BOARD
THIRUVANANTHAPURAM
JANUARY 2004

CONTENTS

	Pages
Chapter - 1 <i>An Overview</i>	1-5
National Economy	1
Developments in Kerala's Economy	2
Chapter - 2 <i>State Finances</i>	6-19
All States: Trend	6
Kerala, Overall Fiscal Position	8
Revenue Receipts	8
Expenditure Pattern	13
Debt Profile	16
Outlook	18
Chapter - 3 <i>Income and Population</i>	20-28
Income	20
Population	26
Chapter - 4 <i>Agriculture</i>	29-104
Farming System	29
Rainfall	30
Ground Water Recharge	33
Trend in Area, Production and Productivity of Crops	36
Farm Commodity Prices	50
Outlook	51
Women in Agriculture	56
Agricultural Research and Education	58
Agriculture Marketing	60
Issues in WTA	64
Livestock Sub Sector	65
Animal Health Care	73
Dairy Development	79
Fisheries Development	84
Infrastructure Facilities	89
Major Development Programmes	91
Co-operation	93
Micro Financing of NABARD	99
Rural Infrastructure Development Fund	103
Chapter - 5 <i>Water Resources</i>	105-135
International Year of Fresh Water	105
Water Resources in the Country	107
Interlinking of Rivers	109
Rain Water Harvesting	110
Investment in Irrigation	112
Review of Major Projects	113
Externally Aided Projects – NHP	117
Minor Irrigation	119
Ground Water Development	120
Flood Management	123
Command Area Development	123

	Drinking Water Supply	126
	Ongoing Water Supply Schemes	127
	JBIC Aided Water Supply Project	130
	Jalanidhi	131
Chapter - 6	<i>Environment</i>	136-180
	Wet Land Conservation	136
	Bio-diversity Conservation	138
	Mining and Quarrying	144
	Coastal Zone	145
	Industrial Effluents	147
	Vehicular Pollution	149
	Air Pollution and Health Impact	151
	Environmental Regulations	153
	Soil and Water Conservation	154
	Western Ghats Development Programmes	156
	Forestry and Wildlife	158
	Kerala Forest Development Corporation	163
	Environmental Sanitation	164
	Solid Waste Management	170
	Bio-medical Waste	176
	Liquid Waste Management	177
	Home Sanitation and Food Hygiene	179
	Community Environmental Sanitation	179
Chapter - 7	<i>Energy Development</i>	181-199
	Status of Power System in Southern States	181
	Generation	182
	Transmission	185
	Distribution	185
	Financial Performance of KSEB	186
	Power Sector Reforms in Kerala	187
	Implications of Electricity Act, 2003	191
	Non-conventional Energy Programme	193
	Bio-energy Programme	196
Chapter - 8	<i>Industry and Mining</i>	200-236
	Industrial Growth	200
	Central Sector Investment	203
	Reforms in Public Sector Undertakings	204
	Industrial Promotion	210
	Special Economic Zones	214
	Human Resource Development	216
	Small Scale Industry	217
	Service Charter for Small Scale Industries	221
	Traditional Industries	224
	Performance of Public Sector	229
	Handloom Industry in Kerala	231
	Handicrafts	233
	Khadi and Village Industries	235
	Mining	236

Chapter - 9	<i>Tourism</i>	237-242
	Kerala Tourism	237
	Eco Tourism	240
	Human Resource Development	241
	Income Generation	241
Chapter - 10	<i>Infrastructure</i>	243-266
	Surface Transport	243
	Road Transport Services	248
	Road Accidents	252
	Transport Finance	253
	Railways	254
	Water Transport	255
	Kerala Ports Sector	259
	Inland Water Ways	261
	Air Transport	263
	Communications	264
Chapter - 11	<i>Education</i>	267-284
	School Education	267
	Higher Secondary Education	272
	Vocational Higher Secondary Education	272
	Higher Education	273
	Technical Education	278
	Art & Culture	282
	Sports and Youth Affairs	284
Chapter - 12	<i>Health</i>	285-296
	Health Care Infrastructure	285
	Communicable Diseases	287
	Medical Education and Training	290
	Ayurveda Medical Education	293
	Homoeopathy	293
	Family Welfare	294
Chapter - 13	<i>Housing</i>	297-301
	Demand for Housing in Kerala	297
	Local Self Government and Housing	298
	Kerala State Nirmithi Kendra	299
	Housing Finance	300
Chapter - 14	<i>Poverty and Special Programmes for Weaker Sections</i>	302-330
	Destitutes	302
	New Initiatives in Poverty Reduction	304
	Anti-Poverty Sub Plan	305
	Kudumbasree	308
	Balasabha	308
	Land Reforms	310
	Urban Poverty Reduction Programme	311
	Social Security and Welfare	314
	Social Protection Measures Exclusively for Women	317
	Safety of Workers	321
	Mid-day Meal Programme	323
	Development of SCs/STs and OBCs	324
	Literacy Rate and Employment Seekers in Employment	326

	Exchanges	
	Development Programmes	327
	Kerala State Backward Classes Development Corporation	329
Chapter – 15	<i>Prices and Food Security</i>	331-340
	Consumer Price Index	331
	Retail Prices	331
	Wholesale Price Index	333
	Parity Index	334
	Wages	334
	Public Distribution System	335
	Food Security	338
Chapter – 16	<i>Export and Import</i>	341-349
	Balance of Payments	341
	Foreign Investment	341
	Marine Products	343
	Spices Export Performance of India Spice Industry	344
Chapter – 17	<i>Institutional and Bank Finance</i>	350-362
	Institutional Finance	350
	Bank Finance	350
	NRE Deposits	357
	Agricultural Finance	358
Chapter – 18	<i>Gender and Development</i>	363-379
	Status of Indian Women	363
	Women and Population	365
	Women and Literacy	367
	Women and Health	369
	Women and Migration	372
	Gender and Budgeting	376
	Women Development Agencies in Kerala	377
Chapter – 19	<i>Labour and Employment</i>	380-387
	Employment Strategy in Kerala	380
	Changing Profile of Job Seekers	380
	Labour Attitudes	381
	Work Participation Rate	382
	Unemployment	382
	Employment in the Organised Sector	384
	Placement through Employment Exchanges	385
	Migration	385
	Foreign Remittances in Kerala Economy	386
Chapter – 20	<i>Human Development and Socio-economic Well-being in Kerala</i>	388-397
	Human Development Index	388
	Educational Attainments and Well-being	388
	Demographic and Health Indicators	390
	Other Indicators of Attainments	392
	Magnitude of Child Labour	396
	Basic Issues in Human Development in Kerala	397
Chapter - 21	<i>Information Technology</i>	398-410
	Investment Area in I.T.	398
	Electronic Technology Park	399
	I.T. Industry (Hardware and Software)	402

	Export from Kerala	403
	E-Governance	404
	I.T. Initiatives	405
	Akshaya	407
	Kissan - Kerala	408
	Police – Portal for Community Interaction	408
	I.T. Education Grid	409
Chapter - 22	<i>Local Self Government</i>	411-441
	Strategy of Decentralisation in Kerala	414
	Setting up Accountability System	415
	Good Governance Features	416
	Fiscal Decentralisation	417
	Second State Finance Commission	423
	Key Initiatives during 2003-04	428
	Institutionalisation	431
	Best Practices	434
Chapter – 23	<i>Science and Technology</i>	442-447
	Role of State S&T Councils	442
	GAIN Centre – Kerala	443
	Research and Development Activities through Major Institutions	444
	Bio-Technology Policy and Programmes	447
Chapter - 24	<i>Governance</i>	448-454
	Key Initiatives	448
	E-Governance	450
Chapter - 25	<i>Towards an Investor – Friendly Climate</i>	455-466
	Industrial Policy	455
	I.T. Policy	457
	Bio-Technology Policy	458
	SEZ Policy	459
	Labour Policy	461
	Kerala Renewable Energy Policy	464
	Policies on the Anvil	465
	Tourism Vision 2025	466
	APPENDIX TABLES	S 1–S 356

CHAPTER 1

AN OVERVIEW

National Economy

After the difficulties faced by the national economy last year, there have been very encouraging signs of strong performance during the current year. The second quarter of 2003-04 saw a growth in real GDP of 8.4% as against 5.2% for the corresponding quarter in the last year. Over all, this works out to 7% for the half year compared to 5.2% for the first half of 2002-03 enabling revision of the growth forecast for 2003-04 to over 7%. The comparative growth of GDP during the first half of this year and the last year is given below:

Growth in GDP (at 1993-94 prices) (per cent)

Sectors	2002-03		2003-04		
	Q2	H1	Q1	Q2	H1
Agriculture, forestry & fishing	-3.5	0.0	1.7	7.4	4.1
Mining & Quarrying	6.0	6.8	3.1	2.3	2.7
Manufacturing	6.5	5.2	6.4	7.3	6.8
Electricity, gas & water supply	4.0	4.2	4.8	2.9	3.8
Construction	8.6	7.4	5.7	6.4	6.1
Trade, hotels transport & communications	8.1	7.5	9.6	11.9	10.7
Financing, insurance, real estate & business services	7.0	6.8	7.1	7.3	7.2
Community, social & personal services	7.8	7.4	4.3	8.9	6.7
GDP at factor cost	5.2	5.2	5.7	8.4	7.0

1.2 The higher performance in the second quarter is mainly due to a bumper agricultural production following a satisfactory monsoon. In fact agriculture is expected to register a double digit growth during the year. During the first half of the previous year this huge sector witnessed nil growth whereas in the current year it is 4.1% so far. Manufacturing sector shows a steady 6.8% growth in the first half of the current year compared with 5.2% during the previous year. In agriculture, production of rice went up by 12.8%, coarse cereals by 38.9% and pulses by 41.7% during the kharif season. Among the commercial crops oil seeds pro-

duction is expected to grow up by 60% and cotton by 40%.

1.3 The large food stocks of nearly 65 Million tonnes has come down to 25 Million tonnes following exports and heavy releases for drought relief. Even so, the stocks are reasonably high and will go up as a result of the bumper production expected this year.

1.4 Most macro economic indicators are positive. Foreign exchange reserves have crossed \$ 100 billion. The Indian Rupee continues to be strong against the dollar.

The stock market is once again witnessing a boom and it recently crossed the 6000 mark in Sensex. Investor confidence is also looking up. By and large the major reasons for the turnaround is the good south west monsoon over and above the growth of the services and manufacturing sectors.

1.5 India's current account registered a surplus of \$500 million as compared to a deficit of \$ 1.2 billion in the previous quarter. Inflation

continues to be low in November 2003, it stood at 3.07%. This recent performance of the economy has made the Tenth Plan target of 8% growth rate achievable.

1.6 The year 2003 saw important improvements in infrastructure. Nearly 1000 kms of 4/6 lane highways were built. The Government has announced Rs. 100000 crore 'Sagarmala' project to develop a chain of ports. The new Electricity Act was passed paving the way for reforms in the power sector.

1.7 VAT could not be implemented. In spite of Fiscal Responsibility and Budget Management Act, there is no let up in the rise of revenue deficit and fiscal deficit. Also there has not been any significant dent on the problem of unemployment. The plantation sector especially Coffee and Tea continue to be weak.

Developments in Kerala's Economy

1.8 An important feature of the Kerala's economy in nineties is the significant growth rate of the economy while in the 70's and 80's the economy was relatively stagnant. The growth rate in the 90's is estimated at 5.99 %.

1.9 The rates of growth for different sectors as well as the total economy for the last three years are summarized below.

Kerala Economy : Sectoral Growth Rates
(in per cent)

Year	Sectors			
	Primary	Secondary	Tertiary	Overall
2000-01	- 19.6	10.14	10.48	2.60
2001-02	- 1.03	- 6.00	9.28	4.00
2002-03	- 4.38	4.80	9.78	6.10

1.10 Structurally it is the service sector which is growing fast. The contribution of the Agriculture Sector declined from 19.1 percent in 2001-02 to 17.2 percent in 2002-03. At the same time the service sector has grown from 61.7% to 63.8% of the economy.

1.11 With the economic growth of the nineties the per capita income has gone beyond the national average for the first time. As per the latest figures, the per capita income at constant prices (1993-94) increased from Rs.10832 in 2001-02 to Rs. 11388 in 2002-03 recording a 5.1% growth. Per capita income at the national level is Rs. 10754 in 2001-02 and Rs. 11010 in 2002-03. The State income at constant prices (1993-94) is estimated at Rs.37031.33 crore in 2002-03 (It is Rs.83782.01 crore at current prices). It has to be noted that remittances from abroad are not included in these figures. It has been roughly estimated that if hypothetically they are also counted, the figure would go up by around 25%.

Agriculture

1.12 The Agriculture economy has been fairing badly since 2000 mainly due to sharp decline in prices. In 2002-03, the quick estimate showed a decline of 5.54% compared to the previous year. On the price front there has been a turnaround especially in the case of Rubber and Coconut as is evident from the following figures:
(in Rs.)

	2001-02	2002-03	2003-04
Coconut (100 Nos.)	340.64	475.60	513.00
Rubber (qtl.)	3228.00	3919.00	4792.00
Coffee (Kg.)	28.54	28.12	32.54

1.13 However, the price of Cardamom, Pepper and Tea are still low as indicated below.
(in Rs.)

	2001-02	2002-03	2003-04
Cardamom (Kg)	622.96	561.13	408.98
Pepper (qtl.)	6942.00	7814.10	7070.00
Tea (Kg)	52.21	47.21	43.05

1.14 Diversification of agriculture into crops with high market potential and from mono-crop to mixed-crop farms, is happening in the State particularly in the northern and central parts of the State. There is also a rapid adoption of organic modes of cultivation in these parts of the State. The initial results are encouraging in

higher farm incomes, employment and higher potential for Agro Industry. The challenge before the Government is to facilitate its expansion all over the State and its intensification. The push being given to Agri Export Zones is a significant step in this direction.

1.15 In the livestock sub-sector there is an alarming decline in the number of livestock compared to the 1996 figures. The latest Livestock Census 2000 shows a decline of 24.4% in cattle population, 42.73% in buffalo population and 34.07% in poultry population. During the year milk production has come down by 11% (from 27.18 lakh tonnes to 24.19 lakh tonnes) and egg production has come down by 32.7% (from 2 billion to 1.34 billion).

1.16 Fish production increased marginally from 6.72 lakh tonnes to 6.78 lakh tonnes. However the export of marine products increased by 12% in quantity and 10% in value (Rupee terms).

Water

1.17 Unlike the rest of India, rainfall in the State has been poor during the current year also. Last year also the State had a below normal rainfall situation. This has affected agriculture severely, reduced availability of water for electricity generation and is threatening to affect drinking water supply.

Industry

1.18 Post GIM, the Investment Promotion Board has approved 40 projects with an expected total investment of Rs.6846 crore. These are under different stages of implementation. As per the latest available figures the growth of industrial sector in the economy is recorded at 1.5% which shows a marginal improvement over the previous year's 0.36%.

1.19 The traditional industries are still in a very bad shape especially Coir and Cashew. During the year, a policy decision has been taken to develop Bamboo so that it could provide jobs to disadvantaged sections of society like Scheduled Castes and Scheduled Tribes.

1.20 However, Information Technology has started showing promise. With a view to promoting IT enabled services the E-literacy programme of 'Akshaya' is under implementation and is to be expanded. It is estimated that during the last four years, IT sector has attracted an investment of about Rs.5000 crores. The sector as a whole employs about 80,000 people.

1.21 There is a wide range of initiatives on the IT front ranging from E-literacy for one member per family to highly sophisticated systems development in IITM-K. These have to be stepped up further so that they raise not only employment but also employability.

Tourism

1.22 Tourism continued to grow and is becoming a major provider of jobs and generator of wealth in the State. In 2002, the State recorded a growth of 11.37% in inflow of international tourists whereas at the national level there was a decline of 6.92%. The flow of domestic tourists also increased by 6.27%. In 2003, the sector is reported to have had a record growth of nearly 30 per cent.

Infrastructure

1.23 Telecom and IT infrastructure has made significant progress in the State in the last few years. However, water supply, roads and waterways need to be upgraded to higher standards. Large investments are necessary calling for private-public partnership. The provisions of the Infrastructure Bill when enacted and brought into force are expected to go a long way in facilitating this process.

1.24 The public utilities, KSEB and KWA are both in a difficult situation. The problems affecting them have been analyzed and the policy formulations required for their reform so that they are able to provide the quality of services expected by the citizens, have been outlined. Early decision is needed in these matters.

Health and Education

1.25 The focus has been on improvement of quality and development of human resources. Continuing the policy of allowing private investment in higher education has resulted in net addition of seats to various

in Nos.

Courses	2002-03	2003-04
	Additional Seats	Additional Seats
Engineering	6940	1650
MBBS	400	200
BDS	..	340
B Sc. Nursing	1350	..
B Pharm	..	540
BAMS & BSMS	..	290

courses as indicated below.

1.26 There is a widening gap between formal education and the needs of the emerging job market. At a time of fast changing technology, institutional forms and management practice, there is need for continuous training in all sectors to upgrade skills and make the youth employable. The changes begun in general and in the vocational streams of education and training have to be speeded up or else even jobs generated in the State let alone job opportunities outside the State and the country would be out of reach of the youth of the State in the coming years.

Poverty Elimination

1.27 A total census to identify the poor has been completed and the results are awaited. In order to make poverty alleviation more focused a transparent index

to determine absolute deprivation and relative deprivation is proposed to be developed on which an Anti-Poverty Sub Plan would be prepared.

1.28 An innovative exercise was undertaken during the year in identifying the poorest of the poor, the most deprived destitutes living on the margins of the economy, society and polity. Data collected from 147 village panchayats shows that about 2% of the households belong to this category and need a mix of measures, enhanced levels of assistance and continuous handholding to come out of their present state.

1.29 With appropriate policies, Kerala is in a position to eliminate poverty within a reasonable period of five years. For this, focused strongly pro-poor measures are necessary, which can be undertaken by a financially strained government only if the prospering middle class which has grown over the last two decades and benefited from the development efforts of the State and from remittances is willing to make some sacrifice along with, of course, the rich, for the common good by better tax compliance, necessary user charges and payment for higher end service received from government agencies.

Employment

1.30 The employment scenario in the formal sector is quite bleak. Kerala continues to have the highest rate of unemployment at 20.77%. Compounding this problem is the fact that there is a wide gap between the emerging needs and the skills and knowledge of those coming out of the formal educational and training systems. 'Employability' in new areas is a major challenge facing the youth. The State has the lowest work participation rate for women at 13.5%. Figures for organized employment, which are available for

Employment in Organized Sector in Kerala

Year	No. of Persons Employed
2001-02	1214003
2002-03	1219630

the latest two years are given below:

1.31 At the same time employment through micro enterprises has shown an encouraging trend. Women below poverty line organized through Kudumbashree alone run 1342 Group Enterprises, each employing about 10 persons and 13452 individual units. It is note-

worthy that many of them are in the non-traditional areas like information technology, biotechnology, service units etc.

1.32 This shows that while "unemployment" in the conventional sense in the formal sector persists, there is growing self-employment in the service sector, most of whom consider themselves unemployed as the expectation is for a life-time permanent job with terminal benefits. There will be greater acceptance of new forms of employment if there is adequate social security and health assurance for the people. For these are the factors which force educated persons to go in search of even the lowest grade jobs providing permanent employment especially in government.

Institutional Finance

1.33 The criticality of flow of institutional finance for the development of the State has been well recognized and much debated. CD ratio which was 42.71 in March 2002 has gradually increased to 46.69 in September 2003. Though it has a long way to go, this small increase is a welcome development. The increase in drawal of micro finance by self-help groups is again a positive development. The Neighbourhood Groups under Kudumbashree alone have attracted bank finance to the tune of Rs. 392.50 crore.

State Finances

1.34 After recording marked improvement in 2001-02 the revenue deficit and fiscal deficit have jumped up as per the latest estimates for 2002-03. The details are (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 (L.E)	4122.16	4.53	4993.54	5.49

summed up below:

1.35 This increase is mainly attributable to settlement of several pending claims including two instalments of DA.

1.36 The total debt of the State as per the latest estimate is Rs.31060 crores. In this scenario Government have taken very important reform initiatives in financial management. During this year two important Acts namely, the Kerala Fiscal Responsibility Act, 2003 and the Kerala Ceiling on Government Guarantees Act, 2003 have been brought into force.

Reduction and elimination of government non-plan deficit is essential for stepping up capital expenditure on infrastructure etc.

Decentralization

1.37 Local governments have gained sufficient expertise in preparing and implementing development plans particularly for creation of infrastructure and provision of minimum needs. It is time for them to move on to economic development and job generation through local action which in turn would enable them to harness more resources locally which they can further feed into improving the quality of service to citizens. The institutionalization of the decentralization initiatives of the State has been rather delayed. The key initiatives that have been identified have to be implemented within a definite time frame.

1.38 Local governments have to focus more on the environment particularly in conserving water and water bodies free of pollution and keeping the surroundings clean. These are important not only from an environmental and health point of view but also from the perspective of tourism which is the fastest growing sector of the State economy.

Governance

1.39 Tenth Plan focuses on reform along with investment in critical sectors. In keeping with the decision of the National Development Council, the State has gone in for very basic governance reforms, through a composite programme called 'Modernizing Government Programme', which has launched 100 initiatives focusing on improving the quality of service delivery, enhancing efficiency, reducing delays and setting the State on the way to pro-poor growth, resulting in job generating investment.

1.40 These governance initiatives and the E-governance initiatives launched at various points of time have to be implemented seriously as a priority package. Only then would public services improve and people get the benefit they need and expect. Therefore, while 2003 which was declared as the year of development was spent on identifying key issues and their solutions and in working out the details, 2004 has to be the year of implementation which calls for quick decision making and concerted action. Simultaneously a long range vision is needed for taking Kerala to a higher plane of development. A Vision 2025 is proposed to be brought out through a process of consultations and consensus-building backed up by critical analysis of the situation in different sectors.

CHAPTER 2

STATE FINANCES

All States: Trend

Finances of the State Governments have been under severe stress over the years, especially from the second half of 1990's. This is evident from the Table-2.1 and fig 2.1, which exhibit the prime indicators of the fiscal health of all States put together. The GFD-GDP ratio of all States, which was 2.6 per cent in 1995-96, increased year after year and attained a peak level of 4.7 per cent in 1999-00. Revenue deficits and primary deficits also behaved almost in the same manner.

2.2 Inadequate buoyancy in revenue receipts and the rising level of revenue expenditures are the major factors that contribute to the higher rate of deficits. Significant part of borrowed funds are

being utilised for meeting revenue expenditure. Dependence on borrowings under public account for financing of GFD has been on the increase in many States (Table-2.2).

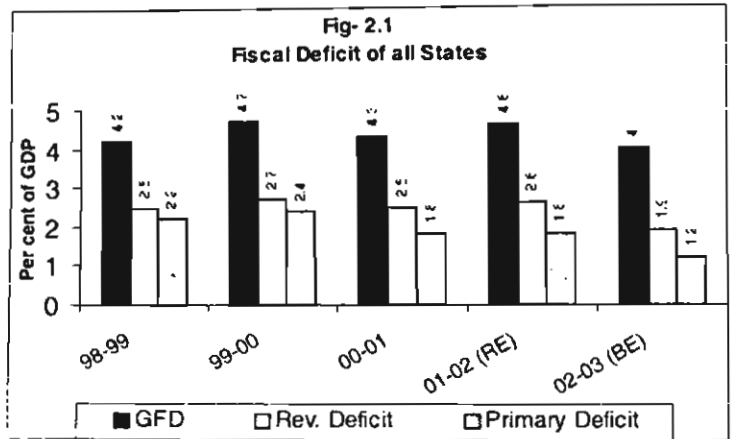


Table 2.1
Combined Fiscal Deficits of All States

(Rs. crore)

Year	Gross Fiscal Deficit (GFD)	Revenue Deficit	Primary Deficit
1993-94	20596 (2.4)	3813 (0.4)	4795 (0.6)
1994-95	27697 (2.7)	6156 (0.6)	8284 (0.8)
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 (RE)	106595 (4.6)	60540 (2.6)	42092 (1.8)
2002-03 (BE)	102848 (4.0)	48223 (1.9)	30562 (1.2)

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

Source: State Finance; A Study of Budget, 2002-03; RBI, February 2003. RBI, January 2002.

Table-2.2
Financing of GFD through Public Account Borrowings
(Per cent)

States	1990-91	1999-00	2000-01 (RE)
1. Andhra Pradesh	13.7	12.4	6.7
2. Bihar	20.3	24.4	23.8
3. Goa	33.4	32.3	27.8
4. Gujarat	56.6	41.9	13.2
5. Haryana	37.6	32.5	21.7
6. Karnataka	66.2	38.2	23.1
7. Kerala	42.2	63.3	35.0
8. Madhya Pradesh	54.7	27.0	26.0
9. Maharashtra	41.3	41.7	27.6
10. Orissa	33.5	43.7	29.4
11. Punjab	12.4	38.0	21.9
12. Rajasthan	26.3	29.4	21.4
13. Tamil Nadu	31.7	43.3	17.4
14. Uttar Pradesh	30.6	10.6	34.8
15. West Bengal	28.7	36.6	15.5
All States' Average	32.5	33.4	21.9

Source: State Finance; A Study of Budget, 2001-02;

2.3 The above situation has put on all States severe constraints in taking up development activities. Heavy commitments on salaries, pension and interest payments are the worrisome feature of all the States. In order to face this situation, many States have initiated measures such as revenue augmentation, containment of non-essential expenditures, enactment of fiscal responsibility and budget management legislations, public sector reforms etc. and as a result, combined fiscal position of States improved in 2000-01. The GFD of the States declined from 4.7 per cent of GDP in 1999-00 to 4.3 per cent of GDP in 2000-01. However, this

trend could not be sustained in 2001-02 due to short-fall in revenue receipts on account of general slowdown in the economy and hence the GFD-GDP ratio again rose to 4.6 per cent in 2001-02. The budget estimate figures for 2002-03 indicated signs of recovery, but later figures suggest that the situation is far from stabilised.

2.4 Some general reasons for the deterioration in the State Finances and the restructuring and reforms that have to be taken for the improvement of the finances, summed by Dr. C. Rangarajan, Chairman, Twelfth Finance Commission are significant in this context (Box 2.1).

Box -2. 1

Deterioration of State finances: Reasons and Reforms

Reasons

- Under the constitutional arrangements in India, as in most federal countries, resources are more centralised while the responsibilities are more decentralised.
- Most of the social and economic services fall within the purview of the State Governments.
- The combination of rising revenue and fiscal deficits in conjunction with rising committed expenditures like interest payments and pensions.

Below 15%	Arunachal Pradesh, Goa, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura, Uttranchal
15 to 18%	Chattisgarh, Jammu & Kashmir, Karnataka, Assam, Madhya Pradesh, Maharashtra, Manipur, Tamil Nadu
18 to 22 %	Andhra Pradesh, Bihar, Gujarat
Above 22%	Haryana, Himachal Pradesh, Kerala, Orissa, Punjab, Rajasthan, Uttar Pradesh, West Bengal

- The revision of salaries and pensions of State Government Employees following the recommendations of the Fifth Central Pay Commission.
- Erosion in the buoyancy of Central indirect taxes which led to a fall in tax devolution.
- As the States tried to make up for the resource gap through additional borrowing, they faced unusually high nominal interest rate towards the end of the nineties.
- Borrowing for capital assets has remained unviable as the returns on investment remained negligible.

Reforms

- Revenue augmentation through :
 1. Non-distortionary taxation like VAT,
 2. Revamping of the planning strategy that emphasizes the quality of expenditure,
 3. Improving efficiency through reducing the volume of subsidies and targeting them better
 4. Undertaking capital expenditure for social and economic infrastructure
 5. Emphasizing maintenance of assets and
 6. Putting in place an effective strategy for controlling the growth of debt, by a suitable legislation, if necessary

The falling capital expenditure-GDP ratio and the depleting share of maintenance expenditure in the overall revenue expenditure should be considered as priority reforms.

- Reforms of State level Public Enterprises, particularly in the power and transport sector, constitute a critical component of the overall restructuring. The performance of the State Electricity Boards is known to constitute the Achilles heel of State Finances.
- Public spending in areas such as roads, water supply, power, primary education and primary health will need to be stepped up to provide the appropriate physical and social infrastructure necessary for accelerating growth.

Source : ADB INDIA, Economic Bulletin, September 2003

KERALA**Overall Fiscal Position**

2.5 In 2002, the latest year for which final accounts are available, the overall fiscal health of the State witnessed a positive trend as is evident from the level of relevant fiscal indicators given in Table-2.3 and fig 2.2. The revenue deficit declined from Rs. 3147.06 crores (4.51 per cent of GSDP) in 2000-01 to Rs. 2605.64 crores (3.28 per cent of GSDP) in 2001-02. The Gross Fiscal Deficit (GFD) declined from Rs. 3877.8 crores (5.56 per cent of GSDP) in 2000-01 to Rs. 3269.4 crores (4.12 per cent of GSDP) in 2001-02. Primary deficit also witnessed similar trend. It declined from Rs. 1620.2 crores (2.32 per cent of GSDP) in 2000-01 to 779.93 crores (0.98 per cent of GSDP) in 2001-02. At the same time, the latest estimate for 2002-03 depicts a slippage. This is mainly attributable to settlement of

several pending claims including two instalments of DA. The revenue deficit is estimated to go up by Rs.1516.52 crore(58.20 per cent), from Rs.2605.64 crore in 2001-02 to Rs.4122.16 crore (4.53 per cent of GSDP) in 2002-03. The gross fiscal deficit is estimated to increase by Rs.1724.14 (52.74 per cent), from Rs.3269.4 crore in 2001-02 to Rs.4993.54 crore (5.49 per cent of GSDP) in 2002-03. Almost similar trend is seen in primary deficit also. The over all trend reveals that in spite of the fiscal reform measures taken by the State, fiscal deficit remains high.

Revenue Receipt

2.6 The total revenue receipt of the State during the last decade is exhibited in Table-2.4 and Fig 2.3. During this period revenue receipt grew by a rate of 11.03 per cent. Incidentally, it is significant to note that dur-

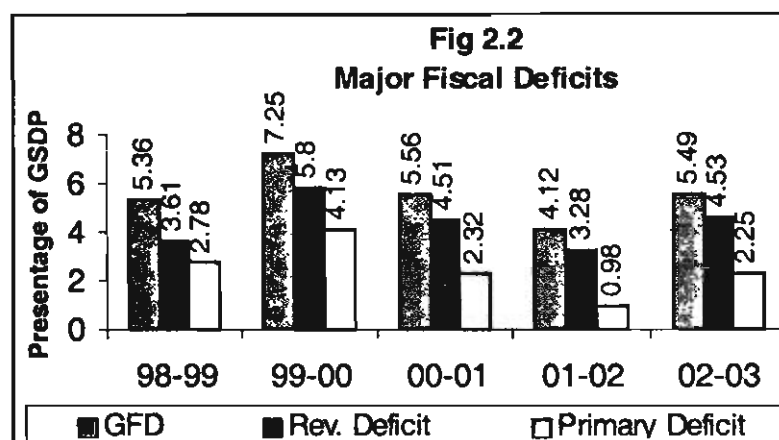


Table-2.3
Major Deficit Indicators

Year	Fiscal Deficit		Revenue Deficit		Primary Deficit	
	Amount	% to GSDP	Amount	% to GSDP	Amount	% to GSDP
1993-94	935.45	3.52	371.6	1.40	248.29	0.93
1994-95	1108.65	3.48	399.88	1.25	288.98	0.91
1995-96	1302.66	3.36	402.82	1.04	378.5	0.98
1996-97	1542.48	3.47	643.03	1.45	439.07	0.99
1997-98	2413.85	4.88	1122.9	2.27	1127.76	2.28
1998-99	3012.2	5.36	2029.96	3.61	1565.94	2.78
1999-00	4534.56	7.25	3624.21	5.80	2582.29	4.13
2000-01	3877.8	5.56	3147.06	4.51	1620.2	2.32
2001-02	3269.4	4.12	2605.64	3.28	779.93	0.98
2002-03(LE)	4993.54	5.49	4122.16	4.53	2046.78	2.25

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

ing this period the growth of revenue expenditure was much faster, 13.35 per cent. The component-wise growth rate of revenue receipts are: 12.28 per cent by States' own tax revenue, 6.72 per cent by States' own non-tax revenue and 9.49 per cent by share of Central taxes and grants. In 2001-02, the total revenue receipt

increased by Rs. 325.53 crore, compared to the previous year. This was contributed by the increase in Central Transfers, by Rs.388.08 crore. The own revenue of State was short by Rs.62.55 crore due to the heavy fall (Rs.115.71 crore) in non-tax revenue collection. Own tax revenue during this period was up by Rs.53.15 crores. As per the latest estimate for 2002-03, revenue

receipt is estimated to increase by Rs.1577.5 crore, out of which, Rs. 1513.51 crore is by way of own revenue and Rs.63.99 crore by way of share of Central taxes and grants. The growth characteristics of the revenue receipts of the State over the last three decades are shown in Table-2.5. The growth of revenue which was 18.05 per cent in the first half of 1990's came down to 10 per cent in the second half of 1990's.

State's Own Tax Revenue

2.7 The growth of State's own tax revenue in 2001-02 was very marginal, 0.9 percent

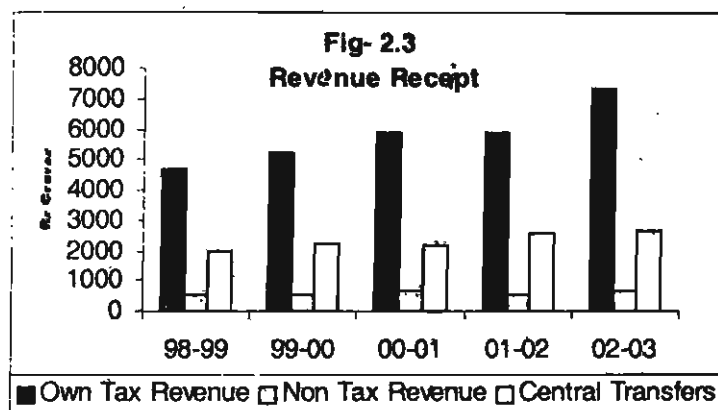


Table-2.4
Revenue Receipt (Rs. crore)

Year	State's Own Revenue			Share of Central Taxes and Grants	Total Revenue (4+5)
	State's Own Tax Revenue	State's Own Non Tax Revenue	Total (2+3)		
1	2	3	4	5	6
1993-94	2344.87	322.92	2667.79	1253.96	3921.75
1994-95	2799.09	396.35	3195.44	1470.97	4666.41
1995-96	3382.68	535.49	3918.17	1505.39	5423.56
1996-97	3898.5	513.8	4412.3	1732.78	6145.08
1997-98	4501.05	552.11	5053.16	2065.06	7118.22
1998-99	4649.56	557.66	5207.22	1990.90	7198.12
1999-00	5193.5	530.71	5724.21	2217.53	7941.75
2000-01	5870.26	659.09	6529.35	2201.51	8730.86
2001-02	5923.42	543.38	6466.8	2589.59	9056.39
2002-03(LE)	7302.55	677.76	7980.31	2653.58	10633.89
Growth Rate(1993-94 to 01-02)	12.28	6.72	11.70	9.49	11.03

Sources: 1. Finance Department, Govt. of Kerala

2. Budget in Brief, Kerala: 2003-04

Table - 2.5
Growth Characteristics of Revenue Receipts

30 year Growth Rate	GR 70's	GR 80's	GR 90's	GR 1970-1975	GR 1976-1980	GR 1981-1985	GR 1986-1990	GR 1991-1995	GR 1996-2000
14.87%	16.49%	13.69%	12.67%	17.56%	13.90%	15.13%	10.55%	18.05%	10.00%

Sources: Finance Department, Govt. of Kerala

only (Rs. 53.16 crore), as against a growth rate of 13 per cent (Rs. 676.75 crore) in 2000-01 (Table-2.6). The total tax realised during 2001-02 was Rs.5923.42 crore, out of which, Rs.4440.85 crore (75 per cent) was by way of sales tax and R.394.28 (6.66 per cent) crore by way of fees on stamps and registration. The excise duty sharply declined by Rs.147.48 crores, from Rs.688.94 crore in 2000-01 to Rs.541.66 crore in 2001-02, the heaviest decline in the decade. As per the latest esti-

mate for 2002-03, the own tax revenue is estimated to have increased by Rs.1379.13 crore (23.28 per cent), compared to 2001-02. However, a fact to be noticed is that on an average only 50 per cent of the State's total revenue expenditure can be met with the State's own tax revenue, normally. The growth characteristics of major tax revenue are given in Table-2.7. In 1990's, compared to the first half, growth was slower in the second half. Speedy measures are required to augment

Table-2.6
State's Own Tax Revenue

Year	Land Revenue	Stamps and Registration fees	State Excise Duties	Sales Tax	Motor Vehicle Tax	Others	Total
1993-94	19.8	230.15	330.95	1533.24	151.06	79.647	2344.87
1994-95	22.65	295.81	353.21	1864.93	183.90	78.59	2799.09
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
1997-98	23.75	331.36	543.41	3084.09	301.63	216.81	4501.05
1998-99	32.73	301.15	529.62	3366.62	323.31	96.13	4649.56
1999-00	34.67	279.65	591.1	3853.54	380.83	53.72	5193.51
2000-01	39.35	341.1	688.94	4344.33	394.85	61.69	5870.26
2001-02	34.93	394.28	541.46	4440.85	452.18	59.72	5923.42
2002-03(LE)							7302.55
Growth rate(1993-94 to 01-02)	7.35	6.96	6.35	14.22	14.69	-3.54	12.28

Sources: 1. Finance Department, Govt. of Kerala

2. Budget in Brief, Kerala: 2003-04

Table 2.7
Growth characteristics of major tax revenues

30 years Growth	GR 70's	GR 80's	GR 90's	GR 1970-75	GR 1976-80	GR 1981-85	GR 1986-90	GR 1991-95	GR 96-2000
Own Tax Revenue									
16.62%	18.01%	15.63%	14.37%	16.11%	16.16%	16.58%	13.97%	20.21%	11.31%
Sales Tax									
17.72%	19.21%	16.15%	15.19%	19.11%	13.52%	16.46%	13.80%	20.06%	13.95%
State Excise									
16.12%	22.30%	12.60%	13.41%	11.64%	29.67%	11.36%	13.82%	19.12%	7.10%
Stamps and Registration									
14.84%	15.29%	17.90%	8.82%	15.84%	14.64%	13.61%	25.02%	24.79%	-5.71%
Motor Vehicles Tax									
15.41%	12.55%	15.04%	17.29%	-0.52%	20.00%	19.26%	10.38%	25.50%	14.33%

Source: Finance Department, Govt. of Kerala

State's own tax revenue, otherwise, the State will be constrained to go in for high cost borrowings to meet revenue expenditure, which is not a healthy fiscal practice.

State's Own Non-Tax Revenue

2.8 On an average, State's own non-tax revenue constitutes only about 6 to 8 per cent of the total revenue receipts. In 2001-02, non-tax realisation was far from satisfactory. It declined by Rs.115.66 crore, from Rs. 659.04 crore in 2000-01 to Rs. 543.38 crores in 2001-02 (Table 2.8). However, as per the latest estimate for 2002-03, non-tax revenue is expected to increase by Rs.134.38 crore (24.7 per cent), from Rs.543.38 crore in 2001-02 to Rs.677.76 crore in 2002-03 (LE). During the period from 1993-94 to 2001-02, when the State's own tax revenue increased by a growth rate of 12.28 per cent, State's own non-tax revenue increased only by a slow pace of 6.72 per cent. The major component of non-tax revenue in the State is the revenue from forests and it constitutes about 20-30 per cent of the total non-tax revenue. However, its annual growth is very low, only 1.25 per cent. Possibility of generating more revenue from forest sector needs to be explored in this situation. In most sectors, the level of non-tax revenue does not bear any relation to the expenditure incurred by the

State in providing the corresponding service. Health and Education are two of such major sectors. The total non-tax revenue collection in relation to GSDP was also on the decline in the State. The ratio which was 1.06 per cent in 1996-97, declined to 0.94 per cent in 2000-01 and further to 0.68 per cent in 2001-02.

2.9 A comparative position of non-tax revenue in the four neighbouring States as per their revised estimate for 2000-01 is shown in Table 2.9. When the ratios between non-tax revenue and revenue expenditure in Andhra Pradesh, Karnataka and Tamil Nadu are 11.8 per cent, 7.8 per cent and 6.4 per cent respectively, in Kerala, it is only 5.33 per cent. The growth characteristics of non-tax revenue for the last three

Table-2.8
State's Own Non Tax Revenue

Year	Forest	Debt Services (Interest)	Social Development Services*	Others	Total
1993-94	102.96	27.6	68.25	124.11	322.92
1994-95	136.88	37.76	83.48	138.23	396.35
1995-96	160.77	100.32	96.42	177.98	535.49
1996-97	162	55.73	86.3	209.77	513.8
1997-98	144.91	53.48	106.73	246.99	552.11
1998-99	121.03	70.96	122.66	243.01	557.66
1999-00	109.88	37.31	118.41	265.11	530.71
2000-01	141.24	36.81	165.02	315.97	659.04
2001-02	113.7	31.08	135.51	263.09	543.38
2002-03(LE)	149.58	34.4	173.93	348.63	677.76
Growth rate(1993-94 to 01-02)	1.25	1.50	8.95	9.85	6.72

Sources: 1. Finance Department, Govt. of Kerala

2. Budget in Brief, Kerala: 2003-04

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

Table - 2.9
Comparative Position of Non-Tax Revenue in Four Neighbouring States 2000-01
(Latest Estimates)

States	Andra Pradesh	Karnataka	Kerala	Tamil Nadu
Non Tax Revenue of State	2695.92	1332.93	669.72	1432.19
Revenue Expenditure (RE)	22830.29	17086.86	12563.84	22318.23
Revenue Receipts (RR)	19717.35	14911.89	9332.07	18395.96
NTR / RE	11.81%	7.80%	5.33%	6.42%
NTR / RR	13.67%	8.94%	7.18%	7.78%

Source: Finance Department, Govt. of Kerala

decades are given in Table 2.10. It shows a very dismal picture. The growth rate of non-tax revenue declined from 18.01 per cent in 1991-95 to -0.22 per cent in 1996-2000. In this context, it is desirable to study deeply, scientifically and judiciously the need and scope for increasing the non-tax revenue in the State and come out with rational measures, without affecting the welfare of poor. It has become inevitable in view of the increasing rate of investment being made by the State in service sectors and also considering the emphasis being given by the Government for providing better service delivery to the society.

Central Transfers

2.10 The transfers from the Centre to State comprise of tax devolution and grant. The component-wise Central transfers to the State from 2000-01 to 2002-03 (LE) are shown in the Table-2.11. The total transfer increased by 17.6 per cent in 2001-02, over the previous year. The total share of Central taxes and transfers from 1993-94 to 2002-03 (LE) are exhibited in Table-2.12. Share in Central taxes and grants-in-aid anticipated in the latest estimate for 2002-03 is Rs. 2653.58 crores, which shows an increase of only 2.47 per cent over the previous year.

Table - 2.10
Growth Characteristics of Non Tax Revenues, Forest and others

GR 30 yrs	GR - 70s	GR - 80s	GR - 90s	GR 1970-75	GR 1976-80	GR 1981-85	GR 1986-90	GR 1991-95	GR 96-2000
Non Tax Revenue									
8.30%	14.03%	2.35%	10.96%	22.21%	5.98%	15.37%	-4.52%	18.01%	-0.22%
Of which Forest									
9.79%	18.73%	-1.79%	10.29%	18.74%	19.04%	-7.20%	-6.76%	38.38%	-9.08%
Other than Forests									
7.94%	12.95%	3.36%	11.17%	22.90%	2.65%	21.97%	-4.28%	11.64%	2.94%

Source: Finance Department, Govt. of Kerala

Table-2.11
Central Transfers: Component-wise

	2000-01	2001-02	2002-03 (LE)
1. Share in Central Taxes and duties	1585.61	1614.26	NA
2. Plan grants	497.72	820.15	
3. Finance Commission's Award	79.34	130.14	
4. Other non-plan grant	38.84	25.04	
Total	2201.51	2589.59	2653.58

Sources: 1. Finance Department, Govt. of Kerala

2. Budget in Brief, Kerala: 2003-04

Table-2.12
Central Transfers: 1993-94 to 2002-03 (LE)

(Rs. in crore)

Year	Share of Central Taxes & Grant in Aid	Growth rate %
1993-94	1253.96	8.82
1994-95	1470.97	17.31
1995-96	1505.39	2.34
1996-97	1732.78	15.11
1997-98	2065.06	19.18
1998-99	1990.9	-3.59
1999-00	2217.53	11.38
2000-01	2201.51	-0.72
2001-02	2589.59	17.63
2002-03 (LE)	2653.58	2.47

Source: Finance Department, Govt. of Kerala

Eleventh Finance Commission

2.11 The criteria adopted by the Eleventh Finance Commission for devolution of resources to the States were extremely unfavourable to the State. 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). The State argued that the assumption that a State with larger area would have larger non-development expenditure and construction of index of infrastructure, a mix of social and economic infrastructure, were not objective criteria. But the Commission did not consider it. Reduction in the share of population (1971 figures) from 20 per cent adopted by the Tenth Finance Commission to 10 per cent for Eleventh Finance Commission also unfavourably affected the State. Another adverse point was that, of the total sharable revenue, 68.1 per cent was distributed to the States with

per capita income below the national average and the balance 31.9 per cent of the share only was distributed to the other States, including Kerala, with per capita income above national average. The estimated reduction in transfers for the period 2000-05 as per Eleventh Finance Commission Award as compared to the previous Commission has been worked out to be Rs. 3664 crores (Table-2.13).

Expenditure Pattern

Revenue Expenditure

2.12 The Revenue Expenditure in the State is on the increase, regardless of the revenue receipts. During the period from 1993-94 to 2001-02, when the revenue expenditure increased by a growth rate of 13.35 per cent, the revenue receipt increased by a growth rate of 11.03 per cent only (Table-2.14 and 2.4). At the same time, in 2001-02 the revenue expenditure could be contained by Rs. 215.89 crores (1.82 per cent), from Rs. 11877.92 crores in 2000-01 to Rs. 11662.03 crores in 2001-02. However, as per the latest estimate for 2002-03, the revenue expenditure has shot up by Rs. 3094.02 crores (26.53 per cent), compared to 2001-02. Another disquieting fact noticed was that the share of development expenditure in the total revenue expenditure is on the decline, especially after 1998-99. The share of development expenditure, which was 61 per cent in 1998-99 declined to 56 per cent in 1999-00, 54 per cent in 2000-01 and fur-

Table-2.13
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. of Kerala.

Table 2.14
TREND IN REVENUE EXPENDITURE

Year	Development Expenditure						Non Development Expenditure				Rev.Expr.
	Edn	Health	Agri, AH, and Coop	Labour and Empl	Others	Total	Interest payment	Pension	Others	Total	
93-94	1145.49	367.44	288.22	110.01	674.81	2585.97	687.16	464.72	555.51	1707.39	4293.36
94-95	1351.08	431.57	346.46	132.25	754.02	3015.38	819.67	565.45	665.8	2050.92	5066.3
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	4047.96	1103.41	753.67	883.06	2740.14	6788.1
97-98	1761.05	634.12	575.65	214.61	1845.8	5031.26	1286.09	913.02	1010.75	3209.86	8241.12
98-99	1957.9	694.86	615.43	191.75	2182.1	5642.03	1446.26	1154.32	985.47	3586.05	9228.08
99-00	2609.49	870.38	643.67	216.87	2169.8	6510.24	1952.27	1808.29	1295.16	5055.72	11566
00-01	2620.24	837.04	594.69	178.34	2166.2	6396.5	2257.6	1929.48	1294.34	5481.42	11877.9
01-02	2471	861.21	487.57	176.36	2032.2	6028.34	2489.47	1837.93	1306.29	5633.69	11662
02-03(LE)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	14758.1
GRI 93-94 to 01-02	10.61	11.15	9.02	7.11	15.4	11.8	15.87	18.92	11.2	15.45	13.35

Sources: 1. Finance Department, Govt. of Kerala

2. Budget in Brief, Kerala: 2003-04

ther to 52 per cent in 2001-02. In other words, the share of non-development revenue expenditure is on the increase. The growth characteristics of revenue expenditure for the last three decades are given in Table 2.15.

Capital Expenditure

2.13 The capital expenditure in the State during the period from 1993-94 to 2002-03 is given in Table-2.16 and Fig 2.4. The trend shows decline over the years. Capital expenditure declined from Rs. 648.10 crores in 1999-2000 to Rs. 577.20 crores (11 per cent) in 2000-01 and further (3.3 per cent) to Rs. 558.36 crore in 2001-02. In terms of capital expenditure-GSDP ratio, the ratio which was 1.4 per cent in 1996-97 declined to 0.83 per cent in 2000-01 and further to 0.70 per cent in 2001-02. This is partly due to the accounting system followed. The transfer of plan assistance to the local Governments to the extent of about 30-35 per cent of plan outlay is under revenue head. But the major share of this transfer to the local bodies is being utilised as capital expenditure for asset creation. Assuming an expenditure of at least 50 per cent of the the assistance to local Governments for asset creation as capital, the capital expenditure of the State will go up. But even with this the proportion of

capital expenditure in the total expenditure may not attain a desirable level as is evident from the trend of growth in expenditures given in Tables 2.16 and 2.17. The latest estimate for 2002-03 anticipates an increase of Rs.140.30crore (25.13 per cent) in total capital expenditure, compared to 2001-02. The most disturbing feature of State finances is that despite growth in borrowing the capital expenditure is very low.

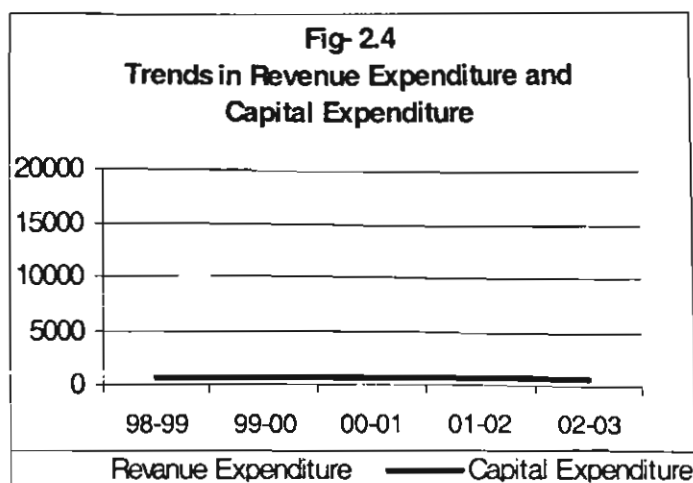


Table 2.15
Growth Characteristics of Revenue Expenditure

30 year Growth Rate	GR 70'S	GR 80'S	GR 90'S	GR 1970-75	GR 1976-80	GR 1981-85	GR 1986-90	GR 1991-95	GR 96-2000
15.79%	15.03%	15.93%	14.69%	15.12%	10.73%	14.28%	12.29%	15.72%	18.70%

Sources: Finance Department, Govt. of Kerala

Table-2.16
Trend in Capital Expenditure

Year	Irrigation	Agriculture and allied Services	Industries	Public Works	Others	Total
1993-94	131.46	18.68	57.83	80.19	75.17	363.33
1994-95	137.39	37.33	84.38	109.16	77.75	446.01
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(LE)	NA	NA	NA	NA	NA	698.66

Source: Budget in Brief: 2003-04
Economic Review 2003

Table- 2.17

30 year Growth Rate	GR 70'S	GR 80'S	GR 90'S	GR 1970-75	GR 1976-80	GR 1981-85	GR 1986-90	GR 1991-95	GR 96-2000
12.31%	16.82%	8.13%	12.06%	8.22%	21.76%	8.20%	3.07%	14.89%	3.56%

Source: Finance Department, Govt. of Kerala

Interest, Pension and Salaries

2.14 One of the major factors that contributes to the rise in gross fiscal deficit is the heavy expenditure commitment on account of interest, pension and salaries. In the fiscal year 2001-02, 94.2 per cent of the revenue receipt had to be utilized for meeting the above three commitments; 27.5 per cent for interest payment, 20.3 per cent for pension and 46.4 per cent for Salaries (Table-2.18 and Fig 2.5). The latest estimate for 2002-03 also shows almost similar trend. During the period 1993-94 to 2001-02, the revenue receipt of the State grew by only 11.03 per cent, whereas, the total com-

mitment for the above three items grew by a higher rate of 14.01 per cent. The item-wise growth rates are 17.45 per cent for interest, 18.75 per cent for pension and 10.90 per cent for salary. However, the share of salary on total revenue receipt is on the decline. The total salary as a percentage to total revenue, which was 56.68 per cent in 1999-2000 declined to 51.45 per cent in 2000-01, 46.39 per cent in 2001-02 and as per the latest estimate for 2002-03 it is estimated to decline further to 45.14 per cent. The growth characteristics of interest, pension and salaries are given in Table-2.19.

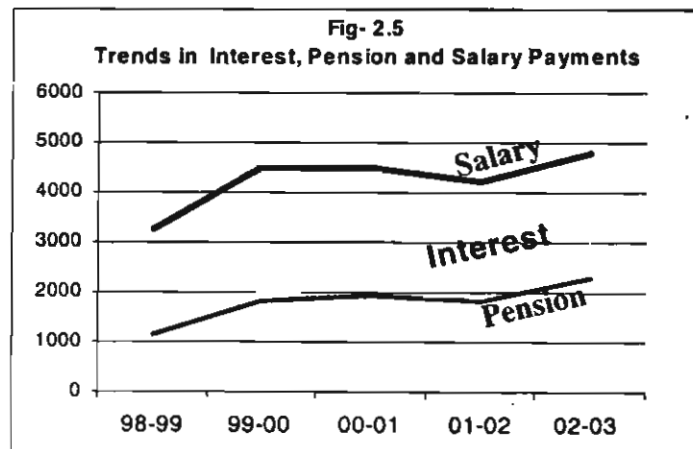


Table 2.18
Interest, Pension and Salaries (Rs.Crore)

Year	Interest	Pension	Salaries	Total	Revenue Receipts	Total as a percentage of Revenue receipts
1993-94	687.16	464.72	1836.13	2988.01	3921.76	76.19
1994-95	819.67	565.45	2194.25	3579.37	4666.42	76.70
1995-96	924.16	716.85	2230.4	3871.41	5423.56	71.38
1996-97	1103.41	753.67	2616.66	4473.74	6145.07	72.80
1997-98	1286.09	913.02	2803.26	5002.37	7118.19	70.28
1998-99	1446.26	1154.32	3254.68	5855.26	7198.12	81.34
1999-00	1952.27	1808.29	4502.86	8263.42	7941.75	104.05
2000-01	2257.6	1929.48	4491.61	8678.69	8730.86	99.40
2001-02	2489.47	1837.93	4200.82	8528.22	9056.39	94.17
2002-03 (LE)	2946.76	2282.90	4800.24	10029.90	10633.89	94.32
Growth rate: 93-94 to 01-02	17.45	18.75	10.90	14.01	11.03	

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

Table -2.19
Growth characteristics of Interest, Pensions and Salaries

30 year Growth Rate	GR 70'S	GR 80'S	GR 90'S	GR 1970-75	GR 1976-80	GR 1981-85	GR 1986-90	GR 1991-95	GR 96-2000
Interest									
17.26%	10.51%	23.08%	16.65%	10.83%	8.76%	25.93%	23.13%	24.55%	20.56%
Pension									
21.80%	20.57%	22.95%	18.39%	14.53%	16.60%	24.28%	19.43%	17.85%	26.03%
Salaries									
N.A	12.03%	17.85%	11.30%	NA	NA	14.19%	20.87%	6.86%	19.20%

Source: Finance Department, Govt. of Kerala

Debt Profile

2.15 Debt burden of the State is a major problem. Debt of the State and its growth characteristics are given in Table- 2.20 and 2.21. Burgeoning revenue expenditure, growing budget deficits, high proportion of loans in Central assistance to State plans etc. are some of the major factors for higher growth in debt liabilities. Internal debt, small savings/provident fund and loans & advances from the Central Government are the three components of debt liabilities of the State. During the period 1993-94 to 2001-02, the total debt liability of the State grew by a rate of 17.94 per cent. Internal debt of the State grew much faster, with a growth rate of 23.43 per cent. As per the latest estimate for 2002-03, the total debt of the State was Rs. 31060 crore. The debt profile of the State is shown in Table 2. 22. The gross retention (receipts minus disbursement) as well

as net retention (gross retention minus interest) attained their peak levels in 1999-00 at Rs. 4424.39 crores and Rs.2494.23 respectively and thereafter the gross retention declined to a level of Rs.2946.26 and the net retention to a level of Rs.494.89 in 2001-02. State's debt-GSDP ratio as well as the per capita debt liability of the State is much higher than that of neighbouring States' and all States' average (Table 2.23). 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) were 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

Table-2.20
DEBT OF THE STATE

Year	Internal Debt	Small Savings provident Fund, Others	Loans and advances from the central Govt.	Total
1993-94	1734.68	2349.76	3114.22	7198.66
1994-95	2079.32	3015.5	3726.05	8820.87
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 (LE)	NA	NA	NA	31060.00
Growth rate: 92-93 to 01-02	23.43	21.64	9.31	17.94

Sources: 1. Finance Dept., Govt. Kerala

2. Budget in Brief 2003-04

Table -2.21
Growth Characteristics of Debt

30 year Growth Rate	GR 70'S	GR 80'S	GR 90'S	GR 1970-75	GR 1976-80	GR 1981-85	GR 1986-90	GR 1991-95	GR 96-2000
17.48%	15.65%	16.67%	16.73%	20.84%	14.33%	18.06%	17.13%	16.12%	22.98%

Source: 1. Finance Department, Govt. of Kerala

Table -2.22
Debt Profile of the State (1992-93 to 2001-02)

Item	Year	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-2000	2000-01
Loans and Advances from Government of India	Receipts	529.55	595.85	749.42	655.45	539.94	567.15	869.59	1072.97	483.11
	Disbursements	243.29	202.67	137.59	143.25	165.65	189.18	211.96	246.95	284.01
	Interest	237.62	278.16	330.7	418.07	494.16	550.71	606.54	703.74	732.26
	GROSS RETENTION	286.26	393.18	611.83	512.2	374.29	377.97	657.63	826.02	199.10
Small Savings and Deposits	NET RETENTION	48.64	115.02	281.13	94.13	-119.87	-172.74	51.09	122.28	-533.16
	Receipts	1268.78	1629.29	1880.9	1887.17	1988.28	2396.71	3875.61	6986.41	6200.93
	Disbursements	1142.05	1504.39	1581.54	1824.76	1809.58	2168.57	2935.66	4981.87	5312.91
	Interest	40.19	45.79	103.26	64.62	62.46	76.70	78.92	273.00	357.84
State Provident Funds	GROSS RETENTION	126.73	124.9	299.36	62.41	178.70	228.14	939.95	2004.54	888.02
	NET RETENTION	86.54	79.11	196.1	-2.21	116.24	151.44	861.03	1731.54	530.18
	Receipts	405.07	692.14	773.16	800.9	880.10	972.17	1128.11	1713.92	1722.63
	Disbursements	337.98	368.82	428.2	513.36	636.32	779.95	770.01	859.97	1033.71
Internal Debt	Interest	101.92	174.13	159.33	176.04	214.66	253.69	276.32	364.19	391.02
	GROSS RETENTION	67.09	323.32	344.96	287.54	243.78	192.22	358.10	853.95	688.92
	NET RETENTION	-34.83	149.19	185.63	111.5	29.12	-61.47	81.78	489.76	297.90
	Receipts	2162.62	1143.35	509.32	427.64	623.01	947.81	3101.91	4858.25	6975.36
TOTAL DEBT	Disbursements	1831.94	1102.81	164.68	20.68	138.44	333.54	2262.67	4118.37	5083.63
	Interest	154.98	180.9	216.41	253.63	318.08	388.50	465.38	589.23	747.71
	GROSS RETENTION	330.68	40.54	344.64	406.96	484.57	614.27	839.24	739.88	1891.73
	NET RETENTION	175.7	-140.36	128.23	153.33	166.49	225.77	373.86	150.65	1144.02
TOTAL DEBT	Receipts	4366.02	4060.63	3912.8	3771.16	4031.33	4883.84	8975.22	14631.55	15382.03
	Disbursements	3555.26	3178.69	2312.01	2502.05	2749.99	3471.24	6180.30	10207.16	11714.26
	Interest	534.71	678.98	809.7	912.36	1089.36	1269.60	1427.16	1930.16	2228.83
	GROSS RETENTION	810.76	881.94	1600.79	1269.11	1281.34	1412.60	2794.92	4424.39	3667.77
NET RETENTION	276.05	202.96	791.09	356.75	191.98	143.00	1367.76	2494.23	1438.94	

Source : Finance Department, Govt. of Kerala

Table 2. 23
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) : 2003-04

high as 32 per cent. As per the latest estimate for 2002-03, Kerala's per capita debt will go upto Rs.9755 and debt GSDP ratio 34 per cent.

Contingent Liabilities

2.16 Contingent liabilities are not direct debt burden of the State. But, in the event of default by borrowing units, for which Government is a guarantor, the State will be required to meet the obligations. In such cases, like other debt liabilities, contingent liabilities will also become a debt obligation to the State. In the past, there were instances where Government guarantees have been invoked and the Government had to pay the liability. Since the level of guarantee is rising without limit, considering its fiscal implications, 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. The current level of (up to 2001-02) outstanding guarantees of the State Government are given in Table-2.24. The outstanding liabilities increased over five fold during the period 1992-93 to 2001-02, from Rs. 2295.73 crore in 1992-93 to Rs. 11817.53 crores in 2001-02.

Table-2.24
Outstanding Guarantees (Rs.Crore)

Year	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

Source: Finance Department, Govt. of Kerala

OUTLOOK

2.17 Mounting fiscal deficits and high growth in non-development expenditure are the two major problems confronting State's fiscal position. During the period 1993-94 to 2001-02, the fiscal deficit grew by a rate of 16.9 per cent and the non-development expenditure by 15.50 per cent. The unique achievements that the State made in several sectors are getting undermined for want of adequate resources for their maintenance. Health, education and infrastructure are the sectors most affected by the situation. The problem of elderly, mounting unemployment, increasing rate of morbidity, re-emergence of fatal diseases, deterioration in the quality of education, high cost in health care and education etc are some of the problems facing the State. To address these issues, large-scale investments are required. Besides, the total investment required for attaining the Tenth Plan targeted growth rate of 6.5 per cent is estimated to be around Rs 50000 crore, including the State Plan outlay of Rs. 24000 crores. Unless speedy measures are taken towards a purposeful fiscal consolidation, the State would not be in a position to have the required resources to prevent diversion of loans to revenue expenditure and thereby get the ability to make higher capital investments

2.18 Fiscal consolidation requires augmentation of revenue and restraining of expenditure. Own revenue realisation needs to be streamlined and boosted ; especially non-tax revenue. Considering the higher allocations being provided for the public spending, it has become inevitable to rationally enhance the user charges of services being rendered by the Government, in a progressive manner. The State Government has argued before the Twelfth Finance Commission its case strongly for basic changes in the scheme of Central transfers and grants. The State's fiscal problems can be tackled only if its own efforts are supported by

higher Central transfers and comprehensive debt relief. Even while demanding alteration in devolution criteria, all possible efforts are to be made for availing of maximum assistances under discretionary grant/project based grant by raising State's special problems such as acute unemployment, problems of elderly, second generation problems, industrial backwardness, low level of Central sector investment etc.

2.19 The total expenditure of the State during 2001-02 was 15.38 per cent of GSDP, which is comparatively moderate. But, what matters is not the level of expenditure but the composition of expenditure. The concern is that the share of non-development revenue expenditure in the State is disproportionately increasing, especially pension and interest payments. High cost borrowings and too much dependence on ways and means advances and over drafts from RBI, for which the rate of interest is comparatively higher, are the two major factors, which increase the burden on interest. Very poor return from public sector units is another burden to the State. The rate of return on investment in these units is abysmally low, 0.2 per cent. The public sector units are to be made self-supportive by taking appropriate steps, including reform measures. Maintenance and renewal of assets already cre-

ated is another problem facing the State. The capital assets are languishing on account of poor investment for maintenance. The State has been in a position to utilise only around 3 per cent of the total revenue expenditure for asset renewal/maintenance.

2.20 The State Government has already initiated many fiscal reform measures. Enactment of 'The Kerala Fiscal Responsibility Act, 2003', 'The Kerala Ceiling on Government Guarantees Act, 2003', closure of TP Accounts, measures for debt swap in the context of current low interest rates, re-deployment and restructuring initiatives for an efficient Civil Service etc. are some of the important measures taken. 'The Kerala Fiscal Responsibility Act, 2003' envisages reduction of the revenue deficit to 'nil' and the fiscal deficit to 2 per cent of the GSDP, by the end of March, 2007. Prioritisation of expenditures, restructuring of public sector units, growth oriented sectoral policies, speedy and time-bound completion of long pending feasible projects, new budget cycle facilitating early budget implementation, legal authority for financial management and responsibilities, improved asset management system etc are certain other measures being taken up by the Government, with which it is expected that the State can achieve fiscal soundness and sustainability in two to three years.

CHAPTER 3

INCOME AND POPULATION

A. INCOME

Global Economy

The outlook for the global economy continues to be uncertain. Despite the formal end of the war in Iraq, retreat of the Severe Acute Respiratory Syndrome (SARS) epidemic and reversal of persistent sell-offs in major equity markets, signs of recovery in major industrial economies are not significant. Interest rate cuts by the Federal Reserve and the European Central Bank (ECB) in June 2003 have taken key international rates to all-time lows, reflecting a growing concern about possibility of deflationary trends emerging.

3.2 The estimated GDP growth rate of the major developing countries in years 2001 to 2003 and the projection for 2004 is given in Table 3.1

3.3 The growth of the Indian economy in 2002-03 although significantly lower than expected due to simultaneous impact of several adverse developments, including drought and lowered agriculture production was still among the highest in the world. Border tensions in the early months of the year were followed by the worst drought in fifteen years. The estimated fall of 29 million tonnes in foodgrains production was the largest in a year since independence.

National Income

3.4 World Bank estimated the combined GDP growth of India and other South Asian nations at 5.4 per cent this year compared to 4.2 per cent in 2002 and 4.9 percent in 2001. The projection was made close on

Table- 3.1
Real GDP Growth Rate of
Major Developing Countries

Countries	Real GDP Growth Rate			
	2001	2002	2003	Projection 2004
Selected African countries				
Algeria	2.6	4.1	5.9	3.8
Morocco	6.3	3.2	5.5	8.4
Tunisia	4.9	1.7	5.5	5.8
Cameroon	5.3	6.5	4	4.4
Cote d'Ivoire	0.3	-1.8	-3	3
Ghana	4.2	4.5	4.7	5
Kenya	1.2	1	1.3	2.6
Nigeria	2.8	0.5	5.2	2.8
Tanzania	6.1	6.3	5.5	6.3
South Africa	2.8	3	2.2	3
Uganda	5.5	6.6	5.4	6
Selected East European Countries				
Bulgaria	4.1	4.8	5	5.5
Cyprus	4.1	2.2	2	3.8
Czech Republic	3.1	2	1.7	2.6
Estonia	5	5.8	5	5.1
Hungary	3.8	3.3	3	3.5
Latvia	7.9	6.1	5.5	6
Lithuania	6.5	6.7	5.8	6.2
Poland	1	1.4	2.9	4.1
Romania	5.7	4.9	4.7	5
Slovak Republic	3.3	4.4	4	4
Slovenia	2.9	3.2	2.2	3
Commonwealth of Independent States				
Armenia	9.6	12.9	7	6
Azerbaijan	9.9	10.6	9.2	9.1
Belarus	4.7	4.7	4	3.2
Georgia	4.7	5.3	4.8	4.5
Kazakhstan	13.5	9.5	9	8
Kyrgyz Republic	5.4	-0.5	5.6	4
Moldova	6.1	7.2	6	5
Russia	5.0	4.3	6	5
Ukraine	9.2	4.8	5.3	4.8
Tajikistan	10.2	9.1	6	4
Uzbekistan	4.1	3.2	0.3	2.5

Source: *Monthly Review of the Indian Economy*, CMIE

the heels of RBI's annual report which portrays a growth significantly higher than 6 percent in this fiscal year. ADB's forecasts show a growth of 6 per cent. The latest RBI forecast is 7% in view of the growth of 8.4% in the last quarter.

3.5 As per the Statistics published by Central Statistical Organisation the Revised Advance Estimate of Gross Domestic Product (GDP) at factor cost at constant (1993-94) prices in 2002-03 has been estimated at Rs. 13,20,313 crores, as against Rs.1265429 crore in 2001-02 registering a growth rate of 4.3 percent during 2002-03 compared to the growth rate of 5.6 % during the previous year. At current prices GDP in 2002-03 is estimated at Rs. 22,42,463 crore as against Rs.2094013 crore in 2001-02 showing an increase of

7.1% during the year 2002-03.

3.6 The National Income (i.e. Net National Product at factor cost) at constant prices (1993-94) in 2002-03 is estimated at Rs.11,61,580 crore as against the previous year's Quick Estimate of Rs.11,15,157 crore. In terms of growth rates, the National Income is estimated to rise by 4.2 percent during 2002-03 compared with the growth rate of 6.2 percent of 2001-02. The National Income at factor cost at current prices is estimated at Rs. 19,86,027 crore during 2002-03 when compared to Rs. 18,64,292 crore during 2001-02 registering a rise of 6.5%.

3.7 The overall performance of the economy during the year 2002-03 has been positive (4.3 percent) but not impressive compared to the corresponding growth of 5.6 percent in the previous year. The growth of 4.3 percent in GDP during 2002-03 has been mainly due to fairly good growth in trade, hotels, transport and communication (7.8%), construction (7.2%) and community, social and personal services (6.8%) manufacturing and financing, insurance, real estate business services

Fig 3.1
GDP at 1993-94 Prices

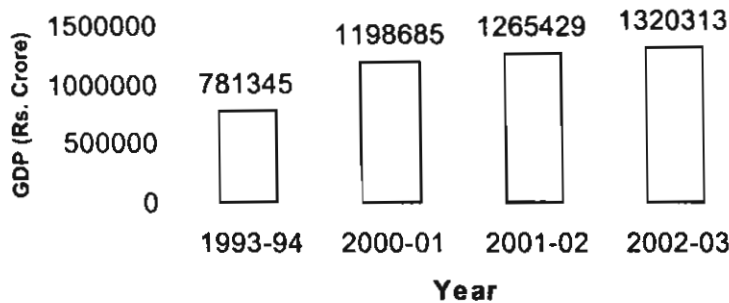


Table 3.2
National Product, Domestic Product & Per Capita
Income at Factor Cost (All India) (Rs. Crore)

Sl. no.	Item	At current prices		At 1993-94 prices	
		2001-02@	2002-03*	2001-02@	2002-03*
1	Gross National Product (GNP)	20,81,350 (9.5)	22,24,151 (6.9)	12,57,043 (6.0)	13,09,531 (4.2)
2	Net National Product (NNP) i.e. National Income	18,64,292 (9.5)	19,86,027 (6.5)	11,15,157 (6.2)	11,61,580 (4.2)
3	Gross Domestic Product (GDP)	20,94,013 (9.2)	22,42,463 (7.1)	12,65,429 (5.6)	13,20,313 (4.3)
4	Net Domestic Product (NDP)	18,76,955 (9.1)	20,04,339 (6.8)	11,23,543 (5.7)	11,72,361 (4.3)
5	Per Capita National Income (Rs)	1,79,78 (7.6)	1,88,25 (4.7)	10,754 (4.3)	11,010 (2.4)

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

*: Revised Advance Estimate @: Quick Estimates

Source: Central Statistical Organization

(6.1%) and mining & quarrying (5.1%). However, Agriculture, forestry and fishing registered a growth rate of (-) 3.2 percent.

Per Capita National Income

3.8 The per capita income (per capita net national product at factor cost) in real terms, (at 1993-94 prices) during 2002-03 is estimated to attain a level of Rs.11010 as compared to the Quick Estimates for the year 2001-02 of Rs.10754. The growth rate in per capita income is estimated at 2.4 per cent during 2002-03 as against the previous year's estimate of 4.3 percent. The per capita income at current prices during 2002-03 is esti-

mated to reach a level of Rs.18825 as compared to the Quick Estimates of Rs.17978 for the year 2001-02 showing a rise of 4.7 percent.

3.9 An analysis of the percentage distribution of GDP shows that 23 percent of the GDP is from Agriculture, Forestry and Fishing followed by trade, hotels, transport and communication (22.5%) during 2002-03 at current prices. Moreover at constant prices for the same year (i.e., 2002-03), the maximum contribution to GDP is from trade, hotels, transport and communication (24.3%) followed by agriculture, forestry and fishing (22.1%). Sector-wise GDP at current and con-

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	9.2	-1.3	5.7	-3.2
2	Mining & Quarrying	1.9	4.6	1	5
3	Manufacturing	6.1	8.9	3.4	6.1
4	Electricity, Gas & Water Supply	7.3	10	4.3	3.9
5	Construction	7.7	10.9	3.7	7.2
6	Trade, Hotels, Transport & Communication	10.6	10.4	8.7	7.8
7	Financing, Insurance, Real Estate & Business Services	11.8	9.6	4.5	6.1
8	Community, Social & Personal Services	10.1	10.7	5.6	6.8
	GDP at factor cost	9.2	7.1	5.6	4.3

*: Revised Advance Estimate, @: Quick Estimates
Source: Central Statistical Organization

Fig 3.2
Per Capita National Income

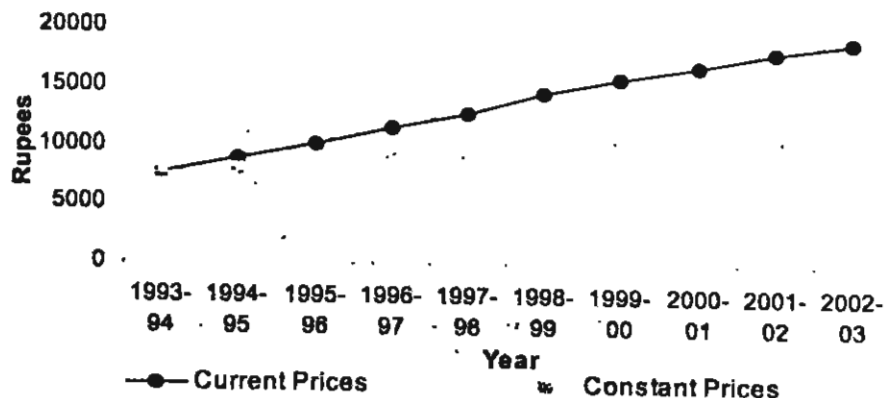


Table 3.4
Gross Domestic Product at Factor Cost - Percentage Distribution (All India)

Sl. No.	Industry of origin	Percentage Distribution of GDP			
		At Current Prices		At 1993-94 Prices	
		2001-02(a)	2002-03*	2001-02(a)	2002-03*
1	Agriculture, Forestry & Fishing	25.0	23.0	23.9	22.1
2	Mining & Quarrying	2.2	2.2	2.2	2.2
3	Manufacturing	15.3	15.5	16.8	17.1
4	Electricity, Gas & Water Supply	2.4	2.4	2.5	2.4
5	Construction	6.0	6.2	5.1	5.3
6	Trade, Hotels Transport & Communication	21.8	22.5	23.5	24.3
7	Financing, Insurance, Real Estate & Business Services	12.7	13.1	12.5	12.7
8	Community, Social & Personal Services	14.6	15.1	13.5	13.8
	GDP	100	100	100	100

*Revised Advance Estimate (a): Quick Estimate
Source: Central Statistical Organization

stant prices are given in Appendix 3.3 and 3.4.

State Income

3.10 The Kerala economy as per quick estimate registered a growth rate of 6.1 percent in 2002-03, a significant jump from the 4 percent growth of the preceding year.

3.11 State Income, i.e. Net State Domestic Product at factor cost at constant prices (1993-94) is estimated at Rs. 37031.33 crore during 2002-03 as against Rs. 34905.99 crore during 2001-02, registering a growth rate of 6.1 percent. At current prices the state Income is estimated at Rs. 83782.01 crore during 2002-03 as against Rs. 73048.95 crore during 2001-02 recording a growth rate of 14.7% compared to 14.6 percent in 2001-02. (see Table 3.5). The Advance Estimate of

State Income during 2003-04 at current prices is Rs. 5702179 lakh and at constant prices is Rs. 3970074 lakh.

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

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

Sl. No.	Item	Year			Growth rate	
		2000-01	2001-02 (P)	2002-03 (Q)	2001-02 (P)	2002-03 (Q)
1	Net State Domestic Product (Rs. in crore)					
	a) At current prices	63715.11	73048.95	83782.01	14.6	14.7
	b) At constant prices	33565.16	34905.99	37031.33	4.0	6.1
2	Per Capita Income (In Rs.)					
	a) At current prices	19951	22668	25764	13.6	13.7
	b) At constant prices	10510	10832	11388	3.1	5.1

P: Provisional, Q: Quick Estimate

Source: Department of Economics & Statistics.

Per Capita State Income

3.13 Per capita Net State Domestic Product at current prices increased from Rs.22668 in 2001-02 to Rs.25,764 in 2002-03 recording a growth rate of 13.7%. The per capita state income at constant prices (1993-94) was Rs.11388 in 2002-03 as compared to Rs.10,832 in 2001-02, showing a rise of 5.1 per cent during the year. At the same time the National Per capita Income at constant prices was Rs11010 during 2002-03.

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 17.5 %, 18.7% and 63.8% respectively during 2002-03. At current

prices, the primary, secondary and tertiary sectors contribute 17.6%, 24.2% and 58.2% respectively to the Net State Domestic Product during 2002-03. The details of sectoral contribution of State Income during the last three years is given in Table 3.6.

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. 10428 crore in 2002-03 as against Rs. 9046 crore in 2001-02 with a growth rate of 15.3 % over the previous year. At constant prices it comes to Rs.4567 crore in 2002-03 as against Rs.4277 crore during 2001-02. Thiruvananthapuram District stands second with an income of Rs. 9153 crore in 2001-02 at current prices

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)					
		2000-01		2001-02(P)		2002-03 (Q)		2000-01		2001-02(P)		2002-03 (Q)	
		NSDP	%	NSDP	%	NSDP	%	NSDP	%	NSDP	%	NSDP	%
1	Agriculture, Forestry & Fishing	1399680	21.9	13872.41	19	14508.6	17.3	675987	20.1	6680.98	19.1	6370.97	17.2
2	Mining & Quarrying	15752	0.3	190.47	0.3	239.67	0.3	8436	0.3	92.63	0.3	105.84	0.3
Sub-Total: Primary		1415432	22.2	14062.88	19.3	14748.27	17.6	684423	20.4	6773.61	19.4	6476.81	17.5
3	Manufacturing	603075	9.5	6821.5	9.3	6891.45	8.2	353129	10.5	3543.98	10.1	3597.33	9.7
4	Electricity, Gas & Water Supply	137799	2.2	1892.03	2.6	2949.35	3.5	82447	2.5	761.88	2.2	961.49	2.6
5	Construction	651710	10.2	8582.3	11.7	10450.75	12.5	266421	7.9	2296.74	6.6	2360.56	6.4
Sub-Total: Secondary		1392584	21.9	17295.83	23.6	20291.55	24.2	701997	20.9	6602.6	18.9	6919.38	18.7
6	Transport, Storage & Communication	448039	7	5241.8	7.2	6171.48	7.4	286707	8.5	3183.32	9.2	3577.33	9.7
7	Trade, Hotels & Restaurants	1534603	24.1	17923.77	24.5	20943.32	25	768898	22.9	8345.04	23.9	9150.86	24.7
8	Banking, Insurance & Real Estate	679693	10.7	7853.8	10.8	8945.58	10.7	437192	13	4826.85	13.8	5257.56	14.2
9	Public Administration and other services	901560	14.1	10670.87	14.6	12681.81	15.1	477299	14.3	5174.57	14.8	5649.39	15.2
Sub-Total: Tertiary		3563495	55.9	41690.24	57.1	48742.19	58.2	1970096	58.7	21529.8	61.7	23635.1	63.8
Total-NSDP		6371511	100	73048.95	100	83782.01	100	335616	100	34906	100	37031.3	100

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

followed by Thrissur (Rs. 8459 crore), Kozhikode (Rs. 7639 crore), Kollam (Rs. 6737 crore) and Malappuram (Rs. 6316 crore). The lowest income was recorded in Wayanad district (Rs. 1994 crore) in 2002-03 preceded by Kasaragod (Rs. 2894 crore) and Pathanamthitta (Rs. 3341 crore). The District-wise income at current and constant (1993-94) prices with growth rate is given in Table 3.7.

District-wise Per Capita Income

3.16 Among the Districts, Ernakulam stood first with the per capita District income of Rs. 32918 at current prices in 2002-03 as against Rs. 28826 in 2001-02 with a growth rate of 14.2%. Idukki District has the second largest per capita income of Rs. 31697 in 2002-03 followed by Kottayam (Rs 28622), Thrissur (Rs. 27871), Thiruvananthapuram (Rs.27686) and Pathanamthitta (Rs.26901). The lowest per capita income was recorded in Malappuram District (Rs. 16766) in 2002-03 preceded by Palakkad (Rs.22132), Kasaragod (Rs.23414) and Kannur (Rs.24369).

3.17 The highest rate of growth of per capita income of 15.2 percent was recorded in

Thiruvananthapuram District in 2002-03 followed by Pathanamthitta (14.6%) and both Ernakulam and Kozhikode districts 14.2%. The lowest growth rate was recorded in Wayanad district (10.3%) preceded by Kasaragod (10.7%) and Idukki (12.6%). The District-wise percapita 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, secondary sector recorded the highest rate of growth with 17.3% in 2002-03 followed by tertiary sector with 16.9% and primary sector with 4.9%.

3.19 Districts –wise analysis shows that rate of growth of primary sector ranged between 1.2 %and 7.9%, secondary sector between 10.9% and 31.1% and tertiary sector between 16.7% and 17.2%. The highest rate of growth of primary sector was recorded in Pathanamthitta District (7.9%), secondary sector in Idukki District (31.1%) and tertiary sector in Thiruvananthapuram District (17.2%). The District-wise and sector-wise details of income and growth rate are presented in Table 3.9.

Table 3.7
District-wise Distribution of Net State Domestic Product (Rs. Crore)

SI 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
		2001-02 (P)	2002-03 (Q)	2001-02 (P)	2002-03 (Q)	2002-03	2002-03
1	TVM	3798.99	4079.19	7873.54	9153.09	7.4	16.3
2	KLM	2823.10	2978.05	5912.76	6737.12	5.5	13.9
3	PTA	1384.81	1460.91	2904.90	3341.07	5.5	15.0
4	ALP	2382.77	2541.71	4920.75	5635.86	6.7	14.5
5	KTM	2430.21	2582.15	4946.61	5675.80	6.3	14.7
6	IDI	1489.07	1521.12	3198.04	3616.67	2.2	13.1
7	EKM	4277.23	4566.74	9045.64	10428.35	6.8	15.3
8	TCR	3512.17	3746.72	7358.90	8458.88	6.7	15.0
9	PKD	2490.59	2641.61	5167.67	5920.39	6.1	14.6
10	MLP	2585.66	2743.01	5495.37	6315.81	6.1	14.9
11	KKD	3115.53	3319.10	6628.37	7638.52	6.5	15.2
12	WYD	866.52	895.31	1778.81	1993.63	3.3	12.1
13	KNR	2483.96	2631.80	5231.68	5972.87	6.0	14.2
14	KSD	1265.38	1323.91	2585.91	2893.95	4.6	11.9
State		34905.99	37031.33	73048.95	83782.01	6.1	14.7

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

B. POPULATION**Demographic Factors**

3.20 Kerala's population as per Census 2001 is 318.39 lakh consisting of 154.69 lakh males and 163.70 lakh females with a decadal growth of 9.42%. Kerala has the lowest population growth rate compared to other States in India. 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%. 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 2001-02 is 326.62 lakh while that of India is 103.7 crore.

Table 3.8
District-wise Per Capita Income at Current Prices

Sl No	District	2001-02 (P) (Rs.)	Rank	2002-03 (Q) (Rs.)	Rank	Growth rate (%) 2002-03
1	Thiruvananthapuram	24041	5	27686	5	15.2
2	Kollam	22663	9	25646	9	13.2
3	Pathanamthitta	23483	6	26901	6	14.6
4	Alappuzha	23211	7	26459	7	14.0
5	Kottayam	25110	3	28622	3	14.0
6	Idukki	28152	2	31697	2	12.6
7	Ernakulam	28826	1	32918	1	14.2
8	Thrissur	24456	4	27871	4	14.0
9	Palakkad	19501	13	22132	13	13.5
10	Malappuram	14824	14	16766	14	13.1
11	Kozhikode	22739	8	25964	8	14.2
12	Wayanad	22152	10	24432	10	10.3
13	Kannur	21485	11	24369	11	13.4
14	Kasaragod	21161	12	23414	12	10.7
	State	22668	-	25764	-	13.7

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

Table 3.9
District-wise Rate of Growth of Sectoral Income during 2002-03 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	1023.92	3.4	2230.78	20.4	5898.39	17.2
2	Kollam	1421.23	5.1	1698.51	15.7	3617.38	17.0
3	Pathanamthitta	948.06	7.9	596.13	22.8	1796.88	16.7
4	Alappuzha	571.17	2.8	1675.76	14.3	3388.93	16.9
5	Kottayam	942.71	1.2	1191.77	20.9	3541.32	16.9
6	Idukki	1850.99	6.7	530.89	31.1	1234.79	16.7
7	Ernakulam	1226.14	3.2	3222.22	17.7	5979.99	16.8
8	Thrissur	1062.21	5.9	2286.97	15.4	5109.70	16.8
9	Palakkad	1105.38	6.2	1264.39	16.3	3550.62	16.8
10	Malappuram	1127.76	6.0	1257.09	17.3	3930.96	17.0
11	Kozhikode	1172.99	4.9	1870.31	18.2	4595.22	17.0
12	Wayanad	781.00	5.0	181.69	19.1	1030.94	16.9
13	Kannur	912.89	4.4	1527.61	14.4	3532.37	16.9
14	Kasaragod	601.82	2.4	757.43	10.9	1534.70	16.7
	State	14748.27	4.9	20291.55	17.3	48742.19	16.9

Source: Department of Economics & Statistics

3.21 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. In Kerala the decadal growth rate increased 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.

Table 3.10
Population and Its Growth from 1901 to 2001

Census Year	All India		Kerala	
	Population (In lakhs)	Decadal Growth Rate	Population (In lakhs)	Decadal Growth Rate
1901	2383.9	-	63.9	-
1911	2520.9	5.75	71.5	11.75
1921	2513.2	-0.31	78.0	9.16
1931	2789.8	11.00	95.1	21.85
1941	3186.6	14.22	110.3	16.04
1951	3610.9	13.31	135.5	22.82
1961	4392.3	21.64	169.0	24.76
1971	5481.6	24.80	213.5	26.69
1981	6833.3	24.66	254.5	19.24
1991	8433.9	23.86	290.9	14.32
2001	10270.2	21.34	318.4	9.42

3.22 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%.

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

Population Density

3.24 As per 2001 Census, the density of population for India as a whole is 324 persons per sq. 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 by Bihar. In 1881, Kerala's population density was 134 persons per sq. km. Dur-

ing the last 120 years the figure has gone up almost 6 times.

3.25 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

3.26 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 reflects 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.

Aged Population

3.27 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 population 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%.

3.28 It is a noteworthy feature of Kerala that the aged population (above 60 years) is increasing year after year. 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

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
Total						
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
Rural						
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
Urban						
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

have reached about 15% in 2001.

3.29 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.

3.30 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.

Total Workers

3.31 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. (Appendix 3.17)

3.32 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 3.12

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

Birth, Death and Infant Mortality Rate

3.33 The details of Birth Rate, Death Rate and IMR in Kerala are given in Table 3.12

3.34 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.

3.35 Kerala's life expectancy for males is 69.1 and for females 76.1 in 1998.

CHAPTER 4

AGRICULTURE

Introduction

Economic liberalisation - induced demand-based agricultural production necessitates moving away from a stable price support system towards exposure and adjustment to unstable international prices. The decreasing trend in family participation in the farm operation with growing incidence of fragmentation and consequent decline in the average size of land holding and subdued growth in yields and dominance of perennial crops make Kerala agriculture more vulnerable. 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. The import of pepper from Sri Lanka under the Indo-Sri Lankan Agreement affecting pepper farmers in the State is an example. Steps have to be taken to improve productivity and quality.

4.2 The rise in international prices of some of the commodities since the second half of 2002 and 2003 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 prod-

ucts 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 support, improved post harvest technology and infrastructure support could help increase agricultural exports from the state.

4.4 The Medium Term Export Strategy 2002-07 (MTES) sets out a road map for the export sector which would be co-terminous with the Tenth Five Year Plan period. The MTES aims at increasing India's share in world trade to one per cent by 2006-07 from the present level of 0.67 per cent. The modified EXIM policy would continue to lay focus in the direction of further export facilitation measures already initiated with a view to ensuring increased country's share in world exports.

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 through optimising the strengths of public-private sectors has to be adopted.

Farming System

4.6 It is expected that future agricultural growth would largely accrue from improvements in productivity of diversified farming systems with regional specialisation and sustainable management of natural resources, especially land and water. It is important to explore frontiers in technology focusing on evolving location specific and economically viable technologies by capitalising developments in the field of biotechnology, information technology crop 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.

4.7 The major strength of the mixed cropping pattern traditionally followed in Kerala was 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. However, the extent of coverage under mixed cropping system has become quite low in the state. Eventhough the strategy has been advocated for the last one and a half decades, especially in these Reviews, the adoption rate as well as success stories reported are far below the potential. Mixed cultivation has to become the general pattern in all farms in the state as was the case once.

4.8 Diversification of agriculture 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.

4.9 The results of the trials in CPCRI indicate the feasibility of several crop combinations in coconut gardens. The major findings of experimental trials are shown in BOX 4.1. Perennial crops like coconut which occupy the land solely and continuously for several decades neither result in realisation of the full potential of the land nor in protecting the sustainability of the land. More focused attention is needed to promote multi species vegetation not only as an income security strategy in combination with supplementary enterprises, but also to optimise biophysical and socio economic resource use. This strategy is also relevant in the WTO context of reduced protection.

4.10 The experiments conducted at CPCRI in root wilt affected coconut gardens with mixed cultivation also revealed improved performance

of affected palms.

4.11 The diversification of the farming system also offer opportunities to boost nutritional security of the small holders. The introduction of nutritionally rich crops in the farming system could safeguard the nutritional security of the people.

Income

4.12 The trends in agricultural income in Kerala during the last ten 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 1.70 per cent in 2001-02. However, the final figures indicated a decline of 1.52 per cent in growth and the provisional figure for 2002-03 shows a further decline of 5.54 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 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.

Rainfall

4.13 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 2288 mm in 2003 (upto 31 October), against the normal of 2742 mm. in this period, indicating a deviation of 17 per cent from the normal. Highest deviation from normal was recorded in July and shortage of South West 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 4.9 per cent re-

Box - 4.1

Major Findings of Studies on Farming Systems

A. High Density Multi species Cropping System

➤ In the coconut based high density multi species cropping system, the coconut yield ranged from 122 nuts/palm/year under 1/4th of the recommended fertiliser dose to 144 nuts/palm/year at full dose of the recommended fertiliser - while net returns was the highest with 1/4 recommended dose of fertiliser. Microbial bio mass and enzyme activities were highest in one fourth dose of fertilizer recommendation.

B. Coconut based farming system under Coastal ecosystem

➤ The experiment was started in 1999, to study the profitability of coconut based system with fodder, dairy, poultry and pisciculture.

➤ The plant nutrient status indicated improved NPK due to beneficial interaction of palms and improved soil fertility status.

C. High density multi species cropping system model for coconut root (wilt) affected garden

➤ Coconut 112 nos. (adult), 152 coconut seedlings, 45 adult nutmeg, 25 nutmeg seedlings, 26 pepper plants in coconut and another 82 pepper in the inter spaces, 500 banana plants, 1920 pineapple, 100 amorphophallus, cassava 75 plants and 100 Vanilla plants in 1 ha. area are included in the system.

➤ Apparently healthy and disease early palms produced higher number of nuts.

➤ Overall there was decrease in the yellowing and necrosis of the Palms indicating improvements in growth character due to management practices.

E. Result of a field Survey

➤ Result of a field survey in 100 holdings in Kannur district on coconut based farming system showed that the average net income varied from Rs. 20,000 to Rs. 40,000 /ha under rainfed conditions and Rs. 40,000 to Rs. 60,000 /ha under irrigated conditions.

Source: CPCRI

Table 4.1:
Growth of Agricultural Income in Kerala
(at 1993-94 prices)

Sl. No.	Year	* Agricultural Income (Rs. in crore)	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	5365	- 1.52	15.38
10	2002-03	5068	- 5.54	13.72

*Includes Livestock sector

Source: Directorate of Economics and Statistics

spectively 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 (-43%) followed by Kozhikode (-32%) during 2003. During the South West Monsoon of 2003, deficient rainfall was recorded in 10 districts.

Table 4.2:
Percentage Departure of Rainfall from Normal (1990 to 2003)

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	-08	-12	32
5.	1994	11	15	13
6.	1995	-06	-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 *	-17	-24	4.9

Fig 4.1
District-wise Normal and Actual Rainfall, 2003
(up to 31 st Oct.)

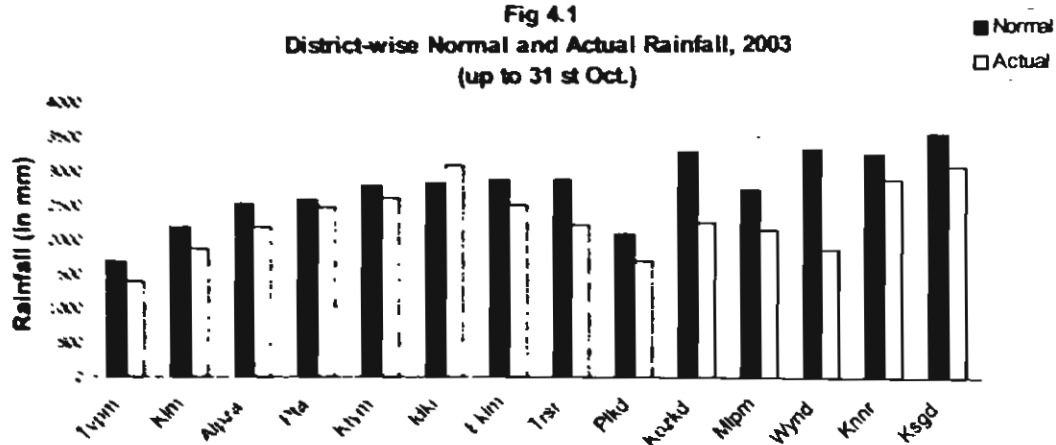
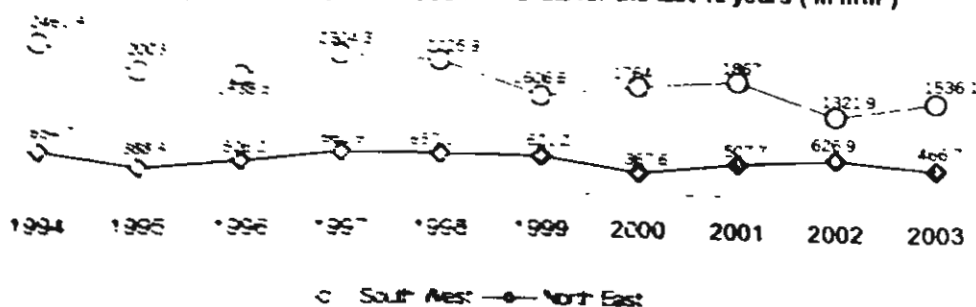


Fig 4.2
South-West and North-East Monsoon in Kerala for the last 10 years (in mm)



Ground Water Recharge

4.14 Rainfall is the major recharge source of ground water, and the rise in water level in the Phreatic aquifer is directly related to precipitation. A falling trend in the post monsoon months indicates that the rainfall is not sufficient to recharge the aquifer to the required level. The data related to water level recharge and fluctuation levels in the State are shown in BOX 4.2

Box - 4.2

Major Findings of a Study on Water level Fluctuations in Kerala

The data pertaining to 864 National Hydrographic Network Stations were monitored for water level during the month of April, August, November 2001 and January 2002.

- During the year 2001-02, less rainfall was recorded in comparison with 2000-01, for NE and Summer seasons except South West monsoon.
- About 20.5% of NHS have shown fall in water level during January 2002 in comparison with April 2001 which are mostly located in the districts of Malappuram, Wayanad, Ernakulam and Thiruvananthapuram.
- During November 2001, the rise in the water level is predominant in almost all the districts due to higher rainfall received during North East monsoon of the year 2001 in comparison with the corresponding period in 2000.
- The comparison of the water level of 2001-02 with that of mean water level of 1991-2001, indicates that the water level has not changed much and water level fluctuation is confined to the range of +2m to -2m. However in the month of August 2001, fall in water level is more predominant in many districts except in the case of Kasaragod and Kozhikode districts.
- Long term trend of data from 1981-2001, indicates that in 72% of NHS, water level fluctuation is negligible. 10% of NHS showed declining pre monsoon trend in the range of 0.05 to 0.0 m/year.

Source: CGWB, 2003

4.15 The fall in water level could be due to the failure of monsoon and due to enhanced development of ground water. Most of the NHS which showed declining pre monsoon water level have a steady post monsoon water level trend. However, some of the NHS in the district of Malappuram, Palakkad and Pathanamthitta have shown falling trend in water level during pre-monsoon as well as post monsoon periods which need attention. Further shortfall of rainfall in the State would affect the water levels in more districts.

Need for Micro Irrigation

4.16 In the context of water stress and scarcity, adoption of modern irrigation technologies such as micro irrigation systems which save water and improve efficiency assume paramount importance. The recent drought brings into sharp focus the need for conservation of water resources. The Government of India appointed a Task Force on micro irrigation under the Chairmanship of the Chief Minister of Andhra Pradesh to recommend measures needed to expand the coverage of area under such irrigation. The major recommendations of the task force are shown in the BOX 4.3

Box - 4.3

Major Recommendations of Task Force on Micro Irrigation

- Rate of taxes on components of micro irrigation systems to be reduced to 2% from the existing range of 4-8%
- Reasonable assistance of 50% cost to be extended to all categories of farmers.
- Micro irrigation should be made compulsory in the Command areas of new irrigation projects.
- Extend coverage to 2 million ha which requires an investment to the tune of Rs. 9000 crores.
- Purchase of micro irrigation systems are also to be considered as part of agricultural loan for enabling farmers to derive the benefits of low interest rates.
- In order to reduce high initial investment needed, technological interventions like crop geometry modification etc. has to be adopted.
- Promote demonstration units.
- Feasibility of low cost drip to be explored.

Source: Ministry of Agriculture, 2003

4.17 Micro irrigation comprising of drip and sprinkler become a pivotal element of integrated water use system with many agroecological, socio economic and environmental advantages. Though the hectareage under micro irrigation in the country rose from a meager 1500 hectares in 1980s to near 5 lakh hectares in 2000, the technology adoption is confined to only few selected areas. In Kerala also the scheme on popularization of drip and sprinkler irrigation is under implementation. But the coverage is very low. More focussed attention is needed to popularize micro irrigation in the State. The salient find-

ings of an evaluation study on sprinkler irrigation in Kasaragod district conducted by NABARD are shown in BOX. 4.4. Apparently there is no constraint in adoption of micro irrigation except the high initial investment which could be addressed through credit.

4.18 The experiments conducted at CPCRI have demonstrated the possibility of reduction of 50 per cent of fertilizer dose for coconut through drip irrigation. Detailed action plan has to be prepared for popularizing micro irrigation in the state.

Box - 4.4

Major Findings of an Evaluation Study on Sprinkler Irrigation in Arecanut Gardens in Kasaragod District of Kerala

- A sample of 50 beneficiaries was randomly selected from each of the identified schemes financed by RRB and PCARDB. Further, a control sample of 15 farmers (non-beneficiaries) was also selected for comparison purposes. All the costs and benefits were valued at the reference year prices of 1999-2000.
- The cost of maintenance per acre ranged between Rs. 21841/- and Rs. 29132/- while that of control (for irrigation) was above Rs. 64109/- the higher cost per acre for control samples was on account of high cost of irrigation using manual labour. Thus the main advantage of the installation of sprinkler irrigation in arecanut gardens was from the substantial reduction in labour cost. The financial rate of return for all the models worked out to be more than 50 per cent.
- Sixty percent of the respondents of RRB were small farmers while it was 24 percent in the case of PCARDB.
- Erratic power supply was a major constraint in operating the sprinkler system. Hence the farmers had to resort to keeping stand by diesel/kerosene pump.
- The sprinkler systems installed in the beneficiaries' gardens were functional in all the cases.
- The major source of water for irrigation was streams. Scarcity of water was reported during summer months.
- Though the scheme envisaged shifting type of sprinkler sets, the farmers installed fixed type sprinkler sets, as the installation of sprinkler was intended to save labour.
- The repayment performance of the beneficiaries were found to be satisfactory. Only 20 percent of the beneficiaries from RRB and 8 percent from PCARDB reported overdues. All defaults were wilful.

Source: NABARD, 2002

4.19 Data on land use pattern of Kerala for the year 2002-03 is given in Table 4.3. Out of a total geographical area of 38.85 lakh ha. net sown area is about 57 per cent. Forest occupies around 28 per cent. Agriculture and forest sectors together account for over 85 per cent of the land area (see Fig. 4.3). 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 9.70 per cent in 2002-03. There was decline in the area under current fallows (8772 ha) and an increase in the area under fallow other than current fallow (7431 ha). during 2002-03 over 2001-02. The area under cultivable waste also increased by 11239 ha. and barren and uncultivated land by 50 ha.

4.20 In the light of the newly introduced ordinance on promotion of tree growth in non-forest areas, more focussed action plan is needed to promote farm forestry to utilise the homesteads and other available land for the promotion of tree growth.

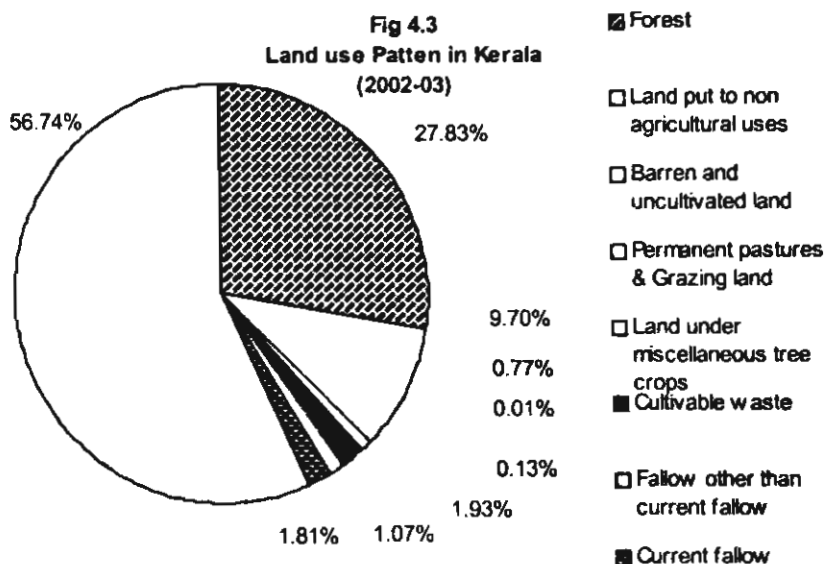


Table 4.3:
Land Use Pattern in Kerala (in Ha)

Sl. No.	Classification of Land	2000-01	2001-02	2002-03		Change in Area between 2001-02 & 2002-03	
				Actual	% of Geo. Area	Actual	%
1	Total Geographical Area	3885497	3885497	3885497	-	-	-
2	Forest	1081509	1081509	1081509	27.83	0	0
3	Land put to non agricultural uses	381873	392352	376751	9.70	- 15601	- 3.98
4	Barren and uncultivated land	29318	29728	29778	0.77	50	0.17
5	Permanent pastures & Grazing land	164	233	451	0.01	218	93.56
6	Land under miscellaneous tree crops	15409	13613	5186	0.13	- 8427	- 61.90
7	Cultivable waste	59257	63771	75010	1.93	11239	17.62
8	Fallow other than current fallow	33988	34331	41762	1.07	7431	21.65
9	Current fallow	77853	79270	70498	1.81	- 8772	- 11.07
10	Net area sown	2206126	2190690	2204552	56.74	13862	0.63
11	Area sown more than once	815556	801562	823671	21.19	22109	2.75
12	Total cropped area	3021682	2992252	3028223	77.94	35971	1.20
13	Cropping intensity	137	137	137			

Source: Directorate of Economics & Statistics

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 30.3 lakh.ha. in 2002-03, food crops comprising rice, pulses, minor millets and tapioca occupy only 15 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 3.22 lakh ha. in 2001-02 to 3.11 lakh ha. in 2002-03. In the case of tapioca also the area has declined from 1.11 lakh ha. to 1.10 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 2002-03 the increase was only 1008 ha. compared to previous year. The low price of rubber that prevailed during the last two years might have influenced the slow rate of area expansion.

4.23 In the case of coconut area was at its peak during 2000-01. During the year 2002-03 area declined by 20300 ha. from 2000-01 and by 236 ha over 2001-02. The low price of coconut coupled with the widespread incidence of mandari pest might have influenced the decline in area. Major commercial crops which had recorded expansion of area during 2002-03 from previous year include cardamom (2900 ha) banana and plantain (1163 ha). The major crops with consider-

Table 4.4:
Area, Production and Productivity of Principal Crops

Sl. No	Crops	Area (Ha)		Production (MT)		Productivity (Kg/ha)	
		2001-02	2002-03	2001-02	2002-03	2001-02	2002-03
1	Rice	322368	310521	703504	688859	2182	2218
2	Pulses	8191	7357	6281	5548	767	754
3	Pepper	203956	201037	58240	59744	286	297
4	Ginger	10706	10365	40181	39886	3753	3848
5	Turmeric	3558	3388	7895	7598	2219	2243
6	Cardamom	41336	44237	8380	6480	203	146
7	Areca nut	93193	92589	84681	92039	909	994
8	Banana	50871	51805	375903	379884	7389	7333
9	Other Plantains	55183	55412	393182	408649	7125	7375
10	Cashewnut	89718	86623	65867	63287	734	731
11	Tapioca	111189	110297	2455880	2504391	22087	22706
12	Coconut *	905718	905482	5479	5338	6049	5895
13	Coffee	84795	84139	66690	64425	786	766
14	Tea	36899	36821	66090	65800	1791	1787
15	Rubber	475039	476047	580350	594917	1222	1250

*Production in million nuts & Productivity in nuts/ha

Source : Directorate of Economics and Statistics & UPASI

able loss in area apart from coconut include cashewnut (3095 ha) ginger (341 ha) and turmeric (170 ha). Pepper (2919 ha), Arecanut (604 ha), Tapioca (892 ha), coffee (656 ha) and tea (78 ha).

4.24 With respect to productivity, the tendency of different categories of crops is just the opposite of the trend in respect of area coverage. The major crops with positive growth in productivity levels are ginger 95 kg, rice 36 Kg, Pepper 11 Kg, turmeric 24 kg, Plantain 250 kg, Tapioca 619 kg and Rubber 28 kg. The productivity declined in respect of coffee (-20 kg) and tea (-4 kg), coconut (-154 nuts), and Banana (-57)

4.25 Crops which have failed to sustain the production level of 2002-03 as in the previous year include rice (-14645 MT), cashewnut (-2580 MT), ginger (-295 MT), turmeric (-297 MT), coffee (-2265 MT), coconut (-141 m. nuts), cardamom (-1900 MT), Tea (-290 MT). Increase in production reported during this period include banana (3981 MT) and rubber (14567 MT), Pepper (1504 MT), Arecanut (7358 MT), lantains (15467 MT) and Tapioca (48511 MT).

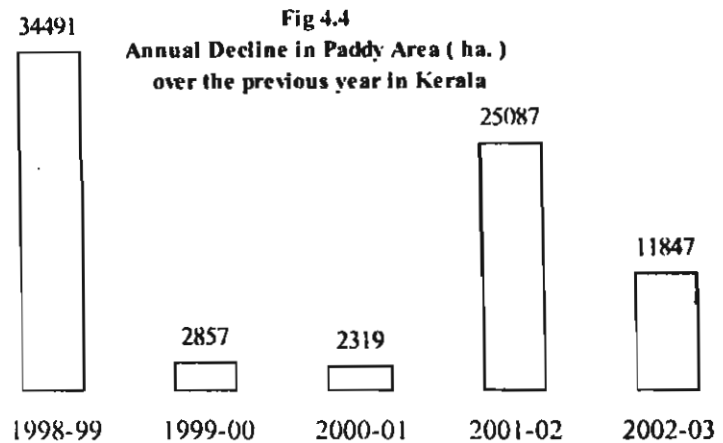
Crop wise analysis

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

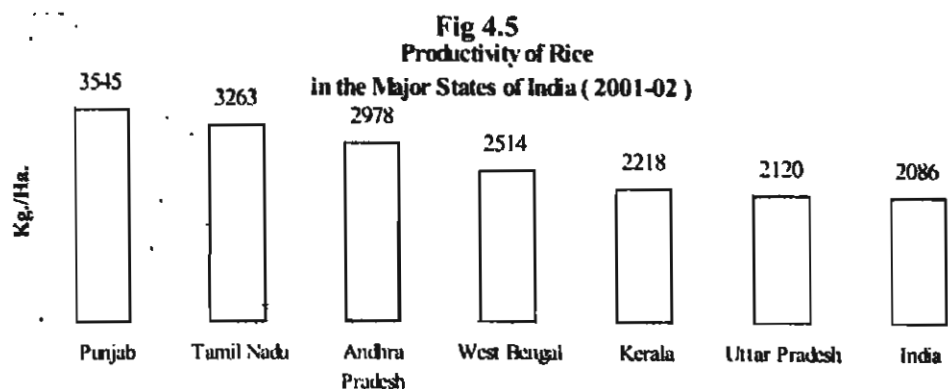
the internal demand of food grains was estimated to be around 50 percent during that period. The increasing cost of cultivation and the disproportionately small rise in price has acted as a deterrent in rice production.

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 2002-03, the reduction was to the tune of 12000 ha. from 3.22 lakh ha. in 2001-02 to 3.10 lakh ha and rice production declined from 7.04 lakh MT 6.89 lakh MT (Fig. 4.4).

4.28 The average productivity is stagnant at around 2.2 MT /ha.(Table-4.4) Rice productivity at current level is sub optimal. Although the average productivity is higher than the national average of 1874 kg/ha, it is lower than the levels achieved by the major rice producing states of Punjab, West Bengal and Tamil Nadu (Fig 4.5). The consistent failure of the crop to rise to the expectations has raised series of questions about the policy to sustain rice production at any cost. The enormous 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. 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 technology development are also equally important.

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. 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 3.5 per cent reduction in area during Virippu season in 2002-03 compared to previous year and 6.3 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 50 per cent followed by 34 per cent in Virippu and 16 per cent in Punja season. However productivity recorded in Punja is the highest with 2723 kg. per ha. which was 14 per cent higher than that in 2001-02.

High Yielding Varieties

4.31 The coverage of high yielding variety 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 in the range of 1.65 to 1.77 lakh ha during the last decade, has registered marked improvement in the last four years. It increased from 1.77 lakh ha in 1998-99 to 2.51 lakh ha in 2002-03. Maximum high yielding variety coverage was in Punja season with 98 percent. followed by Virippu (88%) Mundakan (72%) and overall coverage was 81 percent. (Appendix-4.9). The average productivity of high yielding varieties during 2002-03 was 2342 kg/ha. This implies that the high yielding varieties are not receiving the needed attention for scientific management for securing optimal productivity as there still exists a wide gap between potential yields as established in experimental farms and those actually realised under field condition.

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

Sl. No.	Year	Area('000 Ha)		Production('000MT)		Productivity(Kg/ha)	
		Kerala	India	Kerala	India	Kerala	India
1	2	3	4	5	6	7	8
1.	1998-99	353	44598	727	85995	2061	1930
2.	1999-00	350	44972	771	89680	2203	1994
3.	2000-01	347	44710	751	84980	2162	1901
4.	2001-02	322	44620	704	93080	2182	2086
5.	2002-03	311	40410*	689	75720*	2218	1874

Source: Directorate of Economics and Statistics, Kerala, Ministry of Agriculture

* Advance Estimates as on 01-07-2003

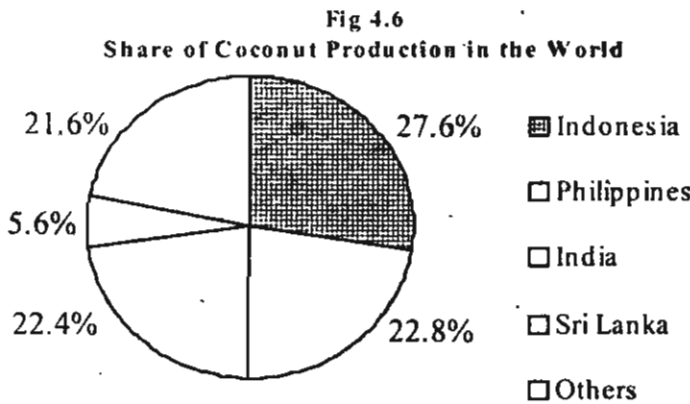
4.32 Eventhough Mundakan season accounts for the largest share in coverage of area under rice its share in high yielding varieties is lower compared to Virippu season. This is mainly because of inadequate research support to evolve varieties with multiple disease resistance suitable for cultivation in 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 (28%) followed by Philippines (23%) and India's share in world production is 2 per cent , fourth being Sri Lanka with 6 per cent share. Countries of the Asia-Pacific region

2 per cent growth in eighties. Despite the deceleration in the growth of yields, production of coconuts in the country has increased by about 5 percent per annum due to substantial area expansion at the rate of 3 per cent per annum in Kerala and Karnataka and by 6 per cent per annum in Andhra Pradesh and Orissa and by 5 per cent in Tamil Nadu and 10 per cent in Maharashtra during the nineties.

4.35 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 2001-02 with a corresponding decline in share of production from 46 per cent to 43 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. (Fig 4.7)

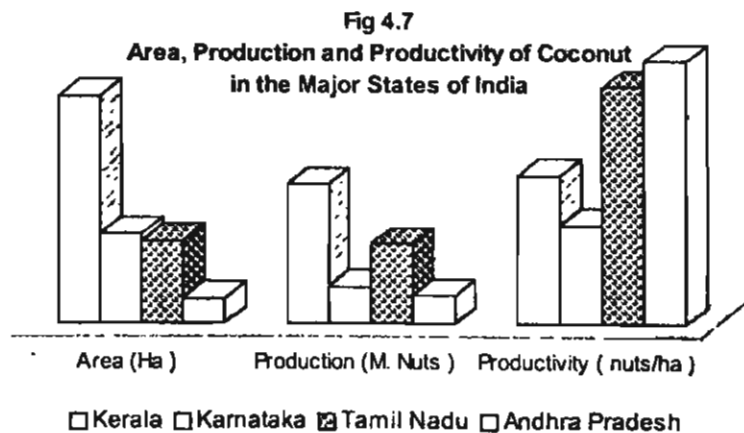


produce 86 per cent of the coconut in the world. The major producers and exporters of copra in the world are Philippines, Indonesia and Sri Lanka. Although the share of India in world production of coconut is 22 percent, the production of milling copra is around 12 per cent of the world output, while Philippines accounts for 42 per cent and Indonesia 24 per cent.

4.36 With a coverage of 9 lakh ha, coconut occupies 41 per cent of the net cropped area and provides livelihood for over 3.5 million families in Kerala. Production declined by 2.6 percent in 2002-03 compared to the previous year. The widespread attack of Mandari pest could perhaps be the factor responsible for the decline in production. A recent survey has reported the incidence of mite at 55 per cent in Kerala, 37 per cent in Karnataka, 44 per cent in Tamil Nadu and 22 per cent in Pondicherry. The pest incidence

has also been reported from many other coconut producing countries. The chemical control though effective needs repeated applications making it not cost effective and eco-friendly. Biological control methods seem effective, however further studies are needed to

4.34 In India, coconut is grown in an area of 1.89 million ha. producing 12822 million nuts with a per hectare productivity of 6776 nuts. (Table 4.6) During the nineties, all India yield growth decelerated significantly to about 1 per cent per annum as compared to about



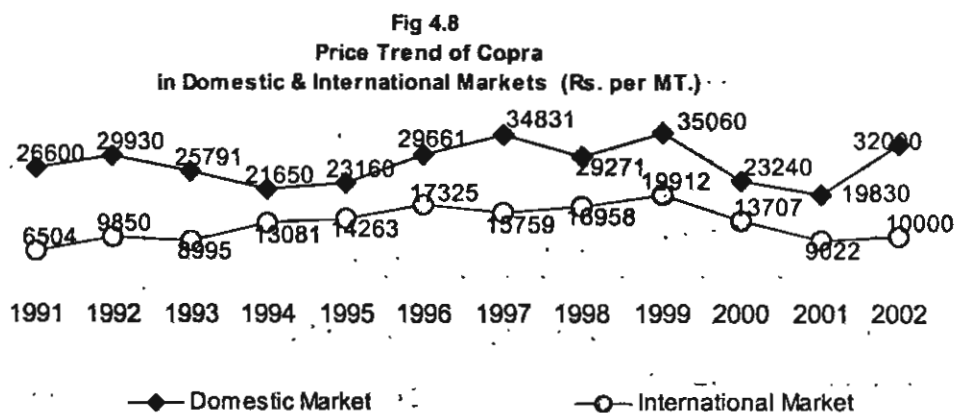
develop a low cost biological control method in combination with other management practices. The average productivity has slightly declined in 2002-03 by 2.5 per cent to 5895 nuts/ha compared to 2001-02. (Table 4.6) The productivity levels in Kerala are also lower than other major producing states.

4.37 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.

4.38 The International price of coconut oil (Philippines) declined from \$ 737.08 per MT in 1999 to \$ 318.08 in 2001 which recovered to \$421.00 in 2002 and further improved to \$ 451 in 2003. The international price of palm oil reached a peak in 1998 with \$671.08 per MT; it declined to \$ 285.67 in 2001, improved to \$ 390.25 in 2002 and further moved to \$ 430.60 in 2003. The recovery of international prices of oils seems to have a positive effect on the domestic price of coconut also. The price of coconut in the state has started increasing from the latter half of 2002. The International prices of vegetable oils firmed up in the first half of 2003 as global

stocks of oils and fats declined for the third consecutive year on account of production shortfall caused by weather. Palm oil imports rose sharply following the reduction in customs duty. The import of edible oils by India shot up from 1.06 million MT with a value of Rs. 2260 crores in 1995-96 to 40 lakh MT with a value of Rs. 6465 crores in 2001-02.

4.39 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 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

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	2	3	4	5	6	7	8
1.	1998-99	882	1755	5132	12536	5817	7145
2.	1999-00	925	1768	5680	12129	6140	6860
3.	2000-01	926	1840	5536	12597	5980	6847
4.	2001-02	906	1890	5479	12822	6049	6776
5.	2002-03	905	NA	5338	NA	5895	NA

Source: Directorate of Economics and Statistics & Ministry of Agriculture

enterprises offer scope in the state.

4.40 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.

Pepper

4.41 India is the largest producer of pepper in the world with 25 per cent in share of production followed by Vietnam with 23 per cent and Indonesia with 16 per cent in 2002 and the world production was 3.24 lakh MT. World pepper production had registered a six per cent growth during 2002. In 1991, Vietnam was in seventh position with a share of just 3.8 per cent of world production. The projections for world pepper production place Vietnam as the leading producer with 80,000 MT followed by India with 65000 MT for 2003. There is concurrent increase in area, production and productivity in Vietnam over the period and productivity in Vietnam is around 1.3 MT/ha.

4.42 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 2002-03 was only 297 kg. per ha. The production increased from 58240 MT during 2001-02 to 59744 MT in 2002-03. 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 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. Government of India is now negotiating with Sri Lanka for a comprehensive Economic partnership Agreement and the issue needs to be addressed in the proposed new agreement. The country wise import of pepper into India is shown in Table 4.7.

4.43 India could export 42803 MT of pepper in 1999-2000, which declined to 24000 MT in 2001-02. Export performance dissipated further and quantum of exports declined to 20,000 MT in 2002-03. The value realization was also lower at Rs. 166.10 crores compared to Rs. 211.93 crores in 2001-02 and unit value realization declined from Rs. 88.30 per kg to Rs. 83.05 per kg. in the corresponding period. The unit value realisation has slightly improved to Rs. 88.85 in April to July 2003 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 31 per cent followed by Indonesia with 22 per cent, Bra-

Table 4.7:
Country-wise Import of Pepper into India
(Quantity in MT and Value in lakh Rs)

Sl. No.	Country	2000-01		2001-02		2002-03	
		Quantity	Value	Quantity	Value	Quantity	Value
1.	Sri Lanka	1759.31	2790.66	1240.54	1605.08	6373.61	5888.10
2.	Vietnam	666.90	689.88	2658.00	2197.92	7425.61	5090.41
3.	Indonesia	1188.76	1673.87	2010.35	1474.80	1631.73	1332.35
4.	Others	412.78	528.85	419.27	358.46	319.05	210.57
	Total	4027.75	5683.26	6328.16	5636.26	15750.00	12521.43

Source: Spices Board

zill 20 per cent and India 13 per cent. Vietnam exports around 83 per cent of its production, while Indian exports account for only 32 per cent of its production. The worsening export performance continued during April-July 2003 also.

4.44 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.

4.45 Price of pepper moved consistently upwards from early nineties and reached a peak level in 1999-00 with Rs. 205 per kg. Since then declined to Rs. 125 per kg. in 2000-01, further down to Rs. 69 per kg. in 2001-02 and slightly improved to Rs. 78/kg. in 2002-03. Pepper prices continued its declining trend since 2000.

4.46 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 frame-

work 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 major findings of research at IISR is shown in Box.4.5:

4.47 The varietal selection and improvement through genetic upgradation is also important for stabilizing and retaining its lead share in global trade.

4.48 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 limits at the codex level.

4.49 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.

4.50 Emerging trends and market potential indicate

Box - 4.5

Integrated Plant Nutrient Management Strategy (IPNS) and Plant Growth Promoting Rhizobacteria for Pepper

- To attain a target yield of 3 kg/vine from Wayanad, the nutrient requirement based on soil test value, yield and nutrient uptake of the berry was N:P205:K20 as 128:206:136 kg/ha.
- Adoption of IPNS reduced phytophthora disease incidence by 2%.
- IISR has also isolated a Plant growth promoting rhizobacteria compatible with biocontrol agent Trichoderma. When inoculated together about 40% enhanced growth in black pepper was recorded.

Source: IISR, 2003

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

4.51 India is the largest producer and exporter of cashew in the world. India's share in world production is 30 per cent with a production of 4.6 lakh MT in 2002. (Table 4.8).

4.52 Area under the crop in Kerala, has been declin-

ing steadily from 1.25 lakh ha. in 1988-89 to 0.87 lakh ha. in 2002-03 and the production declined from 1.08 lakh MT to 0.63 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 per cent in 2002-03 and the corresponding decline in share of production from 31 per cent to 12 per cent. Area and production are increasing steadily in other producing states in the country. Maharashtra is the leading producer with 22 per cent share in production during 2002-03, whose share was only 10 per cent in 1990-91. Area increase in Maharashtra was to the tune of 549 per cent during this period.

4.53 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 2002-03 was to the

Table 4.8
Production of Cashewnuts
in different Countries during 2002

Sl.No	Country	Production (in Lakh MT)
1.	India	4.60
2.	Vietnam	1.27
3.	Indonesia	0.94
4.	Western Africa	3.96
5.	Nigeria	1.86
6.	Others	2.54
World		15.17

Source: CEPC

Fig 4.9
Production of Cashewnut in the World during 2002

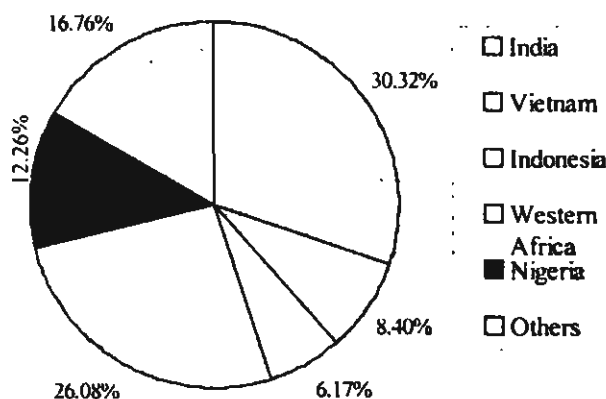


Table - 4. 9:
Area, Production and Productivity of Cashew in Kerala and India

Sl. No.	Year	Area ('000 Ha)		Production ('000 MT)		Productivity (Kg / ha)	
		Kerala	India	Kerala	India	Kerala	India
1.	1998-99	91.3	732.0	51.3	460.0	562	628
2.	1999-00	89.4	686.0	65.5	520.0	733	758
3.	2000-01	92.1	720.0	66.2	450.0	718	625
4.	2001-02	89.7	750.0	65.8	470.0	734	710
5.	2002-03	86.62	770.0	63.29	500.0	731	760

Source: Directorate of Economics and Statistics & Directorate of Cashewnut

tune of 51500 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 731 kg/ha during 2002-03.

4.54 India exported cashew kernels worth Rs. 2006.40 crore during 2002-03 and imported raw nuts worth Rs. 1230.64 crore resulting in a net foreign exchange earning of Rs. 775.76 crore indicating 12.17 per cent increase in rupee terms and 11.53 per cent increase in dollar terms compared to 2001-02. U.S.A. is the major export market with 55 per cent export share followed by Netherlands (12%). The unit export price of cashew kernels went down during the year 2002-03 by 13.42 per cent compared to 2001-02. The total raw nuts imported into India during 2002-03 was 4.01 lakh MT. Around 22 per cent of total raw nuts imported is from ivory cost followed by Tanzania (19%). Indonesia has emerged as a major supplier of raw cashew nuts with a share of 16 per cent of total imports. Out of imported nuts 54 per cent of imported raw nuts is bought to Kerala during 2001-02 which 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 recent decision of Government to include cashew in the list of plantation crops will help in area expansion under this crop.

Organic Agriculture

4.55 The size of global organic market is estimated at US\$11 billion, the equivalent of 2 per cent of the total food market. 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. 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, ac-

Fig 4.10
Export of Cashew Kernels from India
during 2002-03 (by value)

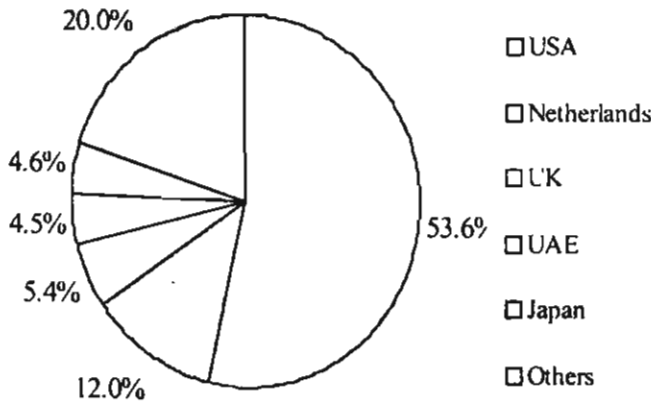
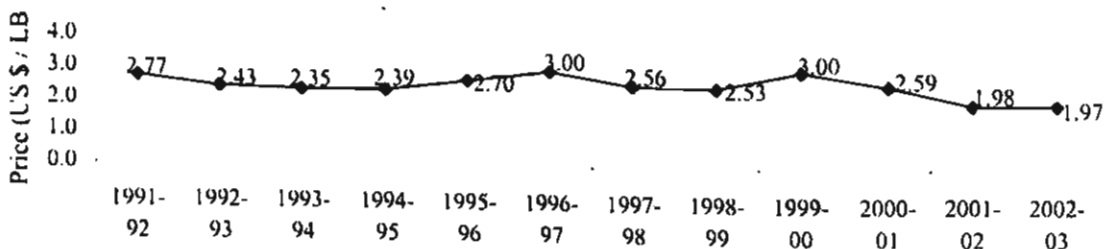


Fig 4.11
Average Price of Cashew Kernels (W320) in London Market



counts for 5 per cent of US coffee market. An analysis of UK organic market is shown in BOX. 4.6.

4.56 Future growth in organic agriculture will depend more on supply constraints than on developments in demand, at least over the medium term. The supply of quality raw materials and rules governing organic production and processing might limit the extent to which developing countries could satisfy the demand in developed countries.

4.57 Organic farming is practiced in developing countries have more out of economic necessity than as a life style. Consumers in developed countries are reportedly willing to pay additional 10-40 per cent for organic produce. Price advantage may disappear in the long run and major market would tend towards organic agriculture. 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.

Box - 4.6

Analysis of Organic Market in UK

- Imports from India are dominated by tea, nuts and spices
 - 85% of organic tea is from India
 - The main import from Mexico is coffee and vegetables.
 - Brazil's organic exports to the UK comprise concentrated orange juice, cashew nuts and cane sugar. 70% of quantity imported from Brazil to UK is Citrus based Products.
 - 100% of organic banana is imported from Egypt.
 - China exports 14 different products to UK market mainly rice, sunflower seeds, soyabean and green tea.
- EU is the largest organic market in the world and UK recorded annual growth in organic sales in excess of 40%

Medicinal Plants

4.58 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

4.59 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.

4.60 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.

Plantation crops

4.61 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 43 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 72 per cent, coffee 23 per cent and tea 8 per cent.

4.62 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 unbridled inflow of these commodities.

Rubber

4.63 Global natural rubber production at 71.10 lakh MT in 2002 was below the record level of 72.10 lakh MT in the previous year. The production in Thailand,

the world's largest producer with a share of 35 per cent has been declining steadily from the peak attained in 2000, mainly due to unfavourable weather conditions and govt. efforts to manage supplies in order to strengthen the prices. In Indonesia, the second largest producer, 5 per cent increase in output due to favourable weather condition was recorded. The declining trend in production in Malaysia over the past decade was reversed in 2002 with output rising at 8 per cent from the 2001 level. The upward trend in production in Vietnam continued with output rising by 20 per cent to 3.8 lakh MT.

4.64 India is the third largest producer of natural rubber with a share of nine percent in the world after Thailand and Indonesia relegating Malaysia to the fourth position. The production of natural rubber in the country was 6.49 lakh MT in 2002-03, registering 2.9 per cent growth over the previous year. 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 9 per cent in 2002-03. 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.

4.65 Kerala accounts for

84 percent of the area under rubber in the country. The coverage under the crop in 2002-03 was 4.76 lakh ha, higher by 1008 ha. over the previous year. The production of natural rubber in Kerala during the year was 5.95 lakh tonnes. The increase in production registered during the year was 2.5 per cent over the previous year. Being predominantly a small holder plantation crop in Kerala, the average size of a small rubber holding is as low as 0.50 ha. The increasing trend in productivity continued during 2002-03. It was 1190 kg. per ha in 1998-99, which rose to 1250 kg. during 2002-03. In terms of tapping area, productivity recorded was 1635 kg. per ha during 2002-03.

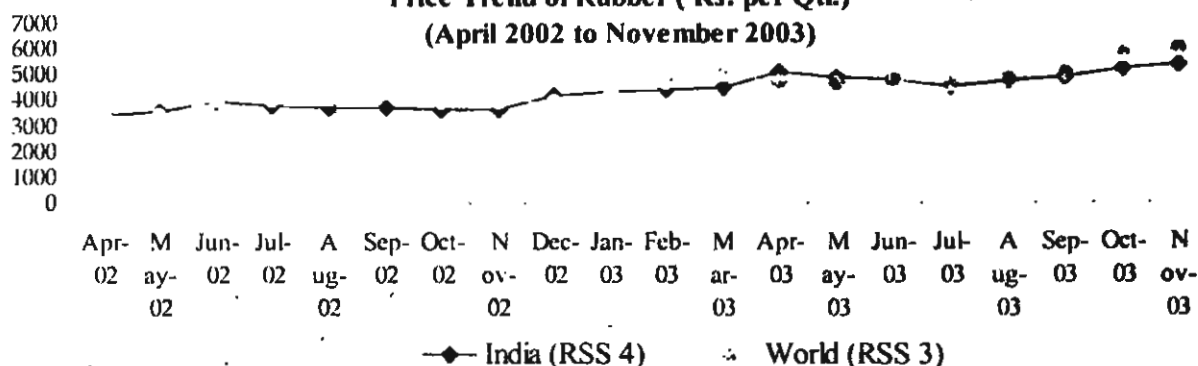
4.66 Eventhough the domestic prices of natural rubber were more or less comparable to international prices during 2002-03 (See Appendix-4.23 and Appendix-4.24) the industrial sector still resorts to imports in bulk quantities since the import duty is only 25 per cent. The total quantity imported was 26000 MT in 2002-03 which increased to 40,000 MT in the first half of 2003-04. The annual average growth of the domestic natural rubber industry for the period 1996-97 to 2002-03, showed an annual average increase of 2.8 per cent in production where as consumption had increased at 3.7 per cent per annum while import of natural rubber increased by 62 per cent.

Table 4.10
Consumption of Rubber during 2001-02 & 2002-03

Sl. No	Item	Consumption (in MT)		Growth (%)
		2001-02	2002-03	
	Natural Rubber (NR)			
1	Auto Tyres & Tubes	304,425	353032	16.0
2	Others	333,785	342393	2.6
3	Total of NR	638,210	695425	9.0
	Synthetic Rubber (SR)			
4	Auto Tyres & Tubes	95,277	107483	12.8
5	Others	79,253	87367	10.2
6	Total of SR	174,530	194850	11.6
	NR & SR			
7	Auto Tyres & Tubes	399,702	460515	15.2
8	Others	413,038	429760	4.0
9	Total of NR & SR	812,740	890275	9.5

Source: Rubber Board, Kottayam

Fig 4.12
Price Trend of Rubber (Rs. per Qtl.)
(April 2002 to November 2003)



4.67 The world consumption of NR amounted to 7.2 million MT in 2002, 2 per cent higher than previous year. Higher demand for motor vehicles and hence for tyres stimulated by the stronger economic growth in several key markets and the spike in oil prices which resulted in higher prices for synthetic rubber contributed to the higher demand of natural rubber. In 2002, Natural rubber consumption in China rose by more than 7 per cent and in India by 9 per cent. The import demand for natural rubber rose by nearly 10 per cent largely due to higher automobile sales influenced by economic recovery. Since world natural rubber consumption surpassed production in 2002, global stocks declined. The year end stocks in producing countries reached a multiyear low of 5.43 lakh MT. After dropping to below 1 million MT in 2001, imports into US, the largest importer of NR rebounded to 1.10 million MT in 2002 and imports into Japan increased by 8 per cent. These contributed to the revival of world natural rubber prices. 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. 33.89 per kg. in April 2002 which increased to Rs. 53.46 in November 2003.** The international price of RSS3, equivalent of RSS4 of India, increased from Rs. 34.22 to Rs. 59.54 in the corresponding period.

Coffee.

4.68 World Coffee production reached 7 million MT in crop year (Oct-Sept) 2002-03 indicating 5.6 percent increase over the previous crop year. This growth is mainly attributed to production growth in Brazil, world's largest coffee producer with a share of 41 per cent. On the contrary, in all major coffee producing

countries in Asia outputs declined in 2002-03. The fall in output was prominent in Vietnam (-18%) which is mainly due to unfavourable weather conditions. India is the sixth largest producer of coffee in the world with a share of 4.9 per cent. The top producers being Brazil, Columbia (9%) and Vietnam (8%), during 2002-03. 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.

4.69 According to the crop estimates for 2002-03, the area under coffee in Kerala was 0.841 lakh ha out of 3.47 lakh ha in the country, which works out to 24 per cent. The share of Kerala in production is 23.40 per cent. 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 2.75 lakh MT for the country. Productivity of the crop in Kerala (766 kg/ha) is lower than the national level of 793 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 9 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 75,000 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 inspite of growth in incomes as well as population.

4.70 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. 50.67 per kg. in 2002-03. The quantity of coffee exported from India also declined in 2002-03 to 2.07 lakh tonnes from 2.14 lakh tonnes in 2001-02. 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 and already there is higher stock in 2001 which is more than double the stock size of 1996-98 period. National production for the year 2002-03 was estimated at 2.75 lakh MT compared to 3.0 lakh MT in 2001-02.

4.71 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 27.54 US cents per lb in 2001. However since October 2002 ICO indicator prices showed an increasing trend. The international price trend got reflected in domestic prices also. The price of Robusta coffee in 1999 was Rs. 58.86 per kg. which declined to Rs. 28.54 per kg. in 2001. The ICO composite price averaged 48 cents/lb in 2002, 5 per cent higher than the average in 2001 and the price continued to rise slightly in 2003. The price of Robusta is likely to stay slightly higher in major Robusta producing countries during 2003-04 due to smaller expected crop.

4.72 The average domestic price for 'Plantation A' in 1999 was Rs. 80.21 per kg. which declined to Rs. 55.35 per kg. in 2002 and the corresponding price for Robusta cherry AB was Rs. 58.86 and Rs. 28.12 respectively. The prices improved slightly to Rs. 60.14 and Rs. 35.08 respectively during January to June 2003. Recovery of coffee prices is still fragile and uncertain. Though there appears to be some evidence of a cyclical recovery in coffee prices, the fundamental problem of over supply remains. The revival of prices depends on the expected production from Brazil during 2004-05. The short term uptrend in prices have stemmed from market sentiments arising from the forecast of decline in Brazil's crop in 2003-04. However a high forecast of Brazilian crop at 43 million bags during 2004-05 makes the emerging Arabica coffee situation quite vulnerable. Indications suggest that risk of frost in Brazil has disappeared and early flowering has already started.

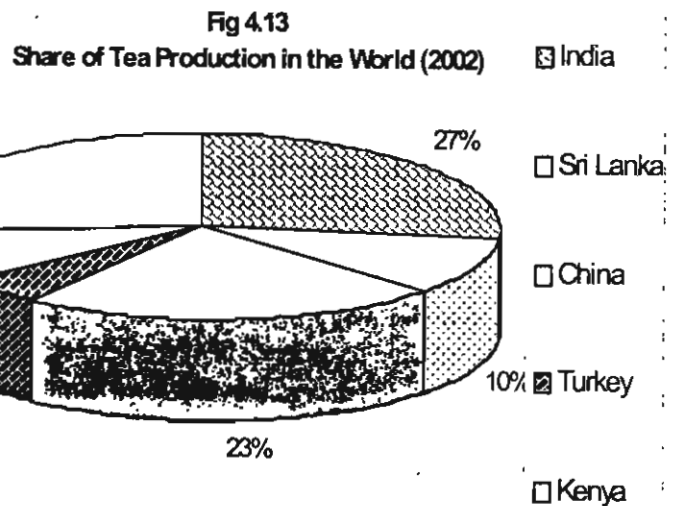
4.73 The new package announced by the Ministry of Commerce for coffee growers which is an improvement on the

special coffee term loan announced earlier may have a limited impact in the state considering the severity of the crisis. The pilot project of Coffee Board on income insurance proposed to be implemented in collaboration with the World Bank's commodity group would be one of the effective interventions in the liberalized economy. However, coverage of farmers under the scheme from the State has to be increased.

Tea

4.74 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 2.97 million MT. Most of the growth was due to the increase in productivity rather than expansion in area. Preliminary estimates indicate that world tea production in 2002 reached 3 million MT. 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 27 per cent of global production. The output in India is estimated to have fallen by 3 per cent due to inadequate monsoon rains and due to low prices. The production during 2002 was 826.3 Million kg. in the country.

4.75 Against the total area of 5.11 lakh ha under tea in the



country Kerala accounts for only 0.37 lakh ha. In respect of production also Kerala could retain its share of eight per cent. 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 Million kg. in 1995-96, reaching to 69.1 Million kg. in 2000-01 which declined to 65.8 Million kg. in 2002-03.

4.76 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 Million kg. in 2000 to 16.6 Million kg. in 2001 and further increased to 21.9 Million kg. in 2002. The disturbing fact is that most of the countries are exporting to India at low prices. The unit value of imported tea during 2001 was Rs. 55.72 per kg. in 2001 which declined to Rs. 45.95 in 2002. Around 55 per cent of the quantity is imported from Vietnam followed by Indonesia (20%)

4.77 The average auction prices for 1999 at Kochi was Rs. 62 per kg. which declined to Rs. 47 per kg. in 2002. International FAO composite price also declined during this period by 10 percent. 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.

4.78 The Reserve Bank of India has announced a relief package to the tea industry on the basis of the recommenda-

tions made by the working group under the Chairmanship of Mr. Madhukar. Salient features of the scheme are shown in BOX. 4.7. The package could be availed by the borrowers if they liquidate at least 60 percent of the peak hypothecation outstanding.

4.79 Though the wholesale prices fetched by the producers at the auctions have sharply declined, there has been no softening trend in the retail prices. Considering the wide gap between auction price and retail price of teas, the Commerce Ministry appointed AF. Ferguson's & Co to study the market structure of tea and to suggest appropriate reforms, that will lead to reduction in transaction cost besides introducing greater transparency. Based on the recommendations, Government of India has issued the Tea (Marketing) Control Order 2003, with effect from 1st January 2003 in supersession of the Tea (Marketing) Control Order 1984. The major changes in the order as compared to previous one are shown in BOX.4.8:

Box - 4.7

Salient Features of Tea Relief Package announced by RBI based on Madhukar Committee Report

- The seasonal deficit of tea borrowal accounts (classified as standard assets) will be converted to a term loan repayable within a period not exceeding 5 years
- The period allowed to liquidate the working capital dues of last season extended upto a maximum of 6 months in such cases where the entire outstanding is backed by the stock of tea or by the prompt (receivables) without affecting the drawing and the working capital limit of current season
- Banks can fix the rates of interest upto two stages better than the rate as applicable to such borrowers according to its credit rating by the individual banks subject to the condition that after such reduction, the rate of interest should not be below PLR.

Box - 4.8

Salient Features of Tea (Marketing) Control Order 2003

- All primary buyers have to register themselves with the Tea Board.
- Apart from manufacturers of bulk tea, those who manufacture value added products like packet teas, tea bags, instant tea etc. have also to get registered (subsequently amended, reported below)
- Similarly, apart from primary buyers of bulk tea, primary buyers of value added products like packet teas, tea bags, instant tea etc. have also to get registered. (subsequently amended)
- Enabling provision has been introduced to prescribe compulsory purchase of tea of a specific percentage through the auction in respect of buyers.
- Enabling provision has been introduced for prescribing a reasonable price to be paid for green leaf in terms of a formula to be specified.

Amendments introduced by Government of India

- Manufacturers of hand-made tea have been excluded from the definition of the term 'manufacturer' and only those who make tea in factories will come within the purview of the order. Those purchasing value added tea products and secondary buyers who do not source their teas either from auction or from manufacturers have been excluded from the definition of 'buyer'
- Buyers will be required to file only quarterly returns with the registering authority. The registration fee and fee for the issue of license has been reduced from Rs. 5,000 to Rs. 2,500 and for renewal of licensee the fee has been reduced from Rs. 1,000 to Rs. 500

4.80 Government of India had appointed three separate Expert Committees for a complete investigation into the affairs of the closed tea units in West Bengal, Kerala, Assam and Tripura. The Committees have submitted their reports to the Ministry of Commerce, and are under the scrutiny of the Government. Government of Kerala also announced relief package to the ailing plantation sector. A Committee was constituted under the Chairmanship of Chief Minister to address the issues in the Plantation sector, and tax exemptions were allowed for one year in the sector.

Cardamom

4.81 The total production from India and Guatemala was estimated at 22500 MT in 2002. The production in Guatemala improved by 14.4 percent 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, where as India's share of export in total production is only 8 per cent.

4.82 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 146 kg/ha in 2002. 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 72 per cent in 2002-03. While area under cardamom in the country has declined from 0.96 lakh ha to 0.72 lakh ha. in the period, in Kerala it has come down from 65,000 ha to 44237 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 chal-

lenge 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 further declined to Rs. 561.13 in 2002-03. The early trends indicate that situation had further worsened and reached a record low at Rs. 358.34 per kg. during August 2003, compared to Rs. 743.94 during August 2002. The Indian export of cardamom has increased from early nineties and reached a peak level of 1100 MT in 2000-01 and then declined by 50 percent in 2002-03 to reach 550 MT. The unit price realised increased steadily to Rs. 620 per kg. in 2001-02 from Rs. 514 per kg. in 2000-01 and further improved to Rs. 683.64 in 2002-03. It declined to Rs. 538.14 per kg. in April-July 2003.. However the market for cardamom is largely domestic as could be seen from the fact that the share of exports is only 8 per cent of the production.

Farm Commodity Price

4.83 The farm prices of major commodities were on a revival path during 2002-03 compared to the previous year and prices firmed up in varying degrees. The lowest price for coconut in the last 13 years was in 2000-01 and the highest in 1996-97. The increase in prices during 2002-03 compared to the previous year was 40 percent and price of coconut reached the level of 1999-00. For paddy the peak price over 13 years was in 1999-00 and there was 12 percent increase in price in 2002-03 over the previous year and a decline of 4.5 percent compared to the peak price. The peak prices of paddy, arecanut, cashewnut ginger and pepper were in 1999-00 over the last 13 years, and 1995-96 for rubber. The price of tapioca was its peak level in 2002-03. The price of rubber improved by 21 per cent in 2002-03 over the previous year. However prices of tea and coffee continued to the depressed.

Table 4.11:
Average Farm Price of Important Agricultural Commodities (in Rs.)

Year	Paddy (Qtl.)	Coconut with husk (in '00 Nos)	Arecanut (in '00 Nos)	Cashewnut (Qtl.)	Banana (in '00 Nos)	Tapioca (Qtl.)	Ginger-dry (Qtl.)	Pepper (Qtl.)	Rubber (Qtl.)
1999-00	684.43	476.12	75.25	3638.50	160.39	368.09	6393.68	20505.35	3099
2000-01	647.16	281.19	41.93	2336.70	189.50	349.06	4881.31	12467.97	3036
2001-02	585.75	340.64	32.81	2519.85	173.66	320.41	3070.64	6942.22	3228
2002-03	653.56	475.60	32.53	2718.35	176.82	393.57	4137.54	7814.10	3919
% change in 2002-03 over 2001-02	11.58	39.62	-0.85	7.88	1.82	22.83	34.75	12.56	21.41

4.84 Data on average farm prices of principal crops grown in Kerala are shown in Table 4.11. The table shows increase in 2002-03 compared to previous year in respect of most of commodities, namely paddy (11.58 %), tapioca (22.83%), pepper (12.56 %), ginger (34.75 %), banana (1.82%). A slight decline was reported for arecanut (-0.85%). Global agricultural prices have also indicated a recovery path from the later half of 2002 and continued in 2003 also. Data on month-wise prices of the commodities during 2002-03 is shown in (Appendix 4.25)

4.85 The Cardamom auction prices declined to Rs. 561.13 per Kg. in 2002-03 from Rs. 622.96 per kg. in 2001-02 and tea auction prices at Kochi declined further to Rs. 47.21 in 2002 from Rs. 52.21 in 2001 and to Rs. 45.49 in January to November 2003. Auction price of Robusta cherry AB had declined to Rs.28.12 in 2002 from Rs. 28.54 in 2001 and improved slightly to Rs. 32.59 per kg. in January to September 2003.

4.86 Under regulated situation, the domestic prices are less volatile than the international prices. This implies that unregulated and free trade would bring instability to domestic prices. The variability in domestic prices of major export commodities like pepper (62%) and cashewnut (31%) were relatively high over a period of eleven years from 1991-92. As a consequence with removal of quantitative restrictions, producers are facing the threat of imports. Large scale import of edible oils was facilitated by sharply falling world prices coupled with the relatively low level of tariff rates. The international price of coconut oil was US \$ 658 per MT in 1998, which declined to US\$318 in 2001 and later recovered to US\$421 in 2002 and further improved to \$451 in 2003. The price of palm oil also showed a similar pattern and declined from US\$ 671/tonne in 1998 to US\$ 286 in 2001 which increased to US\$ 390 in 2002 and \$431 in 2003. The annual average import of edible oil during 1995-96 was about 10.62 lakh MT which increased to 42.68 lakh MT during 2000-01. During 2000-01, palm oil accounted for 72 per cent of the imported edible oil. The magnitude of price fall for pepper was to the extent of 44 per cent in 2001-02 compared to the previous year and a slight improvement in 2002-03. Being an export commodity, movement in international prices determines the level of domestic prices of pepper. World prices of pepper doubled during 1996 to 1997 from US\$ 1.14 to US \$ 2.02 per lb and then steadily de-

clined. World markets for coffee and tea continue to be depressed due to large production surplus and slow down in consumption.

4.87 Recent evidence of improvement in international prices of commodities is suggestive of a new trend in world prices of agricultural commodities. Till recently, most of the agricultural commodities have been experiencing long range declines in their prices. Agricultural prices continue to be determined by demand and supply factors and three factors in general played a role in the recent buoyancy in international prices.

4.88 The first is the lagged effect of low prices on production, since direct income support has increasingly been decoupled from production decisions in developed countries. The second is the spur to demand for agricultural commodities resulting from sharply reduced prices. The net result of this has been that the volume of stocks of individual commodities has tended to either stagnate or decline, and country specific developments such as drought, frost or pest attacks have tended to reduce world supply even further being the third reason. Palm oil and coconut oil prices have been increasing owing to small crops in major producing countries and reduced inventories and palm oil prices have also been affected by large purchase by India and Pakistan

4.89 High demand for tyres, higher crude oil price induced substitution of synthetic rubber with natural rubber, the relatively low stocks at both the world level and in producing countries, good growth in demand particularly in major Asian markets like China and India and the possible effect of the ITRO production reduction scheme are the reasons for strengthening the world rubber prices in the short run. World rubber production is projected to reach 7.2 million MT in 2003, approaching the expected demand. Over the long run, price increase would be limited by the good potential which exists to increase supply through more intensive tapping and due to rising production capacity in newer producing countries such as Vietnam, where major investment have been made in the recent past.

OUTLOOK

Coffee

4.90 Global coffee production during the 2003-04 season is expected to be about 107 million 60 kg bags,

down from last season's 123 million bags. Almost all of the reduction is because of reduced Brazilian output due to unfavourable weather conditions. Coffee prices are projected to increase in 2004, with arabica up 9 per cent and robusta up 5 per cent. Over the longer term, real coffee prices are expected to increase relative to the 2002 depressed levels but remain well below the historical highs of the 1970s and more recent highs of the mid 1990s.

Tea

4.91 The auction average tea price is expected to remain largely unchanged in 2003-04 compared to 2002-03. The weakness in tea prices is expected to persist because of over supply and a trend of slow growth of consumption. The production in 2003-04 is expected to increase due to increased production in Vietnam and threaten to depress prices further. Vietnam has doubled production since 1990.

Rubber

4.92 Rubber prices are expected to remain high in 2003-04, after falling to historical lows in 2001-02. Natural rubber prices are expected to remain above US \$ 0.90 /kg. for the next two to three years. The consumption in 2002 increased 3.6 percent over 2001 and preliminary figures for 2003 indicate that it will stay strong. The demand for natural rubber has also been aided by lower demand for synthetic rubber whose prices increased considerably because of high crude oil prices.

Coconut Oil

4.93 International coconut oil prices is expected to increase in 2003-04 up from \$ 421 in 2002 and further to \$ 460/tonne in 2004. The price of Palm oil is expected to increase to \$ 425/t in 2003-04 from \$ 390 in 2002 and projected to decline to \$ 415/t in 2004. However slight variation in international prices of palm oil as a substitute product of coconut oil could be warded off through appropriate tariff structure.

Coconut

4.94 The world coconut production for 2003-04 is expected to decline by 8 per cent from the estimated output while India's production is expected to increase by 2 per cent and a slight improvement in Indonesia's production is forecast and world exports of coconut oil for 2003-04 is forecast to decline by 2.4 per cent from the level of 2002, mainly due to the shortfall in the production in Philippines.

4.95 The decline of the dollar since early 2002 (10 percent on a real trade weighted basis) also contributed to the rise in commodity prices. Similarly reduced supplies from earlier low prices and severe El Nino related droughts in 2002 which reduced oil seed production, coffee production, pepper etc. Most of the sharp agricultural price increase in 2002 and 2003 are expected to be reversed as surplus production capacity once again results from higher prices.

Table 4.12:
International Commodity Prices and Price Projections
for 2004 (in current US Dollars)

Sl.No.	Commodity	Unit	Price		
			2000	2002	Projected Price 2004
1.	Coffee (robusta)	Cents / kg	91.3	66.2	92.6
2.	Tea *	Cents / kg	187.6	150.6	155.0
3.	Coconut oil	\$ / mt	450.3	421.0	460.0
4.	Copra	\$ / mt	304.8	266.3	380.0
5.	Palm oil	\$ / mt	310.3	390.3	415.0
6.	Rubber RSS 1, Malaysia	Cents / kg	69.1	77.1	90.0

*Auctions average (3)

Source : World Bank

Crop Development Programme - Review of Annual Plan 2002-03

4.96 During the Annual plan 2002-03 an amount of Rs. 9877.00 lakhs was provided to crop husbandry which include Rs. 18.00 lakhs for partially aided schemes and Rs. 5859.00 lakhs under 100 per cent Centrally sponsored including MOU schemes. The State sector schemes incurred an expenditure of Rs. 8836.10 lakh and showed an expenditure of 89.46 per cent. During the year government of India have released Rs. 2952 lakhs and State government released Rs. 403 lakhs .

Crop Husbandry

4.97 Specific strategies are formulated for different crops during Tenth Plan. A number of programmes were implemented for the development of agriculture during the year 2002-03. Major crop wise achievements made during the period is furnished below.

Table 4.13:
Financial Performance of Crop Husbandry during 2002-03
(Rs. in Lakhs)

Sl.No.	Item	Outlay	Expenditure	% of Expdr. to outlay
1.	State Plan Schemes	4000.00	5874.31	146.86
2.	Partially Assisted Central schemes	18.00	9.94	55.00
3.	100% Centrally Sponsored Schemes including MOU	5859.00	2951.85	50.00
Total		9877.00	8836.10	89.46

Rice

4.98 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 than 2.8 MT 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 2002-03, it was targeted to introduce revitalisation ac-

tivities in 0.75 lakh ha and attained progress in 0.73 lakh ha.

4.99 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 2526 ha. against the target of 2050 ha. cultivation of HYV seed production achieved 3219 MT against the target of 6000 MT, green manure seed production achieved 40.55 MT against 100 MT and scented rice production implemented in 300 ha. through tribal samithies.

Coconut Development

4.100 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 64.49 lakh palms against the target of 64 lakhs and 1097 pump sets were distributed and 512 wells were constructed for irrigating coconut palms during the year.

4.101 As per the Centrally sponsored scheme the Coconut Development Board provides assistance for production and distribution of quality hybrid coconut seedlings. During the year, 0.64 lakh TxD coconut seedlings were produced and distributed against the target of 0.94 lakh seedlings.

Table 4.14:
Major Scheme wise Expenditure during 2002-03
(Rs. in Lakhs)

Sl.No.	Schemes	Expenditure
1.	Rice development	1630.50
2.	Coconut development	1992.86
3.	Pepper development	776.6
4.	Cashew development	781.36
5.	Vegetable and Fruit Production Council	130.00
6.	Vegetable development	377.75
7.	Fruit development	84.55
8.	Women development	47.51

Pepper

4.102 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 85.15 lakh pepper cuttings were produced and distributed, Pepper rehabilitation was introduced in 2915 ha. Along with pepper other spices such as ginger, turmeric, chillies and tree spices also received support during this period.

Cashew

4.103 In the case of cashew development, rehabilitation, plant protection and establishment of cashew nurseries were given importance during the Annual plan 2002-03. Through Centrally Sponsored programme an area of 888.83 ha was brought under rehabilitation programme against the annual target of 5500 ha. Plant protection measures were implemented in 3343 ha. and 10 nos. of cashew nurseries were established during this period.

Vegetable development

4.104 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.

4.105 During the year 2002-03, 1682 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 100 ha. was brought under cool season vegetable cultivation. Financial assistance was given for promoting vegetable cultivation in 1103 ha. during 2002-03. Vegetable development programme received priority in local level planning of panchayats also.

Vegetable and Fruit Promotion Council's Programme

4.106 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 followed in Kollam and Alappuzha districts during 2002-03. The programme covers production, formation of SHGs, credit management and marketing.

4.107 The area brought under Vegetable cultivation was 343.11 ha. against the targeted area of 1572 ha. and Banana cultivation in 175.88 ha. against the target of 208 ha.

Fruit development

4.108 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.

4.109 Through Centrally Sponsored programme Banana cultivation was done in 523.3 ha against the target of 600 ha, pineapple and other fruits in 40.1 ha against 100 ha and pomegranate in 15 ha. during the year 2002-03.

Supplies and services

4.110 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.

4.111 During 2001-02, the consumption of fertilisers

Table 4.15:
Season-wise Consumption of Fertilisers in Kerala

('000 MT)

Sl.No.	Nutrients	2000-01			2001-02			2002-03		
		Khari	Rabi	Total	Khari	Rabi	Total	Khari	Rabi	Total
1	N	38.86	24.90	73.76	40.12	36.30	76.42	43.70	43.00	86.70
2	P ₂ O ₅	21.50	16.10	37.60	19.17	18.07	37.24	19.10	21.10	40.20
3	K ₂ O	35.14	26.71	61.85	35.16	28.31	63.47	38.30	39.50	77.60
4	Total	95.50	77.71	173.21	94.45	82.58	177.13	101.10	103.60	204.70

Source: FAI

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. Table 4.15. 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 4.26). 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..

4.112 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 4.27.

Kissan Kerala

4.113 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. Recent announcement by the Prime Minister to dedicate a Television channel for the farmers may address the basic issues in technology and costs for faster dissemination of information. However location specific content generation for the state is a challenging job which necessitates the involvement of research in-

stitutions and IT experts.

Agricultural Insurance

4.114 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, landslide, 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.

4.115 The State Crop Insurance Scheme, has so far enrolled 1,22,657 farmers. Out of this 52,488 farmers have benefitted, with a total sanctioned relief assistance of Rs. 1128.63 lakhs, against the collected premium of Rs. 304.18 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 2003-04

4.116 The NAIS implementation since Rabi, 1999 has made an enrollment of 1,20,343 farmers till Kharif, 2003 and 17,818 farmers have so far made claims, amounting to Rs.625.51 lakhs. Since the insurance charges being Rs. 235.76 lakhs only, the claim ratio comes to about 268 per cent.

4.117 The Government of India, as per the budget proposal 2002-03, has initiated action for setting up of a separate corporation of agricultural insurance, to be promoted by the existing public sector general insurance companies. The task force, constituted by the government has proposed to set up the company as "Agriculture Insurance Company of India Ltd."

Women in Agriculture

4.118 The National Agricultural Policy of India (2000) and the Indian National Policy for the empowerment of Women (2001) have highlighted the need for incorporating gender issues in the agricultural development agenda to provide recognition of women's role as farmers and producers of crops and livestock, users of technology, active agents in marketing, processing, and storage of food and agricultural labourers. An expert committee constituted on women in agriculture, in the Department of Agriculture and Co-operation, Ministry of Agriculture, GOI has also analysed the policies and the frame work required for the programme.

4.119 The strategic objectives identified for the programmes are:

- i) To increase rural women's access to land and water resources, credit services and entrepreneurship training.
- ii) To Ensure agricultural policies and programmes are sensitive to gender differences in roles and activities.
- iii) To Ensure that agricultural research and extension programmes are gender-sensitive.
- iv) To Increase gender awareness in the commercialisation of agriculture.
- v) To Increase women's empowerment and access to decision-making.

4.120 Various central sector schemes are in operation in different states on women in Agriculture. The Central Government had launched the scheme under the 8th Five Year Plan to make farm women farmers self-

reliant by providing them opportunities to avail themselves of the benefits and opportunities of the existing agricultural system. The project was implemented on a pilot basis, with one district each from Rajasthan, Haryana, Himacal Pradesh, Punjab, Kerala, Maharashtra and Uttarpradesh. In Kerala the project was implemented in Palakkad district since 1994. An evaluation study conducted on the programme in Palakkad District under the Kerala Research Programme on Local Development (2001) has revealed that equality of members in the group, participation of group members in group activities, identified leadership and exposure of members to new technologies were the major strengths, where as lack of collective action, feasibility of enterprises, credit and market linkage and common savings as thrift group were identified as the major weaknesses. (BOX.4.9)

4.121 The state has formulated a programme on 'Women in Agriculture', in congruence with the policy for economic empowerment of women, with ultimate objective of making all potential women, economically independent and self-reliant. The 10th plan has also envisaged a paradigm shift in the objectives of LSGs from Local Development' to 'Local Economic Development' by attracting youth and women in Agriculture.

4.122 The Department of Agriculture has been implementing a project on 'Women in Agriculture' under macro management, to make women farmers self-reliant by motivating and mobilising them, through group approach. During 2002-03, this programme was implemented in Alappuzha, Malappuram and Wayanad districts and it has been extended to all other districts, except Palakkad during 2003-04. The project has been drawn as per the broader guidelines of the Centrally Sponsored Schemes, with emphasis on women empowerment, monitoring and evaluation and assistance for starting women enterprises, with a total provision of 100 lakhs. The 100 per cent central sector scheme on women in Agriculture is now in the 3rd phase of implementation in Palakkad District..

4.123 The State Poverty Eradication Mission (SPEM), Kerala, through 'Kudumbasree', has increasingly recognised the programme on 'Women in Agriculture', as a powerful tool for poverty eradication. Leased land farming, skill development, agri-business, agri-processing etc. are their thrust areas. The micro enterprises

Box - 4.9

Extracts from the study on 'Women in Agriculture: an evaluation of the Central Scheme in Palakkad District' by the Kerala Research Programme on Local Development, 2001

Salient Features

- The project has resulted in significant increase in terms of contribution to the total family income, with 35% of the members contributing 25% to 50% of the total family income and 55% contributing up to 25%
- There was only moderately low adoption of enterprises with 64% of the members adopting less than 25% and 36% between 25% to 55% of the enterprises.
- Nearly 20% of the members showed positive attitude towards farming while 60% remained neutral and about 20% expressed negative attitude
- The extent of empowerment of the members through participation was moderate among 57% and high among 25% of the total members.
- About 43% of the members maintained regular contacts with co-members. Nearly 1/3rd had contacts only as part of their group activities and another 1/4th, only occasionally
- About 48% of the members were involved in the decision making process of their group.

Major Constraints

- Failure in developing proper marketing channels for the enterprises established by the groups or their members
- Non availability of quality inputs and lack of effort to procure inputs on a group basis, to cut down prices.
- Inflexible nature of the training schedule, not focusing at the individual needs
- The schemes seemed to have never considered group savings as an essential component in its functioning.

Strategies

- Thrust to be given to thriftiness of the group and strategies to be evolved to formulate group activities with savings as an integral part of the programme
- To fix the group size flexible, according to the nature of the enterprises and to ensure the feeling of compactness and togetherness
- To adopt selective training in a phased manner rather than superficial trainings.
- To channelise inputs through collective purchase and to provide adequate infrastructure facilities.
- To develop effective marketing strategy for each products, including brand assignment and to ensure maintenance of product quality

Table 4.16
District wise details of Farming Undertaken by Kudumbasree

Sl. No.	Name of District	No. of GPs	No. of NHGs	No. of families	Area (Ha)
1	Thiruvananthapuram	52	607	7082	139.59
2	Kollam	32	500	10025	209
3	Pathanamthitta	22	186	1468	20
4	Alappuza	39	1996	23522	347.14
5	Kottayam	11	370	5041	405.91
6	Idukki	42	3398	37469	1673.88
7	Ernakulam	68	1788	17204	1132.00
8	Thrissur	84	674	7335	275.10
9	Palakkad	61	921	16660	553.62
10	Malappuram	33	72	1200	146.94
11	Kozhikode	59	794	8525	221.13
12	Wayanad	25	2001	20176	1107.52
13	Kannur	57	1459	22020	272.42
14	Kasargod	36	1103	8325	250.15
TOTAL		621	15869	186052	6754.4

Source: State Poverty Eradication Mission, Kerala

strategy adopted by the mission has helped so many NHGs to engage in agriculture related enterprises such as vegetable farming, crop nurseries, hardening units, mushroom cultivation, vermi compost production, bee keeping, dairy, hatchery units, backyard poultry, agro-processing, produce marketing etc. There are about 15869 NHGs spread over 621 GPs of the state engaged in farming in about 6754 Ha.. The major crops cultivated by these groups other than paddy are vegetables, banana and tuber crops . There are about 186052 families involved in such farming. The no. of families and no. of NHGs involved and area of cultivation are maximum in Idukki District.. The coverage under farming in different districts by Kudumbasree is given in Table: 4.16

Agricultural Research and Education

4.124 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.

4.125 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.

4.126 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 2002-03, 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.

4.127 University facilitates in-service training on new innovations, technologies and extension management to the grass root as well as middle level functionaries of development departments and agencies drawing considerable technical, scientific and professional capacity available in the University.

4.128 The Central Training Institute and the Centre of Excellence in Training for Plantation Crops, co ordinate and facilitate empowerment of the different stakeholders such as field extension functionaries of the development departments, commodity boards, commercial and rural banks. The centre has started capacity building programmes for professional graduates for taking independent ventures like agro-clinics, agri-business centre etc, with the help of Government of India, NABARD and other agencies such as MANAGE and Small Farmer's Agricultural Consortium.

4.129 Agro Bio-technology Agency for Rural Employment (ABARD), launched by the University as a pilot project, aims at technological empowerment of rural youth, especially women, for entrepreneurship development and to extent quality services and products at affordable rates. ABARD is a joint venture of the KAU, supported by Thrissur District Panchayat, Thrissur DCB Ltd. and 3 Grama Panchayats – Ollukkara, Pananchery

and Madakkathara. The University has also initiated a new project on Participatory Extension System for technology generation, dissemination and refinement.

4.130 Research studies conducted by KAU on Water Resource Management on tropical hill slopes of Kerala, has suggested that *lined pits and storage tanks with recharge wells* are effective and economical means of water harvesting in these regions. Evaluation studies on the various Farm Implements and its uses have suggested that, while many implements still need modification, there are many modern high-capacity machinery like *Transplanters and Combined Harvesters* available with different departmental agencies not fully utilised. The University has started a project on Development and testing of farm machinery for plantation crops of Kerala and has so far developed prototypes for *basin lister* for tree crops, *micro tiller*, *pit digger*, *powered palm climber*, *rotary coconut husker* etc. A revolving fund project aided by ICAR for production and popularisation of farm machinery is also in the offing.

4.131 Animal nutrition studies, undertaken by the university has suggested that, feeding of *complete feed* to calves improves the conversion efficiency, daily body weight gain, better dressing percentage, meat yield and meat-bone ratio. Studies on bacterial quality of meet, sampled from meat processing plants has revealed presence of pathogenic and spoilage organisms like *E.coli*, *Staphylococcus aureus*, and *Pseudomonas* in all the 3 meat species namely beef, pork and poultry. *Salmonella* was also isolated from beef and chicken samples.

4.132 Table 4. 7 shows real growth and intensity of agricultural research funding at state level. The growth in real funding was highly uneven among states during the 1970s. These differences narrowed in the 1980s with steady growth in all states. The growth of total state funding increased from 1.3 per cent per annum in the 1970s to 8.2 per cent in the 1980s, but slowed to 3.8 per cent in the 1990s. The intensity of state funding has increased in all states since 1980s, except in West Bengal. However there remains wide variations in the intensity between states. The growth rate in real funding for the period 1992-99 in Kerala was 1.85 per cent and funding per hectare was highest in Himachal Pradesh followed by Jammu and Kashmir and Kerala during 1995-97. Kerala is one of states with higher intensity of research funding.

Table 4.17
Growth and Intensity of Agricultural R&E Funding by State Governments

State	Annual growth rate in real funding			Funding per ha		Funding as share AGDP		Share in the total funding by all State
	1972-81	1982-91	1992-99	1981-83	1995-97 a	1981-83	1997-99	1997-99
	(%)			(1999 Rupees)		(%)		(%)
Andhra Pradesh	11.4	6.47	5.23	26.21	78.02	0.16	0.28	8.08
Assam	-0.07	9.51	-0.03	63.66	95.67	0.28	0.33	2.84
Bihar	18.52	8.55	5.1	25.95	71.97	0.13	0.25	4.96
Gujarat	0.61	9.71	4.78	28.03	85.2	0.19	0.41	7.52
Haryana	28.56	5.16	8.18	70.58	196.27	0.28	0.44	6.23
Himachal Pradesh	-0.09	12.76	10.21	150.68	567.78	0.62	1.52	3.31
Jammu & Kashmir	-0.09	10.97	12.79	73.35	295.13	NA	NA	2.25
Karnataka	12.91	7.54	3.03	22.57	52.07	0.19	0.28	5.74
Kerala	25.4	5.23	1.85	100.08	242.89	0.31	0.41	5.65
Madhya Pradesh	-0.08	13.29	1.09	5.19	18.16	0.07	0.14	3.42
Maharashtra	0.74	7.06	2.43	42.04	84.94	0.39	0.43	14.21
Orissa	7.75	6.5	-0.02	14.27	27.85	0.1	0.21	1.78
Punjab	3.43	10.28	2.41	72.66	155.01	0.24	0.3	6.48
Rajasthan	3.63	10.95	3.58	9.6	27.85	0.12	0.18	4.13
Tamil Nadu	3.8	13	7.44	36.15	160.2	0.21	0.59	9.34
Uttar Pradesh	-0.06	5.74	2.06	28.63	45.07	0.13	0.16	8.03
West Bengal	12.13	2.35	4.73	46.19	65.48	0.17	0.17	4.89
Average for all States	1.34	8.23	3.82	29.84	28.28	0.24	100 b	

Note: Figures for the R&E intensity are three year averages; 1972 refers to 1971/72 and so on.

a: Triennium average of NCA ending 1997.

b: Column total may not add upto 100 percent as expenditure for small states is not reported here.

Source: ICAR, 2003.

4.133 Overall the Government of India provides 52 per cent of public funding for agricultural R&E in India which almost entirely passes through ICAR. A large proportion of these funds (87%) is directed to the State Agricultural Universities. However the recent decline in external funding for Kerala Agricultural University is a cause for concern and KAU should take effective steps to get more funding from external agencies.

4.134 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 in the changing agricultural scenario. Government has constituted a high level committee to study the issues in research, education and administration of the University. A vision document has to be prepared for the University similar to the ones prepared for the individual institutions under ICAR.

Agricultural Marketing

4.135 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 lib-

eralisation, *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.

4.136 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.

4.137 The inter-Ministerial Task Force set up by the Ministry of Agriculture to strengthen agricultural marketing submitted its report in June 2002. It recommended amendments to the State APMC Act for promotion of direct marketing and contract farming, development of agricultural markets in private and cooperative sectors, stepping up of pledge financing, expansion of futures trading to cover all agricultural commodities, introduction of negotiable warehousing receipt system and use of information technology to provide market led extension services. The Ministry of Agriculture, Government of India have constituted a committee under the Chairmanship of Shri. K.M. Sahini, Additional Secretary and the committee has

prepared a model legislation titled the State Agricultural Produce Marketing (Development and Regulation) Act, 2003 mainly to reform the APMC Acts in various states. Facilitation of E- Commerce , including online trading under a transparent environment with suitably strengthened market intelligence set up and quality assurance system would go a long way in helping to protect the poor farmers from the unstable price regime.

4.138 Government of India have appointed a Working group under the Chairmanship of Dr. Kalyan Raipuria for finding implementable solutions to the recommendations of the Expert Committee (Guru Committee) on Agricultural marketing. The report of the working group specifically covers areas relating to commodity forward and futures markets. The major recommendations are shown in BOX 4.10. Since the beginning of 1990s, concerted efforts have been made in expanding the scope of futures trading along with general economic reforms. Though major initiatives have been taken up in promoting commodity futures markets in India, many of the constraints still persist.

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. BOX 4.11. Around 91 commodities are in the regulated list.

4.140 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.

4.141 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.

Box - 4.10

Major Recommendations of the Working Group on Forward and Futures Markets

- Commodity specific approach to futures trading to be discontinued. Instead recognized associations/exchanges could apply for permission for trading in any 'contracts'
- Negative lists should be pruned drastically.
- Exchanges should come out with feasibility studies on commodities and products based on costs and benefits analysis of futures trading. The system of piecemeal opening up and permission based on the Regulators (FMC)/ Governments evaluation may be discontinued. Contracts proposed by the Exchanges based on proper feasibility studies should be approved by the Regulator.
- The design of contracts and the type of contracts should be left to the Exchange.
- The system of warehouse receipts needs to be universalized in futures trading to enable enhancing volumes and in minimizing transaction costs.
- Legal framework for making warehouse receipts transferable and negotiable should be strengthened in making negotiable warehouse systems the demat of commodity futures trading.
- The Regulator (FMC) needs to be strengthened and made an autonomous organisation with adequate powers and professional capabilities to monitor and surveil in an expanded and liberalised futures market.
- Rules and procedures need to be simplified to provide transparency
- The role of commodity market regulator may be redefined to regulate all derivative products.
- The target turn over of futures trading may be kept at least 10% of the GDP from a level of 1.26% in 2000-01.
- A policy to be framed for convergence of futures m markets, ie. the commodities derivatives exchanges and securities derivatives exchanges to trade in either or both the categories of derivatives products.

Government of India - 2001-02

Box - 4.11

Futures Trading in Agricultural Commodities

- Commodity futures hedge the risks faced by farmers and agricultural trade functionaries from seasonal and cyclical fluctuations in the prices of Agricultural Commodities. Futures markets perform the two important functions of price discovery and price risk management, helping to stabilize the amplitude of price variations.
- Internationally Futures Trading is allowed in a range of commodities and even in a number of non-commodities such as weather indices and pollution permits.
- The first organized futures market in India evolved with the setting up of the Bombay Cotton Trade Association Limited in 1875. The Forward Contract Regulation Act (FCRA) was enacted in December 1952. During the 1960s and 1970s, however FT was either suspended or prohibited. The Khusro committee recommended the reintroduction of futures trading in major commodities. On the recommendation of Kabra Committee in 1993, the Government of India permitted futures trading in a large number of commodities. 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.
- 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.

Agri Export Zone

4.142 The EXIM Policy 2001 has 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 2002, the Central Government has sanctioned and notified 41 AEZs in 17 states. These 41 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 ex-

port 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. More attention is needed to attract private investment in the AEZ established in the state. 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. However, Private investment is the crucial factor determining the level of exports.

WTO and Agriculture

4.143 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 base-line support levels from which reduction 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, TRQs, tariff escalation and opaque tariffs.

4.144 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 are 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. In many industrial countries, the average income of farmers are 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.

4.145 When subsidies depress prices the impacts in poor countries can be severe. Import growth rates in industrialised countries declined across all groups of agricultural products exported from developing countries while the opposite occurred in developing countries. However the developing countries in general gained market share in manufacturing sub sector to a limited extent except food processing. The protection rates for food processing in industrial countries are extremely high.

4.146 Compared to the slow reforms in OECD countries, the change in protection in developing countries were significant in 1990s. 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 percent. 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 are 34 percent higher than the international prices in 1999-01.

4.147 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 support.

4.148 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 recently at Cancun

4.149 The state government have taken steps for the implementation of the major recommendations of the Commission on WTO concerns in agriculture. A Virtual University on Agrarian prosperity would be set up in 2003-04 by the Kerala Agricultural University in collaboration with the Indian Institute of Information Technology Management, Kerala.

Sanitary and Phyto Sanitary (SPS) and Technical Barriers to Trade (TBT) Agreements

4.150 The SPS and TBT Agreements confirm the right of WTO members to apply measures necessary to protect human, animal and plant life and health. These include the setting of technical regulations and standards governing quality requirements for food, packaging, marking and labelling and ratial 200 and phytosanitary measures to protect animal and plant life and health.

4.151 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 co-dex 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.

4.152 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. Major findings of a study on coffee farms conducted in Karnataka are shown in BOX 4.12. Out of 282 farms surveyed, 149 are SPS complying farms. Partial financial support could speed up adoption of SPS norms by the farms.

Issues in WTA

Tariff escalations

4.153 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.

Harmonisation of Phyto sanitary measures

4.154 Harmonisation of phytosanitary measures, through the establishment of International Standards for Phytosanitary Measures (ISPMs) by the International Plant Protection Convention (IPPC) started only recently. A substantial number of concept ISPMs have been adopted but much work

remains to be done, in particular on standards specific to individual pests, plants or plant products. Maximum Residue Levels (MRLs) should be harmonised for produces such as tea, coffee and pepper for retaining the market share. The level of participation of developing countries in both the number and effectiveness in international standard setting bodies remains an issue. Developing countries lack the technical and financial capacity to fully participate in activities of international standard setting bodies and they lack the supply side capacity to meet the increasingly strict and high standards adopted by the developed countries.

Rules of Origin

4.155 The raw materials produced in one country is moved to another for processing and to yet another as a export product. Imported low quality pepper and tea are reported to be blended with Indian varieties and exports as Indian varieties. Such products with multi country origin should be enforced strictly to protect Kerala's traditional markets, especially for tea, cashew, 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 spices in the international market.

Regional Trading Blocks

4.156 Along with the evolution of multilateral system, there has also been a parallel movement towards the formation of RTBs. Disciplines are lacking with respect to preferential rules and WTO has no mandate to monitor the trade effects of RTBs. Around 250 preferential trading blocks are reported throughout the World and it is growing. Eventhough the Fifth Ministerial meeting at Cancun was a failure, multilateralism will dominate in World trade along with proliferation of RTBs. Indo-ASEAN Negotiations are in an advanced stage. 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 liberalisa-

Box - 4.12

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

tion with these countries may have an impact in the agricultural economy of the state, especially in rubber, palm oil and pepper.

Indigenous Traditional Knowledge

4.157 Indigenous Technical Knowledge (ITK) 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. 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.

4.158 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 revoked.

4.159 Geographical indications especially appellations of origin, could be used to protect products of a special region like Basmati rice, Darjeeling Tea, Alphonso mago, Kolhapur slippers Malabar pepper, Alleppey turmeric etc.

4.160 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.

4.161 Preparation of village wise community Bio diversity Registers has been undertaken in some Panchayats. The Traditional Knowledge Digital Database (TKDC) project has been initiated at Government of India level. TKDC 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 innovations, mobilize IPR protection, set up incubation for converting innovations into viable business opportunities. It has established four incubation centers across the country. A project on documenting ITKs in the state has been initiated. This is more relevant in the context of TRIPS.

Livestock Sub Sector

4.162 Livestock sub sector has a vital role in the States' economy. This sector has high potential for alleviating poverty and unemployment in rural areas. Majority of livestock owning farmers are either small and marginal or even landless. In view of its suitability for combining with crop sub sector and sustainability as a household enterprise with the active involvement of the farm women, it is emerging as a very popular supplementary avocation in the small farm segment. The rural women play a significant role in the development of Livestock sub sector and are involved in operations like feeding, milking, breeding, management and health care and running micro enterprises. It is estimated that about 32 lakh out of the total number of 55 lakh households in Kerala are engaged in livestock rearing for supplementing their income. The homestead settlement pattern, the relatively high level of literacy particularly among women, the highly favourable agro climatic conditions conducive for bio mass production and the long tradition in livestock rearing are the inherent strengths which the Kerala economy possesses in favour of livestock rearing. In the context of removal of Quantitative Restrictions (QRs), measures to safeguard the domestic sector from import of cheaper products and to ensure that the incoming items conform to Indian standards are to be strengthened.

4.163 As per earlier Census figures, Kerala accounts for 1.61 per cent of the total cattle population in the country. In 2000 about 72 per cent of the breedable cattle in the State were crossbred which was made possible by expanded health care facilities and veterinary services. So far out of 2887 artificial insemination centers 2523 have been established by the Animal Husbandry Department, 12 by Dairy Development department 140 by Voluntary Agencies, 185 by APCOS. The embryo transfer technology introduced in the recent past is yet another step towards livestock development. As a result milk production increased from 9.82 lakh MT in 1981-82 to 22.58 lakh MT in 1996-97 and

27 lakh MT in 2001-02. By 2002-03 milk production declined to 24.19 lakh MT recording a reduction of 11% compared to previous year.

4.164 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. Marginalisation of agricultural holdings, declining trend in the family participation particularly among youth and high cost of production as a result of increasing reliance on external source for inputs have further aggravated the problem. 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.

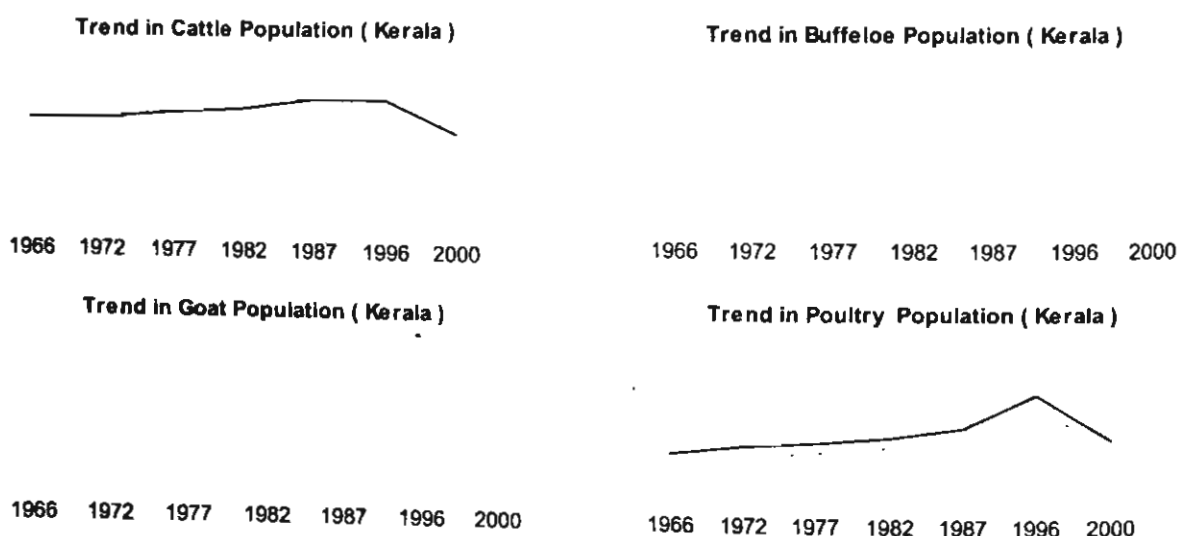
4.165 Tenth plan strategy of Kerala is framed in consonance with the national strategy with due adaptation to the Kerala context giving due importance for Upgradation of standards of veterinary institutions and services, establishment of disease free zones, extending health cover and stock upgradation 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

4.166 The trend in livestock population has been examined on the basis of the quinquennial livestock census data. The distribution trend of livestock and poultry for the last three decades is presented in the Appendix 4.33. On analysis of data, it can be seen that Livestock population was showing an increasing trend up to 1982 and by 1987 there was a decline of 2.54 per cent. Even though it showed signs of improvement by 1996 (1.38%), total livestock population declined by 23.01 per cent during 2000. Kerala possesses 24.9 lakh cattle, 1.1 lakh buffaloes, 16 lakh goats, 0.9 lakh pigs, 10.4 lakh ducks and 169.1 lakh poultry as per 16th Quinquennial Census 2000. The provisional data of ongoing Census (17th Quinquennial Census 2003) showed further reduction in population and the State possess 21.21 lakh cattle, 0.71 lakh buffalo, 12.05 lakh goats, 123.33 lakh poultry and 6.74 lakh ducks.

4.167 An analysis of the Census figures for 2000 shows an overall negative trend during 1996- 2000 period in cattle, buffaloes, cows and she buffaloes population. During the period cattle population declined by 9.06 lakhs (26.55%), adult cows by 7.37 lakhs (24.47%), buffaloes by 0.54 lakhs (32.73%) and She buffaloes by 0.44lakhs (44.89%) respectively. The transition occurred in the structure of bovine population during the census period 1956-2000 is given in Appendix 4.34. Compared with preceding census Bovine population has declined to 35.6 lakh in 1996, further by 27 per cent in 2000 and by 15.8 per cent to 21.9 lakhs in 2003.

Fig 4.14
Trend in Livestock Population in Kerala



4.168 As already stated the buffalo population is on the decline. The State has not undertaken any concerted attempt in implementing buffalo development programme. KLD Board has been producing frozen buffalo semen and the same is made available through AI units for artificial insemination.

4.169 Goat population is also on the decline mainly due to indiscriminate slaughter, shrinking of grazing lands and urbanisation. Goat population showed a significant increase from 1966 to 1982 but declined by 21 per cent as during 1987 census and then increased by 17.71 per cent during 1996 census period. By 2000 it showed a reverse trend and declined by 14.13 per cent and during 2003 another 24.6 per cent.

4.170 Even though some efforts were made by KLD board and MPI to foster swine industry, compared to 1996 the pig population declined by 70 per cent during 2000.

4.171 In the case of poultry and duck population decline during 2000 census was 34.07 per cent and 12.27 per cent respectively. During 2003 they further declined by 27.06 per cent and 35.30 per cent (Appendix 4.33)

4.172 The last two livestock census reveals a drastic decline in livestock and poultry population and it needs urgent correction. Non availability of quality fodder, lack of sufficient land for fodder cultivation, high feed and feed ingredient cost, labour cost, increased consumption of meat and indiscriminate

slaughter, inflow of products from neighbouring states etc., are the main reasons for this tendency.

4.173 An overall review of the past investments in the Livestock sector shows that development efforts were largely confined to cattle development with focus on dairy cattle through herd improvement. This approach has paid rich dividends by way of steady improvement in productivity and continuous increase in milk production. It is estimated that about 80 per cent the dairy cattle in Kerala are cross bred

4.174 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.

Weak Feed and Fodder Base

4.175 Most of the reports regarding the 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 (prevailing and expected) in green fodder in the country. The available fodder can meet the demand of only 46.7 percent of the total livestock .The deficit as on 2000 in green and dry

fodder in the country was 61.10% and 21.93% respectively.

Demand and Supply of Fodder

4.176 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 (prevailing and expected) in green fodder in the country.

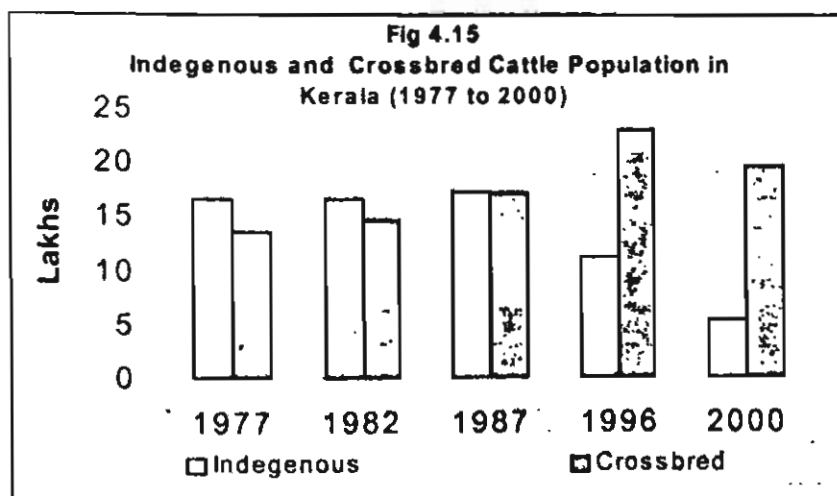


Table - 4.18
Supply and Demand of Green and Dry Fodder Estimated
 (in million MT)

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: KLDB

4.177 Projected gap between demand and supply of green and dry fodder presents a challenge for fodder production in the coming years. While the deficits are anticipated to increase as a proportion of the requirements in both the case, the situation appears all the grimmer in case of green fodder. Focussed strategies and concerted efforts are the need of the hour to face this challenge.

4.178 The situation in Kerala is worse. Kerala is a deficit State as far as fodder production is concerned. Earlier cattle rearing has been integrated with rice farming system to the advantage of both. With the shift in cropping pattern, 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. The dry matter requirement of adult cattle is 53.6 lakh MT. Total dry matter available in the State as per KLD Board report is only 16.76 lakh MT during 2002 - 2003. The dry matter requirement for 26.80 lakh adult cattle is estimated at 53.6 lakh MT Availability of dry matter in Kerala for the period 1997-98 to 2002-03 is given in Table 4.19.

4.179 Regarding the cattle feed concentrate, State is not producing even half the requirement. 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". Green fodder is yet to be incorporated into the state-cropping pattern because its cultivation is not as profitable as that of other crops. Non-availability of land for fodder cultivation also stands as a major limiting factor. The cost of concentrated feed is ever on the increase making it almost impossible for the dairy farmers in the State, especially those with limited financial resources to maintain cattle. The present price of compounded feed ranges from Rs.7/- to Rs.7.50 per kg. There is an increasing trend in the price of ingredients also.

4.180 Kerala farmers have adjusted 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 animals in the total

Table - 4.19
Details of Dry Matter Availability in Kerala
 (in Lakh MT)

Sl.No.	Year	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

Source: KLD Board

cattle population is of the order of 79 per cent (see Appendix 4.31). There is drastic reduction in other categories of livestock such as bullocks, indigenous female cattle, male calves etc. (Appendix 4.36 & 4.37). The recent trend reveals that the farmers are reluctant to maintain even high yielding cross-bred cows during their dry period.

Table 4.21
Average Annual Growth Rate of Milk & Egg Production

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	4.42	4.16	2.75	4.59
6	1996-97 to 2001-02	3.78	4.37	(-) 0.22	4.09

Trend in Production of Major Livestock Products

4.181 The important contribution of livestock sector to the economy in Kerala is derived from milk, meat and egg. Trends in requirement and availability of major livestock products are given in Table 4.20. Milk is the only product which could maintain its growth rate in tune with the increase in demand. The per capita availability of milk during 2002-2003 was only 205 g/day compared to 234g/day during the previous year. Compared to the Kerala situation per capita availability of milk in India during 2001-02 is 226 gm/day (still below world average of 285 g/day). In the case of egg, the domestic production is sufficient to meet only 30 per cent of the internal requirement. The per capita availability of egg is 59 Nos/per year during 2002-03 showing a decrease from 63 Nos/year during 2001-02. The state is largely dependent on external sources for maintaining the supply of meat. The internal supply is more or less around 15 gm per capita per day.

4.182 The average Annual growth rate of milk and egg production in Kerala & India for the period from 1950-51 to 2001-02 is given in Table -4.21

Milk

4.183 In spite of a shrinking fodder base, the dairy sector in Kerala could maintain its performance during 1990-91 - 2001 and the growth rate is 4.42 per cent, 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. The compound annual average growth rate recorded during the last decade was 4.2 per cent, which was maintained during 2002-03 as well. The genetic upgradation attained through the artificial insemination programme launched by the state with the support of the frozen semen technology has helped it to attain new heights in milk production. However, the high yielding potential secured through cross breeding could not be converted into a corresponding increase in productivity. 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

Table 4.20
Requirement and Availability of Livestock Products

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

Source: Animal Husbandry Department

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

1984-85 to 2002-2003 is given in Appendix-4.40.

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. The inter state disparity in milk production vis-avis population and average yields requires the development of appropriate strategies for equitable development of livestock sector in the country.

Egg and Meat

4.185 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 has reached the level of 2024 million numbers by the end of Eighth Five Year Plan is now showing signs of slowing down. The production which was 2054 million nos. in 1999-2000 is showing a downward tendency to 2034 million nos. in 2000-01, 2002 million nos. in

2001-02. This is against the target of 2279 million nos. during Ninth plan. Compared to previous year, a drastic fall of 32.47 per cent was recorded in the egg production to 1347 million nos. during 2002-03. 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 - 4.21). Index of egg production of Kerala and India over the years 1984-85 to 2001-02 is given in Appendix 4.40

4.186 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.

4.187 The production of poultry meat including broilers is on the increase. It reached 52611 MT in 2002-03 as against 42693 MT in 2001-02. Details of milk, egg and meat production are furnished in Table 4.22.

Table 4.22
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 (
(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	6.8	32480	117840
1999-00	781	3.86	25.25	4.34	3.2	31501	6.87	2054	0.48	6.5	33204	121875
2000-01	810	3.71	26.05	3.17	3.2	32420	2.92	2034	(-)0.97	6.3	41515	122808
2001-02	846	4.44	27.18	4.34	3.2	33600	3.64	2002	(-)1.57	6.0	47693	125100
2002-03	NA	-	24.19	- 11.0	-	NA	-	1347	(-)32.7	-	52611	125130

Source: Economic Survey and Department of Animal Husbandry including unauthorised sector *Provisional (@)

Poultry Rearing in India

4.188 The poultry production model in vogue (high input-high output using commercially developed strain of birds) has been primarily responsible for the rapid growth in production of eggs and broiler meat in the country, but it is successful mainly in large scale units (more than 1,000 units of birds). Due to high feed cost, non-availability of credit and marketing support, most of the small farmers have become contract farmers and are exploited by middlemen. Government intervention, by way of various support mechanisms, is now needed for the promotion of poultry in rural areas. Indigenous poultry breeds, including the improved strains that can survive with low quality raw feed and better resistance against diseases, can be reared under free range conditions by rural unemployed youth and women for some additional income and employment.

Box - 4.13

2020 Vision for Indian Poultry Industry

- A relatively strong growth for egg and poultry meat both in the urban and rural areas is projected in the next two decades.
- Egg consumption is found to grow much faster rate than poultry meat with per capita consumption rising from 30.4 in 2000 to 69 in 2020.
- Per capita egg consumption of lower income group both in the urban and rural areas are likely to grow at a much faster pace than the upper income groups.
- Average per capita poultry meat consumption is found to increase from 0.69 to 1.28 kilogram during 2000 to 2020.

Total egg consumption is projected to increase by 200 percent from 34 billion in 2000 to 106 billion by 2020.

Source: *International Poultry Review, 2003.*

Poultry Rearing and Kerala State Poultry Development Corporation

4.189 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 against the target of 25,000 and to hatch 28 lakh day-old chicks against the target of 58 lakh by utilising financial assistance from the State Government and commercial banks.

I. Backyard Poultry Rearing

4.190 Backyard poultry system is having 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 firms are also involved in the activity. It has been estimated that around 1 lakh families are getting benefits and around 10000-15000 direct employment opportunities generated. No hybrid variety of Broiler birds are being reared as Backyard system, since they need sophisticated Management System in order to give maximum output. Coloured birds seen are the cross breeds of birds such as Austrolop, Plymothorock, Black minarca, White Leghons and non descript (local) Breeds. These birds are being reared to cater the need for both meat and eggs.

4.191 During 2002 to 2004, KSPDC has targeted to supply 6 lakh backyard commercial chicks to the farmers of Kerala. Upto 2003 September, 3.01 lakh chicks supplied and it is estimated that 4.76 crores of eggs will be produced additionally in the State. The Corporation is marketing chicks mainly through various self help groups.

II. Broiler Production

4.192 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. Except KSPDC, no other hatcheries are maintaining Broiler inside the State. 10-15 Private hatcheries, working as satellite hatcheries are also contributing to this local production of chicks and chicken meat.

4.193 Apart from this around 30000-40000 MT of chicken meat which includes broilers, layer chicks, broiler and layer parent culls etc. being imported from neighbouring state. Approximately 40000-50000 direct employment opportunities are generated through Broiler production.

Poultry Feed

4.194 There is need of Broiler feed to the extent of 2000-3000 MT per month which is being catered by 6-7 private feed manufactures. Average price of the feed is Rs. 10000/- to Rs. 11000/- per MT. Road tax levied is 4 per cent with

Table 4.23

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	
2	Buffalo	2001-02	180.30	10394	
		2002-03	151.53	8637	
3	Goat	2001-02	553.56	5202	
		2002-03	665.74	6276	
4	Pig	2001-02	40.70	1830	
		2002-03	44.50	1994	
Total(1-4)		2001-02	1257.85	41710	
		2002-03	1386.02	42804	
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		2001-02	42366.70	47693
			2002-03	41241.40	52611

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

15 per cent additional sales tax.

New opportunities for meat production

4.195 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. Kerala has the relative advantage for substantially increasing manufacture and export of meat and meat products. Male calves available as the bye-product of intensive cross breeding programme are estimated to be about 1.5 lakh every year. If properly looked after for value addition, these could be utilised for export. Farmers are reluctant to keep the male calves, as fattening with purchased inputs is not an economic proposition. Rearing of cattle for meat purposes continues to be a losing proposition in Kerala and it is therefore prudent to rely on external sources for meeting domestic demand.

4.196 There are 774 authorised slaughter houses in the State as on 2002-03 Category wise no of animals slaughtered and quantity of meat produced during 2001-02 and 2002-03 are given in Table 4.23

4.197 Of the total meat production beef contributes 60 per cent, buffalo meat (20%), mutton (15%) and pork (5%).

4.198 Details of meat production as per the report is based on the data collected from the recognised slaughter houses functioning in the State and hence the data of meat production in the unauthorised sector is not available. It is estimated that about 2/3rd of the meat production in the State is from unauthorised sector.

Import and export of Milk and Milk products

4.199 The salient features of import regulations related to milk and milk products to India are given in Box.4.14.

Box - 4.14

Salient Features of Import Regulations Related to Milk and Milk Products

- All imported milk products have to conform to the requirements under the Prevention of Food Adulteration Act
- Skimmed milk powder, condensed milk and infant food must also conform to standards specified by the Bureau of Indian Standards
- It is necessary to obtain an animal health sanitary import permit from the Government of India, before importing any livestock products including milk products
- At the time of entry to India all imported food products should have valid shelf life of not less than 60% of its original shelf life, with the original shelf life calculated as the difference in date of manufacturing and expiry date
- Imported food products in packaged form must conform to the requirements under the Packaged Commodities Rule (under the Standards of Weights and Measures Act)
- Processed food products imported in bulk shall contain a declaration that it does not contain any beef

Source: IDF Bulletin

4.200 The Export of Milk Products Rules (Quality control, Inspection and Monitoring) 2000 set 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, processing establishments, storage and transportation. As at the end of March 2003, 38 establishments had obtained certification from the authority for undertaking exports. Details of exports and imports of milk and milk products are given in Table - 4.24. During 2001-02 it was estimated that 14.74 lakh Nos of egg, 28.734 MT of meat and 2114 kg butter were exported from Kerala.

Table - 4.24
Export and Import of Dairy Products (India)

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
	Imports ('000 MT)		
6	Skimmed milk Powder	0	0.6
7	Butter oil	1	3.2

*estimated. Source: NDDB, 2003

Animal Health Care

Indian Scenario

4.201 India has a large network of veterinary hospital/dispensaries. At the end of 2000, there were 7749 veterinary hospitals/polyclinics, 15554 veterinary dispensaries, 27543 veterinary aid centers including mobile dispensaries. These institutions employed some 36000 professional staff and over 70000 para veterinarians. The primary emphasis is on clinical services and as a result, endemic disease 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 glo-

bal 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.

4.202 Free Veterinary and AI Services have resulted in an infrastructure that is vast and expensive. Low levels of cost recovery have further limited the revenue generating capacity of State departments to meet their operation needs making it difficult to provide high quality services.

Kerala

4.203 Health cover is an important support, which has to support the intensive cattle improvement programme. Veterinary health care programmes are implemented through a network of institutions consisting of veterinary polyclinics, veterinary hospitals, mobile units and district veterinary centres. At the end of Ninth Plan period every village panchayat in the State had a veterinary institution (hospital/dispensary) but for 23. There is a strong network of 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. At present 3400 cattle units are attended by each veterinarian.

4.204 There is significant demand for Veterinary Services. A study was conducted to assess the Willingness to Pay (WTP) for curative veterinary services in Gujarat, Rajasthan and Kerala by IIM, Ahmedabad. It was found that most of farmers were Willing To Pay (WTP) for Veterinary services and a larger proportion of farmers were found to opt for home service. For home service a significant positive relationship was found between income and WTP in Gujarat while such a relationship was absent in Kerala and Rajasthan. The major findings of the study are shown in Box 4.15. In addition to the WTP framework, the survey also collected information on various aspects of animal health and use of present Veterinary services.

Box - 4.15

Major Findings of a Study on Willingness To Pay for Livestock Services in three States

A Survey was conducted in three States covering 1164 households to examine the willingness to pay for veterinary services. The sample included 406 households in Gujarat, 353 households in Rajasthan, and 405 households in Kerala

- Nearly 50% of the respondents in Gujarat and Rajasthan and 30% in Kerala had not used veterinary services during the 12 months preceding the Survey.
- In Gujarat in centre veterinary services was nil. Out of 140 sample visits in Gujarat by Govt. veterinarians 130 were at home, while in Rajasthan out of 257 visits, 178 visits at home, while in Kerala out 534 visits, 304 were at home and 230 were at the centre.
- The average visit charge per house visit by a govt doctor in Kerala was Rs. 94 and private Rs. 98, while in Gujarat, the corresponding figure was Rs. 111 and Rs. 185, in Rajasthan, Rs. 227 and Rs. 206 respectively.
- For home service, a significant positive relationship was found between income and willingness to pay in Gujarat while for other states, no relationship was found.

Source: Vinod Ahuja, Kenneth E. MC cossne. IIMA, 2003

Even though it was envisaged in the Ninth plan that health cover irrespective of income levels in Kerala will be provided at doorstep of the farmer, this aspect could not be achieved. The study highlights the importance attached by the farmers for the door delivery of Veterinary services. Strengthening of the infrastructural facilities are also needed in veterinary hospitals. A micro level study conducted in Thiruvananthapuram district has highlighted the importance of animal health service facilities apart from the tendency to treat in premises of the animals. Major findings of the study are shown in BOX 4.16.

4.206 A systematic approach and programme could not be developed for Helminthiasis and mastitis control. The state is implementing a programme for Foot and

Box - 4.16

Major Findings of a Study on Delivery of Animal Health Care Services in Kerala

Detailed household survey on the utilisation of animal health care and breeding services by the livestock owners was conducted in three Panchayats in Thiruvananthapuram district during Feb- April 1999, covering 124 households.

- Clinical Service was utilised once, in 40%, twice in 16% and four times in 4% of the households during the one year period prior the survey and 6% did not utilise the services.
- Among the 86 cases, 55% were treated at the premises of the animal and 45% in the hospital. In the case of minor diseases 60% was presented at the hospital while nearly 77% of major cases were treated at the premises of the animal.
- Average cost of treatment at hospital was Rs. 167 for minor and Rs. 290 for major cases while Rs. 335 for minor and Rs. 507 for major cases in premises of animals. Corresponding charges for Private services were Rs. 454 and 1400/-
- Cost of artificial insemination was Rs. 90 per insemination with cost of semen and transportation/service charge.
- 19% of the respondents have utilised the services of private Veterinarians.
- Problems encountered in Vet hospital/dispensaries 93% of the Doctors in Hospitals indicated lack of medicines and 74% indicated lack of lab facilities.

Source : KAU

Mouth control with the assistance of Government of India. Systematic vaccinations are over up to Central Kerala and now the programme is extended up to the northernmost district, Kasaragod. 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. It is necessary to control worm infestation through proper surveillance and medication. Data regarding outbreaks, attacks and deaths of major contagious diseases of animals in Kerala for the period from 1993 to 2002 is given in Table 4.25.

Table 4.25
Outbreaks, Attacks and Deaths due to Major Contagious Diseases
(in Nos)

Sl. No.	Disease	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
1	Anthrax										
	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	Black Quarter										
	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	Haemorrhagic Septicemia										
	Outbreaks	4	9	3	8	4	9	9	2	4	5
	Attacks	265	123	5	29	308	121	56	27	170	23
	Deaths	214	38	5	10	22	10	64	0	31	12
4	Foot & Mouth Disease										
	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	Rinderpest										
	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

4.207 *Source: Annual Disease Surveillance Programme - 1998 and A H Dep*
Even though vaccinations were carried out, fre-

quent outbreaks were reported which lead to production loss to farmers. During 2002-03, 470 F&M disease outbreaks, 9918 attacks and 814 deaths were reported. Compared to 2000 & 2001 nearly 10 fold increase in out breaks and compared to 2000, 47 fold and 2001 nearly 6 fold increase in attacks occurred. No of deaths increased from 344 in 2001 to 814 in 2003.

4.208 Constant movement of animals from neighbouring states to our State, non awareness among farmers about the diseases and disease control act, less interest among farmers to vaccinate the animals, except at the time outbreaks, absence of a National level strategy for the systematic control measures to eradicate Foot and Mouth Diseases (FMD) from all the States are the main draw backs. More over 80 to 85 per cent of the livestock population is to be covered through vaccination in order to get herd immunity. More involvement of public, local bodies and NGOs are needed for the success of this task.

4.209 A project for the creation of disease free zone with the assistance from NDDB is on the anvil. 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 meager and hence the aim of the project can be

achieved with less effort.

Production of Vaccine in Veterinary Biological Institute, Palode

4.210 Though the State is blessed with a diverse livestock wealth, infectious diseases pose a major threat to the economic viability of the sector. Most of the major diseases of Cattle and Poultry are today controlled by the use of biological products like sera and vaccine. The manufacture of biological products in our country, was initiated at Indian Veterinary Research Institute.

4.211 It is over thirty years ago that the State made a small beginning in biological production by opening the Veterinary Biological Institute. The Veterinary Biologicals, 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 Septicaemia broth Vaccine, Haemorrhagic Septicemia oil adjuvant Vaccine, Black Quarter Vaccine and Anthrax Spore vaccine are manufactured here. The production details are shown in Table 4.26.

Table 4.26
Production of Vaccine by Veterinary Biological Institute (1998-99 to 2003-04)
 (in lakh doses)

Sl. No.	Name of Vaccine	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04*
1	RDVK	18.458	13.316	21.024	26.654	54.45	60.01
2	RDVF	7.262	20.659	5.132	12.872	17.61	23.31
3	FPV	0.418	8.664	1.003	3.115	.45	-
4	DPV	3.542	12.972	9.110	11.462	10.64	23.87
5	HS Oil adjuvant	0.706	0.327	0.390	0.132	0.411	0.49
6	HS Broth	0.839	0.763	0.734	0.734	0.667	0.51
7	BO	0.888	0.839	0.469	0.589	0.667	0.46
8	Anthrax	0.598	0.573	0.429	0.839	0.281	0.08
9	FMD Vaccine**	NA	NA	2.193	8.297	12.154	NA

**Supply from Other Sources * till December 2003

Source: Animal Husbandry Department

4.212 Apart from the production of vaccines, the institute is engaged in the manufacture of diagnostic reagents and other animal health products. During 2003 three diagnostic antigens were released viz., Rose Bengal Plate test antigen, milk ring test antigen for detection of bovine brucellosis and salmonella pullorum coloured antigen for detection of salmonellosis in poultry and introduced California mastitis test reagent for screening of sub clinical mastitis which accounts for the major loss in dairy sector.

4.213 Compared to previous year poultry vaccine production increased by 54 per cent to 88.18 lakh doses and Live stock vaccine decreased by 12 per cent to 2.03 lakh doses. Number of vaccinations done during the year was 12.11 lakh for livestock and 31.94 lakh doses for poultry recording an increase of 131 per cent and 156 per cent respectively. Details are given in Appendix 4.41. Strengthening of the institute is essential to face the challenges in animal health in the State.

Breeding Support

4.214 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.

4.215 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 cross-

bred and purebred cattle and buffalo bulls. Production of frozen semen during 2001-02 increased to 28.94 lakh doses from 24.78 lakh doses in 1996, the terminal year of 8th Five Year Plan. The increasing trend is maintained throughout the Ninth plan period, but for the year 2000-01 during which production came down to 20.13 lakh doses. But the distribution inside the state remained more or less static. Details are furnished in Appendix 4.42

4.216 The Department of Animal Husbandry is responsible for providing artificial insemination (AI) support. The Tenth plan strategy is for improving the quality of AI Services rather than increasing the number of Centres and the target is to extend the facility to remote areas through realigning / shifting of AI centres with low performance. The number of AI centres under Animal Husbandry Department decreased to 2505 in 2001-02 from 2537 in 2000-01 and by 2002-03 increased to 2523. Along with 364 centres operated by other agencies the total number of AI centres operational is 2887. (Appendix-4.43).

4.217 Animal Husbandry Department has launched a pilot programme to extend artificial insemination facilities to the doorstep of farmers. The number of AI centres has been almost doubled during the last decade. But there is no proportionate increase in the number of inseminations conducted. The achievement in this regard was 2.4 percent only. The number of inseminations done during 2002-03 was 13.69 lakh nos.

and calvings recorded is 4.02 lakh. This is against 3.61 lakh calvings recorded out of 13.72 lakh AI during 2000-01 and 3.33 lakh calvings out of 12.49 lakh AI during 2001-02. In spite of the expansion of AI facilities, the average no of insemination done by one centre showed a decreasing tendency from 570 in 1999-2000 to 542 in 2000-01 and to 499 in 2001-02. By 2002-03 average AI done per Centre increased to 543 showing an increase of 10%. The average number of inseminations needed for producing one calf is four which had remained stagnant over the last 7 years is showing signs of improvement and by 2002-03 it decreased to 3 (Table 4.27).

4.218 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 production 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 cen-

calves are registered under the programme. Another notable achievement of KLD Board is the introduction of Boer goats which are considered far superior to any other goats for meat production into the Kerala scene. It 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 suitable genotype for the goat production system and well adapted to all types of climate.

Cattle Feed

4.220 Based on cattle population, 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 Pattanakad, Malampuzha and Kallettumkara . The cattle feed plant at Pattanakad (300 MT/day capacity) and Malampuzha (200MT /day capacity) are under KCMMF, whereas Kerala Feeds Ltd. Kallettumkara

Table – 4.27
Number of Artificial Inseminations Conducted and Calving Produced

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

Source: Animal Husbandry Department

tre at Puthur etc. During the year, the Board has produced 244 Malabari kids and 57 Boer kids, collected 34 embryos and trained 292 personnel. Other activities of the Board are given in Appendix 4.44

4.219 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 96885 animals have so far been identified and registered under the programme. During 2002-03 against the target of registering 5000 calves, 4406

with an installed capacity of 500 MT/day commissioned in 1999 is 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.

4.221 Due to the heavy demand of the pellet feed from farmers, the proposal to augment the capacity of Malampuzha plant from 200 MT to 300 MT and to introduce Pelletization facility was approved by NDDB and the implementation of project planning activities has already started. During 2002-03, the two plants

under KCMMF produced 1.09 lakh MT of feed jointly as against 1.17 lakh MT produced during 2001-02. There was reduction in the sale from cattle feed plant, Malampuzha due to reduction in indents from APCOS under MRCMPU mainly because of the farmers preference for pellet feed.

4.222 The production of cattle feed by Kerala Feeds Ltd., increased from 0.82 lakh MT in 2001-02 to 1.06 lakh MT in 2002-03 showing a growth of 29.34% and sales from 0.83 lakh MT to 1.07 lakh MT showing a growth of 29.04%. The KFL have received ISO 9001:2000 quality system certification and is the only cattle feed manufacturing facility in India which have received the above certification. The Company has a good marketing network which included 400 dealers and 450 Co-operatives. Their products are also sold in other States like Karnataka and Lakshadweep etc. On the basis of the growing demand, the Company is planning to expand the present capacity to 2 lakh MTs/annum and set up one more Cattle Feed Production Unit in the State.

4.223 Production and sales details of the above cattle feed plants are given in Table 4.28.

Table 4.28.
Production and Sales of Cattle Feed (in Lakh MT)

Sl. No	Factory	Production			Sales		
		2000-01	2001-02	2002-03	2000-01	2001-02	2002-03
1	Pattanam (KCMMF)	0.71			0.67	0.71	0.68
2	Malampuzha (KCMMF)	0.55	1.17	1.09	0.57	0.45	0.40
3	Kerala Feeds Ltd.	0.72	0.82	1.06	0.71	0.83	1.07
	Total	1.98	1.99	2.15	1.95	1.99	2.15

Better Management of Young Calves

4.224 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' was under implementation during Eighth

Plan through dairy co-operatives. From 1997-98, i.e. the first year of the Ninth Five Year Plan, this scheme is being implemented by local government as State Sponsored Programme. This is one of the effective programmes of Animal Husbandry Department and it has helped in reducing the age at maturity and inter calving period and improving milk production. Even though 6074 calves were enrolled during Ninth Plan period enrolments during the last three years were comparatively lower than the first two years. During 2002-03, 6700 calves and during 2003-04 (as on November) 2975 calves were enrolled in the programme.

Table 4.29.
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*	2975

* Up to November 2003. Source: A H Dept.

Details are furnished in Table 4.29.

4.225 According to a recent study, "Evaluation of Status of Production Performance of Crossbred Cows in Selected Districts of Kerala", conducted in 3 districts of Kerala by KLD Board, even though the percentage of enrollment in all the 3 districts of Palakkad, Idukki and Alappuzha together constitute only 3.9 per cent of the total enrollment, a trend in

peak yield to increase with percentage of enrollment is noticed. Among the 3 districts a higher peak yield is noted in Alappuzha where the enrollment of surveyed cows in the calf subsidy scheme in their calf hood is higher compared to other two districts. According to the study enrolment under the scheme ensures a better calf hood and heifer management resulting better yielding cows.

Kamadhenu Insurance Scheme

4.226 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 Animal Husbandry Department provides technical assistance and the local government are subsidising the premium at varying rates. The response from the farmers as well as the local government for participation in the scheme is encouraging. The number of cows insured during 2001-02 was 3037 and during 2002-03 was 6425. Details of number of farmers insured, amount of premium remitted and claims settled are given in Table 4.30.

annual output of over 69 million MT of milk. India's milk output during 2001-02 was estimated to be 84.6 million MT and is expected to reach the level of 88 million MT during 2002-03.

4.229 The National Dairy Development Board (NDDB) has drawn up a perspective plan 2010 to strengthen the country's cooperative dairy sector. NDDB has already released Rs. 760 million to district milk unions for activities such as productivity enhancement, quality assurance, cooperative business including milk marketing and building a national information network. It has implemented the Women Dairy Cooperative Leadership Programme in 50 districts across the country, increasing women dairy farmers' participation in dairy cooperatives.

Table 4.30
Kamadhenu Insurance Scheme Progress of Implementation

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 Reimbursement	
				No.	Amount (Rs. lakh)	No.	Amount (Rs. lakh)	No.	Amount (Rs. lakh)
1998-99	42583	69003	339.99	NA	NA	NA	NA	NA	NA
1999-00	37008	61288	277.24						
2000-01	28677	45607	160.25	754	52.86	16	12.36	781	12.20
2001-02	3037	3796	70.62	1009	70.55	16	8.41	761	20.32
2002-03	6245	8838	58.25	875	73.58	52	5.60	746	25.55

Source: Animal Husbandry Department

Prices

4.227 Average price of important inputs and products of livestock sector for the last seven years is presented in Appendix 4.45. Compared to 2001-02 there was an increase in the price of all meat other than broiler and pork during 2002-03. In the case of all other products though the prices showed a slight upward tendency. During the year, price of milk recorded a decrease of 0.39 per cent, broiler chicken 3.96 percent, fowl-white egg 2.1 per cent, fowl- brown egg 2.4 percent. On the input side, the cost of groundnut cake remained unchanged and coconut cake increased by 5.49 percent, gingely oil cake decreased by 2.6 per cent straw by 3.05 per cent and fodder by 26.35 per cent.

4.230 Dairy sector in Kerala made spectacular progress during the last three decades. Milk marketing continues to be largely under private sector. However, with the inception of Operation Flood Programme organised sector under the co-operative fold started giving lead for the production and marketing of milk in Kerala. 'Milma' has installed a milk powder plant of a capacity of 10 MT/day. Besides marketing support, the Federation also provides extension support, input delivery service and health cover. The year 2002-03 was a land mark for Central products Dairy as it became the first dairy in Kerala to get ISO 9002 Certificate for manufacture of products.

Dairy Development

4.228 The Indian dairy industry registered a substantial growth from the 8th Plan onwards, achieving an

4.231 Extension support for dairy development, fodder development programmes, advisory service, quality control measures, training of farmers etc. are the

Box - 4.17

World Dairy Situation 2003

- World milk production in 2003 is estimated at 6000 million MT or 1.1% more than the year before.
- The speed of growth has slowed down in comparison with earlier year, affected by drought and depressed market returns, but still within the average over the last 10 years and The reduction in growth does not seem to decrease in Southern Asia and Latin America.
- In the last 10 years from 1992 to 2002 milk production grew by 63 million MT of which, cow milk was up by 40 million MT or 0.9% on an average where as buffalo milk grew in total 20 million MT or 3.5% on average which is mainly produced in Indian sub continent. In relative terms increase in Buffalo milk is the fastest, but cow milk production is the strongest in absolute volumes.
- Cow milk production is expected to reach 505 million MT by 2003. Buffalo milk production exceeded 70 million MT in 2002 still continuing its expansion and as per INC report an expansion of herd by 1.1 million head or 2.9% over the year before.
- Around 305 million MT of milk (76%)of the milk produced is delivered to dairies for further processing
- On an average around 24% of the milk which is processed in dairies worldwide is immediately treated for liquid consumption, and in addition a certain quantity is produced by reconstitution from milk powders, concentrates and butter oil
- The growth of cheese production will be mainly limited to Europe and North America. that of whole milk powder to Oceania, Latin America and Asia
- The EU, the United States, Japan, Russia and many other countries have increased their imports, but other traditionally importing countries have declined
- Prices of butter and milk powders have remained at the reduced levels of 2002 in many countries, although on the world market they have notably increased in terms of the devalued US Dollar

Source: *Bulletin of International Dairy foundation*

major activities coming under the purview of Dairy Development. The Department is undertaking activities such as promotion of indigenous milk product units and assisting the co-operatives for making them economic. The development programmes are operated through 3090 dairy co-operatives including 2456 Anand pattern societies functioning under KCMMF.

4.232 In order to achieve the desired level of self reliance and then going beyond, the Indian dairy industry will have to make strenuous efforts to upgrade quality of its products to become economically viable and self sustaining. India today is proudly the highest milk producing country. Technology upgradation is must for us to improve our product quality to international levels.

4.233 In Kerala the last decade witnessed considerable increase in demand for packeted milk. Several organisations which do not come under the purview of MMPO are operating in the State and their main source of supply is Tamil Nadu where milk is comparatively cheaper. KAU which had conducted a field survey on the market milk concluded the presence of preservatives and adulterants which are injurious to health in many of the samples.

4.234 During Eighth Plan, quality control units were established in eight districts. Six more units were made operational by 1998-99. Out of the 93487 milk samples tested during 2001-02, 53419 (57%) were of low quality and this clearly speaks of the necessity of en-

forcing strict quality control measures on milk and milk products.

4.235 Realising the importance of fodder development in optimising economic return from the dairy activity, the KLD Board has taken up fodder development as an important activity right from the beginning. KLD Board produced 13.51 MT of fodder seeds during 2002-03 against 15.98 MT of seeds during 2001-02. (see Table 4.31.) During the year, Dairy Development Department procured and supplied 49 MT fodder seeds (from NSC, KLD Board and Government of India) against 73 MT during 2000-01 and 51.30 MT during 2001-02. The Department also supplied 100 lakh root slips/stem cuttings during 2002-03 against 400 lakh during the previous year. The total area covered under fodder cultivation is 2000 ha against 2315 ha during the previous year (Table 4.32) Besides this a large area has been brought under fodder cultivation through programmes under local government.

4.236 As per available details the requirement of dry matter in the State to feed our cattle is 53.6 MT per annum against the internal availability of 16.76 lakh MT. To cover the deficit, intensive fodder cultivation is to be promoted.

4.237 Below given are some of the findings of the ex-post evaluation study of the impact of investment in dairy sector mainly on income and employment generation in Kollam district of Kerala. According to the study purchase of good quality milch animals, better management, availability of infrastructure and linkages in the district helped the dairy farmers to earn reasonable income. The return of investment was adequate to make different types of dairy units viable. The average loan recovery under dairy sector was comparatively better than all other Sectors. Most of the farmers who borrow for purchase of high yielding milch

Table - 4.31
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	50.84

Source: KLD Board Annual Reports

* Including sales to outside agencies and used for KLDB programme

Table 4.32
Procurement & Supply of Fodder seeds / Root Slips and Area Covered under Fodder Cultivation

Sl.No.	Year	Procure ment 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	49.00	49.00	2000	100	500	2500

Source: Dairy Development Departmen

animals are of APL Families. Weaker section could not avail the benefit of loans due to the problem of collateral security. Some of the main constraints are non availability of green/dry fodder and high cost of feed leading to higher maintenance cost of the animals.

Box - 4.18

Major Findings of ex-post Evaluation Study of Dairy Development In Kollam District of Kerala

- Ninety percent of the animals purchased were of European species (Jersy, Brown Swiss, Holstein- Fresian etc.
- The cost of maintenance per animal per year with family labour vary from Rs.15532.93 to Rs.18624.25 and with out family labour it varied between Rs.12332.93 to Rs.15190.92
- High cost of feed and non availability of fodder made the recurring expenditure on animals higher, resulting in reduced margin vis-à-vis the prices of milk
- The average feed and fodder consumption per animal was not adequate for crossbred cows
- Educated youth in rural areas are now coming forward for taking dairy enterprise as a source of self employment, which needs to be encouraged
- Facilities have to be explored for converting fluid milk into ghee, khoa, paneer etc., at the ground level
- Better diary management training has to be imparted to women for better milk yield

Source : NABARD, 2002

Milk Marketing

4.238 The Co-operative Milk Marketing Federation (KCMMF) has a wide spread network of outlets for marketing of milk. With the advent of Operation Flood Programme, under the aegis of the KCMMF, a well established system for regular procurement of milk from the producers for distribution to the regular consumers became a reality and 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 June 2003, the federation was operating through 2517 APCOs with a total membership of 6.85 lakh. The average milk procured per day by APCOs during the year was 7.09 lakh litres against the previous year average of 6.39 lakh litres. The activities of KCMMF are presented in Appendix 4.46.

4.239 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. The excess requirement was met by procurement of fluid milk and milk powder from neighbouring states. Season-wise milk production in Kerala is given in Table 4.33. The procurement of milk by KCMMF stood at 2253, 2484 and 2412 lakh litres respectively 2000, 2001 and 2002 against the sale of 2293, 2080 & 2479 lakh litres during 2000, 2001 & 2002. Procurement and sale of milk by KCMMF stood at 1020 and 1316 lakh litres respectively as on June 2003. Data on procurement and sale of milk by different dairies of KCMMF during 2000 to 2003 is presented in Appendix 4.47.

4.240 The veterinary services rendered by KCMMF are noteworthy. During 2002, services were provided through 16 regular and 38 emergency routes and 0.12 lakh animals were treated as on June 2003. KCMMF has sold 1.03 lakh MT of cattle feed during 2002 Cattle Feed sold during 2003 as at the end of June is 0.66 lakh MT. Also produced 912 MT of ghee and sold 893 MT s of ghee during the year. Year wise details for the period from 1995 to 2003 are furnished in Appendix 4.46.

4.241 Besides milk, a wide variety of milk products are manufactured by KCMMF. A comparison of sales by KCMMF from 2000-01 to 2002-03 is given in Appendix 4.51. Among the products, sale of Milma Plus (bot) chokolik, Paneer sip up & ice cream recorded notable increase compared to previous year. The products introduced during 2002-03 Yoghurt and Skimmed Milk Powder.

Table 4.33
Season wise Estimated Production of Milk

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

Source: Integrated Sample Survey

4.242 As part of joining the national stream to promote co-operative brand in the light of competition from private sector, 'Milma' joined hands with other State Dairy Co-operatives in accepting mnemonic symbol introduced by the NDDDB during 2001-02. It was the first Federation in India to introduce the mnemonic symbol throughout the State. KCMMF have been provided financial support for carrying out local promotional activities by NDDDB. In this connection mass media campaign is being organized by NDDDB in liaison with the Federation. The national level brand building exercise initiated by NDDDB brought rich dividend as well and several mass media campaigns were organised by KCMMF in consultation with NDDDB.

4.243 KCMMF has entered into an agreement with Mother Dairy Foods Ltd., for the formation of a Joint Venture Marketing Company 'Milma Foods Ltd', on 16.12.2002 and the company was registered under the Indian Companies Act 1956 on 17.3.2003. The said Mother Dairy Foods Ltd., is a wholly owned subsidiary of the Mother Dairy Fruit and Vegetable Ltd., which in turn is a wholly owned subsidiary of the National Dairy Development Board. The authorized share capital of Milma Foods Ltd., is Rs.175 lakhs comprising of 17.50 lakhs of equity shares having a face value of Rs.10/- each. The initial paid up capital is Rs.100 lakhs, of which Mother Dairy Foods Ltd., and KCMMF have subscribed to 51 per cent shares and 49 per cent shares respectively. The Joint Venture Company is to undertake the distribution, marketing of liquid milk, milk products and other food products in the State of Kerala.

4.244 Milk processing capacity has touched Rs.8.50 lakh liters per day with the expansion of various projects during the year. The Quality control wing of KCMMF

renders technical and legal assistance to primary dairy co-operatives and regional Milk Unions.

Annual Plan 2002 -03 : A Review

4.245 The total outlay approved for the livestock sub sector under Annual Plan (2002-03) was Rs.42.75 crores. This included Rs.40.75 crores provided for Animal Husbandry and Rs.2 crores for Dairy Development (Table - 4.34). Against this actual expenditure in AH sub sector amounts to Rs.22.86 crores (56.10%) and Dairy Development sub sector amounts to Rs.1.25 crores (62.50%).

4.246 During 2002-03 the envisaged target for milk production was 27.18 lakh MT egg production to 2180 million Nos. and meat production was 1.63 lakh MT Against this the actual achievement is comparatively low ie., 24.19 lakh MT 1347 million Nos and 1.71 lakh MT.

4.247 During the annual plan, major share of plan outlay was directed for the development of Veterinary Services and Animal Health, Expansion of Cross Breeding Facilities, Special Livestock Breeding Programme and Commercial Fodder Production Programme. Approved outlay and expenditure incurred for the major activities during period are given in Table- 4.35

4.248 More utilisation of plan funds are seen to be achieved in the case of Rural Dairy Extension and Farm Advisory Services (71%), Modernisation of Dairy Co-operatives (115%), Extension and Training (88%), Centrally Sponsored Scheme for Veterinary Services for Cattle Development (104%), Poultry Farms and Expansion of Poultry Production (94%) and Commercial Fodder production Programme (99.75%).

Table-4.34
Financial Performance of Livestock sub Sector during Annual Plan 2002-03
 (Rs. in Lakhs)

Sl. No	Sub Sector	Approved Outlay	Expenditure	Expenditure as percent to total outlay
1	Animal Husbandry	4075	2286	56.10
2	Dairy Development	200	125	62.50
Total :Livestock sub sector		4275	2411	56.40

Table: 4.35
Scheme wise Outlays and Expenditure for Major Schemes of Annual Plan
 (Rs. in Lakhs)

Sl. No.	Name of Scheme	Approved Outlay	Actual expenditure
1	Strengthening of Veterinary Service	1420	360.93
2	Expansion of Cross Breeding facilities	675	371.48
3	Special Live Stock Breeding Programme	735	526.88
4	Assistance to Public Sector undertaking viz., KLD Board, KCMMF, KSPDC and MPI	596	-
5	Commercial Fodder Production Programme	170	169.63

4.249 During the year, 13.69 lakh number of artificial inseminations were done through departmental institutions, 11.68 lakh animals were protected against foot and mouth diseases, 29391 personnel were given training in various aspects of Animal Husbandry practices 34 numbers of panchayats were provided with assistance for construction of buildings for veterinary institutions and 1000 infertility camps were conducted. 125 Vigyana Vyapana Kendras were established in Veterinary Institutions and goat farm, Parassala had been made functional.

4.250 An IT unit has been set up at LMTC, Kudappanakunnu and with the assistance of NIC, a data base and MIS software is being build up to record all the activities of the Animal Husbandry department

4.251 Under Dairy Development during 2002-03, with a view to provide a venue for interaction among progressive farmers, experts, bureaucrats so as to shape policies, initiatives etc., 10 district level and 151 block level cattle shows and seminars were conducted. As an useful arena for exchange of ideas and solving micro level problems 9633 farmers ,contact programmes were organised during the period. Also conducted 4248 training programmes for dairy farmers, employees of dairy co-operative societies and rural women.

With a view to reduce the fodder shortage in the State intensive fodder cultivation was promoted in the State and during 2002-03 perennial fodder is cultivated in an area of 1719 ha.

4.252 A review of the Annual Plans of the local bodies indicates that substantial outlays have earmarked by them for livestock development. The flow of grant-in-aid to local bodies for the development of livestock sector was clearly about two times the normal funding as part of the State sector.

FISHERIES DEVELOPMENT

4.253 The National strategy for the Tenth Plan for the 'Fisheries' sector contemplates integrated development of riverine fisheries, habitat restoration and fisheries development of upland waters, development of reservoir fisheries, management of coastal fisheries, deep sea fisheries, vertical and horizontal development of aquaculture, infrastructure development and improved post harvest management, policy intervention including monitoring, control and surveillance.

4.254 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.

4.255 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 back-water and extensive brackish water are a (2.43lakh ha). But the inland fish production accounts for only about 11.06% 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.

4.256 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 2001-02 was 10.85 lakh, which includes 8.36 lakh in marine and 2.49 lakh in the inland sector. The number of active fishermen during the period was 2.21 lakh which comprises of 1.77 lakh in marine and 0.44 lakh in inland sector. Alappuzha district is in the first place in the number of fisher folk with a population of 1.83 lakh followed by Thiruvananthapuram (1.77 lakh). The district-wise details of fisher folk population are presented in Appendix 4.52.

4.257 In the marine sector, organising resource conservation measures under a participatory approach combined with regulatory measures was given the major thrust, as part of the implementation of the strategy and to oversee the conservation measures. With the available speed boats (5) in the Department, patrolling in sea water has been conducted to regulate illicit fishing and 5.60 lakhs of fry and 36.81 lakhs of finger lings were stocked during 2002-

03.

Although the total potential available for inland fish production has not been quantified precisely, it can be roughly projected at 1.5 to 2.0 lakh MT. past performance of these sector reveals that the state could tap only around 50 per cent 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,

Table - 4.37
Estimated Annual Catchable Potential in 0-50 m depth in Kerala

Sl.No.	Category	Potential (MT)
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	Total	571317

Source: CMFRI, Department of Fisheries.

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- 4.36. The species wise marine fisheries potential estimated in the depth range of 0-50 m. in the state is shown in Table-37.

4.259 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

Table: 4.36
Marine Resource Potential in Kerala and India (in Lakh MT)

Sl.No.	Area	Demersal Resources		Pelagic Resources		Total
		0-50m Depth	Beyond 50m Depth	0-50m 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.

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.

Species-wise Composition of Fish Landing

4.260 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 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 2002-03 was 54000 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: 4.53

Fishing Crafts

4.261 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 2002-03. The increase was mainly in the case of motorised crafts which rose from 9914 to 29395 (Table-4.38).

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

4.263 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. Considering the quantity of juveniles landed by various destructive gears as revealed in a preliminary survey conducted by CMFRI along the Kerala coast, the total annual economic loss estimated was about Rs. 600 crores.

4.264 The major findings of a comparative study on fuel consumption and comparative efficiency of trawlers in Kochi and Visakhapattanam are shown in BOX 4.19. The profit margin was estimated to be high in Visakhapattanam owing to the longer duration of fishing and catch rate.

Trend in Production

4.265 World marine and inland capture fisheries produc-

Table 4.38
Fishing Crafts Operating in Kerala (in Nos)

Sl. No.	Category of crafts	1988-89	1998-99	1999-00	2000-01	2001-02	2002-03*
1	Mechanised	3548	4040	4194	4150	4150	4510
2	Motorised	9914	27094	28829	29144	29395	29395
3	Non-motorised	20545	21598	21751	21854	21956	21956
	TOTAL	34007	52732	54774	55148	55501	55501

Source: Directorate of Fisheries *Provisional

Box - 4.19

Major findings of a Study on fuel consumption and Comparative efficiency of trawlers.

- Actual fuel consumption by trawlers collected from 448 fishing trips at Kochi was analysed
- Average fuel consumption is 1250 litres by larger trawlers (above 48' OAL) for seven day trip and the expenditure is Rs. 22680, forming 65% of the operational cost.
- For small and medium vessels, fuel cost works out at Rs. 6070 and 15060 respectively forming above 60% of the operating cost.
- Depending on the design and mode of operation of larger trawlers, the rate of fuel consumption of larger trawlers varied from 13 to 15.5 litre per hour of operation.
- Fuel consumption studies at Visakhapatanam showed an average consumption rate of 4000 litres costing around Rs. 70,800 per 10-20 days fishing trip.
- Both the fuel cost and profit margin were estimated to be high at Visakhapattanam compared to Kochi, mainly due to longer duration of fishing and high catch rate at Visakhapattanam.
- The smaller class of vessels upto (40'OAL) engaged in one day fishing yielded a revenue of Rs. 10120 against its operational expenditure of Rs. 7188 in 2001-02. The medium class vessels (40-48'OAL) with an average of three day fishing trip reported a revenue of Rs. 25100 against an expenditure of Rs. 19700 and larger trawlers brought in a revenue of Rs. 49100 against an expenditure of Rs. 36080 for an average of five days per trip.

Source: CIFT, 2001-0

tion increased on average by as much as 6 per cent per year from 18 million tonnes in 1950 to 56 million tonnes in 1969. During the 1970s and 1980s, the average rate of increase declined to 2 per cent per year, falling to almost zero in the 1990s. This levelling of the total catch following the general trend of most of the World's fishing areas, which have apparently reached their maximum potential for capture fisheries production. With the majority of stocks being fully exploited, it is therefore unlikely that substantial increase in total catch will be obtained from the marine sector. In

contrast, growth in aquaculture production has shown the opposite tendency. Starting from an insignificant total production, inland and marine aquaculture production grew by about 5 per cent per year between 1950 and 1969 and by about 8 per cent per year during the 1970s and 1980s and further to 10 per cent since 1990s. The global pattern of fish production owe much to the activities of China, which accounts for 32 per cent of world production.

4.266 The marine fish production in the state is stagnant and seems to have achieved a saturation level whereas the inland fish production showed signs of improvement for 1999-00 followed by slight decline. During 2002-03, marine production increased from 5.94 lakh tonnes in 2001-02 to 6.03 lakh tonnes and inland fish production declined slightly from 0.78 lakh tonnes to 0.75 lakh tonnes. (Table - 4.39).

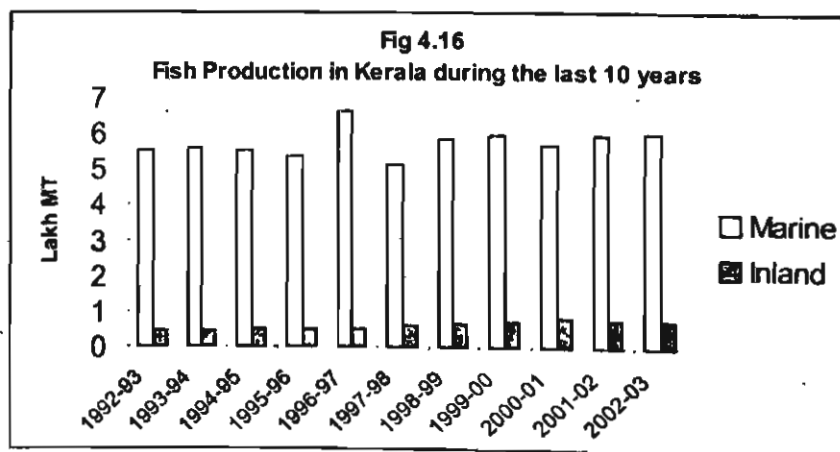
Export

4.267 The marine products export from the state dur-

Table 4.39
Fish Production in Kerala
during the last 5 years

(in Lakh MT)

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



ing 2002-03 was 81393MT valued at Rs. 1047 crores constituting 17 per cent in terms of volume and 15 per cent in terms of value to Indian marine products export. The export of marine products from the state during 2002-03 increased by 12 per cent in quantity terms and 10 per cent in rupee terms and 8 per cent in dollar terms compared to the previous year. The overall export from the country also increased during this period by 16 per cent in quantity and 7.56 per cent in value terms.

4.268 The major export item is frozen shrimp which constitutes 52 per cent in value term of total export from the State during 2002-03 while National level the corresponding share is 67 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% in value terms in 2002-03.

4.269 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 15 percent in 2002-03 and the share in value declined to 17 per cent from 22 per cent. (Table 4.40). European Union continues to be the major market for the marine products exported from Kerala with a share of 47 per cent in value during 2002-03 followed by USA (20%) relegating Japan to the third position (13%).

World Shrimp Situation

4.270 The world production of shrimp in 2001 was 4.2 million tonnes, one per cent higher than that in 2000. At 1.2 million tonnes, China remains the largest shrimp producer, despite a 2.5 per cent decline in volume in 2001. The drop in Chinese output was partially balanced by production increase in Mexico (+11%), Indonesia (+8%) and Vietnam (+4%) Shrimp production

Table 4.40
Export of Marine Products from Kerala
vis-a-vis India

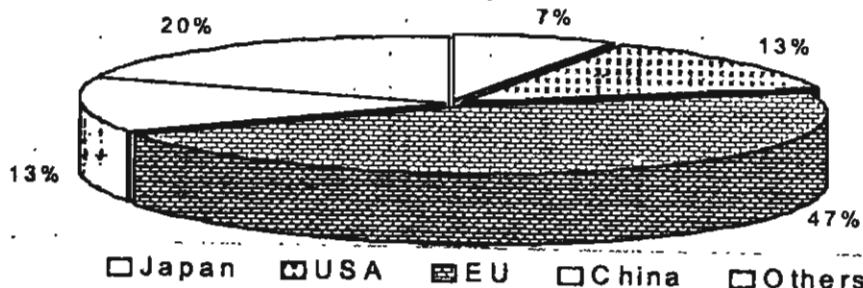
Year		India	Kerala	Share of Kerala (%)
1992-'93	Q* V**	209025 1768	49094 414	23 23
1993-'94	Q V	243960 2503	63848 622	26 25
1994-'95	Q V	307337 3575	74653 817	24 23
1995-'96	Q V	296277 3501	78895 856	26 24
1996-'97	Q V	378199 4121	92288 936	24 22
1997-'98	Q V	385818 4697	89366 948	23 20
1998-99	Q V	302934 4627	70641 817	23 18
1999-00	Q V	343031 5117	92148 1148	27 22
2000-01	Q V	440473 6444	88852 1046	20 16
2001-02	Q V	424470 5957	72756 951	17 16
2002-03	Q V	467297 6881	81393 1046	17 15

*Q: Quantity in MT., **V: Value in . crore Rs
Source: MPEDA

in Ecuador which had fallen by over 50% in 2000 due to white spot disease, rebounded by 22% in 2001 to 63000 MT. At over 8 lakh MT, black tiger shrimp remains the most important species in world production.

4.271 Global shrimp markets during the first half of 2003 have shown a continuation of the weak price levels for farmed shrimps which characterised trade in 2002. This trend is a result of a strong supply situation

Fig 4.17
Export of Marine Products from Kerala
2002-03



for farmed shrimp combined with weak demand in key markets. The steady decline in shrimp prices began in 2001 and continued through 2002. The decline was due to a variety of factors, demand weakened in Japan as well as due to weak Yen. (Box 4.20) In fact, with above average inventories of black tiger prawns and no apparent shortage of white shrimp supplies from Latin America and Asia, prices may weaken further over the coming months in 2003-04. Poor economic outlook projected for EU also may weaken the demand.

4.272 In the EU, the appreciation of Euro vis-a-vis the

Box - 4.20

Income Elasticity of Demand for Fresh Fish in Japan

- A recent study of fish consumption in Japan showed that in the period 1965 to 1998, the income elasticity of demand for fresh fish by Japanese households was -0.26. For each 1 per cent increase in average income, Japanese households demanded 0.26% less volume of fresh fish.

Source: FAO - 2000

dollar effectively reduced import prices for shrimp and prices normally are quoted in dollar terms. On the supply side, the EU ban on Chinese seafood resulted in increased offers of Chinese shrimp on the US market during 2002. Finally increase aquaculture production in countries such as Vietnam and Brazil as well as strong catch levels for European cold water shrimp contributed to the negative price trend for the products in key markets.

4.273 The strong supply situation for farmed shrimps reflected the increased imports again in 2003 in the USA, the leading shrimp import market, as well as in France, the EU's second import market. Shrimp de-

mand in both the countries has benefited from weaker price particularly in relation to farmed shrimp products. Weak prices have not had the same impact in Japan where volume of imports are less in 2002. Japan was the second major market for export of shrimp from Kerala in 2001 while in 2002, it became third after USA. A negative import trend is also evident in Spain and Italy both of which have been affected by the reduced availability of Argentinean shrimp. EU import ban continues to be applicable to Chinese farmed shrimp imports.

4.274 EU shrimp prices are generally lower than the ones in Japan and in the USA. Kerala is exporting a major share to EU market. The average unit value of export from India to different countries is shown in table. The EU market does not play a dominant role in fixing tropical shrimp prices, rather followed the price trend set by Japan.

4.275 Thailand is the world's leading shrimp exporter, is also the leading shrimp supplier to the USA, accounting for over a quarter of volume of imports. China is the largest producer of farmed shrimp and the second largest supplier to the US market in 2002 and increased exports in 2003 first quarter by over 60 per cent especially due to restrictions on farmed shrimp imports in EU. Vietnam, the third largest supplier to US also increased its share in 2003.

Infrastructure facilities

4.276 Out of the 367 freezing plants in the country, 101 units are located in Kerala alone, of which 52 units are having EU standards. Modernisation of processing facilities by the rest of the units for EU approval and production of value added items will increase the

Table: 4.41
Average Unit Value Realisation of Frozen Shrimp exported from India for the period from 1997-98 to 2001-02

(in Rs. /Kg.)

Sl. No	Countries	Year				
		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

export of marine products from Kerala.

Quality Standards

4.277 Competition in the international market is increasing and Kerala has to keep the quality standards to retain the market share. The Sanitary and Phyto Sanitary (SPS) agreement 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. The salient findings of a study on 100 fish export processing units, of which 50 from Kochi, 25 from Calcutta and 25 from Mumbai and shown in Box: 4.21.

Reservoir Fisheries

4.278 Under the Pilot project assisted by Germany, culture fisheries was taken up 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 6776 ha. There are 30 reservoirs with waterspread area of 43,000 ha. in the state suitable for taking up fish culture.

4.279 During 2002-03, a total of 5.90 lakh catla, 8.33 lakh rohu, 5.8 l of mrigal and 7.13 lakh of Labea were stocked in these reservoirs. Total catch recorded was 69.22 tonnes valued at Rs. 27.60 lakhs. The average productivity is very low. (Table 4-42)

4.280 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 1.70 tonnes in Walayar reser-

Box - 4.21

Major Findings of a Study on Fish Export Processing Units

- The Nominal Protection Coefficients (NPCs) without compliance of international standards with SPS measures vary from 0.46 for Sardines to 0.72 for Tuna. A ratio of less than 1 implies comparative advantage.
- The NPC with food safety ranged from 0.57 for Sardine to 0.81 for Tuna
- The magnitude of erosion in competitiveness varied from as high as 24 per cent in the case of Ribbon fish to about 10% in the case of cuttle fish.
- Prawn and Shrimps also suffered a set back in their export competitiveness.
- Installation cost of HACCP plants varies from Rs. 10 million to Rs. 25 million. On an average an export processing firm is entrusted to spend about Rs. 2 million/yr to maintain HACCP system.
- On an average, HACCP implementation has led to pre export and handling cost of Rs. 7 per kg. Small firm had to incur Rs. 10 /kg. on pre export processing of fish

Source: Anjana and Praduman Kumar 2003

voir to 111.28 tonnes in Meenkara in 2002-03. 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.

4.281 Reservoirs offer good potential for fisheries de-

Table: 4. 42
Reservoirs in Kerala with average fish productivity (2002-03)

Sl. No.	Name of Reservoir	Production (Kg)	Productivity (Kg/ha)
1.	Pothundy Reservoir	3400	9.37
2.	Mangalam Reservoir	14210	35.88
3.	Walayar Reservoir	440	1.70
4.	Kanhirapuzha Reservoir	2400	5.26
5.	Chulliar Reservoir	4340	27.30
6.	Meenkara Reservoir	27820	111.28
7.	Malampuzha Reservoir	-	-
8.	Peechi Reservoir	4470	3.54
9.	Vazhani Reservoir	12140	47.61
10	Peruvannamozhi	-	-
	Total	69220	

velopment 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.

Ornamental Fisheries

4.282 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.

Major developmental Programmes

4.283 The major developmental programmes implemented during the Plan period include, NCDC assisted Integrated fisheries Development Project, schemes implemented with financial assistance from NBCDC, 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.

1. Integrated Fisheries Development Project

4.284 The NCDC assisted Integrated Fisheries Development Project is implemented by Matsyafed. The scheme components include distribution of fishing inputs, setting up of adequate village level infrastructure for marketing, working capital assistance, and assistance for execution and trading facilities. During 2002-03, a total of 384 crafts and 889 OBMs were distributed, and the total expenditure was Rs. 27.95 crores. Details are shown in Appendix: 4.55 MATSYAFED has completed four phases of the integrated fisheries development project. The supply of fishing inputs at subsidised prices and a lower rate of interest led to group ownership system among fishermen.

2. Theerasmridhi Scheme

4.285A special central assistance scheme for Rs. 15 crore was taken up to assist renovation of dilapidated houses of fishermen, drinking water supply and sanitation of fishermen villages. Drinking water facilities were provided in 15 fishing villages at a cost of Rs.

3.00 crore, common sanitation for 80 units, individual sanitation for 8000 units and repairs and sanitation of 4000 houses were assisted under this scheme during 2002-03.

3. Social Security and livelihood support to fishermen Community

4.286 A number of programmes were 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-4.56

4.287 Under NFWF assisted housing scheme, under the Model villages development Programme, 8729 houses were constructed spending Rs. 35.02 crores during Ninth Plan. 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.

4.288 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.

4.289 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 2002-03, 1.06 lakh beneficiaries were assisted and the total expenditure was Rs. 6.08 crores.

4. Schemes Implemented with the Financial Assistance of NBCDFC

4.290 Special programmes assisted by the National Backward Classes Development Corporation (NBCDFC) were also under implementation. With the financial assistance of NBCDFC, 493 screw pine mat making units, 46 cold storages and 916 fish marketing units have been established for providing additional employment opportunities to fishermen. In addition, autorikshaws have also been supplied under this scheme for

promoting self-employment among fishermen.

Fishing Harbours and Landing Centres

4.291 Neendakara, Munambam, Puthiyappa, Mopla Bay and Chombal- have been completed and commissioned. The progress of work in respect of the ongoing Harbours and landing centres is given in Appendix.4.58 and Table 4.43. All the harbours are constructed with 50% Central assistance. The three projects Thankassery, Munambam and Neendakara, the central 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.

4.292 Vizhinjam Harbour was scheduled for commissioned by March 1999. Rahabilitation issues, communal tensions, litigation by the contractors etc. have contributed to the delay in commissioning. Work on Muthalappozhy, Ponnani and Kayamkulam are progressing. The total revenue collected during 2002-03 was Rs. 171.25 lakhs, out of which Neendakara contributed about 50 per cent (Appendix 4.59).

4.293 As a part of modernising Government Programme, a policy on long pending infrastructure projects was approved. Detailed status report and action plan for completion of all long pending harbours would be prepared during 2004-05.

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

4.295 The construction of fishing harbours and landing centres has to be done on a strict project mode with different methods of financing and participation.

FFDA & BFFDA

4.296 The Fish Farmers' Development Agencies are functioning in all the districts for 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 4390 ha. in 2002-03. During the year 21802 farmers were benefited and 21.8 lakh fingerlings were stocked and fish production was 705 tonnes from these activities.. 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% 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.

4.297 Brackish Water Fish/Prawn Farmers' Development Agencies are functioning in six districts. An area of 592 ha. has been brought under Prawn culture through the promotional programmes implemented during 2002-03. During the year, 1708 farmers were benefited and 36.83 lakh fingerlings were stocked.

4.298 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.

Table -4. 43
Fishing Harbours in Kerala (in Lakh Rs)

Sl.No.	Name of Fishing Harbour	Total estimated cost		Year of starting	Expenditure upto March 2003
		Original	Revised		
1.	Vizhinjam	704.00	1583.00 *	1987	1487.871
2.	Muthalappozhi	1366.00	-	2000	249.245
3.	Thankasseri	1980.50	4385.50 *	1991	3920.540
4.	Neendakara	585.00	622	1982	808.193
5.	Kayamkulam	624.60	1770.00	1994	658.959
6.	Munambam	1167.20	1895.80 *	1988	1717.659
7.	Puthaiappa	527.00	962.50	1988	1149.093
8.	Chombal	556.00	975.00	1992	876.093
9.	Mopla Bay	564.00	816.00	1992	1007.986
10.	Ponnani	2759.40	-	2001	243.450
11.	Thalai	1370.00	-	-	40.972

Source: Harbour Engineering Department

* Revised Estimated submitted to Government for sanction

Integrated Development of aquaculture in Kuttanad

4.299 The project envisages augmentation of fish/prawn production by introducing eco friendly culture and ranching practices in greater Kuttanad region covering 100 ha. of waterlogged areas during 2002-03 with the participation of local bodies. This is a credit linked programme and production of 40 MT of fish and 75 MT of Scampi (*Macrobrachium*) are projected.

Co-Operation

4.300 The spread and growth of co-operatives in different sectors were nurtured under development plans with government initiatives and government finance. As co-operative movement is a people's movement, the restrictions imposed by government has affected the growth of the sector. The Planning Commission constituted the Bhabha Perkash Commission 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.

4.301 The Law Reforms Committee 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 revitalise the co-operative sector in the state.

4.302 The amendments to the state Co-operative Societies Act on the lines of the Model Co-operative Societies Act as recommended by Chaudhary Brahma Perkash Committee has been under the consideration of various State governments. Nine State governments have enacted the Parallel Co-operative Legislation for self reliant Co-operatives, containing the enacted features of the Model Act.

4.303 The Companies Act, 2002 came into force from February 6, 2003. The legislation provides for incorporation of specially structured producer companies possessing the unique characteristics of co-operative business. The legislation also offers a purely voluntary option for existing co-operatives to become producer companies.

4.304 A study on innovative behaviour in 30 cooperatives in Kerala was undertaken in 2001-02 by the Tilburg University. In innovative co-operatives the

Box - 4.22

Major reforms introduced in the co-operative sector in the country from November 2002 to October 2003.

- The Companies (Amendment) Bill, 2002 was passed in the Lok Sabha on December 10, 2002, and came into force from February 6, 2003. The legislation provides for incorporation of specially structured Producer Companies possessing the unique characteristics of a co-operative business and also offers a purely voluntary option for existing co-operatives to become Producer Companies.
- The Government of India committed Rs.100 crore for recapitalisation of co-operative credit institutions and gave assurance for consideration of provision of additional funds depending on the pace of reforms, in the Union Budget for the year 2003-04.
- The Uttaranchal Self-Reliant Co-operative Act, 2003 was notified on May 21, 2003. Uttaranchal has now become the ninth State in the country after Andhra Pradesh, Madhya Pradesh, Chhattisgarh, Karnataka, Orissa, Bihar, Jharkhand and Jammu & Kashmir to enact a parallel co-operative legislation for self reliant co-operatives.
- The Banking Regulation (Amendment) and Miscellaneous Provisions Bill, 2003 was introduced by the Government in the Lok Sabha on August 13, 2003. It proposes 'freezing' of all regulatory exemptions currently enjoyed by co-operatives banks under the Banking Regulation Act, 1949 thereby bringing the regulation of the sector at par with commercial banks. The bill also bars connected lending involving lending to related persons and associated companies by the banking co-operatives societies.
- The parliament passed the National Bank for Agricultural and Rural Development (Amendment) Bill, 2003 on August 21, 2003. The bill seeks to provide direct refinance of District Central Co-operative banks (DCCBs).

democratic organs participated and different organs of the cooperatives at different stages of innovation process, while in non-innovative ones, participation of such organs were absent. The major findings of the study are shown in BOX. 4.23: Lack of professionalism was also highlighted. This study again highlights the im-

portance of reforms in cooperative sector for innovative behaviour.

Box - 4.23

Major Findings of a Study on Innovative Behaviour in Co-operatives

- A total of 30 co-operatives were covered, which carried out a total of 57 innovations of different levels of impact. Out of these 57, 35 were product innovative, where as 11 were process innovation and another 11 market innovations. Impact scores are given and identified 10 as innovative and 20 as non-innovative.
- 10 innovative co-operatives produced 34 innovations, 30 of which are of medium or high impact to the firm. Where as the (20) non-innovative co-operatives produced only 23 innovations, of which 12 are of low impact and only 3 are of high impact. The 12 low impact and 7 of the medium impact innovations were product innovations. In the five year period of the research, the innovative co-operatives present 0.7 innovations a year on an average, the non-innovative one on an average only 0.2
- Neither the government nor the apex organization played a significant role, neither in the innovative nor in the non-innovative co-operatives.
- The innovative ones produced about three times as many innovations as the non-innovative ones did and these innovations were for a greater part of a medium or high impact whereas those of the others were more of a low or medium impact.
- Co-operatives with a higher turn over (size), direct export (distribution channel), sales abroad (market) and in Kannur district (location) were more innovative.
- Appointments of Secretaries of the co-operatives were not always based on managerial skills but often rather on political linkages.
- Co-operatives should be encouraged to market their own products
- Government and related institutions should play a role in teaching skills to managers to be appointed in the organisations.

Source: Tilburg University, 2002.

Support by NCDC

4.305. The role and relevance of NCDC in the context of promotion and development activities leading to production, processing, storage and marketing of agricultural produce food stuffs and various other commodities in the co-operative sector was very significant. Considering the over all improvement in the efficiency levels of co-operative, Kerala has been continuing to avail NCDC's development assistance to the co-operatives in the state. As on March 2003 the Corporation has released a total financial assistance of Rs.544.48 crores as term loan . which is 7.67 per cent of total amount released in the country. The amount released by NCDC from 1962 - '63 are given in Table: 4.44. During 2003 Rs.39.75 crores was availed by the co-operative department, out of Rs.50.18 crores An amount of Rs.8.06 crores (16.06%) was released for co-operatives of weaker sections like Fisheries, Handloom, Coir, SC/ST etc. The sector-wise sanction and release of assistance from NCDC in 2001-02 and 2002-03 are furnished in Appendix 4.60 and 4.61

4.306 The NCDC loans have been high interest loans and even though recently steps have been taken to reduce interests rates, further downward revision is needed in tune with the market interest rates. Otherwise the need for channeling the loans through a special agency may have to be reviewed.

Table 4.44
Year wise release of NCDC loans with interest rates

(in Crore Rs)

Year	Release of fund	Interest 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
Total	544.48	

The Primary Agricultural Credit Societies (PACS)

4.307 The Primary Agricultural Credit Societies (PACS) are institutions at the grass root level for the disbursement of co-operative credit. As on March 2003, there were 1628 PACS with a total membership of 2.26 crores with a paid up share capital of Rs. 506 crores and reserves of Rs. 925 crores. During 2002-03, out of 1628 societies, 754 societies were on profit and 874 were on loss and 1560 societies have paid secre-

taries.

4.308 To solve the problem of resource scarcity in Co-operative Banks, this year NABARD had introduced a new scheme in which minimum involvement would not be insisted upon and 50 per cent of the money disbursed would be reimbursed by NABARD. NABARD had also come out with a scheme of Gold Loans for crop production

4.309 The total loan disbursed through PACs during 2002-03 was Rs.8750.50 crores against a disbursement of Rs.5859.62 crores during the previous year. The credit disbursed for agricultural purposes was Rs. 4554.97 crores during 2002-03 against Rs.2100.64 crores in 2001-02. Out of the total credit the percentage disbursed to agriculture was 52 per cent as against 35.8 per cent in the previous year. A significant increase in the rate of total disbursement was noted in the agriculture sector. Details are furnished in appendix 4.62 and 4.63

4.310 Even though the PACs are multi functional societies for multi purposes, the challenges faced by them have increased the number of loss making societies. The increased in deposit per society shows the ability to mobilize funds locally, while mobilized deposits have not seen deployed in a profitable manner. The problem of over dues continues to be a major challenge confronting the PACs in the State. The loans outstanding have increased by 55 per cent between 1999-00 and 2002-03 while loan overdue increased by 113 per cent during this period.

One Time Settlement Scheme (OTS)

4.311 The One Time Settlement Scheme was implemented first time in the co-operative sector with a view to reduce 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 draught/flood and consequent loss of agricultural products. The defaulters of this scheme were exempted from the payment of penal interest and compound interest if they remit back the dues in lumpsum and they were also permitted to pay back the dues in ten installments. In this case the interest will be charged at the current rate of document rate whichever is less. This scheme was implemented in all the co-operative banks. Subsequently the scheme was further extended up to March 31,2004. By virtue of this, the interest rate will be

calculated @ 12 per cent on the amount outstanding as on March 31, 2002. The KSCB and DCBS have also implemented the OTS scheme as suggested by the Reserve Bank of India. About 3185 co-operative societies have implemented the scheme and 3.64 lakhs members are benefitted. The societies were able to collect Rs.668.19 crores as over due.

A brief Review of Plan Schemes 2002-03

4.312 The budget provision for the year 2002-03 was Rs.1400.00 lakhs and the expenditure was Rs.1226.18 lakhs. The sub sector wise financial achievement during the year is shown in Table 4.45.

Table: 4.45
Financial Achievement during 2002-03
(in Lakh Rs)

Sl. No	Sub Sector	Financial Achievement
1	Credit Co-operatives	125.04
2	Processing Co-operatives	201.08
3	Consumer Co-operatives	143.83
4	Housing Co-operatives	100.00
5	Research, Education and Training	49.50
6	Modernisation and Administrative Reforms	161.16
7	Other Co-operatives	445.17
	Total	1226.18

4.313 During the year, in order to strengthen the co-operative base through commercial operations 34 per cent of the total outlay (Rs.475.00 lakhs) was earmarked for rehabilitation programme for weak but potential co-operatives and expansion and diversification of activities of co-operatives. Under these schemes all categories of co-operative societies, such as Marketing, Consumer, Housing etc. with viable project proposals were assisted. Of the total outlay of Rs.250.00 lakhs, 238.07 lakhs was expended during 2002-03 under the rehabilitation programme by way of subsidy, share and loan. Under Expansion and Diversification Scheme out of the total outlay of Rs.225.00 lakhs Rs.158.63 lakhs was expended as subsidy, share and loan.

4.314 Under the Scheme of Assistance to PACS subsidy and share were given to 18 societies and 67 societies respectively and 42 SHGs were formed As on 03 / 2003, 554 PACs were selected for the implemen-

tation of SHGs by forming 7384 groups.. The members of SHGs consists of landless labours, artisans, small and marginal farmers, tribals etc. Short term and medium term loans for the cultivation of seasonal crops were disbursed through 1685 Primary Agricultural Credit Societies and 38 Farmers Service Co-operative Banks at the grass root level. Out of a total outlay of Rs 90.00 lakhs, Rs.69.04 lakhs was expended for the above purposes.

4.315 During 2002-03, seven Processing and Marketing Societies were assisted. Out of Rs.240.00 lakhs, Rs.201.00 lakhs expended. Most of the societies were rubber based processing societies. Share capital contribution of Rs. 5.00 lakhs was given to Cattle feed Processing Unit, Kannur.

4.316 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. Four of them are exclusively for SC/ST candidates. Two advanced management institutes of co-operatives ie. ICM, TVPM, ICM Kannur are under the control of National Council for co-operatives Training, New Delhi, which are established for imparting advanced management training programmes. In the year 2002-03 Rs.49.50 lakhs has been spent on training programme. Under the modernization of Co-operative Department Rs.12.30 lakhs has been spent for computerisation . Government has sanctioned share capital contribution of Rs. 80.00 lakhs to Primary Housing Co-operatives during 2002-03.

Deposit Mobilisation Campaign by Co-operative credit institutions

4.317 Deposit Mobilisation Campaigns by Co-operative Credit Institutions were conducted during the period. The target was to mobilise additional deposit of Rs.200.00 crores by the Co-operative Credit Institutions and the deposit of Rs.853.20 crores has been mobilised during 2002. The target for 2003 was Rs.400.00 crores. Year-wise target and achievement is given in the Table 4.46

Table 4.46
Targets and Achievements of deposit mobilisation programme of Co operatives in Kerala (in Crore Rs)

Year	Target	Achievement	Percentage
1999	200.00	725.57	362.79
2000	200.00	775.78	387.89
2001	200.00	1026.86	513.43
2002	200.00	853.20	426.60
2003	400.00	909.61	227.00

Tribal Co-operatives

4.318 Across the country, tribal communities do continue to depend on the forests for their daily needs as well as for their livelihoods, especially on minor forest produce. A study was conducted by International Labour Organisation in India on Tribal Co-operatives covering five States and major findings are shown in Box. 4.24: The Co-operatives were found effective when they were designed and managed by members. In Kerala the Tribal cooperatives are involved in collection of minor forest produce and more organised processing facilities are needed for better realization of prices to the members.

Box - 4.24

Major Findings of a Study on Tribal Co-operatives in India

- Ten primary co-operatives in Gujarat, Chattisgarh, Jharkhand, Orissa and Andhra Pradesh were studied.
- Co-operative for tribal communities were most effective when they were designed and managed by the members.
- Co-operatives for tribal communities were meant to be multipurpose, but had not in fact done significant business either in credit or in produce marketing. Reasons included insensitivity of the Co-operatives to tribal members, repeated reorganisation in terms of geographical areas/membership, unaccountable management, delayed audit etc. These co-operatives tended to sell more to the local communities, than they bought from them.
- Women were the Primary collectors of several items of minor forest produce, but they did not have a presence in the tribal co-operatives.
- Most of the co-operatives had not been voluntarily set up by the members.
- Interference in co-operation were common.

Source : ILO – 2002

Kerala State Federation of Scheduled Castes and Scheduled Tribes Development Co-operative Limited

4.319 The Kerala State Federation of Scheduled Castes and Scheduled Tribes Development Co-operative Limited in the apex institution, consisting of 577 member societies including 482 SC and 95 ST societies. The Federation has an Ayurvedic Medicine Manufacturing Unit. A petrol pump of Indian Oil Corporation was run by the Federation. The sale turnover of the pump is about Rs.65 lakhs/month. The federation also collected and marketed minor forest Produce (MFP) from the 34 ST member societies affiliated to the Federation. The collection and sales during 2001, 2002 was Rs.258.56 lakhs and 298.56 lakhs respectively. The Federation provided employment to furniture making member societies by distributing cane collected from Nilambur forest. With the support of NCDC "Chevakai" powdering unit and Honey Processing Unit are established. The Federation provides financial support to ST member societies by distributing 3.20 lakhs each for construction of MFP godowns.

4.320 A Grain Bank was established during 2002-03 with an amount of Rs. 40.00 lakhs sanctioned by ST Development Department and implemented the scheme through 9 ST Co-operatives for the benefit of tribal population in Wayanad, Attappady and Parambikulam.

Miscellaneous types of Co-operatives

4.321 Miscellaneous types of co-operatives have been organised in the state mainly for the purpose of generating employment opportunities to the unemployed youth and the weaker sections. Co-operative Hospital and Dispensaries, Education Co-operative Societies, Vanitha Co-operative Societies, Motor transport, Autorikshaw and Taxi Drivers Co-operative Societies, Tailors Co-operatives Societies, Washermen Co-operative Societies, Chethuthozhillali Co-operatives 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 extends financial assistance to these societies by way of share capital contribution, grant, loans and subsidy. During 2002-03, assistance was given to 75 societies. Of the total budgeted outlay of Rs. 60.98 lakhs, Rs.48.78 lakhs was expended

Agricultural marketing Co-operatives

4.322 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 challenges.

4.323 The main agencies functioning in co-operative sector for marketing of agricultural products and the institutional network established by them are indicated below.

Central Arecanut and Cocoa Marketing and Processing Co-operative Limited (CAMPCO)

4.324 Central Arecanut and Cocoa Marketing and Processing Co-operative Ltd. (CAMPCO) is a joint venture of State Governments of Kerala and Karnataka, registered under the Multi State Co-operative Societies Act of 1984. The area of operation of this co-operative extends to the entire states of Kerala and Karnataka. CAMPCO has a membership number of 78805, with a paid up capital of Rs.13.47 crores as on 31.03.2003. The main objectives of the co-operative is procurement and sale of Arecanut and Cocoa so as to stabilise market price by way of providing remunerative prices to the growers. CAMPCO had 118 procuring centres through out the two states. It also operates through 13 sales depots all over the states in India at different places. During 2001-02 the procurement and sale of Arecanut was 41242 tonnes and 38370 tonnes valued at Rs 238.59 crores and Rs.249.48 crores respectively. It increased to 44900 tonnes and 42400 tonnes valued at Rs.278.09 crores and 282.73 crores respectively during 2002-03.

4.325 CAMPCO entered into an agreement with M/s. Nestle India Ltd. and initiated manufacture and supply of bulk quantity of chocolates, semi finished product and cocoa products. Total quantity of chocolate sales during 2002-03 is 2426 MTs as against 2626 MTs in 2001-02. It was valued Rs.33.19 crores and Rs.33.01 crores respectively.

4.326 CAMPCO has established one copper sulphate producing unit with 300 MTs capacity/year. During

2002-03, 252.26 MTs valued Rs.138.26 lakhs was sold as against 366 MTs valued Rs.188.04 lakhs during 2001-02.

4.327 Besides, CAMPCO has a small consumer packing unit in the name of "Mangala Supari". In order to explore the market further started to manufacture "Kaja Supari" – a mixture of Cashew and Supari.

Kerala Kera Karshaka Federation Limited (KERAFED)

4.328 KERAFED was created for the integrated development, procurement, processing and marketing of Coconut and its products. Diversified value added products, like Kerakesh food products of coconut such as curry mix, chutney powder, confectioneries etc. are produced and marketed. The federation with the net work of distribution through the patronage of public distribution agencies all over the state. The federation has setup copra dryers of smaller capacities at local levels.

4.329 The procurement of copra by KERAFED during 2001-02 was 1778 MTs, which increased to 5199 MTs during 2002-03. At the same period 6.55 MTs alone was sold with a value of Rs.2.16 lakhs. Details of performance of KERAFED is given in Appendix. 4.66

Kerala State Co-operative Housing Federation

4.330 Kerala State Co-operative Housing Federation is the Apex institution of 207 Primary Housing Co-operatives in the State. The Federation raises funds for lending programmes as share capital from Government of Kerala and member societies, and borrowing from institutions like LIC, HUDCO, HDFC, NHB etc. During 2002-03, the institution received an amount of Rs.1.00 crore Rs.40.00 crores and 25.00 crores from State Government, LIC and NHB respectively. Out of the total amount of Rs.66.00 crores Rs.57.34 crores was spent for the construction of 7596 houses. The Federation has advanced loans for construction of 1,44,955 houses since its inception in 1970 by extending Rs. 766.85 crores.

Kerala State Co-operative Consumer Federation (Consumer Fed.)

4.331 Kerala State Co-operative Consumer Federation Ltd. is the apex institution of consumer co-operatives linked to the whole sale co-operative con-

sumer stores at district level with 12 primary co-operatives as its associated members. The basic objectives of the federation is to procure and distribute the various consumer goods and other products of daily use at reasonable prices through the District Co-operatives, whole sale stores, retail outlets named 'Triveni' and through the primary consumer co-operative societies. It deals with the business of groceries, pulses, cosmetics and toiletries, household and electrical goods note books, office stationery items, generator, Medicine, LPG, foreign liquor etc. The Federation has also established 1000 Neethi stores run by selected Primary Agriculture Credit Societies, besides 14 Neethi Distribution Centres sponsored by Government of Kerala and 17 Neethi Medical Stores are directly run by the Federation. During the year 60,000 gas connections were given through their LPG Bottling Plant. Retail sale of unadulterated foreign liquor through the network of 46 FLI shops in the state is undertaken by the Federation.

4.332 At present the Federation has 162 various units in the state. The total sales turn over for 2002-03 was Rs.305.55. crores.

Kerala State Rubber Co-operative Limited (RUBCO)

4.333 Kerala State Rubber Co-operative Limited, popularly known as RUBCO was formed in 1997 with an authorized share capital of Rs.300.00 crores, with the main objective of setting up industries based on Rubber and Rubber wood. The co-operative is also engaged in the trading business of Natural Rubber of different grades and forms and also acts as a market intervention agency of Government of Kerala for Natural Rubber, including its exports. RUBCO is very actively and effectively involved in the procurement and trading business of natural rubber. Details of procurement, sale and export of Natural Rubber by RUBCO is given in Appendix-4.66

4.334 A Hawaii chappal-manufacturing unit with a production capacity of 36 lakhs pairs per year has been established with the financial assistance of NCDC. Besides conventional Hawaii Chappals, the unit is producing Ultra light weight Hawaii Chappals under the brand name of 'Rubco Rainbow' with the technical assistance of Hitech Setters, Malaysia. During the year 2002-03, the unit produced 12,47,549 pairs of Hawaii Chappal and marketed 13,56,518 pairs

valued at Rs. 440.69 lakhs. The targeted sales for 2003-04 is Rs. 10.00 crores.

4.335 A cycle tyre and tube factory was established on 2000 with a total cost of Rs. 435.00 lakhs. Average monthly domestic sale of the product is 20,000 tyres and 10,000 tubes. RUBCO has contracted to export cycle tyres and tubes to various foreign countries. During 2002-03 the unit produced 776 MT cycle tyres and tubes and marketed 460 MT valued at Rs. 216.47 lakhs. The target for cycle tyres and tubes for the year 2003-04 is Rs. 10.00 crores. Rubberized coir mattress unit was also established with a total project cost of Rs. 27.00 crores. Rubber mattress are marketed under the brand name of 'Dosth, Safar, Heaven, Hitech, Yatri, Heal' etc. During 2002-03 the unit produced 908 MT mattress and marketed 859 MT valued at for Rs. 730.59 lakhs. The targeted sale for 2003-04 is Rs. 30.00 crores.

4.336 Rubco Huat Woods (P) limited is a subsidiary unit of RUBCO engaged in the production of various kinds of furniture in technical collaboration with M/s. Long Huat Group Berhad of Malaysia, situated at Tellichery, Kannur District. The commercial production commenced in 01.01.2000 and the product range covers domestic and office chairs, tables, computer tables, coat, sofa, Wardrobes, Fan stand, T.V. stand etc. The targeted sale for the financial year 2003-04 is Rs. 42.00 crores. Rubco Sreekanthapuram latex (P) limited became a part of Rubco Group and the company manufactures Black Rubber and Pale Latex crepe by processing latex directly from farmers and process the same to get value addition. Rubco Sales International Limited (RSIL) is a subsidiary company registered under Indian Companies Act, through which all products produced by RUBCO Group of companies are marketed.

4.337 The other projects in pipe line in the rubber sector a unit for manufacture of radial and bias tyres for heavy vehicles, passenger cars and for two and three wheelers are established. As a part of diversifying their activities, Rubco has proposed to establish a coconut based processing unit for the production of coconut spray, dried milk powder, activated carbon, tender coconut water and coconut water concentrate, with a total cost of Rs. 75.00 crores, using

imported technology. Also proposed to establish a unit for producing coconut oil directly from fresh coconuts and has already signed MOU with M/s. Kokonut Pacific Private Limited, Australia for technical collaboration of this project. They envisages to establish 200 small scale units in Kerala under the Primary Co-operative Societies.

Integrated Co-operative Development Project (ICDP)

4.338 Integrated Co-operative Development Project (ICDP) aims at the development of selected districts through co-operative net worth and there by the development of horizontal and vertical functional linkages among the co-operatives in the rural economy in an effective manner with the financial assistance of NCDC. Now ICDP covers all the districts in the state. ICDP provides financial assistance to PACs, PAMs SC/ST co-operatives to providing infrastructural facilities such as godown, retail outlet, cash counters iron safe, strong room, furniture etc. Besides, several processing units have been setup under ICDP such as milk pasteurisation plant, cattle feed plant, spices powdering unit, Tea processing plant and Neem cake production plant etc. About 300 persons were provided employment under the units. The project facilitates skill improvement programme through training to the employees to PACs, PAMs and SC/ST co-operatives are also undertaken under the project.

Micro Financing of NABARD

4.339 The micro finance initiative of the National Bank has made a sustainable social movement over a decade. The initiative has attracted the attention of a wide range of stake holders and the relevance of the micro finance programme was greatly enhanced for all the partners through the core strategy of Self Help Groups-bank linkage. NABARD launched this modest pilot project of SHG Bank-programme in 1992,

4.340 The cumulative number of SHGs credit linked with banks increased to 7,17,360 as on March 2003 by extending the programme to more than 116 lakh poor families as against 4,61,478 SHGs benefiting 78 lakh poor house holders as on 31st march 2002. The commutative position of bank loans disbursed and the refinance support provided by the National Bank (NABARD) is given in Table 4.47.

Table: 4.47
SHG-Bank Linkage Programme – Cumulative Progress
(As on 31 March)

Year	SHGs Finance (No.)	Bank Loans Disbursed (Rs.in crore)	SHGs Refinanced (No.)	Refinance Disbursed (Rs.in crore)
1999	32,995	57.07	32,995	52.09
2000	1,14,775	192.98	94,645	150.13
2001	2,63,825	480.87	2,13,213	400.74
2002	4,61,478	1026.34	3,40,131	769.47
2003	7,17,360	12,048.67	4,93,634	1,418.80

4.341 The important indications of SHG-Bank linkage programme in Kerala state can be described through three models (a) SHGs formed and financed by banks (b) SHGs formed by formal agencies and NGOs but directly financed by banks and (c) SHGs financed by banks through NGOs. Agency-wise cumulative participation up to 31st March 2003 is given in Table 4.48. District wise cumulative achievement of SHGs-Bank linkage programme under Co-operative banks up to 31st March 2003 is given in Table 4.49

4.342 Under Co-operative banks, the total number of SHGs provided with bank loans up to March 2003

was 2726. The bank loan disbursed at the same was Rs.1.51 lakhs. Idukki, Alappuzha and Thrissur are major district formed

Table 4.49
SHG-Bank Linkage District wise Cumulative Progress of Participating Co-operative Banks

Name of DCCB	Cumulative of SHGs provided with bank loan up to 31 st March 2003	Cumulative Bank loan disbursed up to 31 st March 2003.
Thiruvananthapuram	20	1.82
Kollam	138	12.96
Pathanamthitta	49	3.56
Idukki	953	28.73
Alappuzha	714	50.47
Kottayam	226	11.91
Thrissur	502	33.80
Kolzhikode	23	2.19
Wayanad	77	4.07
Kannur	2	1.22
Kasargod	22	0.73
TOTAL	2726	151.46

Table: 4.48
SHG Bank linkage in Kerala
Agency-wise Cumulative Participation up to 31st March 2003

Sl. No	Name of Bank	No. of SHGs	Bank Loan (Rs.in Million)
1	Commercial Banks	14068	402.75
2	RRB's	4218	90.66
3	Co-operative Bank	2726	151.46
TOTAL		21012	644.87

953,714 and 502 groups by availing Rs. 0.29 lakhs, Rs.0.50 lakhs, and Rs.0.34 lakhs respectively.

4.343 A National seminar on the SHG-bank linkage programme was organized by the National Bank in collaboration with SDC, GTZ and IFAD in November 2001 at New Delhi. Major recommendations of the Na-

tional Seminar on SHG-Bank Linkage is given in Box 4.25:

Box - 4.25

Recommendations of the National Seminar on SHG-Bank Linkage

- Promotion of new SHGs to be taken up on a large scale in eastern, northern and other backward states
- There is a growing need for meeting the cost of promotion, training and nurturing of SHGs through convergence of resources.
- A system of self-financial services by SHGs such as auditing, escort services for enterprises promotion etc needs to be encouraged.
- The issue of collateral for higher loans needs critical examination.
- SHG-Bank Linkage had a significant impact on the income level of the members of SHGs.
- The Government should divert a large part of subsidies, (subsidies provided under SGSY etc) for capacity building of the poor and also for establishing micro-enterprises

Kerala State Co-Operative Union and Institute of Co-operative Management

4.344 The Kerala State Co-Operative Union has the responsibility of imparting awareness and education to the officials and non-officials engaged in the Co-operative sector. The Union is conducting education through the nine Co-operative Colleges in the state. The National Co-operative Union of India has also established two Institutes of Co-operative Management in Thiruvananthapuram and Kannur districts with the primary objective of promoting advanced training courses and increase professionalism in management of co-operatives in the state.

(a) ICM, Kannur:- The Institute conduct Diploma courses ranging from 3 months to 9 months for different co-operative organisations for improving the managerial efficiency for the personnel working in various departments like Dairy, Bak-

ing, Industries etc. Sectoral Diploma courses are also conducting by the Institute. The Institute organizes Seminars, Work shops and Conference to discuss the latest issues emerging in the business field and offers consultancy services to help the co-operative with latest trends. The faculty members undertaken problem oriented studies in different aspects of co-operative management during 2002-03 the Institute conducted 55 number of courses by participating 1178 persons.

(b) ICM, Thiruvananthapuram:- During 2002-03 ICM, Thiruvananthapuram has conducted 54 programmes by participating 1463 personnel. Out of 54, two programmes are Diploma Programmes with the duration of 12 and 36 weeks. During 2003-04 up to October 34 programmes are conducted by participating 832 personnel.

Kerala State Co-operative Employees Pension Board

4.345 Government of Kerala have constituted the Kerala State Co-Operative Employees Pension Board as per G.O.(P) No.45/95 Co-op. Dated:15-03-95 and Pension fund was established as per G.O. (P) No.44/95 dated:14-03.95 for payment of pension to employees of Primary Co-operatives in the state coming under the administrative control of Registrar of Co-operative Societies and not covered under the Employees Provident Fund Scheme. The number of societies and employees admitted at the end of March 2003 was 2159 and 20050 respectively which was 2122 and 19750 numbers in the previous year. The pension fund collected during 2002-03 was Rs. 15.54 crores. In the same period Rs. 13.56 crores was sanctioned as monthly person and arrears.

Extending Gehan System in Co-Operatives

4.346 It was a long standing demand of the co-operatives in the state that the Co-operatives may be exempted from the registration of the documents with the registration authorities while awaiting loan from the co-operative Bank on the security of loaned property. The loanees were liable to pay registration fee at the time of availing loan and fee at the time of registration of release deed. The Government of Kerala have made provision for making suitable amendments in the KCS Act 1969 and Kerala State Co-operative Agricultural and Rural Development Act 1984. Gehan envisages a special charge on movable or immovable prop-

erty in favor of the society by a mere declaration in writing by the borrower for securing the payment of money advanced by way of loans. By the introduction of this system, the loanees will be relieved from the heavy burden of registration fees. The system was introduced as per the guide lines of NABARD for getting further assistance:

COINS

4.347 The Co-operative Insurance Society has been registered under the Co-operative sector with a total share capital of Rs.125.00 crores. The major shareholders of the society are Kerala State Co-operative Bank, District Co-operative Banks, Kerala State Co-operative Agricultural and Rural Development Bank, Primary Agricultural Credit Societies and Primary Co-operative Agricultural and Rural Development Banks. Now the society is under the control of an Administrative Committee consisting of 3 members constituted by Government.

4.348 In Kerala the Co-operative sector has entered into the insurance business in collaboration with Iffco through COINs as a corporate agent. Iffco-Tokyo is the joint venture Insurance company with a partnership of Indian Farmers Fertilizers Limited (49%) Crishk Bharati Co-operative Limited (20%), Indian Pottash Limited (5%) and Tokyo Marine and Fire Insurance in Japan (26%).

Co-operative Academy of Professional Education - CAPE

4.349 Under this Academy, a Co-operative Medical College at Kochi and Five Engineering Colleges at Vadamara, Thrikkaripur, Thalassery, Perumon and Kidangoor were established. Pariyaram Medical College is also under the Co-operative Sector and the Government have obtained permanent affiliation from the Medical Council and also obtained sanction for Dental College, Nursing College, Nursing School, Pharmacy Course etc.

Kerala State Co-operative Employees Welfare Board

4.350 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. The rate of monthly contribution of the employees irrespective of the grades has been raised to Rs. 30/-. Till march 2003, 39286 employees (from 3965 co-operatives societies) were admitted. As on 31/03/2003 an amount of Rs.14.67 crores is outstanding under welfare fund contribution of the employees after the total disbursement of Rs.3.34 crores for various welfare activities.

Kissan Credit Card (KCC)

4.351 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. Pursuant to the announcement made in the Union Budget for the year 2002-03, banks were advised to issue Kissan Credit Cards (KCCs) to all eligible borrowers in the agricultural sector by march 2004. A total of Rs. 3.13 crores KCCs were issued up to March 31st 2003 in the country. A personal insurance package to the Kissan Credit Card holders was introduced in the Union Budget 2001-02 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 was to be shared by the card issuing institutions and the KCC holders in the ratio of 2:1. The personal insurance package linked in KCCs was operationalised in July 2001.

4.352 Under co-operative sector up to 2002-03 co-operative banks issued 193.81 lakh KCCs in the country. Co-operative Banks in Kerala have issued 4,21,872 KCCs up to 30-06-2003. The details of district-wise cumulative issue of KCCs is given in Table 4.51.

Table: 4.50
Agency - wise, Year-wise Kissan Credit Cards Issued in India
(in Lakh Rs)

Year	Co-operative Banks	RRBs	Commercial Bank	Total
1998-99	1.56	0.06	4.45	6.07
1999-00	35.95	1.73	13.66	51.34
2000-01	56.14	6.48	23.90	86.52
2001-02	54.36	8.34	30.71	93.41
2002-03	45.80	9.64	20.67*	76.11
Total	193.81	26.25	93.39	313.45

* Data up to 31st December 2002

Source: NABARD - Annual Report '02-03

Table 4. 51
The Details of District-wise Cumulative issue of KCCs in Kerala

District	Progressive Total 31/03/2003	No of Cards issued during 3 months	No of Cards issued up to 30/06/2003
Thiruvananthapuram	89485	7093	96578
Kollam	18938	33	18971
Pathanamthitta	5421	35	5456
Alappuzha	9496	294	9790
Kottayam	20088	2005	22093
Idukki	32479	10231	42710
Ernakulam	9278	-233	9045
Thrissur	48627	1190	49817
Palakkad	16518	2900	19418
Malappuram	24502	2125	26627
Kozhikode	9805	1230	11035
Wayanad	19559	1209	20768
Kannur	50101	4777	54878
Kasargod	32169	2517	34686
TOTAL	386466	35406	421872

Source: Kerala State Co-operative Bank Ltd.

Rural Infrastructure Development Fund (RIDF)

4.353 The Rural Infrastructure Development Fund (RIDF) of NABARD was set up in 1995-96 with contributions from the Scheduled Commercial banks against their short fall in agricultural target lending upto an extent of 1.5 percent of the net bank credit. The total corpus of the fund at the all India level from RIDF I to RIDF IX stood at Rs. 34000 crore . The Union Budget 2002-03 provided an allocation of Rs. 5500 crore to the VIII tranche of the Fund and the rate of interest on loans to State governments was reduced from 11.5 per cent to 8.5 per cent per annum during 2002-03, and further down to 6.5 per cent during 2003-04. During 2003-04 under RIDF IX it was made mandatory to allocate 60 per cent of the funds to agriculture and allied sectors.

4.354 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

Table 4.52

Priority Sector advances (in Crore Rs)

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.

(SIDBI) for one year.

Deposits

4.355 With the receipt of deposits of Rs. 3857.09 crore from Commercial banks during 2002-03, the cumulative deposits under RIDF received upto 31 March 2003 stood at Rs. 16145.37 crore. Deposits amounting to Rs. 1422.87 crore were redeemed during 2002-03. The deposits outstanding at the end of March 2003 stood at Rs. 12159.23 crores.

Assistance to Kerala

4.356 The State Government has been receiving assistance under RIDF from 1995-96 onwards. The major projects for which refinance has been disbursed include water shed 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 had been widened in 1999-00 to include lending to Grama Panchayats, Self Help Groups and Non-Government Organisations for implementing village level infrastructure projects. The cumulative sanction of amount stood at Rs.1049.54 crores, which is 3.6% of the total amount sanctioned from RIDF, in the country, in respect of 1846 projects. This include minor irrigation projects (767), medium irrigation projects (6), flood control projects (14), inland navigation projects (1), roads and bridges (219), reclamation projects (1), rural roads constructed by CRD (444), and rural roads constructed by PWD (103), watershed management (181), rural market yards (108) and tourism roads (2). Up to March 2003, 878 projects have already been completed and another 344 projects are in progress. Apart from these , 98 projects with a total cost of Rs.17.46 crores have either been dropped or proposed to be dropped. As regards projects

sanctioned under RIDF-IV and V, the period for implementation is extended up to 31 March 2004. Under RIDF IX 1193 projects were sanctioned with RIDF assistance of Rs.65.50 crores. The projects covered were Minor Irrigation schemes (MIS) – 5, Drainage – 1, Rural Roads – PRI – 39, Rural Water Supply (RWS) – 8, School Building – 1136 and Boat jetties – 4.

4.357 The tranche wise projects sanctioned in the state is shown in Table 4.53 The projects sanctioned under RIDF-I were financially closed on 31st December 2000. Implementation period for projects under RIDF-II and RIDF-III has been extended upto 30 June 2002 and

Table 4.53 :
Tranche-wise Sanction & Disbursement under RIDF
(in Crore Rs)

RIDF	Kerala (as on 11/03)		India (as on 3/03)	
	Sanction	Disbursement	Sanction	Disbursement
I	95.83	86.26 (90%)	1910.54	1760.71 (92.2%)
II	85.65	72.64 (85%)	2627.82	2373.68 (90.3%)
III	86.20	72.37 (84%)	2707.79	2377.03 (87.8%)
IV	63.71	48.26 (76%)	2976.53	2160.77 (72.6%)
V	124.94	99.34 (80%)	3532.52	2502.19 (70.8%)
VI	174.10	107.56 (62%)	4579.26	2788.38 (60.9%)
VII	191.76	58.62 (31%)	5056.77	2055.73 (40.6%)
VIII	196.55	52.28 (27%)	6084.07	1126.43 (18.5%)
IX	65.50			
Total	1083.62	597.34 (55%)	29475.30	17145.08 (58.2%)

Source: Annual Report 2002-03 NABARD
(Figures in brackets are % share of disbursement to sanction)

31st March 2003 respectively.

4.358 As part of rural infrastructure development, road length to the tune of 642 km, including 259 km of PWD road, (33 nos.) and 383 km of Block Panchayat roads have been added/improved up to March 2003. 108 bridges with a total length of 6883 m. have been completed. Under irrigation projects 43360 ha. of land was benefitted. Area benefitted by completed soil and water conservation projects is 22865 ha.

WATER RESOURCES

Water sector has undergone basic changes in recent years. While focus in this past was mainly on investment in physical structures, recent developments are associated to a great extent with improved management, conservation and institutional changes.

International Year of Fresh Water

5.2. The United Nations declared 2003 as the 'International Year for Fresh Water'. To focus on the role of water as a precious and finite resource that must be used carefully. To feed an additional 2 billion people by 2030, water needs to be used more efficiently. Only 20 per cent of the arable land in developing countries is irrigated. The irrigated area in developing countries is expected to increase by 20 per cent by 2030.

5.3 The technical solutions to produce 'more crop per drop' exist for which modernisation of irrigation system is also essential. The message

Box -5. 1

More Crop per Drop

- Agriculture is the sector where the potential for water productivity is the highest.
- To accept that all sources of water/rain, surface water, ground water and waste water are important to activate-food security.
- To create the right policy, institutions and market incentives to increase water use productivity in agriculture.
- To move from supply to demand driven and service oriented water management

FAO, 2003

of FAO in the context of international year for fresh water is given in BOX.5.1.

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 earlier 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 5.1.

5.5 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 percentage share for agriculture is 71 per cent.

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.

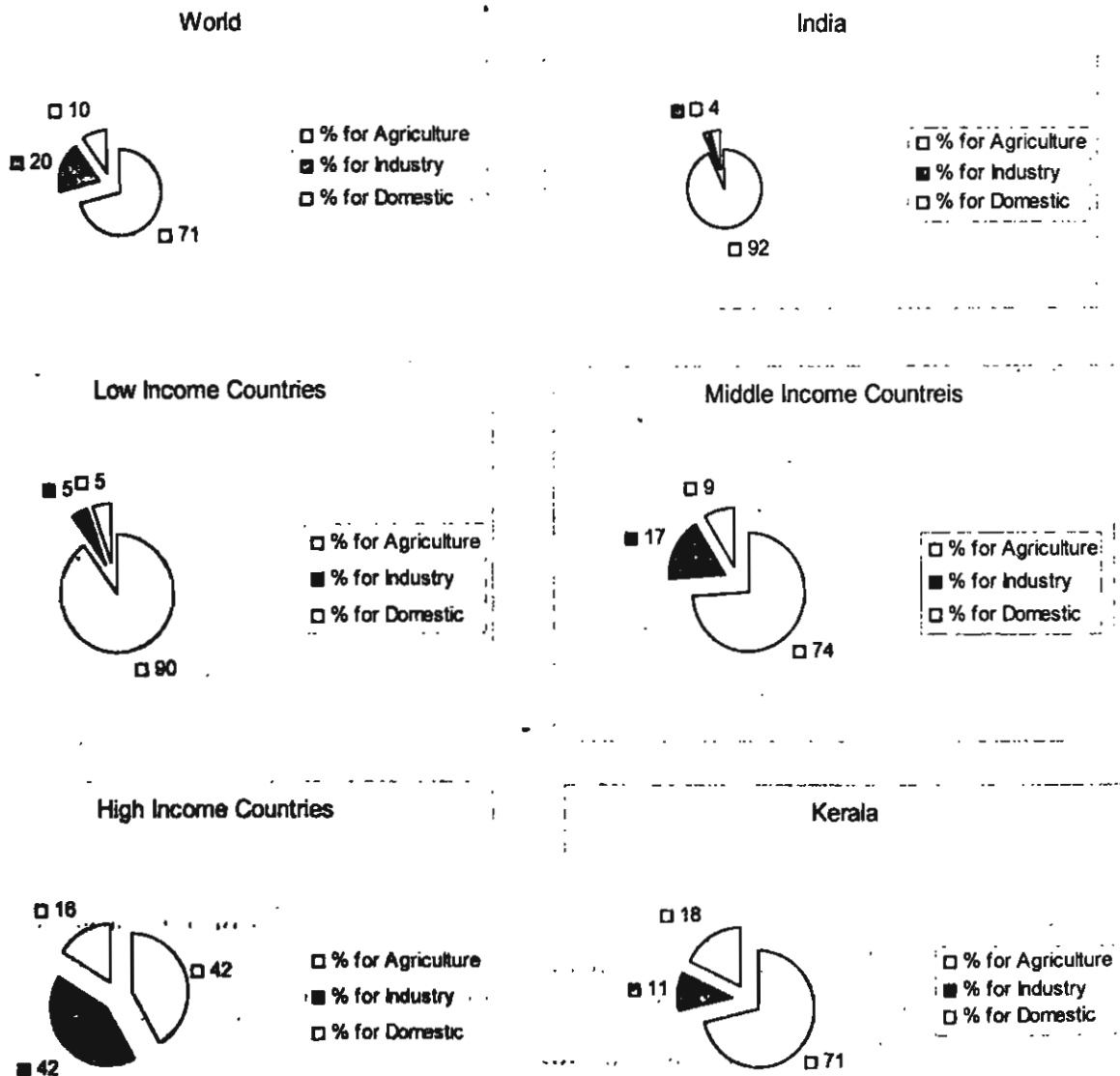
5.7 "Optimal sustainable development, maintenance of quality and efficient use of country's water resources to match the growing demands on the precious natural resource with active involvement of all stake holders in order to achieve accelerated, equitable economic development of the country" is the vision for integrated water resources development and management.

Table 5.1.
Purpose-wise Annual Fresh Water Withdrawals

Sl. No	Country/Category	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. * Percentage includes saline water intrusion

FIG.. 5.1
Annual Freshwater Withdrawals



5.8 The strategies designed for achieving the vision for integrated water resources development and management (2003-2017) prepared by the Ministry of Water Resources are: integrated management of water resources, development of new resources, optimal utilisation of developed water resources, preserving the resources, realistic assessment of water resources and their requirements in different regions, augmenting the available water resources by transferring water from surplus regions to water deficit areas, stakeholders' participation in water resources management, demand side management through mass awareness, optimal utilisation of the flood plains keeping adverse impacts to a minimum, dissemination and application of technology and research.

5.9 The various action points suggested to achieve the strategy are summarised below.

- Establish one RBO in each state with the assistance of Ministry of Water Resources.
- Creation of data bank for water.
- Laying down a policy for zoning the water basins according to water availability.
- Accelerated ground water exploration in unexplored areas and drought prone areas through construction of 15000 deep tube wells over 15 years.
- Support Non-Governmental efforts in rainwater harvesting.
- Promotion of PIM.
- Adoption of modern irrigation techniques like sprinkler and drip irrigation etc.
- Restructure and modernisation of old irrigation projects.
- For new projects, review the procedures of economic evaluation of water resource projects and prepare guidelines for prioritization of projects.
- Enact dam safety legislation.
- Rehabilitation of minor irrigation projects.
- Encourage Non-Governmental Organisations to help WUAs in capacity building.
- Legislation for promotion of existing water bodies.
- Support Non-Governmental efforts in artificial recharge of ground water.
- Create mass awareness about the need for conservation of water and maintaining the quality of ground and surface water sources.
- Strengthening of WALMIs for facilitating training and technical support to WUAs.

5.10. 22nd March is celebrated as World Water Day

and countries are to implement the UN recommendation and initiate activities related to conservation and development of water resources. The theme for the various years is given in BOX 5.2.

Water Resources in the Country

5.11 India, which has 17 percent of the world's population, has only 2.45 percent of world's land resources

Box -5.2

World Water Day

- 1994 : Caring for our water resource is every one's business
- 1995 : Women & Water
- 1996 : Water for thirsty cities
- 1997 : The World's Water. Is there enough?
- 1998 : Ground water. The invisible resource
- 1999 : Every one lives Downstream
- 2000 : Water for 21st century
- 2001 : Water & Health
- 2002 : Water for Development
- 2003 : Water for the Future
- 2004 : Water and Disaster

and 4 percent of the world's fresh water resources. Monsoon rains is the main resource of fresh water. The rain fall in India is confined mainly to the South-West Monsoon months of June to September. The South West Monsoon contributes about 75 to 80 percentage of rainfall in most parts of India. Rainfall occurs during October – December in the south and south east regions under the influences of North east Monsoon. The maximum rainfall is about 110,00mm. in North East regions whereas in Rajasthan it may be less than 100 mm. 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.

5.12 Country's water resources have been estimated by various committees and commissions like Irrigation Commission, National Commission on Agriculture, National commission on Integrated Water Resources Development etc., but still the exact quantity has not been arrived at. However, the amounts of water which are available both surface and ground water, have been calculated. The total annual surface water flow including regenerated flow from ground water is estimated at about 4000 billion cubic meters (BCM)

The average annual flow in rivers is 1869 BCM. The Ganga- Brahmaputra Barak system is the major contributory to the total water resources potential of the country. The water resource of this basin is estimated at 1110.62 BCM which is about 59 per cent of the total water resources. The potential of the west flowing rivers from Tadri to Kanyakumary accounts for 11% of the total potential. It has been estimated that only about 1086 BCM of the total potential of 1869 BCM can be put to beneficial use (690 BCM from surface water resource and 396 BCM from ground water). Out of the total fresh water availability of 4000 BCM only about 1086 BCM could be utilised, the balance flows into the sea. This water has to be channelised for utilisation.

Box -5.3

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 (1997)	1967 Cu. m.
• Utilizable Water Resources	1086BCM.
• (i) Surface Water Resources	690 BCM.
• (ii) Ground Water Resource	396 BCM.

5.13 The water resources potential of the river basins of India is given in Table: 5.2.

Table 5.2
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)	Repleni shable 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	Sabarnati	3.81	1.9	..
13	Mahi	11.02	3.1	8.52
14	West Flowing Rivers of Kutch. Sabarnati 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	..	..
	TOTAL	1869.37	690.3	431.42

Source: Ministry of Water Resources

Interlinking of Rivers

5.14 The National Perspective Plan for water prepared in 1980 envisaged interbasin transfers beginning with the peninsular rivers. Specifically it envisaged the interlinking of the Mahanadi- Godavari -Krishha-Pennar-Kauvery and diversion of surplus West flowing rivers eastward. It estimated that by doing so all the four southern states can get substantial additional supplies totalling 58 BCM capable of irrigating an extra 9-10 m ha. Similarly National Water Development Agency had prepared a feasibility report for the Pamba Achankoil Vaipar Link Project on the basis of water balance study conducted in the 1980s for diverting 634 mcm of surplus water to deficit Vaipar basin. The study conducted by CWRDM shows a deficit of 3537 mcm of water in Pampa-Achankoil rivers by 2051 which makes the transfer unfeasible. The National Commission on Integrated Water Resources Development found (1998) that in Peninsular rivers only Godavari had some surplus. Inter-linking of the rivers in the country has once again become a subject for study and discussion, following the observations of the Supreme Court in a case. The Government of India has appointed a high level Task Force for the purpose once again. Several major issues - legal, political, social, economic, technical, environmental.- are involved.

River Basin Organisation

5.15 River Basin Organisation (RBOs) has been suggested to be established for the integrated, optimum and holistic development and management of water resources. Each RBO will be an inter disciplinary body representing various disciplines. Considering the need for the formation of RBO's in the country, Ministry of Water Resources would help to establish one RBO in each state. RBO's will address the issues of soil conservation, pollution control, flood control, optimum usage of water resources in a river and long term conservation of rivers. In Kerala it is proposed to organize RBOs in five major river basins viz. Chaliyar, Bharathapuzha, Periyar, Pamba and Achankovil.

Participatory Irrigation Management (PIM)

5.16 The Participatory development is a process through which stake holders influence and share control over development activities and the decisions and resources which affect them. PIM is introduced with the objectives of improving performance of irrigation, improving planning and water distribution, ensuring equality and uniformity among all stake holders, de-

veloping a source of ownership of the newly created infrastructure, upkeep of the field channels in running condition through weeding and desilting, attending to repair and maintenance of field channels, ensuring efficient and economic use of canal water and to determine crops to be sown for optimum utilisation of available water.

5.17 The sustainability and success of PIM depend on mutual accountability between WUAs and the Water Resources Department, attitudinal change in the bureaucracy, autonomy for the WUAs, multi functional nature of WUAs and choice of appropriate model for PIM with appropriate legal and institutional framework. The irrigated area transferred to Water Users Association (WAUs) in India is about 7 percent as against 45 per cent in Indonesia, 51 per cent in Mexico, 65 per cent in Philippines, 25 per cent in Thailand, 35 per cent in Turkey and 19 per cent in Sri Lanka.

5.18 Legislation has been made by Governments of Andhra Pradesh and Madhya Pradesh for Participatory Irrigation Management and are being framed by some other state governments for effective involvement of farmers in the O & M of the irrigation systems. In Tamil Nadu, a Bill on Farmers Management of Irrigation System was introduced in 1999.

5.19 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.

Irrigation Management

5.20 Effective steps were not taken for improving water use efficiency through modernisation/renovation of existing systems which have deteriorated over the years. The major recommendations of International Irrigation and Water Management Institute - TATA Water Policy Programme are shown in BOX 5.4.

5.21 Integrated management of water resource 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

Box -5.4**Recommendations of IWMI - TATA Water Policy Programme**

- Before investing in expanding irrigated area, look at options for improving water productivity.
- Take a basin perspective on water savings and understand how changes in water management or allocation in one area affect users in another
- Integrate management of blue water - from rivers and reservoirs - with green water - rainfall stored in the soil profile in aquifers.
- Invest in efforts to provide reliable irrigation to farmers in existing schemes.
- Create policies and incentives to support the uptake of technologies and practices that will improve water productivity and reduce degradation of agro ecosystems.
- Ensure that the poor benefit from investments in improving water productivity by ensuring access to water for income generation, developing and promoting affordable water productivity enhancing technologies and giving the poor a voice in water decision.

not to contribute to the deterioration of water quality.

5.22 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.

5.23 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 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.

Rain water Harvesting

5.24 Increasing importance is being placed on in situ rain water harvesting and recharge. Ground Water depletion has also revived popular interest in rainwater harvesting. Khadins in Rajasthan, 'Tankas' in Western Gujarat and a whole new range of roof water harvesting techniques are coming back in to

vogue. Rainwater harvesting is a viable alternative to conventional water supply. Rainwater harvesting besides helping to meet the increasing demand for water helps to reduce the run-off which is choking storm drains avoid flooding of roads, augment the ground water storage and to control decline of water level, reduce the ground water pollution, improve quality of ground water and reduce soil erosion. This is considered an ideal solution of water problem in areas where ground water supply is inadequate and surface resources are insufficient. Rainwater is bacteriologically pure and free from organic matter and soft in nature. The structures required for harvesting the rainwater are simple, economical and eco-friendly.

5.25 Kerala is blessed with 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.

5.26 Awareness on rainwater harvesting has to be created among the stakeholders through seminars and

workshops. A committee has been constituted under the chairmanship of Vice Chairman, State Planning Board to co ordinate various agencies involved in the promotion of rainwater harvesting and to prepare policy guidelines.

Kerala Irrigation and Water Conservation Act

5.27 The State Government have passed a law named "Kerala Irrigation and Water Conservation Act 2003" to consolidate and amend the laws relating to construc-

tion of works, conservation and distribution of water for the purpose of irrigation and levy of betterment contribution and irrigation cess on lands benefitted by irrigation works, to provide for involvement of farmers in water utilisation systems and for matters connected there with or incidental there to. The salient features of the Act are given in BOX 5.5.

Dam Safety

5.28 There are 18 dams intended mainly for irrigation. Safety of the existing dams is one of the items in

Box -5.5

The Kerala Irrigation and Water Conservation Act 2003

The Salient features of the Bill are:

- All watercourses and all water in such water courses in the State shall be the property of government. Conservation of water in the watercourses shall be the responsibility of the Government.
- Government can construct and commission an irrigation work of any kind on any land by notification.
- Redefining the category of irrigation works to Major, Medium and Minor irrigation works - Major irrigation scheme - a scheme benefiting an irrigable command of more than 10,000 hectares, Medium irrigation - benefiting and irrigable command area of more than 15 hectares but less than 10,000 hectares, and Minor Irrigation works includes less than 15 hectares.
- Construction and maintenance of all of minor irrigation works within the limit of a local authority shall devolve upon that authority.
- The alignment and construction of any field channel and technical specification thereof shall be the responsibility of the Government.
- The Government shall be entitled to issue certificates and levy of irrigation cess.
- Distribution of water from all irrigation works constructed or maintained wholly or partly at the cost of Government shall be regulated by rules or orders issued by Government.
- Distribution of water to any other state or Union Territory shall be in accordance with an agreement between the State Government and the Government of such other State or Union Territories.
- No encroachment shall be allowed in the irrigation land.
- Introducing Participatory Irrigation Management through Water Users' Association with in an area of every forty hectares benefitted by an irrigation system. The Water Users' Association shall prepare and implement water schedule for each irrigation season, prepare a plan for the maintenance of irrigation system in the area of its operation and carry out the maintenance works of the distribution system. Government shall authorise the association to take up and execute all the works for rehabilitation of the system prior to taking possession of the same and all maintenance work of the system under the area of operation.
- Constitution of a Dam Safety Authority for the purpose of surveillance, inspection and advice on maintenance of dams situated within the territory of the state.
- Constitution of a Water Management and Utilisation Board with respect to any basin or cluster of river basins or project or irrigation work or any major irrigation work, for advising the Government on matters relating to the regulation of the distribution of water from the irrigation work in that area or the major irrigation work, as the case may be and on such other matters as may be referred to it. The Board constituted shall consist of not more than twenty members appointed by the Government representing agriculturists in the area, non official of such interests as may be prescribed, officials and representatives of local bodies.

the National Water Policy. Almost all of them 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:

- Monitoring the post and pre-monsoon inspections of dams and maintenance and surveillance and safety activities of the dam.
- 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.

5.29 During 2002-03, Dam Safety Organisation along with Dam Safety Committee had inspected the dams in Neyyar, Malampuzha, Chimmony, Vazhani, Kanjhirappuzha, Siruvani, Kallada and Peechi. Execution of safety measures could not be done during 2002-03.

5.30 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

5.31 Keeping in line with the national perspective, Kerala also relied upon surface water irrigation system operate on gravitational force for distribution. A major chunk of the outlay on water resources sector has been earmarked for Major & Medium Irrigation. Out of a cumulative investment of Rs.3245 crores made from first Plan to first year of the Tenth plan, Rs.2220.00 crores (68%) was for major and medium irrigation. Such a huge investment made has not succeeded in generating commensurate increase in area

irrigated. Most of the projects remain incomplete and with escalation of cost as well as time over run. Under time bound completion, eight projects were targeted during the Ninth Plan period. Against these, four projects, viz., Chimmoni-Mupli, Pazahsi, Kanakkankadavu and Kanhirapuzha could be completed. Kallada, Muvattupuzha, Karapuzha and Idamalayar are the projects, which could not be completed as scheduled. This is not the case of Kerala alone.

5.32 According to the latest published data by Planning Commission, 380 irrigation projects of the Ninth Plan period has been spilled over to Tenth Plan spanning across 23 states have added to a total of Rs.98089.00 crores to the project implementation cost. According to the Planning commission figures, 380 projects, which had a potential to bring 201.99 lakh ha. under irrigation during the Ninth Plan had spilled over to the Tenth Plan Period. Maharashtra has the highest spill over projects (138) followed by Karnataka (31), Madhya Pradesh (27), Jharkand (26) and Gujarat (21). Though Gujarat has less number of spillover projects, the maximum financial spillover commitment is to Gujarat (Rs.18676.1 crores).

5.33 State wise details of Irrigation Projects spilled over from Ninth Plan to Tenth Plan are given in Table: 5.3.

5.34 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 in support of ongoing irrigation schemes. Allocations under this programme have been massively increased. Upto 2002-03, Government of India had sanctioned Rs. 9590 crores to various states. The assistance sanctioned to Gujarat was Rs. 2262 crores (23%), Karnataka Rs. 1252 crores (13%) & Andhra Pradesh Rs. 651 crores (6.79%) and Kerala Rs.

Table 5.3
State-wise Details of Irrigation Projects Spilled Over from the
Ninth to the Tenth Plan

(Rs in Crores)

Sl. No.	State/UT	Total No of Projects	Latest estimated cost	Expenditure Upto X Plan	Increase (3-4)	Total Potential (In'000Ha.)
1	2	3	4	5	6	7
1	Gujarat	21	31940	13263.9	18676.1	1909
2	Maharashtra	138	31299	14311.7	16987.3	3098
3	Madhya Pradesh	27	17353	4661.5	12691.5	2046
4	Andhra Pradesh	24	17606	7399.3	10206.7	2202
5	Karnataka	31	20034	10996.4	9037.6	1835
6	Uttaranchal	3	5334	264.6	5069.4	312
7	Orissa	13	6034	1943.9	4090.1	588
8	Jharkhand	26	5178	1708.7	3469.3	534
9	Uttar Pradesh	11	7273	3825.4	3447.6	2395
10	Rajasthan	9	6989	3805.5	3183.5	1598
11	Bihar	13	4784	1887.8	2896.2	747
12	West bengal	11	2734	959.7	1774.3	670
13	Assam	10	1841	485.3	1355.7	268
14	Punjab	1	1324	20.0	1304.0	37
15	Kerala	8	2609	1357.7	1251.3	221
16	Haryana	5	1776	893.3	882.7	786
17	Chhattisgarh	10	1991	1307.6	683.4	777
18	Goa	1	859	470.0	389.0	27
19	Manipur	3	702	364.8	337.2	56
20	Himachal Pradesh	3	213	53.9	159.1	33
21	Jammu & Kashmir	8	232	107.7	124.3	27
21	Meghalaya	1	57	15.6	41.4	5
23	Tripura	3	162	129.5	32.5	27
	Total	380	168323	70234.0	98089	20199

Source: Planning Commission

59.06 crores (0.6%)

5.35 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). In Kerala, Kallada and Muvattupuzha Projects were assisted through the AIBP - Rs. 29.47 crores and Rs. 29.59 crores respectively. The assistance is provided based on individual selected components of public works identified under each project.

5.36 As part of the implementing 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 seems too beneficial, will be completed in a fast track method.

5.37 The ultimate irrigation potential of the state as per the earlier assessment is 25 lakhs ha. (gross) covering 16.00 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 4.47 lakh ha. (gross) The share of major and medium projects was 2.29 lakh ha. and that of minor irrigation schemes is 2.18 lakh ha.

Review of Major Projects

5.38 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 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 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).

5.39 Under time bound completion, 6 projects are targeted for completion during the Tenth Plan period. Out of this work relating to Muvattupuzha and Karappuzha are progressing.

5.40 Kallada Irrigation and Tree Crop development Project is the second largest project in Kerala started in 1961 with an original cost of Rs.13.28 crores and revised estimate of Rs. 725 crores in the 1999 schedule of rates. The cost escalation reported is 5356 per cent. The ayacut targeted was 61630 ha. (net) and 92800 ha. (gross). Though the project was targeted for completion and priority in allocation was given during Ninth Plan it could not be completed and commissioned fully. Certain branches and distributories for which land has not acquired so far were not taken up. Exempting the ayacut of such branches and distributories (8116 ha.), the remaining ayacut is 53514 ha. and the work completed till 2003 March is 51322 ha. (96%) and water has been distributed to 43626 ha.

5.41 As majority of the work has been completed, during Tenth Plan the project was closed as an indynamic one. Certain spillover commitments are met under 'Winding up of projects. The cumulative expenditure as on 03/2003 for the project was Rs.656.59 crores and the ayacut achieved is 43626 ha

5.42 As far as Muvattupuzha Project is concerned, work relating to dam and major portion of the main canal has been completed. Major portion of the branches and distributories have to be completed. Out of a total length of 57.16 km. of branch canals, only 30.79 km. has been completed and out of 184 kms. of distributories only 56.82 km. has been completed. The progress of execution was very slow and the ayacut achieved was only 7200 ha. as on 3/03.

5.43 In the case of Idamalayar project, out of 32.278 kms. of Main canal work relating to 9.364 kms. is completed and in the case of low level canals, only 3.58 km. has been completed. The progress of execution is very slow. One of the problems indicated was the delay in getting forest land for the construction of the canals.

5.44 The Karappuzha project is also nearing completion. All the major works except the distributories have been completed. But no ayacut is achieved till date. Over time run the cropping pattern in the ayacut has changed and it is doubtful whether the original ayacut targeted could be achieved.

5.45 The physical achievement of the works in main canals, branch canal and distributories of the 3 projects Kallada, Muvattupuzha and Karappuzha are given in Fig. 5.2.

5.46 The overall performance of the major and medium irrigation sector during the initial year of Tenth Plan was not encouraging. Additional irrigation facility could be extended only in Muvattupuzha project. The additional area brought under irrigation by the project is only 4450 ha. The cumulative area brought under irrigation through major and medium irrigation projects is 2.29 lakh hectares. (gross). The details of the progress of implementation of ongoing projects as on 3/2003 is given in Table-5.4.

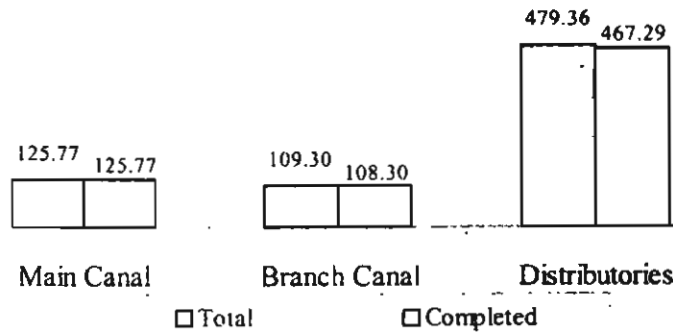
Revamping and Consolidation of Old generation Projects

5.47 The principal requirement of a good water distribution system is that it involves minimum loss of water and ensures timely and equitable supply of water to all irrigators in the command irrespective of the relative location of their fields in the command. Due to the long gestation period most of the projects has lost their efficiency in water distribution. The remodeling and modernization of the existing system has become imperative due to various reasons such as meeting the water requirements of crops at various stages of their growth, change in cropping pattern and improvement in operational methodologies etc. Hence, Kerala also has introduced a revamping and consolidation programme for augmenting the water use efficiency of the old generation projects which had deteriorated over the years and occurred radical changes in the water distribution system. Nine projects out of the old ten projects were taken up. Rehabilitation packages were drawn

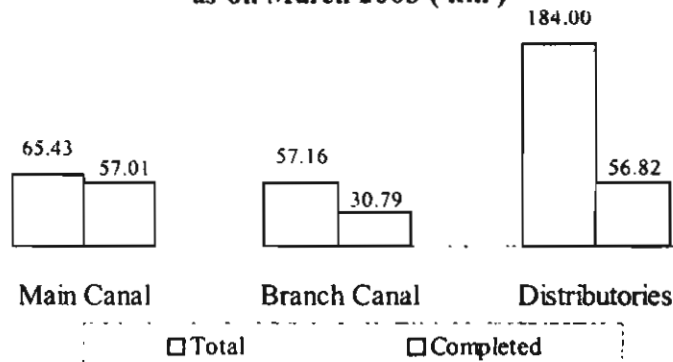
Fig 5.2

Progress of Irrigation Work

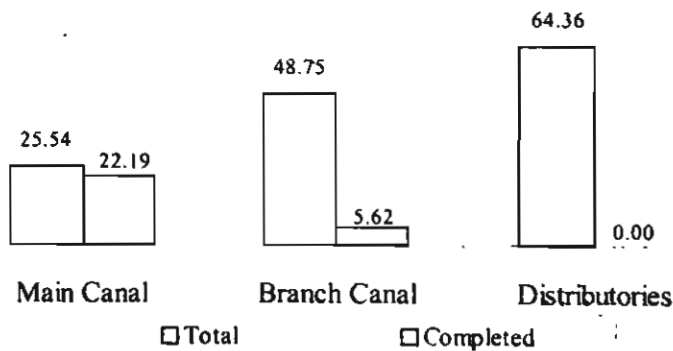
Kallada Project - Progress of Work as on March 2003 (km)



Muvattupuzha Project - Progress of Work as on March 2003 (km)



Karappuzha Project - Progress of Work as on March 2003 (km)



up based on detailed baseline study of each project and modifications/interventions necessary to make the system more effective were drawn up and implemented. Even though a time bound implementation was targeted it could not be completed as scheduled. Out of the projects taken up for implementation two projects have been completed and others spilled over to the Tenth

plan. Against a financial target of Rs.50 crores for the project, the expenditure incurred up to 3/2003 was Rs. 28.48 crores and the additional area brought under irrigation is 35,746 hectares. In the case of system modernized, the participatory approach for irrigation scheduling and management has not been included so far.

Table 5.4
Project-wise Details of Ongoing Projects (Rs. lakhs)

Sl. No.	Name of Project	Year of starting	Original estimate	Revised estimate	Year of revision	Cost escalation (%)	Expenditure upto March 2003	Target area to be irrigated (Ha.)		Physical achievements (Ha.)	
								Net	Gross	Net	Gross
1	2	3	4	5	6	7	8	9	10	11	12
1	Muvattupuzha	1974	2086	51500	1999	2368	40888	17737	34737	7200	14100
2	Idamalayar	1981	1785	41200	1999	2208	13223	14394	29036	-	-
3	Kuriyarkutty-Karappara	1987	1036	15830	1999	1427	1321	17488	34976	-	-
4	Karapuzha	1979	760	25300	1999	3228	19117	5221	8721	-	-
5	Banasurasagar	1979	800	5000	1999	525	932	2800	4740	-	-
6	Chamravattom	1985	1327	12000	1999	804	1227	3106	9659	-	-
7	Thrithala	1998	1900	2660	1999	40	1780	1303	3997	-	-

Source: Department of Water Resources

Table 5.5
Details of Revamping and Consolidation Programme (Rs. in lakhs)

Sl. No.	Name of Project	Estimated Cost	Approved Cost of Revamping	Estimated cost and expenditure for								Total Expenditure as on 3/03
				Head Works		Main Canal		Branch Canal		Distributories		
				Est.	Expd.	Est.	Expd.	Est.	Expd.	Est.	Expd.	
1	Malampuzha	1658	693		6	279	113	1110	278	268	NIL	396
2	Pothundy	831	452	53	56	150	80	594	223	15	NIL	358
3	Mangalam	430	670	7	NIL	22	244	204	59	197	NIL	303
4	Walayar	370	560	27	NIL	155	227	127	NIL	61	NIL	228
5	Gayathri	700	465	42	NIL	284	265	331	NIL	42	NIL	265
6	Neyyar	380	590	35	NIL	119	190	158	NIL	68	172	362
7	Vazhani	145	360	8	19	46	227	75	115	16		361
8	Cheerakuzhi	230	360	26	16	166	60	39	28			104
9	Peechi	810	510	50	NIL	412	312	201	18	146	98	427
10	Regulators of Koleland	188	290		44		NIL		NIL		NIL	44
	TOTAL	5742	4950	248	141	1633	1718	2839	719	814	270	2848

Source: Department of Water Resources

The component-wise financial achievement of the projects as on 3/2003 is given in Table-5.5.

5.48 Considering the merits of the scheme, the scheme is continued for the second generation projects also during Tenth Plan. Steps have been initiated for identifying the interventions, which are needed for modernising the projects for the optimum utilisation of the infrastructure already created.

Externally Assisted Project - NHP

5.49 National Hydrology Project assisted by World Bank is the only project implemented in Kerala during the Tenth Plan period.

5.50 The Hydrology Project is a National Project aided by World Bank under a credit agreement with Government of India represented by CWC, CGWB, CW PRS - Pune and NIH - Roorkee and 8 State Governments namely Andhra Pradesh, Gujarat, Kerala, Madhya Pradesh, Maharashtra, Orissa, Karnataka and Tamil Nadu.

	Crores
Project Cost (India)	Rs. 455.78
Kerala HP component (Original)	Rs. 35.97
SW Component (Original)	Rs. 18.95
GW Component (Original)	Rs. 17.02

5.51 The project was started in Kerala in January 1996 and implemented by the Water Resources Department both surface and ground water components with a total cost of Rs. 35.97 crores. The original scheduled period of completion was March 2002. During the Mid term review by the external agency, the financial target has been reduced to Rs. 32.78 crores and extended the term of completion till December 2003. After reviewing the performance by the Joint Supervision Mission in April 2002, the financial target has again been reduced to Rs. 29.54 crores (Ground Water – Rs. 13.39 crores and Surface Water Rs. 16.15 crores) from Rs. 32.78 crores and physical target has also been revised.

The Objectives of the project are:

1. To improve organisational arrangements for measurement, validation, collation and analysis of hydrological, meteorological and water

quality data.

2. To strengthen institutional and technical capabilities.
3. To improve physical facilities and hydrology services for data measurement, validation, collation and analysis of hydro-meteorological and water quality data.
4. Use of hydrological and hydro meteorological data.

5.52 Details of Allocation and expenditure and reimbursement claimed as on September 2003 and the physical achievement is given in Appendix: 5.1 and Appendix - 5.2

5.53 The physical targets has been achieved. The major physical achievements are summarised as follows.

Under Surface Water

- Data generated at the hydrological and meteorological stations are compiled at respective sections and sent to sub divisions where primary validation is done.
- Data entry is almost stabilised and is up to date.
- Data after primary validation is sent to the corresponding divisions for secondary validation. The data transfer is through floppy disks on bimonthly basis.
- Data processing software HYMOS (Hydrology Modelling system) is established in 2 DDPCs & SDPC. Secondary Validation of data using HYMOS is completed. Preparation of digitised station maps completed and data entry operation of historical rainfall data from 1960 to '99 has been completed though Surface Water Entry System (SWDES). The historical data is published in the form of Year Book. Year Book for the years 2000,2001 & 2002 have been prepared. The data available in digital media is kept in CDs. The validated current data is kept in CDs.

Under Ground Water

- With the installation of GEMS software, at the State Data Centre the operationalisation of the ground water dedicated software has been started.
- The transfer of data from GWDES has been done and the preliminary integration of the GEMS is on.
- Two TOTs were sponsored at Faridabad.

Local training in I.T. covering all the modules have been imparted by CDAC

- The implementation of hardware and software package is undertaken by the SWD. Now the combined Data storage is done by the GWD in the State Data Centre.

5.54 The project implementation in Kerala has achieved sufficient progress towards project objectives in terms of improving the organisational arrangements, institutional and technical capabilities and physical facilities for measurement, validation, collation, analysis, transfer and dissemination of hydrological, hydro meteorological water quality data and for basic water resources development. Though sufficient progress has been achieved much headway could not be made in the dissemination and use of hydrological data by surface water component. There is a forward movement in data dissemination and use in ground water component and hence the donor agency in their implementation progress rating, has rated Ground Water component as 'satisfactory'.

5.55 Under NHP, sophisticated equipments like AWLRs (45), DWLRs (304), equipments for Level I & II labs, 53 computer packages and other modern equipments for the processing of data were supplied.

Also 59 meteorological stations, 33 Automatic rain gauge (ARG) & 106 Standard rain gauges (SRGs) are functioning under the project. Arrangements for the O&M of the equipments and stations are to be made in the post project period. Hence a proposal for the post project period has been prepared by the department and has forwarded to GOI. The proposal was mainly prepared for continuance of the project as NHP II.

Irrigation Status

5.56 The source-wise and crop-wise area irrigated as on March 2002 is given Tables: 5.6 and 5.7

5.57 As per the assessment of the Directorate of Economics and Statistics the net irrigated area in the state as on 3/03, was 3.93 lakh ha. and the gross area irrigated is 4.47 lakh ha. Only 17.83 per cent of the net cropped area is under irrigation. The major source of irrigation is wells, which contribute 30 per cent followed by government canals 25.5 per cent, tanks 17.04 per cent and private canals 1.01 per cent. In the source wise irrigation, the contribution of private wells predominates. The area benefitted by lift irrigation schemes comes to 0.27 lakh hectares

5.58 Among the crops, paddy continued to be the ma-

Table 5.6
Net Area Irrigated (Source wise)

(in Ha.)

Sl. No.	Source	1990-91	1995-96	1998-99	1999-00	2000-01	2001-02	2002-03 *
1	2	3	4	5	6	7	8	9
1	Government canals	104265	103136	94643	81231	100926	95270	101139
2	Private canals	3691	3681	2482	4803	4041	4413	4272
3	Tanks	48952	49213	47532	52932	49972	49945	66729
4	Wells	65678	73137	107213	121605	115703	86297	117490
5	Other sources	110783	113026	122639	119472	110399	110788	103541
6	Total	333369	342193	374509	380043	381041	377162	393171
7	Area irrigated more than once in a year	51282	123311	46335	90655	76824	55055	
8	Gross irrigated area	384651	485504	420844	470698	457865	432217	447490
9	Net area irrigated to net area Sown(%)		15.11	16.58	16.97	17.27	17.2	17.83
10	Gross irrigated area to gross cropped area (%)		15.18	14.43	15.68	15.15	14.44	14.77
11	Irrigated area under paddy to total irrigated area	58%	49	47	44.21	45.44	42.57	41.16

*Provisional

Source: Directorate of Economics & Statistics

Table 5.7
Gross Area Irrigated (Crop-wise)

(in Ha.)

Sl. No	Crops	1990-91	1995-96	1998-99	1999-00	2000-01	2001-02	2002-03 *
1	Paddy	225063	234409	196927	208790	208047	183992	183703
2	Tubers	885	954	887	931	979	972	1008
3	Vegetables	5766	7428	7049	7813	8529	8972	9786
4	Coconut	104889	164518	152917	169894	165957	158050	163550
5	Areca nut	20208	25544	26798	32115	30501	31467	34205
6	Nutmeg/clove	828	1459	1804	2407	2466	2170	2948
7	Other Spices and condiments	1361	2942	2824	2967	3074	3109	3212
8	Banana	10557	10737	11735	18792	19448	24372	29209
9	Betel leaves	908	931	881	1024	990	944	990
10	Sugarcane	2180	3844	6160	5780	3367	3267	3426
11	Others	11916	12738	12826	20185	14507	14569	15373
Total		384561	465504	420844	470698	457865	432217	447490

*Provisional

Source: Directorate of Economics & Statistics

major crop supported by irrigation. It accounted for about 39 per cent followed by coconut (36%) areca nut (8%) banana (6%) and vegetables (2.2%). 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 18 per cent of the total area under coconut, 37 per cent of the area under areca nut and 56 per cent of the area under banana. Compared to last year the area irrigated under all crops has been increased. Even though an increase of 4 per cent has been recorded in the gross irrigated area, a slight decrease (0.11%) is noted in the area irrigated under Paddy. This may be due to the reduction of area under rice and the change in the cropping pattern from more water demanding crops to less water demanding crops.

Minor Irrigation

5.59 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 enact-

ment of the new Act 'Kerala Irrigation and Water Management Act' the definition of minor irrigation has been changed and that the works benefiting an area less than 15 ha. only comes under the category of minor irrigation and is vested with PRIs. All other works having cultivable command area greater than 15 ha. has 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 irrigations schemes. Construction of check dams, Vented cross bars, weirs, tanks etc are the various works executed under minor irrigation Class-I & II.

5.60 During the year under review (2002-03) the Department has invested Rs.14.43 crores for implementing surface water minor irrigation schemes. The additional area reported to be brought under irrigation during 2002-03 was 3479 ha. Compared to the last year a slight increase (20%) is noted in the achievement.

5.61 In the ninth Plan period local governments tended to go in for structures for drainage and for land protection. Now to wean the local governments from this unproductive practice, farmer involvement is mandated. 20 per cent of the capital cost has to be paid by the benefited farmers in cash and the entire O&M is their responsibility.

Local Water Resources

5.62 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.

5.63 Among the traditional water harvesting system, the prominent ones are Khadins in Rajasthan, Haveli system in Madhya Pradesh, Guhl in Himachal Pradesh and Utter Pradesh, Ahar in Bihar, Churams of North Kerala etc. The Pani panchayats in Maharashtra, Phad system in Western Maharashtra and Traditional irrigation institutions in Tamil Nadu are good examples of revival of traditional institutions and methods. In Pani panchayat, which is an integrated scheme of management of water, land and cropping patterns, 20 per cent of the total cost of the development is shared by beneficiaries, 30 per cent from the village management institutions (Grama Gaurav Pratistan) and 50 per cent is the government subsidy.

5.64 Renovation of local water resources in the State must start with a clear recognition of the fact that it is beyond the ability of government to 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.

Ground Water Development

5.65 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 col-

laboration 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. Stage of ground water development in the country is about 32%.

5.66 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.

5.67 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%. The ground water resources of Kerala as on 31.3.1999 is given in Appendix.5.4.

5.68 Monitoring and preservation of groundwater is an important aspect, which requires serious attention. The 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.

5.69 Artificial recharge and rainwater harvesting are the best-suited and cheapest methods to overcome this situation. 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.

5.70 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 (1997). 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. The details of the groundwater resources of the State and list of blocks in overexploited, critical and semi critical categories are given in Tables 5.8 & 5.9 respectively.

Table 5.8:
Ground Water Resources of Kerala

Total replenishable Ground water resource	6840 MCM
Net ground water potential	6229 MCM
Gross ground water draft	2693 MCM
Net ground water availability for future irrigation	3221 MCM
Overall stage of development - State	43%

Source : Water Resources Department (GWD)

Table 5.9
Details of Over-exploited, Critical and Semi-critical Blocks in Kerala

Sl. No.	Category	Block	District
1	Over exploited	Chirayinkil	Thiruvananthapuram
2		Kasaragod	Kasaragod
3		Kodungallur	Thrissur
4	Critical	Tellichery	Kannur
5		Parassala	Thiruvananthapuram
6		Adiyannur	Thiruvananthapuram
7		Mukhathala	Kollam
8		Anchalamoodu	Kollam
9		Balusseri	Calicut
10	Semi Critical	Pampaguda	Ernakulam
11		Paravur	Ernakulam
12		Mulenthuruthi	Ernakulam
13		Mala	Thrissur
14		Calicut	Calicut
15		Nemom	Thiruvananthapuram

5.71 The systematic approach to the management of ground water requires a sustainable legal frame work. 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.

5.72 The Act is 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. The salient features of the Kerala Ground Water (Control and Regulation) Act, 2002 are given in BOX: 5.6.

5.73 The Central Ground Water Board has prepared a master plan for artificial recharge to ground water in India in February 2002. The master plan gives a brief outline on the artificial recharge structures that can be implemented in Kerala. The areas of priority for artificial recharge are the over exploited, critical and semi critical blocks. Based on our analysis of the water level trends and physiographic features, areas for artificial recharge has been demarcated. Areas identified for artificial recharge structure fall in 15 out of the 44 watersheds, covering an area of 4650 sq. km. The details of the schemes are given in Table 5.10

Box -5.6

• KERALA GROUNDWATER (CONTROL AND REGULATION) ACT 2002

Salient Features

- Formation of a State Ground Water Authority
- Notifying areas for the Control and Regulation of groundwater Development.
- Grant or permit to extract and use groundwater.
- Registration of the existing wells of the notified area.
- Registration of user of groundwater.
- Protection of public drinking water sources.
- Power to make changes to the conditions in the permit or certificate of registration.
- Cancellation of permit or certificate of registration.

Table 5.10.
Artificial Recharge to Ground Water by Suitable Principal Recharge Schemes using Surface Water Resources.

Sl. No	Name of Basin	Volume of surface water considered for planning artificial recharge to ground water	Check dams (Average gross capacity - 0.1MCM)		Subsurface dykes (Average gross capacity 0.03 MCM)		Gully plugs (Average gross capacity (0.02 MCM.)		Nalah bunding (Average gross capacity 0.02 MCM)	
			MCM	Nos.	MCM	Nos.	MCM	Nos.	MCM	Nos.
1	Neyyar	115	46	460	23	766	23	1150	23	1150
2	Karamana	136	54.4	544	27.2	906	27.2	1360	27.2	1360
3	Vamanapuram	95	38	380	19	633	19	950	19	950
4	Ithkikara	77	30.8	308	15.4	513	15.4	770	15.4	770
5	Kallada	82	32.8	328	16.4	546	16.4	820	16.4	820
6	Karuvannur	22	8.8	88	4.4	146	4.4	220	4.4	220
7	Ponnani	29	11.6	116	5.8	193	5.8	290	5.8	290
8	Bhavani	74	29.6	296	14.8	493	14.8	740	14.8	740
9	Kadalundi	134	53.6	536	26.8	893	26.8	1340	26.8	1340
10	Kabini	70	28	280	14	466	14	700	14	700
11	Valapatanam	39	15.6	150	7.8	260	7.8	390	7.8	390
12	Kuppam	15	6	60	3	100	3	150	3	150
13	Kariangode	39	15.6	156	7.6	260	7.8	390	7.8	390
14	Chandragiri	84	33.6	336	16.8	560	16.8	840	16.8	840
15	Shiriya	67	26.8	268	13.4	446	13.4	670	13.4	670
Total		1078	431.2	4312	215.4	7181	215.6	10780	215.4	10780

Source: Master Plan for Artificial Recharge to Ground Water in India, CGWB

5.74 The main recharge structures identified for artificial recharge to ground water are checkdams, subsurface dykes, gully plugs and nalah bundings. About 1078 MCM of subsurface water is considered for planning artificial recharge to ground water. Based on field situation it has been considered that 40 per cent storage (431.2 mcm) would be through checkdams, 20 per cent (215.4) mcm) through subsurface dams, 20 per cent (215.4 mcm) would be through gully plugging and 20 per cent (215.4 mcm) would be through nallah bunds. Hence in the masterplan, it is envisaged to construct 4312 checkdams, 7181 subsurface dykes, 10780 gully plugs and 10780 nalah bundings. In Kerala, with the technical and financial support of CGWB, constructed 11 subsurface dykes.

5.75 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.

5.76 During the period under report (2002-03), an amount of Rs.26.68 crores has been invested for minor irrigation out of which the share of ground water development was Rs.11.68 crores ie. 44 per cent.

5.77 During 2002-03 the Department has imparted technical assistance to identify sites for 850 open wells, 3058 drilled wells and constructed 510 drilled wells. The additional area reported to be brought under irrigation was 1010 ha. Training was imparted to 108 personnel and analysed 2160 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. With the help of the National Hydrology Project, the labs in the Department has been upgraded and water quality analysis were done for various institutes like Department of Surgery, Medical College, Thiruvananthapuram, (influence of well water consumed of Calcium Oxide nephrolithiasis), Pollution Control Board (effects of industrial waste on ground water for the major industries of Kerala like Trivandrum Titanium Products, Kerala Minerals and Metals and Cocoa Cola factory at Palakkad) and Vilappil Sala garbage processing factory etc. The details of physical achievement are given in Appendix: 5.5

Flood Management

5.78 Floods have been occurring frequently causing devastating damages to life and property. The high intensity of rains over a short spell of time combined with undulating terrain make the State highly prone to floods.

5.79 The flash flood occurs mostly in the Northeast Monsoon. The flood control measures operated in our State are more of a relief work for the affected areas. Even though a new approach for management for flood proofing after identifying the prone areas through basin wise studies were suggested during Ninth Plan period, it has not materialized.

5.80 Flood proofing and identifying the flood prone areas are more important in managing the flood. Basin wise studies are necessary for finding out the causes of occurrence, intensity, duration etc. of flood. A basin wise study has been initiated by the WRD in collaboration with KSREC, State 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.

5.81 At the State level an amount of Rs.4.15 crores has been spent for protection of an area of 1061 ha. of land from the ravages of flood. The cumulative area brought under flood control was 58690 ha. as on 3/2003.

Coastal zone Management

5.82 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 sea-coast is thickly populated and as a result the loss due to sea erosion is relatively very high. The Centre for Earth Science Studies had conducted a study to identify economically important stretches of the coast from Thiruvananthapuram to Trichur districts. Field data covering the details of tourism location, mining, fisheries and industries in the coastal zone were collected and digitization of map in 1:12,500 scale has been prepared. Another study was also initiated to identify and map the coastal areas prone to erosion, siltation, bar formation, reclamation, salinity intrusion, pollution and other forms of degradation in the study area and suggest management options for the integrated management of those coastal areas. Detailed field data was collected between Kollamcode to Ponnani during September 2001 and March 2002. Beach profile, measurements, shoreline change monitoring and evaluation of the condition of the seawall were completed. Secondary data on pollution in the study area was compiled. Digitization of the maps was completed and final project report is under preparation.

5.83 Construction of sea walls continued to be the sole intervention for coastal zone protection. In the area of sea wall construction and protection, modern technologies like geo textiles, polyethylene fabrics/sheets, nourishment of foreshore with biomaterials, etc. are emerging. During 2002-03 an amount of Rs.998.05 lakh has been spent to construct 1.64 km. of new sea wall and for reformation works in 1.05 km. Out of the total coastal stretch of 590 kms, about 184.03 Kms were protected by constructing new sea walls and reformed 112.179 Km. of old sea walls spending an amount of Rs. 268.82 crores upto 31.3.2003. 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, 5.54 km of new sea wall were constructed and 13.629 km. of old sea walls were reformed as on 31.03.2003 spending Rs.13.06 crores. The physical and financial achievement under flood management and coastal zone management during 2002-03 are given in Table-5.11.

Command Area Development

5.84 The Command Area Development Programme

Table: 5.11
Financial and Physical Progress of Flood Management and Coastal Zone
Management Programmes during 2002-03 (Rs. In lakhs)

Sl. No	Item	Financial Achievement	Physical Achievement	Cumulative Physical achievement as on 3/2003
1	Flood Management	435.40	1061 ha.	58690 ha.
2	Anti-Sea Erosion Works			
	New sea-wall constructed	998.05	1.64 km.	384.03 km.
	Reformation of old & damaged sea-wall		1.05 km.	112.79 km

Source: Water Resources Department

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. 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 decided to withdraw the central assistance of the Command Area Development Programme except reclamation scheme in the 12 projects with effect from 31.03-2003.

5.86 In the first generation of projects beneficiary farmers were expected to take up the construction and maintenance of field channels and water distribution below the sluice level. Beneficiary participation in almost all the projects was inadequate. Active and sustained beneficiary participation in construction, management and

maintenance came to be ensured in all the second generation projects. Though CADA has been introduced beneficiary participation is found to be poor in India as a whole. In this respect Kerala has been behind the all India performance level. A study has been conducted in Malampuzha Project to find out the causes for the failure of the Beneficiary Farmers Associations and the measures to be taken up and reforming them. The findings of study and the measures suggested to reform them are given in BOX 5.7.

5.87 The performance of the implementation of Command Area Development Programmes during 2002-03 was not at all encouraging. The achievement recorded during 2002-03, include construction of field channels in 776 ha; drains to benefit 15580 ha; constructed warabandhies to benefit 678 ha. conducted large scale demonstration in 8045 ha; adaptive trials in 635 ha; 298 training programmes, bench mark and evaluation studies in 1167 ha. The work on reclamation of water logged areas were done in 3462 ha. disbursed subsidies to 456 small and marginal farmers; conducted detailed survey in 1320 ha., yield estimation survey on principal crops in 1111 ha. and four evaluation reports were also published. The physical and financial achievement is given in Appendix.5. The cumulative achievement of the main activities of CAD programmes of all projects are represented in Fig.5.3

Box -5.7

The Findings of Study and the Measures Suggested to Reforming BFAs

Findings: -

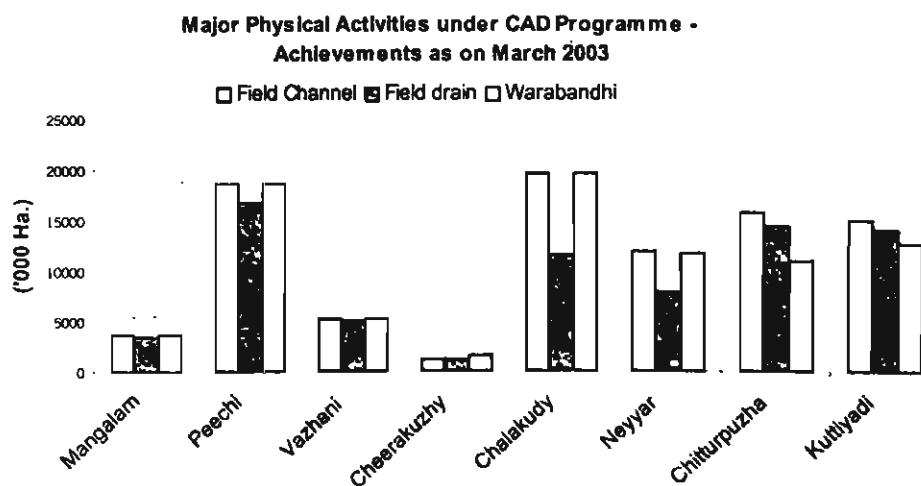
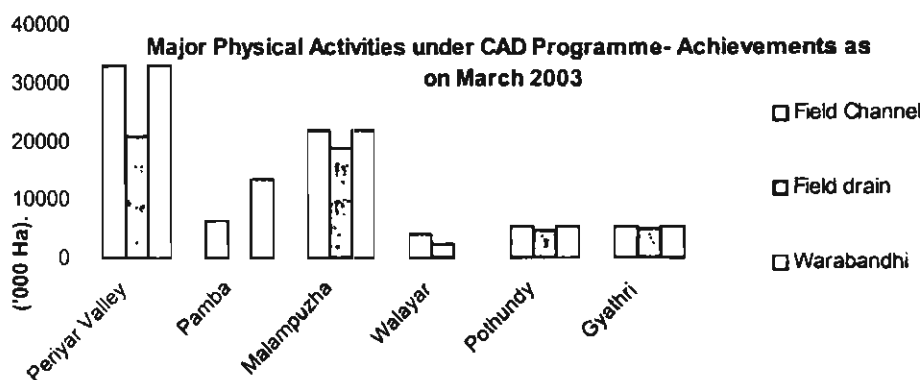
- BFAs collect and disburses the subsidies to farmers and other items of assistance but did not take any initiative in organising any other activity of the farmers.
- BFAs are not maintaining linkages with Government.
- Resolution of conflicts, attending Canal Committee meetings, disseminating the decisions of Canal Committee to BFA members, providing seed and seedlings, fertilizers and agricultural implements were performed only partially.

Measures suggested to reforming the BFAs: -

- Successful awareness creation among ordinary members of the Association.
- Economic and moral incentives to BFAs on the basis of performance.
- BFAs may be given a seed money to take up civil works under adequate safeguard.
- Simplification of procedure to avoid delays in the formation and working of BFAs.
- BFAs leadership should be assigned some powers in their selection and appointment as well as given supervisory powers in their everyday functioning.
- Proper legislation empowering BFAs legally must precede the earmarking of the source of funds to them.
- The scope of participation of BFAs may be confirmed to maintenance of canals in the first instance.
- The beneficiaries may be made to bear a part of the cost of maintenance of the project.
- BFAs may be made legally powerful and financially viable and strengthened with competent office bearers to function the BFAs properly.

Source: KRPLLD, 2002

Fig 5.3



Drinking Water Supply

5.88 In Kerala, piped water is provided to 204 lakh people which comes to around 64% of the population on July, 2003. Out of these, 138 lakhs (68%) are rural and 65.6 lakhs (32%) are urban people. It shows that 59% rural people and 79% urban people are covered under piped drinking water. Piped water coverage of total population varies from a high of 89.5% in Ernakulam to a low of 46.6% in Kozhikode district. Similarly the coverage under rural population also varies from a high of 90.5% in Ernakulam district to a low of 33% in Kozhikode district. With regard to urban population, highest coverage is in Kottayam district (97.6%) and lowest is in Wayanad district (50%). District wise rural-urban piped water coverage is shown in Appendix-5.9

5.89 During the last decade (1993-03) piped water has been provided to an additional population of 54.98 lakh. Out of these 8 lakhs belongs to SCs and 0.97 lakh to STs. According to a survey carried out for the Rajiv Gandhi National Drinking Water Mission, in Kerala, there are 9776 habitats. Out of these habitats by 2003 April, 2091 habitats (21.4%) have been fully covered with piped water and 7444 (76%) have been partially covered. Non covered habitats are 228. In 1788, habitats drinking water provided is below 10 lpcd whereas in 2091 habitats above 40 lpcd is provided.

5.90 Kerala Water Authority implement different category of water supply schemes like State Plan, Accelerated Rural Water Supply Programme, Accelerated Urban Water Supply Programme, Technology Mission, Rain Water harvesting etc.

Accelerated Rural Water Supply Programme (ARWSP)

5.91 Under Accelerated Rural Water Supply Programme, as on 31-3-2003, 519 schemes have been sanctioned and out of these 386 schemes have been commissioned. 121 schemes are ongoing and 12 schemes have not been taken up due to land problem/source failure. As on 31-3-2003, an amount of Rs. 24250 lakhs has been spent. Under Accelerated Rural Water Supply Scheme, the schemes are designed with a per capita demand of 40 lpcd.

5.92 Under Accelerated Urban Water Supply programme, six schemes are under implementation. Un-

der Technology Mission, Water Supply Schemes are implemented in water quality affected areas. 10 such schemes have been sanctioned with 50%/75% central assistance. Out of these one has been completed and 9 schemes are under different stages of implementation. Water supply schemes are also taken up in rural schools with 50% central assistance under ARWSP. Out of 355 schools taken under the scheme during 2002-03, 86 schools have been provided with water supply. During 2001-02 water supply was provided to 166 schools.

Rain Water Harvesting

5.93 During 2002-03, 623 units in 30 panchayats were sanctioned at a cost of Rs. 299.36 lakhs in 4 districts. 221 units have been completed and others are under different stages of implementation.

Issues under ARWSP

5.94 Under ARWSP, there are several issues starting from the identification of the project till the completion of the project. 100% assistance is provided under ARWSP. But under drinking water supply schemes in rural schools, only 50% of the cost is shared by Government of India. Water Supply Scheme under ARWSP has to be completed within the estimated cost and within the stipulated time to avoid cost over run. However, majority of the schemes are not completed in time which cause cost over run. The excess amount has to be met by the State Government for the completion of schemes taken up under ARWSP.

5.95 Kerala Water Authority could not avail the full grant for Water Supply Schemes from Government of India, during 2000-03 (3 years) due to inadequate project expenditure. Government of India grant is released in advance and based on its utilisation further releases are made. When expenditure falls short of the released amount, the shortage is disallowed from future releases. During 2000-03, disallowance from Government of India grant for ARWSP was Rs. 3687 lakhs (Rs.602+1286+1799 lakhs).

LIC Aided Schemes

5.96 Kerala Water Authority has been implementing rural and urban water supply schemes with LIC loan since 1967-68. An amount of Rs. 319.57 crore has so far been received as LIC loan for water supply and 278 schemes have so far been completed with LIC assistance. There are now 80 rural water supply schemes and 41 urban water supply

schemes under different stages of implementation with LIC loan. Out of these 27 schemes were sanctioned during 2003 March. During 2002-03 Rs. 50 crore has been received from LIC. Outstanding loan to LIC as on 9/2003 is Rs. 231.05 crore.

HUDCO Aided Schemes

5.97 HUDCO has provided loan for 18 urban water supply schemes so far and out of these, 13 schemes have been commissioned. Total loan sanctioned for these 18 schemes was Rs. 157.27 crores and Rs. 119.71 crore has been released. During 2002-03, only Rs. 29 lakh has been received from HUDCO. Total loan outstanding with HUDCO for water supply schemes as on 9/2003 is Rs. 59.87 crore.

Production, Distribution and Leakage of Pipe Water

5.98 Production of water during 2003 was 1260 to 1360 million litres per day against the capacity of 1720 to 1820 million litres per day. This shows that only 73% to 75% capacity is utilized. Out of the water produced water supplied was only 756 to 856 million litres per day which indicates that water supplied is only 60 to 63% of water produced. This shows that unaccounted for water is 37 to 40%. During 2002, unaccounted for water was only 17 to 22% of production. It shows that the leakage of water was at higher rate during 2003 compared to previous years. Table 5.12 shows production and supply of piped water in Kerala.

5.99 Distribution loss is due to very old pipes and lack of maintenance as well as unauthorised connections. Several Water Supply Schemes commissioned years ago requires replacement of pipe lines, pumps and motors, improvements to treatment plant and electrical installations. But this requires significant investment. Therefore thrust has to be given for rehabilitat-

ing old rural water supply schemes and for time bound metering of all connections to reduce distribution loss to the minimum.

Ongoing Water Supply Schemes

5.100 There are 1655 Water Supply Schemes under different stages of implementation. Out of these ongoing schemes, 1558 are under rural water supply schemes and 54 are under urban water supply schemes. Within the rural water supply schemes, 811 are under ARWSP and 349 are under State Plan and 72 are LIC aided. Similarly under urban water supply schemes 17 are under State plan and 34 are LIC/HUDCO aided. Table 5.13 shows category-wise ongoing water supply schemes in Kerala. District-wise and category-wise details are given in Appendix-5.10

TABLE – 5.13
Category-wise ongoing Water supply Schemes

Sl. No.	Ongoing Water Supply Schemes	Numbers
1	2	3
	Rural Water Supply Schemes	
1	Accelerated Rural Water Supply Schemes	811
2	Technology Mission	10
3	PMGY	316
4	State Plan	349
5	LIC Aided	72
	Sub Total	1558
	Urban Water Supply Schemes	
1	Accelerated Urban Water Supply Schemes	3
2	State Plan	17
3	LIC/Hudco Aided	34
	Sub Total	54
	Others	43
	Grand Total	1655

TABLE – 5.12
Production Distribution and Leakage of pipe water

Year	Capacity (MLD)	Production (MLD)	Distribution (MLD)	Unaccounted for water (% to production)
1999	--	1030-1050	770-800	25-30
2000	--	1030-1050	770-800	25-30
2001	1200-1300	NA	1000-1100	20-25
2002	1700-1800	NA	1400-1500	17-22
2003	1720-1820	1260-1360	756-856	37-40

Water Supply Schemes in Operation

5.101 There are 1916 water supply schemes in operation by the end of March 2003. During 2002-03, 15 water supply schemes were completed and out of it 2 were urban water supply schemes and 13 were rural water supply schemes. Table 5.14 shows the number of water supply schemes in operation by the end of March 2003. District-wise details of water supply schemes in operation are given in Appendix-5.11.

TABLE – 5.14
Water Supply Schemes in operation

Sl. No.	Category	Schemes in operation		
		As on 31-3-02	Completed during 2002-03	Total as on 31-3-03
1	Urban	56	2	58
2	Rural	1845	13	1858
	Total	1901	15	1916

Service Connections and street Taps

5.102 Kerala Water Authority has given 8.71 lakh service connections by 1-4-2003 as against 8.51 lakhs on 1-4-2002. Out of the total service connections, 8.04 lakhs (92.3%) are domestic and 0.66 lakhs (7.6%) are non-domestic. Similarly service connections are provided to 1.72 lakh street taps and out of it 1.28 lakhs (74.4%) are rural and 0.44 lakhs (25.6%) are urban. In other words, out of total service connections, 1.72 lakhs (16.5%) are street taps. Table 5.15 shows category wise service connections. District-wise details of service connections and street taps are given in Appendix-5.12.

TABLE – 5.15
Service Connections and street tap connections as on 1-4-2003

Category	Number
Service Connections	
Domestic	803706
Non-Domestic	66323
Industrial	1208
Sub Total	871237
Street Taps	
Rural	128297
Urban	44084
Sub Total	172381
Grand Total	1043618

Water Tariff and Revenue

5.103 Water Tariff rate in Kerala was revised last on April 1999. Consumers are classified into four categories (i) domestic, (ii) non-domestic, (iii) industrial and (iv) local bodies. Cost of production of water is given in Table –5.16. The existing water tariff rate in Kerala from 1st April 1999 is shown in Appendix-5.13.

5.104 Total revenue collected from water charges during 2002-03 is Rs. 105.8 crore as against Rs. 95.4 crore during 2001-02. Out of the total revenue from water charges during 2002-03, 27% was from street taps and 73% was from other categories. Similarly out of the total revenue from water charges, revenue from urban schemes amounted to Rs.68 crores (64.5%) and Rs. 37.6 crores (35.5%) from rural schemes. Details of revenue collected from water charges from 1998-99 to 2002-03 are given in Appendix-5.14

Arrears of Water Charges

5.105 Total arrears of water charge amounts to Rs. 320.3 crores by the end of March 2003. Out of the total arrears, 25% are from non-domestic consumers and 57% (Rs.184.61 crore) are said to be from local governments. Arrears from Grama Panchayats is Rs. 88.18 crore (27.5%) from Municipalities Rs. 51.13 crore (16%) and from Corporations Rs.45.3 crores (14%). Table 5.17 shows, category wise arrears of water charge as on 31st March 2003.

TABLE –5.16
Summary of cost of production of Water

Particulars	For the year 2002-03	
	mly	mld
Quantity produced	470,850	1800
Quantity sold	282,510	1080
	Total (Rs. in crores)	Per KL (Rs.)
Direct Variable Cost		
Operators Salary	43.64	1.11
Power charges	78.00	1.98
Chemicals	10.85	0.28
Total Direct Variable Cost	132.49	3.36
Indirect overhead cost		
Repairs & Maintenance	20.46	0.52
Administrative Overheads	34.95	0.89
Interest & Depreciation	133.71	3.39
Total Indirect overhead cost	189.12	4.8
TOTAL	321.61	8.16

TABLE -5.17
Arrears of water charge

Sl. No.	Category	Arrear Amount (Rs. lakhs)	Percentage
1	2	3	4
1	Domestic	4782	14.9
2	Non-domestic	7962	24.8
3	Industrial	825	2.6
4	Grama Panchayat	8818	27.5
5	Municipality	5113	16.0
6	Corporation	4530	14.2
	Total	32030	100.00

Plan and non-plan expenditure

5.106 During 2002-03, total expenditure of Kerala Water Authority was Rs. 377.19 crore. Out of the total expenditure Rs. 145.6 crore (38.6%) was under plan and Rs. 231.59 crores (61.4%) was under non plan. Under plan, expenditure incurred is for implementing water supply schemes under different category of schemes like State Plan, ARWSP, LIC/HUDCO aided etc. Under non-plan, major expenditure items are salary, energy charges, interest on loan and operation and maintenance. During 2002-03 expenditure on salary was 27% of total expenditure and 44% of non plan expenditure. In other words, nearly half the cost under non plan is for salary and establishment charges against 21% for energy and 13.5% for operation and

maintenance. Interest on loan accounted for about 15% of the total non-plan expenditure in 2003 against 13.8% in 2001. Category-wise expenditure of KWA is shown in Table 5.18.

5.107 Electricity charge could not be paid regularly due to paucity of funds. As on 1-4-02, amount due as electricity charge was Rs. 56 crore and the bill for 2002-03 was Rs. 78 crore. As against it only Rs. 48.10 crore was paid. Therefore as on 31-3-03, electricity dues increased to Rs. 86 crore. In 2002-03, gap between revenue and expenditure was Rs. 117.7 crore and the non plan grant was Rs. 61.86 crore. Therefore 2002-03 ended in a deficit of Rs. 55.84 crore.

5.108 Total anticipated revenue for 2003-04 is Rs. 143.50 and anticipated revenue expenditure is Rs. 398.05 crore which shows a deficit of Rs. 254.95 crore. As against it non-plan grant for 2003-04 is Rs. 68.04 crore. In order to meet all revenue expenditure, Rs. 186 crore will have to be diverted from plan funds. The diversion of increasing amounts of plan funds (from the state government, LIC etc and Government of India) for revenue expenditure has led to an untenable position of (i) increasing number of unfinished works which are dragging on for years and have to be financed by the state government fully (ii) decreasing receipts of funds from Government of India (iii) more and more schemes 'under implementation' but little

TABLE 5.18
Plan and Non-plan Expenditure (2000-01 to 2002-03)

Sl. No.	Category	Expenditure (Rs. Crores)		
		2000-01	2001-02	2002-03
	A. Plan			
1	State Plan	57.48	39.65	51.06
2	ARWSP	43.83	42.33	43.31
3	LIC/HUDCO Aided Schemes	33.46	41.40	37.07
4	Others (AUWSP/PMGY)	--	--	14.16
	Sub Total	134.77	123.38	145.60
	B. Non-Plan			
1	Salary and Establishment	100.69	104.33	102.59
2	Power	54.91	66.00	48.09
3	Operation & Maintenance	30.68	31.34	31.31
4	Interest on Loans	34.22	35.63	35.21
5	Repayment of Loans	21.77	20.26	8.73
6	Others	5.58	5.60	5.66
	Sub Total	247.85	263.16	231.59
	Grand Total	382.62	386.54	377.19

addition to water supply. Receipts of Kerala Water Authority from various sources from 1998-99 to 2002-03 are given in Appendix-5.15

JBIC Aided Water Supply Project

5.109 Agreement was executed with JBIC in 1997 by Kerala Water Authority to take up five major Water Supply Schemes under Kerala Water Supply Project at an estimated cost of Rs. 1787.45 crores. Implementation started only in September 2003. The project comprises of augmentation and rehabilitation of Water Supply Systems of two urban regions viz. Thiruvananthapuram and Kozhikode and construction of Water Supply systems of three rural regions viz. Meenad and adjoining villages (Kollam Dist.), Pattuvam and adjoining villages (Kannur Dist.) and Cherthala and adjoining villages (Alappuzha dist.). The project when completed will benefit 43 lakh people in 2021. The project is proposed to be completed by 2006-07. Details of estimated cost of the project and estimated loan component are given in Table 5.19.

5.110 The consultancy agreement has been executed on 4-8-2003 and consultancy contract came into effect from 7-8-2003. The Consultants have commenced the consultancy services from 1-9-2003. The work on topographical survey is nearing completion. Tenders for geo-technical survey have been invited and are being finalised. Treatability studies for designing drinking water treatment process will continue till January, 2004.

Land acquisition for Meenad project has been completed and acquisition work of the other four projects are nearing completion.

5.111 The cumulative expenditure for the project as on 30-11-2003 is Rs. 2132 lakhs and the anticipated expenditure for 2003-04 is Rs. 516 lakhs.

Modernisation and Computerisation of Kerala Water Authority

5.112 Kerala Water Authority has started computerisation and modernisation in phases. In the first phase, computer has been procured for Head Office, Regional Offices, 10 Circle Offices and 7 IPD Offices. In the second phase, emphasis is on the procurement of software and hardware and network implementation. Sanction has been obtained for phase II for Rs. 164 lakhs. Computerisation up to the sub division level is to be taken up at an estimated cost of Rs. 272 lakhs. It is also decided to introduce e-governance by building up a network infrastructure in head office connected to subordinate offices. Network components have been procured. Similarly it has been decided to develop and implement Management Information System. Project Management System and Material Management System are proposed to be implemented during 2004-05.

5.113 Computerised billing and collecting system has been introduced in major revenue centres (27 sites) and about 60% of 8 lakh consumers are covered by the

TABLE 5.19
Details of estimated cost of the project and estimated loan component

SLNo.	Item	Estimated cost (Rs. Crores)	Loan portion (Rs. crores)
1	2	3	4
1	a. Thiruvananthapuram	215.12	199.47
2	b. Meenad	175.96	162.87
3	c. Cherthala	231.37	215.39
4	d. Kozhikode	430.59	410.20
5	e. Pattuvam	195.31	184.37
	Sub Total	1248.35	1172.30
6	Institutional Strengthening	34.18	34.18
7	Contingencies	128.25	128.25
8	Consultancy	100.01	100.01
9	Interest during Construction	84.64	84.64
10	Land Acquisition	19.86	--
11	Administration Charges	98.76	--
12	Taxes & Duties	73.40	--
	Grand Total	1787.45	1519.38

system in 4 Corporations and 8 municipalities. Computerization in other towns is proposed to be completed during 2004-05. Bi-monthly billing has been implemented in 3 Corporations and it is proposed to be extended to one Corporation and 8 municipalities during 2004-05.

White Paper and MOU

5.114 The Government of Kerala constituted, a Secretaries Committee with a view to suggesting concrete measures to improve the efficiency of Kerala Water Authority and to make it financially viable based on the detailed study made by the State Planning Board. The Committee prepared a White Paper on Kerala Water Authority.

5.115 The study is one of the major efforts to recognize hard facts, identify the weaknesses and suggest urgent remedies. Unless a serious thought is given and drastic steps are taken to overcome the situation, the position would further worsen in the coming years and KWA would not be able to incur any expenditure for Capital works. The critical financial condition of Kerala Water Authority and its diminishing image warns all concerned that unless something is done, the Authority would reach a point of no return. The employees of the Authority are now conscious of the situation and are willing to support any action to reform the Authority. The reforms should therefore aim not only at reducing expenditure by cutting down some posts, but should consider a complete restructuring of the entire organization for improving systems, simplifying procedures, introducing professional management, enforcing discipline, reducing the number of offices and the best utilization of all available resources in and outside the organization.

5.116 KWA has to take all out measures to restore normalcy and to build up public image. These measures include proper selection of schemes, careful monitoring for the implementation of the schemes without cost and time over-runs, reduction of expenditure by all conceivable methods, increase revenue collection and introduce own codes and manuals. The State Government has also to take a consistent set of decisions vis-a-vis KWA. The Committee advised to have an MOU signed between the Government and the KWA laying down short term and medium term objectives for 2002-07, the monitorable targets and the relative responsibilities. The implementation of MOU has to be moni-

tored every month as in the case of KSEB.

5.117 The Government accepted the white paper and decided to initiate further action except those relating to the tariff increase, functional restructure, reduction in the number of offices and staff. Government also decided to finalize and execute an MOU with KWA, laying down monitorable targets and goals and mutual responsibility.

Jalanidhi

Kerala Rural Water Supply and Sanitation Project

5.118 The World Bank supported Kerala Rural Water Supply and Sanitation Project (Jalanidhi) is being implemented in four districts: Kozhikode, Palakkad, Malappuram and Thrissur by Kerala Rural Water Supply And Sanitation Agency (KRWSA) through village panchayats. Total outlay of the project is Rs. 451 crore and will be implemented in six years (2001-2006), Project is expected to cover three lakh households, benefiting a population of over 15 lakhs in the selected 100 village panchayats of 4 districts through 2500 piped Water Supply Schemes.

5.119 Panchayats are covered in batches of approximately 15-20 panchayats per batch and each scheme has a project cycle of 27 months, divided into four phases: 3 months for Pre-Planning Phase, 12 months for Planning Phase, 8 months for Implementation Phase and 4 months for Post-Implementation Phase.

5.120 The Beneficiary Groups (BGs) plan, implement, contract and/or construct and take full responsibility for the continuous operation and maintenance of the structures created under this project. They contribute 15% of the capital cost and mobilise the full O&M expenses. There can be 25 or more BGs in a panchayat. Grama Panchayat (GP) is the Nodal Agency for this project. They have to contribute 10% of the capital costs of the water supply schemes and have to play different roles during the lifecycle of project ranging from that of a Co-ordinator to Mediator, Arbitrator and Monitor. GoK share of the project is channelised through the Panchayat. Panchayats are selected for the project based on the need for water and sanitation, the extent of poverty and proven efficiency in managing Plan Funds.

5.121 Socio-technical support required to mobilize the community and the GP is provided by a Support Organisation (SO) usually an NGO or a CBO selected by the GP itself. District Project Management Unit is at district level with multi disciplinary team and provides all necessary operational assistance, technical or otherwise, for the GPs and the SOs.

5.122 Project also ensures (i) Domestic and Environmental Sanitation to protect quality of water (ii) sanitation and hygiene promotion activities (iii) Sustainability of source (iv) economic empowerment activities and (v) Strong Capacity Building to empower people to ensure sustainability of the project.

5.123 Jalanidhi Project is into its third year of implementation and is working with the third batch of GPs. The Project covered 5 GPs in the first batch, 25 GPs with 26 projects in the second batch and has taken up 29 GPs with 33 projects in the third batch. Four GPs in Batch II and 2 GPs in Batch III come under Tribal Development Project. Thus 64 projects have already been taken up by the third year, which is 73.03% of the target by 2006.

5.124 Till end August, 2003, the Communities have contributed Rs. 634.78 (10%) lakhs to the Project fund, the Grama Panchayats have contributed Rs. 455.57 lakhs (7.07%) and the Government of Kerala contribution has been Rs. 5350 lakhs (83.07%).

5.125 Jalanidhi project has proved the success of a participatory and community based water and sanitation service delivery paradigm. Grama Panchayats, when give necessary socio-technical support, can develop and sustain rural water and sanitation delivery systems without the overheads that accrue in a monopoly service provision scenario, stands validated.

5.126 Rural people are building 966 small water supply schemes with a paid up capital cost contribution of Rs. 634 lakhs. They are collecting Rs. 18 lakhs as operation costs for running 150 commissioned schemes for the past 36 months. Middlemen have been avoided leading to a cost saving of 20%. Average commissioning time frame for a scheme is 32 months. 35 Non-governmental organizations have positioned about 900 community engineers and social animators in the selected panchayats delivering sustainable service.

TABLE 5.20
Present status of the project

Sl. No	Activity	Target till end 2003	Batch completed		To be completed only in October 2004	Total (upto end Sep. 03)
			I	II	III	
1	2	3	4	5	6	7
1	GPs Selected	46	5	25	29	59
2	No. of projects	46	5	26	34	65
3	Implementation Phase Quad. Agreements signed	500	133	731	--	864
4	Water Supply Schemes Functional	500	119	47	--	166
5	Population Covered by Functional WSS	2,50,000	46608	9506	--	56114
6	Estimated Coverage by completion	2,50,000	61350	205777	--	267127
7	Cash Contribution Mobilised (Rs.in lakhs)					
	BG	1656	137.46	391.89	161.52	690.87
	GP	966	113.29	316.58	181.09	610.96
	GOK	11178	746.62	2160.56	65.30	2972.40
8	San. Latrines Built	8000	1441	5236	--	6677
9	Unsanitary Latrines Converted	2000	28	429	--	457

TABLE – 5.21
Target and Achievements

Sl.No.	Activity	Target (Nos.)	Achievement (Sep. 2003)
Batch-I			
1	Water Supply Schemes	118	107
2	Rehabilitation of KWA/ GP Schemes	13	8
3	Rain Water Harvesting Units	3	24
4	Environment Management Units		
	Soak pit	419	101
	Compost pit	1808	461
	Vermi Compost pit	99	7
	Drainage (Mtrs)	4710	4154
	Latrines	2012	1441
	Latrine Conversion	732	28
Batch-II			
1	BGs Registered	375	1066
2	Functional Water Supply schemes	375	47
3	Environment works		
	Drainage(Mtrs)		
	Latrine	3400	550
	Latrine Conversion	7500	5236
		1500	429

Transfer and Rehabilitation of Single Panchayat KWA schemes

5.127 Government of Kerala has taken a policy decision to transfer all single panchayat KWA schemes that are currently managed by KWA to the respective grama panchayats. Such 1050 schemes were notified for transfer during August, 1998. However only 140 schemes have been transferred by July, 2003. The reasons for slow progress of transfer are (1) Absence of a protocol for transition on roles and responsibilities during and after transition (2) Reluctance of GPs to take over and their unwillingness to maintain the schemes through collection of user charges (3) Functional status of many schemes is unsatisfactory in terms of reliability, high distribution loss, poor service level and sub optimal efficiency (4) Absence of a comprehensive financial and technical package for rehabilitation with adequate incentives and disincentives. Table 5.22 shows district wise details of single panchayat KWA schemes listed for transfer to GPs.

5.128 Subsequently during June 2002, another 43 KWA schemes were added to the list for transfer

to GPs. Thus the total number of rural single panchayat schemes listed for transfer are 1093. The listed schemes for transfer include LIC aided, ARWSP, SCP Schemes, TSP Schemes and other RWS and drought relief schemes.

Advantages of Rehabilitation

5.129 Advantages of transfer of schemes to GPs are (i) Strengthening of Decentralisation and good governance (ii) help financial and institutional restructuring of KWA, (iii) reduce fiscal burden of KWA (iv) Improve efficiency of service delivery and satisfaction of consumers and (v) improve coverage with less household capital investment.

KRWSA Model transfer of KWA Schemes

5.130 KRWSA took over 13 KWA schemes in 5 GPs in Batch I as pilot project and rehabilitated and handed over to community. Rehabilitated status of the 13 schemes are shown in Table 5.23

5.131 Similarly 77 rural single KWA schemes in 56 GPs are under different stages of rehabilitation by KRWSA

TABLE - 5.22
District-wise Details of Single Panchayat KWA Schemes (No.)

Sl. No.	Name of District	Grama Panchayats	Total Schemes	Operators	Others engaged
1	2	3	4	5	6
1	Thiruvananthapuram	60	80	135	27
2	Kollam	32	57	126	11
3	Pathanamthitta	24	33	71	10
4	Alappuzha	48	72	155	48
5	Kottayam	51	99	110	NA
6	Idukki	25	88	55	1
7	Ernakulam	41	82	96	3
8	Thrissur	54	103	115	NA
9	Palakkad	54	92	128	10
10	Malappuram	42	66	65	1
11	Kozhikode	61	105	86	NA
12	Wayanad	16	29	18	3
13	Kannur	54	90	84	17
14	Kasaragod	26	54	32	NA
	Total	588	1050	1276	131

TABLE - 5.23
RWSA Rehabilitation status of 13 KWA schemes: Batch I

Sl.No.	Item	
1	Schemes Rehabilitated (Nos.)	13
A	Pre Rehabilitation Status	
1	Service level	Unsatisfactory
2	Household connection (Nos.)	250
3	Public stand posts	548
4	Total Household	5081
B	Rehabilitation projection	
	(i) Service level	70 lpd
	(ii) Household connection	3217
	(iii) Public stand post	356
	(iv) Total Household	5407
C	Estimated Cost (Rs. lakhs)	207

Rehabilitation of Single GP KWA Scheme:

KRWSA Model: Erimayur Experience

5.132 KRWSA selected seven single panchayat rural water supply schemes in Erimayur GP in Palakkad district during November, 1999. Total cost of seven schemes was Rs. 105.56 lakhs and valuation cost in 2001 was Rs. 47.97 lakhs. Rehabilitation cost was Rs. 123.19 lakhs. Table 5.24 shows the details of pre and post rehabilitation of these 7 schemes.

5.133 The take over and rehabilitation posed serious challenges. The demand was "Free water". Divided opinion and vicious campaign resulted in a significant fall in the number of BGs and lukewarm participation in the remaining. With tremendous pressure and as takeover is a pre condition for the GP to get project funds for other new schemes as well, the GP signed

the STM in November 2000. The GP also showed significant courage in betting its side in favour of rehabilitation. KRWSA provided additional technical support to the SO (Support Organisation) and convened a series of meetings and training to all concerned along with flow of funds for rehabilitation. Like other SO in pilot GPs, the SO, Maithri in Erimayur showed exemplary courage, team spirit and sense of purpose. But for the concerted efforts of the GP and SO, the resolution, vision and statesmanship of the GP, it would not have come to a reality.

Key issues of Rehabilitation

5.134 Key issues associated with the transfer and rehabilitation of Single Panchayat KWA schemes is given in BOX 5.8

TABLE 5.24
KWA Schemes in Erimayur GP

Sl.No.	Parameters	Pre-rehabilitation status	Post rehabilitation status
1	2	3	4
1	Private Connections	376	1413
2	Public stand posts	280	209
3	Service Level	40	70
4	Pumping Hours 1 day	6	10
5	Household cost (New schemes Rs.)	12000	3700
6	Household cost sharing	1800	555

Box -5.8

Transfer and Rehabilitation of Single Panchayat KWA schemes : Key Issues

Technical Issues

- Non-availability of basic details including as laid maps, land transaction details etc. with KWA.
- Unauthorized connections/privileged connections and lack of authenticated list from KWA.
- Hardware imbalance (Over design) leading to excessive O&M.
- Lack of transparent valuation norms and participatory valuation to ensure ownership while transfer.
- Methodology for disposal of items/scrap after rehabilitation is over.
- Status report/pre feasibility study to be done and only those schemes that are viable for rehabilitation need to be taken up.
- Technical un-sustainability and high unaccounted flow (UAF)

Management Issues

- TMC formation and management of large schemes.
- Continued investment/expansion programmes and fresh connection on these schemes/KWA other than routine maintenance.
- Redeployment of existing operators who are highly paid.
- Scheme transfer to be effected only after the preparation of pre-feasibility /status report or shall be at a stroke.
- Whether TMC to be constituted with existing consumers alone or with prospective consumers.
- Strategic issues – Model A (TMC with existing consumers decided to give fresh connections) and Model B (prospective consumers build pressure on existing for rehabilitation)
- Drafting of bylaws and water sharing in federated BGs.
- From the divided stand of public policy, expectations of continued free provision act as a strong barrier to rehabilitation.

Social Issues

- Rehabilitation of public stand post.
- Water sharing issues intra GP and inter-GP.
- Social tension and conflict in sharing of water, procurement, new connections in large multi BG schemes.
- Exclusive SC/ST schemes.

Financial Issues

- Sharing of capital cost by existing consumers.
- Electricity arrears and transfer of ownership.
- Valuation should separately show the investments made by GP/GOK in the schemes and amount so apportioned.
- Payment of O&M expenses including electricity charges during the transition period.

Policy Issues

- Though the GO has been issued in 1999 the take over and cost recovery not taking place in non-project districts.
- KWA continues to go ahead with expansion/giving new connections in single panchayat schemes, even after GO came into force.
- Who will be the nodal agency for implementing the rehabilitation/ensure co-ordination and commonality of approach.

CHAPTER 6

ENVIRONMENT

Introduction

Ever since the 1972 Stockholm conference of the Heads of Nations and subsequently the UN Conference of Environment and Development (UNCED) held in Rio de Janeiro in 1992, followed by the Johannesburg Conference on Sustainable Development in 2002, the concerns of all nations including India, have been increasingly aired to conserve, preserve and protect our natural resources on a sustainable basis in the best interest of the people. In many developing countries the costs of environmental degradation have been estimated at 4 to 8 per cent of GDP annually.

Wet land Conservation

Distribution

6.1 The total wetland area of the country is about 4.1 million hectares. Wetlands are distributed in different geographical regions (Table 6.1). There are 32 natural and 2121 man made wet lands in the State. 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.

6.2 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

6.3 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.

6.4 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 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. The features of Ashtamudy estuary are shown in BOX.6.1 Ashtamudy estuary is the second largest estuary in Kerala. The water body derives its name from the plannimetric shape with eight branches radiating from the central part.

6.5 State has to prepare action plan for wetlands project implementation. Wetlands are rich in floral and faunal biodiversity and they harbour a large number of endangered and threatened species. Immediate steps should be taken to protect them by changing their legal status to that of a protected category. Peoples's 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.

Table 6.1 :
State /Union Territory wise Distribution of Wet Lands in India

State	Natural		Manmade	
	No	Area (Ha)	No	Area (Ha)
Andhra Pradesh	219	1,00,457	19,020	4,25,892
Arunachal Pradesh	2	20,000	NA	NA
Assam	1,394	86,355	NA	NA
Bihar	62	224,788	33	48,607
Goa	3	12,360	NA	NA
Gujarat	22	394,627	57	129,660
Haryana	14	2,691	4	1,079
Himachal Pradesh	5	702	3	19,165
Jammu & Kashmir	18	7,227	NA	21,880
Karnataka	10	3,320	22,758	5,39,195
Kerala	32	24,329	2,121	2,10,579
Madhya Pradesh	8	324	53	1,87,818
Maharashtra	49	21,675	1,004	2,79,025
Manipur	5	26,600	NA	NA
Meghalaya	2	NA	NA	NA
Nagaland	2	210	NA	NA
Orissa	20	1,37,022	36	5,391
Punjab	33	17,085	6	5,391
Rajasthan	9	14,027	85	1,00,217
Sikkim	42	1,101	2	3.5
Tamil Nadu	31	58,868	20,030	2,01,132
Tripura	3	575	1	4,833
Uttar Pradesh	125	12,832	28	2,12,470
West Bengal	54	2,91,963	9	52,564
Total	2,164	14,49,338	65,250	25,87,965
Union Territories				
Chandigarh	NA	NA	1	170
Pondicherry	3	1,533	2	1,131
Total	2,167	14,50,861	65,253	25,89,266

Note : i. These figures may differ from the figures generated by the GIS/RS study
ii. This table includes wetlands that are less than 100 hectares in area

Source: Jyothi Parikh and H. Datye, 2003

Box -6.1

Features of Ashtamudi Estuary

- Dissolved oxygen is low in the Ashtamudi. It is 3.2 mg/l in the non-monsoon compared to the values of about 5 mg/l in a healthy tropical estuary. Low levels of 2-3 mg/l occur in the Southern Kayal adjacent to Kollam city.
- Chemical pollution of water is not high except in certain pockets.
- Microbial contamination is high in some locations particularly around the port area and in the river zone.
- The southern Kayal is affected by the waste disposal of the coir industry which causes a large increase in best sediment organic content.
- Fleshing of the Kayal is slow and so discharges to the water body need to be minimised.
- Polluting hydrocarbon content is highest in the fishing harbour area and along the national waterway.

Source: CESS

Mangroves and Sacred Groves

6.6 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

6.7 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.

6.8 Potential areas stands fragmented and actual area is estimated to be less than 50 km² which only is the remnants of about 700 km² of mangroves which reportedly existed in Kerala earlier. The developments of timber industry especially plywood, alternative land use and the establishment of fishing ports were 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. 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. The area under mangroves in different

states is shown in the Appendix 6.2. Action plan for the conservation of mangroves and strategy for its implementation to ensure community participation in conservation has to be prepared.

6.9 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.

6.10 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. Kavu (Malayalam) Sarppakkavu (Tamil), Pavithravana (Kannada) Devarais (Marathi), Orans (Rajasthani) etc. and have extent varying from about 10 sq. kms to a million sq. kms.

6.11 The state of Kerala from time immemorial has nurtured a very divine and aesthetic line of protection of sacred groves, which was intermingled with religious ways of social activities and worships. 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

6.12 Ever since the convention on Biological Diversity adopted at the UN Conference on Environment and Development (UNCED) at Rio de Janeiro in June 1992, there is great concern and commitment on the part of the international community for the conservation and sustainable and equitable utilisation of bio-diversity. Bio-diversity occurring in plants, animals and micro-organisms of economic value is now referred to as Agro bio diversity. The future of global food security depends on the success of our efforts in the conservation of agro-biodiversity. 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 fore-

Box -6.2

Kole Wetlands – An Internationally Important Wetland in Peril

Wet lands are lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. Kerala by virtue of its extensive geographical extent, varied terrain and climatic conditions, supports a rich diversity of inland and coastal wetland ecosystems. Wet lands of Kerala include estuaries, deltas, mangroves, coastal lagoons, freshwater lakes, swamp forests, rivers, streams, ponds and non-managed systems such as rice fields and reservoirs.

The Indian Remote Sensing Satellite Data has shown that the state has a total wetland area of 127930.07 ha, in which 64 units covering an area of 34199.57 are inland wetlands and 93 units having an area of 93730.5 ha. are coastal wetlands.

Wet lands provide a wide variety of functions such as flood control, water purification, shoreline stabilisation, control of erosion and control of the hydrological cycle. They also prevent salt-water ingress from sea and enable ground water re-charge.

Kole wet lands is one of the largest and most important wetland of Kerala, covering an area of 13,632 ha. spread over Thrissur and Malappuram district, extending from the northern bank of Chalakkudy river in the south to the southern bank of Bharathapuzha river in the north. The area lies between 10° 20' and 10° 40' N latitudes and 75° 58' and 76° 11' east longitudes. The name 'Kole' refers to the peculiar type of cultivation practices carried out from December to May. 'Kole' a Malayalam work indicated bumper yield or high returns in case floods did not damage the crop. The rice cultivation in kole had been started early as 18th century by reclaiming the Thrissur 'kayal lands' by erecting temporary earthen bunds. The region generally experiences a moderate climate. The temperature varies from 21 to 38° C and the mean annual rainfall is 2757 mm. Kole wetlands is of substantial economic and cultural value and is regarded as the 'rice bowl' of central Kerala. It generates about 12,49,100 man days and an income of Rs. 17,29,61,750/- annually.

Though it proved to be an internationally important wet land, kole wetland is one of the most threatened wetlands in the state. Reclamation of land and change in land use pattern are the most serious problems. The Paddy fields are being converted to Coconut, Arecanut and Banana and other cash crops at an alarming rate. The marshes are being 'developed' and new construction are cropping up. At many places, the wetland has been converted to brick-kilns. Large scale poaching and trapping of birds and fishing are also going on. The indiscriminate use of pesticides has been found to affect the migrant bird populations, which visits Kerala wetlands from September to April every year. Kole wetland harbours globally threatened species such as spot-billed pelicans, Oriental Darter, Black Headed Ibis, Painted Stork, Black-necked stork, Black bellied Tern, Cinereous vulture and Greater Spotted Eagle. From biodiversity conservation point of view also, 'kole' is of utmost importance.

It is suggested that conservation measures through a wetland Information System (WIS) and a participatory Wetland Management (PWM) Programme should get priority for environmentally sound sustainable development for all the wet lands in Kerala.

(Source: Proceedings of the 14th Kerala Science Congress, 2002)

front 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.

6.13 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 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.

Bio-Diversity Challenge in Kerala

6.14 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 represents 95 per cent of the flowering plants and 90 per cent of the vertebrate fauna of the Western Ghats.

6.15 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.

6.16 At the present rate, the state of Kerala would have a population of 60 million by 2030. By that time 1/3 of our 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 20th 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. The species diversity is shown in BOX 6.3.

6.17 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

Bio diversity Conservation Strategy

6.18 The ecologically sensitive areas have to be identified with reference to topography, hydrological regimes, and this has to be networked with species diversity. Catchment areas and coastal areas are two ecologically sensitive areas in Kerala. Land use planning of catchment areas with afforestation of native species through natural growth, Shola protections and aerial seeding with native seeds and closing the area from human interference for varying periods can help develop natural forests without much expenditure. This would enhance the bio-diversity of the area, allow soil conservation and increase the discharge of rain water without siltation into man made dams. Some of the highly critical areas of denudation of Sholas are seen in Agasthyamala, High Ranges of Idukki district and Wayanad belt in Malabar. The coastal areas of Kerala have become cesspool of pesticides and toxic materials discharged from agricultural operations at the high lands. Appropriate monitoring of pollution load in the rivers at the point of source can help the sustainable

Box -6.3

Species Diversity in Kerala

- Kerala has a flora of 10035 species, which represent 22% of India's flora, occupying a landmass of just 1.18 per cent of the nation.
- There are about 3872 flowering plants and among them 1272 are endemic and 159 species have been classified under different threat categories .
- The flowering plants include about 1000 species of ornamental plants, 900 medicinal plants, 450 wild edibles, 175 gums, resins and dyes, 165 timber/wood species, 14 bamboo and reed, and 11 canes. Hardly, 10-15% of these plant resources has been exploited, while the rest remain as a potential gene pool as yet untapped. Among the resource species, medicinal plants are the most collected species from, the forests of Kerala.
- Out of the 300 RET species (Rare, Endangered and Threatened), in the Western Ghats, 159 are in Kerala; of which 70 are herbs, 23 climbers, 8 epiphytes, 15 shrubs and 43 trees. There are about 64 rare, 22 threatened, to endangered and 7 extinct Species.
- There are about 102 species of mammals, 476 of birds, 169 reptiles, 89 amphibians and 202 species of fresh water fishes reported from Kerala . There are about 56 species of mammals, 85 birds and 139 reptiles, recorded as endemic. Also there are about 86 amphibians recorded endemic and RET and 167 species of freshwater fishes as endemic/exotic/transplanted.
- The estimated number of elephants in the state is between 4290 and 7184, with viable populations at Wayanad, Thekkady, Parambikulam and Munnar regions. The estimated population of Guar in the state is around 4000. The tiger population is comparatively higher in Periyar and Parambikulam. Nearly 25 per cent of the Indian bird fauna is found in the state, of which 150 species have been located in the coastal area as and the remaining in the mid and high lands of the state. The endemic birds include *Nilgiri Wood Pigeon*, *Malabar Grey Hornbill*, *Wayanad Laughing Thrust*, *Nilgiri Laughing Thrust*, *Travancore White Breasted Laughing Thrust*, *Malabar Whistling Thrust* etc.
- A total of 10 species of fresh water fishes have been identified as 'most threatened' by NBFGR during 1992

development of fisheries and sanitation in the coastal belt. Some of the critical areas of coastal pollution occur in the belt from Neendakara to Aluva. The bio-diversity of marine life of coastal areas is dependent on the control of pesticides use in the highlands. A strategic approach to bio-diversity conservation in Kerala as given by the French Institute of Pondicherry, the bio-diversity expert consultancy under the Kerala Forestry Project is given in BOX 6.4.

6.19 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

Biodiversity Action Plan

6.20 In line with the Biological Diversity Act 2003, Government has established Kerala Biological Diversity Board. The Board will encompass initially the following activities:

- (a) Development of state-wide strategy for implementing biodiversity programmes.
- (b) Preparation of an exhaustive inventory of the biodiversity based on genetic, species and ecosystem criteria.
- (c) Training programmes for Panchayat level committees to implement the action plan.

Box -6.4

Bio-diversity Conservation Strategy for Kerala

- Create a network of research institutions (Institutes, Universities, Colleges and NGOs etc.), identify and conduct research on information gaps and create a Bio-diversity Information System for Kerala (BDISK)
- Conserve critical species, ecosystems and gene pools, with special reference to sacred groves, mangroves, wetlands and corridors.
- Develop comprehensive baseline information for management plans and monitoring, rationalize priority area network, create different management zones, identify and restore the degraded area, and develop monitoring designs and protocols for each activity.
- Create awareness among public to minimise the threats and to encourage sustainable utilisation of resources, develop appropriate environmental education policy and monitoring mechanism and create awareness among NGOs and other institutes, regarding financial support provided by Government of Kerala and Government of India through different schemes.
- Review the ongoing PFM and eco development initiatives, and extent them in all the forest divisions.
- Improve the capacity of frontline staff through training, workshop etc.
- Tackle the threats based on priority
- Establish a model for sustainable utilisation of resources for livelihood and equitable benefits such as cattle grazing, collection of firewood, grass and leaves for thatching and small poles, fishing and use of explosive in fishing, unsustainable and unscientific collection of NTFP etc.
- Develop comprehensive protection measures to tackle the illicit activities such as poaching, tree felling, encroachment, Ganja cultivation, illicit distillation, sand mining, quarrying and mining in private areas, potential bio piracy, Sandalwood smuggling etc.
- Mitigate human-wildlife conflict through appropriate methods.
- Minimize the impact of mass tourism and pilgrimage.
- Develop appropriate measures in natural resource management to mitigate management issues.
- Develop suitable institutional mechanism to minimize the constraints.

Source: Bio-diversity Expert Consultancy under KFP, 2003.

Bio-diversity Conservation and Panchayat Raj Institutions

6.21 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.

Land degradation

6.22 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 per cent of the regions total vegetated land.

6.23 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.

6.24 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.

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

6.25 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.

6.26 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.

6.27 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, sedges, pesticides, industrial water etc. need to be used with utmost care to avoid the possibility of pollution by the soil through heavy metals.

6.28 High erosion rates have resulted in the sedimentation of river banks, siltation of drainage channels, irrigation canals and reservoirs. The storage capacity of many 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.

6.29 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 are shown in Table 6.3. The reduction in capacity of various reservoirs ranged from 4.18 per cent in Pamba to 30.9 per cent in Anayirankal reservoir.

Salinisation

6.30 Salt affected soils are widespread in the Arid, semi-arid 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

Table 6.3
Summary of the Results of Sedimentation Surveys

Sl. No	Reservoir	Capacity (Mm3)		Reduction (%)	Annual reduction (%)	Sediment yield (m3/ha/yr)
		Original	Present			
1	Kallarkutty	6.87	6.14	11.00	0.37	8.39
2	Sengulam	NA	1.87			
3	Ponmudi	51.66	40.05	21.60	0.72	13.00
4	Peringalkutu	32.00	23.84	26.60	0.71	4.43
5	Mattupetty	55.22	48.78	11.66	0.26	13.34
6	Kundala	7.76	6.49	16.20	0.35	7.11
7	Anayirankal	49.80	34.40	30.90	0.94	71.05
8	Pamba	39.20	37.56	4.18	0.13	7.10

Source : CWRDM

salinity in India accounts to 6.2 million tonnes.

6.31 Kerala endowed with a high ecological diversity has so many inherent problems associated with different soil types. The state with its long coastal line of about 590 km, has 16 lagoons or backwaters, covering an area of about 650 square km linked to the sea. Most of the coastal lands, deltaic areas at river mouths and reclaimed backwaters are either at sea level or 1.0 to 1.5 m below sea level. This leads to intrusion of seawater, which makes the soil saline. The other reasons of soil salinity are saline ground water, seepage from canal and higher adjacent areas, poor surface and subsurface drainage, saline irrigation water and industrial effluents. Saline soils contain excess amount of soluble salts in the root zone and adversely affect crop growth due to osmotic stress.

6.32 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 Pokkali lands are located between the Thanneermukkam and Enamakkal bund, ie. in the coastal areas of Ernakulam and Thrissur districts, mostly distributed in Cochin, Kanayannur, Paravur, Thrissur and Kodungalloor taluks. Oorumundakan lands of Alappuzha and Kollam districts are mostly distributed in Sherthalai and Ambalappuzha taluks. Kaipad lands are situated in the low lying deltaic area of river mouths in Kannur district. The different types of saline land together constitute an area of about 30,000 ha.

6.33 As distinct from the saline soils found in other states, the origin, genesis and development of these soils in the state are under peculiar climatic and environmental conditions. These soils comprise of low lying marshes near the rivers and streams, water logged and ill drained and are subjected to tidal waves. These lands in their original natural state had been overgrown with mangrove and other salt loving plants, but it is difficult to identify such areas now. 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. Recla-

mation 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

6.34 Resource extraction through mining and quarrying activities degrades the environment in various ways. The process of environmental deterioration begins with the resource extraction activity and results in land and water degradation, expressed in terms of increased soil erosion, changes in landscapes, hydrological imbalances, water pollution etc. 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.

6.35 Unlike the rivers of our neighbouring states, the rivers of Kerala are too small in their size and resource capability. River sand is an essential raw material for building construction and an alternative is yet to be found out. This has imposed mining of sand several folds higher than the natural replenishments. 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 M³ (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 ion etc. resulted out of indiscriminate sand mining.

6.36 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.

6.37 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

6.38 The Government of India notification in 1991 has declared 500m of land from the High Tide Line as a Coastal Regulation Zone (CRZ) on the counts 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.

6.39 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.

6.40 The Authority shall have the power to take measures for protecting and improving the quality of the coastal environment and preventing, abating and controlling environmental pollution in the coastal areas of the State.

6.41 The KCZMA examines application for development projects in the coastal areas and issue clear-

ances 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.

Water Quality

6.42 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.

6.43 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 defluoridation and iron removal plants have failed due to inappropriate technology, unsuited to community perception and community involvement.

6.44 The presence of excess Arsenic in ground water has been reported from West Bengal. Nearly 13.8 million people in 75 blocks are reported at risk. It is also reported that around 0.2 million people in West Bengal have arsenic related skin manifestation. Statewise water quality status is shown in Appendix - 6.5

6.45 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

6.46 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 salient findings of a study on fluoride concentration in Ground water in Alappuzha is shown in BOX. 6.5 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

Box -6.5**Major Findings of a Study on Fluoride in Alappuzha**

- Water in the phreatic aquifers is very low in fluoride and is in the range of 0 to 0.4 mg/l and water in shallow tube wells tapping phreatic or, sentshi continued aquifers is also low in fluoride and is in the range of 0.002 to 0.36 mg/l.

- Water in the deeper tertiary aquifer is high in fluoride and is in the range of 0.453 to 2.66 mg/l. In 70 per cent of the water supply wells, the fluoride pressure is more than 1 mg/l and in 40% of the wells it is more than 1.5 mg/l.

Source: CGWB, 2003

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.

Surface Water quality

6.47 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 Bio chemical 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. Major findings of a study by CESS is shown in BOX 6.6

6.48 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.

6.49 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. To focus on urban lakes, the National Lake Conservation Plan was initiated.

Box -6.6**Major Findings of a Study on Selected Rivers of Kerala****Killiar**

- High nitrate and ammonia content in the upper reaches of Killiar
- The total coliform count at monitoring stations were above 4 count/ml which exceed the permissible limit.
- High total suspended solids observed in lower reaches of Killiar.

Kallada and Ithikkara rivers

- In addition to bacterial contamination, salinity is found to be a major problem in these rivers. The intrusion of salinity is taking place upto 6 kms. in Kallada and up to 4 kms. in Ithikkara from the lower reaches.

Pampa river

- Chemical quality of the water in general is good but has severe microbiological problems.
- The faecal coliform in Water samples was found to be higher during pre monsoon seasons.

Source: CESS

Box -6.7

Environmental Impact of Retting Activity in the Wetland Ecosystems of Kerala

The 590 km coastal belt of Kerala is unique, having 30 wetland ecosystems popularly known as back waters. Retting of Coconut husk in the wetlands of Kerala, is a major source of pollution, leading to deterioration in environmental quality and production potential.

A study conducted by Central Inland Fisheries Research Centre (ICAR), Alappuzha (1997-99), in 10 'hot spots' of the wet land ecosystems - *Neeleswaram, Valapattanam, Mahe, Ponnani, Chettuva, Kodungallur, Kayamkulam, Ashtamudi, Anchuthengu and Kadinamkulam*, has revealed that Coconut husk retting is converting the wetland ecosystem into a curious and complex eco-system of micro aerobic and an aerobic properties. The large scale reclamation of the wetlands due to dumping of husk, coir pith and related materials, has resulted in horizontal and vertical shrinkage of the water bodies. Retting activity has led to acidic pH conditions with anoxia resulting in the production of high amounts of Sulphide, coupled with high Carbon dioxide values leading to drastic reduction in the incidence and abundance of Plankton, benthic fauna and fishery resources. Of the 10 wetlands studied, Kadinamkulam and Anchuthengu were found to be the most impacted from the retting activity. The study has recommended to adopt the following management strategies.

- To keep the estuary mouth (Pozhi) permanently open, allowing continuous flushing and uninterrupted sea/estuary interaction, to avoid deterioration in water quality and the consequent damage to aquatic organisms.
- To entrust the local panchayats for licensing of the retting areas and form a local committee comprising of government representatives, local people and technical personnel to advice the government on retting operations.
- To close the worst hit areas for retting activity for a few years, allowing their ecological restoration.
- To allow retting of coconut husks in specially constructed tanks with facility for aeration and partial flushing.
- To conduct studies on the carrying capacity of each back water in the context of number of husks that can be soaked, which will inturn enable for regulating the quality of husks.
- To apply an environmental friendly approach of bio-remediation process, in the retting zones to detoxify and control the major pollutants-organic pollutants, high amounts of H₂S and low dissolved oxygen levels.
- To undertake a bio technological approach, an advanced form of the re mediation process, to control pollution from the retting activity.

(Source: *Proceedings of the 14th Kerala Science Congress, 2002*)

Industrial effluents

6.50 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, Cromium etc due to industrial pollution in Kochi backwaters. Details of in-

dustries in Periyar river basin is shown in the 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

6.51 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, 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.

Green House Gas Emission

6.52 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 per capita emission of carbon dioxide is shown in Table 6.4. The average percapita emission in

Table 6.4
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

India was 1.1MT, while it was 19.7 MT in USA and 18.2 MT in Australia in 1999.

6.53 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.

Bio-Fuel

6.54 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.

6.55 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. The major recommendations of the Committee on Development of Bio-fuel is shown in the BOX.6.8.

6.56 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.

Box -6.8

Major Recommendations of the Committee on Development of Bio Fuel**Recommendations on Ethanol**

- Ethanol may be manufactured using molasses on the raw materials.
- Imported ethanol should be subject to suitable duties so that domestically produced ethanol is not costlier than the imported one.
- Buyback arrangement with oil companies for the uptake of anhydrous alcohol should be made.
- To reduce cost of production, provision of incentives for new economic sized distilleries, technology integration of distillery with sugar plant, Economics of ethanol production from other feed stocks such as sugar beet, corn, potatoes etc. should be studied.
- Blending of ethanol with motor spirit needs to make a very modest beginning to be raised to 10%.

Recommendations on Bio Diesel

- A National Mission on Bio diesel should be launched with the objective of producing by the year 2011-12 Bio diesel enough to enable its blending with HSD to the extent of 20%
- A demonstration project be taken up in a mission mode with micro mission.
- Ministry of Rural Development may take up plantations under the IWDP and other poverty alleviation programmes. Department of Rural Development, Department of Land Resources and CAPART will be responsible for plantation in degraded and waste lands.
- After the completion of the Demonstration Project in, Phase II, Government should act as a facilitator, providing policy.

Source : Planning Commission

Vehicular Pollution

6.57 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.

6.58 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 per-

formance and number of vehicles implies that Indian roads are reaching a saturation point in utilising the existing capacities.

6.59 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.

6.60 Environmental concerns have assumed significance in the recent years. Commensurate with industrial expansion, a strong regulatory mechanism is re-

quired to ensure minimum environmental standards. Pollution control efforts in 17 high polluting industries in various states is shown in Table 6.6. Out of the total 1,551 large and medium industrial units identified in 1992 in the country in the 17 categories of highly polluting industries, 1,349 industrial units have installed the requisite pollution control equipment, 179 units

have closed down and 23 units have yet to install the necessary pollution control facilities (as of June,30, 2002). Legal action has been taken against all defaulting industrial units. In Kerala out of 28, 6 are closed and 22 are having adequate facilities to comply with the standards (Table-6. 5)

Table - 6.5
State wise Summary Status in 17 Categories of Industries
(as per information available with CPCB as on June 30,2002)

State	Total No. of Units	Status (No.of Units)		
		Closed	C#	Defaulters ##
Andhra Pradesh	173	29	143	01
Arunachal Pradesh	00	00	00	00
Assam	16	03	11	01
Bihar	44	19	25	00
Chandigarh	16	01	14	01
Goa	06	00	06	00
Gujarat	177	07	170	00
Haryana	43	06	37	00
Himachal Pradesh	09	00	09	00
Jammu & Kashmir	08	03	05	00
Jharkand	18	03	13	02
Karnataka	85	09	76	00
Kerala	28	06	22	00
Maharashtra	335	24	306	05
Madhya Pradesh	62	11	48	03
Meghalaya	01	00	01	00
Manipur	00	00	00	00
Mizoram	00	00	00	00
Nagaland	00	00	00	00
Orissa	23	03	16	04
Punjab	45	06	39	00
Rajasthan	49	06	43	00
Sikkim	01	00	01	00
Tamil Nadu	119	02	117	00
Tripura	00	00	00	00
UT-Andaman & Nicobar	00	00	00	00
UT-Chandigarh	01	00	01	00
UT-Daman & Diu, Dedra & Nagar	00	00	00	00
UT-Lakshadweep	00	00	00	00
UT-Pondicherry	06	01	05	00
Uttaranchal	17	00	17	00
Uttar Pradesh	207	22	182	03
West Bengal	58	17	38	03
Total	1551	179	1349	23

Having Adequate Facilities to comply with the Standards

Not having adequate facilities to comply with the Standards

Source: Economic Survey 2002-03

Ambient Air Quality

6.61 The annual average minimum and maximum Suspended Particulate Matter concentration in residential areas of various cities ranged from 60 µg/m³ at Bangalore during 1991 to 521 µg/m³ at Patna during 1995, while in Industrial areas the annual average ranged between 53 µg/m³ in Chennai during 1992 and 640 µg/m³ in Calcutta during 1993. The mean average value of SPM for nine years (1990 to 1998) ranged between 99 µg/m³ and 390 µg/m³ in residential areas and between 125 µg/m³ and 457 µg/m³ in industrial areas indicating that the annual average limit of suspended particulate matter for residential areas (140 µg/m³) and for industrial areas (360 µg/m³) had been frequently violated in most cities. Low values have been recorded in Chennai, Bangalore and Hyderabad.

6.62 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.

6.63 The Kerala State Pollution Control Board

(KSPCB) monitors the ambient air quality at 19 stations in the state, of which 11 come under NAMP and the rest under State Ambient Air Quality Monitoring Programme. The KSPCB also has 2 mobile sampling units. The relative air quality situations at four major locations in the state are given in Table-6.6.

6.64 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

6.65 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.

6.66 As per a study report, respiratory infectious disease 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.

Table 6.6 :
Air Quality Levels in Selected Locations of Kerala

Pollution Standards	Annual Mean Concentration Range (µg/m ³)					
	SO ₂		NO ₂		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
Locations						
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

Box -6.9**Traffic, the major cause of Noise Pollution**

Increasing urbanisation, high-density traffic and rapid industrialisation in the past two decades have recognised one more potential air pollutant –Noise. The problem of noise pollution has now reached such a significant dimension, that in India, noise is included in the Air Act (Prevention and Control of Pollution) amended in 1987.

In Kerala, noise pollution is reaching an alarming level, at Kochi, which is the industrial capital of the State. A study conducted by the School of Environmental Studies, Cochin University of Science and Technology has revealed that, the noise levels are high both during day and night time in the central part of the city, with the commercial areas showing the maximum values. The average day time noise at the District Hospital was 66 dB, which is 16 dB higher than the limit. Only in industrial areas and residential areas away from the city centre, it is within limits. The noise level at Thrikkakkara, which is far away from the city, was 10dB more than permissible limits during peak hours. Traffic has been identified as the major cause of noise pollution.

(Source: *Proceedings of the 14th Kerala Science Congress, 2002*)

Carrying Capacity Based Planning

6.67 The carrying capacity based planning approach ensures meeting the objectives of development without impairing ecological health and also it has potential for generating alternatives for future anthropogenic life supporting activities. A study was conducted in greater Kochi Region co ordinated by NEERI in asso-

ciation with seven institutions. The study area accounts for 34 per cent of total geographical area of Kerala covering Ernakulam, Idukki and Kottayam and parts of Alappuzha, Pathanamthitta and Thrissur. The major findings of the study are shown in BOX 6.10 Environmental value of growing stock is shown in the Appendix. 6.7

Box -6.10**Major Findings of Study by NEERI on Carrying Capacity based Development Planning for Greater Cochin Region**

- Air quality index estimated for different seasons showed that that the air quality in the region falls under the category good and excellent. During the study period
- Ambient noise levels recorded in the study region were found to be more or less within the exposure limits. However occasionally high levels were observed due to surface as well as transportation activities and aquatic avi fauna was found to be affected.
- Water quality in seven rivers- Chalakkudy, Periyar, Muvattupuzha, Meenachal, Manimala, Pamapa and Achancoil flowing through the region was in general satisfactory falling under B category of CPCB classification.
- Total coliform was found to be much higher than the permissible limits
- Aluva-Eloor and Ambalamedu area have been identified as hot spots due to ground water problems with reference to heavy metals, nitrates and fluoride.
- Idukki has more capacity to assimilate pollutants than other districts due to higher wind speed
- Air in Kottayam and Alappuzha can assimilate emission load up to 24 MT/day
- The assimilation capacity of air environment in southern part of Ernakulam is unutilised. Locating new industries in this region will help in sustainable development of the region.
- The estimate of industrial effluent discharged into the backwaters including industrial and municipal waste is about 1,04,000 m³/day. Assuming BOD load as 50 mg/l, the total BOD loading is about 5200 kg/day, the estimated assimilative capacity is about 25920 kg/day. This indicates that the effluent presently discharged into the backwaters system, if discharged at 10 m depth in the coastal waters can be easily assimilated.

Source: *NEERI 2002*

6.68 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.

6.69 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.

6.70 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

6.71 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, during 2002-03 with the focal theme 'water-the Elixir of Life'. STEC has also celebrated the World Environment Day, 2003 on 5th June, 2003, with "Water - 2 Billion People are dying for it" as the focal theme. A compendium on 'Fresh Water Resources of Kerala' was also released by STEC on that day.

Environmental regulations

6.72 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.

6.73 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.

6.74 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.

6.75 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.

Path Ahead

6.76 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 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.

6.77 State environmental action plan needs to be prepared in a time bound manner for implementation in collaboration with LSGs, NGOs and Private sector.

6.78 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.

6.79 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.

6.80 Regular publication of environmental indicators such as water and air quality levels and environmental information bulletins are essential for building a sustainable environmental framework .

6.81 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 pollutor pays principle

Soil And Water Conservation

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 bodies. Among the major crops, plantation crops - particularly rubber are planted after proper soil conservation and land development. On the other hand, perennial crops such as coconut, pepper and cashew are planted without providing the required land preparations. Soil and moisture conservation is critically important for crops like pepper which are normally raised in the upper elevations of the land terrain. The undulating topography with alternating hills and valleys, the high intensity of rainfall spread over two monsoons, low infiltration rate of soil and denudation of forests have accentuated the problem of soil erosion in the State.

6.83 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 watersheds of the State received an impetus during Ninth Five Year Plan. The cumulative coverage under soil conservation at the end of Ninth Five Year Plan was 2.40 lakh ha. The achievement of soil and water conservation programmes during 2002-03 is given in Table 6.7.

Table 6.7
Achievement of Soil and Water Conservation Programmes during 2002-03

Name of Scheme	Achievement	
	Financial (Rs. lakhs)	Physical (ha.)
State Plan		
i) RIDF	960.82	4824
ii) Other State Plan schemes	51.44	372
Centrally Sponsored Scheme		
i) NWDPR	6.61	
ii) River valley project – Kabini	215.87	520
Total:	1234.74	5716

6.84 The projects under RIDF I and RIDF II were completed in December 1997 and in December 1999 respectively. Under RIDF I, 37 watersheds in the five districts of Thiruvananthapuram, Idukki, Wayanad, Kannur and Kasaragod was completed with a total project cost of Rs.10.13 crore benefiting an area of 5718

ha. Phase II of the programme comprised of 26 watersheds with a project cost of Rs.12.93 crore benefiting an area of 7859 ha in 9 districts and under RIDF III 37 watersheds were completed in 14 districts having a total project cost of Rs. 2161.50 lakhs and benefitted an area of 10,890 ha. by expending an amount of Rs.1845.07 lakhs. Projects in phase VI, VII and VIII are in progress. During the period under review 4824 ha was benefitted with an expenditure of Rs.958.57 lakhs. Details of RIDF projects are given in Table 6.8.

6.85 An evaluation study of the completed soil conservation schemes in nine districts of Kerala under RIDF II was done by Agricultural Finance Corporation Limited. (AFC) during 2003.

6.86 The National Watershed Development Project for Rainfed Areas (NWDPR) is a Centrally Sponsored Scheme taken up from 1990-91 onwards. During Eighth Plan, an area of 88,226 ha. coming under 114 watersheds received the benefits of the scheme with an expenditure of Rs.29.94 crore. During Ninth Plan the project was implemented in 74456 ha. coming under 114 watersheds lying adjacent to the old ones, expending an amount of Rs.25.69 crore. Government of India has revised the guidelines for implementation during Tenth Plan. As per the revised guideline 30 sub watersheds have been identified in the State with an effective project area of 72032 ha. The District Watershed Committee and Water Shed Development Team were constituted and Project Implementing agencies and Nodal Agencies were identified in all districts. During 2002-03 an amount of Rs.6.61 lakhs has been expended.

6.87 River valley project - Kabini is a centrally sponsored inter state scheme of Kerala and Karnataka started in the year 1998 being implemented in the catchment of Kabini river (Kerala portion) which originates from Kerala State. The major portion of the catchments of Kabini (Kerala portion) is spread over Wayanad district which comes under high altitude zone of Kerala. 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 requires soil and water conservation measures. An amount of Rs.549.00 lakh has been spent upto 3/2003 for covering an area of 2470 ha which includes an expenditure of Rs.215.87 lakhs during 2002-03 for covering an area of 520 ha. The implementation of the project will benefit substantial area of Wayanad district including land owned by Scheduled Tribe (13%) and Scheduled Caste families (4%). However the progress of the project is quite slow

6.88 Watershed based interventions has a direct effect on soil moisture recharge. Critical in the development of watershed is the adoption of appropriate technologies suited to different agro ecological and socio economic situations to realize the anticipated benefits.

6.89 Many states have taken up development of degraded areas under the watershed approach on a mission mode. A paradigm shift in the approach to watershed development came in 1995-96 with the adoption of revised guidelines in line with the Technical committee report headed by Dr. C.H. Hanumantha Rao. The new paradigm of "watershed plus" recognises the need to involve the community as a necessary condi-

Table 6.8
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	3663.21	739.28
RIDF VII	2002-04	40	-	40	1779.32	13694	5216.45	796.62
RIDF VIII	2002-05	12	-	12	647.40	5175	700.5	130.7

Box -6.11

Major Findings and Recommendations of the Evaluation Study of 9 watershed projects under RIDF. II

- The average per hect. expenditure for the nine watersheds was Rs.17,552, ranging from Rs.7,727/- to Rs.27,146/-
- Out of the total expenditure incurred on various interventions, 95.2 per cent was for engineering/ structural measures of soil conservation, whereas the expenditure for Agronomic, Agrostologic and Farm-forestry measures was only 4.8 per cent. Out of 95.2 per cent expenditure incurred on Structural Measures, 87.6 per cent was for three interventions viz. Stone Pitched Contour Bunds (62.7%), Retaining Walls (14.4%) and Loose boulder Checkdams (10.5%). All these structural measures were costly items and the low cost engineering measures were adopted only to a limited extent of 7.6 per cent.
- Soil conservation schemes were prepared without investigation. The schemes prepared were lacking in the required benchmark details. Frequent revisions of the original estimate have been necessitated as a consequence of this. The scheme reports were not supported with the required land use maps and proposed management plans.
- **Recommendations**
- PRA should be conducted in the proposed watershed.
- More emphasis should be given for low-cost technologies by providing at least 20 per cent amount from the total provision for all such items put together.
- The beneficiary committee may be constituted only after giving wide publicity for launching the scheme for ensuring people's participation.
- The beneficiary committees should meet regularly. Transparency has to be maintained in the aspects such as benefits received from the soil conservation unit, admissible wage rates for labourers and the technical parameters. Designs for situation specific check dams may be evolved, avoiding the excessive dependence on type designs.
- More emphasis should be given for water harvesting structures.
- The beneficiaries themselves are to be motivated to conduct timely repairs of the damaged works. Two per cent of the project cost may be earmarked for maintenance and follow up. Raising a corpus fund for the above purpose may also be considered so that the Panchayat can attend to this work, especially in the community land-public land.
- More effective linkage between Soil Conservation and Soil Survey wings at District level is required in order to facilitate preparation of technically sound schemes for land development.

Source: Agricultural Finance Corporation Evaluation Report 2003

tion 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.

6.90 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 decentralised planning 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.

Western Ghats Development Programme

6.91 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.

6.92 The Western Ghats Development Programme which originated during 1974-75 as part of the Hill Area Development Programme with special central assistance is being operated as an integral part of the State Plan from the Ninth Plan but fully financed by Government of India. 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 WGD 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. The strength and weakness of watershed programmes implemented by WGD in earlier years were revealed in a recent study. The findings of the study are shown in BOX 6.12:

6.93 In planning any watershed development programme, community participation is indispensable and farmers should be closely involved in the planning and implementation of the programmes. In several programmes though funds are allocated based on entire area the effective treated area in watershed is very low due to lack of proper plan, supervision and monitoring. In Madhya Pradesh the encouraging performance in some of the watershed programmes is attributable largely to the higher rate of people's participation implemented through the decentralised framework. The Panchayat Raj Institutions are given a major role in the revised guidelines of WGD, for the implementation of watershed programmes in Kerala which may enhance effectiveness of the programmes implemented in the state.

6.94 The major schemes implemented under WGD include forestry, village and small scale industries, horticulture, soil conservation, minor irrigation, dairy development, agriculture etc. The expenditure during the Ninth plan was Rs. 61 12.70 lakhs of which 21 per cent was for Soil Conservation, 23 percent for Forestry schemes and 18 percent for Minor Irrigation works. The physical achievement during the period consists of Soil Conservation works in 9941 ha, fodder development in 1215 ha and construction of 3764 cattle sheds and 2216 wells. During 2002-03 Rs.13.13 crores has

been spent and out of this Rs.7.5 crores is utilized for 41 watersheds in the state.

Box -6.12

Major Findings/Recommendations of the Evaluation Study of WGD Activities During VIII and IX Plan Period.

- Subsidy for wells for agricultural purpose was often misused and watershed committee should identify the beneficiary having the requirement of irrigation and desired plot size.
- The items of work should be depending on the specifics of the watershed/districts and considering the occupational characteristics of the inhabitants. Activities such as compost pit subsidy, nurseries and kitchen garden should have been avoided.
- While selecting the beneficiaries of Animal Husbandry schemes, cattle rearing history needs to be considered.
- Soil conservation work in the forest areas could have been avoided.
- Vegetative cover protection could have been considered for slope stabilisation.
- Soil conservation works were done mostly in private properties.
- Utilised public funds for side wall construction of private property
- Better norms need to be evolved for identification of beneficiaries.
- Agrostological measures in soil conservation may be encouraged linked with the agricultural, dairy and other income generating programmes.
- Monitoring of the programme should be done by a team comprising members of local bodies, officials and representatives of active NGO's operating in the watershed
- The objective such as eco-development and eco-conservation have been met only partly.
- Role of watershed committees must be strengthened and shall be responsible for selection of beneficiaries.
- NGO's are ill suited to undertake soil conservation work.
- Need awareness about the implication of ecological degradation at local level.

Forestry and Wild Life

The National Forest Policy 1988 aims at 33 per cent of country's geographical area under forest and tree cover and envisages maintenance of environmental stability through preservation and reduction of degradation of forests, conservation of bio-diversity, increasing the productivity of forests, increasing substantially the forest cover through massive afforestation and developing participatory forest management. The present management policy of the state encompasses technology improvement, bio-diversity conservation and development of partnership with the forest dependent communities.

6.96 Kerala ranks 14th 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.) (Table 6. 9).

6.97 Forest cover of Kerala is largely spread over the Western Ghats of the state. The Western Ghats represent one of the world's 18 hot spots of bio-diversity and is considered to be a repository of rare and endangered flora and fauna. The forest area in Kerala is 11263.88 sq. km. (28.94% of geographical area which is higher than the national average of 19.50%) which included 9284.86 sq. km. reserve forest, 1837.45 sq.km vested

forests and 141.57 sq. km. proposed reserve. . The percentage of forest cover in Kerala to that of India is 1.5 per cent. Out of the total of 11263.88 sq. km. of forest area, effective forest area in Kerala is only 9400 sq. km. as given in Table 6.10.

6.98 As per the assessment of Forest Survey of India (2001), the area under forest in the state is 11221 sq.km. which is higher than the effective forest cover as assessed by KFD. Division wise details of forest cover is given in Appendix: 6.10

6.99 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.

6.100 The forest cover of the state as per the 2001 assessment of FSI was 15560 sq.km. (dense forest 11772

Table 6.9:
Forest Cover in Various States in 2001

State	Recorded Forest Areas		Forest cover 1999		Forest cover 2001		
	Dense	Open	Open	Total	Dense	Others	Total
Andhra Pradesh	63814 (23.20)	24587	19642	44229	25827	18810	44637
Arunachal Pradesh	51540 (61.55%)	57756	11091	68847	53932	14113	68045
Karnataka	38724 (20.15)	24835	7632	32467	26156	10835	36991
Kerala	11221 (28.87)	8429	1894	10323	11772	3788	15560
Madhya Pradesh	95221 (30.89)	42062	33075	75137	44384	32881	77265
Maharashtra	61939 (20.13)	26721	19951	46672	30894	16588	47482
Orissa	58135 (37.34)	26288	20745	47033	27972	20866	48838
Chattisgarh	59285 (43.85)	39557	17137	56693	37880	18568	56448
Tamil Nadu	22871 (917.59)	8680	8398	17078	12499	8983	21482
India	768436	382229	355064	637293	416809	255729	675538

Source : Forest Survey of India- 2002

Figures in Parenthesis indicate per cent to geographical area

Table 6.10:
Types of Forest 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
	Total	9400	100

Source : Department of Forest

sq.km. and open forest 3788 sq.km). Forest cover includes all lands more than one hectare with a tree canopy density of more than 10 per cent including non-forest area. Certain areas with tree canopy such as coconut, orchards, coffee and tea estates have been included in the assessment, and the forest cover constitute 40 per cent of states geographical area.

6.101 The nature of forest 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. 10. Tropical evergreen and tropical moist deciduous forests accounts for 79 per cent. The coverage of the plantation forestry is to the extent of 19 per cent.

6.102 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, general forestry and World Bank aided Kerala Forestry Project. Afforestation of degraded forests has been carried out in 8719 ha. under various programmes up to 2002-03.

6.103 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 (41.52 %) followed by mixed plantation (31.57%) and Eucalyptus (12.41 %) (See Appendix 6.1)

6.104 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 own the increase. The quantity of timber produced in 2001-02 was 38915 cum. The number of bamboos and reeds produced was 339.16 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

6.105 Indian forest productivity at 0.7 m³ 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. The home gardens is a basic agro ecosystem in Kerala. A wide spectrum of trees and shrubs, more than 127 species, are reported in the Kerala home 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 m³ per hectare. Bio diversity of Kerala home 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 pro-

posal 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.

6.106 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 m³ in 2006.

6.107 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. District and Block 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.

Participatory Forest Management (PFM)

6.108 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. 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 lead role in calling for people's participation in forest management and Participatory Forest Management was implemented.

6.109 The Kerala Forest Department started PFM in selected villages along the forest fringes and within the reserves as a part of Kerala Forestry Project. It is only in the initial stages. In order to assess the strength and weakness as well as to identify the conditions for successful implementation of PFM, an evaluation study was conducted. The major findings of the study are shown in Box 6.13

6.110 Forest officials need re-training for working with people. There is need for much wider spread of the VSS across the forest areas in the State.

Forest Development Agencies (FDAs)

6.111 FDA was constituted in the state in 2002-03 with a view to guide the activities of VSSs. 33 FDAs have

Box -6.13

Major Findings of the Study on PFM in Kerala

- Awareness about the concepts and objectives of PFM is inadequate at all levels
- People have begun to feel sense of belonging to VSS in places where the Forest Department has been interacting with commitment.
- The time has not been sufficient even to re-orient the people to the participatory mode.
- Most of the Microplans need to be revisited using the prescribed microplanning format and procedures.
- VSS is picking up well in certain areas where people have awareness and institutional backing.
- All tribal VSSs find it difficult to market NWFP
- Almost all VSSs suffer from delay in getting approval and money.
- Wherever VSS is a big success vested interests from outside have started intervening through party politics.
- VSS has proved to be very effective in protection and conservation.
- All VSS implementing areas have witnessed good regeneration of forests.
- The infrastructural and personal capacity of KFD is far more than what is needed for successfully implementing PFM in the State.
- It is essential bring about co-ordination among the State Departments (concerned) as well as the VSSs.
- It is necessary to have more prudent delegation of responsibilities among the Department staff and the VSS executive committee members.
- It is necessary to include enough representation of the weaker sections and women in committees, sub committees, etc.

been constituted as on 31.3.2003. MoEF will release funds directly to FDAs. Government of India have sanctioned Rs.105.50 lakhs for 6 FDAs during 2002-03 and another Rs.149.00 lakhs for 4 more FDAs during 2003-04. The amount will be utilised for artificial regeneration, bamboo and cane plantations, medicinal

plants, and regeneration of perennial shrubs of medicinal value, pasture development etc. The total amount allocated to the above 10 FDAs from 2002-03 to 2006-07 comes to Rs. 32.77 crores.

Forest Revenue

6.112 The revenue from the forestry sector by way of sale of timber and other products comes to Rs. 149.57 crores in 2002-03 as against Rs.113.7 crores in 2001-02. The State Government have modified the policy of supplying raw-materials to M'S Hindustan New Print Limited and to M S. Grassim Industries Limited at reduced rates, there will be an annual increase in the price of forest produce supplied to them at 20% per annum. The increase in revenue attainable through this measure is of the order of Rs.10 crores per annum. The changes in forest revenue for the last five years is shown in Appendix 6.13

Wild life and Biosphere Reserve

6.113 The two National Parks, 12 Wildlife Sanctuaries and one Biosphere Reserve coming under the category of protected areas in Kerala cover an area of 2395.4 sq.km.lakh ha. which is 21% of the total forest area and 6 % of the total geographical area. This is higher than the national coverage of 5% Details are

given in Table 6.11 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 attracted co-operation of the neighborhood communities and forest dependent communities.

6.114 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 World Net Work, the third being Nilgiri (Kerala, Karnataka and Tamil Nadu) which was designated earlier. Agasthyamala Hills in Kerala comprising area of 1701 sq.km. has been designated as 13th Biosphere Reserve in 2001. Detailed action plan and focussed cultivation will facilitate attraction of additional funding for these sites for long term conservation and sustainable utilisation of resources.

6.115 The first National Wildlife Action Plan of 1983

Table 6.11
Sanctuaries, National Parks, Biosphere Reserves and other
Protected Areas in Kerala

Sl. No.	Name of NP/WLS/BR	Area in Sq. KM.	Year of formation
1	Periyar WLS	777.00	1950
2	Neyyar WLS	128.00	1958
3	Peechi - Vazhani WLS	125.00	1958
4	Parambikulam WLS	285.00	1973
5	Wayanad WLS	344.44	1973
6	Eravikulam WLS	97.00	1978
7	Idukki WLS	70.00	1976
8	Thattekkad BS	25.00	1983
9	Peppara WLS	53.00	1983
10	Cimmony WLS	85.00	1984
11	Chinnar WLS	90.44	1984
12	Shendurney WLS	171.00	1984
13	Aralam WLS	55.00	1984
14	Silent Valley NP	89.52	1984
	Total Protected Area	2,395.40	
15	Nilgiri Biosphere Reserve	1,455.40	1986
16	Agasthyavanam Biological Park	30.00	1992

Source : Department of Forest

has been revised and the new wild life Action Plan (2002-2016) has been adopted at 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 PAs is almost important from ecological, environmental and socio economic point of view. Detailed plan has to be prepared for the implementation of Management Action Plans prepared under the Kerala forestry Project.

General Forestry

6.116 During 2002-03, an outlay of Rs.19.00 crores was provided to the forestry and Wildlife sub sector and an amount of Rs.14.69 crores (77%) was expended. The various schemes implemented during the period include management of natural forests with an expenditure of Rs. 3.88 crores, improving productivity of plantations with Rs. 1.47 crores, strengthening of infrastructure facilities with Rs.1.70 crores, strengthening biodiversity conservation and management of protected area with Rs. 5.14 crores. The scheme on Management of Non-Wood Forest Produce was started during 2002-03 with an expenditure of Rs.0.55 crores. The World Bank aided Kerala Forestry Project was started in 1998 and cumulative expenditure up to 03/2003 was Rs.132.49 crores.

6.117 Under General Forestry, survey and demarcation of forest boundaries is one of the important activities taken up. Out of an estimated boundary of 11220 kms, 2193 kms were demarcated during Ninth Plan. The activities for boundary protection during 2002-03 include survey of forest boundaries covering 4617 cairns and reconstruction of 28 cairns. Fire protection is another important work done during 2002-03. The coverage under this activity during this period include fire line (939 kms), protection of forests (2000 ha.) etc. The cultural operations include special tending (103 ha.) and climber cutting (70ha.) Other activities are maintenance of roads (68.km.) construction of buildings (7 nos.), maintenance of buildings (16 nos.) maintenance of industrial plantations (292 ha.) replantation of industrial plantations (86 ha.) etc. Maintenance of fuel wood and fodder plantions (765 ha.) raising fuel wood and fodder plantions (180 ha.) etc.

Management of Non-Wood Forest Produce

6.118 The NWFPs including medicinal plants is being given a major thrust because of their importance around the world. 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, value addition and marketing.

6.119 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 MPCAs for in situ conservation of medicinal plants were established. Also four MPCAs in Kerala were 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.

6.120 In addition to the protection and conservation measures taken by the department, these activities should 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.

6.121 During the year. 2002-03, Rs. 50 lakhs have been earmarked for management of medicinal plants and it was raised to Rs. 110 lakhs during 2003-04. In addition to State Plan support, some specific projects are being supported by the national Medicinal Plants Board.

6.122 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 over 1 million ha. of degraded forests in the country. Eventhough Kerala has prepared a project few years back, funding could not be mobilised.

Compensatory Afforestation Scheme

6.123 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.

6.124 Seedlings of various species were distributed to various NGOs during 2002-03 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 Departments of Education, PWD, Grama Panchayats, Aevenue and to plant trees. During the year 5,04,648 numbers of seedlings have been distributed for planting.

Kerala Forest Development Corporation

6.125 KFDC is a public sector undertaking with shares owned by Government of India and Government of Kerala. The area of the corporation is located in 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 it cultivated trees like Eucalyptus, Acacia, Teak, Albizea, Manjium etc. and cash crops like Cardamom, Coffee, Tea, Pepper etc. The corporation has an authorised share capital of Rs. 0.00 crores, of which paid up share capital is Rs. 7.78 crores.

6.126 The activities undertaken during 2002-03 include plantation in 529 ha. with plywood species (Eucalyptus, Acacia, Manjium etc.) under Participatory Plantation Protection Scheme utilising Rs.158.25 lakhs. Eco-Tourism activities being carried out at

Gavi and Munnar were extended to two more divisions viz., Trivandrum and Nenmara during this period. KFDC entered into an agreement with M/s. Hindustan Newsprint Limited for the supply of 25500 MT of pulpwood during 2002-03 at subsidised rates and supplied 13683 MT against the above allotment. The KFDC undertook the work of avenue planting along the sides of Kazhakootam-Kovalam bye-pass during 2000-01 on contract basis for an amount of Rs.11.78 lakhs/- and the plants were maintained during 2002-03 also. The KFDC had entrusted the task of nurturing and harvesting of Cardamom from evicted Cardamom area at Mathikettan in Idukki district and 50000 kg. of green Cardamom was collected which fetched Rs.35.00 lakhs. During 2002-03, a profit of Rs.87.50 lakhs whereas the profit during 2001-02 was Rs.117.00 lakhs.

World Bank Aided Kerala Forestry Project

6.127 The World Bank aided is under implementation

from 1998 and has been extended till December 2003. The original project cost was Rs. 182.39 crores. During 2001, mid term review of the project was undertaken by the World Bank and outlay was revised to Rs. 166 crores. The cumulative expenditure upto the end of October 2003 was Rs. 145.36 crores. In project has three components; viz., strengthening sector management, strengthening forest management and biodiversity conservation. During 2002-03, 359 fire protection committees in 32 divisions were constituted for carrying out the fire management activities. An extent of 114321 ha. has been protected from annual fire hazards by the Fire Protection Committees. The important achievements include assisted natural regeneration (22890 ha), rehabilitation of degraded forests (14104 ha), regeneration of Teak and Bamboo (6799 ha), raising Teak plantation (2214 ha), pulpwood plantation (4310 ha). Participatory Forest Management (356 VSS have been registered and 94665 ha. of area covered). Details are given in Appendix 6. 14- 6.16 As part of the project, Biodiversity Action Plan has been prepared. The Forest Management Information System with 15 modules were developed during the project period.

Haritholsavam (Greening the State Programme)

6.128 A project for massive tree planting under the name Haritholsavam was commenced from 9th August 2002, planting various species of seedlings along the sides of National and State High ways and other public places; with the active participation of National Services scheme volunteers and other NGOs. It was decided to plant 15 lakhs of seedlings on the same day and the target achieved was 13,21,178 nos. However the post planting care was quite weak and the survival rates are reportedly low. This scheme has to be implemented in a participatory mode with the involvement of local governments.

Greening India for Livelihood and Sustainable Development

6.129 Greening India programme has been founded on the premise that no strategy to conserve the forest ecosystem would be successful, unless the needs of the least advantaged and most vulnerable sections of the society are met. The cost of environmental degradation is mostly borne by the poor. Poverty and environmental crisis are closely linked, calling a holistic approach and lasting solutions through greening of all degraded areas with people participation. The 10th Five year plan has set a monitorable target to increase forest/tree cover to the extend of 25% by 2007 and 33% by 2012. The programme proposes to cover 43 million

ha degraded land under forest, in a 10 year period by regenerating 15 mha degraded forests under JFM and by bringing 10 mha of irrigated land under commercial agroforestry and 18 mha of rainfed area under subsistence agroforestry. It also aims at reversing the current trend of spending more than Rs.8000 crores per annum on the total import of forest produce

6.130 In order to formulate a comprehensive strategy and action plan for 10 years, for greening the country, ensuring conservation of all natural resources besides improving ecology, economy and generation of productive employment and ensuring food accessibility to 100 million people, the planning commission, GOI constituted a Task Force with Dr. D.N.Thiwari, Member of the Planning Commission as its Chairman. The critical strategy requirements identified by the team were the following.

1. To maintain existing forest through conservation and management, sustain and expand areas under forest/trees through rehabilitation, regeneration, afforestation, reforestation and tree planting
2. To carry out re-vegetation in appropriate mountain areas, islands, barren lands arid/semiarid lands and coastal areas through JFM.
3. To promote Agroforestry for increasing tree cover and to improve sustainable agriculture.
4. To promote and support the downstream processing of forest products to increase retained value and other benefits.
5. To establish linkages between producers and forest based industries for improving economy and generation of employment.

The salient features of the report of the task force are given in Box 6.14.

Environmental Sanitation

Background

The history of rural sanitation in India began in earnest with the movement for liberation of scavengers, which was an integral part of the freedom movement. In 1954 a sanitation component was introduced in the Health Sector of the Government of India. The first organized attempt made in Kerala was the pilot project sponsored by the WHO in Thiruvananthapuram in the fifties. From the late fifties onwards single leach pit latrine with a squatting slab and water seal bowl placed directly over the pit was vigorously propagated

by the NES Blocks. This found favour in the rural areas and came to be known as ESP type latrines. The period from late sixties to early eighties showed a declining trend in sanitation activities, primarily due to the gradual decrease in extension work in rural areas. International Water Supply and Sanitation Decade Programme which was launched in 1981 generated a lot of discussions about the future directions of the sector.

6.132 Rural Sanitation got a fillip in 1986 when construction of individual household latrines was brought under NREP and RLEGP and later under JRY and IAY. An exclusive programme for sanitation, namely, Central Rural Sanitation Programme (CRSP) was launched by Government of India in 1986 with the objective of improving the quality of life in rural areas and to provide privacy and dignity to women. As sanitation is a State subject, CRSP sought to supplement the efforts of the States in covering rural population with sanitation facilities. Rural sanitation was included as part of Minimum Needs Programme as well from the year 1987-88. The revised guidelines of CRSP issued in 1993 put forward an integrated approach which advocated construction of household latrines, soak pits, garbage pits, bathing and washing platforms, kitchen sanitation, smokeless choola and biogas. However access to latrine in households was continued to be seen as the basic indicator of sanitation.

6.133 The first Model Village Sanitation Project (MVSP) under CRSP was sanctioned in Pallipad Grama Panchayat in 1994. The Model Village Sanitation Programme which had a strong hygiene education component was the first step towards viewing sanitation in its broader perspective.

Towards a definition

6.134 The following elements define the package of practices which together constitute sanitation.

- (i) Safe disposal of human excreta;
- (ii) Solid waste management;
- (iii) Liquid waste management;
- (iv) Safe handling of drinking water;
- (v) Home sanitation and food hygiene;
- (vi) Personal hygiene; and
- (vii) Community environmental sanitation

6.135 These are universally accepted as the seven components of sanitation. Therefore sanitation refers

Report of the Task force on 'Greening India' for livelihood security and sustainable development

Strategy for JFM

- Suitable forest patches to be entrusted to well defined user groups with transparent mou ,with security of tenure and long access of benefits.
- Legal back up to JFM committees and "Food for work " schemes to be launched to ensure food accessibility for JFM members.
- Appropriate institutional and financial mechanisms and tie-up of village protection committees with industries.
- Detailed projects to be prepared for assistance under RIDF of NABARD.
- To set up Forest Development Agencies as Federation of JFM committees.

Strategy for Agroforestry

- Commercial Agroforestry to be practiced in irrigated land with suitable species of Acasia, Bamboo, Cassurania, Eucalyptus, Poplus and Prosopis.
- Agroforestry to be tried in rainfed areas, complementary and supplementary to agriculture, by adopting various models on watershed basis, to cover 18 mha, on an annual basis of 1.8 mha.
- To establish high-tech modern nurseries on catchment basis and to develop elite clones of important agroforestry species, with the participation of corporate/private sectors in R&D.
- To evolve product research, product development, new design and quality standards for down stream processing.
- To develop Market Information System and establish Agroforestry Boards and Marketing Federations to improve the bargaining power of ,farmers in domestic and export markets.
- To amend all the existing laws and executive orders related to felling, transport, processing and sale, to facilitate Agroforestry.
- To start Bamboo Technology Mission.
- To expand the NABARD investment on the schemes for Farm/Agroforestry, to the tune of Rs.1000 crores per year.

Research and Development

- To carry out research and technology development efforts to
- Protect existing forest/trees from fires, diseases etc.
- Increase productivity and forest density by promoting regeneration, enrichment plantation, rehabilitation, afforestation, soil and water conservation ,with people' s participation.
- Selection of high yielding and disease resistant clones for different edaphic and climatic conditions.
- Use of bio-fertilizers and bio-pesticides for boosting production and control of pests and diseases.
- Develop new generation products of bamboo composites and laminations for exports

Institutional Mechanism

- To co-ordinate , monitor and evaluate various activities such as JFM/Agroforestry, Social forestry and other plantation schemes being implemented by several departments of central and state governments, a Green India Authority is to be set up in the planning commission . The authority will also operate the " Green India Fund " to be created.
- 2 separate Departments ,ie. Department of Forest and Department of Environment should be created in the Ministry of Environment and Forest; and the National Afforestation and Eco development Board should be abolished . with its schemes transferred to the proposed Forest Department.
- The National Research Centre for Agroforestry, Jhansi, and Centre for Social Forestry and Eco-Rehabilitation, Allahabad to be upgraded to National Institutes.
- Forest Research Institute, Dehradun and Institute of Wood science and Technology, Bangalore should carry out forest product research on priority basis and promote quality standards designs of new products.
- Indian Plywood Research and Training Institute (IPIRTI) Bangalore, should concentrate on development of next generation products of Bamboo composites.
- Indian Institute of Forest Management, Bhopal, and Indian Council of Forestry Research and Education, Dehradun should carry out socio-economic and marketing research.
- Department of Bio-technology should identify elite clones of agroforestry species and standardise their macro and micro propagation techniques.
- A separate cell of Agroforestry/ JFM should be created in NABARD.
- 100 NGOs ,possessing land and other infra structure facilities should be identified for mass production of seedlings and for extension activities.

Source: Planning Commission, GOI, 2001

to the entire range of habits and practices in daily life that helps a healthy life and through that contributes significantly to the well – being of the community. Sanitation can be defined as “the science and practice of effecting healthful and hygienic conditions”.

Safe Disposal of Human Excreta

6.136 The direct environmental health risk associated with open defecation is very high. The most important intervention is to contain the problem by enabling those practicing indiscriminate defecation to have sanitary latrines through strong promotional activities.

Present Status

6.137 Not only the rural areas, but also the cities and towns of Kerala were known for their cleanliness. The people of the State are also known for their clean and hygienic latrines. Environmental cleanliness has suffered a great deal in the last two decades.

6.138 Kerala has the highest coverage of individual household latrines in India. However 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-6.12. According to 2001 Census the total coverage of households in the State with latrines is 84%. 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.

Community Perceptions

6.139 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.(Table 6.14).

6.140 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

Table 6.12
Household Sanitary Latrines: Access to Sanitation Facilities

Time Line	1991 ⁽¹⁾	1995 ⁽²⁾	2001 ⁽³⁾
Rural households with toilet (%)	44	73.4	81.3
Urban households with toilets (%)	73	90.0	92.0

Source:-Census of India, 1991. (2) NSSO 1995, (3) Census of India 2001

Table 6.13
Type of Latrine within the House

	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
Total	6595206	100.0	4942550	100.0	1652656	100.0

Source: Census of India, 2001

Table 6.14
Community Service Preferences

Sly. No.	Services	Preference Ranking		
		Malappuram	Palakkad	Thiruvananthapuram
1.	Water	1	1	1
2.	Latrine	2	2	3
03.	Health	3	4	2
04.	Transport	4	5	4
05.	Electricity	5	3	4
06.	Education	6	6	6
07.	Others	7	7	7

Source: NAP Formulation Report, June 1997

poor.

6.141 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 la-

trines. (See Table 6.15).

Local Government Initiative

6.142 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.

6.143 In the Ninth Plan about 300 Grama Panchayats gave top priority to sanitation and 50 of them achieved the goal of more than 95% coverage of the household sanitary latrines. During the Ninth Plan about 5.71 lakhs household sanitary latrines were constructed under decentralized plan campaign which is much more than the total achievement in the past 15 years through different governmental programmes.

Table 6.15
Need Felt For Latrine in Kerala

Sl. No.	Variables	%
01.	Reasons for Need	
	1. Better Health	32
	2. Privacy	31
	3. Convenience	46
02.	Reason for Not Having Latrines:	
	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.	Willingness to Spend	
	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 Drinking Water Mission

Table-6.16
No. of Household Latrines constructed by Local Governments

1997-1998	97015	35598	3497	136110
1998-1999	106358	26231	3356	135945
1999-2000	1019293	19112	2714	141119
2000-2001	70999	11708	1304	84011
2001-2002	55867	16986	1107	73960
				571145

Source: State Planning Board

GP : General Plan, SCP : Special Component Plan
TSP : Tribal Sub Plan

Total Sanitation Campaign (TSC)

6.144 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 op-

tions. 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 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 Table 6.17.

6.145 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 as under

- 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
- Intensive IEC

School Sanitation

6.146 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.

6.147 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.

NGO Participation

6.148 Many NGOs are active in the promotion of household latrines. Socio Economic Unit Foundation (SEUF) which was set up in 87-88 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

Table-6. 17
Central Rural Sanitation Programme: TSC

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	Balawadi toilets	RSM
Alappuzha	29.1.02	1656.13	1100.05	322.2	233.88	161871	125	377	0	10
Emakulam	12.3.03	1058.43	514.16	274.1	270.17	54585	100	450	565	9
Idukki	12.3.03	622.19	266.75	167.4	188.04	44896	16	103	0	4
Kannur	12.3.03	804.18	349.09	219.29	235.8	559.14	14	327	0	5
Kasaragod	15.1.01	1111.86	429.26	261.98	420.62	82200	100	281	0	4
Kollam	10.1.01	895.00	597.7	174.55	122.75	85000	400	225	0	10
Kozhikkode	12.3.03	833.86	374.81	225.67	233.38	54024	21	444	0	7
Malappuram	29.1.02	759.86	510.98	152.36	96.52	69217	80	380	0	10
Palakad	12.3.03	1177.89	499.85	320.42	357.62	83059	49	289	0	7
Pathanamthitta	12.3.03	773.96	336.29	208.53	229.14	53799	25	172	100	5
Thiruvananthapuram	29.1.02	749.61	506.90	149.76	92.95	67320	60	350	0	10
Thrissur	12.3.03	546.46	258.45	144.83	143.18	33216	10	316	0	9
Wayanad	29.1.02	535.19	355.32	103.25	76.62	54927	40	78	0	3
		11524.62	6099.61	2724.34	2700.67	900028	1040	3792	665	93

Source : Commissionerate of Rural Development, Thiruvananthapuram

Abbreviations: IHHL: Individual Household Latrines, WC: Women Complex,

RSM: Rural Sanitary Muris

Table-6. 18
District wise Details of Government Schools having
Drinking Water/Latrines/urinal Facilities in Kerala

District	No. of Govt. Schools			No. of Schools having							
	LP	UP	HS	Drinking Water				Urinals/Latrines			
				L.P	U.P	H.S.	Total	L.P	U.P	H.S	Total
Thiruvananthapuram	302	98	121	290	97	110	497	193	93	105	391
Kollam	269	62	75	235	59	69	363	215	52	67	334
Pathanamthitta	168	43	47	135	25	46	206	60	22	46	128
Alappuzha	194	67	58	161	48	55	264	128	51	51	230
Kottayam	169	68	59	135	64	56	255	144	65	53	262
Idukki	86	40	52	78	24	30	132	71	33	43	147
Ernakulam	186	92	90	116	84	84	284	115	75	82	272
Thrissur	121	56	80	105	48	65	218	73	40	61	174
Palakkad	193	63	59	182	58	57	297	174	55	56	285
Malappuram	346	112	82	319	110	78	507	280	92	66	438
Kozhikodu	185	76	67	161	72	63	296	130	61	42	233
Wayanadu	91	34	40	82	33	38	153	53	29	21	103
Kannur	114	77	82	100	74	76	250	79	60	67	206
Kasaragod	141	72	74	139	68	72	279	70	31	30	131
Total	2565	960	986	2238	864	899	4001	1785	759	790	3334

Source: Directorate of Public Instructions, Thiruvananthapuram

(PASS) and Centre for Environment and Development (CED) are some of the other NGOs which are working in the sector.

Bilateral Programmes

6.149 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.

6.150 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.

6.151 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.

6.152 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

6.153 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.

6.154 The subsidy at the rate indicated in the table is

Table-6. 19
Funding Pattern

Category	Subsidy	Loan	Beneficiary
EWS	45%	50%	5%
LIG	25%	60%	15%
MIG&HIG	Nil	75%	25%

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.

6.155 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

6.156 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 instru-

ment to resolve some of the complex issues in the sector.

Kerala Total Sanitation and Health Mission (KTSHM)

6.157 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

6.158 Any waste other than human night soil and sludge 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.

6.159 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.

6.160 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.

6.161 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.

6.162 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.

6.163 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).

6.164 An analysis of the composition of solid wastes

Table-6. 20
Solid Waste Constitution

Sl. No.	Type	Percentage
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*

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.

6.165 In the present solid waste management systems,

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*

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.

Issues

6.166 The key issues related to the different component activities of solid waste management as perceived in the Clean Kerala initiative are given below.

- 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

6.167 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.

6.168 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.

6.169 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.

Cost Implications

6.170 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 Tables 6.22 and 6.23 respectively.

Table-6. 22
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 placer @ 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 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	-	60.00
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		
	2. Weigh Bridge		15.00
	3. Compost Plant		8.00
	4. Vermi Compost Unit		4.00
	5. 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
	Sub Total		284.00
	Less Cost of home composting unit/ household bins and bio-medical waste		104.00
	Total		180.00

(Abstract of cost excluding land cost)

Table -6.23
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	0.80
	b) Tools and equipment	
	i) Maintenance replacement	1.00
	ii) Fuel, power	1.50
	iii) Packing, marketing	3.00
	iv) Management supervision	5.00
	c) Amortization @ 20% of capital cost	12.00
v)	Sanitary Landfill	
	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
	Sub Total	221.00
	Less House to house collection and biomedical waste management	78.00
	Total	143.00

Source: S.W.M: Reading Material: 2002 KTSHM

6.171 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 6.24).

Table – 6.24
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
	Total	58	6735

6.172 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.

6.173 A rough estimation of the own revenue available with urban local governments is given in Table – 6.25.

6.174 At present urban local governments spend 20-30% of their revenue for solidwaste 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 f u n d

could be set up at municipal level with resources flowing in from municipal funds, user charges, penalties imposed, sales proceeds of compost etc.

Information, Education and Communication (IEC)

6.175 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 – 4 Rs
- 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

6.176 Solid Waste Management Systems are practically non-existent in the Panchayats. This is inspite of

Table – 6.25
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 (B)	Balance funds (A-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
Grand Total	58	16496.54	9229.95	7266.59

Source: Directorate of Urban Affairs

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.

6.177 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 on centralized planning and co-ordination with decentralized implementation.

Bio Medical Waste

6.178 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.

6.179 As per 1991 Census, Kerala has the highest number of hospitals (26%) in India. The Report on Private Medical Institutions in Kerala published by the Department of Economics and Statistics (1995) shows that there are about 12618 private medical institutions for all systems of medicines combined.

Table-6. 26
Hospitals in Kerala

No. of Hospitals	5000
Bed strengths : Government	40000
Bed Strength : Private	58000
Bio-medical Waste Generated	30 T/Day
General Waste Generated	170 T/Day

Source: State Pollution Control Board, 1998

6.180 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. (Table 6.27) 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 –6.27
Composition of Hospital Waste

Infections Waste	10%
Toxic Waste	5%
General Waste	85%

Source: State Pollution Control Board

6.181 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 coloured 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 coloured bags and after autoclaving/chemical treatment should be cut into small pieces. Discarded medicine, incinerator ash, chemical waste etc. can be collected in black coloured bags and should be disposed of in secured landfill site.

6.182 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 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 Table 6.28. The annual O&M cost will come to Rs. 30 lakhs.

Table – 6.28
Bio-medical Waste Management System: Capital Cost

Sl. No.	Facility	Amount in Lakhs
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
Total		50.00

(Land requirement: 2 acres)

Source: State Pollution Control Board

Liquid Waste Management

6.183 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 6.29. Though there is a general awareness about the harmful effects of waste water, 48% of households let waste water stagnate in their backyards.

6.184 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.

6.185 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% of the households in Thiruvananthapuram city and 15% houses in Kochi Corporation have access to common sewage collection system.

Safe Handling of Drinking Water

6.186 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. Pocket Chart Exercise carried out in three selected panchayats to find out practices related to water handling is given in Table 6. 30.

Table –6.29
Disposal of Waste Water (in %)

Sl. No.	Variables	Kerala
01.	Disposal	
	I. Soak Pit	6
	II. Open Pit	13
	III. On the street	4
	IV. In Backyard	48
	V. In Drain Connected with Main	2
02.	Perception About Safe method of Disposal of Waste Water:	
	I. Kitchen Garden	27
	II. Soak Pit	15
	III. Open Pit	17
	IV. Drain	18
	V. Do Not Know	6
03.	Stagnant Water Causes:	
	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

Table -6. 30
Water Handling

Sl. No.	VARIABLE	Thrikkunnappuzha	Puthenchira	Kuttiyattor
Figures	Number of Participants	32	22	22
1.	Fingers dipped in glass while serving water	9	16	3
2.	Collecting water, dipping hands up to half in bucket	10	14	4
3.	Taking water using a long handled cup	1	2	9
4.	Taking water by titling the water pot	2	16	6

Source : Kerala Hygiene Evaluation Study 1996, London School of Hygiene and Tropical Medicine and SEUF

6.187 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. 31).

Table - 6.31
Perception about the Quality of Water used
(Multiple Response)

Sl. No	Variables	(in %)
		Kerala
1.	Drinking Water:	
	I. Clean	95
	II. Safe	92
2.	Cooking Water:	
	I. Clean	95
	II. Safe	92
3.	Attributes of Safe Water:	
	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 1998. Indian Institute of Mass Communication and Rajiv Gandhi Drinking Water Mission

6.188 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%).

6.189 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.

6.190 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 Jananidhi Project areas.

Table - 6.32
Storage of Water
(Multiple Response)

Sl. No	Variables	(in %)
		Kerala
1.	Cleaning of Vessel:	
	I. Water	5
	II. Water & Ash	18
	III. Water & Soap	0
2.	Covering of Vessel:	
	I. Always	79
	II. Mostly	14
	III. Sometimes	1
3.	Purification:	
	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 Report 1998

Home Sanitation and Food Hygiene

6.191 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.

6.192 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

6.193 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 (Table 6.33).

Table – 6.33
Health & Hygiene Habits in Kerala
(Washing Hands)

Sl. No.	Variables	%
01.	Wash Hand Before Eating:	
	I. Water	83
	II. Water & Soap	17
	III. Water & Ash	0
	IV. Water & Sand	0
02.	Wash Hand Before Feeding Child:	
	I. Water	44
	II. Water & Soap	12
	III. Water & Ash	0
	IV. Water & Sand	0
3.	Wash Hand After Defecation:	
	I. Water	48
	II. Water & Soap	50
	III. Water & Ash	0
	IV. Water & Sand	0

Source : Water and Sanitation Base line survey Report 1998
Indian Institute of Mass Communication and Rajiv Gandhi
Drinking
Water Mission (%age do not add up to 100.00 in all cases
as "others" are not shown in the table)

6.194 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

6.195 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.

6.196 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.

6.197 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. 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.

CHAPTER 7

ENERGY DEVELOPMENT

India has a total installed capacity of 1,08,207 MW which includes 76,607 MW from thermal, 27,010 MW from Hydro and 2,720 MW from nuclear sources. The share of hydro-electric power in India has been declining steadily since 1963. The hydro share declined from 44 per cent in 1970 to about 29 per cent in 2003. Prime Minister launched "50,000 MW hydro- power feasibility initiative" on 24th May 2003.

Status of Power System in Southern States

7.2 A comparison of key factors depicting the status of power system in Southern States is given in Table 7.1.

7.3 It will be seen from the above table that the distinctive features of Kerala's power sector are:

- Low per capita consumption over-all
- Very high percentage of domestic consumers with low tariff
- High percentage of consumption by power intensive Industries
- Very low consumption by Agriculture.

Growth of Power System in Kerala

7.4 The growth of Power System in Kerala during last few decades has been remarkable as could be seen from selected growth parameters in Table 7.2.

Table 7.1
Status of Power System in Southern States

Sl. No.	Particulars	Units	Kerala	Tamil Nadu	Karnataka	A.P.
1	Population 2001 census	Million	32	62	53	76
2	Per capita GDP (at current prices) Year	Rupees	19463	19889	18041	16373
3	Generation Capacity (owned)	MW	2038	5221	4292	5628
4	Total available capacity	MW	2608	7488	4817	7979
5	Peak demand met	MW	2347	6360	4571	7143
6	Energy available	Mu	12806	41764	27700	44497
7	T&D Loss	%	30	20	36	33
8	Energy Consumption	Mu	8752	33418	17844	29769
9	Energy Consumption per capita	Units	392	484	387	391
10	Villages electrified	%	100	100	99	100
11	Houses electrified (approximate)	%	86	70	70	60
12	No. of irrigation pumsets	Lakhs	4	18	13	19
13	Domestic Consumption/Total Cons.	%	43	19	23	21
14	Ind(LT+HT) Consumption/Total Cons.	%	38	36	22	24
15	Agri Consumption/Total Cons.	%	2	27	37	40
16	Agri Cons+Domestic Cons.(Total Energy Cons)	%	45	46	59	61

Source: KSEB

Table 7.2
Growth of Kerala Power System

Particulars	1951	1961	1980	1995	2000	2001	2002	2003
Installed capacity MW	38	133	1012	1491.50	2350.68	2420.68	2601.62	2608*
Annual sales MU	140	518	4318	7027.69	9812.88	10319	8667.32	8752
PerCapita consumption KWh	13	30	96	231	300.54	311.67	395	392
EHT lines - Circuit KM	911	1900	4404	6099.21	7598.97	8955.18	9021.13	10071
EHT S/S - (Nos)	12	22	86	130	178	190	194	221
HT lines - Circuit KM	1067	5449	13348	24509	28672	30035.67	30371.19	31406
LT lines - Circuit KM	992	8899	47606	125390	180499	187169.69	191930.80	204947
Distribution Transformers (Nos.)	324	2898	10821	22478	29551	31329	32585	33114
Annual Revenue in Rs.crore	0.58	3.11	91.25	625.19	1669.24	1811.12	1945.99	2480.69

*As on October 2003

Source: KSEB

Generation

7.5 During the early stages of development, focus was on tapping hydropower potential in the State. Hydro-Power is renewable, non-polluting and economic. From an installed capacity of 38 MW in 1951, power system in Kerala touched 2608 MW in 2003 with a generation potential of 11521 MU (refer Table 7.2&3) The lion's- share of energy requirement of the State was being met, till recent past, by generation from the 20 hydel power plants of the Kerala State Electricity Board. After the promulgation of Forest Conservation Act 1980, taking up new hydel projects has been affected. Though Kerala has a total hydel generation potential of about 4333 MW, only 1834 MW could be harnessed so far.

7.6 While industrial growth remained stagnant there has been phenomenal growth in domestic consumption especially due to the extensive rural electrification works taken up by the Board under the directions of state and central Governments and the rise in standard of living especially due to remittances. As the State could not keep pace with increasing demand for energy by implementing more hydel projects, it was forced to depend more and more on thermal energy either through import or from generation within the state. Due to the high transportation cost of coal and the environmental problems, coal based thermal power

Table 7.3
Capacity of Generation

Type	Particulars	Nos.	Installed Capacity (mw)	Energy Capacity mu
Hydel	KSEB owned	20	1802	6636
	Captive Power Plants	2	33	116
Wind		1	2	5
Thermal	KSEB (KDPP & BDPP)	2	234	1431
	IPP (BSES & KPCL)	2	177	1239
	NTPC Kayamkulam	1	360	2094
	Sub Total	28	2608	11521
	Import	-	781	6832
	Total	28	3389	18353

Source: KSEB

plants did not come up in the State., Kerala State Electricity Board had to establish two diesel power plants one at Brahmapuram near Kochi (106.6 MW) and the other at Kozhikode (128 MW). Government permitted establishment of Naphta based thermal power plants at Kayamkulam by NTPC (360 MW), at Kochi by BKPL (157 MW) and at Kasargode by M/s. KPCL (20 MW). The State was also forced to purchase more power from the Central Generating Stations. The hydel - thermal energy mix, which was 67:33 in 1998-99, is

now estimated at 34:66 as could be seen from Table 7.4.

7.7 Due to shortfall of rain, in some years, even the optimum generation capacity could not be fully exploited. The storage at reservoirs as on 1st November 2003 is only 51.6% of the storage capacity. The reservoir storage details are given in table 7.5.

7.8 The energy availability in the State during 2002-

Table - 7.4
Hydro- Thermal Mix

Year	Hydel (MU)	Thermal (MU)	Import* (MU)	Total (MU)	Hydel (%)	Thermal (%)	Cost at sale point (Rs./kwh)	Effective realisation (Rs./kwh)
1998-99	7305	567	3085	10957	67	33	1.68	1.40
1999-00	7038	1859	2879	11776	60	40	2.08	1.76
2000-01	6167	2897	3399	12463	49	51	3.04	1.80
2001-02	6712	2133	3748	12593	53	47	3.87	2.39
2002-03	4819	3156	4470	12445	39	61	4.26	2.96
2003.04 (Estimate)	4314	2567	5734	12615	34	66	3.99	2.96

Source: KSEB. *Share from Central Generating Stations (C G S) only included

Table - 7.5
Reservoir Details

Project	Installed Capacity (mw)	Reservoir	Design Potential (mu)	Maximum Storage Capacity (mu)	Present Storage (as on 1.11.2003)	
					(MU)	(%)
Idukki	780	Idukki	2398	2147.9	980.1	45.6
Sabarigiri	300	Pamba	1338	59.5	9.2	15.50
		Kakki		856.5	501.7	58.6
Kuttiadi	125	Kuttadi	343	41.5	25.9	62.5
Idamalayar	75	Idamalayar	380	254.5	146.3	57.5
Sholayar	54	Sholayar	233	152.2	138.1	90.7
Peringalkuthu	48	Peringal	245	10.7	8.4	78.3
Pallivassal	37.5	Kundala	284	22.7	18.5	81.4
		Mattupatty		161.2	65.0	40.3
Sengulam	48	Sengulam	182	0.7	0.7	98.6
Panniar	30	Anayirankal	158	65.6	28.6	43.6
		Ponmudi		63.5	54.2	85.3
Neria-Mangalam	45	Kallarkutty	237	4.8	4.5	93.6
Lower Periyar	180	Lower Periyar	498	2.1	0.9	41.6
Kakkad	50	Moozhiyar	262	0.4	0.4	100.0
		Veluthodu		0.2	0.2	98.8
Others	58.2		209			
Total	1830.70		6767	3844	1982.70	51.6

Source: KSEB

03 is given in Table 7.6.

7.9 The growth on import of power can be seen in the following figure 7.1. Thus the changing mix of hydro and thermal power, further reinforced by successive

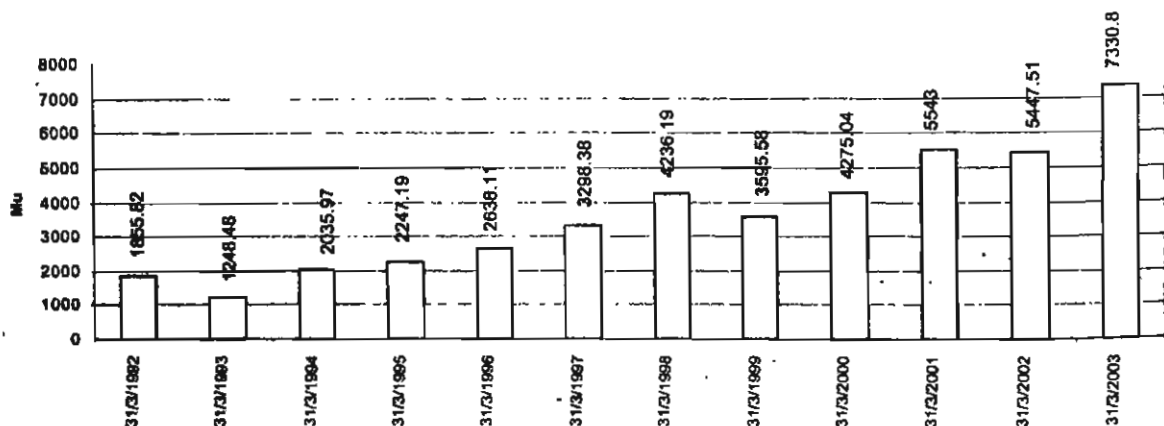
failure of monsoons, in recent years, has pushed up cost of power steeply. On an average, now one unit costs Rs.3.99, but the realisation is only Rs. 2.96 as on 31.3.2003.

Table - 7.6
Energy availability in the State during 2002-03

Sl. NO	Source	2002-03
1	Generation (in million /KWH)	
a	Hydel	4844.03
b	Thermal (BDPP + KDPP)	674.81
c	Wind farm	2.44
	Total (1)	5521.28
2	Power Purchase (in Million KWH)	
a.	NTPC (Kavamkulam)	1857.53
b.	NTPC (Ramagundam)	2191.73
c	Neyveli Lignite Corporation	1216.47
d	Western Region	12.28
e	Madras Atomic Power Project	93.02
f	Eastern Region	808.66
g	Maniyar	23.36
h	Kaiga	376.73
i	BSES	305.80
j	Kuthungal	23.60
k	KPCL, Kasargode	147.65
l	NLCTPS.I. Expansion	12.07
m	PTC DVC Power	30.48
n	UI Units	219.78
o	Thalchar stage ii	11.64
	Total (2)	7330.80
3	Total (1 + 2)	12852.08
4a	Less bilateral Exchange	
b	Less Losses in MU	
c	Auxiliary Consumption	45.53
	Total (4)	
5.	Net Availability (in million KWH) (3)-(4)	12806.55

Source: KSEB

Fig 7.1
Import of Power



Transmission

7.10 Strengthening the infrastructure to match the generation capacity is given prime importance in the plan programmes of KSEB. The present situation of transmission infrastructure is given in Table 7.7.

Capacity	Existing Nos.	Ongoing Nos.	Capacity	Existing Ctkm	Ongoing Ctkm
400kV	1	0	400kV	260	0
220kV	11	4	220kV	2583	78
110kV	94	29	110kV	3747	354
66kV	95	10	66kV	3011	27
33kV	24	83	33kV	534	1148
Total	225	126	22kV	121	0

Source: KSEB

Distribution

7.11 All the villages are electrified in the State. More than 84 per cent of households are electrified. But there are certain habitats yet to be supplied with electricity. All consumers are metered. All 11 kv lines are also metered. The details of distribution infrastructure in the State are given Table 7.8.

Table - 7.8
Distribution Infrastructure
(As on 31.10.2003)

Particulars	Existing
No. of consumers Nos (lakhs)	71
11 Kv Lines (Kms)	31705
LT lines (Kms)	197278
Distribution Transformers (Nos)	33591
Pump sets energised Nos (lakhs)	4
Street Lights Nos. (lakhs)	8.32

Source: KSEB

Pattern of Power Consumption and Contribution to Revenue

7.12 As on 31.3.2003 there were 69,47,803 consumers served by KSEB. The different categories of consumers and their contribution to the revenue generated are shown in Table 7.9. The domestic sector which is the largest consuming sector continues to be heavily subsidized as could be seen from Table 7.9. Out of the total consumers 78.57 per cent belonging to domestic sector consume 43.42 per cent of the energy whereas the revenue realized from them is only 22.41 per cent. Domestic consumers enjoy the lowest tariff next to agriculture. HT & EHT consumers consumed 28.48 per cent of the energy sold but contribute 40 per cent of the revenue collected.

7.13 The pattern of Electricity consumption in Kerala is shown in figure 7.2.

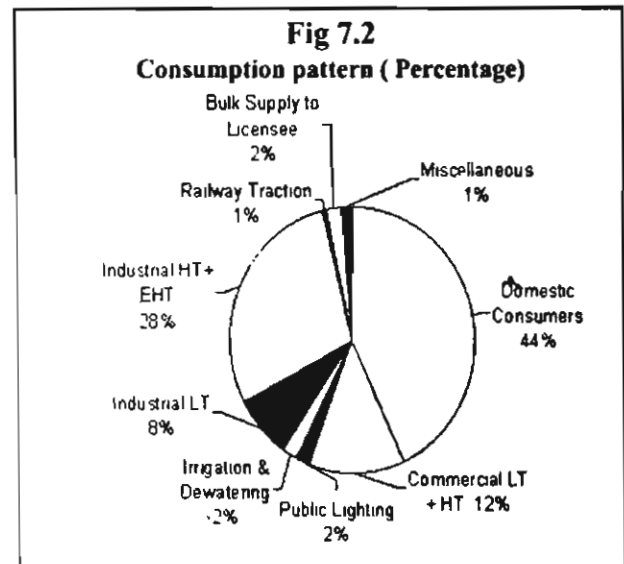


Table 7.9

Power Consumption & Revenue Collected during 2002-03

Sl. No.	Category	Percentage of Consumers To Total	Consumption as Percentage To Total	Revenue as percentage to Total
1	Domestic	78.57	43.42	22.41
2	Commercial LT+HT	14.26	12.47	20.97
3	Industrial LT	1.50	7.76	10.90
4	Industrial HT & EHT	0.01	28.48	40.00
5	Others	5.66	7.87	5.72
	Total	100.00	100.00	100.00

Source: KSEB

Financial Performance of KSEB

7.14 K S E B has been continually running at loss since late 1970s. Despite the statutory requirement to earn an ROR of 3% since 1985, the losses have only increased. K S E B has been showing in the accounts the 3% ROR by assuming the required amount as grant from Government (though never received). K S E B was covering the losses in actual practice by:

- Not paying interest to government;
- Not passing on in full to government the Electricity duty collected;
- Diversion of borrowed funds for Revenue purposes;
- Non payment of dues to central P S Us;
- Low capital investment.

7.15 The tariff was not rationalized commensurate with the increase in purchase of thermal power. Inadequate tariff to meet additional expenditure for thermal power purchase has resulted in more revenue deficit. Even though the object of providing subsidies to industries, domestic and agriculture sectors was to meet the social obligation of the Government, K.S.E.B. has not been suitably compensated by government by way of reimbursement of subsidy in cash. This has increased the revenue gap. Due to stagnant industrial consumption and increasing domestic consumption the load curve became skewed with an average demand of 1400 MW during the period from 6.00 am to 6.00 pm, 2300 MW during the peak hours

from 6.00 pm to 10.00 pm and 1100 MW during the period from 10.00 pm to 6.00 am. In order to avoid load shedding and power cut, the Board had been forced to purchase very high cost energy especially during peak hours. The Board had to depend on more borrowings to meet the additional expenditure for purchase of costly thermal power and for debt servicing (Table 7.10), further widening the revenue gap. Though the Board was statutorily enjoined to function as a commercial institution, it continues to function mainly as an extension of Government.

7.16 The revenue requirement and the gap in revenue to meet the expenditure in recent years are given in table 7.11.

7.17 The performance in the year 2003-04 (till August 2003) shows that there is a revenue gap Rs.148.84 crores corresponding to 11.53 per cent of the revenue receipt

Issues Confronting the Sector

- In recent years, there is an increase in the expenditure on power purchase due to high cost of thermal power from NTPC, Kayamkulam and other IPPs.
- The category contributing to major percentage of consumption is 'domestic consumers' but the tariff rate for domestic consumers is low.
- There is no substantive increase in the number of general industrial and commercial consumers that pay higher tariff.

Table - 7.10
Debt Service

Year	Borrowings	Repayment			Average monthly debt servicing
		Principal	Interest	Total	
1999-00	849.73	277.61	387.04	664.65	55.39
2000-01	1303.57	232.14	514.58	746.72	62.23
2001-02	690.31	457.11	574.79	1031.90	85.99
2002-03	1380.24	1018.69	573.94	1592.63	132.72
2003-04 (BE)	1567.32	938.01	616.21	1554.22	129.52

Source: KSEB

Table - 7.11
Revenue Requirement and Revenue Gap at Current Tariff

Particulars	(Rs.Crores)		
	2001-02	2002-03	2003-04*
Gross Revenue Requirement(a)	3358.29	3722.50	3825.58
Less: Non-tariff Income(b)	95.86	226.27	200.00
Revenue Requirement from Tariff(c=a-b)	3262.43	3496.23	3625.57
Revenue at Current Tariff(d)	1946.00	2480.69	2693.86
Revenue Gap(e= c-d)	1316.43	1015.54	941.72

*projected. Source: KSEB

- Continuing high revenue deficit because the tariff has not been revised to the necessary levels as has been done in other states.
- There is an anomaly in the tariff structure. Whatever be the power consumed, the consumer has to pay only as per the rates for different slabs within the high total consumption. Thus a domestic consumer who uses up to 40 units of power pays Rs.1.15 for the first, 41-80 units Rs.1.90 for the next, 81-120 units, Rs.2.40 and so on.

- Another major cause is huge

Table:7.12
Domestic Tariff Rates

Units	Rs.
0-40	1.15
41-80	1.90
81-120	2.40
121-150	3.00
151-200	3.65
201-300	4.30
301-500	5.30
501 and above	5.45

liability of the Board in debt servicing. The reason for accumulation of debt is the non payment of amount spent under rural electrification, non-payment of subsidy to enable the board to earn the statutory three percent ROR and non-repayment of subsidy for pre-1992 tariff under the industrial policy announced in 1992. An amount of Rs.125 crore per month is projected to be the obligation of the Board for debt servicing

- KSEB's productivity is not commensurate with the staff strength
- Employee cost is high in relation to revenue.
- High T & D losses partly due to theft.
- Time and cost over run of projects.

Reform Initiatives in India

7.18 The Govt. of India initiated reform measures to resolve the accumulated problems of the sector in 1991, when it introduced policy measures to attract private sector participation in the area of power generation. Unbundling of vertically integrated structure of State Electricity Boards and privatisation were considered as desirable reform measures. A Central Electricity Regulatory Commission was constituted in 1998. States were also to form State Electricity Regulatory Commissions. States like Orissa, Haryana, Andhra Pradesh, Delhi, Uttar Pradesh and Karnataka have unbundled and corporatised different segments of the power sector. The experience of reform has not been uniform. The basic problems of tariff for different categories, pricing of power to distributors and collection of dues have remained intractable issues affecting the reforms.

Power Sector Reforms in Kerala

7.19 Governments in Kerala decided to keep K S E B as a vertically integrated structure in the public domain, without unbundling and have tried to introduce Profit Centres and other measures for improved performance. The need to take decisive measures arose when the arrears due to NTPC were offered to be securitised by

Government of India in 2002 in return for monitorable improvements in performance. The MOU signed in this context between Government of India and the Government of Kerala and the back to back MOU between Government of Kerala and KSEB accelerated the reform process. Government of Kerala constituted State Electricity Regulatory Commission on 14th November 2002.

7.20 KSE Board has made significant progress in the reform path as could be seen from the following.

- **100% electrification of households by 2007**
7.21 Approximately 85% of residential buildings have been electrified. Target can be completed by 2007 at the rate of 4,00,000 new connections per annum.

- **100% Metering of consumers**

7.22 All consumers have been metered.

- **Energy Accounting and Audit**

- a) All 11 KV feeders have been metered.
- b) Boundary meters have been established down to the level of division boundaries.
- c) Energy accounting is being done on a monthly basis.

- **Replacement of faulty and sluggish meters by electronic meters**

7.23 Approximately 8.75 lakh faulty / sluggish meters have been replaced during 2002-03 and 2003-04.

- **Anti -Power Theft Legislation and implementation**

- a) Indian Electricity (Kerala Amendment) Ordinance, 2003 was promulgated on 1st April 2003.
- b) Anti- Power Theft Wing has been strengthened and its activities have been intensified. During 2002-03 and 2003-04, 15427 cases have been detected and penal amount of Rs. 7.02 crores have been realized.

- **Computerization of billing and collection**

7.24 Billing and revenue collection systems are being computerized stage by stage. Billing of Extra High Tension (EHT) consumers has been computerized and that of High Tension (HT) consumers is expected to be completed shortly. Computerization of LT consumers in 80 Sections will be completed by December 2003, 97 Sections by

March 2004 and the remaining 379 Sections by end of December 2004.

Speedy settlement of disputes

7.25 The Board is taking action to settle disputes and billing complaints so as to achieve realization of revenue. Approximately 2012 cases could be settled during 2002-03 and 2003-04.

• **Reduction in administrative expenses**

7.26 Multi-pronged approach was resorted to for reducing administrative expenses. Important among them are:

- a) Shifting of offices from rented buildings to own buildings.
- b) Curtailing advertisement expenses.
- c) Curtailing travel expenses.
- d) Outsourcing contingent services.
- e) Hiring of vehicles as and when required instead of purchasing new ones.
- f) Limiting telephone and transportation expenses.
- g) Ban on non-remunerative construction works.

• **Reduction in employee cost**

7.27 Major Steps taken are:

- a) Reduction in number of posts by cutting down redundant posts of both staff and officers and freezing of filling of vacancies for three years.
- b) Redeployment of employees to vacant posts.
- c) Curtailing certain allowances like leave surrender and holiday wages.
- d) Reducing disbursement expenses by stopping pension disbursement by money order.
- e) Stoppage of granting increment to officers beyond maximum of the pay scale.
- f) Moratoriums on recruitment of employees except Electricity workers, special recruitment for SC/ST and compassionate employment.

• **Restructuring of high cost loans**

7.28 High cost loans in the interest range of 13 to 16.5 percent have been restructured with a lower interest rate ranging from 8.5 to 11.25%. The gross savings of account of this would be Rs. 100.20 crores during the entire repayment period. But institutions like REC and PFC insist on pre-payment premium. An amount of Rs.36.56 crores has been paid as pre-payment premium thereby reducing the net gain to Rs. 63.64 crores. On an average, the annual savings would be Rs. 7.15 crores.

• **Availing low cost energy under Availability**

Based Tariff (ABT) Regime

7.29 ABT regime was introduced in Southern Region with effect from 1.1.2003. During the period from April 2003 to October 2003 KSE Board could avail 376.41 Million Units of energy on an average at a cost of Rs.1.62 per unit.

• **Speedy completion of generation and transmission projects by effective project management.**

7.30 The implementation of generation and transmission projects are regularly monitored and effective project management is ensured. The projects that can be completed in a time bound manner have been identified and put under Project Managers.

• **Effective Inventory Management**

7.31 Purchase procedures have been streamlined to ensure quality and competitive rate. Stock of inventory is regularly monitored to ensure optimum purchase for meeting the requirements.

• **Speedy disposal of unserviceable articles**

7.32 Disposal of unserviceable articles have been streamlined and accelerated through the functioning of Scrap Disposal Committees.

• **Consumer Satisfaction**

7.33 Government have issued GO (MS) No. 12/02/PD/Thiruvananthapuram, dated 31.5.2002 constituting Panchayat level committees to resolve problems at grass root level. The Deputy Chief Engineers of Distribution Circles have been delegated with powers to settle consumer grievances. Public Grievance Cell has been constituted at Vidyuthi Bhavanam, Thiruvananthapuram for monitoring the matters relating to public grievance at Headquarters level.

7.34 Mobile Fault Rectification Units have been constituted at Thiruvananthapuram for speedy restoration of power supply. Centralized complaint registering system with Interactive Voice Response System (IVRS) facility has also been introduced.

The Electricity Act 2003(Act No.36 of 2003)

7.35 The Electricity Act, 2003 is a comprehensive law on electricity generation transmission, distribution, trading and use. It replaces the Indian Electricity Act 1910, The Electricity (Supply) Act 1948 and the Electricity Regulatory Commission Act 1998. The statement of Objects and Reasons is unusually long and is reproduced in full below as it also summarises the main features of the Act. It will be seen that the Act is far reaching in intent and comprehensive in coverage and

claims to strike a balance between its objectives and the 'current realities', by giving some flexibility to State Governments 'to develop their power sector in the manner they consider appropriate'

7.36 In reality, the Act has two contradictory directions: One is that of further centralisation with Government of India (through the power to frame the National Electricity Policy and Plan, National Tariff Policy and even the policy on electrification and local distribution in rural areas and on stand-alone systems for rural areas and non-conventional system after con-

sultation with the states); the other is that of decentralisation (through delicensing of generation except for certain restrictions in the case of hydel power, freedom for generation and transmission of captive power, free access to consumers, private transmission licensees, distribution licensees, stand alone system for rural areas etc). In effect, it makes electricity more a subject in the union list rather than one in the concurrent list, the main objective being the unbundling the SEBs and removal of their monopoly position in the states concerned.

Box -7. 1

THE ELECTRICITY ACT, 2003

STATEMENT OF OBJECTS AND REASONS

The Electricity Supply Industry in India is presently governed by three enactments namely, the Indian Electricity Act, 1910, the Electricity (Supply) Act, 1948, the Electricity Regulatory Commissions Act, 1998.

1.1 The Indian Electricity Act, 1910, created the basic framework for electric supply industry in India which was then in its infancy. The Act envisaged growth of the Electricity Industry through private licensees. Accordingly, it provided for licensees who could supply electricity in a specified area. It created the legal framework for laying down of wires and other works relating to the supply of electricity.

1.2 The Electricity (Supply) Act, 1948 mandated the creation of a State Electricity Board. The State Electricity Board has the responsibility of arranging the supply of electricity in the State. It was felt that electrification which was limited to cities needed to be extended rapidly and the State should step in to shoulder this responsibility through the State Electricity Boards. Accordingly, the State Electricity Boards through the successive Five-Year Plans undertook rapid growth and expansion by utilising plan funds.

1.3 Over a period of time, however, the performance of S.E.Bs has deteriorated substantially on account of various factors. For instance, though power to fix tariffs vests with the State Electricity Boards, they have generally been unable to take decisions on tariffs in a professional and independent manner and tariff determination in practice has been done by the State Governments. Cross-subsidies have reached unsustainable levels. To address this issue and to provide for distancing of Government from determination of tariffs, the Electricity Regulatory Commissions Act, was enacted in 1998. It created the Central Electricity Regulatory Commission and has an enabling provision through which the State Governments can create a State Electricity Regulatory Commission. Sixteen States have so far notified/created State Electricity Regulatory Commissions either under the Central Act or under their own Reform Acts.

2 Starting with Orissa, some State Governments have been undertaking reforms through their own Reform Acts. These reforms have involved unbundling of the State Electricity Boards into separate Generation, Transmission and Distribution Companies through transfer schemes for the transfer of the assets and staff into successor companies Orissa, Haryana, Andhra Pradesh, Karnataka, Rajasthan and U.P have passed their Reform Acts and unbundled their State Electricity Boards into separate companies, Delhi and M.P have also enacted their Reforms Acts which, *inter alia*, envisage unbundling/corporatisation of S.E.Bs.

3. With the policy of encouraging private sector participation in generation, transmission and distribution and the objective of distancing the regulatory responsibilities from the Government to the Regulatory Commissions, the need for harmonising and rationalising the provisions in the Indian Electricity Act, 1910, the Elec-

Continued...

Box 7.1 Continuation.

tricity (Supply) Act, 1948 and the Electricity Regulatory Commissions Act, 1998 in a new self contained comprehensive legislation arose. Accordingly, it became necessary to enact a new legislation for regulating the electricity supply industry in the country which would replace the existing laws, preserve its core features other than those relating to the mandatory existence of the State Electricity Board and the responsibilities of the State Government and the State Electricity Board with respect to regulating licensees. There is also need to provide for newer concepts like power trading and open access. There is also need to obviate the requirement of each State Government to pass its own Reforms Act. The Bill has progressive features and endeavours to strike the right balance given the current realities of the power sector in India. It gives the State enough flexibility to develop their power sector in the manner they consider appropriate. The Electricity Bill, 2001 has been finalised after extensive discussions and consultations with the States and all other stake holders and experts.

4 The main features of the Bill are as follows:

- i) Generation is being delicensed and captive generation is being freely permitted. Hydro projects would, however, need approval of the State Government and clearance from the Central Electricity Authority which would go into the issues of dam safety and optimal utilisation of water resources.
 - ii) There would be a Transmission Utility at the Central as well as State level, which would be a Government company and have the responsibility of ensuring that the transmission network is developed in a planned and coordinated manner to meet the requirements of the sector. The load despatch function could be kept with the Transmission Utility or separated. In the case of separation the load despatch function would have to remain with a State Government organisation/company.
 - iii) There is provision for private transmission licensees.
 - iv) There would be open access in transmission from the outset with provision for surcharge for taking care of current level of cross subsidy with the surcharge being gradually phased out.
 - v) Distribution licensees would be free to undertake generation and generating companies would be free to take up distribution licensees.
 - vi) The State Electricity Regulatory Commissions may permit open access in distribution in phases with surcharge for –
 - current level of cross subsidy to be gradually phased out alongwith cross subsidies; and
 - obligation to supply.
 - vii) For rural and remote stand alone systems for generation and distribution would be permitted.
 - viii) For rural areas decentralised management of distribution through Panchayats, Users Associations, Cooperatives or Franchisees would be permitted.
 - ix) Trading as a distinct activity is being recognised with the safeguard of the Regulatory Commissions being authorised to fix ceilings on trading margins, if necessary.
 - x) Where there is direct commercial relationship between a consumer and a generating company or a trader the price of power would not be regulated and only the transmission and wheeling charges with surcharge would be regulated.
 - xi) There is provision for a transfer scheme by which company/companies can be created by the State Governments from the State Electricity Boards. The State Governments have the option of continuing with the State Electricity Boards which under the new scheme of things would be a distribution licensee and the State Transmission Utility which would also be owning generation assets. The service conditions of the employees would as a result of restructuring not be inferior.
 - xii) An Appellate Tribunal has been created for disposal of appeals against the decision of the C.E. R.C and State Electricity Regulatory Commissions so that there is speedy disposal of such matters. The State Electricity Regulatory Commission is a mandatory requirement.
 - xiii) Provisions relating to theft of electricity have a revenue focus.
5. The Bill seeks to replace the Indian Electricity Act, 1910, the Electricity (supply) Act, 1948 and the Electricity Regulatory Commissions Act, 1998
 6. The bill seeks to achieve the above objects.

Implications of the Electricity Act 2003

- KSEB, Constituted under section 5 of the Electricity Supply Act 1948 loses statutory support and has to become State Transmission utility to be constituted as a State Government Company which will have the responsibility of developing transmission network to meet the requirements of the sector.
- The Act provides the formation of independent units under Indian Companies Act 1956 for Generation (Section 7), Distribution (Section 14), Trading (Section 14), Transmission (Section 39) and State Load Despatch Centre (Section 31). Generation, Distribution and Trading can be grouped together to form a Single Company. State Transmission Utility and Load Despatch Centre can be grouped together to form another corporate entity under the control of the government. Privatisation is not a must.
- Generation is delicensed.
- State Electricity Regulatory Commission (SERC) will issue the guidelines for tariff (Section 51). Determination of tariff for generation, supply, transmission, wheeling, wholesale/bulk/retail (Section 62) will be done by SERC after elaborate consultations. Interested parties can argue their case before it. Government has no role in it.
- The present system of providing KSEB directly subsidies will cease to exist. If any subsidy is to be paid, it is to be given in advance by Government to compensate the licensee affected by the grant of subsidy in manner of SERC may direct.

Directives of Kerala State Electricity Regulatory Commission

7.37 The Kerala State Electricity Regulatory Commission has issued orders on Aggregate Revenue Requirement (ARR) and Expected Revenue from Charges (ERC) for the years 2003, 2004 in December 2003. The Commission approved an ARR of Rs.3697.83 crores and the total Revenue Receipts of Rs.3141.37 crores for the year 2003-04.

7.38 The salient points of the directives issued by the Commission are as follows:

- The Commission strongly recommended specific action on the part of the KSE Board to improve

the current level collection efficiency to the level of 98 to 99 per cent as even an increase of one per cent in efficiency would improve the cash flow by over Rs.30 crores during a year.

- The Commission urged upon the KSEB to take up complete the computerisation of billing activity in the shortest possible time.
- Hydro-generation is required to be regulated 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 and the economic of power purchase from external sources.
- Expenditure of dead servicing would be significantly reduced by strict financial management and control.
- The Commission urged upon the KSE Board to institute a system for project management, monitoring and controlling so that the cost and time over – runs and capital project are totally avoided.
- The Commission required to the KSE Board to take immediate action for speedy progress on construction work under Accelerated Power Development and Reforms Programme (APDRP) and also directed the Board to formulate additional schemes for APDRP assistance with a view to reduce borrowings at commercial rate of interest.
- The Commission recommended the computerisation of the inventory and disposal of unwanted stores in the shortest possible time.
- The Commission required the Board to submit the details regarding cost of supply to the various categories of consumers and their consumption along with full supporting data so as to enable to undertake the exercise on tariff rationalisation.

7.39 The KSEB has submitted the ARR and ERC for the year 2004-05 to KSERC and its order is expected to be issued in April 2004. The second order of the KSERC is expected before the end of March 2004. Significant decisions will have to be taken by the State Government and KSEB in April 2004 in accordance with the order of KSERC and the Electricity Act 2003. Meanwhile, certain turnaround options have been proposed, which are summarised below:

Turnaround Options

- 7.40 KSEB in its submission to SERC on Annual Revenue Requirements (ARR) has proposed to cover the

Annual Revenue Gap over Rs.900 to 1000 crores through a combination of subsidy support from govt. and postponing a part of the revenue requirements by forming a regulatory asset. The regulatory asset is to be amortised in subsequent years and associated financing cost is to be allowed to be included in the revenue expenditure during this period as business expenditure. The turnaround option proposed by KSEB can be seen in Table - 7.13.

7.41 KSEB has also raised the question of past arrears, its heavy loan and interest liability.

7.42 On the basis of the analysis of data on power sector in Kerala over the last few years Shri T.L.Sankar, Advisor, Energy Group, ASCI, Hyderabad has come out with certain suggestions for making the KSEB a viable and profitable entity, within a period of seven years¹. The turn around plan is based on graduated tariff increase for different categories while protecting the poor, reduction in the T&D losses, improvement in professional work of KSEB etc. Major components of this proposal are:

- The rate of growth of consumption can be kept at

Table - 7.13
TURNAROUND STRATEGY (Rs. crore)

No	Particulars	2001-02(Actual)	2002-03(Provisional)	2003-04(Revised)	2004-05	2005-06	2006-07
1	Statutory Surplus	62.85	80.78	91.83	99.75	109.65	115.65
2	Total Expenditure	3295.44	3641.72	3758.48	3579.41	3774.22	3968.95
	Generation Power	84.60	166.23	159.56	165.94	172.58	179.48
	Purchase Of Power	1451.55	1872.08	1851.89	1621.39	1749.61	1887.03
	Interest	648.95	672.78	721.54	730.97	737.69	740.70
	Depreciation	212.61	277.10	334.52	340.00	365.00	380.00
	Employee Cost	615.00	670.82	693.64	712.00	735.00	762.00
	Repairs & Maintenance	70.32	60.64	66.70	69.37	72.14	75.00
	Admn&General Expenses	66.40	51.80	55.88	58.24	60.57	63.00
	Other Expenses	399.70	89.51	110.00	114.00	119.00	124.00
	Less:Expenses Capitalised	124.82	118.15	119.80	115.54	119.34	123.75
	Less:Interest Capitalised	128.87	101.09	115.45	116.96	118.03	118.51
3	Less Non Tariff Income	95.86	226.27	240.37	249.60	259.58	269.96
4	Annual Revenue Requirement (1+2-3)	3262.43	3496.23	3609.94	3429.56	3624.29	3814.64
5	Less Revenue from Tariff	1946.00	2480.69	2683.86	2936.47	3233.55	3563.23
6	Revenue Gap(4-5)	1316.43	1015.54	926.08	493.09	390.74	251.41

Source: KSEB

1. Power Reforms in Kerala: Exploring New Approaches under Electricity Act 2003, A Presentation by Shri.T.L. Sankar, Advisor, Energy Group ASCI, Hyderabad at Centre for Management Development, 18th Oct 2003.

the average observed over 1990-91 to 2001-02. The overall growth rate of consumption will be about 5 to 6 per cent per year.

- Tariff increase suggested is as follows.
 - Domestic –poor 5% per annum (constant)
 - Domestic-others-14% up to 2010-11 and then on 5%
 - Commercial-constant up to 2010-11 and then on 5%
 - Industries LT-2.2% up to 2005-06 and then on 5%
 - Industries HT-15% up to 2005-06 and then on 3%
 - Agriculture-10% up to 2010-11 and then on 5%
 - Others-9.5% up to 2010-11 and then on 5%
- While moving for commercial viability, protect the poor ie. Households with a consumption of 40 units per month and keep the tariff at affordable levels-say about Rs.25 per month per household.
- Since the benefit of subsidisation of power for agriculture is not being enjoyed by actually poor, rate could be raised by 50% of the average cost of supply in seven years.
- T&D losses are to be reduced to 18 per cent by 2 per cent reduction per year.
- Another aspect is reduction of losses, which can be achieved by (a) consumer mapping and (b) by energy accounting.
- From each pole the number of connections given should be identified by introducing suitable code system and their consumer number, meter number and connected load should be entered in the ledger.
- The consumption by the consumers is to be recorded monthly or bi-monthly. This will be summed up for each period and compared with the energy passing through the feeder at the substation level during that period. The results should be evaluated at the corporate office and published as widely as possible.
- Operating cost control: - Effective control of costs is possible by rationalising the tasks of the employees even without any reduction in their number.
- Containing power purchase costs – KSEB should ensure that long term, short term and spot purchases are settled each year to keep the average cost of power purchase that year within the projected costs.

- Power intensive industries, which wish to directly access power from outside, may be encouraged to do so.
- Accountability: - Strategic Business Units (SBU) based reorganization should be done. The technical and commercial responsibility for each section should be with the Section Officer and at the Divisional level the figure should be aggregated and the divisional officer should take the responsibility to deliver performance according to the target set.
- A special task force under the Chief Secretary and a few independent experts in electrical engineering and management should monitor the entire reforms.

7.43 The key feature of this package is that it involves no privatisation. But it calls for bold strategic and operational decisions and closely monitored implementation in the larger interests of the State.

LNG as an energy source

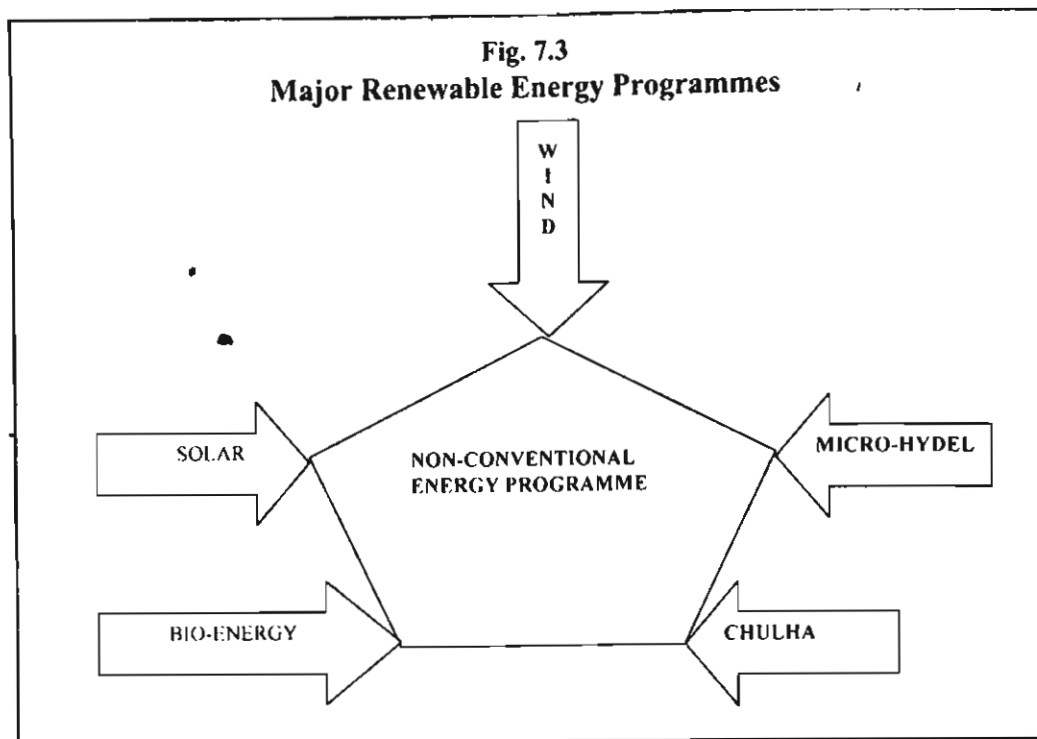
7.44 The high cost of thermal power is due to the use of naphtha as fuel. The State has been urging shift to LNG as fuel and this was pending for some years. It now looks that this will be a reality in the near future. NTPC at Kayamkulam has decided to shift to LNG and enhance the capacity from the present level of 350 MW to 2300 MW (in phases). The State Government have decided to sign an MOU with NTPC for establishing an LNG terminal. The completion of this will result in substantial reduction in the cost of thermal power. The availability of LNG as a fuel will also trigger rapid industrialisation of the Kochi – Kayamkulam belt, as happened in Gujarat due to its availability.

NON-CONVENTIONAL ENERGY PROGRAMME

7.45 India has the world's largest programme for renewable energy. As regard to tapping of wind power, the country is almost a "Wind Super Power", with an installed capacity of 1167 MW. More than 700000 PhotoVoltaic systems with a total installed capacity of 44 MW have been installed all over India., for applications such as home lighting, street lighting, solar lanterns and water pumping for irrigation. Over 17 grid interactive solar photo voltaic generating stations of more than 1400 kw in operation in 18 states in India.

Renewable Energy Programmes in Kerala

7.46 Major Renewable Energy Programmes in the state are depicted in Figure 7.3.



Solar Photovoltaic Programme

7.47 The projects under SPV include Solar Village Electrification, Line interactive PV roof top systems in government Offices and hospitals, stand alone Power Plants on roof tops of residential buildings, grid-interactive P V power plants in Autonomous and Private Institutions for enhancing the quality of power.

Wind Energy Programme

7.48 As regards wind energy projects, India ranks fifth in the world; having installed capacity of more than 1167 MW. However, an achievement of 1167 MW is miniscule, in comparison to the total resource potential which is pegged today anywhere between 65000 MW to 100000 MW. It is possible to achieve the same only through a properly designed policy and institutional set up, backed with a multi-year trade policy.

7.49 In Kerala, the wind energy potential is assessed to be 600-800 MW. But so far only 2.03MW has been tapped.

7.50 ANERT conducted a micro-survey on wind energy potential in the State and has prepared a master plan for Ramakkalmedu. It is estimated that 100 MW wind energy potential is available at Ramakkalmedu area.

Small Micro-Hydel Programme

7.51 Government of India, in its policy on Hydro power development has given emphasis to small hydel projects. It is realised as a solution for energy problem in remote and hilly areas where extension of Grid System is uneconomical. India has a potential of about 15000 MW of Small Hydro Power. About 4233 potential sites up to 25 MW Station Capacity aggregating to a capacity of about 10,000 MW have been identified. Details are given in Table 7.14. 466 projects have already been set up and 196 projects are under various stages of implementation. Table 7.15 shows the state-wise details of projects set up and projects ongoing.

7.52 Under micro-hydel programme, implementation of Micro Hydel projects on behalf of two District Panchayats, Kammadi in Kasargode district and Chakkarakundu in Kozhikode district, have been undertaken by ANERT. The unit at Kammadi is envisaged to energise one small scale production unit proposed as an income generation activity to the local tribal people. The second project is aimed at electrification

of about 50 houses in the locality. The projects are ready for take off.

7.53 UNIDO has set up a Regional Centre on Small Hydropower at Energy Management Centre (EMC). The Centre has initiated preparation of Detailed Project Reports (DPR) for ten small Hydro power projects in Kerala. UNIDO has also agreed to set up one 30KW Micro Hydel Station in an off grid (remote) village in Kerala. It aims at establishment of a multi purpose project for poverty alleviation through employ-

ment generation in that area. Mankulam Panchayat in Idukki district has been identified for this activity .

7.54 Government of Kerala has nominated EMC as the Promotion cell for Small Hydro Power development of CPPs and IPPs. Sixtyone projects have been identified. EMC has completed the D P R preparation and Environment Impact Assessment(E I A) study of the S H P Barapole Project (21MW) which was awarded to Travancore – Cochin Chemicals Ltd. EMC has also assisted many Local Governments in the pre-feasibil-

Table:7.14
State Wise Identified Small Hydel Sites
Up To 25 MW Capacity

Sl. No.	Name of State	Identified no. of sites	Total Capacity in MW
1	Haryana	22	30.05
2	Himachal Pradesh	323	1624.78
3	Jammu& Kashmir	201	1207.27
4	Punjab	78	65.26
5	Rajasthan	49	27.26
6	Uttar Pradesh	211	267.061
7	Uttaranchal	354	1478.235
8	Goa	3	2.6
9	Gujarat	290	156.83
10	Madhya Pradesh	85	336.325
11	Chhatisgarh	47	57.9
12	Maharashtra	234	599.47
13	Andhra Pradesh	286	254.63
14	Karnataka	230	652.61
15	Kerala	198	466.85
16	Tamil Nadu	147	338.92
17	Bihar	92	194.02
18	Jharkhand	89	170.05
19	Orrisa	161	156.76
20	Sikkim	68	202.75
21	West Bengal	145	182.62
22	Arunachal Pradesh	492	1059.03
23	Assam	46	118.00
24	Manipur	96	105.63
25	Meghalaya	98	181.50
26	Mizoram	88	190.32
27	Nagaland	86	181.39
28	Tripura	8	9.85
29	A&N Island	6	6.40
	Total	4,233	10,324.37

Source: Proceedings of the Asia-Africa Regional Seminar on small hydro power from 11 to 15 November, 2003 at Thiruvananthapuram.

ity investigation of S H P projects. It has also undertaken the work of two multipurpose hydel stations at Attapaddy in Palakkad District.

Bio-Energy Programme

7.55 The project under Bio-energy programme has been implemented from 1998 onwards with the financial assistance of MNES .The activities included Biomass assessment study, power recovery from Municipal

Solid Waste (MSW) and industrial waste, bio-mass gasifier programme etc. Government of India accorded sanction to set up 15 Bio-gas plants. Applications were received from 92 beneficiaries through 28 IREP offices in the State and 15 projects were approved for implementation. Seven projects have been completed till now.

Table - 7.15
State wise SHP projects (up to 25 MW) set up & under construction

Sl. No.	State	Projects Set-Up		Project Ongoing	
		Nos.	Cap. (mw)	Nos.	Cap. (mw)
1	Haryana	4	48.30		
2	Himachal Pradesh	41	93.24	13	67.50
3	Jammu & Kashmir	27	102.24	9	13.31
4	Punjab	21	108.40	1	2.70
5	Rajasthan	10	23.85		
6	Uttar Pradesh	8	21.50	1	3.60
7	Uttaranchal	70	64.60	31	33.02
8	Goa	1	0.05		
9	Gujarat	2	7.00		
10	Madhya Pradesh	7	38.96	4	26.40
11	Chhatisgarh	2	1.00		
12	Maharashtra	27	207.08	4	15.75
13	Andhra Pradesh	49	155.61	12	26.50
14	Karnataka	38	198.88	18	91.90
15	Kerala	10	72.02	10	73.00
16	Tamil Nadu	11	76.40	2	7.90
17	Bihar	4	44.90	10	15.00
18	Jharkhand	6	4.05	8	34.85
19	Orissa	6	7.30	7	40.97
20	Sikkim	18	92.28	5	5.62
21	West Bengal	12	35.60	5	15.20
22	Arunachal Pradesh	50	32.37	27	51.64
23	Assam	3	2.11	8	51.00
24	Manipur	8	5.45	3	2.75
25	Meghalaya	3	30.71	9	3.28
26	Mizoram	16	14.78	3	15.50
27	Nagaland	8	20.47	6	12.40
28	Tripura	3	16.01		
29	A&N Island	1	5.25		
	Total	466	1530.41	196	609.79

Source: Proceedings of the Asia-Africa Regional Seminar on small hydro power from 11 to 15 November, 2003 at Thiruvananthapuram.

Table - 7.16
State-Wise Gasifier Installation Details
As on 31-3-2003

No	State	Cumulative	
		No. of system	Capacity KW
1	Andhra Pradesh	231	15384
2	Arunachal Pradesh	3	180
3	Assam	6	123
4	Bihar	2	20
5	Chhattisgarh	1	500
6	Goa	3	22
7	Gujarat	237	11961
8	Haryana	25	964
9	Himachal Pradesh	2	7
10	Jammu & Kashmir	4	120
11	Karnataka	476	4499
12	Kerala	13	725 (1.3%)
13	Madhya Pradesh	144	4529
14	Maharashtra	316	3823
15	Mizoram	2	200
16	Orissa	16	72
17	Punjab	27	700
18	Rajasthan	21	218
19	TamilNadu	83	2652
20	Tripura	4	1000
21	Uttarpradesh	50	2746
22	West Bengal	27	4100
23	Andaman & Nicobar Island	17	167
24	Delhi	16	74
25	Others	91	318
	Total	1817	55104

Source: *Bio-mass gasifiers- Paper presented by Dr. R. Sethumadhavan Co-ordinator, Institute of Energy Studies, Anna University, Chennai.*

7.56 Present status of Biomass gasifier installations in the country in India is given in Table -7.16.

7.57 Kerala has potential for tapping bio-mass energy, using agro-based residues. The total agro-based bio-mass production in the State is estimated to be 8.46 million tonnes comprising of coconut shell, coconut and aracanut fronds, cashew shell etc. Of this bio-mass available for power generation is nearly 5 million tonnes. Potential biomass factor is as high as about 80 per cent for coconut shell and 70 per cent for tapioca stalk. Details are given in Table 7.17.

7.58 Bio-gassifiers are suitable for thermal as well as electrical applications. A unit which was utilising 20-lit diesel has been replaced with 100 KW gasifier unit, consuming 100 kg of coconut shell in the gasifier mode. The present status of bio-gassifiers put into thermal applications in Kerala is given in Table 7.18.

Table - 7.18
Thermal application of bio-gassifiers in Kerala

Sl. No.	Type of Industry	Electrical Equivalent (kw)
1	Copra Processing Units	150
2.	Crumb Rubber Units	1500

National Programme on Improved Chulha

7.59 ANERT is identified as the nodal agency for implementation of National Programme on Improved Chulha in the state. Improved chulahs result in 30 per cent savings of fuel wood when compared with the traditional type. The programme aims to cover all rural areas with due importance to SC/ST beneficiaries. The

Table - 7.17
Bio-mass Availability In Kerala

Sl no	Type of bio-mass	Total bio-mass production	Potential bio-mass availability for power generation (million tonnes)	Power generation potential (mw)
1	Coconut Fronds	5.04	2.52 (0.50)	302.5
2	Tapioca stalk	2.02	1.42(0.70)	198.3
3	Coconut Shell	1.14	0.91(0.80)	127.9
4	Areca nut Fronds	0.16	0.06(0.35)	8.1
5	Cashew nut stalk	0.10	0.02(0.20)	2.8
	Total	8.46	4.93(0.58)	639.6

Note: Figures in Parenthesis of column-4 gives the excess biomass factor.
 Source: Indian Institute of Science, Bangalore.

achievement is reported as 8741 during the year 2002-03.

Energy Conservation Programme

7.60 ANERT distributed solar lamps and CFLs during
Table - 7.19

**Distribution of energy saving devices
2002-03**

Item	Nos Distributed
Solar Lantern	990
CFL 18 watts	381
CFL 13 watts	4267
CFL 11 watts	31
TOTAL	5669

2002-03 as part of popularising energy saving devices
Table 7.19).

7.61 EMC has successfully developed I T based Temperature Monitoring and Alerting systems (TMAS) for energy efficiency in Tile industries for South Indian States and also for the glass Industry in Firozabad, in Uttar Pradesh.. Installation of T MAS in 4 tile industries in Kerala is over. The Centre is enforcing the Energy Conservation Act 2001 in the State. Thus Kerala is the first State to implement the Energy Conservation Act 2001 The Centre has modified the design of Thapabharani, a cost effective thermal cooker, for saving energy in the domestic sector with the financial assistance of Department of Science & Technology (D S T) Government of India

7.62 The Centre has prepared an action plan called "Sradha" for achieving energy conservation in public buildings. "Sradha" aims to increase the energy efficiency and reduction in energy bills in public buildings through energy audit and proper installation and handling of electrical equipment .Action has already been initiated to implement the programme in the Government secretariat.

7.63 Three hundred and fifty energy conservation clubs (E C C) with a membership of 20,000 students are functioning in the State under the support and guidance of E M C with the cooperation of Energy Conservation Society(ECS) – an N G O. There are 60 Energy and Environment Conservation clubs with activities in full swing in the Arts/Science/Engineering / Ag-

ricultural colleges and I T I / I T Cs run with the cooperation of the above society.

Demand side Management and Monitoring

7.64 EMC developed P C based Energy monitoring system for industries for Demand side management of Electricity .One such system was installed in the KINFRA Apparel Park, Kazhakuttom.

Training Programmes

7.65 E M C organised various training programmes for public, engineers, supervisors, architects for inculcating the culture of energy conservation. The various

Box -7.2

Training Programmes

- Energy clinic for women
- Transport clinic for drivers
- Energy manager certification programme
- Training programme on small hydro – power development
- Training programme on Energy efficient pumping system
- Training programme on Best Practices in House wiring
- Training programme on Best Practice in Building electrification
- Energy Conservation awareness classes for Engineers, women, students etc.

training programmes conducted by E M C are shown in Box 7.2.

Research and Development

7.66 In the field of research and development, ANERT constituted a Research Advisory Committee (RAC) which will guide the department to evaluate the proposals submitted by its scientists and assess the performance of R&D activities to improve the quality of work. According to the recommendation of RAC, the department decided to carry out the following works. Recommendations of RAC are shown in Box 7.3.

STANDARDS AND STATUTES

7.67 The Electrical Inspectorate is responsible for enforcing statutes and standards as regard to all electrical installations in the State.

Box -7.3**R&D Activities Recommended**

- Renewable Energy Resources Data Base.
- Sodium Lamp Street Light.
- New Design for Solar lantern (using LED).
- Cost Reduction of Solar Collectors.
- Performance analysis of Solar Lantern.
- Investigative study on the extraction energy from industrial waste in Kerala.
- Solar Evaporation of industrial effluents by green house/surface heating technique.
- Performance analysis and standardization of small hydro systems.

7.68 In order to get accreditation from National Accreditation Board for Laboratories (NABL) and recognition from the Bureau of Indian Standards (BIS). Action has been taken to suitably equip the Meter Testing and Standards laboratory. The laboratory has facilities for the calibration and testing of various electrical measuring equipments/instruments/and electrical equipments like ammeters, insulation testers, earth testers, energy meters, multi meters, tri-vector meters, two part tariff meters, current transformers, potential transformation, phase sequence indicators, frequency meters, rubber mats, MCBs, cables, conductors, UPS, changeover switches, high voltage Test set unit, Electronic Ballast, Power factor metre etc. Kerala State Electricity Licensing Board is functioning with in the department and carries out the function of issuing licence to electrical contractors, supervisors and wiremen.

Box -7.4**Functions of Electrical Inspectorate**

- Ensure standard and quality of electrical installations and thereby ensure safety and efficiency in the generation, transmission and distribution and use of electricity.
- Give approval for Electrification of Extra High Tension installations in buildings and Cinema theatres.
- Issue prior sanction for installations like X-rays, Lifts, Neon-signs and Generators.
- Conduct periodical inspection of all electrical installations except those supplied at Low Voltage, as prescribed by the Government.
- Investigate electrical accidents and submit reports to the Government enumerating the causes and suggestions to avoid recurrence.
- The Chief Electrical inspector is the "Appropriate Authority" to implement the provisions of the Quality Control Orders regarding (Sec.14 of BIS Act 1986 and Sec.3 of Essential Commodities Act 1955) Household Electrical Appliances. Quality of electrical wire, cables etc. are to be ensured by conducting the relevant tests prescribed by the Bureau of Indian Standards.

INDUSTRY AND MINING

Kerala, which has been traditionally backward in the field of industrial development, is taking serious efforts to identify new opportunities and to equip it to meet the emerging challenges. The Industrial Policy, IT Policy, Biotechnology Policy, Labour Policy, proposed Export Policy, conduct of Global Investor Meet are all intended towards enhancement of investment in the State especially in the industrial sector with the objective of creating more income and employment.

Industrial Growth

8.2 Growth of Manufacturing Sector in Net State Domestic Product (NSDP) of Kerala for the years from 1999-2000 to 2003-04 is given below.

Index of Industrial Production

8.3 The general Index of industrial production in Kerala registered a significant decrease from 360.20 in 2000-01 to 302.29 in 2001-02. A positive growth was recorded in beverages, tobacco, coffee, textiles, chemicals and chemical products, non-metallic mineral products etc. Negative growth was recorded in food products, wool, silk man made fibre textiles, wood and wood products, rubber, plastic petroleum and coal products basic metals, manufacturing industries etc.

Industrial Exports

8.4 The following table depicts the performance of Kerala in industrial exports during the last three years.

Fig 8.1
Growth in General Index of Industrial Production

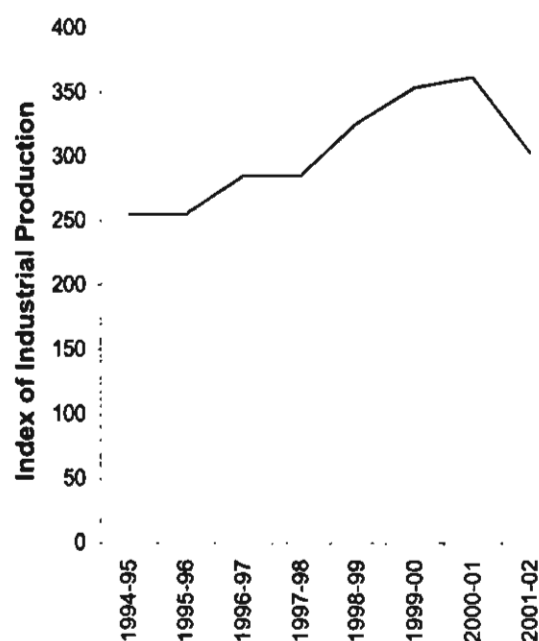


Table 8.1
Growth of Manufacturing Sector (NSDP)
Base Year 1993-94 (Rs lakhs)

Year	Percentage change over years			
	At constant prices		At current prices	
	Actual	Percentage	Actual	Percentage
1998-1999	350458	--	558175	--
1999-2000	369687	5.49	612334	9.70
2000-2001	353129	-4.48	603075	-1.51
2001-2002*	354398	0.36	682150	13.11
2002-2003**	359733	1.51	689145	1.03
2003-2004***	368346	2.39	742571	7.75

* Provisional, ** Quick Estimate, *** Advance Estimate

Source: Department of Economics & Statistics.

Table 8.2
Industrial Exports- 2000-01 to 2002-03

Qty: Metric Tonnes
Value: Rs crores

Sl. No.	Commodity	2000-2001		2001-2002		2002-2003	
		Quantity	Value	Quantity	Value	Quantity	Value
1.	Cashew Kernels	50789	1153	54330	965	66859	1217
2.	Marine products	88852	1046	72756	951	77851	995
3.	Spices	29534	434	34600	560	55750	630
4.	Coir And Coir Products	55614	301	56606	321	76850	321
5.	Coffee	176927	919	145221	842	126900	735
6.	Tea	53430	357	54462	394	53071	351
7.	Cotton Garments & Piece Goods	22737	507	22872	537	21198	498
8.	Cotton & Polyester Yarn	16414	269	12773	209	12520	205
9.	Others	0	2260	0	2259	0	2727

Source : Kerala State Export Trade Development Council

Fig 8.2
Export of Major Commodities during 2002-03 (Quantity)

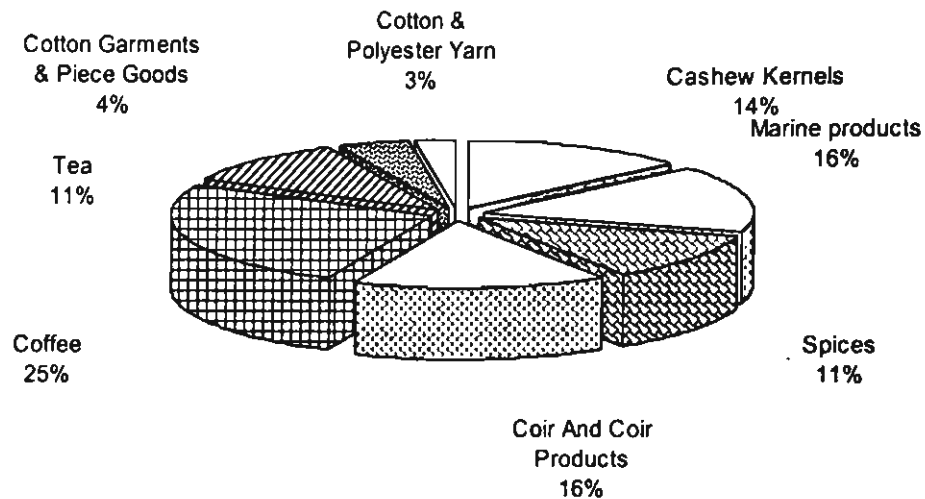
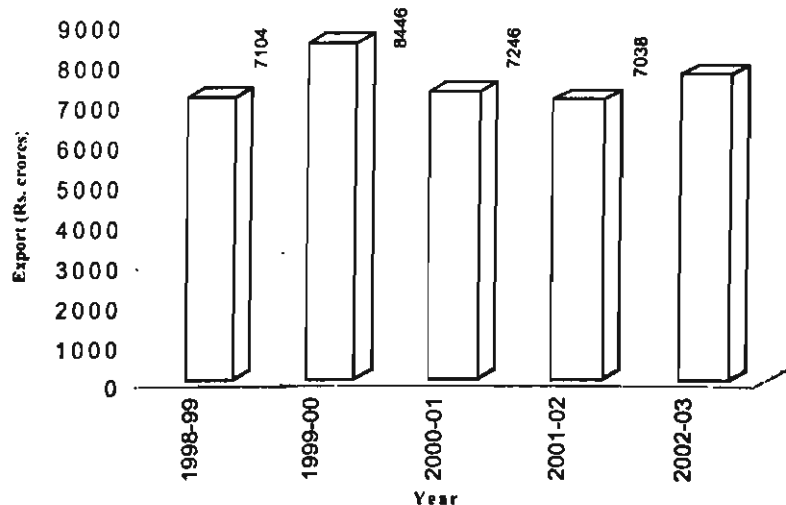


Fig 8.3
Export of Major Commodities (Value)



Investment Attractiveness

8.5 Ranking of different States based on the outcome of the study of CII on industrial attractiveness done in

Table 8.3
Composite Ranking of Large States

1	2	3
Kerala	A	2.8
Maharashtra	A	2.8
Tamilnadu	A	2.7
Punjab	A	2.7
Gujarat	B	2.5
Karnataka	B	2.4
Himachal Pradesh	B	2.3
Hariyana	B	2.3
Uttaranchal	C	2.1
Andhra Pradesh	C	2.1
Jammu & Kashmir	C	1.9
West Bengal	C	1.7
Rajasthan	C	1.5
Madhya Pradesh	D	1.3
Uttar Pradesh	D	1.2
Chattisgarh	D	1.1
Assam	D	1.0
Orissa	D	0.9
Jharkhand	D	0.8
Bihar	E	0.0

Source: Study of CII on industrial attractiveness- 2002

2002 is given in Table below.

8.6 The Global Investor Meet conducted during January 2003 was the State's concerted effort to bring in more private investment in sectors like Tourism, Infrastructure, Ports, Industries etc.

8.7 GIM attracted offer for investment aggregating Rs.26000 crores, despite the economic slowdown. MoUs were entered into for 96 projects, totalling an investment of Rs.11159.45 crores.

8.8 In order that the MoUs signed during GIM are converted into actual projects, the State Government has devised a special mechanism by constituting the Investment Promotion Board (IPB). Of the 96 MoUs signed during GIM, 40 projects with an outlay of Rs.6846.45 crores have been cleared by

the Board and approved by the Government.

Working Factories and Employment

8.9 The number of working factories in private and public sector was 18602 as in 2002, which consisted of 18038 in private and 564 in public sector as against 18554 factories in 2001. There was only a marginal increase of 48 factories during the year 2001-02. Unlike the previous year the increase was in both private and public sectors. The average number of workers employed in the registered working factories in the State increased from 436410 in 2001 to 437340 in 2002 showing a very marginal growth of 0.21 percent. The number of employees decreased in private sector where as in public sector it rose by 1.20 percent. Of the total 437340 workers 328875 were in private and 108465 in public sector factories.

8.10 The growth in number of working factories during the last 10 years is shown in Figure 8.4 In 2001 the number of working factories in 12 districts increased marginally compared to the previous year, and decreased slightly in Idukki and remained constant in Kasargod. As in previous years Ernakulam district had the highest number of factories ie. 2946 followed by Thrissur (2563), Palakkad (1980) and Kollam (1908). Wayand district had the lowest number of factories followed by Kasaragod (272). The number of workers engaged in the factories from 1992 to 2002 is shown in Figure 8.5. Number of workers in all districts except Idukki, Thrissur, Kozhikode and Kasargod increased during the period. Malappuram district recorded the largest percentage increase followed by Wayanad, Kottayam and Palakkad.

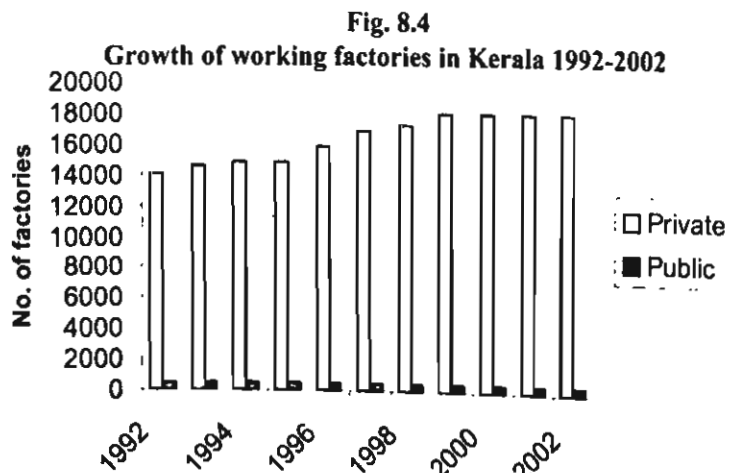
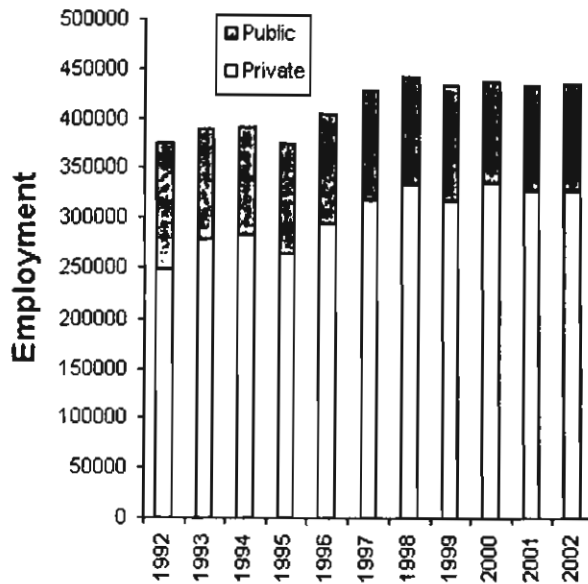


Fig. 8.5
Employment in the factory sector in Kerala 1992-2002



Industrial Disputes

8.11 During the year 2002-03 a total of 6268 disputes were handled in the State of which 3879 cases were settled through voluntary negotiation between parties, conciliation, withdrawal and by adjudication. During

the period under review 81,77,159 man-days were lost due to strikes and lockouts, which was much higher than that of 2001-02. This was mainly due to the strike in coir sector and consequent loss of 640000 man-days during the year. The number of disputes that led to strikes and lockouts increased from 47 to 56 in 2002-03. This was due to increase in lockouts.

Central Sector Investment

8.12 Central Sector investment in Kerala has been increasing from 1996 after a steady fall during the period from 1975 to 1995. Investment in terms of gross block in the public sector in the State was Rs.13504 crores as on 31.3.2002 as against Rs.9893 crores as on 31.3.2001. Employment also increased from 0.39 lakh in 2000-2001 to 0.49 lakh as on 31st March 2002.

Fig. 8.6
Central Sector Investment in India & Kerala 1970-2002

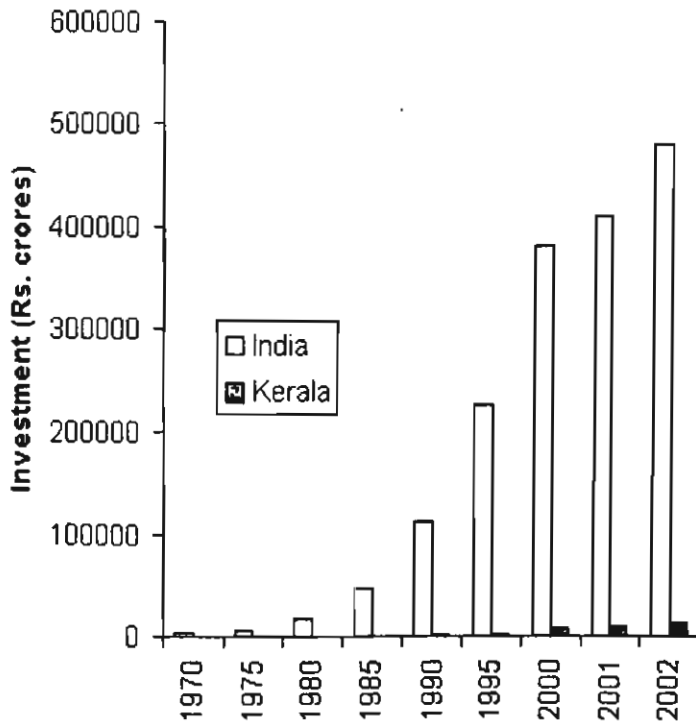
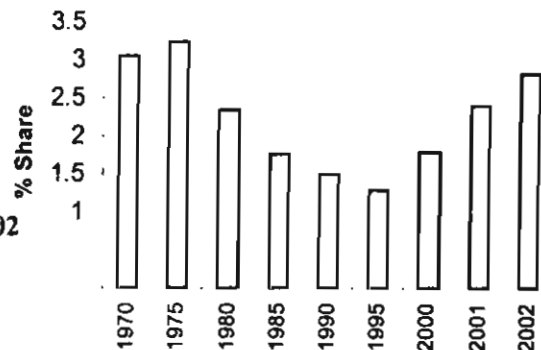


Fig 6.5

% Share of Central Investment in Kerala



Joint Stock Companies

8.13 In Kerala 12817 joint stock companies were working as on 31.3.2003 which included 10909 private limited and 1408 public limited companies. During the year 2002-03 a total of 723 joint stock companies were registered comprising 695 private limited and 28 public limited companies. Only four companies, 2 private and 2 public limited companies, were transferred to other states during the period. Number of companies wound up/dissolved/struck off/amalgamated during 2002-03 was only 71 of which 68 were private limited and 3 public limited companies. Accordingly net addition to the total

number of joint stock companies in Kerala during 2002-03 was 648 which consisted of 625 private and 23 public limited companies. Eleven public limited companies were converted to private and 17 private to public limited companies. No Government Company was registered during the year.

State Level Public Sector Enterprises

8.14 Kerala has the largest number of State level Public Sector Enterprises (SLPEs) in India (113 out of 1071) and employ 1,28,021 persons. Of these, 63 are manufacturing units and are classified under chemical; engineering, electrical equipment, textiles, electronics, ceramics, infrastructures, agro & wood based sectors.

8.15 Out of 63 enterprises four are under merger/closure. Capital investment is more than Rs.100 crores in two enterprises. Investment in majority of the manufacturing enterprises was between Rs.1 crore to Rs.10 crores. The net worth of 26 manufacturing enterprises is negative. Of these manufacturing enterprises only three enterprises provide employment to more than 1500 persons and the majority of the enterprises are providing employment only to below 500 persons and the total employees working in all these 63 manufacturing enterprises comes to 48307. The net loss of these enterprises is Rs.2046.03 lakhs in a year.

8.16 The SLPEs in the manufacturing sector have been plagued by poor standards of corporate governance. Reasons for this include the diffused nature of ownership, delays in critical state sponsored interventions for improving its performance, conflicting objectives advocated by trade unions, inadequate incentives for competent personnel, slow decision making, redundancy of manpower, lack of autonomy and improper person task fit. Many SLPEs are saddled with outdated technology and unviable processes. Data on the performance of PSUs under the Industries Department for the period 2002-03 are given in the following table.

Reforms in Public Sector Undertakings

A. Government of India PSUs

8.17 The policy of the Government of India on Public Sector Reforms and Disinvestment has evolved over a period since 1991-92. Main objective of disinvestment is to put national resources and assets to optimal use and to unleash the productive potential inherent in public sector enterprises.

8.18 The following table indicates the actual disinvestment from 1991-92 to 2002-03, the methodologies adopted for such disinvestment and the extent of disinvestment in different CPSUs.

Table 8.4
Capital Investment Structure in PSUs

Sector	No of PSUs with Capital investment						Total
	>Rs 100 crores	Rs 50 to 100 crores	Rs 20 to 50 crores	Rs10 to 20 crores	Rs1 to 10 crores	< Rs1 crore	
Development & Infrastructure	4	6	5	-	2	0	17
Manufacturing	2	6	12	14	23	2	59
Other Enterprises	0	0	0	0	2	2	4
Plantation & Agro-based	0	0	0	2	2	0	4
Public Utilities	4	0	0	1	1	0	6
Trading Units	1	0	0	0	1	1	3
Traditional Industries	0	0	2	0	0	1	3
Welfare Agencies	1	1	0	1	4	0	7
Total	12	13	19	18	35	6	103

Source: RIAB, Tvp.m.

Note-Figures is provisional

Table 8.5
Performance of PSUs under Industries Department

Sl. No	Company	2002-03	
		Turnover	Profit/Loss
1	The Kerala Minerals and Metals Ltd.	22417.44	6861.95
2	Kerala State Industrial Development Corporation	3066.49	1421.00
3	Transformers and Electricals Kerala Ltd.	9219.00	377.00
4	Kerala Automobiles Ltd.	4523.05	281.06
5	Keltron Component Complex Ltd.	3002.00	210.20
6	Kerala State Industrial Enterprises Ltd.	632.00	185.00
7	CAPEX	400.00	150.00
8	Kerala Clays & Ceramic Products Ltd.	388.37	76.00
9	Steel and Industrial Forgings	2016.00	62.00
10	Forest Industries (Travancore) Ltd.	388.58	1.63
11	Keltron Electro Ceramics Ltd.	378.14	0.56
	Sub Total (Profit Making)	46431.07	9630.40
12	Kerala Hi-tech Industries Ltd.	9.04	-0.72
13	Foam Mattings (India) Ltd.	546.57	-1.80
14	KELPALM	16.69	-7.84
15	The Metal Industries	232.28	-14.36
16	Keltron Resistors Ltd.	154.59	-17.00
17	Kerala Artisans Dev. Corpn. Ltd.	31.44	-2131
18	Keltron Magnetics Ltd.	257.04	-36.24
19	United Electricals Industries Ltd.	1186.00	-47.00
20	The Kerala State Coir Corporation Ltd.	403.84	-54.16
21	The Kerala Ceramics Ltd.	670.45	-68.50
22	Kerala Garments Ltd.	54.25	-99.26
23	Travancore Sugars & Chemicals Ltd.	161.90	-101.43
24	Scooters Kerala Ltd.	60.43	-110.84
25	Kerala State Bamboo Corporation Ltd.	1300.00	-112.00
26	The Malappuram Co-operative Spinning Mills Ltd.	1997.90	-121.88
27	The Alleppey Co-operative Spinning Mills Ltd.	673.83	-131.42
28	The Metropolitan Engineering Company Ltd.	62.00	-148.00
29	The Trichur Co-operative Spinning Mills Ltd.	1281.00	-164.14
30	Keltron Crystals Ltd.	85.32	-171.94
31	The Cannanore Co-op. Spinning Mills Ltd.	983.43	-191.31
32	Sitaram Textiles Ltd.	421.81	-213.00
33	The Ouilon Co-operative Spinning Mills Ltd.	1018.22	-228.83
34	COIRFED	2160.00	-250.00
35	HANTEX	1808.00	-250.00
36	Kerala Small Industries Development Corporation Ltd.	2085.45	-250.00
37	Keltron Counters Ltd.	178.31	-256.10
38	The Travancore Cements Ltd.	2542.00	-274.00
39	Steel Complex Ltd.	1741.00	-297.00
40	Kerala Electrical & Allied Engineering Company Ltd.	4965.96	-305.85
41	Autokast Ltd.	1045.84	-427.58

Source: RIAB, Typm.

Note-Figures is provisional

Reforms in Public Sector Undertakings

A. Government of India PSUs

8.17 The policy of the Government of India on Public Sector Reforms and Disinvestment has evolved over a period since 1991-92. Main objective of disinvestment is to put national resources and assets to optimal use and to unleash the productive potential inherent in public sector enterprises.

8.18 The following table indicates the actual disinvestment from 1991-92 to 2002-03, the methodologies adopted for such disinvestment and the extent of disinvestment in different CPSUs.

B. Reforms in State Level PSUs

Andhra Pradesh

8.19 Government privatised Allwyn Nissan and a working group that was constituted to examine working of SLPEs has given its recommendations in respect of 30 SLPEs so far. A State Renewal Fund (SRF) was created with an initial capital of Rs.5 crores to provide resources for institution of safety nets and 12586 employees have availed VRS. Employees who do not qualify for retirement schemes, or who qualify but do not opt for the retirement schemes will be compen-

Table 8.6
Progress in Disinvestment

Year	No. of companies in which equity sold	Target for the year	Actual Receipts	Methodology
1	2	3	4	5
1991-92	47	2500	3038	Minority share sold by auction method in bundles of 'very good' 'good' and 'average' companies
1992-93	35	2500	1913	Shares sold separately for each company by auction method
1993-94	-	3500	-	Equity of 7 companies sold by open auction but proceeds received in 1994-95.
1994-95	13	4000	4843	Sale through auction
1995-96	5	7000	362	"
1996-97	1	5000	380	GDR (VSNL) in international market
1997-98	1	4800	902	"
1998-99	5	5000	5371	GDR (VSNL/Domestic offerings with the participation of FIIS. Cross purchase by 3 oil sector companies ie GAIL, ONGC & IOC
1999-2000	2	10000	1829	GDR-GAIL VSNLdomestic issues, BALCO restructuring, MFILs strategic sale and others
2000-2001	4	10000	1869	Strategic sale of BALCO, LJMC, KRL(CRL), CPCL (MRL)
2001-02	10	12000	5632	Strategic sale of CMC- 51%, HTL-74%, VSNL-25%, IBP-33.58%, PPL-74% and other modes ITDC, HCI, STC, NMTC.
2002-03	6	12000	3360	Strategic sale of HZL 26%, MFIL -26%, IPCL-25%, Jessop-72% and other modes : HCI, ITDC, Maruti, NMTC, STC and HZL-1.46% (ESops)
Total	48*	78300	29499	

sated (equivalent to 15 days of wages for each year of service plus other legal dues) under the Industrial Disputes Act. The Public Enterprises Reforms Programme of Andhra Pradesh is a component of the AP Economic Restructuring Project supported by World Bank. The World Bank has sanctioned about \$ 26 million, to finance 70 per cent of the VRS to employees. The balance of the VRS amount and the terminal benefits are provided by the State Government.

Karnataka

8.20 Government had set up the Linn Committee to suggest privatisation, de-regulation and merger of SLPEs and later set up a Public Sector Restructuring Commission, in March 2000. The Commission submitted a report on restructuring of 15 PSUs and a policy on Public Sector Reforms and privatisation has been brought out by the Karnataka State Bureau of Public Enterprises. The policy document also outlines institutional mechanism for implementation. The Karnataka Government has also structured a voluntary retirement scheme, which is similar to what is being adopted by the Government of Kerala.

Tamil Nadu

8.21 Tamil Nadu set up a Committee for streamlining and restructuring SLPEs and to initiate privatisation process. The committee recommended setting up of a Tamil Nadu Public Sector Disinvestment Commission. A three pronged approach was suggested for restructuring of public sector viz. retention, disinvestment and winding up. Tamil Nadu News Print and Papers Ltd. has been privatised by reducing the Government stake to 35.10 per cent.

Maharashtra

8.22 Maharashtra has constituted a Cabinet Sub Committee to review the loss incurring, non-viable SLPEs and make recommendations on their restructuring and privatisation.

West Bengal

8.23 The State Government has announced that the Government would close down loss making SLPEs and also welcome private participation in State run enterprises. Restructuring and reforms of SLPEs have been made part of the 0710- assisted (UK) externally aided programme. West Bengal has finally decided to privatise the Great Eastern Hotel.

Madhya Pradesh

8.24 Madhya Pradesh has embarked on an integrated Public Resource Management Programme under which an integrated Public Enterprises Reform is envisaged, with loan and technical assistance grant from the Asian Development Bank (ADB). As a part of reforms the Government proposes to strengthen SLPEs in which Government ownership is required to meet public purposes, close down those which are chronically sick and loss making, and restructure and divest the remaining enterprises to achieve greater efficiency, increase market discipline and have a wider dispersion of ownership. Accordingly an Empowered Committee has been set up. It has also been decided to transfer the responsibility of restructuring SLPEs from the administrative departments to the department of Public Enterprises, in order to accelerate the reform process.

Orissa

8.25 Orissa has set up a Cabinet Sub Committee and has suggested closure and privatisation of certain units. Orissa is availing Rs.85 crores, financial assistance from the Department for International Development (DFID), UK for implementing the reform programme.

Gujarat

8.26 Gujarat has approved a Comprehensive Public Sector Restructuring Programme and has been one of the most successful State Government in winning the confidence of the workers in working out mutually agreed schemes for closure of non core enterprises. The Government decided to provide a social safety net and the State Renewal Fund was set up with a substantial budgetary provision. As a part of the safety net, Gujarat has made elaborate arrangements for counseling, re-training and re-deployment of workers with support from the ADB.

Punjab

8.27 Punjab has set up a State Disinvestment Commission and a Core Group for restructuring, reforms and disinvestment of SLPEs and Apex Co-operative Institutes. Five SLPEs have been wound up pursuant to the Government policy of closing down chronically loss making non core, non strategic SLPEs.

Haryana

8.28 Haryana has set up a High Power Cabinet Sub Committee for Public Sector Restructuring. Six rice mills and one oil mill owned by Haryana State Co-

operative Supply and Marketing Federation have been closed. A food and fruit processing plant owned by Haryana Agro Industries Corporation has been closed.

Uttar Pradesh

8.29 Uttar Pradesh set up a State Disinvestment Commission in 1998.

Rajasthan

8.30 Rajasthan set up a Committee on Re-organisation, Strengthening and Disinvestment of SLPEs and Industrial Development.

Jammu and Kashmir

8.31 Jammu and Kashmir appointed a Committee on Economic Reforms (Godbole Committee) and an apex committee has been set up to consider the recommendations of the Godbole Committee. The Committee has already taken a view on the closure of 7 non-viable units. A Cabinet Sub Committee has been constituted to work out a voluntary retirement scheme for units where decision on closure has been taken.

C. SLPE Reforms in Kerala

8.32 SLPEs reforms in Kerala since 2001 involve implementation of competitive strategies that operate at four levels viz. Policy for facilitating industrial development, sectoral restructuring programmes, enterprise level re-engineering for making it attractive for investment and capacity building for managing the post reform environment.

8.33 As an institutional strengthening initiative for implementation of SLPE reforms consequent to the Industrial Policy 2001, the Government constituted the Enterprise Reform Committee (ERC) for spearheading State level Public Enterprise Reforms in Kerala. The approach paper of the ERC on SLPE reform was approved by the Government in 2002. A Social Safety Net Programme (SSNP) proposed by ERC for employees in SLPEs was approved by the Government in June 2003. ERC has forwarded recommendations of 38 SLPEs till date. Of this Government have taken decisions on 22 SLPEs based on the recommendations of ERC and State Planning Board.

8.34 The PSUs which were closed down or declared closed down are given in Box. 8.1

8.35 Current status of the progress made in reform measures are given in the Box. 8.2

Box -8. 1

SLPEs closed down in the past (before 2001)

- Kerala Fisheries Corporation Ltd.
- Kerala State Engineering Works Ltd.
- Kerala State Coconut Development Corporation
- Kerala Fishermen Welfare Corporation Ltd.
- Kerala Inland Fisheries Development Corporation
- Chalakkudy Refractories Ltd.
- Keltron Power Devices Ltd.
- Kerala Special Refractories Ltd.
- Kerala Premo Pipe Factory Ltd.

SLPEs being closed down

- Trivandrum Spinning Mills
- Kerala Soaps & Oils Ltd.
- Kerala Construction Components Ltd.
- Keltron Rectifiers Ltd.
- Kerala Ceramics (one division only)
- Kerala State Textile Corporation (one division only)

Box -8.2

Snap Shot of Current Status of SLPEs

• No. of SLPEs closed down in the past	9
• No. of personnel brought under VRS in SLPEs since 1996	3408
• Compensation paid (Rs. Crores)	81
• No. of SLPEs in which ERC has forwarded recommendations till date:	38
• No. of SLPEs in which Government have taken decisions based on recommendation of ERC and SPB	23
• 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 the ERC in 11/2003	10
• SLPEs being closed down based on Government decision	6
• No. of SLPEs advertised for Expression of Interest through ICICI – Kinfra Ltd.	5

Social Safety Net Programme for SLPEs in Kerala

- ◆ Government have formulated a Social Safety Net Programme (SSNP) for the employees of SLPEs with two packages viz.
 - i) Financial Compensation Package.
 - ii) Welfare and Economic Sustainability package.
- ◆ All permanent/temporary employees directly appointed against the sanctioned strength and whose name appear in the muster roll of the SLPE are eligible for inclusion under SSNP.

8.36 Financial compensation package is the modification of the VRS declared by BPE. For eligible permanent employees, an amount equal to one and a half months emoluments (Pay + DA) for each completed year of service or the monthly emoluments at the time of retirement multiplied by the balance months of service left before normal date of retirement whichever is less will be provided. For eligible employees ex-gratia payment equivalent to 45 days emoluments (Pay + DA) for every completed year will be given. Only the actual days of service rendered shall be considered for

giving the ex-gratia payment.

8.37 Details of VRS implemented being introduced in PSUs under Industries Department are given in Table 8.7

8.38 Other terminal benefits include

- Balance in the PF amount payable as per GPF Act and rules.
- Cash equivalent of accumulated earned leave/private leave.
- Gratuity as per payment of Gratuity Act.
- Notice or notice pay as per rule.

Welfare and Economic Sustainability package

- The contribution for the Employees package is optional.
- 30% of the ex-gratia received by an employee can be invested in their welfare fund.
- 25% of the employees' contribution will be given by the Government subject to a minimum of Rs.25000/- as an incentive.
- An interest rate equivalent to that prevailing in the Nationalised Banks will be given.

Table 8.7
Implementation of VRS in PSUs

Sl. No	Name of Company	No. of employees	Amount in lakhs
1	Steel Complex Ltd.	155	200.10
2	Trivandrum Spinning Mills Ltd	358	396.47
3	Kerala State Drugs and Pharmaceuticals Ltd.	55	87.38
4	The Chalakudy Refractories Ltd	130	178.00
5	Kerala Soaps and Oils Ltd.	499	1047.00
6	Mannam Sugar Mills Co-operative Ltd.	146	169.00
7	Travancore Plywood Industries Ltd	149	285.06
8	Keltron Power Devices Ltd.	104	321.51
9	Sitaram Textiles Ltd.	188	200.51
10	Kerala State Electronic Development Corporation	623	2661.00
11	Kerala State Textile Corporation Ltd.	305	387.43
12	Sidkel Television Ltd.	50	100.00
13	The Cannanore Co-operative Spinning Mills Ltd.	97	152.31
14	Autokost Ltd.	100	302.71
15	Keltron Computers Ltd.	138	686.75
16	The Kerala Ceramics Ltd.	89	200.00
17	Keltron Rectifier's Ltd.	99	377.11
18	United Electrical Industries Ltd.	123	331.28
	Total	3408	8083.11

Source : RIAB

KIRFB will manage the welfare fund.

(Kerala Industrial Revitalisation Fund (KIRF) is a Special Purpose Vehicle (SPV) with a fund base of Rs.225 crores funded for the revival of the PSUs.)

Box -8.3

Assistance by KIRFB

Total loans provided	
a) Long Term	- Rs.107 crores
b) Short Term	- Rs.184 crores

	Rs.291 crores
Loans outstanding	
a) Principal	- Rs.160 crores
b) Interest	- Rs.18 crores
Recovery percentate	
a) Principal	- 63%
b) Interest	- 67%

8.39 The SLPEs which improved their performance during 2002-03 are shown in Box 8.4

Box -8.4

SLPEs which improved their Performance during 2002-03

1. Kerala State Electronics Development Corporation Ltd.
2. Kerala Minerals & Metals Ltd.
3. Travancore – Cochin Chemicals Ltd.
4. Kerala Electrical & Allied Engineering Company Ltd.
5. Transformers and Electricals Kerala Ltd.
6. Kerala Automobiles Ltd.
7. Kerala Hi-tech Industries Ltd.
8. Kerala State Industrial Development Corporation Ltd.
9. Kerala State Industrial Enterprises Ltd.
10. Foam Mattings (India) Ltd.

Industrial Promotion

8.40 State Government is assisting the industrial units by providing financial assistance, infrastructure and training/ consultancy services. Premier agencies/departments engaged in industrial promotion in the State include

- Kerala State Industrial Development Corporation

(KSIDC)

- Kerala Financial Corporation (KFC)
- Small Industries Development Bank of India (SIDBI)
- Kerala Industrial Infrastructure Development Corporation (KINFRA)
- Directorate of Industries & Commerce (DIC)
- Small Industries Development Corporation (SIDCO)
- Small Industries Service Institute (SISI)
- Kerala Industrial & Technical Consultancy Organisation
- Centre for Management Development

Industrial Financing

8.41 Kerala State Industrial Development Corporation (KSIDC) provides supports by way of extending financial assistance, share capital and loan to projects coming under different categories.

Box -8.5

Performance of KSIDC 2002-2003

• Gross Financial Sanction (Rs. Crores)	: 52
• Projects completed	: 15
• Project cost (Rs. Crores)	: 94
• Employment generated (Nos)	: 1194
• MOU signed (Nos)	: 37
• Estimated cost (Rs Crores)	: 6959
• Project under various stages of implementation	39
• Project cost (Rs. Crores)	: 799
• Employment potential (nos)	: 2796
• Loan recovery- Total over due (Rs. Crores)	368
• Amount recovered (Rs. Crores)	: 58
• Operating profit (Rs. Crores)	: 12

8.42 The Kerala Financial Corporation (KFC) is providing term loan assistance upto a maximum of Rs.500 lakhs per unit for corporate sector and Rs.200 lakhs for others to develop and promote small and medium scale industrial units in the State. The capital adequacy rates of KFC at 31.3.03 was 11.05 percent and is ranked among the top three State Financial Corporations, out of 18 SFCs in the country. The Corporation met the stipulation of Capital Adequacy Ratio (CAR).

Box - 8.6**Performance of KFC 2002-2003**

• Applications received	793
• Applications sanctioned	696
• Cost involved (Rs. crores)	155.73
• Recovery (Rs crores)	252.85
• One time settlement (No. of cases)	488
• Amount settled (Rs crores)	36.68

8.43 Small Industries Development Bank of India (SIDBI) is engaged in providing and financing development of small scale industries and coordinating the functions of the institutions engaged in the similar activities. SIDBI extends financial assistance to small-scale sector through indirect assistance by way of finance to primary lending institutions such as KFC, KSIDC and Commercial banks, direct assistance to small-scale units and development and support services.

8.44 The cumulative sanction and disbursement assistance to small-scale industries extended by SIDBI aggregated to Rs. 86159 crores and Rs. 59101 crores respectively till the end of March 2003. The amount sanctioned in Kerala corresponding to this was 4.66 percent of the total. During 2002-03 the amount disbursed under various schemes of assistance decreased to Rs. 214 crores from Rs. 396 crores in the previous year showing a decrease of 45.96 percent. Kerala's share correspondingly decreased to 3.2 percent of the total disbursement. Of the total of Rs. 214 crores disbursed, Rs. 94.30 lakh was spent under micro - credit scheme.

8.45 Government of India has made a brief announcement to set up Rs. 10000 crore Small and Medium Industry (SMI) Fund to overcome the financial crunch being faced by the small-scale sector. SIDBI has been asked to structure the fund, initially of Rs 10000 crore, spread over the next two years. A comprehensive strategy to solve the problem of resource crunch of the SME sector is awaited from Government of India.

Industrial Infrastructure

8.46 The infrastructure facilities offered in the State include industrial parks, industrial estates, development areas: plots, special economic zones etc. Greater emphasis is laid on providing infrastructure with a view to attracting more investment to the State.

Industrial Parks

8.47 Kinfra is the main State owned agency in offering infrastructure facilities required for setting up industries. These facilities include developed land, dedicated power, continuous water supply, communication facilities etc. and providing ready made manufacturing environment for easy start up of industrial units at minimum cost and time. Kinfra has started allotment of space to companies with all facilities.

8.48 Details of land allotment, investment and employment in KINFRA parks is given in the Table. 8.8

8.49 Kinfra completed the works in nine parks and works in eight parks are nearing completion.

Box - 8.7**Kinfra Parks****Parks Completed**

- Kinfra Export Promotion Industrial Parks, Kakkanad
- Kinfra International Apparel Park, Menamkulam
- Small Industries Park Menamkulam
- Kinfra Food Processing Park, Malappuram
- Small Industries Park, Thalassery
- Small Industries Park, Mazhuvannoor
- Small Industries Park, Seethangole
- Approach road to KEPIP, Kakkanad
- Seafood Park, Aroor.

Parks nearing completion

- Small Industries Park, Kalpetta
- Rubber Park, Irapuram, EKM
- Kinfra Film & Video Park, Kazhakuttom
- Kinfra IT & Electronics Park, Malappuram
- Integrated Infrastructure Development Centre, Koratty
- Food Processing Park, Mazhuvannoor
- Primary Processing Centre cum Cold Storage, Kalpetta

Table 8.8
Land Allotment, Investment & Employment in KINFRA Parks Area in Acres
 Amount Rs lakhs

Sl. No.	Park	Total Area Allotable	Allotments made			Allotments in Pipe Line		
			Area	Investment	Employment	Area	Investment	Employment
1	Kinfra International Apparel Park, Tvpm.	34.00	11.99	1650	900	1.5	2100	950
2.	Kinfra Small Industries Park, Tvpm	19.90	11.15	1436	150	12.28	1383.20	1208
3.	Kinfra Film & Vedeo Park, Tvpm	65.00	12.20	1180	183	11.50	437	79
4.	Kinfra Export Promotion Industrial Park, Kochi	137.70	133.03	10227	300	42.85	7358	2822
5.	Kinfra Food Processing Park, Mpm.	53.00	12.32	1652	240	1.26	455.70	83
6.	Kinfra Small Industries Park, Mazhuvannoor,	42.45	3.83	476.20	312	18.02	1669.36	284
7.	Kinfra Small Industries Park, Thalassery	34.86	26.19	3611	878	4.89	823.84	310
8.	Kinfra Small Industries Park, Ksd.	40	3.75	100.12	77	3.80	1708	445
9.	Kinfra Small Industries Park, Trissur.	20				2	232.50	90
10	Kinfra Small Industries Park, Mpm.	1.39	0.16	81	128	0.38	1012	521
11	Wise Park, Palakkad	200	65.62	5675	255	28	3500	205
12.	Rubber Park, EKM	72	23	3000	600	7	3000	300
13.	Sea Food Park, Aroor	4	4	500	1000			

Source : KINFRA

8.50 Kinfra received an amount of Rs. 1100.00 lakhs under the GOI Scheme "Assistance to States for In-

frastructure Development in Exports (ASIDE) and this amount is distributed to different agencies for the implementation of ASIDE projects.

Box - 8.8

ASIDE PROJECTS

Rs in Lakhs

1) Marine Products Export Development Agency	- Rs.400
2) Sea Food Export Association, Ernakulam	- Rs.100 "
3) Cashew Export Promotion Council	- Rs.100 "
4) Kerala State Industrial Enterprises	- Rs.150 "
5) Cochin Port Trust	- Rs.10 "
6) KINFRA	- Rs.125 "
7) Marine Products Infrastructure Development Corporation	Rs.215 "

	- Rs.1100

8.51 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 land development, road formation, water supply, electricity, necessary building etc. Details of development areas/development plots provided

by Industries Department are furnished in Table 8.9

8.52 The Small Industries Development Corporation also undertakes works on provision of infrastructure facilities for the small-scale sector through its industrial estates and mini industrial estates. Details are given in Table 8.10 & Table 8.11.

Table 8.9
Development Areas/ Development Plots

Sl. No.	District	No. of DA/ DP	Total area acquired (in acres)	Allotable area (in acres)	Area allotted
1	Thiruvananthapuram	2	137.160	111.970	111.970
2	Kollam	1	20.667	18.088	18.088
3	Pathanamthitta	1	20.940	17.320	13.250
4	Alappuzha	7	182.440	164.550	162.240
5	Kottayam	3	45.990	41.500	41.500
6	Idukki	2	22.500	22.080	7.080
7	Ernakulam	6	844.460	753.890	753.890
8	Trissur	5	138.455	88.295	50.485
9	Palakkad	4	776.170	680.430	643.430
10	Malappuram	1	16.190	10.191	10.191
11	Kozhikkod	2	33.060	10.330	10.330
12	Kannur	2	59.310	46.610	46.610
13	Kasaragod	3	241.000	227.240	83.570
TOTAL		39	2538.342	2192.494	1952.634

Source : Directorate of Industries & Commerce.

Table 8.10
Industrial Estates

District	No. of Industrial Estates	Total area acquired (in acres)	Land allotted including common amenities	Total no. of sheds	No. of sheds allotted	No. of SSI units
Thiruvananthapuram	1	17.385	16.910	43	39	66
Kollam	2	34.664	29.799	62	58	73
Alappuzha	2	28.336	25.366	57	53	68
Kottayam	2	43.804	43.294	88	84	137
Ernakulam	2	4.422	4.307	28	27	25
Trissur	2	32.502	31.873	67	67	144
Palakkad	2	32.800	29.260	71	69	82
Malappuram	1	4.920	4.920	19	19	26
Kozhikkod	1	12.440	12.440	42	42	70
Kannur	1	6.189	6.079	11	11	47
Kasaragod	1	16.840	15.840	39	38	50
TOTAL	17	234.302	220.088	527	507	788

Source : SIDCO

Table 8.11
Mini Industrial Estates

Sl. No.	District	No. of Mini Industrial Estates	Total area acquired (in acres)	Vacant Land (in acres)	Total no. of sheds	No. of vacant sheds
1	Thiruvananthapuram	4	3.705	0	49	1
2	Kollam	3	2.830	1.331	36	9
3	Pathanamthitta	1	1.000	0.100	10	0
4	Alappuzha	2	2.310	0	24	1
5	Kottayam	3	3.000	0.979	36	0
6	Idukki	3	3.000	1.059	36	0
7	Ernakulam	5	4.700	0	56	0
8	Trissur	3	3.000	0	36	1
9	Palakkad	3	3.400	0	36	0
10	Malappuram	3	3.243	0.244	36	0
11	Kozhikkod	2	2.000	0.400	24	0
12	Wayanad	1	1.000	0	12	0
13	Kannur	2	2.000	0	24	0
14	Kasaragod	1	1.000	0	12	0
	TOTAL	36	36.188	4.113	427	12

Source : SIDCO

Special Economic Zones

8.53 Cochin Special Economic Zone (CSEZ) has 103 acres of land. Government of India so far invested Rs. 76.00 crores for the development of CSEZ. The zone has 44 developed plots of varying sizes. Infrastructure development worth Rs. 33.00 crores have been sanc-

tioned for the zone and are under implementation. During 2002-2003 six new project proposals were approved and six units have come into production. Employment is about 6100 in 2002-03. Besides, eight units are being set up. During the year exports grew from Rs. 278.91 crores to RS.311.95 crores.

Table 8.12
Industry - wise Export performance of units in CSEZ during the last five years

Sector	No. of Exporting units as on 31-8-2003	Exports				
		1998-99	1999-2000	2000-01	2001-02	2002-03
1	2	3	4	5	6	7
Electronic Hardware	9	8787	12081	15784	11343	13017
Electronic Software	12	35	163	538	1284	1076
Garments						
Gems & Jewellery	3	2340	2935	2608	3360	1242
Plastic & Rubber products	10	2700	1960	2008	1852	2776
Engineering & Food & Agro products	7	4271	2431	1771	1279	4967
Others	8	1333	4096	6865	7690	5620
Total	55	20005	24253	30430	27891	31195

Source : Annual Report 2002-2003, RBI

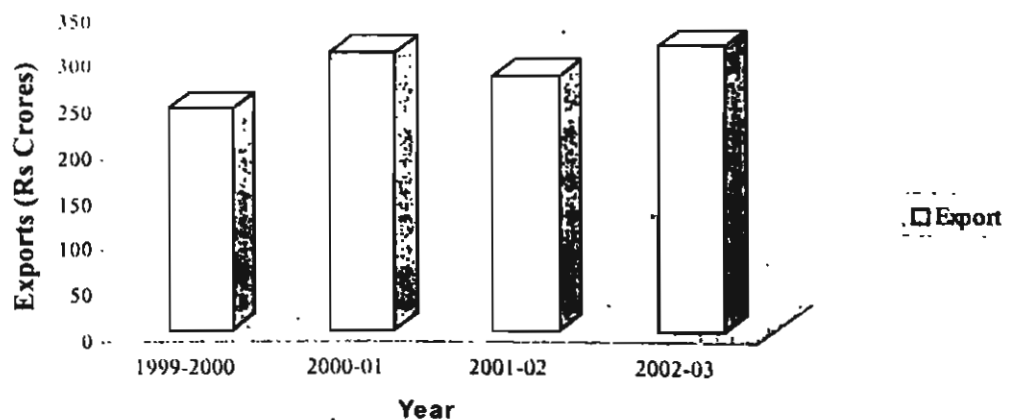
8.54 Country wise exports from CSEZ for the last 4 years shows that the percentage of exports to USA has fallen from 56 to 30 during the current year. Country wise exports from CSEZ is given in the following Table 8.13.

Table 8.13
Country wise Exports from CSEZ (Rs. crores)

Country	1999-2000	2000-01	2001-02	2002-03
USA	136.01	152.44	128.76	95.96
UK	18.24	27.75	26.62	48.87
Germany	6.3	9.8	11.12	11.25
Netherlands	14.23	10.21	0.65	1.00
Japan	1.02	1.13	2.45	5.24
France	1.02	1.13	2.45	5.24
Canada	0.75	1.06	2.41	3.45
Srilanka	-	-	0.45	0.97
UAE	3.88	5.61	7.13	7.72
South Korea	1.25	0.06	0.23	0.03
South Africa	0.30	0.21	0.06	1.02
Mexico	19.44	31.26	0.28	0.15
Italy	6.31	6.30	5.19	5.08
Iraq	-	8.48	17.07	17.53
Russia	0.54	4.96	0.06	3.14
Singapore	0.61	1.14	2.42	1.95
China	-	-	0.70	19.12
Spain	-	-	7.17	5.73
Others	31.78	40.28	65.13	80.73
Total	242.53	304.30	278.91	311.95

Source: RBI Annual Report 2002-2003

Figure 8.8
Exports from CSEZ



Human Resource Development

8.55 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 growth rate of 7.64% during the year 2002-03 as against 12.84% 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.

Box - 8.9

**Major assignments handled by
KITCO 2002-03**

- 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. It also prepared a technical feasibility report for the construction 15 new RoBs to Kerala for RBDCK.
 - Extended detailed engineering service for the construction of a new bridge across Kundhi River at Pulamanthode
 - Extended consultancy services for the construction of a 5 – storied Standard Design Factory for the Cochin Special Economic Zone at Kakkanad
 - Supervision of the construction of Raja Keasava Das Park, Picnic Park and Sea View Park for DTPC, Alappuzha was completed.
 - Construction of Academic block for Kerala Institute for Entrepreneurship Development (KIED) at Kalamasery was completed
 - Completed energy audit in 3 industrial units
 - Conducted 110 PMRY training programmes and 4534 persons were trained in business/service/Industrial sectors
 - Organised 12 Entrepreneurship Development Training Programmes
- Extended Valuation service to Kochi Refineries Ltd, KSIDC, CSEZ, IDBI, KBDCK and other private organisations

8.56 Small Industries Service Institute (SISI) renders techno-economic and managerial assistance to existing and prospective entrepreneurs. It is engaged in the promotion and development of small-scale industries in the State and render common facility service to needy entrepreneurs and SISI units. This institute has 3 common facilities workshops viz. (i) Engineering workshop (ii) Foot wear service centre and (iii) Fruit & Vegetable Preservation Centre. During 2002-03 SISI conducted training programmes such as entrepreneurship development programme, skill development programme, management development programme, PMRY training scheme, computer training programme etc. The other activities carried out by SISI during the year under report include one day awareness programme on energy conservation, Biotechnology, waste minimization, ISO 9001-2000, motivation campaign, vendor development programme, preparation of a study report on Rubber industries cluster at Kottayam.

Box - 8.10

Training Programmes of SISI 2002-2003

Training programmes conducted (Nos.)	45
Persons trained (Nos.)	716
Of which women and SC/ST	342

8.57 The Centre for Management Development (CMD) provides research, consulting and training support to development agencies, corporate and the Government, at the national, state and local levels. During the year 2002-03, CMD undertook several research/consulting assignments for the Government of India, Government of Kerala as well as corporate enterprises (public and private sectors) and developmental agencies. CMD continued to provide professional support to the Public Sector Restructuring and Internal Audit Board (RIAB), Government of Kerala (support provided since 1994). CMD also prepared the Annual Review of Public Enterprises in Kerala, which forms part of the budget documents of the State, for the fifteenth consecutive year. A major study undertaken during the year was to restructure the Directorate of Industries and Commerce, Government of Kerala. CMD assisted the Directorate of Handloom & Textiles, Government of India, in preparing Detailed Project Reports on Cluster Development for Handlooms in Kannur, Infrastructure Development for Handlooms in Kannur and handloom De-

velopment Project for Exports. It supported the Ministry of Rural Development (MoRD), Government of India, in Monitoring of all MoRD schemes in seven districts in Kerala and Tamilnadu, 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 Swarnajayanti Gram Swarozgar Yojana (SGSY) in all the States of the Country.

Small Scale Industry

8.58 Small Scale Industrial sector achieved significant milestone for the Industrial development of India. This sector contributes to 40 percent of industrial production and 35 percent of direct exports. The sector produces a variety of products ranging from traditional to hi-tech. Even though the volume of production of SSI sector is very large, the quality of products, productivity, energy consumption and environmental effects have always been a concern. These concerns have accentuated with the opening of the economy where productivity and quality play a major role for the survival of small-scale industries.

Present Scenario

8.59 The Small Scale Industrial Units registered in Kerala as on 31.3.2003 was 2.70 lakhs with an investment of Rs.3911 crores, providing employment to 12.15 lakh persons.. The registration during the year 2002-03 was 12334 units as against

18114 in 2001-02. In spite of the decline in the number of registration of units, value of output recorded an increase of Rs.1869.35 crores during 2002-03. The total number of SSI units promoted by SC/STs and women by March 2003 were 10643 and 49101 respectively. The district-wise details of registered SSI Units in Kerala as on 31st March 2003 is given in Appendix: The performance of SSI Sector in India and Kerala for the last five years is given in Table below:

8.60 An analysis of the performance of Small Scale Sector in India shows that number of SSI units, employment and production recorded an increase during 2002-03 from that of the previous year. With regard to the number of SSI units registered, Kerala's Share accounted for 11.11 per cent of the total number of 108000 units registered in India during 2002-03. Kerala's Share of employment during 2002-03 was 43000, constituting 5.53 percent of the total employment of 7.77 lakhs in SSI sector in the country. On the production side, Kerala's share of the value of the production is only 2.66 percent of the total value of production amounting to Rs. 70322 crores during 2002-03.

8.61 The third All India Census of Small Scale Industries 2001-02 was conducted during 2002-03 and the quick results were published. The state-wise distribution of registered SSI units and working units as per the census is given in the table below:

Table 8.14
Performance of Small Scale Sector

Year	All India			Kerala		
	Units (in lakhs)	Production (at current Prices) Rs.crores	Employment (In lakhs)	Units (in lakhs)	Production (at current prices) Rs. Crores	Employment (in lakhs)
1998-1999	30.80	520650	171.58	2.00	8604.42	9.81
1999-2000	32.12	572887	178.50	2.20	9770.65	10.54
2000-2001	33.70	639024	185.64	2.40	10998.25	11.14
2001-02	34.64	690522	192.23	2.58	12214.38	11.73
2002-03	35.72*	760844*	200.00*	2.70	14083.72	12.16

*(Estimated)

Sources: India 2003 – Ministry of Information & Broadcasting, GOI, SIDBI, Directorate of Industries and Commerce.

clubs were started in 46 institutions during 2002-03.

Strengthening of the database in the Directorate. The District Industries Centre and Directorate were interconnected through WAN.

Bank Credit to SSI Sector

8.68 The outstanding bank credit to various sectors as at end of March 2003 was Rs. 27007 crore as compared to Rs.22062 crore in the previous year. The outstanding flow of credit to SSI sector showed a slight increase in absolute terms from Rs. 2540 crores in 2002 to Rs. 2562 crores in 2003. The percentage share of SSI sector in the total bank credit decreased from 11.51 per cent to 9.49 per cent during the same period. The status of flow of credit to various sectors is given in Appendix.

New Approach for SSI Development

8.69 The industrial policy of Kerala aims at bringing about a paradigm shift in the small-scale industrial scenario in the State. Policy lays emphasis on cluster development. Efforts already initiated to promote specific clusters of industrial units with the assistance of financial institutions and skilled development facilitated through Common Facility Centers and Training Institutions.

Cluster Development

8.70 A cluster is a sectoral and geographical concentration of enterprises, specially Small and Medium Enterprises (SME) which have common challenges and opportunities and face similar threats. There is also ample evidence that SMEs operating in the same or related industrial sectors tend to cluster close to one another. The tendency to bunch in well-defined areas has been observed in different employments in both developed and developing countries. There are sound economic reasons for this phenomenon. SMEs operating in clusters derive a clear competitive advantage in various factors. The factors leading to competitive advantages are

- Proximity to source of raw materials
- Availability of suitably customized business development services
- The abundance of clients attracted by cluster tradition of industry
- The presence of skilled labour

Box - 8.12

Results of Cluster Development

- Emergence and growth of specialized suppliers of raw materials, components, machinery, sector specific skills etc
- Emergence of specialized technical, administrative and financial services
- Creation of a conducive ground for development of inter firm cooperation and specialization as well as cooperation among public and private institutions to promote local production, innovation and collective learning.

8.71 Cluster formation is common in a wide range of countries and sectors. SME clusters have reached high level of growth and leadership in profitable niches of world market. UNIDO, through its Private Sector Development Branch has developed an approach to help government and private sector to cooperative in design and implementation of programmes to promote the organisation and development of clusters and net work of SMEs Currently UNIDO is implementing a cluster development project to India with the main objective of developing capabilities at both local and national levels so as to promote SSI net working and cluster development . Major clusters are formed in specific industrial areas.

Box - 8.13

Major Clusters in India

Blanket production	:Panipat
Sewing machine	:Ludhiana
Cotton Hosiery	:Thirupur
Bicycle and Bicycle parts	:Ludhiana
Shoes	:Agra
Software	:Bangalore
Woollen Knit wear	:Ludhiana

8.72 Several steps aimed at ensuring committed efforts towards development of clusters have been initiated in Kerala. A few clusters are also developed.

Box - 8.14

Clusters Developed in Kerala

Nature of Cluster	Location
Rubber Industry	Changanachery
Handloom	Kannur
Coir	Alappuzha
Plywood	Perumbavoor

8.73 Role of Cluster Development Agents(CDA) are being played by trained officials of the Department of Industries. The Cluster Development Agents will be responsible for creation of a common corporate entity leading to the formation of a consortium to undertake the cluster development activities. CDAs identify areas where interventions are very crucial to the success. Different phases of Cluster Developments are shown in figure 8.9.

Service Charter for Small Scale Industries

Industries Department

8.74 In order to promote the development of Small-Scale industries and to ensure fair, impartial and speedy implementation of schemes the State Government provides a variety of prompt quality and cost effective services to entrepreneurs by introducing a "Citizens Service Charter". The main features of the charter are given in Table.8.16

Commercial Banks

8.75 Special offers are also being announced by banks for enhancing credit to SSI sector. For example, SBI has issued a Charter for Small Scale Industries, main features of which are given in Box 8.15

Figure 8.9
Key Steps in Cluster Development

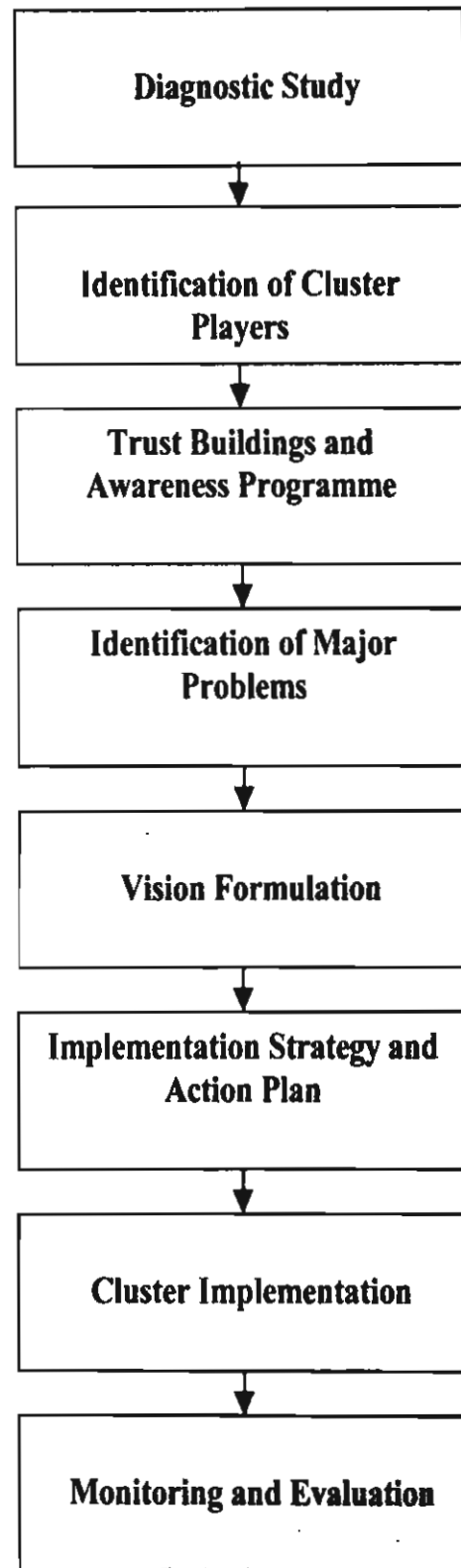


Table 8.16
Citizens Service Charter

On receipt of defect free application, - Industrial Single Window Clearance Boards	- Issuing licenses, certificates etc. within 60 days
SSI registration i) Provisional ii) Above Rs.2 lakhs	- Across the Table. - Within 10 days.
Permanent SSI Registration Amendment to permanent registration Margin Money State investment subsidy	- Within 30 days. - Within 30 days. - Sanctioning and disbursement within 30 days subject to availability of funds. - Processing and placing before the committee meeting within 45 days - Sanctioning within one week from the date of meeting - Disbursement subject to the availability of funds
- Sales Tax Exemption	- Processing within 30 days of receipt and placing in the next meeting - Issuing proceedings within one week of the date of meeting Issuing essentiality certificate within one Week
- Land Allotment DA/DP/MIE	- Advance possession is given within 7 days from the date of execution of agreement
- PMRY	- Publishing the list of selected beneficiaries within a day of the selection - Forwarding of application to the Banks within one week of the selection - Conducting training for selected candidates within one month from the date of receipt of the sanction letter from the bank
- Sick unit revival Programme	- Preparation of revival project report within 15 days of registration
	Disbursing start up expenses within 30 days - payment of Margin money loan within one month from the date of DLRC
Registration of Industrial Co-operative Societies and Handicrafts Co-operatives Government share participation	- Within 30 days - Sanctioning upto Rs. 50000 within 30 days

Box - 8.15

Charter for Small Scale Industries – State Bank of India

- Time Norms for disposal of loan applications.
 - a) upto Rs.25000 - Two weeks
 - b) Over Rs.25000 and upto Rs.5 lakhs - Four weeks
 - c) Over Rs.5 lakhs - 8 to 9 weeks
- No collateral security for advances upto Rs.5 lakhs.
- Composite loan upto Rs.25 lakhs is sanctioned to SSI units.
- Under Sthree Shakti Package (Scheme for women) margins are reduced by 5% and interest reduced by 0.5% in respect of loan above Rs.2 lakhs.
- Small Business Credit Card: Hassle free credit upto Rs.5 lakhs based on scoring model and simplified application form.

Food Processing

8.76 Food processing industry has been recognised as a potential area to development of enterprises in Kerala. Kerala Industrial Infrastructure Development Corporation (KINFRA) is the Nodal agency for promotion of food processing Industries in the State. During 2002-03 KINFRA set up a world class Food Park at Kakkancherry, Malappuram. Four units with a total investment of Rs. 1202 lakhs have already started functioning in the park. Two food processing units with a total investment of Rs. 113 lakhs are there in the KINFRA small Industries Park at Thiruvananthapuram. It is in the process of setting up an exclusive food-processing zone with specific infrastructure facilities for food processing at the Small Industries Park, Mazhuvannur, Ernakulam. Besides specific infrastructure facilities have been set up for the primary Food Processing Centre cum cold storage at Wayanad and Food Processing Park at Adoor.

8.77 KINFRA has succeeded in its efforts in building awareness among prospective entrepreneurs on the schemes of assistance available from the Central and State government. Among the 97 proposals received, KINFRA selected 55 and recommended to Government

of India for financial support. Three proposals, two at Ernakulam and one at Thiruvananthapuram were approved by Government of India. An amount of Rs. 100 lakhs was disbursed till October 2003. From the data on the financial assistance received by different States in this regard during the 9th plan period it could be seen that Kerala had obtained a reasonable share from Government of India. The details are shown below in Table 8.17

Table 8.17
Details of Financial Assistance Availed by Different States for Projects in Food Processing Sector during the 9th Plan Period.

(in Rs, Lakhs)

Sl.No.	State	Assistance availed
1.	Andhrapradesh	720.93
2.	Assam	839.69
3.	Karnataka	1074.42
4.	Kerala	1311.58
5.	Madhya Pradesh	1025.57
6.	Maharashtra	1214.09
7.	Punjab	777.17
8.	Tamilnadu	1331.20
9.	Uttarpradesh	1176.26
10.	West Bengal	1180.67

Source: Annual Report 2002-03
Ministry of FPI, GOI.

Table 8.18
Details of Food Processing Units in KINFRA Parks

Name of Park	Total area acquired in acres	Food processing Units			Investment (Rs. in lakhs)	Employment (Nos)
		Number	Area allotted in acres	Activities		
1	2	3	4	5	6	7
Kinfra Small Industries Park, Thumba, Trivandur m	40	2	0.90	Spice, rice and wheat powder Vinegar, pickles, rice, curry powders, rose water, atta, rava, maida & masalas	113	34
KINFRA Food Processing Park, Kakkancherry, Malappuram	60	4	9.84	Edible oil and vanspathy and fractionation and votator unit Ice cream, Corrugated boxes, Warehouses and cold storage facilities.	1202	61

Source : KINFRA

Traditional Industries

Coir Industry

8.78 Coir Industry is a traditional Industry in India and is largely confined to coconut producing States. Sri Lanka, Thailand and Indonesia are other coir producing countries in the world. A significant share of world coir production is from India and Sri Lanka. Even though a large number of units with different degrees of mechanization and automation have been engaged in the coir processing sector, the market has not expanded, but tended to stagnate. The traditional coir industry is facing many challenges in the rapidly changing world market. Coir industry in India is dominated by about two hundred exporters and coir merchants/traders owning composite/semi-composite units In India Kerala is the major contributor to coir industry accounting for 70 percent of coconut fibre production. The industry provides employment to five lakh persons in India.

Coir Industry in Indian States

Tamil Nadu

8.79 Tamil Nadu is the leading brown fibre producer in the country. Hand spun yarn, curled coir and mechanised spun yarn pith and pith products, garden materials and some rubberised coir mattresses are the major coir products produced in Tamil Nadu. Here, the units producing fibre and other coir products are located in clusters and each cluster specialises in production of a particular range of products depending up on raw material and skills availability. Tamil Nadu is a major centre for producing coir yarn spinning machines and a majority of private producers are machinery manufactures also. Machinery manufactures, Private coir products manufacturers, Co-operative sector units and Non-Governmental Organizations are the major players in Tamil Nadu coir sector. There are six NGOs functioning in the industry, funded by industrial associations, partly by Ministry of Human Resource Development and by international foundations. The domestic market in Tamil Nadu is large but is controlled by a

few traders. Majority of producers sell through agents or intermediaries. The Tamil Nadu Coir Industry is also characterised by low scales of production, limited skills, limited knowledge of export formalities and limited knowledge of weaving technology etc. of export production. More over the problems of transport especially in the Puthukottai area make the products costly.

Karnataka

8.80 Coir Industry in Karnataka is only two decades old and is concentrating on brown fibre production. The process of extraction of fibre is mechanical and hence the structure of industry is quite different. Units in the organized sector dominate the Karnataka Coir Industry. There are 290 manufacturing units registered in the State of which around 80% are in private sector, 10% in the co-operative sector and the remaining in the Government sector controlled by Karnataka State Coir Development Corporation. In Karnataka, private sector produces fibre, curled coir and rubberised coir. Co-operatives produce curled coir, fibre, yarn, mats and the public sector produces curled coir, yarn and mats. Curled coir is made into rubberised coir and sold mostly in the domestic market by the private sector. A very small proportion of curled coir is exported. Curled coir faces stiff competition from Sri Lanka, which has freight advantage and hence domestic products, are costly and not competitive in the export market.. Karnataka State Co-operative Federation is the apex body of 96 primary coir co-operative societies and most of their members are workers.

Andhra Pradesh

8.81 Coconut cultivation in Andhra Pradesh is largely concentrated in the districts of East Godawari, West Godawari, Srikakulam, Cuddapah etc. A major concentration of the coir industry is in the East Godawari district, where 47000 hectares of land is under coconut cultivation. District Rural Development Authority (DRDA), with special assistance from Government of India, has taken up the task of developing the coir industry in the district in the year 2000. Coir Industry in the district has been undertaken as a poverty eradication programme where families below poverty line are given training in spinning yarn on motorised ratts, in making mats and handicrafts and brush making. There was a Coir Marketing Federation in Andhra Pradesh, which is dormant at present. The Federation collected the materials from the small private producers and paid

them half the value of the product at the time of purchase.

Coir Industry In Kerala

8.82 Coir Industry is one of the major traditional industries in Kerala, consisting of three major sub sectors, namely, fibre extraction sector, spinning sector and weaving sector. Among the 23 varieties of coir yarn produced, Anjengo Yarn is the finest Yarn produced in Kerala. The industry employs 3.6 lakhs workers and nearly 76% of them are women. Coir industry in Kerala is dominated by co-operative sector. Even after a number of initiatives taken by Government for the betterment of the sector, the coir industry is still a sick traditional industry struggling for its survival in the field of competition with products made out of other natural as well as synthetic fibre both in domestic and international markets. Hence, incentives for private investment, better utilization of coir pith, focus on coir geo-textiles and identification of markets are considered as the major thrust areas in the 10th Plan.

Structure of Coir Industry

8.83 Yarn producers, manufactures/producers, public sector companies, exporters, depot holders, workers and co-operative societies are the major players in Kerala Industry.

Yarn Producers

8.84 Yarn Producers consist of small scale as well as large scale yarn producers. They buy coir fibre from private traders and give it to the spinners along with wages. They also produce the fibre themselves by immersing the husk in water and then give it to the spinners.

Product Manufacturers

8.85 Coir products manufactures consist of about 10000 tiny and small units, having looms ranging between one to ten looms. Tiny units supply their products to the depot holders or middlemen while small workers supply to the depot holders as well as exporters.

Public sector Companies

8.86 The Kerala State Coir Corporation was set up to ensure that the products of the small-scale manufactures were procured at reasonable prices and marketed. This ensures an outlet for regular sales of the produces of small-scale manufactures. Foam Mattings India Ltd.

is the another Public Sector Company in Kerala which produces coir mattings, sisal mattings, coir door mats, area rugs of coir and sisal, jute and grass and jute mattings. The company owns thirty conventional looms, two semi-automatic looms, two imported power looms and a latex backing plant imported from Denmark for mattings. The sales turn over of the company increased at the rate of 4.56 per cent per annum between 1992-93 and 2002-03.

Exporters

8.87 Exporters can be classified as both large and small scale exporters depending on the total capital employed and value of exports. They purchase coir products either from the depot holders or from the small-scale manufactures for export.

Depot holders

8.88 The depot holders act as middlemen between the tiny and small-scale manufactures and exporters. They secure orders from the exporters and purchase the required products from the small household units.

Co-operative Societies

8.89 Peculiarity of Coir Industry in Kerala is the dominance of Co-operative Sector. A good number of Primary Co-operative Societies are not functioning effectively. The Kerala State Coir Co-operative Marketing Federation (COIRFED) is the apex organisation in this sector consisting of 585 member societies producing yarn, mats and mattings and operating defibering units. COIRFED has 108 showrooms all over the country, of which 51 are its own and the rest are run by the agencies on behalf of COIRFED. Details of coir co-operative societies and their activities are given in appendix.

Key issues facing Kerala Coir Industry

Raw material availability

8.90 Husk and fibre are the raw materials of coir industry. Even though Kerala is the largest producer of coconuts in the country, only 30 percent of the husk potential is being tapped at present. This results in scarcity of coir fibre. As fibre is extracted from husks in Kerala largely through the manual beating process, productivity is low and wage costs are high. The lack of availability of fibre is a crucial issue that threatens the very survival of the coir industry in Kerala.

Diversity in wage and price structures

8.91 Marketing conflicts arise because of the differing wage and price structures followed in the different segments. Price of the products does not match the increase in wages.

8.92 In the domestic market, the Public Sector Organizations themselves sell to large agents and wholesalers, as there are no established outlets for coir products. Thus there is a need to develop the domestic market through awareness and brand building and by standardization of quality. On international market, heavy dependence on mats and mattings is the major problem for Kerala coir industry. The competition is severe for both because of the availability of cheaper substitute products.. Although India is the largest producer of coir products, the competing countries are engaged in aggressive marketing of new and diversified products.

Standardization and Quality

8.93 The present standard fixed for coir fibres of Kerala origin is yet to be universalized. There are no systems of bench marking of quality and mandatory testing of products especially the products meant for "Mass Consumption".

Market Information

8.94 Systematic studies do not exist for market information, analysis and dissemination of data. This erodes the competitiveness of the industry.

Research and Development

8.95 Research and Development is another area requires more attention. New value added products development attracts no attention. Centre for Development of Coir Technology(C-DOCT) was entrusted with the work of establishing High-Tech Coir Park at Perumon, Kollam district. During the period 2002-03, a Geo-textile weaving machinery with all accessories was purchased and installed at the park. In order to identify the R&D areas in coir sector, Government has constituted a State level R&D Advisory Committee. So far the Committee has received twenty projects and the approval was given to seven projects for funding.

Traditional methods of production

8.96 Fear of labour displacement and unemployment led to persistence in the traditional methods of production. At present, the coir industry in Kerala is highly

dependent on fibre from Tamil Nadu, where mechanical extraction of fiber is resorted to. In spinning sector also, only a small proportion is spun with motorised ratts and rest of them depend on Charkas (hand spinning).

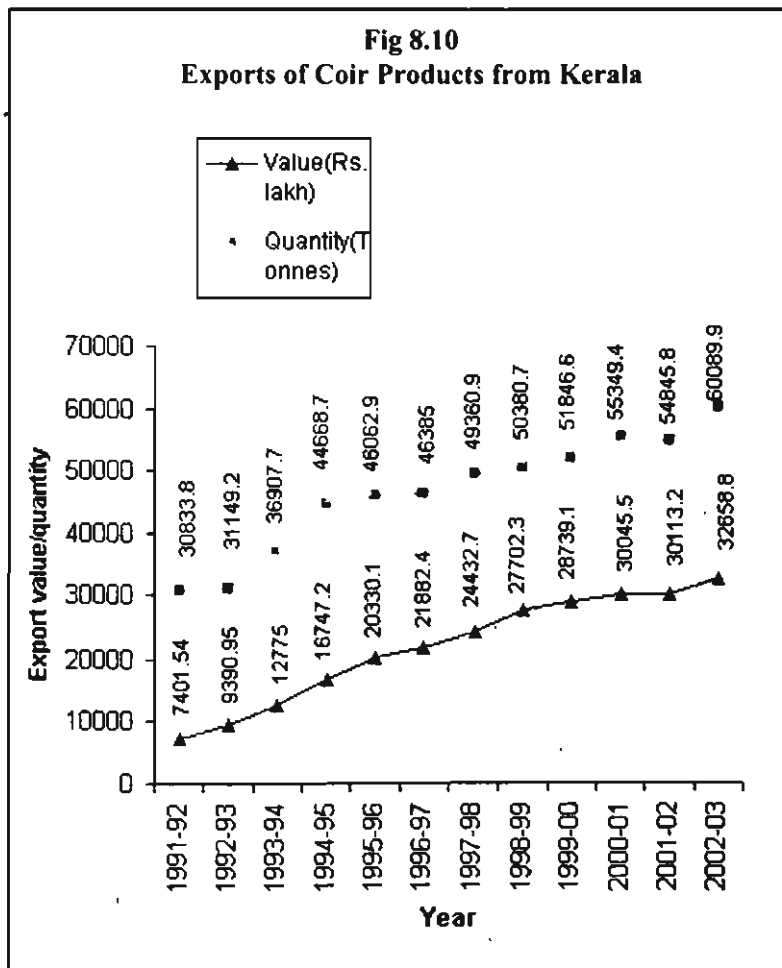
Trends in Exports

8.97 Exports of coir products from Kerala got almost doubled as it increased steadily from 30833.78 tonnes in 1991-92 to 60089.86 tonnes in 2002-03. The year 2002-03 recorded an increase in exports of coir products at the rate of 8.45% in value terms and 9.56% in terms of quantity. The unit price of export, measured in terms of dollar increased monotonically till the year 1995-96. It declined in dollar terms mostly due to the depreciation of rupee value in terms of dollar. The minimum export price (MEP) fixed by Government for coir products such as handloom matting, handloom mats, Tufted mats, coir rope, coir yarn, coir rugs and carpets and coir other sorts has been fully withdrawn in April 2002. The impact of this withdrawal upon the unit price

of export of coir products is varied.

8.98 Administrative Staff College of India (ASCI) conducted a study on Coir Industry in Kerala. An analysis of enterprise level data relating to 135 private enterprises in Kerala over a period of five years from 1998-99 to 2002-03 revealed the following facts.

- v During the period the private sector enterprises in the coir sector in Kerala experienced an annual growth rates of 0.6 percent in quantity of exports, while the value of exports declined by 1.54 percent.
- v Out of total exports by 135 companies, the share of three companies was found to be around 39 per cent in 2002-03, and 114 companies had share in total exports of less than 1 per cent each.
- v Export of the three major companies increased at the rate of 3.41% per annum in terms of quantity and 7.66 per cent in value terms during 2002-03.



8.99 Among the items of export, Handloom mat, powerloom mat, Handloom matting, Geo- textiles, Coirpith, Coir other sorts and Rubberised coir have showed an increase in export and all other coir items recorded a decrease. During the period 1991-2003 while Handloom mat recorded export growth rates of 13.5% per annum in value terms and 7.3 per cent per annum in terms of quantity, the export growth rates of coir yarn were 4.3% per annum in terms of value. But the growth rate in terms of quantity was negative (0.06 per cent) Growth in exports of coir products in terms of value and quantity for the period between 1991 and 2003 are shown in Figure 8.10. Export growth rate was also high for Geo textiles ie, 30 percent per annum in value terms and 25.2 per cent in terms of quantity during 1994-2003.

Table 8.19
Growth Rates of Coir Products from Kerala

(in percentage)

Year	Coir yarn		Handloom Mat		Powerloom Mat		Tufted Mat		Handloom Matting	
	Qty	Value	Qty	Value	Qty	Value	Qty	Value	Qty	Value
1991 – 2003	(-)0.6	4.3	7.3	13.5	20.8	24.8	128.2	103.7	2.5	8.2
1991-97	1.2	11.0	13.5	25.7	41.2	93.2	103.2	118.3	17.5	34.6
1997-2003	(-)6.0	(-)6.2	8.9	9.1	2.1	4.5	131.8	144.0	(-)8.0	(-)8.6

Year	Powerloom matting		Geo Textiles*		Coir Rugs & Carpets		Coir Rope		Coir Other Sorts	
	Qty	Value	Qty	Value	Qty	Value	Qty	Value	Qty	Value
1991 – 2003	(-)8.5	(-)3.1	25.2	30.0	3.8	9.0	12.0	17.6	23.3	23.7
1991-97	(-)10.6	2.7	(-)9.6	(-)0.6	30.6	48.6	(-)6.11	2.3	77.8	96.8
1997-2003	(-)0.8	(-)0.5	17.8	19.2	(-)11.3	(-)11.7	27.2	31.5	(-)30.8	(-)32.7

*For Geo-Textiles data are available from 1994-95 onwards only.

Source: Coir Board, Kochi.

8.100 Item wise export of coir and coir products from India during 2001-02 and 2002-2003 is given in appendix

textiles and coir rope experienced acceleration during the sub period, those can be identified as products of high demand.

8.101 Export of coir and other sorts declined at the rate of 32.7 per cent per annum in value terms and 30.8 per cent per annum in terms of quantity during 1997-2003 as shown in Table 8.19. As tufted mats, geo

8.102 The shares of three coir products, namely, Handloom mat, Coir yarn and Handloom matting constituted 87 percent of total exports from Kerala during 1991 –2003 as in Table 8.20.

Table 8.20
Export Shares of Coir Products

(Percent)

Year	Coir yarn		Handloom Mat		Powerloom Mat		Tufted Mat		Handloom Matting	
	Qty	Value	Qty	Value	Qty	Value	Qty	Value	Qty	Value
1991 – 2003	30.54	15.53	44.71	53.67	1.49	1.95	3.28	3.03	11.95	1.26
1991-97	30.08	20.94	41.65	50.30	1.06	1.39	0.14	0.14	13.08	17.41
1997-2003	26.63	13.80	46.52	55.12	1.76	2.11	5.33	5.37	11.10	14.05

Year	Powerloom matting		Geo Textiles		Coir Rugs & Carpets		Coir Rope		Coir Other Sorts	
	Qty	Value	Qty	Value	Qty	Value	Qty	Value	Qty	Value
1991 – 2003	0.88	1.10	1.79	1.70	4.29	6.18	0.46	0.26	0.59	0.52
1991-97	1.41	2.04	0.46	0.40	4.53	6.9	0.36	0.21	0.24	0.26
1997-2003	0.55	0.74	2.68	2.25	4.04	5.6	0.54	0.29	0.86	0.66

Source: Coir Board, Kochi.

8.103 Export share was the highest in the case of Handloom mat (44.71 per cent) followed by coir yarn(30.54 per cent and Handloom matting (11.95 per cent) in quantitative terms during 1991-2003. The changes in export composition between 1991-92 and 2002-03 both in terms of value and quantity are shown in table 8.21.

8.104 Export from the Kerala State Coir Corporation declined at the rate of 28.38 per cent per annum during the year 2002-03. Thus the share of the Corporation out of the total export from Kerala declined from 1.17 per cent in 1997-98 to 0.21 per cent in 2002-03

Performance of Public sector

8.105 During the period 1997-03, the annual turnover of the Kerala State Coir Corporation was Rs 439.97 lakh including export. Major problems are

- Loss due to existing purchase price system.
- Competition from China on Export Market for Grass Mattings.
- High Labour Cost on handloom products (60%) than power loom products (30%).

8.106 Sales turnover of the Foam Mattings(India) Ltd continued to increase till 1998-99 but declined thereafter. The sales turnover of the Company increased at the rate of 4.56% per annum between 1992-93 and 2002-03.

Handlooms and Textiles

8.107 Major production of Handloom goods is in the category of cotton fabrics. India is the World leader in global cotton yarn exports with 25 percent market share. A positive development in the exports of textiles products is the shift from raw material to value added products. A significant feature of the emerging export profile is the increase in the share of made-ups in the overall basket of cotton textile exports from 28 percent in 1999-2000 to 35 percent in the year 2000-03. The year 2000-03 witnessed a growth of eight percent in the case of fabrics, 10 percent in yarns and 50 percent in made-ups. An important development in the global textile trade will be the total elimination of the quotas with effect from the year 2005. The new developments will bring with them fresh turbulence in the form of pressure on prices, growing resort to protectionist measures, proliferation of bilateral arrangements and regional groupings.

8.108 India is the second largest supplier of cotton made- ups with 16 percent of the market share, second only to China. Countries like India has significant cost advantage due to low labor cost as manufacturing of many made up items require direct human involvement and close manual supervision.

Table 8.21
Composition of Coir Products Export (Percent)

Export of Coir Products	Quantity		Value	
	1991-92	2002-03	1991-92	2002-03
Coir Yarn	49.51	19.11	31.46	9.18
Handloom Mat	35.79	55.35	47.78	63.42
Powerloom Mat	0.42	1.59	0.44	1.79
Tufted Mat	0	9.98	0	10.06
Handloom Matting	9.78	7.25	13.22	8.92
Powerloom Matting	2.03	0.34	3.46	0.41
Geo Textile	0	3.31	0	2.84
Coir Rugs & Carpets	1.95	2.21	3.26	2.86
Coir Rope	0.45	0.55	0.3	0.31
Coir Other Sorts	0.06	0.31	0.08	0.21

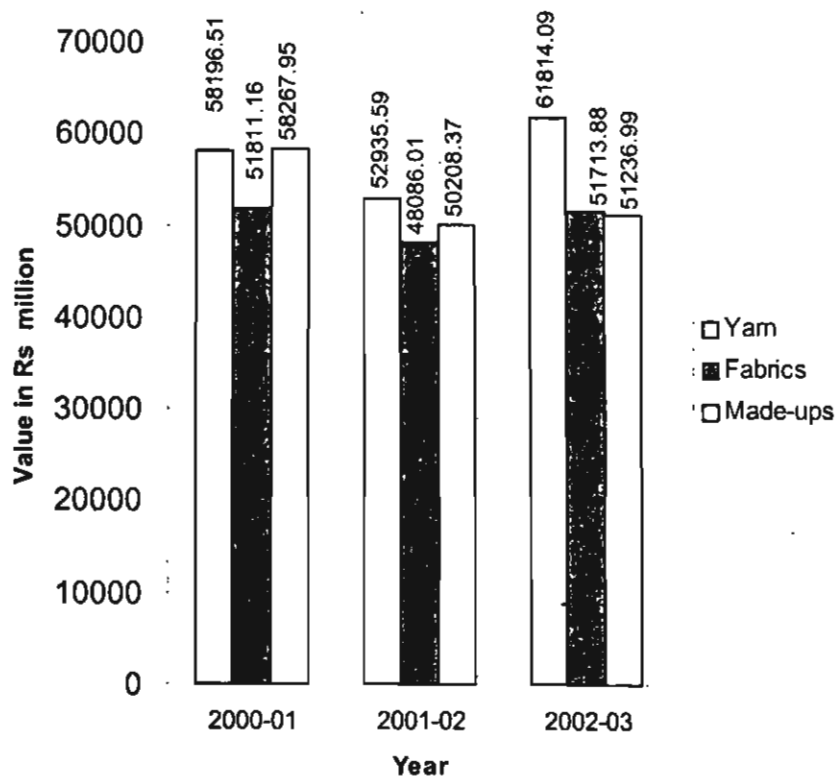
Source: Coir Board, Kochi.

Box - 8.16

Impact of Elimination of Quota Systems

- Pressure on prices - The removal of quota will result in a reduction in prices as exports are expected to quote realistic prices after discounting the quota rent. Competition is expected to intensify in a market of falling prices
- Protectionist measures - It is expected to see a rise in the use of a variety of protectionist measures like anti dumping, anti subsidy action, enforcement of environmental and labor standard, discriminatory application of Rules of Origin Criteria, implementation of cumbersome documentation and customs clearing procedures
- Proliferation of bilateral arrangements and regional groupings – Expansion of regional grouping and growing bilaterlism will result in development of 'conclaves' distorting the principle of 'comparative advantage'

Fig 8.11
Exports of Cotton Textiles from India



Handloom Industry in Kerala

8.109 Traditional Handloom products of Kerala are extremely popular for its distinct blend of elegance, simplicity and excellence in design. This sector employs about 1.75 lakhs of people and this industry stands second to the coir sector in providing employment among the traditional industries of the State. Handloom Industry in the State is concentrated in Thiruvananthapuram, Kannur, Kozhikode, Palakkad, Thrissur, Ernakulam, Kollam and Kasaragod districts.

8.110 The industry is dominated by the cooperative sector with 86 percent of the looms followed by the entrepreneurial sector. The Cooperative sector consists of factory type and cottage type societies. As on March 2003, there were 758 primary handloom weavers' cooperative societies consisting of 155-factory type and 603 cottage type societies. The corresponding figure by the end of March 2002 was 135 and 620 respectively. The factory type societies increased in number where as the cottage type decreased.

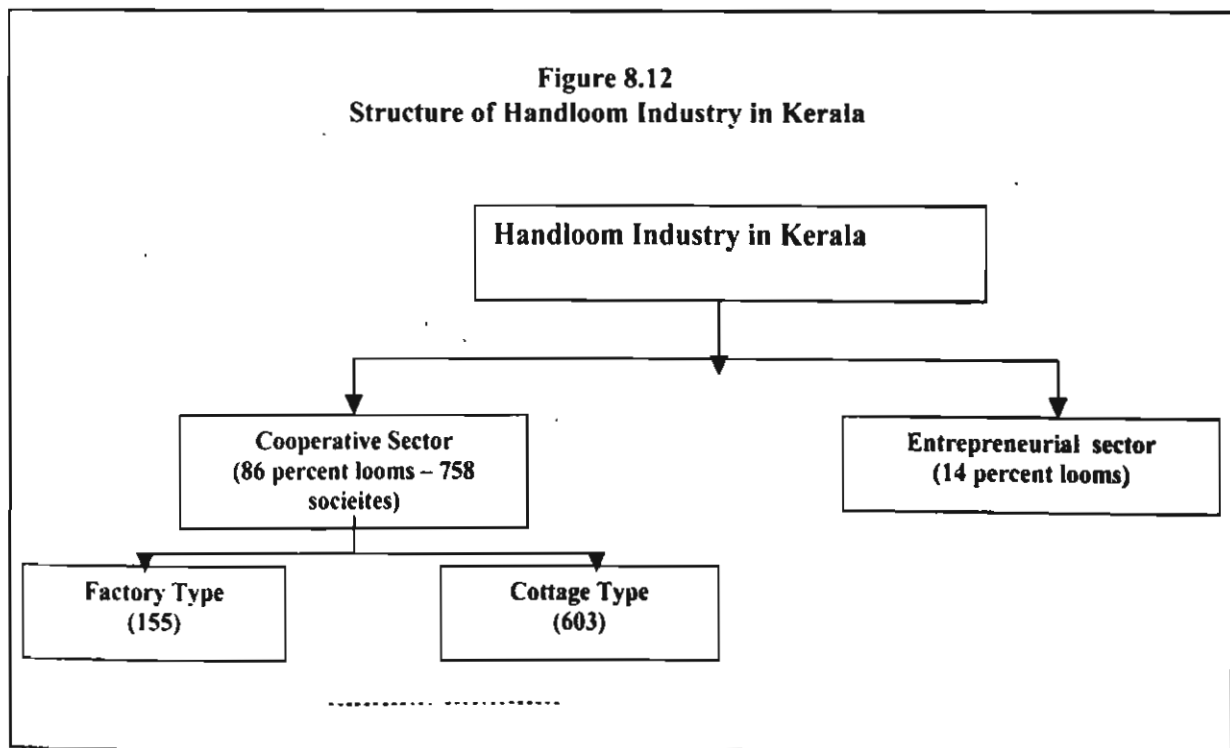
8.111 The district wise details of handloom societies in the State are given in Appendix.

8.112 Handloom products are dominated by cotton fabrics. The major varieties produced in the handloom

sector of the State are Dhoti, Saree, furnishing material and lungi. The overall production of cloth by handloom societies in Kerala decreased from 70.75 million metres in 2001-02 to 56.82 million metres in 2002-03. Of the total production, 97 per cent is contributed by the co-operative societies and the remaining 3 per cent is from the entrepreneurial sector. Approximately 54.30 per cent of the total production of the co-operative sector is contributed by the Co-operative Societies of the southern region. The share of the co-operatives in the central and northern regions in the production is 14.80 and 30.90 per cent respectively.

8.113 In the private sector the northern regions share is almost 41 per cent which is followed by the southern region with 40 per cent. The production and productivity under handloom industry in Kerala for the last 2 years are given in Appendix.

8.114 The Textile Committee, Government of India has completed the study for identifying the bottlenecks in the effective marketing of handloom products by Hantex, Hanveev and PHWCs and for chalking out a demand oriented production programme by identifying fast moving products.



Promotion of Handloom

8.115 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 remained steady at 450 during 2002-03 as in the previous year. The value of yarn purchased and distributed during 2002-03 decreased by 57 per cent and 55 per cent respectively compared to the previous year. The value of cloth produced decreased by Rs.5.98 crores

registering a decline of 53 per cent over the previous year. Hantex conducted 32 exhibitions to increase the sales during the year under report as against 41 during the previous year. The working results of Hantex are furnished in Appendix.

8.116 SWOT analysis of Handloom Industry in Kerala is given in Box 8.17.

8.117 Kerala State Handloom Development Corporation (Hanveev) which started functioning in 1968 is another agency to accelerate the development of handloom industry in the State. The total income of

Box - 8.17

SWOT Analysis

Strength

- Unique skill set to make value added rich and diverse handloom products using cotton, wool, silk jute etc
- Flexible production capability and adaptability to the tastes of various target countries such as U S A, Europe etc.
- Huge production base employing about 1.75 lakhs traditional weavers and with 58,400 looms
- The state contributes to the extend of more than 10% of Handloom exports from the country

Weaknesses

- Poor infrastructure facility
- Obsolete looms with poor productivity
- Lack of product t diversification
- Lack of innovation in the areas of colours, textures etc
- In effective marketing

Opportunities

- The liberalised trade regime will open up huge export opportunities for value added unique handloom products
- Appropriate Technology and process upgradation such as the use of natural dyes will result in improved quality

Threats

- Removal of quota restrictions will witness a free-flow of textile products from other countries
- The Asian economics such as China, Taiwan have strong domestic handloom industry which can offer products at cheaper rates
- Isolation of Indian handloom sector on account of efforts for technological upgradation of textile sector.

the Corporation through sales of products decreased from Rs 16.88 crores in 2001-02 to Rs.9.90 crores in 2002-03. The Corporation incurred a net loss of 448.64 lakhs in 2002-03 compared to the loss of 207.17 lakhs during the previous year. The accumulated loss increased to Rs.1441.29 lakhs at the end of March 2003. The working results of hanveev are given in Appendix.

8.118 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. The company produced 61000 pieces of readymade garments worth Rs.40 lakhs. It released Rs.44.91 lakhs by way of stitching charge and sold garments worth Rs.10.18 lakhs during 2002-03. The loss of the company during 2002-03 was Rs.109.71 lakhs as against Rs.113.84 lakhs in the previous year.

8.119 Powerloom is a dominant player in the weaving sector and it contributes more than 60 per cent of total textile production. There were 3900 powerlooms in the State during 2002-03 of which 1481 were in the co-operative sector. Three more powerloom co-operative societies were added during the year 2002-03, making the total number of societies 33. While the production of cloth by powerloom societies marked a slight increase of 14.41 lakh metres during the year 2002-03 from 98.15 metres during the previous year, the productivity per loom showed a decrease of 20.29 metres during the same period. Details on the production and productivity of powerloom industry are given in Appendix.

Handicrafts

8.120 Kerala State Handicrafts Apex Co-operative Society (SURABHI) 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 18 sales showrooms 14 in Kerala State itself and four outside the State. During 2002-03 the apex society purchased goods worth Rs.197 lakhs and achieved sales of Rs.309 lakhs registering an increase of 11.93 per cent and 18.39 per cent respectively compared to the previous year. In order to popularise Kerala crafts, the apex society conducted two exhibitions out-

side the State. It also participated in the catalogue show of Indian products in the International fair at Budapest organised by India Trade Promotion Organisation. Society has set up an export-oriented showroom at Kaloor, Ernakulam to boost up export sales. During 2002-03 society exported goods worth Rs.5 lakhs.

8.121 Handicrafts Development Corporation of Kerala was established in the year 1968 with SMSM Institute as a Central emporium and other 3 State emporium at Coimbatore, Madras and New Delhi. At present it is having a net work of 20 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 2002-03 the Corporation conducted exhibitions in potential areas and tourist places inside and outside the State. The total sales turn over of the corporation rose to Rs.1049 lakhs from Rs.897 lakhs in the previous year. During the year 2002-03 the Corporation has supplied raw materials worth Rs.17.40 lakhs to artisans at subsidised rates at 25 percent by availing subsidy from State Government. The Corporation has become the channelising agency for the disbursement of loan to artisans from NBCFDC and NMCDFDC.

8.122 The Kerala Artisans Development Corporation Ltd. has been nominated as one of the State channelising agencies for the implementation of schemes announced 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 expenditure of the Corporation during the year 2002-03 was Rs.86.93 lakhs resulting in a loss of Rs.4.45 lakhs as against Rs.1.03 lakhs during previous year. During the year 2002-03 the Corporation organised 36 trade fairs throughout the state and crafts bazar 2002 at Ernakulam.

8.123 Kerala State Bamboo Corporation set up in the year 1971 is working for the upliftment of the workers belonging to mainly harijans and other backward communities, engaged in the reeds based cottage industry. The major activities of the Corporation includes 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 mat and iv) production and sale of bamboo ply. Bamboo industry provides direct employment to one lakh workers. The Corporation produces about 300 lakh sq. ft. bamboo mats, about 50 lakh sq. ft. bamboo ply boards per year. The formation of a multi disciplinary, multi departmental Bamboo Mission in the State is a major initiative for the development Bamboo sector.

Cashew Industry

8.124 Among the various Agri - Horticultural commodities taking part in the Indian commercial sector, Cashew has attained a prominent place. India continues to be the largest producer, processor, consumer and exporter of cashew Kernels in the World. The Indian cashew processing industry provides employment to over 3 lakh persons. India ranks first in the world with respect to area, production of raw nuts and productivity of raw nuts per hectare. The important cashew growing States in India are Kerala, Andra Pradesh, Karnataka, Maharashtra, Tamil Nadu, Orissa, Goa and Kerala is the top among the predominant States with large area and high production.

8.125 At present in India there are nearly 1100 cashew processing units demanding one million tonnes of raw nuts. With the present level of production of five lakh metric tonnes of cashew and an import of two lakh metric tonnes the present processing capacity gets utilised to the extent of 70 per cent only leaving the rest unutilised for want of raw nuts.

8.126 The organised sectors are mostly concentrated in Kerala, Kamataka & Tamil nadu who have larger capacity for processing and large number of labourers engaged. The Industrial set up as existed in 1980's and in the year 2000 is depicted in Table 8.23.

8.127 Kerala inspite of having a long tradition both in cashew cultivation and cashew nut processing, the raw nut production is far from the requirement. The processing capacity of the factories remains under utilised. Also the excellent skill of labourers of the State in processing raw nut also remains untapped. This labour force hardly gets employment even for one third of the year due to shortage of raw nuts. Major constraints confronting the cashew industry are given in Box 8.18.

Table 8.22
Area, Production and productivity of cashew

	2000-01		Average productivity kg/ha.
	Area '000 hectare	Production '000 Tonnes	
India	720	450	710
Kerala	122	100	850

Source: Directorate of Cashew nut and Cocoa Development GOI.

Box - 8.18

Cashew Industry - Major constraints

- Continued heavy dependence on imports due to shortage of raw nuts from indigenous sector
- Inability to expand domestic market
- Inability to find a larger market for cashew nut shell liquid

Table 8.23
Indian Industrial situation of Cashew

State	1982	2000					
		Processing units (Nos.)			Processing		Labour force ('000 Nos.)
	Proce. Units (Nos.)	Organ ised	Unorgan ised	Total	Capacity ('000 MT)	Consum ption ('000 MT)	
Kerala	270	375	23	398	500	193	210
Karnataka	50	164	8	172	60	25	25
Goa	21	25	32	57	20	8	5
Maharashtra	40	NIL	49	49	20	6	2
Tamilnadu	87	217	24	241	320	150	130
Andhrapradesh	95	38	65	103	50	28	25
Orissa	9	Nil	33	33	20	15	3
West Bengal	Nil	Nil	45	45	10	5	3
Total	572	819	279	1098	1000	430	403
Through imports						220	

Source: Indian Cashew Industry - Directorate of Cashew nuts and Cocoa Development, Kochi

8.128 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. KSCDC has 30 factories while CAPEX possesses 10. There were 17254 employees in KSCDC and 4014 employees in CAPEX. The apex society could provide employment only for 29 days during 2002-03, but KSCDC could not provide any employment. KSCDC incurred a loss of Rs. 14.27 crores and CAPEX Rs 1.37 crores during the year 2002-03. Efforts are being made to improve the working of the Cashew Development Corporation and CAPEX.

Khadi and Village Industries

8.129 Khadi and Village Industries Board implements programs through Co-operative Societies, registered institutions, individuals and department units by availing assistance from the State Government, Khadi Commission and nationalised banks.

8.130 During the year 2002-03, Khadi Board received an amount of Rs.280 lakh only as against the allotment of Rs.350 lakh from the State Government. The board extended margin money assistance of Rs.367.20 lakh to 273 units and generated employment opportunities to the tune of 2522 persons during the period. Under the scheme, viz. strengthening of weaving sector, action has been taken to manufacture 80 looms, to repair 121 looms and to impart training in silk weaving to 30 artisans and khadi weaving to 91 artisans. Khadi Board introduced 145 new looms in various Khadi production centres and started 3 spinning units for the mentally retarded persons and 4 weaving units during the period under review by providing employment to 43 persons. Two honey processing units, one in Ernakulam and other in Palakkad district were also started by providing employment to 14 persons directly

and 30 persons indirectly. A handmade paper unit at Kizhakkombalam was started with initial employment opportunities to 10 persons. Khadi Board participated in an International Trade Fair at New Delhi and at an

Table. 8.24

Institutional Position of Khadi Sector

Agency	No. of units	No. of units working
Co operative societies	2009	584
Registered Institutions	2161	1247
Individuals	15814	13003
Departments	429	383

Source : Khadi Board

All India Khadi and Village Industries Exhibition held at Panaji during the period under review. During 2002-03, 74 sales outlets were opened. The Board organised a state level exhibition at Thiruvananthapuram with financial support from KVIC. Item wise details of Khadi products and number sales outlets during 2002-03 are given in appendix.

8.131 The Institutional position under Khadi Board as on 31-3-2003 is given in Table 8.24.

Sericulture

8.132 Sericulture, an agro-based industry is 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 Xth plan period which had mainly three components viz.

- Cluster based development
- Active involvement of local body and member societies
- Emphasis on postcocoon Technology sector

Table 8.25
Status of Sericulture

Year	Plantation (acre-cumulative)	No. of farmers (cumulative)	DFLs distributed (Nos.)	Cocoon production (Kg)	Raw silk production (Kg)
2001-02	555.75	979	113286	29935	2560.74
2002-03	1414	2366	98369	33229	2602.52
2003-04 (up to Sept)	1856	3005	80060	25163	1693.22

Source : Serifed

8.133 As part of cluster based sericulture development strategy, the sericulture activities in the state were confined to 125 Grama Panchayats spreading over 40 selected cluster during 2002-03. More emphasis is now given on creating awareness and motivating people to adopt sericulture as a means for increasing earnings. The cocoon production has been increased to 33MT in 2002-03 as against the achievement of 30MT during 2001-02. Achievements in the area under mulberry plantation, number of farmers covered, DFLs distributed and raw silk yarn produced are shown in the Table.8.25

Mining

8.134 The Exploratory and Prospecting division of the department of Mining and Geology conducted exploration for kaolinitic clays in

- Pallippuram area west of CRPF camp centre, Thiruvananthapuram
- Sitangoli area in Kasaragod
- Kattaikonam Thundathil area in Thiruvananthapuram
- Pallippuram-Mangalapuram-Murukkumpuzha area in Thiruvananthapuram

8.135 The coastal tract of Kasaragod District falling between pallikkara in the north and Thrikkarippur in the south was subjected to remote sensing and air photo

interpretation with a view to study the prospects of economic mineral potential comprised in the quaternary sediments and also to study the geo- environmental aspects of the coastal tracts. An area of about 400-sq. km. was covered by air photo interpretation.

8.136 A rapid survey for assessing the sand resource along the river tracts of Kulathuppuzha, Chittoor and Kallada rivers draining the reserved forest area was conducted during 2002-03. A total of seventeen kadavus were inspected. Survey was also conducted in Vembanad Lake covering the area of about 800 meters east of the confluence of Puchakkal Thodu and two kilometers north of the confluence of Ittippuzha with Vembanadu Lake, comprised in parts of Chembu, Kulasekharamangalam and Udayanapuram villages to probe the possibilities of extraction of sand from lake bed. A total quantity of 36000 cbm of sand was estimated in the lakebed portion over an extend of 12 hectares.

8.137 Two hundred and forty nine minor mineral quarries falling in Moovattupuzha and Kothamangalam taluks in Ernakulam district were inspected and data regarding the quarries collected. Twenty four rock samples were collected from different quarries for petrographic and to examine the polishing characteristics. An area of 1.25 hectares at Vadakodu, Kalloorkkadu village was subjected to field inspection to confirm the availability of graphite ore.

TOURISM

Introduction

Tourism can be an important contributor to the growth of an economy. Growth of tourism is a significant part of the global expression of the new service economy. With the weakening of many other aspects of the economy, tourism is a new opportunity. India, though a late starter in tourism, is giving increasing priority to this sector. A national policy on tourism was declared in the year 2002. Salient features of the policy are given in Box 9.1

Kerala Tourism

9.2 Kerala, "God's own Country", has emerged as the most acclaimed tourist destination in the country. Beaches, warm weather, backwaters, hill stations, waterfalls, wild life, Ayurveda, year round festivals and the diverse flora and fauna make Kerala a unique destination for tourists. During the last few years, the State Government has been giving very high priority to this sector.

Tourist inflow

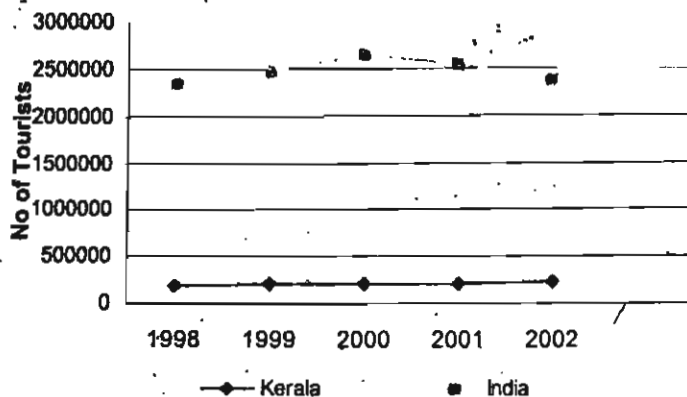
9.3 After the September 11, 2001 incidents at the World Trade Centre, Newyork and subsequent developments leading to Afghan War, Indo-Pak Boarder tension and terrorist attacks in some places of India, foreign tourist arrivals in India suffered a set back in the sense that there was consistently negative growth rate from September 2001 to September 2002. However a revival was observed from October 2002 onwards. While the international tourist inflow to India in the year 2002 recorded a decline to 6.92 percent, Kerala witnessed a considerable growth of 11.37 percent, including a 6.27 percent increase in domestic arrivals. In 2003 there has been a further spurt. According to reports, the increase in tourist inflow this year is expected to be nearly 30 per cent. While domestic arrivals were earlier largely pilgrims, nowadays 30 per cent of domestic arrivals are also tourists. There is in particular a boom in "quality tourism" with Kochi centered resorts as the most popular. This raises some questions regarding future action to be taken in the Kovalam region.

Box -9. 1

Salient features of National Tourism Policy 2002

- Position tourism as a major engine of economic growth;
- Harness the direct and multiplier effects of tourism for employment generation, economic development and providing impetus to rural tourism;
- Focus on domestic tourism as a major driver of tourism growth;
- Position India as a global brand to take advantage of the burgeoning global travel and trade and the vast untapped potential of India as a destination
- Acknowledge the critical role of private sector with government working as a pro-active facilitator and catalyst;
- Create and develop integrated tourism circuits based on India's unique civilization, heritage and culture in partnership with States, private sector and other agencies;
- Ensure that the tourist to India gets physically invigorated, mentally rejuvenated, culturally enriched, spiritually elevate and "feel India from within"

Figure 9.1
Tourist Arrivals -India & Kerala



Kerala Brand

9.4 Kerala has been branded as one of the most wanted tourism destination. A great deal of this is due to proactive marketing and promotional measures taken during the last ten years. It will not be right to adopt a complacent attitude that the State has 'arrived' as a tourist attraction. Constant attention to improvement of infrastructure and environment (physical, ecological, cultural and social) are essential as also the continuance of promotional activities. (Box 9.2)

Box -9. 2

Brand Equity of Kerala Touris

- Kerala was recently listed among the top 100 brands of the country, by the globally renowned Super brands Ltd. The State was selected from among 700 brands in the country that were evaluated to identify India's strongest brands
- Kerala, one of the 55 Things That Make India Proud India Today.
- The first State to be accorded the status of Partner State of the World Travel and Tourism Council (WTTC) in 2002.

Infrastructure

9.5 Availability of quality infrastructure is a very critical component of tourism system. Tourism development activities in Kerala are oriented towards building up of world-class tourism infrastructure facilities like tourist accommodation, transportation facilities, proper water supply system and lighting system which are vi-

tal components of the tourism development.

9.6 The Department of Tourism, Kerala Tourism Development Corporation, (KTDC), District Tourism Promotion Council (DTPCs), Bekal Tourism Development Corporation (BTDC), Local Governments and Private Sector are the major players in the field.

TOURIST ACCOMMODATION

9.7 The Department provides accommodation maintaining 24 Guest Houses at Thiruvananthapuram, Varkala, Ponnammudi,

Kovalam, Attingal, Kollam, Alappuzha, Pathanamthitta, Kottayam, Devikulam, Munnar, Peerumade, Idukki, Ernakulam, Aluwa, Thrissur, Cheruthuruty, Guruvayoor, Malam-puzha, Kozhikode, Malappuram, Kannur, Sulthan Bathery, Kasaragode, Yathri Nivases at Thiruvananthapuram and Ernakulam and Kerala Houses at Kanyakumari and New Delhi

9.8 As on 2002 Kerala has to its credit total classified rooms of 5583, the maximum number of rooms being in the category of 3 star. There is an increase of 16.5%, 10.77% and 16% respectively in the number of hotels, rooms and beds pertaining to classified hotels from 2001 to 2002. Apart from the classified rooms, Kerala has more than 28000 numbers of unclassified rooms also. District wise details of hotels in Kerala are given in Table 9.1

9.9 Kerala Tourism Development Corporation has a range of hotels from star hotel and heritage properties to wayside motels. There are 12 hotels, 9 motels, 4 Yathri Niwas. Out of 5583 hotel rooms available in Kerala, KTDC alone maintains 506 rooms.

Participation in Trade fairs

9.10 As part of aggressive promotion of Kerala as a world class tourism destination, Department of Tourism participated in national and international trade meets along with private sector and organized road shows and events. (Box 9.3)

Table 9.1
District wise Tourist Accommodation

Sl. no	Category of hotel	5 star Deluxe	5 star	4 star	3 star	2 star	1 star	Heritage
	Name of District	Number of hotels						
1	Thiruvananthapuram		1	3	10	6	3	2
2	Kollam				3	1		
3	Alappuzha				2	3	1	1
4	Pathanamthitta					1		
5	Kottayam				3	5	1	2
6	Idukki		1	2	6	7	3	1
7	Eranakulam	2	2	4	17	9	6	2
8	Thrissur				8	1	1	1
9	Palakkad				3	1	2	
10	Malappuram					2	1	
11	Kozhikode		1	1	4	2	1	
12	Wayanad					2		
13	Kannur				3	1	1	
14	Kasaragod				1		1	
TOTAL		2	5	10	60	41	21	9

Box -9. 3

Participation at International Trade Fairs

- International Tourism's Bourse(ITB) 2003, Berlin
- Arabian Travel Market, (ATM) 2003, Dubai
- PATA Travel Mart 2003, Singapore
- World Travel Mart(WTM) 2003, London
- OTDYKH LEISURE 2003, Moscow
- China International Travel Mart, CITM 2003, kunming

9.11 To showcase Kerala to a wider, as well as a select market, Kerala conducted several road shows at hitherto unexplored markets like Jaipur, Goa, Nagpur, Chandigarh, Agra etc. in addition to existing, traditional ones. (Box 9.4)

Box -9. 4

ROAD SHOWS IN NEW MARKETS

- Jaipur Road show
- Nagpur Road show
- Agra Road show
- Ahmedabad Road show
- Delhi Road show
- Pune Road show
- Hyderabad Road show
- Goa Road show
- Chandigarh Road show
- Bangalore road show
- Mumbai Road show
- Chennai Road show
- Kolkata Road show
- Colombo Road show

9.12 Kerala Tourism organized a series of events to attract more visitors and to position Kerala as a Meetings, Incentives, Conventions and Events (MICE) destination. (Box 9.5)

9.13 "Major tourism products identified in Kerala are Beaches, Backwaters, Ayurveda, Wildlife, Hill stations and cuisine. The State has the potential to offer new products. The thrust areas presently being looked into are for the development of village tourism, MICE tourism (Meetings, Incentives, conventions and Events/Exhibitions/Trade shows),

Heritage tourism, Eco tourism and medical tourism.

New Products Development

- Medical tourism from the Gulf
- Kerala's definitive cost advantage in Healthcare sector is attracting a large number of visitors.
- Avian Tours (Bird Watching) Plus Elements of Kerala promoted
- Adding another dimension to the Kerala's backwater and health tourism is 'Avian Tourism to attract birdwatchers from all over the world
- The avian tour package was launched in September 2003, coinciding with the start of the tourist season in Kerala
- Islamic Heritage Holidays Launched in the Gulf
- Important mosques, prayer timings, dress code, festival dates at important mosques, hotels/ restaurants offering halal food across Kerala have been identified to offer an exclusive Islamic holiday for the tourist
- PlantationBased Tourism Introduced
- Ancient buildings and tree houses, popularly known as 'Erumadam' would be utilized to the maximum effect for promoting tourism in the plantation areas.
- Package Launched to Promote Kalamandalam
- A day with the masters is a joint venture between Kerala Tourism and Kerala
- Kalamandalam, to establish Kalamandalam as a premier quality tourism destination in the coming years.

Box -9.5**EVENTS****Kerala Travel Mart**

- Kerala Travel Mart 2002- Second Edition of India's only International Travel Mart
- Held for the second time, Kerala Travel Mart (3-5 Oct. 2002) – India's premier international travel mart – witnessed an overwhelming response.
- KTM 2002 saw the participation of trade from new markets like U SA, Denmark, Greece, Ireland, Korea, Malaysia, Mauritius, Nepal, Netherlands, Norway, Singapore, South Africa, Sri Lanka and Sweden.

National Boat show

- Kerala Tourism Organized National Boat Show (NBS2002), India's first international boat show from October 3 – 5-2002 in Kochi
- Organised in association with the Govt. of India, the National Institute of Water Sports, Goa and was partnered by the Southern Naval Command, Cochin Port Trust, Coast Guard, Cochin Shipyard and Kerala State Inland Navigation Corporation Ltd.
- Fifty boat and marine equipment manufacturers and dealers from all over India and more than 250 buyers participated in the show
- India International Boat show India's only Boat Show of its kind and the mega sequel to the National Boat shows 2002

Mystiques of Malabar 2002 – Unveiling North Kerala

- Conceived and launched as the exclusive travel mart to highlight the vast tourism potential of the Malabar region (Northern Kerala), the three-day event termed 'Mystiques of Malabar 2002' was held from August at Kadavu Resort in Kozhikode
- Over 180 delegates from all over India and abroad attended the travel mart

Mystiques of Malabar Travel Mart, 2003

- Mart focusing exclusively on the tourism products of Malabar, a virtually unexplored region

Kerala Gold Fest, 2003

- Month long Gold Shopping Festival organised in association with World Gold Council and Gold Merchants of Kerala

Tourism Destinations

9.14 "Destination" refers to the "community attraction complex". More attention is now bestowed on the development of new Destinations

Priority to tourism projects in Malabar –

9.15 Department of Tourism is giving priority to the Projects in Malabar to tap the vast tourism potential of this virgin area. (Box 9.6)

Box -9.6**Initiatives in Malabar**

- Beautification of Malampuzha Dam
- Development of Kanhirampuzha Dam
- Development of Kozhikode beach
- Development of Houseboat activities including boat terminal at Chettuva
- Development of Backwater based activities at Parassinikkadavu, Nileswaram and Valiyaparamba

9.16 The task of developing Bekal in Kasaragod District as an 'International standard beach destination is entrusted with the Bekal Resorts Development Corporation.

Eco - Tourism

9.17 A recent addition to the lexicon of tourism is ecotourism. Ecotourism is often referred to as "green", "Conservation" and "sustainable". The "Eco" – part of the word implies a tie with ecology – relations between living organism and their environments, thus linking tourism development and the environment. Increasingly, ecotourism is being defined as a nature – oriented travel that promotes conservation and resource protection and also adds to the local economy.

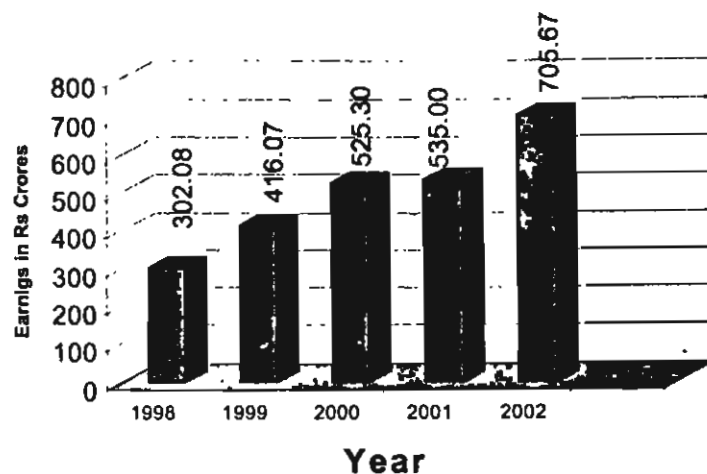
9.18 Thenmala is the major project undertaken under Eco – Tourism. It is a learning experience and probably the first planned ecotourism destination management project in the country.. In coordination with the Forest Department, the infrastructure facilities have been created at Palaruvi. The management of tourists to the falls is done through the Vana Samrakshana Samithy, a committee of local people for the conservation of forest. In the year 2002-03, 65075 tourists visited Thenmala Ecotourism spot and the total earnings was to the tune of Rs. 1806330/-

Human Resource Development

9.19 The Kerala Institute of Tourism & Travel studies (KITTS) is organizing and conducting events, there by providing hands on experience in event management. During the year 2002-03 KITTS offered 14 courses. For example viz. (1) Post Graduate Diploma course in Business Administration – Travel and Tourism (2 years) (ii) Cambridge Career Awards in Travel and Tourism (6 months) (iii) Certificate course in Air fair Ticketing and Travel Agency Management (6 months) (iv) Masseurs Certificate course (6 months), and (v) Certificate course in front office Management (4 months).

9.20 Kerala Institute of Hospitality Management Studies (KIHMS), during the year 2002-03 offered four courses of 12 months duration – food production and patisserie, Food and Beverage service, Accommodation Operation and Front office operations. KIHMS also conducted two training programs, one for the staff of Department of Tourism and the other for developing basic skills

Fig 9.2
EARNINGS FROM TOURISM



9.21 Kerala Tourism Development Corporation conducted training in Spoken English. The employees in the major hotels who come in contact with the guests, were given training in spoken English. They were also taught basic etiquette of wishing and making the guests happy and comfortable. The training is going on at several Hotels.

Recognition

9.22 Tourism development efforts of Kerala are recognized at National and International level. The details of Awards received by Tourism department are given in Box 9.7

Box -9.7

AWARDS

- Pacific Asia Travel Association (PATA) Gold Award for Destination Marketing, 2003.
- PATA Grand Award for Heritage for Fort Kochi, 2002
- Pacific Area Travel Writers Association (PATWA) Award for a Unique Leisure Tourism Destination, 2002
- Best International Exhibitor Award at Destination Sri Lanka Trade Fair, 2003
- Best Debut Exhibitor Award at OTDYKH – LEISURE Trade Fair 2003, Moscow
- "Best Tourism State" award from India Government for 3 consecutive years
- Most Eco-friendly Destination Award from Govt. of India, 2003

INCOME GENERATION

Earnings from Tourism in Kerala

- The earnings from Tourism increased from Rs. 535 crores in 2001 to Rs. 705.67 crores in 2002 ie an increase of 32% (Appendix 9.4)
- Due to the thrust given to tourism by Government in recent times large-scale private investments have been attracted to the State in the tourism sector. It has been estimated that the total investment in tourism in the State for the year 2002 was more than Rs.500 crores. The revenue generated in tourism is assessed as 6.29% of the GDP including multiplier effect.

Employment Generation

9.23 Being a service industry, Tourism cre-

Box -9.8**EMPLOYMENT POTENTIAL**

The travel and tourism industry in Kerala is expected to yield directly 378600 jobs in 2003, or 3 percent of total employment. A total of 788600 jobs (direct and indirect) or 6.2 percent of total employment are expected to be generated across the broader spectrum of the travel and tourism economy.

Over the next ten years Kerala's travel and tourism industry is expected to create 757100 jobs while the broader travel and tourism economy is expected to create 1.4 million new jobs.

ates employment opportunities for local population direct jobs in establishments like hotels, restaurants, tourist shops and travel agencies and also in the transport, handloom and handicraft industries. Direct employment is also generated for certain category of workers like interpreters, guides, tour operators etc. Tourism creates indirect employment opportunities also. (see Box. 9.8)

9.24 Total employment generated in the sector both direct and indirect is about seven lakhs. With the accelerated investment in tourism sector, there should be direct employment opportunities for over ten thousand persons every year.

Projects with government of India Assistance

9.25 Project sanctioned by Government of India during 2002-03 for development of tourism in

Table 9.2
Projects Sanctioned by Government of India in 2002-2003

(Rs. Lakhs)

No.	Name of Project	Amount Sanctioned	Amount Released
	Southern Circuit (1-7)	780.36	780.36
1	Pathway Lighting and signages at Kovalam	30.00	
2	Development of High Mast Lighting and Signages at Varkala	25.00	
3	Restoration of East Fort Heritage area at Thiruvananthapuram	200.00	
4	Refurbishment of Travancore Palace	150.00	
5	Facilitation Centre at Kochi	199.44	
6	Construction of Boat Jetty at Ernakulam	159.92	
7	Pay and Use Toilet at Kumarakom	16.00	
8	Elephants Festival	5.00	4.00
9	National Boat Show at Kochi	15.00	15.00
10	Production of CD-ROMs GIS maps	36.00	18.00
11	Networking of computers in Kerala	25.00	12.50
12	Rural Tourism Kumbalangi	50.00	50.00
	Total	911.36	879.86

INFRASTRUCTURE

Kerala has over the years developed a network of infrastructure in almost all sectors. Now the challenge is its upkeep, upgradation and expansion to cater

Box -10. 1

The rate of infrastructure penetration

Name of State	Rate
1. Maharashtra	2.8
2. Tamilnadu	2.6
3. Punjab	2.5
4. Kerala	2.5
5. Karnataka	2.4

Source: Study by Confederation of Indian Industries, 2003

Box -10. 2

Future trends in Transport

- Improvement in the length, quality and speed of transport networks.
- Increase in productivity and economic efficiency of transport
- Higher frequency and quality of services
- Better control of the air and noise pollution
- Increased mobility for commuters, business and recreational travel
- Improvement of urban transport systems
- Corresponding improvements in rural transport
- Fewer transport constraints to trade
- Reduced transport transit times in general and at initial loading and terminal points
- Better energy efficiency
- Improved safety with fewer accident
- Our vision of India 2020 is of a country with a well - developed network of roads and railways and adequate capacity to handle the growth of demand for transport.

Source: India Vision 2020, Planning Commission

to the changing environment. Kerala stands fourth in the matter of rating of infrastructure penetration arrived at on considering the transport, communication and energy related variables. Maharashtra tops in the rate of infrastructure penetration among Indian States, followed by Tamilnadu, Punjab and Kerala.

Transport Infrastrucutre

10.2 The transport system of the State consists of 1.38 lakh kms of Road, 1148 kms of Railways, 1687 kms of Inland WaterWays and 111 Statute miles of airways and 17 Ports.

SURFACE TRANSPORT

Road and Road Transport Services

10.3 Length of roads in Kerala is 4.2 percent of that in the country. Kerala has a satisfactory road network as compared to other States. Congestion and poor maintenance lead to increasing road accidents. Now a major challenge is upkeep, upgradation and expansion to the standards prescribed by the Indian Road Congress for each category of road. Upgradation and maintenance of 1143 kms of state highways and major district roads have been taken up under the Kerala State Transport Project (KSTP) to develop the roads to national standards. The profile of Kerala roads is given in Box 10.3

10.4 The cost of good quality road construction per km is given in Box 10.4

National Highways

10.5 National Highways form the prime arterial routes and span about 58112 kms through out the country and cater to about 45 percent of the total road transport demand. The National Highway network in Kerala is 1523.954 kms. This is only 2.6 percent of the total National Highways in the country. There are eight National Highways in the State. Details are given in Table 10.1

Box -10. 3

Kerala Road Profile

- Kerala had a wide network of roads comprising 138196.471 kms
- Most roads are narrow, poorly developed and inadequately maintained
- Road width is insufficient to accommodate present traffic volume and future growth
- Kerala's villages are large (average population 50000) and 'hundred percent road connectivity' does not mean the same here as in other states

10.6 The length of National Highways in the State remained static during 2002-03. Also, except for im-

Box -10. 4

Cost of good quality road construction

A tarred surface alone will not make a good road. A good road should be scientifically designed with footpaths, signs for road users and tracks for cycles as well as slow and fast moving vehicles etc. Current estimates show that the cost of a four lane highway works out to Rs. 4.5 crore

provements of major sections of serial numbers 2 and 3 above, most of the so-called National Highways remain un-upgraded. In particular, the Thiruvananthapuram- Kaliyikkavila portion of NH 47 is almost like a road in the heart of a city.

Road Network

10.7 On the road front, traffic has been growing at a rate of 10 to 11 percent every year, resulting in excessive pressure on the roads in the State. Total road length in Kerala during 2002-03, increased to 138196 kms from 125835 kms in the previous year, registering an increase of 9.82 percent. The roads maintained by Panchayats increased by 3.73 percent during 2002-03. The road density in Kerala is 3.56 kms per sq.kms, which is far above the all India average of 0.91 km and is a reflection of the unique settlement patterns in the

Table 10.1

Sl. No	Name of National Highway	Length (km)
1	NH17- Thalappady - Edappaly	420.777
2	NH 47- Salem Walavar - Kaliyikkavila	416.800
3	NH 47 A - Kundannor junction- Wellington Island	5.900
4	NH 49 Kochin - Bodimettu	167.593
5	NH. 208 Kollam - Aryankavu	81.280
6	N H 122 Kozhikode - Kollegal	117.000
7	NH. 213 Kozhikode - Palakkad	125.304
8	NH 220 Kollam - Theni	189.300
Total		1523.954

State. In relation to population, for every one lakh population in Kerala, there are 434 kms of road against a corresponding value of 299 kms at national level. The length of roads maintained by different agencies is given in Table 10.2.

10.8 Out of the total road length of 95515.888 kms under Panchayats, 58465.967 kms (61.21%) are gravelled and 24330.108 km (25.47%) are black topped. Of the 14 districts in the State, Kottayam district has the major share of PWD roads with a length of 2173.427 kms (10.12%) as on 3/2003. Wayanad district has lowest share with 515.897 kms. (2.4%). The major development indicators of Transport and Communication sector

Table 10.2
Agency-wise Distribution of Road Length

Name of Department	Length (km)	Percentage
Panchayat	95515.888	69.12
PWD (Roads & Bridges)	21467.492	15.53
Municipalities	7696.769	5.57
Corporation	5853.281	4.24
Forest	3770.740	2.73
Irrigation	1929.875	1.40
PWD (NH)	1523.954	1.10
Others (Railway, KSEB)	438.472	0.31
Total	138196.471	100

in the State since 1998 are given in Appendix 10.1. Details of district - wise, category - wise and surface wise length of road maintained by PWD (R&B) as on 31.3.2003 are given in Appendices 10.2 and 10.3.

10.9 During 2002-03, 157.299 kms of village roads were transferred to the local governments. As on 3/2003, there were 2024 bridges and 47605 culverts on PWD roads. Of them, 182 bridges need reconstruction/renovation and 1654 culverts are not in safe condition. The district -wise and surface wise length of road and details of bridges and culverts on different categories of road maintained by PWD as on 31.03.2003 are given in Appendices 10.4 to 10.6.

10.10 The peculiarities of roads of Kerala and issues thereon are given in Box 10.5

10.11 The maintenance and repair activities on State Highways and major District Roads are being done under the following four sub heads, viz:

- Ordinary repairs (OR)
- Periodical repairs (PR)

Table 10.3

Category-wise (normal, urban, hilly) length of road maintained by PWD (R&B)

Category	State Highways (kms)	Majordistrict Roads (kms)
Normal(450-1500CVD)	1430	12908
Urban(>1500 CVD)	642	3165
Hilly	782	991
Total	2854*	17064*

*excluding the length of road taken up under KSTP
CVD : commercial vehicles per day

- Flood damage repairs (FDR)
- Special repairs (SR)

Kerala State Transport Project (KSTP)

10.12 KSTP is a World Bank assisted project being implemented in the State taking into account the environmental problems, social aspects and Performance Based Maintenance Contracting. The performance - based management and maintenance contract approach was conceived to provide cost-effective solution to the growing cost of road maintenance resulting from the

Box -10. 5

- Two monsoons covering nearly eight months
- High intensity and density of population
- Habitats and economic activities on road side
- Non-availability of barren land an high cost of land acquisition for new roads and bye passes

Issues of maintenance of roads

- Deterioration of roads is faster due to:
- Heavy seasonal rainfall (average 3000 mm/year)
- Insufficient pavement structure
- High intensity of traffic and overloaded vehicles
- Inadequate drainage
- Heavy ribbon development
- Raising of adjacent land

Why roads are below standard

- Most of the roads are evolved roads
- Not designed as per standards
- Increased traffic intensity

Box -10. 6

Maintenance and repair activities of roads

Ordinary repairs :

Ordinary repair is done annually in 80 percent of the road length of normal, urban and hilly roads in State Highways and major District Roads

Periodical repairs:

Periodical repair is done in 20 percent of the road length of normal, urban and hilly roads in State Highways and Major District Roads

Flood damage repairs:

15% of the maintenance cost of (O R + P R) is taken for F.D.R in normal and urban areas and 20 percent for hilly areas of State Highways and Major District Roads

Special repairs

15 percent of the, maintenance cost (O R + P R) is also allowed for special repairs in normal and urban areas and 20 percent in hilly areas

aging of the system. The main characteristics of the performance – based management and maintenance contract are that it is outcome based, long-term (five years or more) lumpsum contract.

10.13 Box 10.8 shows the KSTP in a nutshell.

Construction of Railway overbridges and other Bridges

10.14 Roads and Bridges Development Corporation is acting as a nodal Corporation/Agency for execut-

Box -10. 7

Performance-Based Management and Maintenance Contract

The outcome-based performance-specified contract allows the contractor a great deal of flexibility in method of work accomplishment, including planning, prioritisation and execution of the maintenance itself, but requires specific measurable outcomes based on performance targets. These targets specify a level of service designed to ensure that all maintainable assets are kept at or above minimum acceptable performance levels. Prior to the start of the contract, a baseline condition is established to measure the performance of the contract. All future assessments will be compared to the standard. The agreement between the client and the contractor establishes that the contractor is responsible for all work, labour, materials, services and equipment necessary to meet the asset specific outcome and performance targets specified in the agreement. This concept has been conceived as lumpsum contract with limited change orders for the duration of the contract. Payments are made in monthly instalments based on an annual fixed fee. The contractor has limited opportunities to request change orders. The benefits of the contract are:

- A lumpsum contract insulates PWD from the escalating costs of maintaining an aging road network
- Because the contract ensures that the roads under contract will be well maintained, PWD can focus its remaining maintenance resources on other roads.
- This new type of contracts provides opportunities for attracting qualified contractors to the local market.

Box -10. 8

KERALA STATE TRANSPORT PROJECT (KSTP)

Commencement of the Project	: 5.06.2002
Expected date of completion of the Project	: 31.12.2007
Project Cost	
i) IBRD Loan Crore	: Rs.1236.75
ii) GOK Share	: Rs.395.85
Total	:Rs. 1632.85
Bank Finance : Stateshare	: 70:30
Financial achievement as on 31.03.2003	: Rs.67.72 Crore
Physical Targets	
(i) Upgradation	: 584 km
(ii) Heavy maintenance	: 993 km
(iii) Performance linked maintenance	: 150 km
(iv) Upgradation of Inland Canal	: 93 km
Physical Achievement as on 31.03.2003	
(i) Agreement for phase I Upgradation executed	
(ii) Maintenance work started and completed – 145 km	
(iii) Three Consultancy contracts awarded for supervision, upgradation and maintenance work.	
(iv) Land acquisition and utility shifting work started.	
(v) NGO Consultancy appointed	
(vi) Balck spot	

ing railway overbridges in the State apart from other major district roads.
North South Express way
 10.15 With a view to addressing the major issues and problems confronted with the road and road transport sector, preliminary studies for a High Speed Corridor

Box -10. 9

Major activities and initiatives of Roads and Bridges Development Corporation of Kerala (RBDCK)

Railway overbridges

- Completed two railway overbridges namely, Irumbanam in Kochi and Vellayil in Calicut and opened for traffic
- Tended construction of 21 railway overbridges
- River Bridge
- Pattambi-Perumthalmanna State highway (2.3 crore)
- Road Projects
- Cochin Airport-Seaport highway (30 km) costing Rs. 200 crore in three phases – first phase completed

extending over 506.5 km connecting Kasaragod and Thiruvananthapuram are over. The techno-economic feasibility study has been completed by Lea Associates South Asia Private Limited.

Research and Development in Road Sector

10.16 Research and Development activities have an important role to play in meeting the challenges of modernizing the road system, technology upgradation and finding cost effective solutions to infrastructure problems in general. Design, Research, Investigation and Quality Control Board (DRIQ Board), Kerala Highway Research Institute (KHRI) and National Transportation, Planning and Research Centre (NATPAC) are engaged in research and development of the road sector. The DRIQ Board consists of the following three Divisions

- Design
- Research and Project Preparation Unit
- Quality Control and Computer Cell

10.17 The project preparation unit came into existence in June 2002. The main function of the unit is to make project reports including preparation of detailed design and cost estimation.

Box -10. 10

Activities related to design of DRIQ Board in 2002-03

- Design of 10 buildings
- Design of 31 bridges

10.18 The Kerala Highway Research Institute conducts laboratory tests and field testing of samples of flexible pavements, building materials, concrete, soil, bricks, tiles, steel etc. It carries out design of mix for concrete as well as bitumen for various engineering applications, undertakes applied research work in the traffic and transportation engineering, geotextiles, bitumen concrete structures etc. The Institute has established a Training Centre for providing training to Engineers in service on quality control of works, mix design, project preparation etc.

10.19 NATPAC has been brought under the umbrella of newly formed Kerala State Council for Science, Technology & Environment (KSCSTE). The Centre offers technical advice to traffic and transportation

Box -10. 11

Activities of KHRI during 2002-03 & 2003-04 (up to 8/2003)

- Testing of various materials : 907 sets
- Research study on soil exploration, soil testing, quality evaluation work, silt content etc. : 154 nos.
- Training programme : 1 (15 trainees)

problem of different regions. Major areas of activity of NATPAC are:

- Undertaking sponsored research projects
- Extension activities in the field of traffic engineering and management
- Highway Engineering
- Public transport systems
- Alternate options for transport system
- Transport Energy
- Inland Water transport
- Tourism Development Planning
- Rural road planning
- Surveying for preparation of techno-economic studies
- Accident studies and road safety
- Preparation of detailed project reports (DPR) for infrastructure development
- Regional Transportation
- Urban Transportation

Projects involving multi-model systems of transportation covering road, rail, water, seaport and airport.

New Outlook in the Road Sector

10.20 Even though Kerala is comparatively better placed than most other states as regards road length, the condition of many of these roads is very poor. There-

Box -10. 12

Activities of NATPAC during 2002-03

- Research studies :10
- Sponsored Research :25

fore the main emphasis under road development in Kerala has been on improvement and upgradation of existing roads rather than on construction of new roads. The investment needs in the road sector are of magnitudes that are beyond the resources available with Government. Final bill to the tune of Rs. 188.40 crore in respect of road works are pending payment with the PWD (R&B). Therefore there is an imperative need to motivate the private/ and other non-governmental agencies/corporate sector to participate in road construction and upgradation especially in the projects like express ways and selected highways. A comprehensive road policy will have to be brought out and implemented to bridge the gap. Even though road network in Kerala has the distinction of the achieving connectivity to all the villages in Kerala, connectivity has not been established in all the habitats, which should be the future direction of the road development in the State. The traffic density in National Highways and State Highways has already surpassed the capacity of two lanes (10000 PCUs) ie. the traffic demand in most of the urban roads has reached the level of 30000 – 40000 PCUs thereby making their widening to four and six lanes, especially in the high density corridors, a matter of urgent necessity.

Road Transport Services

10.21 Road transport is the dominant mode of transport for moving goods and passenger traffic. The transport sector bears a close and complex relationship with all other sectors of the economy and transport improvements stimulate economic development. The sector has grown significantly during the last 50 years. Road trans-

port act as the feeder service to the rail traffic, air traffic and Port & Harbours. The vehicle density in the State is very high compared to many other States in India. Road Transport industry is dominated by private service providers. The road freight services are wholly owned and operated by the private sector.

10.22 Kerala State Road Transport Corporation (KSRTC) is the largest single public sector undertaking, which carries out transport operation in the State. The State owned KSRTC has only 14.71 percent of the total number of stage carriages in the State. The passenger transport operation in Kerala is mainly carried out by private operators. There are 29249 buses in the State as on 3/2003 including private buses. The Corporation commissioned 800 buses during 2002-03 for replacement of old buses. As on 31-8-2003 it possessed 4174 buses. Out of this 394 buses (9.44%) are aged above ten years. The age-wise details of KSRTC buses are given in Appendix.1015. The number of schedules operated as on 3/2003 has increased from 3576 to 3651 in 2002-03. The corporation operated its bus services to a length of 4124.44 lakh kms as against 4148.15 lakh kms in the previous year with a marginal decrease of 0.59 percent. About 11306.79 lakh passengers travelled in the KSRTC buses during 2002-03 as against 11087.16 lakh passengers in the previous year. The average km run by a bus in a day was 365 km during the period under review. The major indicators showing operational efficiency of KSRTC are given in Appendix.10.16. The major issues and problems of KSRTC are given in Box 10.13

10.23 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

Box -10. 13

Issues/Problems of KSRTC

- High staff vehicle ratio
- Ageing fleet
- Operation in uneconomic routes
- Operating losses
- Fair concessions not fully reimbursed
- Accumulated loss of 900 crores
- Burden of payment of pension to staff

Appendix 10.17. KSRTC enhanced the fares with effect from 1.10.2001 by 25 percent over the previous rate. Additional income to the tune of about Rs. 6 crore per month has been generated due to this enhancement. The fares charged by KSRTC ranged from 35 paise per km in ordinary and city buses and 75 paise per km

in super deluxe service. The fare structure of the KSRTC is given in Appendix.10.18.

10.24 The turn round strategy being adopted in KSRTC is given in Box 10.15

Box -10. 14

New Initiatives of KSRTC at a glance

- 800 new buses has been put into operation by availing Rs. 100 cr. from HUDCO
- Better quality pre-cured tyre retreading has been introduced replacing the traditional method of tyre retreading in regional workshops at Edappal, Thiruvananthapuram Central Workshop etc.
- Two Volvo luxury air-conditioned bus services have been put into operation on Thiruvananthapuram-Palakkad route and Thiruvananthapuram – Kozhikode route with cell phone facilities
- Decided to introduce Intelligent Transport system/ Global Positioning System in KSRTC for ascertaining location of bus passes, average speed, distance travelled, seat availability, capacity utilisation, trip information, bus timings, expected time of arrival, late running of buses etc.
- Three Lightning Express Services intended for the long distance travelers has been introduced in Thiruvananthapuram – Palakkad, Thiruvananthapuram – Thodupuzha and Thiruvananthapuram – Kothamangalam routes
- Medical shops working 24 hours (round the clock) have been opened in three major bus depots viz. Thiruvananthapuram Central, Palakkad and Kottarakara
- Waiting rooms attached to the bus stations have been constructed with assistance and collaboration of Rotary Club, I.O.C, M.P's fund etc. in Thiruvananthapuram Central, Ernakulam, Kottarakara, Thrissur, Palakkad, Cherthala & Alappuzha bus stations
- For the first time in the public transport market, KSRTC has introduced thirty seater mini bus in the State during 2002-03.
- Introduced electronic ticketing machine in Kollam and Guruvayoor bus stations
- Cellphone facilities introduced in a public sector transport company for the first time in India
- OTS with oil companies resulting in discount on fuel
- Adalat for MACT claims

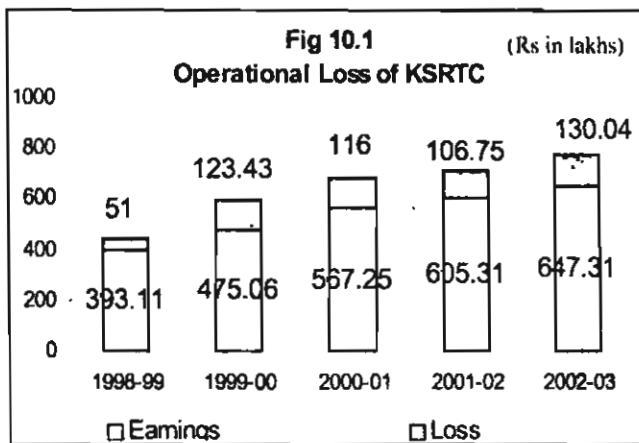
Box -10. 15

Turn round Strategy of KSRTC

- Reduction of dead mileage
- Stoppage of uneconomic schedules
- Management information system
- Replacement of ageing fleet
- Reduction of staff - vehicle ratio from 8 to 6.3
- Contributory pension scheme to all new recruits
- Organisational restructuring as per 'CRISIL' study
- Rationalisation of manpower and introduction of electronic ticket machines

10.25 Fifty-five schedules were cancelled during the year 2002-03 due to poor earnings. The major performance indicators (operational ratios) of KSRTC such as average kms run per day per bus, average route length, average earnings per passenger, average earnings per vehicle on road per day, earning per km of buses operated etc. during the year 2002-03 are shown in Appendix.10.19. The total number of employees of the Corporation decreased from 25954 to 25564 in 2002-03. The Corporation again reduced the number of staff to 23482 by 31.8.2003. Currently KSRTC has total staff strength of 23482 of which 20768 are traffic and maintenance personnel. The availability of staff per operable bus was higher at 7.15. The category-wise staff position of KSRTC is given in Appendix. 10.20. The present earnings are just enough to meet only the personnel and fuel cost of the Corporation. The operating deficit of KSRTC since 1998-99 is given in Fig. 10.1

10.26 The loss incurred by KSRTC was brought down from Rs. 15 crores to Rs 11 crores per month during



the period 2001 to 2003. Most of the State road Transport undertakings face financial constraints. Operational losses are also partly attributable to operations of uneconomic routes for several reasons. In the year 2003, Kerala registered 38967 accidents (107 per day) in which 2839 persons were killed (8 per day) and 49450 persons were injured. Out of this KSRTC buses were involved in 1174 accidents (3 per day) whereas

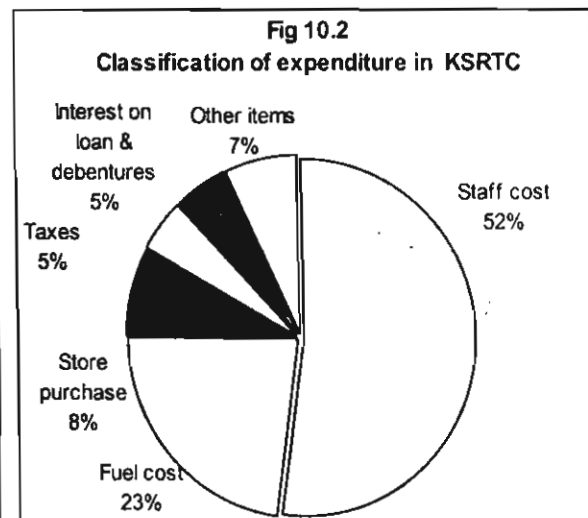
private buses were involved in 4681 accidents. The breakdown level of KSRTC is also very high. The daily income and earnings of KSRTC is given in Box 10.16

Box -10. 16

Earnings of KSRTC

□ KSRTC's daily income from its buses	: Rs. 1.78 crore
□ Earnings per kilometer for determining breakeven point	:Rs. 17.57
□ Present earnings of KSRTC per km	: Rs 16.17
□ Average earnings per bus per day	: Rs 5382
□ Pension commitment per annum	: Rs 84 crore
□ Other pensionary benefit per annum	: Rs 60 crore
□ Total outstanding liabilities of the KSRTC	: Rs 508 crore

10.27 How a rupee spent by KSRTC for meeting various items of expenditure is shown in Fig. 10.2



10.28 The major financial commitment of K S R T C is its payment towards pension. Pension and other pensionary benefits work out to Rs. 84 crores and Rs. 60 crores per annum respectively. Total outstanding liabilities of K S R T C as on 3/2003 is Rs. 508 crores. The Corporation continued to meet its social commitment by operating uneconomic routes as well as giving concessions to students, handicapped persons etc. The details are given in Table 10.4.

Table 10.4
Concessions to different categories of persons in KSRTC buses

Category	Amount (Rs crores) In a year
Students	13.68
Others	56.00
Total	69.68

10.29 The efficiency and productivity of the KSRTC mainly depend on the age and effective utilisation of its fleet and staff productivity. The State Planning Board conducted a study during 2002 to explore the possibilities of improving the performance of the KSRTC. The recommendations were examined by Government and it was decided to implement almost all suggestions in a phased manner.

Box -10. 17

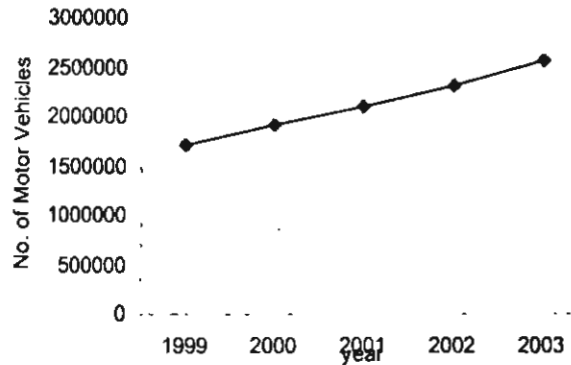
The reform measures initiated by KSRTC

- Replaced 800 old buses by availing loan from HUDCO/KTDFC
- Cancellation of loss making trips / schedules (trips fetching below Rs. 10/- per km) Earning per km for determining breakdown point is Rs. 17.57
- Computerisation of stores inventory
- Ticketing machines
- Modernisation of workshops
- Introduction of Mini Bus
- Construction of shopping complex at Kozhikode, Thiruvananthapuram, Kottayam, Ankanmally, Munnar bus stations with private participation
- Upgradation of bus stations with private participation
- Reduction of dead mileage
- Stoppage of uneconomic schedules
- Management information system
- Replacement of ageing fleet
- Reduction of staff - vehicle ratio from 8 to 6.3
- Contributory pension scheme to all new recruits
- Organisational restructuring as per 'CRISIL' study
- Rationalisation of manpower and introduction of electronic ticket machines

Motor Vehicle Population

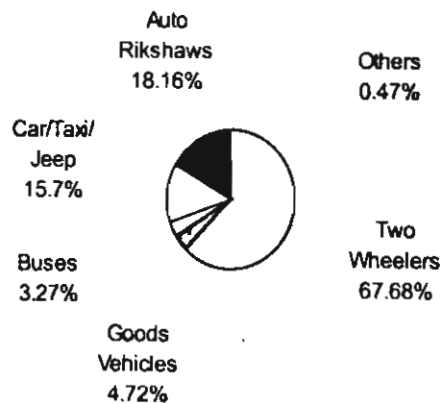
10.30 The vehicle population in Kerala is growing at the rate of 10 percent per annum. The growth of motor vehicles since 1993 is shown in Fig. 10.3

Fig 10.3
Growth of Motor Vehicles in Kerala since 1999



10.31 The Motor Vehicles Department registers motor vehicles and is responsible for the enforcement of Motor Vehicle Act and Rules in the State. The number of motor vehicles having valid registration as on 3/2003 stood at 2552171 as against 2315372 in the previous year, of which 236819 vehicles are newly registered during 2002-03. Personal vehicles recorded a faster growth. The percentage of category-wise motor vehicles newly registered during 2002-03 is shown in Fig 10.4

Fig 10.4 Motor Vehicles Registered in Kerala during 2002-03 (Category-wise)



10.32 The district-wise details of vehicles newly registered, vehicles with valid registration and growth of vehicles in Kerala are given in Appendices.8.7 and 8.8. The growth in road length in a year does not match the growth of motor vehicles. An analysis of growth of

motor vehicles and road development in the State during the last five years reveals that vehicle population has increased from 1.51 lakh in 1998 to 25.52 lakh in 2003, while only a marginal increase of 1.36 percent has been achieved in the case of augmentation of road length during the same period. About 649 vehicles are newly added to the vehicle population every day. Of this 439 are two wheelers. The details of category-wise growth of motor vehicle in Kerala since 1998 are given in the appendix. The highest vehicle population was recorded in Ernakulam district and 446959 (17.51%) followed by Thiruvananthapuram district with 350455 (13.73%) vehicles. Wayanad has the lowest number of vehicles ie. 33550 (1.31%). The fast growth of road transport has been associated with a steep rise in the number of accidents.

Initiatives for improved service to public

10.33 New initiatives of motor vehicle department during 2002-03 for delivering effective services to people are given in Box 10.18.

Box -10. 18

New Initiatives and activities of M.V Department during 2002-03

- Introduction of e-governance
- All the services of Regional Transport office, Thiruvananthapuram are provided through computer facilities which renders transparency in the activities of the department
- Introduction of 'CALL CENTRES' at Ernakulam and Kozhikode
- Initiated steps for the introduction of 'FAST' (Fully Automated Services of Transport Department)
- Road Safety Authority Bill has been prepared with a view to taking up various road safety measures
- A Road safety cell has been formed for augmenting the efforts to improve road safety measures
- Five mobile enforcement squads were set up
- Initiated steps for establishment of a Driver Training Institute

Road Accidents

10.34 According to the latest report of Crime Records Bureau during 2002-03, Kerala recorded the highest number of road accidents in the country after

Maharashtra, Gujarat and Tamilnadu. Kerala appears to have a dubious honour of being one of the most accident-prone States in India. The incidents of road accidents in Kerala is quite high and the state ranks fourth among the states in the number of accidents. Kerala has 6567 vehicle per 100 sq. km of area and 8016 vehicles per lakh population. The corresponding all India figure is 1673 and 5489. Some facts about every day occurrence of road accidents in Kerala during 2002-03 are given in Box 10.19

Box -10. 19

Every day accident statistics in Kerala during 2002-03

- 107 accidents
- 143 persons either killed or injured
- 34 accidents involved two wheelers
- Average 2 deaths involving two wheelers
- 30 accidents on National Highways
- 16 accidents on State Highways
- 8 accidents in Kochi Corporation
- 5 accidents in Thiruvananthapuram Corporation
- 5 accidents in the Kozhikode Corporation

10.35 It is necessary to understand the loss due to road accidents. More than 4 lakh accidents take place on Indian roads every year resulting in death of over 75,000 and injuries 4.5 lakh persons. Kerala State has nearly three percent of the country's population, but it has recorded nearly 12 percent of the country's road accidents. The State has recorded the highest accident rate of 15 accidents per 1000 vehicles as against the national average of 7.27 accidents per 1000 vehicles. The accident rate in Kerala is more than twice that of all India average. Everyday nearly 205 persons are killed and nearly 1233 persons are injured in road accidents in India. Road accidents registered an increase of 1.6 percent during 2002-03 over the previous year. The State recorded a total of 38967 accidents causing death of 2839 persons and injuries to 49450 persons during 2002-03. About 28 percent of accidents were reported on national highways, which accounts for less than three percent of total road length in the State. District-wise number of road accident in Kerala and number of persons injured/killed during 2002-03 are given in Ap-

pendix.10.11. Driver's fault was identified as the most common cause of accidents in 98.58 percent of the traffic mishaps. Thirty two percent of the total vehicles involved in accidents are the two wheelers followed by Car/Jeep (19 %) and Autorikshaws (18%). About 68.68 percent of the accidents occurred in day - time. Other causes such as mechanical defects, poor road conditions, fault of pedestrians, bad weather conditions contribute hardly two percent of the accident. The vehicle - wise details of accidents by primary causes, district-wise and type-wise details of motor vehicles involved in road accidents and accidents by time of day during 2002-03 are given in Appendices 10.12 and 10.13. The number of road accidents was highest in Ernakulam district (18.10%) and lowest in Wayanad district (1.35%). The percentage of category - wise and vehicle - wise accidents in Kerala as on 3/2003 is shown in Fig. 10.5.

10.36 The trend of road accidents in Kerala since 1998 is shown in Fig. 10.6

10.37 The State government has decided to bring in legislation to create a Road safety Authority with sufficient power.

Transport Finance

10.38 Kerala Transport Development Finance Corporation (KTDFC) renders financial services for development of transport services sector. Major objectives of the Corporation are.

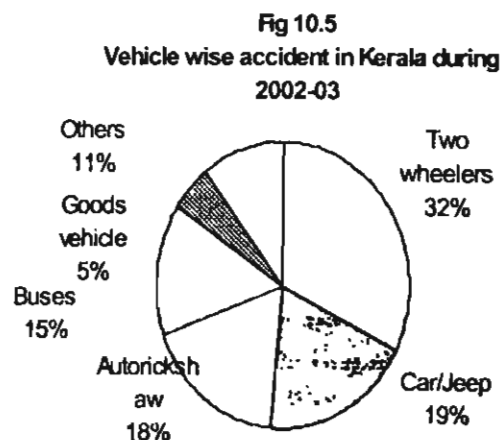
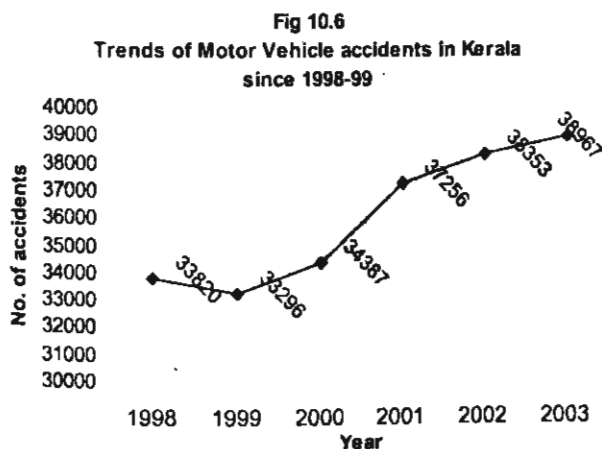
- Providing finance for purchase

- of transport vehicles
- Providing finance for procurement of workshops & machinery
- Providing loan to KSRTC and other Government/Quasi - Government organizations for purchase of vehicles
- Providing loan to individuals for purchase of new vehicles
- Mobilising deposits from public

10.39 During 2002-03 Rs. 23.20 crore was mobilised by way of fixed deposits. The details of loan

Table 10.5
Details of loans sanctioned to various Agencies/Institutions

Name of agency/Institutions	Loan Granted During 2002-03 (rs. Lakhs)	Total Amount of Loan Granted till 3/2003 (Rs. Lakhs)
1. KSRTC	4281.91	23294.74
2. KTDC	-	85.50
3. KSFDC	-	25.00
4. Horti Corporation	-	5.80
5. KSAVRC	-	7.38
6. Aluva Municipality	-	18.55
7. TBGRI	-	10.96
8. Small Road Training Operators(SRTO)	3798.81	4453.46
9. Loan for purchase of new vehicles under general loan scheme	633.13	633.13
10. Loan for purchase of new vehicles under general loan scheme	3361.33	3361.33



sanctioned to various Agencies, Organisations and individuals are given in Table 10.5.

Railways

10.40 The Indian Railways provides one of the largest railway systems in the world with a network of about 63028 route kms and it is the principal mode of transport for long haul bulk freight movement, long distance passenger traffic and for mass rapid transit in sub - urban areas. It is the second largest network in the world under a single management. It provides one of the cheapest means of transport in India. The railway network runs multi-gauge operations extending over 1148 route km in Kerala of which 94.14 kms is meter gauge.

10.41 Road and Rail are complementary to one another. Kerala depends heavily on railways for the import of various items from other parts of the country. Railways also have an advantage of being less energy intensive and more environment friendly system of transport. The pressure on the road system in Kerala is extremely heavy which necessitates the development

of a multi modal transport system in the State. The railway operations in the State are controlled by the Thiruvananthapuram, Palghat and Madurai Divisions of Southern Railway. The entire railway route length of the State is spread along 13 railway routes of which highest number of railway stations (92) is in Thiruvananthapuram – Walayar route. The route length has remained stagnant in the State for a number of years.

10.42 Thiruvananthapuram division ranks second in number of passengers carried and passenger earnings. Forty-seven Express/Mail trains and 59 number of passenger trains are being operated by the Division to carry 1.65 lakh passengers daily. Thiruvananthapuram Division carried 1217 lakh passengers during 2002-03 against 1214 lakh passengers in the previous year. The total revenue receipts from passengers in 2002-03 amounted to Rs. 22792.00 lakh in Thiruvananthapuram division as against 19312 lakh in the previous year (18.02% increase). The goods traffic has increased during 2002-03 from 36.3 lakh tonnes to 40.71 lakh tonnes (10.8% decreased) in this division. Receipts

Box -10. 20

New initiatives of the Railways in the State.

- 12 new trains introduced during 2002-03
- Inter-city train services called Jana Shatabdi introduced in the year 2002-03
- Thruvananthapuram division, being a passenger oriented railway division, has accorded the highest priority to the quality of services provided to the rail users and an amount of Rs. 230.00 lakh has been spent for passenger amenity works.
- 95 percent of total reservation are covered under the purview of computerised reservation in Thiruvananthapuram division
- Inter-active passenger reservation system to know status and availability of reservation through telephone is now available at six stations.
- Computerised self printing ticket machines for issue of tickets are provided at 10 centers
- The work connected with the doubling of track between Ernakulam and Mulanthuruthi is in progress
- The doubling project between Kayamkulam – Haripad and Kayamkulam – Chengannur has been commenced
- The railway electrification work viz. Ernakulam to Kottayam as well as via Aappuzha is in progress and is expected to complete the work by December 2004.
- A second entry passenger terminal building at the Karshaka roadside of Ernakulam junction is in progress.
- It is proposed to introduce National Train Enquiry System/Automatic Vehicle Location System which will indicate the current running status of each train at Thiruvananthapuram and Ernakulam shortly.
- The work of gauge conversion between Kollam and Punalur is also in progress

from goods traffic decreased to Rs. 16520 lakh in 2002-03 as against Rs. 20966 lakh in the previous year (21.21% decrease).

10.43 The railways is working towards setting up of Anti-Collision Devices across all trains to pickup signals from Global Positioning System which submit the data on track, the movement of locomotive apart from providing online information on real time basis, on wagon loading trans-

portation and unloading. The Anti-Collision Device (ACD) is based on the Global Positioning System whereby a train is automatically brought to a halt, if the track ahead is not clear. The train starts braking 3 km ahead of the blockage.

**WATER TRANSPORT
PORT SECTOR**

10.44 Ports have become focal points of convergence for several competing business interests. There are more than 2000 ports existing around

**Table 10.6
Top World Ports**

TOTAL CARGO VOLUME- 2000				CONTAINER TRAFFIC - 2001			
Rank	Port	Country	000 Tonnes	Rank	Port	Country	000 TEUs
1	Singapore	Singapore	325,591	1	Hong Kong	China	18,000
2	Rotterdam	Netherlands	319,969	2	Singapore	Singapore	15,520
3	South Louisiana	U.S.A	197,680	3	Busan	South Korea	7,907
4	Shanghai	China	186,287	4	Kaohsiung	Taiwan	7,540
5	Hong Kong	China	174,642	5	Shanghai	China	6,334
6	Houston	U.S.A	173,770	6	Rotterdam	Netherlands	5,945
7	Chiba	Japan	169,043	7	Los Angeles	U.S.A	5,184
8	Nagoya	Japan	153,370	8	Shezhen	China	5,076
9	Ulsan	South Korea	151,067	9	Hamburg	Germany	4,689
10	Kwangyang	South Korea	139,476	10	Long Beach	U.S.A	4,463
11	Antwerp	Belgium	130,531	11	Antwerp	Belgium	4,218
12	New York/New Jersey	U.S.A	125,885	12	Port Kiang	Malaysia	3,700
13	Inchon	South Korea	120,398	13	Dubai	U.A.E	3,502
14	Busan	South Korea	117,229	14	New York	U.S.A	3,180
15	Yokohama	Japan	116,994	15	Bremerhaven	Great Britain	2,896
16	Kaohsiung	Taiwan	115,287	16	Felixtowe	Great Britain	2,800
17	Guangzhou	China	101,521	17	Manila	Philippines	2,796
18	Quinhuangdao	China	97,430	18	Tokyo	Japan	2,770
19	Ningbo	China	96,601	19	Quingdao	China	2,640
20	Marseilles	France	94,097	20	Gioia Tauro	Italy	2,488
21	Osaka	Japan	92,948	21	Yokohama	Japan	2,400
22	Richards Bay	South Africa	91,519	22	Laem Chabang	Thailand	2,337
23	Kitakyushu	Japan	87,346	23	Tanjung Priok	Indonesia	2,222
24	Quingdao	China	86,360	24	Algeciras	Spain	2,152
25	Hamburg	Germany	85,863	25	Kobe	Japan	2,100
26	Dalian	China	85,053	26	Tanjung Pelepas	Indonesia	2,050
27	Kobe	Japan	84,640	27	Nagoya	Japan	1,890
28	Tokyo	Japan	84,257	28	San Juan	U.S.A	1,830
29	New Orleans	U.S.A	82,400	29	Keelung	Taiwan	1,816
30	Dampier	Australia	81,446	30	Colombo	Sri Lanka	1,727

Source: Containerization International, March 2002

the world. List of major ports in the world is given in Table 10.6.

10.45 More than 80 per cent of trade with origins and destinations in developing countries, in tonnage, is through seas. There was an average annual growth rate of three per cent in port traffic since 1990s, but it declined for the first time in the last 15 years in the year 2001. The business environment in the International Maritime Trade is rapidly changing. Several International Ports like Hongkong, Singapore, Port Klang, Colombo etc. have adapted themselves to international transshipment of container trade. The major reason for allowing private investments is the insufficiency of public investment on ports to meet the growing efficiency related demand of the port users.

10.46 India has around 6000 km of peninsular coastline, strategically located on the crucial East - West trade routes which links Europe and Far East. In India there are 12 major ports and 185 minor/intermediate ports. The state wise distribution of ports is given in Table 2. Four major ports, Mumbai, Calcutta, Chennai and Mormugao are more than 100 years old. Cochin and Visakhapatnam ports have celebrated their golden jubilee. The ports of Kandala, Tuticorin, New

Mangalore and Paradip were developed in the post-independent period. The Jawaharlal Nehru port at Nhava Sheva became operational in 1989. The first corporatised port at Ennore was commissioned in February 2001.

Box -10. 21

Major Indian Port Laws

Indian Ports Act 1908	- Applies to all ports including minor and intermediate ports.
Major Port Trusts Act 1963	- Applies to major ports only.

Growth of Indian Ports Sector

10.47 The management and control of all the major ports, other than Ennore, are vested with government of India and governed by Port Trusts where as State government is in control of the minor/intermediate ports.

10.48 Indian Ports Sector witnessed a spectacular growth in the first four decades after independence under the initiatives of planned development. Development of Ports remained exclusively with the Central Government and it became a natural monopoly. The development of port infrastructure is given more importance due to the fact that the ports handle more than 95 per cent of Indian total cargo volume relating to overseas trade. The 12 major ports under the control of Govt. of India employ 80000 workers, out of which Mumbai Port alone accommodates 23000 workers. Following the economic liberalisation, in the nineties, port sector has been opened to private sector investment. The impact of the government policy on privatisation of ports in India has been immediate and quite marked in the container terminal operations segment of the Indian port sector.

10.49 The fundamental forces, which drive the business of ports,

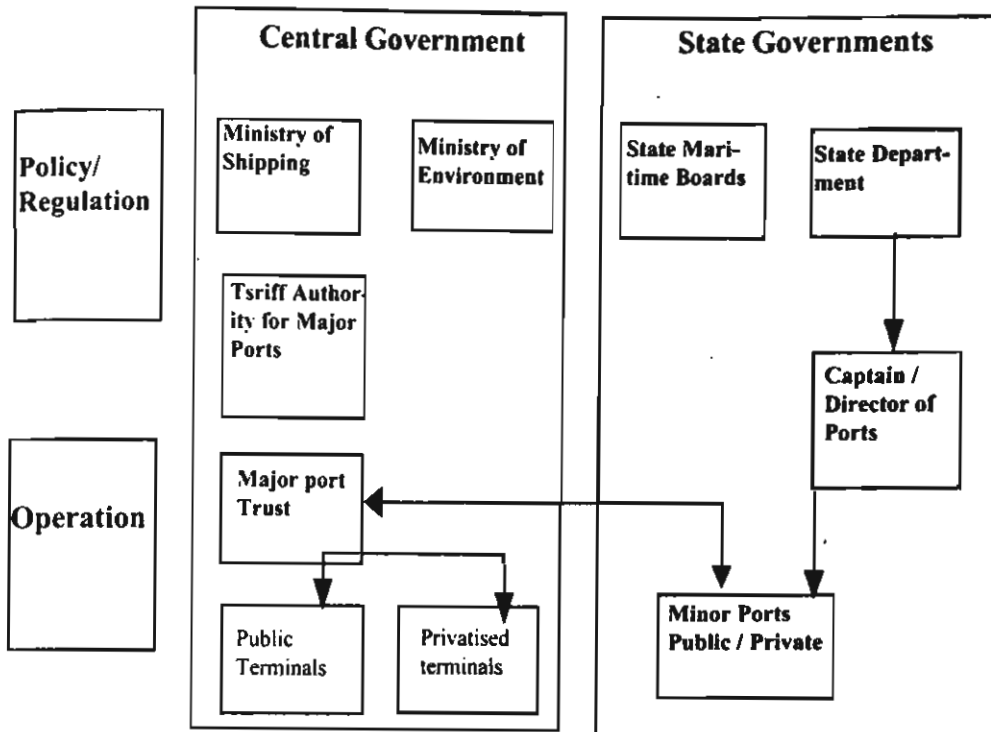
Table 10.7

Major and Minor/Intermediate Ports in India

State/Union Territory	No. Of Major Ports	No. Of Minor/Intermediate Ports	Total no. Of Ports
1	2	3	4
West Coast			
Gujarat	1	40	41
Maharashtra	2	53	55
Goa	1	5	6
Daman & Diu	-	2	2
Karnataka	1	9	10
Kerala	1	13	14
Lakshadweep Islands	-	10	10
East Coast			
Tamil Nadu	3	14	17
Pondicherry	-	1	1
Andhra Pradesh	1	12	13
Orissa	1	2	3
West Bengal	1	1	2
Andaman & Nicobar Islands	-	23	23
Total	12	185	197

Source: Basic Port Statistics of India (2001-02)

Fig 10.7
Institutional Framework for Indian Ports Sector



Source: India Port Report, September 2003.

Box -10. 22

Key Drivers of Port Business

Global Trade

Dramatic increase in containerised mode of cargo delivery

Technology Changes

Rapid changes in cargo handling technology and tools

Deployment of large-sized and faster vessels, requiring deeper drafts and highly efficient mode of cargo discharge to reduce the detention time.

Institutional Dynamics

Regulatory reforms in the port sector have opened up scope for reworking the institutional arrangements. Private sector presence is still at an early stage.

are global trade, technology changes and institutional dynamics. See Box.10.22

10.50 Some of the significant private sector projects in port sector, which have been established in the last few years are given be-

Table 10.8
Privatisation of Container Terminals in India

	Nsict	Tuticorin	Chennai	Visakhapatnam
Sponsor	P&O Ports, Australia	PSA, Singapore(57.5%) and SICAL, India	P&O Ports, Australia and Chettinad Group, India	United Liner Agency (JM Baxi Group) and Dubai Port International
SPV	Nhava Sheva International Container Terminal	PSA SICAL Container Terminal	Chennai Container Terminal Limited	Visakha Container Terminal
Year of commissioning/privatisation	April 1999	December 1999	November, 2001	July 2003
Concession agreement	30-year BOT	30-year lease	30-year BOT	30-year BOT
Royalty-basis	Rs. TEU Increases over the years	Rs. TEU Increases over the years	Fixed percentage of revenue (37.12%)	Rs. TEU
Development undertaken by SPV	Terminal, Backup area, Superstructure	Superstructure. Further development of backup area	Superstructure. Further development of backup area	Superstructure Backup Area
Investment by SPV till date(estimated)	Rs.800 crores	Rs.100 crores	Commitment for USD 100 million in 5 years	Rs.100 crores
Quay length and draft(metres)	600,12.0	370,10.7	890,12.0	449,14.9
Capacity of terminal Traffic (2001-02)	1,200,000 TEUs	200,000 TEUs 213,509 TEUs	400,000 TEUs 344,528 TEUs	200,000 TEUs

Source: India Port Report, September, 2003.

Table 10.9
Dry Bulk Cargo Handled at Indian Ports

Major Ports	1991-92	1997-98	1998-99	1999-00	2000-01	2001-02	Cagr (%)
1	2	3	4	5	6	7	8
Kolkata	0.34	0.11	0.05	0.08	0	0	-
Haldia	4.84	7.42	7.48	6.96	8.69	9.34	6.80
Paradip	5.64	10.27	8.98	9.12	15.54	16.76	11.50
Visakhapatnam	13.26	17.00	17.61	18.61	20.92	20.47	4.40
Ennore	0	0	0	0	0	3.40	-
Chennai	11.30	16.59	16.51	16.99	20.47	16.07	3.60
Tuticorin	3.72	6.31	5.23	4.45	6.34	5.97	4.80
Cochin	0.61	0.60	0.61	0.57	0.66	0.59	-0.30
New Mangalore	6.63	6.91	5.58	6.69	5.54	6.28	-0.50
Mormugao	12.68	19.11	15.5	15.63	17.10	20.14	4.70
Mumbai	0.52	0.88	0.90	0.89	0.66	0.70	3.00
JNPT	1.44	1.54	1.44	0.92	0.52	0.33	-13.70
Kandla	0.68	1.74	1.92	2.35	1.35	1.26	6.40
Total	61.66	88.48	81.81	83.26	97.79	101.31	5.10
Minor Ports	N.A	N.A	N.A	N.A	26.26	32.52	
Total Dry Bulk Cargo	61.66	88.48	81.81	3.26	124.05	133.83	8.10

Table 10.10
Container Traffic at Major Ports (':000 TEUs)

Major Ports	1991-92	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	Cagr
1	2	3	4	5	6	7	8	9
Calcutta	58	133	141	132	147	138	98	5.39%
Haldia	9	9	29	28	28	51	93	26.3%
Paradip	0	0	0	0	0	0	0	-
Visakhapatnam	8	13	13	14	20	20	22	10.65%
Chennai	106	256	293	284	322	352	344	12.49%
Tuticorin	28	89	102	100	137	157	214	22.56%
Cochin	52	112	122	129	130	143	152	11.32%
New Mangalore	2	0	0	0	0	2	4	7.18%
Mormugao	0	3	3	3	4	4	4	-
Mumbai	280	583	601	509	429	321	254	-1%
J.N.P.T	112	423	504	669	889	1190	1573	30.24%
Kandla	28	77	84	64	79	92	126	16.23%
Total	683	1698	1892	1932	2185	2470	2885	15.49%

Source: Indian Ports Association

low:

10.51 The details of dry bulk cargo handled and container traffic at major Ports in India are given in

Table 10.11
Distribution of Cargo in Indian Ports

Cargo	Percentage
1. POL	36
2. Iron Ore	16
3. Fertiliser and raw materials	3
4. Food grains	1
5. Coal	16
6. Vegetable oil	1
7. Other liquids	3
8. Containers & Cargo	13
9. Others	11

Source: Economic survey 2002-03

Table 10.9 and 10.10.

10.52 Category wise Distribution of cargo handled at the various Indian Ports is given in Table 10.11.

Kerala Ports Sector

10.53 Cochin Port is the only major port in Kerala. Three intermediate and 10 minor ports are also there. In addition, four more ports, which have been declared as minor ports, have not started operations.

10.54 The Cochin Refinery has plans to set up Single Bouy Mooring (SBM) facility at the minor port area of Manakkodam to enable them to handle larger crude oil tankers in order to have substantial cost savings. But Cochin Port has opposed this move since it

Box -10. 23

Ports in Kerala

Major Port	: Cochin
Intermediate Ports	: Neendakara, Alappuzha, Beypore
Minor ports	: Vizhinjam, Valiathura, Thankasseri, Munambam, Ponnani, Vadakara, Thalasseri, Kannur, Azhikkal, Kasragod.
Minor Ports yet to start functioning	: Manjeswaram, Neeleswaram, Kayamkulam, Manakkodam.

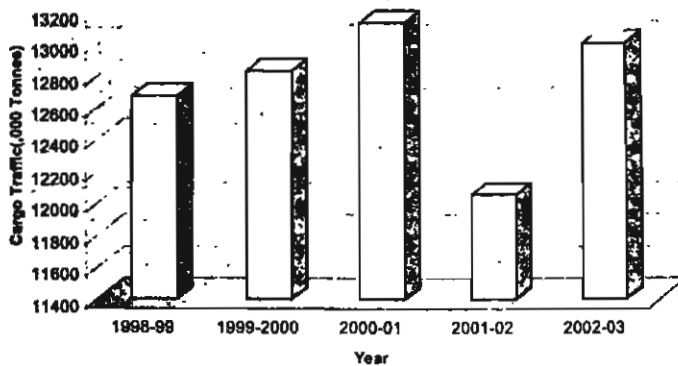
would lead to loss of more than 60 per cent of its cargo. The port has offered to increase the draft of the channel at the existing oil berth to 14 meters from existing 11.7 meters.

Performance of the Ports

Major Port

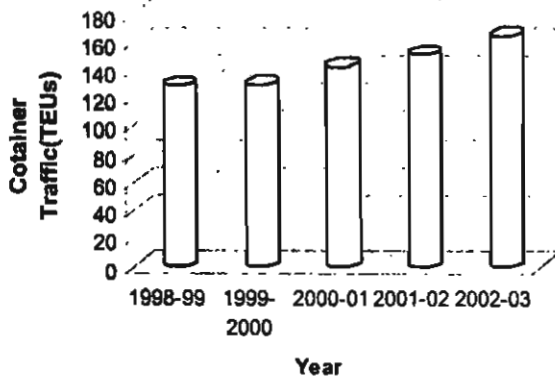
10.55 Cochin port handled imports of 108.89 lakh

Figt 10.8
Cargo Traffic-Cochin Port



tonnes of cargo and exported 21.12 lakhs tonnes in the year 2002-03: The total cargo handled at the port for the last five years is shown in Fig.10.8.

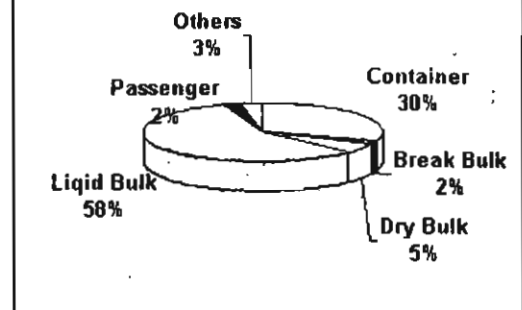
Fig 10.9
Container Traffic-Cochin Port



10.56 The trend in container Traffic at Cochin Port is given in Fig 10.9 and the break up of Cargo handled by Cochin Port during the year 2002-03 is given in Box 10.24.

10.57 The number of ships, which called at Cochin port during 2002-03, decreased from 1190 in 2001-02 to 1174, recording a decrease of 1.34 percent. The Net Registered Tonnage (NRT) also showed

Fig 10.10
NRT Break Up



a decline of 5.54 percent, from 8273959 to 7815244 during 2002-03. The break up of NRT called at Cochin port during 2002-03 is shown in Fig10.10.

Box -10. 24

Cargo handled at Cochin Port

Nature of Cargo	Percentage
1. POL	72.06
2. Food grains	1.44
3. Coal	4.85
4. Fertilizer raw material	1.48
5. Iron, Steel and machinery	2.61
6. Cashew nuts/Kernels	2.61
7. Zinc ore	0.37
8. News print	0.32
9. Coir products	0.76
10. Tea	0.80
11. Marina products	0.65
12. Coffee	0.88
13. Spices	0.36
14. Miscellaneous	13.42

Source: Cochin Port Trust

Box -10. 25

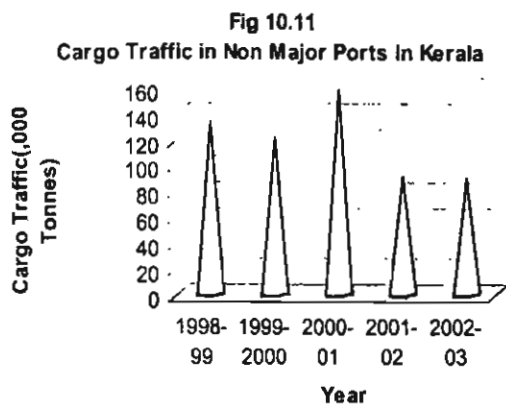
Development plan for Cochin Ports

- Setting up of Port based Special Economic Zone (SEZ)
- Establishment International Container Transshipment Terminal at Vallarpadam
- Putting up of an International Bunkering Terminal
- Construction of L N G Terminal at Puthuvypeen
- Setting up of a Passenger terminal to attract Cruise Liners

from Rs. 187.06 crores in 2001-02 to Rs. 200.69 crores in 2002-03 with a net surplus of Rs. 19.40 crores as against a negative figure of Rs. 35.02 crores in previous year. Cochin Port is on a development path and has got an ambitious plan.

Non Major Ports

10.59 Beypore Port alone handled 96 percent of total



traffic at minor /intermediate ports in Kerala. There was a marginal decline in the volume of Cargo handled from 0.91 lakh tonnes in 2001-02 to 0.89 lakh tonnes in 2002-03. The details of Cargo handled during the last five years is shown in Fig 10.11.

10.60 The number of steamers / sailing vessels which reported at the non major ports also declined from 370 in 2001-02 to 360 in 2002-03. The Net Registered Tonnage (NRT) has decreased to 0.65 thousand tonnes from 0.87 thousand tonnes during the corresponding period. But there was an increase in the number of Harbour crafts registered in 2002-03 to 2020 from 1766 in the previous year. The port department earned a revenue of Rs. 67.88 lakhs during the period under review.

Port Development - Future Plans

10.61 Kerala has an ambitious plan of port development. Government intends to develop Vizhinjam, Beypore, Alappuzha and Azhikkal port with private sector participation. An investor friendly Port policy is on the anvil. It proposes to develop Vizhinjam port as an International Transshipment Hub considering its proximity to the International shipping route connecting Colombo, Singapore, Malaysia, Middle East and Africa and the anticipated increase in Port trade. The availability of deep water close to the shore

lines enables less development /operational cost due to insignificant dredging requirements. There is a natural draft of 20 metres within one kilometer of seashore. L & T Ramboll, Chennai has already submitted Draft Phase I Project Report in September 2003. It is under process for proceeding further to identify suitable investors.

10.62 A Memorandum of Understanding (MOU) has already been signed with M/S Parison Group of Companies for development of Beypore Port. The detailed project report for the development of Alappuzha and Azhikkal ports have also been prepared already by M/S L& T Ramboll, Chennai and M/S ICICI KINFRA Ltd. and HOWE (India Private limited) respectively.

Inland Waterways

10.63 Inland Waterways in Kerala stretches to a length of 1687 kms corresponding to 11.6 percentage of a total of 14544 km in the country. The major stretch of canal in the State is the West Coast Canal connecting Hosdurg in the north and Thrivananthapuram (Poovar) in the south, having a length of 560 kms.

10.64 Inland Waterways in Kerala is not utilised to its full potential for movement of people and goods. Bottlenecks in using the existing waterways to the optimum level include lack of depth in waterways caused by slitting and lack of maintenance and dredging, lack of maintenance of navigation system, poor bank protection, lack of modern crafts and accelerated growth of water hyacinth. There are also other constraints like absence of navigational aids, lack of modern Inland Craft terminals and cargo handling facilities. Hence Government has been giving importance to development of Inland canals in the State.

10.65 Development of canals is being undertaken by Coastal Shipping and Navigation department to enable movement of Cargo to reduce the congestion in roadways. A portion of the West Coast Canal is being developed for movement of bulk carriages and this necessitates development of feeder canals and navigable structures of rivers from isolated areas to main artery of water routes. Developmental works, such as deepening, widening, bank protection, etc. in respect of West Coast Canal for a stretch to 205 kms. from Kollam in the south to Kottappuram (Kodungalloor) in the north, declared as National Waterway No-III (NWW-III) in 1993, are being carried out by Govern-

ment of India through Inland Waterways Authority of India (IWAI). The NWW-III is navigable in almost all areas except a few impediments, which are to be removed soon.

10.66 Government of India, in principle, has accepted the extension of NWW-III from Kollam to Kovalam in the south and Kottappuram (Kodungalloor) to Kasaragod in the north. The proposals for declaration of these two waterways as NWW are likely to be cleared soon. Extension of NWW-III south of Kollam and north of Kottappuram along with development of feeder canals will, by and large, improve the inland water transport system in the State substantially. The development of feeder canal is proposed to be undertaken with 90 percent Central grant. Earlier under the above scheme only 50 percent assistance as loan was provided by the Centre.

10.67 Ninety-three km of three stretches of canals is being developed with assistance of World Bank under Kerala State Transport Project.

Water Transport

10.68 Major activities undertaken for the development of water transport in the State include canal development, infrastructure development and provision of water transport services. Coastal Shipping and Inland Navigation Department (CSIND) undertakes the development of canals and State Water Transport (SWT) Department and Kerala Shipping and Inland Navigation Corporation (KSINC) are engaged in providing transport services.

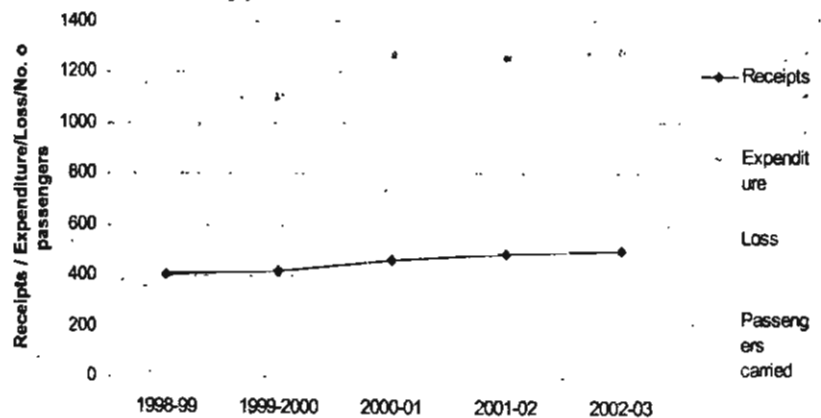
10.69 SWT Department operates boat services at Kollam, Alappuzha, Kottayam, Ernakulam, Kannur and Kasaragod. The department faces stiff competition from private sector operators. Construction of link roads and bridges may further lead to shrinkage in the activities of SWT Department. The department has already taken steps to acquire modern boats like steel and fiber boats and other equipment so as to replace the old ones. Modernisation of workshop at Thevara and Alappuzha and construction of two

slipways at Ponjikara are other infrastructure development activities have been undertaken by the department.

Operational Performance

10.70 Performance of SWT has not shown any signs of improvement during 2002-03. There was a decline in number of passengers travelled from 216 lakhs in 2001-02 to 188 lakhs in the year 2002-03. There were 85 boats under the possession of Water Transport Department and 52 were put into operation. The number of schedules remained at 644 as in the previous year. There was a reduction in route length operated by 6.83 percent, from 6775 kms in 2001-02 to 7272 kms in 2002-03. The revenue earned by the department recorded a marginal increase of Rs. 11 lakhs and reached Rs. 500 lakhs in 2002-03. This could not make any improvement in operational performance as the ex-

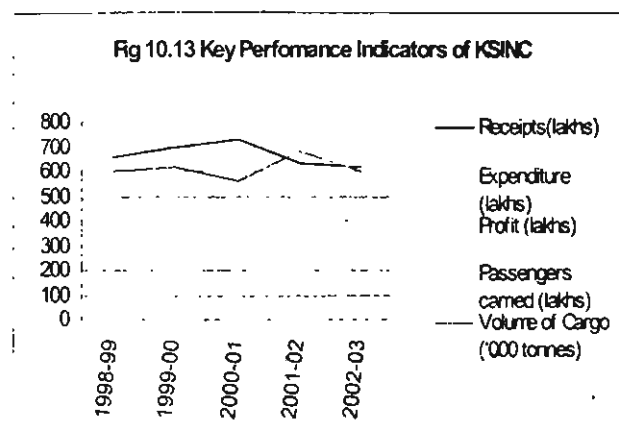
Fig 10.12
Key performance indicators of SWT



penditure went up to higher levels. Expenditure also increased by Rs. 20 lakhs and reached Rs. 1278 lakhs. The trend in performance of SWT Department during the last five years is shown in Fig 10.12.

10.71 Water Transport services connecting Ernakulam and Vypeen are provided by KSINC. Movement of cargo through waterways, docking and repair of vessels and construction of boats also formed part of their activities. The Corporation is on the path of diversifying its activities into coastal shipping and tourist boat operations as its activities will be seriously affected, once the Goshree Bridges are constructed and opened for traffic. The cargo transported by KSINC includes

fertilizer raw materials, imported fertilizers and drinking water. Out of a fleet strength of 14, eleven were put into service during 2002-03. While the number of schedules increased from 45260 in the year 2001-02 to 47729 in 2002-03, the gross route distance decreased from 574500 km to 491896 km during the above period. There was also a marginal decline in Cargo transported, from 6.84 lakh tonnes in 2001-02 to 6.04 lakh tonnes in 2002-03. Whereas the passenger traffic reduced to 58 lakhs from 65 lakhs, the income from passenger traffic increased from Rs. 226.67 lakhs to Rs. 240.48 lakhs in the year 2002-03 compared to previous year. The revenue receipt was Rs. 619 lakhs and the expenditure Rs. 590 lakhs registering a profit of Rs. 29 lakhs in the year 2002-03. There was reduction in the number of people employed from 319 to 312. The performance of KSINC in the last five years is given in Fig 10.13.



against 28247 (15136 domestic and 13111 international) in 2001-02. There was an increase in the number of flights by 10.27 percent. A total number of 2317116 passengers (742724 domestic and 1574392 international) were carried during the reporting period from the three airports as against 2303817(824652 domestic and 1479165 international) passengers in the previous year showing a marginal increase of 0.58 percent.

Cargo Traffic

10.73 Kerala State Industrial Enterprises Ltd. runs two air cargo complexes at Thriuvananthapuram and Calicut Airports. The company is the official export house for promotion of exports as recognised by Government of India. The Company also acts as the virtual office of Agricultural and Processed Food Products Export Development Authority (APEDA) Ministry of Commerce, Government of India, for the Kerala State. The details of quantity/value of cargo exported and imported during 2002-03 are given in Table 8.12.

PASSPORT AND EMIGRATION

10.74 The passport offices in the state are at Thiruvananthapuram, Kochi and Kozhikode. The total number of applications for passports received in the State during 2002-03 was 406418 compared to 415419 lakh in 2001-02, showing a marginal decrease. Simi-

AIR TRANSPORT

Passenger Traffic

10.72 Thiruvananthapuram, Kozhikode and Kochi are the three airports in Kerala. Thiruvananthapuram and Kochi were declared as international airports. Kochi international airport is a venture of state government. Air transport plays a major role in the development of tourism, both domestic and international. During 2002-03, 31481 flights (15324 domestic and 16157 international) were operated from all the three airports as

Table 10.12
Quantity / Value of Cargo exported and imported during 2002-03

Name of airport	Quantity (mt)	value (rs. Lakh)
Export		
Thiruvananthapuram International Airport	19023	20685.00
Calicut Airport	3462	1796.00
Cochin International Airport	800	N A
Total	23285	22481.00
Import		
Thiruvananthapuram International Airport	6049	3416.00
Calicut Airport	4211	1781.00
Cochin International Airport	200	N A
Total	10460	5197.00

lately there is also a marginal decrease in the number of passports issued during the same period. The total number of passports issued in the State during 2002-03 was 394588 compared to 402933 in 2001-02. The passport office-wise details of applications received and number of passports issued are shown in Appendix.10.28.

10.75 The Protector of Emigrants Thiruvananthapuram under the Ministry of Labour, Government of India issued emigration clearance to 25327 emigrants during 2002-03 under various categories.

COMMUNICATIONS

Postal Service

10.76 Indian Postal System is the largest in the world with a net work of about 1.55 lakh post offices spread all over the country. Kerala postal circle has a postal net work of 5077 post offices. Postal services, duly supported by a technology-based network are an important component of the modern and efficient information and communication system. The information technology revolution has a vast potential for the development of postal sector both in terms of coverage of area as well as quality of services. A comparison of the population served and average area covered by a post office is given in Table 10.13.

10.77 Major thrust areas of postal department at present are:

- Upgradation of technology and modernisation of postal operations
- Computerisation, connectivity and networking

have been identified as the core activity. Networking of various post offices, record offices, customer care centres etc. forms an integral part of the entire programme

- Modernisations of mail motor services and RMS vans and mechanized delivery of postal articles.

10.78 Mail processing is the central activity in the entire set up of postal operations and its modernisation is very crucial for both improving efficiency of the staff and speedy delivery of postal services. The postal system covers all the villages in the State. The growth of post

Box -10. 26

Postal System at a glance in Kerala

Post offices functioned during 2002-03	: 5077
Head post offices	: 51
Sub post offices	: 1463
Extra departmental sub post offices	: 527
Branch offices	: 3036
Speed post centres	: 44
Other postal services	: 90
Rural post offices	: 4197
Urban post offices	: 880
Area served by one post office (sq.km)	: 7.67
Population served by one post office	: 6288

offices in Kerala, category-wise details of postal services, rural/urban split up of post offices and details of area and population served by one post office etc are given in the appendices.

Table 10.13
Postal Network in the World

Country	Population served by one post office	Average area served (sq.km) by one post office
1. China	22490	168
2. Indonesia	10806	96
3. Malaysia	18489	269
4. Sri Lanka	4192	14
5. U.K	3377	14
6. USA	7471	246
7. India	6568	21
8. Kerala	6271	8

TELECOMMUNICATION

10.79 Telecommunication is one of the prime support services needed for rapid growth and modernisation of the economy. It is one of the fastest growing sectors of the economy and has immense potential of growth in future. Technology in telecommunication is rapidly changing and is constantly leading to major changes even in the structure of telecommunication industry worldwide. The telecom sector in the country has been witnessing a continuous process of reforms since 1991. It is one of the largest telecom networks in

Asia. The operational network of the erstwhile department of telecom has been converted into fully owned public sector undertakings called BSNL. The company had become operational from 1.10.2000. BSNL with over 35 million lakh telephone connections operates the seventh largest network in the world. The policies and programmes of the department are guided by the basic goal of creating a world class telecom infrastructure in order to provide the information communication technology (ICT) based sector needs of a modern economy on the least cost basis. The present status of the Telecom sector in Kerala are shown in Box. 10.27.

10.80 Kerala Telecom circle serves the whole of Kerala State, the Union Territory of Lakshadweep and part of Union Territory of Pondichery (Mahe). The circle has ten

Box. 10. 27.

Status of Telecom Sector in Kerala

No. Of telephone exchanges	1179
No. of new telephone exchanges opened during 2002-03	83 (urban 13, rural 70)
Equipped capacity	3653413
No. of new telephone connections during 2003/04 till 8/2003 including W.L.L as on 3/2003	3.26 lakh
Total no. of working connections as on 3/2003	30.21 lakh
Telephone density as on 3/2003	94.88/1000 population
Telephone density as on 8/2003	105.9/1000 population
No. of new technology exchanges capable of providing ISDN services as on 3/2003	592
No. of customer base of BSNL mobile service as on 8/2003	289764
Internet facility – subscriber base	38775
No. of telephones per sq.km	77.65
District having maximum no. of Telephone exchanges	Ernakulam
District having minimum no. of telephone exchanges	Wayanad
District with maximum working connections	Ernakulam
District with minimum working connections	Wayanad

major Secondary Switching Area, one major Telecom District and one minor S.S.A of lakshadweep. Kerala has an impressive record of performance in telecom sector. BSNL has become the premier cellular service provider in Kerala. The cellular mobile services in Kerala were launched on 23-10-2002 covering 128 cities and towns and 2112 kms of Highways.

10.81 The State has a telephone density of 94.88 per 1000 population and 101 per 1000 population inclusive of BSNL cellular mobile connections as on 31-3-2003. The telephone density of the State compared to national and international level is given in Box

Box -10. 28

Major achievements of telecommunication sector

- The circle has provided higher capacity internet modes linking all the 14 district headquarters and Union Territory of Lakshadweep (Kavarathy)
- Access at local call rates is provided to customers from all exchanges
- All SSA Headquarters has Integrated Services Digital Network (ISDN) connectivity
- BSNL has commissioned Direct Internet Access system (DIAS) at Ernakulam
- 'Internet for All' service has been introduced at Thiruvananthapuram on 15-8-2003
- A new scheme known as Grameen Sanchar Sevak Scheme was launched on 24-12-2002 to augment communication facilities in rural and remote areas in collaboration with postal department by utilizing the services of Extra - Departmental Postmen
- Grameen Sanchar Sevak scheme has been introduced in 48 villages in the State in the initial stage and is proposed to be extended to more areas during the current year

10.29.

10.82 The Kerala circle has programmed to provide 8 lakhs new telephone connections (2.95 lakh wireline, 2.85 lakh W.L.L & 2.2 lakh cellular mobile telephone) during 2003-04. The district - wise details of telephone network in Kerala during 2002-03 are given in Appendix.10.34.

10.83 Mobile connections in Kerala continued to in-

Box -10, 29

Telephone density in the world (per 1000 population)*

Country/State	Year
1. USA	66.45
2. Germany	63.48
3. Japan	59.69
4. UK	57.78
5. France	57.35
6. Korea	47.60
7. Turkey	28.52
8. Russia	24.33
9. Brazil	21.69
10. China	13.81
11. Sri Lanka	4.30
12. Indonesia	3.70
13. India	3.60
14. Pakistan	2.40
15. Kerala	9.48
World	17.20

Source : India Vision 2020, Planning Commission

crease and the phone connection in the State has crossed the one million mark. At the end of December 2003, the state had 10.23 lakh mobile owners as against roughly 33 lakh phones in the state. The one million mark means Kerala is only behind Punjab and Uttar Pradesh in terms of total mobile ownership in the "B" circle, and is ahead of Haryana, Rajasthan and Madhya Pradesh. All mobile companies operating out of the state showed healthy growth during December 2003. The growth during 2003 is as high as 93%, with the total mobile ownership number growing from 5.31 lakh in December 2002 to 10.23 lakh in December 2003.

10.84 Considering the robust growth, BSNL is in the process of more than doubling its base stations in Kerala. BSNL currently has 333 BT stations and another 40 are under implementation. Another 373 would enhance the number of base transceiver stations (BTS) of BSNL before April 2004. The capacity expansion is being carried out at an outlay 131 crore. The number of mobile connection in Kerala by different service providers is given in Table 10.14

Table 10.14
Cellular Mobile connection of various operators

Name of mobile services providers	Number of service provided as on 12/03 (in lakh)
BSNL	3.50
Escotel	3.39
BPL	2.03
Bharati	1.31

CHAPTER 11

EDUCATION

Literacy

Kerala has achieved a high literacy rate of 90.92 percent (2001 census) as against the all India rate of 65.38 percent. Literacy rate of states is shown in Appendix.11.1

Box -11.1

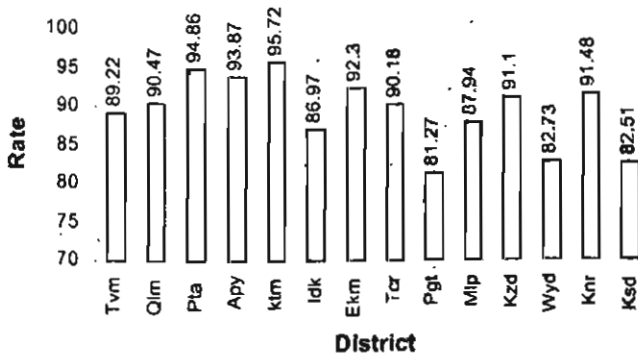
Among the States, Kerala has the highest literacy rate (90.92percent) followed by Mizoram(88.49 percent) and Goa(82.32 percent) as against the all India rate of 65.38 percent.

11.2 In Kerala, among the districts, Kottayam has the highest literacy rate of 95.90 percent and Palakkad has the lowest literacy of 84.31 percent.(Appendix-11.2). Regional and gender disparities in literacy rates are least in Kerala. National Literacy rate and that of Kerala since 1951 are shown in Table 11.1.

Table – 11.1
Literacy Rates – All India and Kerala (1951-2001)
(percent)

Year	All India	Kerala
1951	16.67	40.47
1961	24.02	56.85
1971	29.45	60.42
1981	36.03	70.42
1991	52.21	89.81
2001	65.38	90.92

Fig 11.1
District wise Literacy Rate -2001

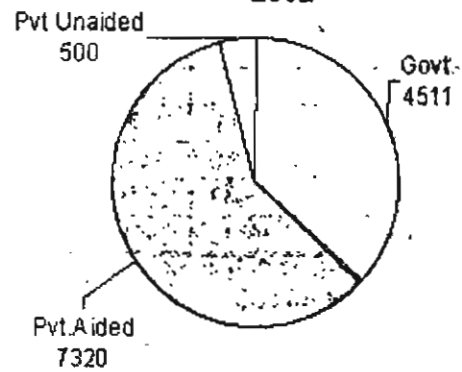


School Education

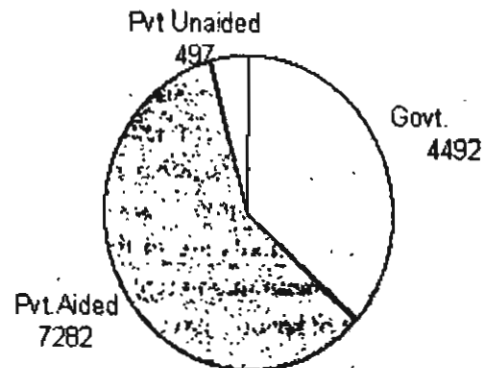
11.3 Now there are 12271 schools as against 12331 schools in 2002, there is thus a decrease of 60 in 2003. Out of the 12271, 6712 are Lower Primary Schools, 2951 are Upper Primary Schools and 2608 are High Schools. Besides there are 8 Anglo Indian High Schools, 35 schools for the physically handicapped, 27 Kendriya Vidyalayas and 13 Jawahar Navodaya Schools.

11.4 LP School education is provided through 6712 Lower Primary Schools and 2982 Lower Primary Sections which shows that for every 237 children in the LP School going age group, there is one LP School/section. Similarly, there are 2951 UP Schools and 2047 Upper Primary sections which implies that for every 331 UP school going age children, there is one UP School/section.

Fig. 11.2
Management –wise Distribution of Schools
2002



2003



11.5 In School education, private aided schools have strong presence in Kerala. Out of the total 12271 schools, 7282 (59 percent) are private aided, 4492 (37 percent) government, and 497 (4 percent) unaided. Similarly, out of the total 6712 lower primary schools, 38 percent are government, 60 percent private aided and 2 percent unaided. Out of 2951 upper primary schools, 32 percent are government, 64 percent private aided and 4 percent unaided. In the case of 2608 high schools, 38 percent are government, 54 percent private aided and 8 percent unaided. The relevant facts are presented in Appendices 11.2 & 11.3

Spatial Distribution of Schools and Accessibility

11.6 Distribution of schools in 2002-03 reveals that 503 (4%) schools are in Corporation area consisting of 215 lower primary schools, 114 upper primary schools and 174 high schools. In Municipal areas, there are 1115 (9%) schools with 554 lower primary schools, 248 upper primary schools and 313 high schools. The remaining 10653 (87%) schools are in Panchayat areas consisting of 5943 lower primary schools, 2589

Table 11.2

Spatial Distribution of Schools in Kerala- 2002-03 (Nos.)

Sl.No.	Area	LP	UP	HS	Total
1	2	3	4	5	6
1	Corporation	215	114	174	503
2	Municipality	554	248	313	1115
3	Panchayat	5943	2589	2121	10653
	Total	6712	2951	2608	12271

upper primary schools and 2121 high schools. Details are given in Table 11.2.

Facilities in Government Schools

11.7 The infrastructure created under District Primary Education Programme, Sarva Shiksha Abhiyan and the involvement of Local Governments have contributed to the improved facilities. 89 percent government schools have pucca buildings. However, still 10 percent government schools are in thatched sheds and 434 schools are functioning in rented buildings. Similarly, 11 percent of schools have no drinking water facilities and 26 percent have no toilets. Appendices 11.5

& 11.6 show the availability of physical facilities in Government schools.

District Primary Education Programme(DPEP)

11.8 DPEP was an integrated education development programme launched by Government of India and started in Kerala in 1994-95. The objectives of the programme were universal access and enrolment, universal retention of children up to 14 years of age and substantial improvement in quality of education to enable all children to achieve essential levels of learning. The total estimated cost of the project was Rs.186.87 crores and the financing pattern was 85% by Government of India and 15% by Government of Kerala. The DPEP had been implemented in six districts in two phases- the first phase was introduced in 3 districts viz, Kasaragod, Wayanad and Malappuram in 1994 and the second phase was introduced in another three districts namely Palakkad, Idukki and Thiruvananthapuram in 1997. The DPEP came to a close by 30th June of 2003. Major achievements of DPEP is given in Box.11.2.

Box -11. 2

Achievements under DPEP

- DPEP was introduced in 3570 LP schools and almost all teachers were trained.
- About 300 volunteers (including 31 tribal volunteers) were appointed in the DPEP districts for massive awareness campaign.
- Under DPEP 61 new schools were opened and 1411 schools and 902 additional class rooms were constructed.
- 136 dilapidated/thatched schools and 47 rented buildings have been replaced.
- 33 Multi Grade Learning Centers were established.
- Drinking water facilities in 180 schools and toilet facilities in 384 schools have also been provided.
- Buildings for 53 BRCs and 376 CRCs and
- Compound wall for 16 schools were constructed.
- Aids and appliances given to 2323 disabled children.

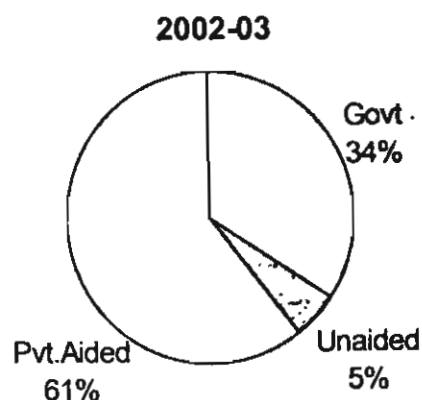
Enrolment of Students in schools

11.9 Enrolment of students in schools has been showing a declining trend due to sharp fall in the rate of growth of population. Table 11.3 shows the enrolment of students for the last 5 years. In 1998-1999, enrolment was 53.35 lakh students. It shows that enrolment of students declined by 3.33 lakhs in 2002-03 compared to 1998-99. Though total enrolment shows a sharp declining trend, enrolment of students in private unaided schools shows a marginal increase. For instance, students enrolled in government schools decreased from 18.69 lakh in 1999-00 to 17.08 lakhs in 2002-03. During the same period, students enrolled in private aided schools decreased from 31.39 lakhs to 30.29 lakhs. But students enrolled in private unaided schools increased from 2.41 lakhs to 2.65 lakhs. Increased incomes, parental demand for better education and the perceived decline in quality of education in government and private aided schools leads to greater reliance on private unaided sector, though the overall numbers in such schools is still lower.

11.10 Out of the total 50.02 lakh students in 2003, 37% are in lower primary, 31% in upper primary and the remaining 32% in high schools. Details are shown in Appendix 11.7.

11.11 The gross enrolment ratio in classes I-V and VI-VIII in Kerala during 2000-01 stood at 87.14 and 97.33 as against the all India level of 95.66 and 58.64 respectively. Gross enrolment ratio at elementary level (Std I to VIII) in Kerala is 91.03 compared to the All India figure of 81.58.

Fig.11.3
MANAGEMENT WISE ENROLMENT OF STUDENTS IN SCHOOLS- 2002-03



Enrolment of Girls Students

11.12 Education of girls is increasingly being seen as a basic human right and as a crucial input for national development. Number of girls enrolled from first to tenth standards in schools in Kerala almost equals the boys. For instance, in Kerala, out of the total enrolment of students, girl students form 49 percent. The percentage share of girl students in lower primary, upper primary and secondary level schools stood at 49.4, 48.2 and 49.47 respectively in 2003. Details are given in Appendix 11.8

- The number of girls at lower primary level has decreased from 9.27 lakhs in 2001-02 to 9.15 lakhs in 2002-03.
- The number of girls at upper primary level has decreased from 7.77 lakhs in 2001-02 to 7.52 lakhs in 2002-03.
- The number of girls at secondary level has decreased from 7.96 lakhs in 2001-02 to 7.85 lakhs in 2002-03.

This declining trend in girls enrolment at different levels is due to the fall in population of that age group.

Table. 11.3
Management-wise Enrolment of students in Schools in Kerala 1999-2003.

Year	Enrolment of Students (in lakhs.)			
	Govt.	Pvt. Aided	Pvt. Unaided	Total
1998-99	19.25	31.75	2.35	53.35
1999-2000	18.69	31.39	2.41	52.49
2000-2001	18.42	31.19	2.58	52.19
2001-2002	17.71	30.68	2.63	51.02
2002-2003	17.08	30.29	2.65	50.02

SC/ST Enrolment

11.13 The enrolment of SC/ST students in schools in 2003 is 5.93 lakhs, which constitutes 11.86 percent of the total school enrolment. Out of it, SC students numbered 5.33 lakhs and ST students numbered 0.60 lakhs. In 2002 the figures were 5.39 lakhs and 0.59 lakhs respectively. This shows a fall of students in 2003 over 2002. But enrolment of ST students increased by 977 in 2003 over 2002. The stage-wise enrolment of SC/ST students in schools during 2002 and 2003 is given Table.11.4.

11.14 Management-wise enrolment of SC/ST students shows that 42.4 percent are in government schools, 56.1 percent in private aided schools and 1.5 percent in private unaided schools. Enrolment of SC/ST students in private unaided schools shows a marginal increase. Standard-wise/management-wise enrolment of SC/ST students is given in Appendix. 11.9

Drop out rate in Schools

11.15 Drop out rate has continued to decrease. In 2002, total drop out rate in Kerala was 1.36% as against 1.45% during 2001; However, drop out rate varies at different school levels. For instance, at lower primary level, drop out rate which was 1.16% in 2001 decreased to 1.1% in 2002. Similarly, in upper primary level drop out rate was 1.02% during 2002 as against 1.03% in 2001. However, drop out rate at high school level remains at 2.02%. With regard to SC students also, drop out rate is coming down. For instance, total drop out rate which was 1.69% in 2001 among SC students decreased to 1.57% during 2002. Drop out rate among ST students which was 4.13% during 2001 also decreased to 3.47% during 2002.

Sarva Shiksha Abhiyan.

11.16 Sarva Shiksha Abhiyan is an intensive and com-

prehensive scheme for the universalisation of elementary education. The major goals are:

- all children in school by 2003,
- all children complete five years of primary schooling by 2007.
- all children complete eight years of elementary schooling by 2010.
- focus on elementary education of satisfactory quality with emphasis on education for girls.
- bridge all gender and social category gaps at primary stage by 2007 and at elementary education level by 2010.
- achieve universal retention by 2010.

Financial assistance under Sarva Shiksha Abhiyan is on 75:25 between Government of India and Government of Kerala during the Tenth Plan and 50:50 thereafter. The District Planning Committees prepare district-wise projects in partnership with the Local Governments.

Teacher –Pupil Ratio**Box -11.3**

The total number of teachers was 1.76 lakhs in 2002-03, of this about 62% are employed in private aided schools. About 68% of the teachers are female.

11.17 There were 182186 school teachers in Kerala in 2001-02 and their number came down to 175701 in 2002-03, a decline of 3.6%. Out of the total 175701 school teachers in 2003, 59364 (34%) are in government schools, 108429 (62%) in private aided schools and 7908 (4%) in private unaided schools. Stage-wise distribution of teachers in the state shows that 41251 (23.5%) are in lower primary, 45693 (26%) in upper primary and 88757 (50.5%) in high schools. Besides there are 919 TTI teachers in the state. Details of teachers are given in Appendix 11.10.

Table. 11.4
Enrolment of SC/ST students at School level (2001-02 and 2002-03)
(in nos.)

Section	2001-02		2002-03	
	SC Students	ST Students	SC Students	ST Students
Lower Primary	201901	26835	205565	28150
Upper Primary	172982	18414	165394	18595
High School	164466	13610	162529	13091
Total	539349	58859	533488	59836

11.18 Teacher-pupil ratio in Kerala changed slightly to 1:28.5 in 2002-03 from 1:28 in 2001-02. However, teacher pupil ratio differ at different levels. For instance, at lower primary stage, ratio is 1:45, at upper primary stage it is 1:34 and 1:18 at high school stage.

Integrated Education of the Disabled Children (IEDC)

11.19 IEDC was introduced in 1974-75 as a 100% centrally sponsored scheme for the education of disa-

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 2541 uneconomic schools in 2003 against 2720 in 2002. This shows that the number of uneconomic schools decreased by 179. Of the total uneconomic schools, 1201 (47%) are government schools and 1340 (53%) are private aided schools. Further, of the total uneconomic schools, 2085 (82%) are LP schools, 373 (15%) UP schools and 83(3%) high schools. District-wise analysis shows that highest number of uneconomic schools are in Kannur fol-

lowed by Pathanamthitta, Kozhikode and Emakulam. District-wise and management-wise details of uneconomic schools are given in Appendix. 11.11.

Table-11.5
Number of Pupils appeared and passed in

Year	Month	No. of students Appeared	No. of students Passed	Percentage of Pass
1	2	3	4	5
1999	March	543478	287692	52.94
2000	March	560541	308484	55.03
2001	March	568081	312095	54.94
2002	March	581520	344967	59.30
2003*	March	458594	297379	64.85

* School candidates only

Protected Teachers.

11.22 One of the major problems in the education sector is that of protected teachers which causes heavy financial drain to the government. Due to fall in school enrolment, teachers become excess over requirement. In 2002, there were 3926 pro-

bled children. In 1998, IEDC scheme was merged with DPEP.

S.S.L.C Examination Results

Box -11. 4

The KER Review Committee (2000) observed that the practice of granting extra marks in public examinations with a view to inflating results (popularly called moderation) has to be dispensed with as it smacks of academic dishonesty and leads to erosion of credibility

11.20 An analysis of SSLC examination results during the last five years shows a sharp increase of pass percentage from 52.94 in 1999 March to 64.85 in 2003 March. In March 2003, out of 4,58,594 students (school candidates) who appeared for examination 2,97,379 students passed out which constituted 64.85 percent. Details of SSLC examination results from 1999 to 2003 are shown in Table-11.5.

Schools which do not have minimum students and have "protected" teachers.

11.21 As per Kerala Education Rules, a school in which the minimum strength per standard/batch in LP/UP/HIS is below 25 is called an "uneconomic school". In schools where

The total number of Protected teachers is 3738 in 2003, of this 2165 are primary division teachers, 968 special teachers and 605 high school teachers. Of the total 3738 protected teachers, 83% teachers are re deployed to SSA and IT@ School Project.

tected teachers but their number came down to 3738 in 2003. Out of the total protected teachers, 2165 (58%) are primary level teachers, 968 (26%) special teachers and 605 (16%) high school teachers. District-wise analysis shows that Kozhikode has the highest number of protected teachers (20%) followed by Kannur, Emakulam and Kollam. Details are given in Appendix.11.12.

11.23 Reform measures have been initiated in the Tenth Plan to re-deploy surplus teachers. Accordingly 3103 protected teachers have been re-deployed and 48 uneconomic schools have been closed.

Box -11. 6

Major reforms initiated in school education

- 3103 protected teachers re deployed
- 48 schools without minimum students closed
- A single-day verification in the schools of contiguous area swas done to fix the actual student strength.
- Introduced Information Technology as a compulsory subject at high school level.

Higher Secondary Education.

Box -11. 7

At present there are 1267 Higher Secondary Schools in the state of which 416 are in government sector, 512 in aided sector and 339 in un-aided sector. The sanctioned intake of students is about 2.62 lakhs.

11.24 Higher Secondary course was introduced in 84 schools during 1990-91. During the Ninth Plan shifting of Pre-degree from colleges accelerated and 842 higher secondary schools were started. Thus by the end of the Ninth Plan, there were 932 Higher Secondary Schools with an annual sanctioned strength of 174300 students in 3486 batches. During 2002-03 there were

1267 HSS with 4194 batches and annual sanctioned student strength of 2.30 lakhs. Out of these schools, 416 are government, 512 private aided and 339 private unaided. District-wise details of schools with batches is given in Appendix-11.13. Enrolment of students in Higher Secondary Schools was only 2.01 lakhs in 2002-03 as against the sanctioned strength of 2.30 lakhs. This shows that 29000 seats remained vacant. During 2003, 2.74 lakh students appeared for higher secondary examination and 1.63 lakh students (59.42%) passed. Total number of teachers in higher secondary schools is 16,292 in 2003 and out of them 6883 (42%) are in government and 9409 (58 percent) are in the aided sector. There are more than enough number of higher secondary schools. Priority attention needs to be given to quality, teacher upgradation and laboratory, computer and library facilities.

Vocational Higher Secondary Education

11.25 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 government and 128 are private aided. Under VHSE there are 1000 batches in 42 courses (2003). Out of 1000 batches, 328 are in engineering technology, 204 are in business and commerce and 143 are in agriculture. Similarly out of 43 subjects (SPB study), 14 are in engineering technology, 7 are in business and commerce, 6 are paramedical and 4 each in agriculture and fisheries (see Table 11.6). District-wise details of schools are given in Appendix 11.14 The sanctioned intake and actual enrolment of students in VHSS during 2003 - 04 are 33,000 and 29089 respectively. This shows that students enrolled are only 88% of sanctioned seats. Course-wise intake of students in VHSS during 2003-04 is given in Appendix 11.15. During 2003, 25543 students appeared for examination and 18723 students passed (73.3%).

Fig 11.4
Batch wise details in Higher Secondary Schools

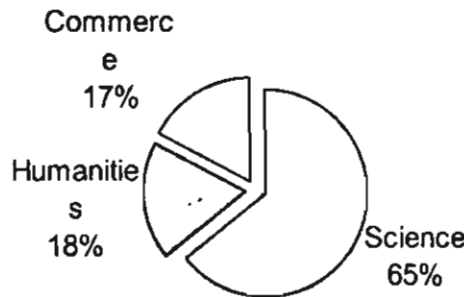


Table 11. 6
Courses, Subjects and Students enrolled in VHSS during 2002-03.

Sl. No	Courses	Subjects	Students (No.)
1	Engineering Technology	14	9699
2	Agriculture	4	2787
3	Animal Husbandry	3	1309
4	Fisheries	4	1016
5	Paramedical	6	5468
6	Physical Education	1	122
7	Home Science	3	682
8	Humanities	1	610
9	Business and Commerce	7	5767
	Total	43	27460

Source: SPB Study on VHSE

Box -11. 8

Major Recommendations of the Study on VHSE by the State Planning Board.

- There is no point in or scope for increasing the number of schools or the over-all intake during the Tenth Plan.
- Vocational Educational programme has to be revamped based on Project Report prepared by the Directorate during the Tenth Plan.
- Obsolete courses should be identified and dropped in a phased manner.
- Courses have to be restructured based on market demand.
- Demand survey may be conducted before introduction of a new course.
- Computer-based vocational curriculum should be introduced in all courses.
- Weightage to academic and vocational subject to be revised.
- Laboratory and library facilities are to be modernised.
- Casual and temporary appointment of teachers may be done away with to have continuance in teaching of subjects in schools.
- Curriculum of subjects has to be revised

Higher Education

11.26 Kerala has now seven universities. They are University of Kerala, University of Calicut, Mahatma Gandhi University, Sree Sankaracharya University of Sanskrit, Cochin University of Science and Technology, Kannur University and Kerala Agricultural University. There are also two deemed universities.

11.27 There are 286 Arts and Science Colleges affiliated to four Universities namely, Kerala, Calicut, Mahatma Gandhi and Kannur. Out of these, 38 are government colleges, 148 are private aided colleges and 100 are private unaided colleges. University-wise and management-wise Arts & Science Colleges in Kerala are given in Table.11.7.

Enrolment in Higher Education.

11.28 There are 1.59 lakh students in arts and science colleges during 2003. (excluding students in unaided colleges). Of the total students, girls constitute 61.4 percent. Similarly out of the total 1.59 lakh students, 1.44 lakhs (90.6%) are in degree courses and 0.15 lakhs (9.4%) are in Post Graduate Courses.

11.29 Enrolment of students in arts and science colleges for degree and post graduate courses decreased from 160754 in 2002 to 1,58,967 in 2003. Of the total 1,44,199 students for degree courses in 2003, 61153 (42.4%) are for B.A Courses, 60939 (42.3%) for B.Sc courses and 22107 (15.3%) for B.Com Courses. Details are given in Table 11.8. Similarly girls form 62.5% for B.A Courses, 62.7% for BSc courses and 50.9% for B.Com Course. In other words, in all the Degree courses, there are more girls than boys. There are 16 subjects for BA courses and 15 subjects for BSc courses. In BA degree courses 30.7% students are in economics and 16.4% are in history. Similarly, in BSc courses 25% students are in Mathematics and 20% are in Physics.

Table.11.7
University-wise and Management-wise Arts and Science Colleges in Kerala-2003

Sl. No.	Name of University	No. of Colleges			
		Govt.	Aided	Private Unaided	Total
1	2	3	4	5	6
1	Kerala	9	37	13	59
2	Calicut	16	44	31	91
3	Mahatma Gandhi	7	55	37	99
4	Kannur	6	12	19	37
	Total	38	148	100	286

11.30 Details of course-wise and subject-wise enrolment of students for degree courses are given in Appendices 11.16,11.17 &11.18.

11.31 During 2003 there are 14768 students for Post Graduate courses and out of them 9897 (67%) are girls. Similarly out of the total students, 6664 (45.12%) are for M.A courses, 5912 (40.03%) are for M.Sc courses and 2192 (14.85%) are for M.Com course. There are 16 subjects for MA courses and

10 subjects for MSc courses. Out of the total students in MA courses, 27% are in Economics and 19% are in English. Similarly out of the total students in MSc courses, 21% are in Mathematics and 17% in Physics. Details are furnished in Appendices 11.19, 11.20 & 11.21.

Table.11.8
Details of enrolment of students in Arts and Science Colleges for Degree & Post Graduate courses in 2003. (Nos.)

Sl. No	Degree/P.G. Course	Boys	Girls	Total
1	2	3	4	5
1	B.A	22914	38239	61153
2	B.Sc	22733	38206	60939
3	B.Com	10856	11251	22107
4	M.A	2306	4358	6664
5	M.Sc	1597	4315	5912
6	M.Com	968	1224	2192
	Total	61374	97593	158967

New Courses including Self financing Courses under the Universities

11.32 Four Universities in Kerala started 131 new courses in 2002-03 and 64 new courses in 2003-04 at graduate and post graduate levels in modern areas like Bio-chemistry, Micro-biology, Bio-technology, Computer Sciences, Polymer chemistry etc. Annual intake capacity of new courses started in 2002-03 is 10595. It is 3343 for courses started during 2003-04.

11.33 Kannur University also started five self financing schemes through its various centres during 2003-04. The courses were in PGDFD, PGDEC,

PGDCA, MCA, MSc, Computer Science with an annual intake is 230.

11.34 Mahatma Gandhi University also offers self financing courses through its centres, School of medical education, School of Technology and Applied Sciences, School of Communication and Information Sciences, School of Life Sciences and School of Pedagogical Sciences.

Private Registration

11.35 There are 78734 private registrants in the three universities (Kerala, Calicut and Mahatma Gandhi) in Kerala during the year 2002-03. Stage-wise details of private registrants shows that out of the total 78734 students, 64827 students (82%) are for degree courses and 13907 (18%) are for post graduate courses. Further, of the total 64827 students for degree courses 25961 (40%) are in B.A courses and 38866 (60%) are in B.Com course. Out of the total 13907 students for post graduate courses, 7411 (53.3%) are in M.A courses, 1020 (7.3%) are in M.Sc courses and 5476 (39.4%) are in M.Com course. University-wise details of private registration at graduate and post graduate courses are given in Appendix. 11.22.

11.36 Teachers in arts and science colleges numbered 10458 in 2003 as against 10585 in 2002. Out of the total college teachers in 2003, 3723 (36%) are in Mahatma Gandhi University and 3169 (30%) are in Kerala University. Similarly out of the total college teachers 5493 (52.5%) are women. While in Mahatma Gandhi University, women teachers are 53%, in Kerala University their share is 51.6%. University-wise number of teachers in Arts and Science Colleges is shown in Appendix..11.23.

Table. 11.9
New courses started by four Universities in Kerala during 2002-03 and 2003-04 (Nos.)

Sl.No.	University	New courses		Annual Intake	
		2002-03	2003-04	2002-03	2003-04
1	2	3	4	5	6
1	Calicut University	24	9	710	314
2	Kerala University	40	4	2600	100
3	Kannur University	7	21	195	845
4	Mahatma Gandhi University	60	30	7090	2084
	Total	131	64	10595	3343

Box -11. 9

Higher Education
Major Reforms initiated during 2002-03.

- Rates of fees have been enhanced with effect from the academic year 2002-03.
- During 2002-03, 418 posts (non-teaching staff) under different categories in the Department of Collegiate Education have been identified as excess. Out of them, 402 posts have been abolished and the remaining 16 post are being retained against the retirement vacancies/deployment.
- 156 lecturers have been re deployed to Higher Secondary Schools on working arrangement and 104 lecturers on deputation basis.
- However the problem of surplus teaching and non teaching staff in colleges due to transfer plus two classes to higher secondary schools still continuing to an extent.
- A unified bill for the general university has been introduced in the legislature.

Financing of Universities in Kerala.

11.37 Govt. of Kerala provide grants to universities under plan and non-plan. Increase in salary, pension and conduct of examination increase the expenditure and therefore there exists a gap between income and expenditure of universities. Gap is mainly due to fall in the internal receipts of universities. For instance, internal receipts of the universities which was about 70 percent of total receipts in 1981 sharply declined to 21 percent in 2001-02. In 2002-03, internal receipts of four universities grew to 28.9% of total receipts consequent on enhancement of fees structure. University-wise receipts and expenditure during 2000-01 to 2002-03 is shown in Table.11.10.A and 11.10B All the universities continue to suffer from financial constraints. The action taken on the Reports of Enquiry Commissions submitted three years ago is very slow.

11.38 As could be seen in Table 11.10A total receipts of the five universities increased from Rs.12997.48 lakhs in 2000-01 to Rs.15079.78 lakhs in 2002-03 which shows 16% increase. The

plan and non-plan grant increased from Rs.9066.5 lakhs to Rs.10514 lakhs during the above period which also shows 16% increase. Similarly the internal receipts increased form Rs.3623.87lakhs to Rs.4263.79 lakhs.

11.39 Further analysis reveals that plan and non-plan receipts form 70% of the total receipts of the universities. Internal receipts form only 28% of the total receipts. Grants from UGC and other institutions form 2% of the total receipts. State government grant is thus the major source of the finance of the universities in Kerala.

11.40 The total expenditure of the five universities increased from Rs. 15083.83 lakhs in 2000-01 to Rs. 15460.22 lakhs in 2002-03 which shows an increase of 2.5%. The share of salary expenditure is 57% of the total expenditure of the universities in 2000-01 and the share of salary declined to 52% in 2002-03. Next to salary, conduct of examination is the major item of expenditure and was about 15% in 2000-01 and 13% in 2002-03.

Table.11.10 (A)
Details of Receipts -University wise -2000-01 to 2002-03

Name of University	2000-01				2001-02				2002-03			
	Internal Receipts Plan	Non-Plan	U.G.C and Other	Total	Internal Receipts Plan	Non-Plan	U.G.C and Other	Total	Internal Receipts Plan	Non-Plan	U.G.C and Other	Total
1.Kerala University	1275	340	3040	4655	1408	300	3350	5058	12	360	3551	5302
2.Calicut University	1585	297.5	2150.5	4286.8	1743.89	225	2365	4731.62	1831	280	2507	4752.09
3.Mahatma Gandhi University	626.44	600	1243	2516.24	634.09	600	1400	2680.89	670.33	360	1484	2583.73
4.Kannur University	96.72	340	--	436.72	193.18	346.5	--	539.68	288.5	528	300	1116.5
5.Sree Sankaracharya University	40.71	170	885.5	1102.72	88.95	112.5	975	1185.43	82.96	120	1024	1325.46
Total	3623.87	1747.5	7319	12997.48	4068.11	1584	8090	14195.6	4263.79	1648	8866	16079.8

Table. 11.10(B)
Details of Expenditure- University-wise (2000-01 to 2002-03)

Name of University	2000-01				2001-02				2002-03			
	Expdr. of Staff	Conduct of Exam	Others	Total	Expdr. of staff	Conduct of Exam	Others	Total	Expdr. of Staff	Conduct of Exam	Others	Total
1	2	3	4	5	6	7	8	9	10	11	12	13
1.Kerala University	2329.7	1508.1	1561.2	5399	2203.48	1133.2	1685.32	5022	2177.86	1183.02	1853.18	5214.06
2.Calicut University	2689.59	401.43	1588.38	4679.4	2399.18	371.69	1787.12	4557.99	2498.81	487.15	1898.23	4884.19
3.Mahatma Gandhi University	2746.99	326.95	755.19	3829.13	2644.71	267.27	796.62	3708.6	2349.98	272.64	442.26	3064.88
4.Kannur University	238	52.81	129.34	420.15	284.96	60.47	167.32	512.75	364.12	66.12	619.46	1049.7
5.A12Sree Sankaracharya University	530.45	9.56	216.14	756.15	735.8	12.79	226.43	975.02	629	7.22	611.17	1247.39
Total	8534.73	2298.85	4250.25	15083.8	8268.13	1845.42	4662.81	14776.4	8019.77	2016.15	5424.3	15460.22

Box -11.10

Kerala Universities Bill-2003

Government of Kerala intends to bring in Kerala Universities Bill common to all the four affiliating universities in Kerala so as to bring about equitable and efficient distribution of facilities for higher education. The bill seeks to infuse better management techniques suggested by the UGC for greater participation of academic community. The salient features of the Bill are the following.

- There shall be a Kerala State Council for Higher Education; a statutory co-ordinating body.
- An Executive Council in place of the Senate/Syndicate. Executive Council is the chief executive body of the university consisting of
 - i) Ex-officio members
 - (a) Vice-chancellor (b) the Pro-Vice-chancellor (c) Secretary/nominee of the Higher Education Department (d) Directors of Collegiate, Technical and Medical Education and
 - ii) Nominated members
 - (a) Two Principals, one each from government and private colleges (b) One senior most professor selected from five senior professors from university departments (c) One Faculty Dean nominated by the government (d) Two lecturers of General Council one each from government colleges and aided colleges nominated by the government and (e) Three experts in the field of Technical, Industrial and Managerial fields nominated by the Government.
- Granting academic autonomy to affiliated colleges/departments by University with the concurrence of the Government.
- A Committee on Finance and Accounts shall be constituted for giving advise on financial and accounts matters of the University.
- All officers, members, teachers and employees of University to be deemed as public servants.
- Constitution of selection committees for recommending to the Executive Council for appointments to teaching posts.
- Transfer of aided college teachers and non teaching staff from one University to another.
- Penalisation of a member of teaching/non-teaching staff for refusal to work in connection with the university examinations.
- Prohibition of private tuition or any other employment or job without University's permission.
- Exchange of teachers for sharing of academic expertise .
- Government regulation of scale of pay and other service conditions of teaching and non teaching staff of unaided colleges.
- Prohibition of capitation fees.
- Power to Government to regulate admissions to unaided professional colleges.
- Power to Government to issue general/special orders to unaided colleges regarding number of seats to be set apart as government seats, management seats, reserved seats for SC/ST/OBC etc.
- Constitution of two committees viz, Teachers Consultative Committee and Students Consultative Committee at the state level.

Technical Education

11.41 In India, technical education witnessed a phenomenal growth during the last 55 years. In 1947, there were only 44 engineering colleges and 43 polytechnics (including Pharmacy and Architecture institutions) with an intake capacity of 3200 and 3400 respectively. During 2002-03, there were 1208 engineering colleges and 1197 polytechnics with an annual intake capacity of 3,59,721 and 2,42,698 respectively. This phenomenal growth in technical education was particularly due to policy changes to allow participation of private and voluntary organisations in setting up of technical institutions on self-financing basis.

Box -11.11

By permitting private managements to establish engineering institutions in the state, Government of Kerala have taken an important step for promoting human resources development in the newer areas. At present about 64 unaided/self financing engineering colleges are functioning in the state.

11.42 During the past five years, there has been a tremendous increase of technical educational institutions in Kerala. During 1998-99, there were only 21 engineering colleges and 54 polytechnics with an intake capacity of 5798 and 7080 students respectively. During the first year of the Tenth Five Year Plan (2002-03), the number of engineering colleges and polytechnics increased to 69 and 56 with an annual intake of 17023 and 9380 students (excluding students in unaided polytechnics) respectively. There are at present 76 engineering colleges (excluding National Institute of Technology, Kozhikode and CUSAT) with a sanctioned annual intake of 18673 students. Number of polytechnics remain unchanged at 56. During 2002-03, seven engineering colleges were started.

Engineering Colleges and Enrolment

11.43 6.3 percent of the total number of engineering colleges in the country are in Kerala. Of the total engineering colleges (excluding NIT, Kozhikode and CUSAT) 9 are government, 3 are private aided and 64 are unaided/self financing. District-wise and management-wise distribution of engineering colleges in Kerala is given in Table 11.11.

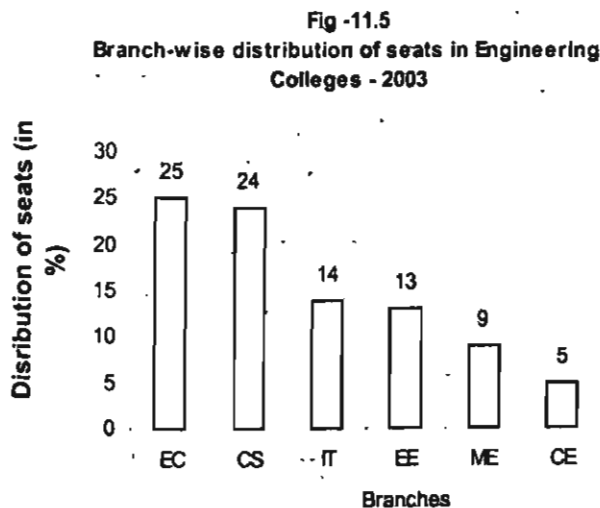
Table.11.11.
District-wise and Management-wise Distribution of
Engineering Colleges in Kerala 2003.

Sl. No.	District	Number of Engineering Colleges			
		Government	Aided	Unaided/self Financing	Total
1	2	3	4	5	6
1	Thiruvananthapuram	2	--	10	12
2	Kollam	--	1	8	9
3	Pathanamthitta	--	--	5	5
4	Alappuzha	--	--	2	2
5	Kottayam	1	--	9	10
6	Idukki	1	--	3	4
7	Ernakulam	--	1	10	11
8	Thrissur	1	--	6	7
9	Malappuram	--	--	3	3
10	Palakkad	1	1	1	3
11	Wayanad	1	--	--	1
12	Kozhikode	1	--	3	4
13	Kannur	1	--	2	3
14	Kasaragod	--	--	2	2
	Total	9	3	64	76

Source: DTE, Thiruvananthapuram.

11.44 Total sanctioned annual intake of students in engineering colleges in Kerala is 18673 in 2003 as against 17023 in 2002 (excluding NIT Kozhikode and CUSAT). It shows that annual intake increased by 9.7 percent in 2003. Total sanctioned annual intake of students in Kerala is 5.2 percent of the total sanctioned intake of students in India. Besides, part-time B.Tech Degree courses are being offered through three engineering colleges (Thiruvananthapuram, Kollam and Thrissur) in different disciplines with a total intake of 610 students.

11.45 Analysis shows that out of 18673 sanctioned seats, 4785 (25%) are in Electronics and Communication, 4410 (24%) are in Computer Science, 2535 (14%) are in Information Technology, 2400(13%) are in Electrical Engineering, 1711 (9%) are in Mechanical Engineering, 902 (5%) are in Civil Engineering and 1930 (10%) are in other branches. It shows that 63% of seats are in Electronics, Computer science and Information Technology. The branch-wise distribution of seats in engineering colleges is given in Appendix 11.24. Intake of post graduate students in Government engineering colleges is 157 in 2003. Post Graduate Courses are there in six subjects. Details are given in Appendix 11.25. Besides, MCA courses are conducted in five Engineering colleges (Thiruvananthapuram, Kollam, Kottayam, Thrissur and Kothamangalam) with an intake of 30 students in each college. 26 self financing colleges also conduct MCA course and the total intake is 1315 students.



11.46 In order to improve the capacity, quality and efficiency of Technical Education system in Kerala a major project-‘Technical Education Quality Improvement Programme’ has been undertaken with the assistance of World Bank. The vision as stated is to ensure the highest quality in technical education at state level consistent with State and National Policies and requirements to produce the best world class engineering professionals so as to provide impetus to industry, business and services to make the country as economic power house. This envisages academic autonomy, managerial autonomy, administrative autonomy and financial autonomy through lead and network institutions. College of Engineering, Thiruvananthapuram, LBS College of Engineering, Kasaragod, SCT College of Engineering, Thiruvananthapuram, Model Engineering College, Kochi , MES College of Engineering, Kuttippuram and College of Engineering, Chengannoor have been selected for the project. NIT, Kozhikode, is also selected in the project.

Polytechnics and Technical High Schools

11.47 There are 56 polytechnics in the state of which 42 are Government, 6 are privated aided and 8 are self financing. Out of 42 government polytechnics, 7 are Women’s Polytechnics and one is a residential women’s polytechnic established under World Bank Project. The polytechnics conduct Diploma Courses in 23 different disciplines. Multi point Entry and Credit system has been introduced in three government polytechnics. Intake of students in polytechnics, excluding self financing, is 9380 in 2003. Out of the total 28180 students in polytechnics in 2003, 10344 (37%) are girls. There are 1679 teachers in Polytechnics of which 409 (24%) are women. Details of students and trades are given in Appendices 11.26 & 11.27.

11.48 There are 39 Technical High Schools in the state. Intake of students is 2085 in 2003. Out of the total 6255 students in technical high schools in 2003, 615 (10%) are girls. There are 1015 teachers in Technical High Schools in 2003 of which 183 are women.

Cochin University of Science and Technology

11.49 The University of Cochin established in 1971 was upgraded and reorganised as Cochin University of Science and Technology in 1986. The University has at present 28 schools/departments and 6 associated institutes with an annual intake of about 5000 students in different courses. Similarly, 19 engineering colleges are affiliated to the university. Details of courses, annual intake, duration of courses etc are given in Appendix. 11.28.

Institute of Human Resources Development (IHRD)

11.50 The IHRD established by Government of Kerala in 1987 has at present 2 regional centres, one extension centre, 6 engineering colleges, 6 model polytechnics, 18 Technical Higher Secondary Schools and 14 Applied Science Colleges. Applied Science Colleges and Engineering Colleges are fully self financing institutions. IHRD and associated institutions have an annual intake of 6839 students. Details of institutions, annual intake and students admitted are given in Table.11.12.

National Institute of Technology- Kozhikode

11.51 Regional Engineering College started in 1961, is now developed as a Deemed University, National Institute of Technology. Total sanctioned strength is 539 and out of it 375 are in B.Tech and 134 are in M.Tech courses. NIT conduct B.Tech , M.Tech and MCA courses. Branch- wise details of courses and sanctioned intake of students are given in Table – 11.13.

Table – 11.13
Branch-wise details of Courses with sanctioned intake of students under NIT

Sl. No.	Course/Branch	Sanctioned intake
1	B. Arch: Optional	10
2	B.Tech- Architectural Engineering	30
3	Civil Engineering	80
4	Computer Science & Engineering	45
5	Electrical Engineering	60
6	Electronics	75
7	Mechanical Engineering	30
8	Production Engineering Management	45
	Sub-Total	375
	M.Tech	
1	Energy Management	10
2	Material Science & Technology	10
3	Structural Engineering	15
4	Traffic & Transportation Planning	13
5	Offshore Structures	5
6	Instrumentation & Control Systems	15
7	Energetic	13
8	Power Electronics, Digital System & Communication Engineering	10
9	Industrial Engineering	13
10	Thermal Science	10
11	Manufacturing Technology	10
12	Computer Science	10
	Sub- Total	134
	M.C.A	30

Table-11.12
Institutions and Annual Intake of Students under IHRD-2003

Sl.No	Type of Institution	2003		
		No. of Institutions	Annual Intake	No. of students admitted
1	Engineering Colleges	6	865	807
2	Polytechnics	6	655	611
3	Technical Higher Secondary Schools	18	2860	1635
4	College of Applied Science	14	1144	915
5	Regional Centres and Other Institutions (PGDCA,DCA) on short term courses	2	1235	N.A
	Total	46	6839	3968

Note: Total excludes students admitted in PGDCA & DCA

Source:IHRD

Expenditure on Education

11.52 The plan and non-plan expenditure on education (excluding Art & Culture and Sports and Youth Services) increased from Rs. 1747.34 crores in 1997-98 to Rs. 2550.01 crores in 2002-03(RE). This shows an increase of 45.9 percent. During the period the state domestic product increased by 86.7 percent (at current prices). Expenditure on education was 3.9 percent of GDP in 1997-98 and it increased to 4.10 percent in 2000-01. But declined to 3.3% in 2001-02 and again to 3.04% in 2002-03. In 2002-03, Primary education shared 40.8 percent of the total expenditure on education, secondary education shared 24.92 percent and higher secondary and vocational higher secondary education shared 11.8 percent. University and higher education shared only 14.98 percent, while technical education shared 5.69 percent. Remaining 1.81 per-

cent went to general and language development. The relevant details are given in Table 11.14. The proportion of expenditure on education to total expenditure of the state (Revenue and Capital) was 18.02% during 2002-03.

11.53 Out of the total expenditure of Rs. 2550.01 crores (RE) in 2002-03, Rs. 155.02 crores (6 percent) was plan expenditure and Rs. 2394.99 crores (94 percent) non-plan expenditure. While analysing the non-plan expenditure it is seen that Rs. 2135.14 crores (83.7%) goes to salary. Of the total salary of Rs. 2135.14 crores, salary on school education, university education and technical education were Rs. 1799.28 crores (84.3%), Rs. 261.91 crores (12.2%) and Rs. 73.95 crores (3.5%) respectively.

Table- 11.14
Stage-wise Expenditure on Education (2000-01 to 2002-03)

Stage	2000-01			2001-02			2002-03		
	Plan	Non-Plan	Total	Plan	Non-Plan	Total	Plan	Non-Plan	Total
2	3	4	5	6	7	8	9	10	11
Primary Education	11.13	1180.79	1191.92	9.11	1038.24	1047.35	10.24	1030.00	1040.24
Secondary Education	3.49	777.39	780.88	4.25	675.04	679.29	9.02	626.43	635.45
Higher Secondary Education	47.94	--	47.94	50.94	--	50.94	3.98	128.73	132.71
Vocation Higher Secondary Education	1.48	27.84	29.32	1.50	27.45	28.95	24.40	143.77	168.17
University and Higher Education	22.85	364.18	387.03	12.15	478.58	490.73	27.55	354.44	381.99
Adult Education	0.56	0.02	0.58	0.37	0.01	0.38	--	--	--
Language Development	2.18	10.71	12.89	2.61	9.71	12.32	1.84	9.68	11.52
General	10.87	3.82	14.69	3.72	3.64	7.36	30.36	4.35	34.71
Sub Total General Education	100.50	2364.75	2465.25	84.65	2232.67	2317.32	107.39	2297.4	2404.79
Technical Education	40.19	79.77	119.96	41.67	85.24	126.91	47.63	97.59	145.22
Total Education	140.69	2444.52	2585.21	126.32	2317.91	2444.23	155.02	2394.99	2550.01

Industrial Training Institutes

11.54 Total number of Industrial Training Institutes (both Government and private) in India are 4644 with an intake capacity of 6.78 lakh students. In Kerala there are 432 Institutes of which 34 are Industrial Training Institutes and 398 are Industrial Training Centres. Details are given in Table – 11.15.

Table – 11.15
Details of ITI's and ITCs in India and Kerala.

Sl.No	Categories	India	Kerala
1	2	3	4
1	Government ITI's (Nos)	1795	34
2	Private ITC's (Nos)	2849	398
3	Seat strength in ITI's (lakhs)	3.73 lakhs	0.12580
4	Seat strength in ITC's (lakhs)	3.05 ..	0.42996

Source:- Annual Report 2002-03 (Ministry of Labour G.O.I)

11.55 In addition, there are 41 ITCs under Scheduled Caste Development Department for SC students and one ITC under Scheduled Tribe Development Department for ST students. Total sanctioned seat strength in the ITI's/ITC's is 55576. Out of the total sanctioned strength, 12580 seats(23%)are in Govt. ITI's and 42996 (77%) are in private ITC's .

11.56 Actual admission during 2003 was 22962 that is 41 percent of the sanctioned seat strength. Out of this 8600 were in Govt. ITI's and 14342 in private ITC's that is 68 percent and 38 percent respectively of seat strength. In 2002, actual admission was 61 percent and 34 percent respectively. Details of Students admitted during 2003 in ITIs/ITCs are given in Appendix – 11.29.

11.57 There are one year , two year and three year courses. In the one year course there are 17 trades, in the two year course there are 18 trades and in the three year course there is only one trade, 'Tool and Dye making' with an annual intake capacity of 96 students. This three year trade is conducted in four Government ITIs and two private ITCs. Out of 4590 students admitted in two year course during 2001, 2438 passed including repeaters. Among those passed, 2030 were

boys, 408 were girls, 258 were SC students and 14 were ST students. The trade wise intake and out turn in Govt. ITI's for one year and two year courses are is given in Appendix 11.30 & 11.31.

11.58 Apprenticeship training is provided at present through 9 RIC's and 5 ITI's. During 2003, 5104 apprentices were trained against a seat strength of 7124. Similarly during 2002 ,5198 apprentices were trained against the strength of 6951. It shows that apprentices trained were 75% during 2002 and 72% during 2003 of seat strength. Of the total trainees (2003), 4725 were boys and 379 were girls. Institution wise details of apprentices under going training are given in Appendix -11.32.

11.59 Demand for admission in ITI's is coming down as job prospects have become limited due to the obsolete courses. For instance, by August 2003, 132889 Certificate holders remain unemployed as per employment exchange data against 123387 in 2002 and 115736 in 2001.

11.60 It has been decided to introduce new trades having employment potential. Also it is proposed to upgrade older trades to modern trades through retraining and updating the skill of teachers and modernization of the existing equipment. Accordingly 8 units in five trades have been introduced in six ITI's till August 2003. During 2004, the department intends to modernize 25 units in 18 ITI's.

Art and Culture

11.61 State Government have established a number of cultural institutions and academies and have instituted various awards and fellowships for the promotion of art and culture in Kerala. Now there are 28 cultural institutions. Besides there are departments doing related works like Museums and Zoos, Archaeology, State Archives and the Public library. There are 6 departments/institutions involved in the publication and translation of books into malayalam and other Indian languages. They are Cultural Publications Department, State Institute of Languages, State Institute of Childrens Literature, State Institute of Encyclopedia Publications, Council for Historical Research and the Kerala Book Marketing Society. Education and training in cultural

arts like Kathakali, Koodiyattam, Folklore are carried out through Kerala Kalamandalam, Kerala Sahitya Academy, Kerala Sangeetha Nataka Academy, Kerala Lalithakala Academy, Margi and the Folklore Academy. Promotion, heritage preservation and construction of buildings in traditional Gurukulam models is carried out through the Vasthuvidya Gurukulam.

11.62 Kerala State Film Development Corporation (KSFDC), Kerala State Chalchitra Academy and the Centre for Development of Imaging Technology (C-DIT) are engaged in the promotion of Art and Culture through films and videos. The Kerala State Chalchitra Academy conducts the International Film Festival of Kerala (IFFK) and boosts the promotion of both feature and art films in Malayalam. C-DIT provides technical expertise for the promotion of IT sector in the State. Friends project in 14 districts of the state and the hologram studio are major achievements of C-DIT. Kerala State Library Council play key roles in the development of library movement and non-formal education in Kerala.

Museums and Zoos.

11.63 There are three Museums and Zoos at Thiruvananthapuram and Thrissur. Also there is one art Gallery and Krishna Menon Museum at Kozhikode. Sri Chitralayam which collects and displays the masterpieces of Raja Ravi Varma paintings, the Napier Museum, Natural History Museum, the Botanical Gardens and the Zoological Gardens are located within the lush green, picturesque and historical museum compound at Thiruvananthapuram.

Box -11.12

More than one million people from within the country and abroad visit the Museum and Zoos in Thiruvananthapuram every year. Gate fee collection during 2002-03 was Rs 125 lakhs

Department of Archaeology

11.64 Department of Archaeology protects and preserves States cultural, historical and archaeological monuments and conducts explorations and excavation and collect antiquities on scientific ways. The invaluable artifacts and antiquities are scientifically displayed in 8 museums. About 102 monuments are preserved and protected.

Economic Review 2003

Kerala State Archives Department.

11.65 Kerala State Archives Department has a huge collection of palm leaf manuscripts dating between 1500 AD-1850AD. The total number of palm leaf manuscripts comes to about 140 lakhs and this is one of the largest collection in the country. Many of them are in brittle and damaged condition due to high relative humidity, acidity, fungus and insect infestation and lack of proper conservation and proper storage facility. During the Tenth Five Year Plan, the Department has prepared a plan for the conservation, preservation and digitalisation of these records.

Kerala Sahitya Academy.

11.66 Kerala Sahitya Academy was established in 1956. Production of literature, translation of books from other Indian languages to Malayalam and translation of Malayalam books into English and other Indian languages and publication of standard works on literary history and criticism are the major functions of the Academy. Academy also brings out publications like Sahityalokam, Sahityachakravalam and Malayalam literary survey.

Kerala Sangeetha Nataka Academy.

11.67 Kerala Sangeetha Nataka Academy was established in 1958. Conduct of competitions at State and District level. Workshops on music, dance and drama, Payment of Scholarships to winners of art competitions and stipend to school children of artistes belonging to low income families are some of the activities of the Academy.

Kerala Kalamandalam.

11.68 Kerala Kalamandalam started in 1930 promotes Kathakali and other traditional performing arts of Kerala like Koodiyattam, Krishnanattam etc and imparts training in classical art of Kerala and conduct programmes at national and international levels. The institution admits 300 students annually for various training programmes, it also conducts a two-year plus 2 course and a 3-year degree course in Classical Arts with an intake of 281 students.

Vasthuvidya Gurukulam

11.69 Vasthuvidya Gurukulam at Aranmula is an institution intended to promote and preserve the Traditional Architecture Science of Kerala. Gurukulam started functioning in 1993. It is the only government

Institution in India to promote and preserve traditional architecture. Gurukulam has documented all the important architectural buildings in Kerala. Gurukulam conducts a university-recognised course in traditional architecture and has a total student strength of 300. Out of them more than 50% are engineers and other technically qualified persons. The Gurukulam conducts 4 Academic courses in Vasthuvidya and Mural paintings.

Sports and Youth affairs

11.70 Sports and Youth welfare activities are implemented by different agencies Viz Kerala Sports Council, Department of Sports and Youth Affairs and the Kerala State Youth Welfare Board. Government have passed the Kerala Sports Act 2000 and it has come into force 3.12.03. Accordingly the Sports Council has been constituted with 50 nominated members. The Act envisages increased people participation in sports and integration of the activities of the sports organizations and transparency in their functioning.

Kerala Sports Council

11.71 The Kerala Sports Council was established in 1974 as a grant-in-aid institution for promoting sports in Kerala. During the Tenth Plan Rs 58.25 crores is set apart for various activities of Sports and Youth Affairs Department and out of that Kerala Sports Council is provided with an outlay of Rs 43.50 crores which constitutes 75% of the total outlay for sports.

11.72 The Kerala Sports Council has 21 sports school hostels accommodating 330 students which impart training in sports and games. In addition there are 32 sports hostels attached with colleges with an intake of 299 students. There are 7 centralised sports hostels functioning in the State with an intake of 214 students

functioning at Thiruvananthapuram, Kollam, Kottayam, Alappuzha, Ernakulam, Thrissur and Kasargod. Rural Coaching Centres are functioning under the District Sports Councils. These centres give facilities for the sports disciplines popular in the locality. The Kerala Sports Council implements the social security and welfare programmes viz, pension to sportsmen in indigent circumstances. Monthly pension at the rate of Rs 400 is given to those below 60 years of age, Rs 600 to those of age between 60 and 70 years and Rs 800 to those above 70 years of age. Assistance was given to 190 persons during 2002-03. The amount spent for this purpose was Rs 15.55 lakhs.

Kerala State Youth Welfare Board.

11.73 Kerala State Youth Welfare Board came into existence in 1985. In Kerala Youth constitute 40% of the population and 40 lakh youth remain unemployed. The function of the Board is to guide them on the right path for finding employment and to bring them into the main stream. At present there are three Youth Hostels functioning at Thiruvananthapuram, Ernakulam and Kozhikode.

11.74 The Board has established the National Adventure Academy at Munnar, which provides training in paragliding, trekking and rock climbing. During the Tenth Plan period the Board proposes to start a State Youth Centre and 14 District Youth Centres. It has also proposed to form 58 Municipal/Corporation Youth Level Federations, 152 Block level Youth Federations, 991 Grama Panchayat Level Youth Federations and 15078 Ward Clubs. Besides, the Board conducts Keralotsavam throughout the State, National Integration Camps, Training for employment of Youth and related activities.

CHAPTER 12

HEALTH

Kerala's achievements are very high when compared to other major Indian States in areas like birth rate, death rate, IMR, MMR average life at birth and immunization. For instance, birth rate in Kerala is 17.3, death rate is 6.6 and infant mortality is 11. But all India birth rate is 25.4, death rate is 8.4 and IMR is 66. Average life at birth in Kerala is 73 years whereas it is 68 years for the Country. Kerala achieved good health status even with low growth in income and high unemployment rate.

12.2 Eventhough the achievement in health status has been good, State now face problems like high morbidity, low maintenance of health infrastructure, under utilised facilities and shortage of health man power. Emergence of new diseases like malaria, diarrhoea, dengue fever etc. creates problems.

Health care Infrastructure

12.3 Kerala State has built up a vast health care infrastructure under allopathy, ayurveda and homoeopathy systems of medicine. Three systems together have 2712 medical institutions under government sector with 50805 beds during 2003. Out of it, 91% of beds (46224) and 48% of (1310) medical institutions are in allopathy. 31% medical institutions and 6.7% beds are in

Ayurveda,. Homoeopathy institutions constitute 21% and beds are 2.3%. Details of government medical institutions and beds under each system of medicine are given in Table- 12.1.

12.4 Three systems together treated 19.36 lakh inpatients and 809 lakh out patients during 2002-03 as against 17.64 lakh inpatients and 798.47 lakh outpatients during 2001-02. Total patients treated thus increased by 12.25 lakh(1.5%) in 2002-03 over 2001-02. But the share of patients treated under each systems of medicine under went significant change in 2002-03 over 2001-02. During 2001-02 76% patients treated were in allopathy, 5% in Ayurveda and 19% in Homoeopathy. But during 2002-03 share of out patients in allopathy decreased to 48% whereas the share of ayurveda increased to 22% and that of homoeopathy to 30%. Inpatients treated under different systems of medicine increased by 9.7% (1.72 lakh) in 2002-03 over 2001-02.

12.5 There are 160 beds per lakh people (2002) in the three systems together. In allopathy there are 145 beds per one lakh people against 10.6 beds in Ayurveda and 4 beds in Homoeopathy. There was no increase in bed strength during 2002-03 compared to previous year eventhough inpatients treated increased by 1.72 lakh.

TABLE-12.1
Medical Institutions, beds and patients treated in three systems of medicine (2002)

Sl.No.	Systems of Medicine	Institutions	Beds	Inpatients	Outpatients
1	2	3	4	5	6
1	Allopathy	1310 (48.3)	46224 (91)	1842642 (95.2)	39054674 (48.3)
2	Ayurveda	845 (31.2)	3411 (6.7)	68450 (3.5)	17976627 (22.2)
3	Homoeopathy	557 (20.5)	1170 (2.3)	24604 (1.3)	23908959 (29.5)
	Total	2712 (100)	50805 (100)	1935696 (100)	80940260 (100)

Note: Figures in bracket indicate percentage.

District wise details of institutions and beds under three systems of medicines are given in Appendix. 12.1

Private Sector

12.6 In the health sector the role of private sector is significant. Data on private health care facilities is available only for 1995, based on a study conducted by the Department of Economics and Statistics. According to the study there were 4288 Private allopathic medical institutions with 67517 beds. Similarly, there were 4922 ayurveda private institutions with 2595 beds and 3118 homoeopathic institutions with 394 beds.

Co-operative Institutions and Insurance Medical Services

12.7 In the co-operative sector there are 69 co-operative hospitals/ dispensaries with 3306 beds and 433 doctors and 1355 nurses and para medical staff in Kerala.

12.8 There are 12 ESI hospitals with 1113 beds and 136 dispensaries. Details of co-operative and Insurance Medical Services are given in Appendix 12.2 and 12.3

Health Infrastructure under Directorate of Health Services

12.9 Hospital infrastructure under DHS consists of 933 (72%) Primary Health Centres, 115 (9%) Community Health Centres, 130 (10%) hospitals and 121 (9%) dispensaries and other institutions including grant in aid institutions. Hospitals include 5 general hospitals, 5 Women and Children Hospitals, 11 District Hospitals, 41 Taluk Hospital, 3 Leprosy Hospitals, 3 Mental Hospitals, 3 T.B. Hospitals, one Ophthalmology Hospital and 58 intermediary hospitals. In addition to these institutions there are 5094 sub centres.

District wise details of health infrastructure under DHS are given in Appendix-12.4.

Hospital Beds

12.10 There are 37646 beds under various institutions attached to DHS, out of which 5060 (13.4%) are in Primary Health Centres, 4726 (12.6%) are in Community Health Centres and 22636 (60.1%) are in hospitals and 5224 (13.9%) are in other medical institutions.

12.11 Average bed in PHC is 5.4 at State level. CHCs are rural based hospitals above PHCs. National pattern of CHC is 30 beds and 5 specialities. In Kerala the average beds in CHC is 40 and it varies from 29 beds in Kasaragod to 51 beds in Palakkad. 80% beds are in urban areas and 20% are in rural areas. Average hospital beds under Directorate of Health Services in Kerala is 174 and it varies from 91 beds in Pathanamthitta to 264 beds in Kozhikode district.

Health Personnel and Equipment

12.12 There are 3032 medical officers under DHS. Of this 1.7% are holding administrative positions and another 29% are in PHCs. The strength of medical officers available for secondary health care service is 69.3%. Of this nearly 58% are specialists. Paramedical staff consists of 7581 senior/ junior nurses. District wise details of medical officers are given in Appendix 12.7

Idle Equipment

12.13 Data collected from 202 medical institutions under DHS shows that 154 medical equipment costing Rs.5000 and above remain idle or unused. Total value of the idle equipment is estimated at Rs.53 lakh. The analysis leads to

TABLE-12.2
Total number of beds under allopathy

Sl.No.	Category	No.of Institution	Beds	Percentage to total
1	2	3	4	5
1	Institutions under DHS	1299	37646	31.7
2	Medical College hospitals and attached Institutions	11	8578	7.2
3	Co-operative Hospitals	69	3306	2.8
4	E.S.I. Hospitals	12	1113	0.9
5	Regional Cancer Centre	1	320	0.3
6	Sree Chitra Thirunal Institute of Medical Sciences and Technology	1	217	0.2
7	Private sector *	4288	67517	56.9
	Total	5681	118697	100

Box -12. 1

- I. More than 28% of the medical equipment supplied to different health institutions are excess in supply over requirement.
- II. Absence of supportive infrastructure facilities contributed significant non-use.
- III. Non availability of technicians/supportive staff cause idleness of equipment.
- IV. 18% of the equipment remain idle for want of minor repairs.
- V. Obsolete or unserviceable equipment constitute 16% of the total equipment in different institutions

the following observations.

Immunization Coverage

12.14 Kerala State has achieved almost universalisation of immunization. Coverage of immunization pro-

gramme in 2002-03 has increased over 2001-02. For instance, immunization coverage of measles increased from 86.2% in 2001-02 to 90.6% in 2002-03 and DPT from 93% to 95.8%. Details are given in Table-12.3. Target and achievement of immunization programmes are given in Appendix.12.8.

Institutional Delivery

12.15 National Family Health Survey-2 figures indicate the rates of performance of essential obstetrics care in major states. Only 65% of mothers received ante-natal check up, 67% received two or more doses of T.T. Kerala's achievement in institutional delivery is significant. In Kerala, 93% deliveries are in medical institutions (up from 89% in NFHS-1), 5% took place in women's own homes and 1% took place in their parents home. At all India, institutional deliveries are only 42.3%. In Kerala almost all births in urban areas are institutional births where as in rural areas 8% of births are non-institutional. In 2002, reported delivery cases in medical colleges and attached institution were 65974.

TABLE - 12.3**Coverage of immunisation Programme - Kerala - (2002-03)**

Sl. No.	Programme	Coverage (Percent)	
		2001-02	2002-03
1	BCG	103.8	103
2	Measles	86.2	90.6
3	DPT	93.1	95.8
4	Polio	92.8	95.3
5	TT for pregnant women	89.9	86.1
6	TT for 5 years	93.9	89.2
7	TT for 10 years	97.6	98.1
8	TT for 16 years	96.5	95

TABLE-12.4**Prevalence Rate of Public Health Diseases**

Sl. No.	Disease	Prevalence Rate per 1000 population	
		2002	2003
1	Leprosy	0.71	0.66
2	Filaria	1.02	1.28
3	T.B	1.2	0.70
4	Acute Diarrhoeal Diseases	17.63	16.96
5	Pneumonia	0.66	0.60
6	Enteric Fever	0.23	0.26
7	Measles	0.10	0.07
8	Respiratory Infection	216.62	221.42

Communicable Diseases

12.16 Of the ten leading causes of Burden of diseases (BOD) and mortality in India, almost 50% were on account of respiratory infections, diarrhoeal diseases, T.B. and measles. But in Kerala the incidence of communicable diseases like leprosy, pneumonia, measles, filaria, T.B. etc are coming down. For instance, the prevalence rate of leprosy has come down from 0.71 in 2002 to 0.66 per 1000 population in 2003. Similarly, prevalence rate of filaria, T.B. etc. has come down in 2003 compared to 2002. However diseases such as dengue fever and leptospirosis are emerging.

12.17 There was an outbreak of Dengue fever and Leptospirosis in Kerala during 2003. Dengue fever cases treated were 3332 and out of it 3266 were cured and 66 deaths occurred. Dengue fever cases reported were highest in Thiruvananthapuram district (709) followed by Malappuram (533) and Thrissur (325). Reported cases of death were highest in Thiruvananthapuram (17)

followed by Kollam(9) and Palakkad(8). Similarly 1343 cases of leptospirosis were treated in Kerala during 2003 and out of them 1247 were cured and 96 were dead. Highest number of leptospirosis cases were reported in Kottayam district (342) followed by Ernakulam(191) and Idukki(170). Highest number of deaths were also reported from Kottayam(28) followed by Alappuzha (13) and Thrissur and Malappuram(10 each). District wise details of Dengue fever and Leptospirosis are given in Appendix 12.9 and 12.10.

12.18 During 2003, there was an out break of diarrhoeal diseases in Kerala. Diarrhoeal diseases reported were from Alappuzha and Kasaragod. In Alappuzha, 34 cases of Cholera were identified with 3 deaths. In Thiruvananthapuram more than 2000 suspected cases were reported and out of it 36 were confirmed cases and 2 deaths occurred. In Kasaragod district 8 cases were confirmed. In 2003 August, there was out break of cholera at Thiruvallam in Thiruvananthapuram Corporation area and out of it 19 cases were positive for vibrio cholera. In all during 2003 upto September, 463094 cases of diarrhoeal cases including 39 cholera cases were reported in Kerala and 13 diarrhoeal deaths occurred. Major reasons cited for diarrhoeal diseases are poor environmental sanitation, broken drainage system, lapses in solid waste/ night soil disposal and inadequacy in the preventive, promotive and curative aspects.

Major Principal Diseases and death

12.19 Low birth and death rate and high life at birth have caused to demographic transition in Kerala. Age structure of population is changing. People above 70 years form 4.95% of total population in 2001 against 3.44% in 1991 and projected figure in 2011 is 6.65% of the population. Simultaneously affluence brings in new life style and food habits. Diet rich in saturated fat, salt and excess calories, decreased physical activity, addiction of tobacco and alcohol and augmentation of psychological stress cause several health problems and result to diseases like cardio vascular disorder (CVD), diabetics, neuro psychiatric ailments and cancer.

12.20 In Kerala during 2003 ,280.52 lakhs persons had attack from major diseases. Out of them 7748 persons died. During 2002, 280.58 lakh persons had attack from various major diseases and out of them death reported was 9238 . Details of major attacks and death

are given in Appendix.12.12

Cardiac Problems

12.21 Coronary artery diseases are on the increase in Kerala. Statistics shows that in Medical College Hospital, Thiruvananthapuram on an average 10 to 12 acute heart attack patients are being admitted daily in emergency service and annual admission to the coronary care unit in the Medical College Hospital, Thiruvananthapuram is about 1300. Among the cardio vascular diseases, Coronary Artery Diseases (CAD) is the one which causes highest rate of mortality and morbidity. Other major diseases like Rheumatic fever and Rheumatic Heart diseases are still rampant.

Intervention in suicide

12.22 Kerala remains the first among Indian States in the number of suicides for the last seven consecutive years. Rate of suicide in the state is 31 per lakh every year which is 3 times the national rate of suicide (11 per lakh every year). Every day 24 persons commit suicide in the state. Increasing number of family suicide in Kerala is also disturbing. Economic problems, mental tensions, marital disharmony and other family problems are the major causes of suicide. In order to contain this situation, Kerala Integrated Scheme for Intervention in Suicide Prevention (KRISIS) has been launched with the aim of setting up counselling centres and clinics in Medical Colleges, district/general hospitals and taluk level medical institutions in a phased manner and to combine the activities of health, education and social welfare sectors for suicide prevention with public participation.

HIV/AIDS

12.23 HIV infection and AIDS cases were detected in India in 1986. In 2000, Indians infected with HIV were estimated at 3.86 million indicating a prevalence rate of around 0.7% of the adult Indian population. In March 2000, 11251 cases of full blown AIDS were reported by NACO, of which 79% were male and 21% were female. First HIV positive case was identified in Kerala in 1987. Till now total number of AIDS cases reported from different parts of Kerala is 1219 and the number of reported AIDS death is 411. HIV infected people in Kerala are estimated at 70000. Surveillance data shows that more than 79% of HIV infection in Kerala is acquired heterosexually and very few infection cases are acquired through blood transfusion/ injecting drug use. HIV prevalence among ante-natal

women is 0.3%. An autonomous organisation, the Kerala State AIDS Control Society was formed to implement the National AIDS Control Programme (NACP), a Centrally Sponsored Programme, funded by the World Bank. Targeted intervention is one of the main activities envisaged under NACP.

Blood units collected

12.24 There are 123 blood banks in Kerala registered under Central Drugs and Cosmetic Act in 2003. During 2002, the registered blood banks were 117. Out of the total blood banks, 30 are in govt./autonomous sector and 93 are in private sector. During 2002, 2.11 lakh units of blood were collected and out of it 44.6% units were from govt./autonomous institutions and 55.4% were from private institutions. During 2001 blood units collected were 4.09 lakh. Medical Colleges collected 50060 units of blood which formed 23.7% of the total blood units collected. Market value of one unit of blood is estimated to be around Rs. 700. Total value of blood collected therefore amounted to Rs. 14.77 crores in 2002 whereas in 2001, it was Rs. 28.63 crores. Details of blood units collected during the last 5 years are given in Appendix.12.13

Health Societies

12.25 At the instance of the Govt. of India, Government of Kerala has constituted State level and District level health societies. In Kerala there are 52 health societies which were formed during 1980's and 1990's and out of it 42 are district level societies and 10 are state level societies. These societies formulate and implement programmes to eliminate/control specific diseases such as leprosy, T.B. Blindness, AIDS etc. Major activities of the societies include awareness camps, workshop, conference, supply of medicine etc.

12.26 District and state level societies together received Rs. 6066.32 lakhs during 1996-2001. Out of this 23% was for district level societies and 77% for state level societies. Out of the total receipt Rs. 2056 lakh (33.9%) was from Govt. of India Rs. 3105 lakhs (51.2%) external aid and Rs. 386 lakhs (6.3%) state govt. aid and Rs. 519.32 lakh (8.6%) was from other sources. Only the state level societies received external aid. At the district level 95% of the fund flow is from Government of India where as in State level societies 67% of the fund flow is from external agencies. The state level societies received Rs. 4663 lakh and out of it 64% was

by RCH, and 14% by AIDS Control Society. District level societies received Rs. 1403.33 lakh during 1996-2001. Out of it 45% was by leprosy control societies and 33% by T.B. Control societies and 22% by Blindness control societies. State and district level societies spent Rs. 4445.84 lakhs during 1996-2001 which constitute 73% of the total allocation. Among the state level societies expenditure on RCH was 56.7% whereas AIDS control society spent 89.8% of the total allocation. The expenditure pattern of the societies shows that at the district level, programme expenditure is 35%, whereas salary and allowances constitute 34%. Salary component constitute 41% of the expenditure in Leprosy Control Society, whereas it was only 4% in T.B. Control society. At the state level societies, programme expenditure was 70%, whereas salary and allowance was only 7.1%. Purchase of equipment and construction work constitutes other items of expenditure.

Standardization of Medical Institutions

12.27 Standardization of facilities has been one of the major objectives of the 10th five year plan. As part of it, DHS, Kerala constituted a committee to recommend standards in service delivery, infrastructure, equipment and staff pattern at various health care institutions under health services department. The committee submitted its report during 2002. Highlights of the report are:

Box -12. 2

1. The current terminology of mini – PHC is to be dispensed. Each Grama Panchayat may have a PHC with focus on curative service limited to O.P.
2. CHC shall provide specialist care in General Medicine, Surgery, Paediatrics, Obstetrics and Gynaecology, Anesthesiology and Public Health /Family medicine.
3. Taluk hospital shall provide all major and minor speciality services viz, medicine, surgery, Obstetrics and Gynaecology Paediatrics, Anesthesiology, Ortho, ENT, Ophthalmology, Psychiatry, Dermatology, Respiratory medicine, Orthodontics and Maxillo-facial Surgery.
4. District Hospital shall provide tertiary care in addition to services provided in Taluk Hospitals.

The Committee recommended that

- (i) PHC may have one Medical Officer one staff nurse and one pharmacist.
- (ii) CHC may have 8 medical officers and five specialties (medicine, surgery, Obstetrics and Gynaecology, paediatrics and Anesthesiology)
- (iii) Taluk Hospitals may have 2 units for major specialties and one each for minor specialties.
- (iv) District hospitals may have three units each for Medicine, Surgery, Paediatrics, O&G and minor Specialities may have two units each.
- (v) General Hospitals may have 5 units of major specialties and 3 units of minor specialties and one unit of super speciality with supporting staff.

12.28 Reforms in health sector have been started in 2002-03 and as part of it, it is proposed to start speciality departments like cardiology and neurology in major hospitals and to set up an administrative cadre with expertise in hospital management. Based on the proposal it is decided to start speciality cadre/departments in General/District/and other hospitals in a phased manner. Government have accorded sanction to create speciality cadre in 96 medical institutions and 375 additional posts had been created during 2003 in hospitals having 100 beds or more. Similarly steps have been initiated to start Dip-NB courses in selected General and District hospitals to overcome the shortage of specialist doctors.

Major Achievements

12.29 Inpatients treated in hospitals under DHS were 13.99 lakhs in 2002 against 12.89 lakhs in 2001. Similarly outpatients treated increased from 337 lakhs in 2001 to 360 lakhs in 2002. During 2002, 0.95 lakhs major operations were conducted in hospitals under DHS as against 1.64 lakhs in 2001. Similarly 2.67 lakhs minor operations were conducted during 2002 against 2.40 lakhs during 2001.

12.30 During 2002-03, seven Primary Health Centres were upgraded as Community Health Centres and one Primary Health Centre was converted into rural dispensary. One hospital was converted into Community Health Centre and one hospital was converted into T.B. clinic. As a result number of T.B. clinic/ centres in Kerala increased from 21 to 22 during 2002.

Medical Education and Training

12.31 In Kerala until 2001, there were only 20 medical colleges and all were in government/aided/co-operative sector. Out of these medical colleges, 7 were for MBBS course, 3 were for Dental and five each were Ayurveda and Homoeopathy. In 2002, 18 self financing Medical Colleges were started in private sector. Out of them six each were for MBBS, BDS and BAMS. With the starting of self financing medical colleges, admission strength for MBBS course in-

Table 12.5
Details of Medical Colleges and intake of students for Degree course

Medical Colleges	Courses	Government		Cooperative/aided		Self-financing		TOTAL	
		Nos	Intake	Nos	Intake	Nos.	Intake	Nos	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	--	--	6	340	9	470
3. Ayurveda	BAMS	3	160	2	90	6	290	11	540
4. Homoeopathy	BHMS	2	100	3	150	--	--	5	250
TOTAL		13	1090	7	390	18	1230	38	2710
5. Nursing Colleges	BSc	3	150	--	--	27	1350	30	1500
6. Pharmacy Colleges	BPharm	2	48	--	--	9	540	11	588
TOTAL		5	198	--	--	36	1890	41	2088

creased from 700 to 1450 and BDS from 130 to 470.

12.32 Private self financing institutions account for 41% of seats for MBBS, 72% for BDS and 54% for BAMS. Similarly 27 self financing nursing colleges and 9 pharmacy colleges were started in private sector during 2002-03. Accordingly, 90% B.Sc. nursing and 92% B.Pharm seats are in private sector. Post graduate and super speciality courses are only in Government colleges.

12.33 Five government college hospitals under Allopathy have 7978 beds which constitute 17.3% of the total beds in Kerala. Medical College wise beds and patients treated are given in Table- 12.6.

12.34 On an average 56 inpatients in these five medical colleges used one bed during 2002. It varies from 49 patients in Trissur Medical College to 64 patients in Kozhikode Medical College. Total beds in the five medical colleges rose from 7390 in 2000 to 7978 in 2002, where as inpatients treated increased from 383974 to 443000. Inpatients thus rose by 15.4%, while beds strength increased only by 8%.

12.35 After considering the developments/bottle necks of the medical colleges, Tenth Five year Plan strategy is to prepare a comprehensive development plan for each medical college in a phased manner by allotting a lump sum amount with focus on renovation of existing infrastructure and improving service delivery. It is proposed to convert Thiruvananthapuram Medical College as a centre of excellence with all modern facilities in

academic and treatment protocol.

12.36 Medical College, Thiruvananthapuram consists of a group of academic institutions comprising of Medical College, College hospital, SAT hospital, College of Nursing, College of Pharmacy, Priyadarsini Institute of Paramedical Sciences, Regional Institute of Ophthalmology. Independent Institutions like Dental College and Regional Cancer Centre are also situated within the campus.

12.37 In Medical College, Thrissur the major construction works undertaken include construction of 400 bedded hospital building and 1200 bedded hospital complex. Besides this the work of gents and ladies hostel, nursing hostel are in progress. During 2003 priority is for completing the 1200 bedded hospital and other infrastructure and to shift the hospital from Thrissur (Town) to Mulamkunnathukavu.

12.38 In Alappuzha Medical College, construction of Hospital complex with all facilities at Vandanam, is in progress. Five departments are now functioning in Medical College, Vandanam and steps have been initiated to shift two department viz, paediatrics and paediatric surgery to newly constructed hospital complex.

12.39 During 2002-03 machinery and equipment worth Rs. 313 lakh were purchased and installed in the five medical colleges. Out of it, equipment valued Rs. 82.50 lakh were for Kozhikode and Rs. 82 lakhs were for Kottayam.

TABLE -12.6
Government Medical college hospital wise distribution of beds ,Inpatients and Outpatients treated,delivery cases attended - 2002

(No.)

Medical College Hospital	Beds	IP	OP	Major operation conducted 2001	Delivery cases attended 2001
1	2	3	4	5	6
1.Thiruvananthapuram	2457	133700	765200	21104	16790
2. Alappuzha	1031	53600	478000	3556	6322
3. Kottayam	1246	62700	735000	12000	8184
4. Thrissur	987	48000	415000	9192	4678
5. Kozhikode	2257	145000	690000	21295	30000
Total	7978	443000	3083200	67147	65974

12.40 Running cost of medical colleges and hospitals has been increasing but there has been no corresponding increase in the budgetary allocation under non-plan. Fund available for major items of expenditure like drugs, diet, materials, cots, beds and equipment required for patients care and payment of electricity, water and telephone charges are inadequate. For instance, amount allotted for drug, diet and other materials was Rs. 33.96 crores in 2002-03 against actual requirement of Rs. 55 crores.

TABLE -12.7
Budget outlay and Requirement for drug, diet and other materials (Rs. Crores)

Year	Budget Outlay	Expenditure	Requirement
1	2	3	4
2000-01	23.69	23.69	38.00
2001-02	32.81	32.81	46.00
2002-03	33.96	33.96	55.00

12.41 During 2000-01, requirement was Rs. 38 crores against the allotment Rs. 23.69 crores. Consequent on the lower allotment estimated fund required for the settlement of hospital bills for purchase of medicine, diet and other material is Rs. 60 crores. Allocation of fund in the non-plan during the last 3 years for running the college hospitals is shown in Table.12.8. During 2003-04, deficit was Rs.47 crores as against Rs. 32 crores during 2002-03.

Table 12.8

Allocation under Non-plan and Requirement
(Rs. Crore)

Year	Non-Plan Outlay	Requirement	Deficit
1	2	3	4
2001-02	156.00	184.00	28.00
2002-03	158.00	193.00	35.00
2003-04	180.00	227.00	47.00

Shortage of Medical Personnel

12.42 In the government medical colleges there are 39 category of speciality departments and in each department there are four category of posts of doctors, namely Tutor/ Lecturer, Asst. Professor, Associate Professor and Professor. Total number of sanctioned post of doctors in 27 major departments in all the five medical colleges together is 1342. Out of them 299 (22%) are vacant as on October, 2003. Out of the present vacant posts, 76 are in Kozhikode Medical College and 62 are in Thrissur Medical College. In other words 25% posts of doctors in Kozhikode and 21% in Trissur medical college are vacant. There is an increase of 100 doctors in 27 major departments in 5 medical colleges in 2003 compared to 1998. This includes 16 Professors, 18 Associate Professors, 21 Asst. Professors and 45 Lecturers. Additional posts were mainly created in departments such as gynaecology (13 Nos.), General Surgery (10), Gen-

TABLE -12.9
Sanctioned and vacant posts of Doctors in Medical Colleges -2003

Medical College	Professor			Associate Professor			Asst. Professor			Lecturer			Total		
	Sanctioned	Existing	Vacant	Sanctioned	Existing	Vacant	Sanctioned	Existing	Vacant	Sanctioned	Existing	Vacant	Sanctioned	Existing	Vacant
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
TVPM	52	43	9	56	51	5	103	91	12	178	144	34	389	329	60
KKD	40	33	7	46	37	9	92	77	15	151	106	45	329	253	76
KTM	29	24	5	32	28	4	69	54	15	97	67	30	227	173	54
ALP	20	15	5	24	22	2	57	50	7	87	54	33	188	141	47
THSR	16	14	2	27	22	5	62	49	13	104	62	42	209	147	62
TOTAL	157	129	28	185	160	25	383	321	62	617	433	184	1342	1043	299

eral Medicine (10), Skin & VD (9) and Paediatric Medicine (8). Medical College wise position of creation of posts shows that in Thiruvananthapuram Medical College 22 posts were created followed by Alappuzha (21), Kottayam (20), Kozhikode (19) and Thrissur (18) during this period. Among the speciality departments 71.4% vacant posts are in Nuclear Medicine and 60% in Infectious Diseases and the lowest number of vacant post are (7.42%) in ophthalmology department. Vacant posts of doctors in major departments are 29% in medicine, 26% in surgery, 15% in cardiology 20% in Anesthesia, 32% in Nephrology, 42% in Neurosurgery, 20% Obstetrics and Gynaecology and 42% in paediatric surgery.

Nursing Education

12.43 In Kerala nursing education is imparted through DHS run institutions, approved private institutions, medical colleges and nursing schools in private sector. Three nursing colleges attached to 3 medical colleges have a total annual intake capacity of 150 students for BSc nursing, and 28 seats for M.Sc. nursing. There are 27 self financing nursing colleges in private sector with an annual intake capacity of 1350 students for B.Sc. nursing. In addition to it, there are 12 Nursing schools under department of Health Services which conduct general nursing (3Yr) course and 4 schools conducting JPH Nursing (18 months) course. The relevant details are given in Appendix-12.16

Ayurveda

12.44 There are 115 Ayurveda Hospitals with 2644 beds and 727 rural dispensaries without beds in Kerala. Out of the total dispensaries, 4 are visha chikilsa kendras, six are siddha and one is unani. Hospitals include 14 district hospitals, one nature cure hospital, one sidha hospital, one panchakarma hospital and one Ayurveda Mental Hospital at Kottakkal. Out of the total hospitals, 96 have own building, 15 are in rented building and 4 have own land but no building. Similarly, out of the 727 rural dispensaries, 399 have own building and 292 are in rented building. During 2003, 177.2 lakh patients were treated in Ayurveda institutions and out of them 0.58 lakhs were inpatients. Institutions and beds in ayurveda remained without change during 2003. Details of Ayurveda institutions and patients treated are given in Appendix.12.17

12.45 Modernisation and standardization of facilities in the existing institutions is the objective of the 10th

five year plan. As part of it, computerisation of the Directorate has been initiated during 2002-03. Similarly steps have been initiated to upgrade and standardise the facilities in the existing hospitals and dispensaries in partnership with concerned Local Self Govts.

Ayurveda Medical Education

12.46 There are 11 Ayurveda colleges in Kerala. Out of them 3 are Government, 2 are private Aided and 6 are Private Self Financing. Annual intake capacity in Ayurveda Colleges is 540 for graduate courses (BAMS/BSMS) and 62 for P.G. courses. Intake of students in Ayurveda Colleges is given in Appendix.12.18

12.47 In the five Ayurveda Medical College hospitals there are 972 beds. During 2002, 2.7 lakh patients were treated in these Ayurveda College Hospitals. Out of them 2.60 lakhs were outpatients and 0.12 lakhs were inpatients. More details are shown in Table .12.10.

12.48 Ayurveda College Hospital for Women and Children, Panchkarama Hospital, Ayurveda Research Institute, Ayurveda College Pharmacy are the attached institutions of Ayurveda College, Thiruvananthapuram. The College offers post graduate courses in 9 specialities. Government Ayurveda College, Thrippunithura has 14 teaching departments and Ayurveda College, Kannur has 13 departments. As per CCIM norms 3 more departments have to be established.

12.49 The 10th five year plan strategy is to develop all the three Ayurveda Medical Colleges as per CCIM norms with special emphasis to develop Thiruvananthapuram Ayurveda College as a centre of excellence. Accordingly during 2003-04, steps have been initiated to start new P.G. course in panchakarma in Ayurveda College, Thiruvananthapuram. In Ayurveda College, Thrippunithura, during 2003-04 focus is on the construction work of 350 bedded college hospital and the works are nearing completion.

Homoeopathy

12.50 Under homoeopathy there are 31 hospitals and 524 dispensaries. Total institutions are 555 and beds are 970 in 2003. Hospitals include 14 district hospitals and 17 taluk hospitals. 494 dispensaries are in rural areas and 30 are in urban area. Out of the 31 hospitals, 21 have own building, 9 are in rented building and one has own land but no building. Similarly out of

Table 12.10
Beds and patients treated in Ayurveda Colleges (2002)

Sl.No.	College Hospital	Beds	OP	IP	Total
1	2	3	4	5	6
A. Government					
1	Ayurveda College Hospital, Thiruvananthapuram.	528	159702	7518	167220
2	Ayurveda College Hospital, Thrissur.	139	21701	913	22614
3	Ayurveda College Hospital, Kannur	100	22016	947	22963
Sub Total		767	203419	9378	212797
B Aided					
1	Vaidyaratnam Ayurveda College, Ollur	103	53051	1203	54260
2	Vaidyaratnam P.S. Varrier Ayurveda College Hospital, Kottakkal.	102	3678	1077	4755
Sub Total		205	56729	2280	59015
TOTAL		972	260148	11658	271812

the dispensaries, 274 have own building and 232 are in rented building and 18 have own land but no building. During 2002-03, 236 lakh patients were treated in Homoeo hospitals and dispensaries. Out of them 0.17 lakh are inpatients and 235 lakh are outpatients. In other words only 0.07% were inpatients. Details of beds and patients treated in homoeo hospitals are given in Appendix.12.19

12.51 Homoeo hospitals have no unified staff pattern and dispensaries at present have 6 different types of staff pattern. The recommended staff pattern in homoeo dispensary is one medical officer, one pharmacist, one attender and one P.T.S. Prescribed staff is available only in 343 dispensaries. Among the 17 taluk homoeo hospitals, one has 125 beds, two have 35 beds and others have 25 beds each. Only 8 hospitals have clinical laboratories.

12.52 During the 10th five year plan the thrust is for strengthening and improving hospitals/dispensaries and to standardize the facilities in a phased manner. During 2003, steps have been initiated to start clinical laboratories in three district hospitals. As part of modernization of the Directorate of Homoeopathy, 8 computers were purchased during 2003.

Homoeo Education

12.53 Under Homoeopathy there are 5 medical colleges, 2 government and 3 private aided. Total annual intake for graduate courses are 250 (see Appendix-12.20). There are 325 beds in homoeo medical college hospitals. During 2003, the five homoeo medical colleges together treated 3.56 lakh patients. Out of them 3.48 lakh were outpatients.

Family Welfare

12.54 Kerala has achieved substantial improvement in family welfare programmes. This has mainly been due to higher level of education, exposure to mass media and accessibility to health centres. N.F.H.S.-II (1998-99) reveals that nearly 88% of women in Kerala are regularly exposed to one or more media. Family Welfare programmes in Kerala are implemented through PHC and CHCs and sub centres. State has achieved couple protection level of 65.98% in 2003. Details of couple protected by effective family planning method are given in Appendix -12.21 and 12.22

12.55 NFHS-2 1998-99 revealed that in Kerala 10% of birth occur after 18 months of a previous birth, 21% occur within 24 months and 54% occur after an interval of three or more years. The median birth interval is 38 months, longer than any other state in India. The

Table 12.11
Distribution of beds and patients treated in 2003

SL. NO.	NAME OF HOSPITAL	BEDS	PATIENTS TREATED		TOTAL
			IP	OP	
1	2	3	4	5	6
A	Government				
1	Govt. Homoeopathic Medical College Hospital, Tvpm.	100	91,914	1,521	93,435
2	Govt. Homoeopathic Medical College Hospital, Kozhikode.	100	1,16,863	1,390	1,48,253
B	Government Aided				
1	Dr. Padiar memorial Homoeopathic Medical College	100	3879	60025	63904
2	A.N.S.S.Homoeopathic Medical College	Nil*	359	24749	25108
3	Sree Vidhyadhiraja Homoeopathic Medical College	25	1084	24276	25360
	Total	325	8233	347827	356060

*ANSS Homoeo Medical College is not having an independent teaching hospital. The hospital beds are under the control of the Director of Homoeopathy.

median birth interval increases with house hold standard of living from 33 months to women in house holds with a low standard of living to 44 months for births to women in house holds with a high standard of living. Similarly, 97% mothers got ante-natal coverage in 1992-93 (NFHS I) and 99% (NFHS II) in 1988-99. At all India, coverage of ante-natal mothers was only 44% and 65% respectively. Key indicators of National Family Health Survey are given in Table-12.12.

Expenditure on Medical and Public Health

12.56 In Kerala during the first three five-year plans, nearly 8% of state's total plan outlay had

been earmarked for medical and public health. However, since the Fourth plan, outlay for Medical and public health has been only around 2.5% of total state plan outlay. However, in absolute terms, plan outlay for medical and public health increased 62 times from the First five year plan to the fifth five year plan, while state's total plan outlay increased by 181 times.

12.57 Total expenditure on medical and public health including family welfare was Rs. 758.58 crore in 2001-02. During 2003-04, expenditure is estimated at Rs. 865.60 crore.

TABLE -12.12
Key Indicators of National Family Health Survey
(NFHS-I 1992-93) and II (1998-99)

Item	NHFS-I (1992-93)		NHFS-II (1998-98)	
	Kerala	India	Kerala	India
Neo-Natal Mortality rate	15.5	48.6	13.8	43.4
Infant Mortality rate	23.8	78.5	16.3	67.6
Child Mortality rate	8.4	33.4	2.6	29.3
Total Mortality rate	2.00	3.4	1.96	2.85
Percentage of Mothers Received ANC	97.3	44.0	98.9	65.3

TABLE – 12.13
Plan and non-plan expenditure on Medical and Public Health including Family Welfare. (Rs.Lakhs)

Year	Expenditure on Medical and Public Health (excluding FW)			Expenditure on Family Welfare	Total
	Plan	Non-Plan	Total		
1	2	3	4	5	6
2001-02	6466.88	59120.91	65587.79	10270.57	75858.36
2002-03 (RE)	7541.58	55698.90	63240.48	10490.89	73731.37
2003-04 (BE)	10289.00	66270.80	76559.80	10000	86559.80

Accreditation to Laboratories

12.58 There are two important Laboratories in the State, namely, Public Health and Clinical Laboratory and Government Analyst's Laboratory. The Public Health and Clinical Laboratory does various biomedical investigations and on an average 2500 various tests on blood and other body fluids are done daily. Government Analyst's Lab on the other hand tests food and other related materials to find out the presence of chemicals and other substances. Eventhough these Laboratories are long existing institutions, having credibility, accreditation has not been obtained from the National Accreditation Board. As per WTO Agree-

ment, imported and exported food articles are to be analysed and certified by an Accredited Laboratory with international standards. Modern equipment, trained personnel, instrumentation room with all facilities, modernised work area, waste disposal system and computer network are the minimum requirements for obtaining the accreditation. Kerala State Council for Science, Technology and Environment has also stressed the need for the Laboratories to be accredited. Under the Tenth Five-Year Plan, the two Laboratories are to be modernized by providing necessary infrastructure facilities.

CHAPTER 13

HOUSING

According to 2001 census, there are 93.56 lakh houses in Kerala and out of it 7.31 lakhs are vacant and 86.25 lakhs (Residences, Shops, Schools, Hospitals, Factories, places of worship etc) are occupied. Among the occupied houses 64.90 lakhs are residences and out of the residences, 36.30 lakh (56%) are good, 23.30 lakhs (36%) are livable and 5.33 lakhs (8%) are dilapidated. Among the 2490.96 lakh households in India, 964.47 lakhs are good houses, 849.64 lakhs are livable houses and 105.53 lakhs are dilapidated houses.

13.2 Among the 65.95 lakh households in Kerala, 44.94 lakh households (68%) live in permanent houses and 14.24 lakh (21.6%) households in semi permanent houses. At the national level 994.32 lakhs (51.8%) are permanent houses and 576.64 lakhs (30%) are Semi-permanent houses.

13.3 47.20 lakhs (71.6%) have drinking water within the premises, 10.85 lakhs, (16.4%) have drinking water near the premises and for only 12% house holds drinking water is away from premises (See table – 13.1). At all India level only 748.03 lakhs (39%) have drinking water within premises and 851.12 lakhs (44%) have near premises. For 16.7% households drinking water is away from premises.

13.4 In Kerala while 46.33 lakh households (70.3%) have electricity, 19.19 lakhs (29.1%) use kerosene as source of lighting. In India, 55.8% households use electricity and 43.3% use Kerosene. Details are given in Appendix 13.1 and 13.2.

Demand for Housing in Kerala

13.5 Shortage of houses worked out as the difference between the number of households and number

Table – 13.1
Housing Situation of Kerala

Sl. No	Item	(Nos in Lakhs)	
		1991	2001
1	2	3	4
1	Total Houses	80.72	93.56
2	Residence & Residence Cum other used houses	54.59	65.32
3	House holds	58.90	65.95
4	House hold size average (Nos)	5.3	4.9
5	(i) Pucca houses	30.56	36.30
	(ii) Semi pucca/livable	10.44	23.30
6	(iii) Kutcha houses/Dilapidated	13.59	5.33
7	House holds and drinking water		
	(i) Drinking water with in premises	36.12	47.20
	(ii) Drinking water near premises	NA	10.85
	(iii) A way from premises	17.78	7.90
8	Houses holds source of lighting		
	(i) Electricity	26.10	46.33
	(ii) Kerosene	NA	19.19
	(iii) Others	NA	0.43

Note: 2001 Census has classified houses as good livable and Dilapidated. 1991 has classified as pucca, semi pucca and Kutcha.
Source:- Census. Reports 1991 & 2001

of houses is 63000 in 2001. Taking into account the dilapidated houses, housing demand in Kerala for 2001 is worked out as follows.

Numerical shortage of houses in 2001 (65.95-65.32)	= 0.63 lakhs
Dilapidated houses which need reconstruction	=5.33 ..
Houses, which require major repair/construction (10% of livable)	= 2.3
Total Demand (2001)	= 8.26 lakhs

13.6 Household size in Kerala is 4.9 (2001 census) as against 5.3 in 1991. Population increased from 290 lakhs in 1991 to 318 lakhs in 2001. Increase in population creates additional demand for houses. Based on projected population and household size at 4.9, demand for houses during the period 2001-08 is calculated as 14.44 lakhs. Similarly during the last three years, on an average, 2.69 lakh houses have been newly constructed with Government/Institutional support. Here houses constructed without external support are not considered. Considering all these aspects into account, it is estimated that by 2006, all people will have own houses, if the present trend of house construction continues. (See Table - 13.2)

Houses Constructed by Various Agencies

13.7 More than 20 major agencies are implementing housing programmes in the state. The Kerala State Housing Board, Rural Development Department, Kerala State Co-operative Housing Federation, Agricultural Bank and Kerala State Development Corporation for SC and ST and LSGs are the major Govern-

Table - 13.2

Estimated Demand for Houses by 2008 using 2001 actual population and demand in lakhs

Sl. No	Year	Demand during the year	Cumulative demand for houses	Average houses likely to be constructed (cumulative)	Balance houses
1	2	3	4	5	6
1	2001	8.26	8.26	--	--
2	2002	1.59	9.85	2.69	7.16
3	2003	1.07	10.92	5.38	5.54
4	2004	0.73	11.65	8.07	3.56
5	2005	0.51	12.16	10.76	1.4
6	2006	0.55	12.71	13.45	--
7	2007	0.64	13.35	16.14	--
8	2008	1.09	14.44	--	--

Note: Demand during each year is calculated based on the average family size 4.9.

ment Departments and autonomous bodies implementing the programme. A review of performance of various agencies shows that during 1998-03 assistance was provided to construct 11,32,931 houses. During 2002-03, all the agencies together assisted construction of 1.33 lakh houses and out of it 40620 (30%) were assisted by nationalized Banks and 32107 (24%) were assisted by Rural development department. SC department and Agricultural Development Bank are two other, major Government departments which supported house construction. Houses constructed by different agencies during the last 3 years is shown in Table 13.3. During 2003-04, upto (30.9.03), 51126 houses have been constructed with the assistance of these agencies. Agency/Department wise assistance provided

Table - 13.3
Houses constructed by various agencies
(2001-03)

Year	Houses Constructed (Nos)
1	2
2001-02	82082
2002-03	133228
2003-04 (up to 30.9.2003)	51126

for house construction is given in Appendix - 13.3.

Local Self Government and Housing

13.8 Since 1997-98, Local Self-Government have been actively involved in house construction for economically weaker sections. Increase of subsidy per house from Rs.9000 to Rs.35,000 in 1998 increased the demand for housing assistance. During 1997-2002 (Ninth Plan) LSGs have assisted construction of 5.71

Table - 13.4
Houses constructed and repaired by LSGs
(1997-2002)

Year	Houses Constructed (Nos)	Houses Repaired (Nos)
1	2	3
1999-00	28478	40851
2000-01	158282	33965
2001-02	288301	32420
Total	475061	107236

lakh houses and repair of 1.86 lakh houses. Table 13.4 give the details.

Kerala State Housing Board

13.9 Kerala State Housing Board has constructed 54930 houses under various schemes as on 30.9.03. KSHB assisted construction of 282238 Maithri Houses out of which 258245 houses are fully completed. The achievement under major housing schemes implemented by the Board are shown in the Table - 13.5.

Table - 13.5
Housing Schemes Implemented by Kerala State Housing Board
Other than Maithri Scheme (Houses Constructed) (Nos)

Sl. No.	Scheme	Upto 31.3.99	1999-00	2002-03	2003-04 upto 30.9.03
1	2	3	4	5	6
1	LIG Cash Loan Scheme	15213	1829	161	41
2	MIG Cash Loan Scheme	9734	1593	71	25
3	HIG Cash Loan Scheme	2872	88	0	0
4	MLA/MP Housing Scheme	91	7	1	0
5	Repair and Renewal of LIG	1148	295	6	9
6	Repair and Renewal of MIG	819	222	1	6
7	Repair and Renewal of HIG	185	40	0	0
8	Flood Loan Schemes(1992)	14934	301	0	0
9	WJHS (Subsidy)	388	19	8	16
10	Jubilee Housing Scheme	201	36	0	0
	Total	45585	4430	248	97

Source:- Kerala State Housing Board.

Appendix - 13.5 shows the achievements under Maithri housing scheme.

13.10 Due to heavy borrowing, poor recovery and increase in unsold houses/flats and plots, the Board landed itself in acute financial difficulties by 2000 and future lending to the Board was stopped by agencies like HUDCO. The Board started in 2001 aggressive recovery measures like recovery of arrear loans, selling of unsold plots, renting out revenue towers and flats and starting consultancy services. During 2003-04, Board sold 134 units of unsold property and raised Rs. 1000 lakhs. Through loan recovery, an amount of Rs. 2392 lakhs has been recovered. Similarly 52 developed house plots were sold for Rs. 110 lakhs. Revenue towers in four towns have been completed and allotted for rent to government departments and collected Rs.59 lakhs. Board also started consultancy services and raised Rs. 0.15 lakh through rent. Continuing the tempo, Housing Board altogether mobilised Rs.

3577 lakhs during the first six months of 2003-04.

13.11 Out of the 2973 plots available for allotment. 2671 plots have been allotted so far. Similarly out of 5599 Plot with Building (PWB) available for allotment, 4897 PWB have been allotted. Flats available for allotment were 3137 units and out of it 2721 units have been allotted. However, still 416 flats and 302 house plots are available for allotment as on September 2003.

13.12 During 2002-03, Board raised Rs. 320 lakhs through market borrowing and Rs. 4800 lakhs as subsidy for Mythri Housing from State Government. An amount of Rs. 2563 lakhs was raised from Commercial Banks during 2002-03. Board disbursed Rs. 7738 lakhs for various works during 2002-03. During 2003-04 Board received Rs. 209 lakhs for Mythri Housing Scheme from State Government and raised Rs. 2000 lakhs from HUDCO upto October 2003 and distributed Rs. 30 crores.

Kerala State Nirmithi Kendra

13.13 Kerala State Nirmithi Kendra is an agency engaged in the propagation and promotion of cost effective and environment friendly techniques in house construction. Nirmithi Kendra also conducts training programmes for engineers, architects and artisans to equip them with skill to practice cost effective and environment friendly building construction. KESNIK has established production centres in 12 centres all over Kerala. The Kendra has a joint venture with SDC (Swiss Agency for Development Corporation) for a building material project. In the first phase project is aimed at increasing the availability of cost effective and environment friendly building materials. In the second phase the focus is on rural housing. It is proposed to take up 55 Grama Panchayats in the project. Activities are going on in 15 selected panchayats in six districts in a phased manner and 29 grama panchayats have been taken up additionally.

13.14 Nirmithi Kendra implemented 161 projects during 2002-03 and during 2003-04 upto September, 31 projects have been taken up. Similarly during 2003-04, 69 projects have been completed against 189 during 2002-03. Details are given in Appendix - 13.6.

Kerala State Co-operative Housing Federation

13.15 Kerala State Co-operative Housing Federation is an apex body financing 207 primary co-operative housing societies affiliated to it. It has a share capital base of Rs.2793 lakhs as on 31-3-2003. The Federation helps low income, middle income and high income families for construction of houses through its primary societies spread through out the state. It mobilised Rs.6500.00 lakhs from the Financial Institutions during 2002-03 Rs.4000 lakhs from LIC and Rs. 2500 lakhs from NHB. It has disbursed an amount Rs.242.70 crores upto 30.9.2003. During 2002-03 the Federation disbursed Rs. 5715.13 lakhs as against Rs.7060 lakhs during 2001-02. During 2002-03 Federation assisted construction of 10826 houses and during 2003-04 up to 30.9.2003, it has assisted 4283 houses. It has targeted to assist 14234 houses during 2004-05.

13.16 During 2002-03, out of the total houses assisted 3702 (34%) were EWS and 3953 (36.5%) were LIG. Outstanding borrowings of the federation which was Rs.34818 lakhs as on 31.3.2002 increased to Rs.37628 lakhs as on 31.3.2003. Loan distributed and houses assisted are given in Appendix - 13.7.

Kerala Police Housing and Construction Corporation Ltd

13.17 The Kerala Police Housing and Construction Corporation was formed in 1990 with a view to constructing houses, quarters and office buildings for the police department. The Corporation has an authorised share capital of Rs. 10 crore. It has completed 723 quarters and 30 police stations under the Xth Finance Commission Award. Under XI th Finance Commission Award, Six police stations and four Rest Room works have been completed and about 124 works are in progress. Similarly certain modernisation works, work of Kerala Police Academy and Vigilance Head Quarters are in progress. The Corporation raised Institutional Finance from HUDCO and LIC to the tune of Rs.1239 lakhs during 2003 for various works. Institu-

Table - 13.6
Fund raised by Kerala Police Housing and Construction Corporation (Rs. lakhs)

SL. NO	Year	Hudco	Lic	Total
1	2	3	4	5
1	2001-02	817.88	110.00	927.88
2	2002-03	237.44	1001.68	1239.12

Source: Kerala Police Housing construction Corp.

tional Finance raised by the Corporation is shown in Table - 13.6.

HUDCO and Housing

13.18 HUDCO provides assistance for house construction to individuals and Institutions and also for construction works like road, bridges, Commercial Complex etc. HUDCO sanctioned Rs.5987.6 lakhs to institutions and individuals in Kerala during 2001-02 and Rs.45835.45 lakhs during 2002-03. During 2001-02, Rs.1617.00 lakhs was given to individuals. In 2002-03, there was an increase of Rs.40779 lakhs. Similarly the assistance given to Institutions also increased from Rs.3439.45 lakhs in 2002-03 to Rs.6932.16 lakhs in 2003-04. Details are given in Appendix-13.8. Amount sanctioned and released by HUDCO for Housing Finance Schemes are given in Table - 13.7.

Table- 13.7
Amount Sanctioned and released by HUDCO for Housing Finance Schemes Rs in lakhs

Year	Amount Sanctioned		Amount Released	
	Institutions	Individuals	Institutions	Individuals
2001-02	4370.60	1617.00	4370.63	1617.00
2002-03	3439.45	42396.00	3439.45	42396.00
2003-04	6932.16	561.00	6932.16	561.00

Housing Finance

13.19 In early 1990s, housing finance was available at interest rates ranging from 13 to 18 percent per annum and only a few Banks were providing housing finance. With more funds flow and flexibility to the institutional sector, emergence of more competitive financial institutions and liberal policies pursued by banks, housing finance has become cheaper and also available on easy terms. Institutions involved in housing finance are

mainly Nationalized Banks, HDFC, HUDCO, LIC, GIC, Canfin Homes, Co-operative Housing Federation etc. Interest rate for house loan now is as low as 7.75% (up to 5 years) depending upon the period of loan and amount of loan. The interest rates as on, October 2003 in the case of 21 institutions are given in Appendix 13.9. The availability of relatively low cost housing finance from banks etc and the over-all housing situation in the state, calls for a rethinking on the role of

institutions like the Housing Board. The government have already switched over to bank finance in the case of housing loans of government servants. It is only housing for the poor that needs to be addressed by government and its agencies. The Government of India have recently announced low interest loans/subsidy for housing of the rural poor and details of the scheme are awaited. The availability of funds under this new scheme has also to be taken into account.



POVERTY AND SPECIAL PROGRAMMES FOR WEAKER SECTIONS

Kerala has good achievement in coverage of basic minimum services. Its social security systems in the form of pensions to vulnerable groups and welfare funds for various categories of labourers are reasonably well spread. Universal public distribution system in Kerala provides good food security. These measures have prevented abject poverty to a great extent. Thus from the point of view of capabilities as well as entitlements, Kerala has performed better, in comparison with other states in tackling the problems of the poor.

14.2 The recent initiative in Kerala in this direction is the use of participatory planning as the launch vehicle for decentralization. The decentralization process has helped in restructuring development programmes with accent on full participation of the people with reliance on transparent indicators and criteria for conferring of benefits.

14.3 With decentralization of plan schemes, poverty eradication has become a Local Government responsibility, State Government has a guiding, supporting and co-ordinating role. All the Centrally sponsored anti-poverty programmes have been transferred to Local Governments. Bulk of the State Plan funds meant for poverty reduction especially under SCP/TSP and Women and Child Development have been devolved as practically untied bulk grant for local level projects to be planned and implemented by the Local Governments.

14.4 At the national level for the devolution of funds to the State, figures of people below poverty line are arrived at from National Sample Survey data. As per the NSSO 55th round (1999-2000) Kerala has poverty figures of 9.38% in rural areas and 20.27% in urban

areas, where as the All India figures are 27.09% in rural areas and 23.62% in urban areas.

14.5 According to the Survey of Rural Development Department, now there are nearly 17.23 lakh families below poverty line in the State. Out of this 19% are scheduled caste families, 3% Scheduled Tribe families and the remaining 78% belong to other categories. (See Table 14.1).

Table. 14.1
Number of Families Below Poverty Line according to Social Groups *

Sl. No	Category	Number of families below poverty line	Percent
(1)	(2)	(3)	(4)
1	Scheduled Castes	3,35,280	19
2	Scheduled Tribes	46,847	3
3	Others	13,41,429	78
	Total	17,23,556	100

Source: Commissionerate of Rural Development

* As on 31st August 2003

14.6 There is high concentration of families below poverty line among Schedule Caste and Scheduled Tribes. The district-wise/block-wise number of families below poverty line according to social groups are given in Appendices 14.1 & 14.2.

Destitutes

14.7 Kudumbashree has prepared an elaborate data base of destitutes, meaning those among the poor who can be called totally or absolutely poor and who need continuous handholding and a mix of support arrangements to lead a life of bare minimum comfort. The consolidated data covering 147 Panchayats in all the districts is given in Table 14.2.

14.8 The data reveal destitute families constitute above 2% of the population. It is shocking to note

Table 14.2
Consolidated Statement showing Component-wise Details of the Destitutes Rehabilitation Projects

S No	Name of District	No. of Panchayats	No. of Destitute Families Identified	Sector-wise Details of Deprivation Identified in Destitute Families															
				Lack of Food	Suffering from Chronic Illness	No Pension	No Physical Facilities for Education	No Drinking Water	No Sanitation Facilities	No Land for Housing	No Shelter		No Land for Housing	No Drinking Water	No Physical Facilities for Education	No Sanitation Facilities	No Land for Housing	No Shelter	No Employment	Other Requirements
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	Thiruvananthapuram	7	604	247	181	132	434	105	678	149	289	137	152	270					
2	Kollam	6	423	125	237	221	263	295	1420	113	171	20	118	26					
3	Pathanamthitta	11	816	203	391	415	586	486	916	213	391	232	273	20					
4	Alappuzha	2	184	0	81	105	64	148	121	112	137	11	149	84					
5	Kottayam	6	344	160	135	215	175	171	1160	31	72	67	41	23					
6	Idukki	17	998	400	351	508	785	583	2425	173	441	199	422	232					
7	Ernakulam	1	136	57	82	0	0	59	80	44	64	115	0	121					
8	Thrissur	10	986	242	318	384	582	227	311	243	320	348	307	73					
9	Palakkad	18	1932	501	357	473	646	316	139	54	121	23	43	17					
10	Malappuram	18	2000	405	502	970	1144	789	582	146	763	228	402	41					
11	Kozhikode	13	1190	588	352	572	622	749	845	276	751	95	526	475					
12	Wayanad	16	1266	537	480	788	374	956	437	275	675	155	432	187					
13	Kannur	11	837	414	340	471	496	559	526	103	480	184	303	166					
14	Kasaragod	11	779	431	301	319	439	464	300	107	555	33	317	106					
	Total	147	12445	4280	4128	5573	6610	5887	9940	2039	5230	1847	3465	1841					

Source: Kudumbashree

that 34 % of them do not have access to minimum food and in all probability they are outside the food security system. Similarly 45% of them do not have any social security assistance. Half of them do not have drinking water facilities and $\frac{3}{4}$ of them do not have sanitary latrines.

14.9 In fact a concerted effort is needed to provide these families with minimum entitlements.

New Initiatives in Poverty Reduction

Poverty reduction is given the prime place in the development strategies of the State. Certain initiatives have been launched. They are summarized below:

1. Special programme for development of destitutes – Ashraya

14.10 This innovative programme was initiated in the previous year through 101 Village Panchayats and now 46 more have come in. A detailed exercise was carried out to identify the destitutes. The Neighbourhood Group network under Kudumbashree identified families having the following risk factors.

1. *Kutcha 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 5 years in the family*
8. *Alcoholic or drug addict in the family*
9. *Scheduled Caste or Scheduled Tribe family*

14.11 The family which attracts 8 out of the 9 points is classified as destitute. In addition the following factors are considered as the next stage.

- (1) Squatters on public lands
- (2) Vagrants and beggars
- (3) Women headed families – unwed mothers, separated women, widows
- (4) Families with severe incurable diseases and disabilities.

14.12 After the identification the elements of destitution are documented. Thereafter trained volunteers interact with the destitute families and prepare family based micro plans. Government have issued orders allowing a package of measures to alleviate destitution. These include provision of minimum needs, social security, food and nutrition security, human development necessities etc. A system of continuous hand-holding of the family till it comes out of destitution is put in place and a tracking system to monitor the progress has been established.

14.13 This highly participatory community based approach has the best elements of care and compassion embedded in a development plan. This bids fair to become a new form of social security to the poorest provided by the State in partnership with local governments.

2. Creation of an index of poverty.

14.14 A census of all the poor people in the State has been undertaken by Local Self Government – Rural Development Department. The data are now being computerized. Once the computerization process is over an output showing key objective indicators of poverty would be generated which would then be validated by the NHG network. Thereafter the nine-point index of the SPEM now being followed would be reviewed through extensive consultations with representatives of the CDS system, academic experts, local government leaders, civil society representatives, officials and other stakeholders. A transparent index of poverty which combines elements which may not be disputed and which are socially recognized as indicators of poverty would be developed. Using this index all the families below poverty line would be ranked according to severity of poverty. This would then be presented before the Grama Sabhas and Ward Sabhas and their seal of approval obtained.

14.15 This list of the poor would strengthen their entitlement to various forms of assistance from Government and local government and make beneficiary selection absolutely fair. It would also facilitate re-designing of the anti-poverty sub plan with the involvement of the NHG network.

3. Tracking of Poverty

14.16A multilevel mechanism would be put in place to track poverty consisting of the following elements:

- (i) Conventional monitoring through reporting systems by implementing agencies.
- (ii) Participatory monitoring by the NHG network.
- (iii) Independent assessment by academic institutions and expert agencies.

This would be an initiative under the Modernizing Government Programme.

Anti – Poverty Sub Plan

14.17 As part of the Tenth Plan all Local Governments were asked to prepare an Anti -Poverty Sub Plan. Most of the Local Governments have done this. But the quality of planning has not been uniform. It needs to be

fine-tuned, for which Kudumbashree has launched a kind of an Action Research Project in five village Panchayats. However, the analysis of the Anti-Poverty Sub Plan prepared for Local Governments for the year 2002-03 is quite interesting.

14.18 During the first year of the Tenth Five Year Plan Local Governments have set apart Rs. 348.82 Crore for different projects intended to reduce poverty. Most of these projects are in the service sector constitute 73% of the investment.

The details of Anti-Poverty Sub Plan for each level of Local Governments in terms of allocation under grant-in-aid are given in Table 14.3 & 14.4.

The details of resource mobilization of projects under Anti-Poverty Sub Plan of Local Governments are given in Appendix 14.3

Table 14.3
Details of Anti-Poverty Sub Plan (Tier-wise Distribution) (Rs. Crore)

Sl. no	Local Government	No. Of Projects	Grant -in-aid				Total
			General	SCP	TSP	EFC	
1	2	3	4	5	6	7	8
1	Grama Panchayat	18975	154.9	76.48	1.38	3.21	235.97
2	Block Panchayat	3116	32.53	25.83	0.39	0.02	58.77
3	Municipality	1151	18.09	8.66	0.24	0.15	27.14
4	Corporation	105	5.62	4.84	0	0	10.46
5	District Panchayat	220	11.43	4.94	0.11	0	16.48
	Total	23567	222.57	120.75	2.12	3.38	348.82

Table 14.4
Sector-wise Distribution of Grant-in-aid (Rs. Crore)

Sl. No	Local Government	No. of Projects	Grant -in-aid			Total
			Productive Sector	Service Sector	Infrastructure Sector	
1	2	3	4	5	6	7
1	Grama Panchayat	18975	60.17	171.02	4.78	235.97
2	Block Panchayat	3116	12.49	43.87	2.41	58.77
3	Municipality	1151	2.13	23.31	1.7	27.14
4	Corporation	105	1.55	8.64	0.26	10.46
5	District Panchayat	220	6.19	7.43	2.86	16.48
	Total	23567	82.53	254.27	12.01	348.82

Rural Anti-Poverty Programmes

14.19 Rural Anti-Poverty Programmes are partially or fully Centrally assisted schemes, targeting people below poverty line. Important poverty alleviation programmes implemented by the Rural Development Department in the State in 2003-04 are Swarnajayanthi Gram Swarozgar Yojana (SGSY), Indira Awaz Yojana (IAY) and Sampooma Gramin Rozgar Yojana (SGRY). All these programmes are aimed at generating additional employment and income to the families below poverty line. In addition to these, Kudumbashree, a woman based participatory Poverty Eradication Programme of the State Government with the financial support of NABARD and Central Government, involves the poor actively in planning, managing and monitoring of their development programmes.

1. Swarnajayanthi Gram Swarozgar Yojana (SGSY)

14.20 Swarnajayanthi Gram Swarozgar Yojana (SGSY) is a Centrally Sponsored Scheme launched on 1st April 1999, aimed at establishing a large number of micro enterprises in the rural areas, building upon the potential of the rural poor. In this programme emphasis is given to group activities. The objective of SGSY is to bring every assisted family above the poverty line. It is conceived as a holistic programme of micro enterprises covering all aspects of self employment viz. formation of self help groups, capacity building, planning activity clusters, infrastructure build up, technology, credit and marketing. This programme adopts a project approach for each key activity. The effort is to cover 30% of the rural poor in each Block Panchayat during the Tenth Plan period.

14.21 SGSY, a credit cum subsidy programme, seeks to promote multiple credit rather than one time credit injection. This programme lays emphasis on skill development through training. It also proposes to ensure technology up-gradation in identified activity clusters. Market intelligence, development of market, consul-

tancy services etc. are the market promotion activities envisaged under this programme. Subsidy under SGSY is uniform at 30% of the project cost subject to a maximum of Rs. 7500/- per beneficiary. In respect of SC/STs it is 50% subject to a maximum of Rs. 10,000/-. For group activities the subsidy is 50% of the project cost subject to a maximum of Rs. 1.25 lakh. There is no limit on subsidy for irrigation projects. The programme expects at least 50% of the beneficiaries to be SC/STs, 40% to be women and 3% to be disabled. The physical and financial achievement under the scheme from 1999-2000 to December 2003 are given in Table. 14.5 & 14.6.

**Table 14.5
Physical Achievements under SGSY, 2003**

Sl.No	Particulars	Physical Achievements Number upto 2003-04*
1.	Self-Help Groups formed	42611
2.	Members covered	
	General	6485
	SC	1444
	ST	102
	Disabled	20
	Total	8051
3.	Individual beneficiaries assisted	80645

*Source: CRD * As on December 2003*

**Table 14.6
Financial Achievement under SGSY**

Sl.no	Particulars	Rs. In lakh
1.	Total Fund Available	13971.81
2.	Total Expenditure	11152.94
3.	Percentage of Expenditure	79.82
4.	Subsidy for Individual Beneficiaries	5813.51
5.	Subsidy for Groups	2996.00

Source: CRD

2. Indira Awaz Yojana (IAY)

14.22 The objective of the scheme is to provide dwelling units to the houseless Scheduled Castes and Scheduled Tribes, freed bonded labourers and other rural poor below poverty line by providing grant at the rate of Rs. 22000 per house. Indira Awaz Yojana is a centrally sponsored scheme, with the Centre and State sharing the cost in the ratio of 75:25. A maximum of 40 per

cent of the fund can be utilized for construction of houses for rural poor below the poverty line other than SC/ST and freed bonded labourers. Out of this, 3 per cent is earmarked for physically handicapped persons. The unit cost of a house is taken as Rs. 35,000/- and the balance Rs. 13,000/- is provided to the beneficiaries by the State Government or Local Government. Upgradation of existing Kutchha houses is also possible under the scheme for which the limit is Rs. 10,000/- per unit.

The physical and Financial achievement under the scheme is given in Table 14.7.

Table 14.7
Achievements of IAY from 1997-98 to 2003-04 (upto December)

A	Physical (no.)	Target	Achievement	SC	ST
1	New houses constructed	126401	103471	53086	6334
2	Houses upgraded (from 1999-2000)	48452	35553	18076	1498
B Financial (Rs. Lakh)					
<i>(i) New Houses</i>					
1	Total Fund Available		28937.65		
2	Expenditure		26268.26		
3	Percentage of Expenditure		90.77		
<i>(ii) Upgradation houses (from 1999-2000)</i>					
1	Total Fund Available		4467.27		
2	Expenditure		3721.29		
3	Percentage of Expenditure		83.30		

Source: Commissionerate of Rural Development

3 Sampoorna Gramin Rozgar Yojana (SGRY)

14.23 Sampoorna Gramin Rozgar Yojana (SGRY) is a Centrally sponsored scheme introduced in August 2001, by merging Employment Assurance Scheme (EAS) and Jawahar Gram Samridhi Yojana (JGSY). The objective of the scheme is to provide additional wage employment as well as food security through creation of durable community, social and economic assets and infrastructure development in the rural areas. The expenditure sharing between the Centre and the State is in the ratio of 75:25. Central Government also

provides food grains of value equivalent to the cash component free of cost. As an additionality under the scheme 5 Kg. of food grains is made available per manday at the ratio of Rs. 6.20 per kg.. The balance wage is paid in cash as per the notified minimum wages. The cost of transportation of food grains from FCI godowns to the workplace/PDS and its distribution are the responsibility of the State Government.

14.24 The programme is implemented in two streams namely, (I) district and block panchayat level and at Grama Panchayat level. Out of the total fund available under SGRY 50% is earmarked to district and block

panchayats in the ratio of 40:60 per cent. In this stream 22.5% of the funds is earmarked for individual beneficiary schemes for Scheduled Castes and Scheduled Tribes for providing economic and social assets and for development works in the individual lands of below poverty line families of these groups. The balance 50% of the funds is earmarked to grama panchayats. The grama panchayat is to set apart 50% of the funds allotted to them for taking up infrastructure development works in Scheduled Castes and Scheduled Tribes settlements.

14.25 The spillover works of the erstwhile Employment Assurance Scheme and Jawahar Gram Samridhi Yojana continued during the year under review. The achievement under SGRY (stream I & II) are shown in Table 14.8.

Table 14.8
Physical Achievements under SGRY, 2003

Sl.no	Particulars	Stream I	Stream II	Total
1	Works undertaken (number)	7813	32363	40176
2	Works completed (number)	3778	9221	12999
3	Employment generated (lakh mandays)	36.33	34.62	70.95

The physical achievement under Centrally Sponsored Poverty Alleviation Programmes are given in Appendix 14.4.

The financial achievement under Centrally Sponsored Poverty Alleviation Programmes are shown in Table 14.9.

Table 14.9
Financial Achievements under SGSY, IAY, JGSY, EAS & SGRY,
1997-98 to 2003-04
(Rs in Lakh)

Year	SGSY	IAY	JGSY (SGRY-II)	EAS (SGRY-I)	SGRY (I+II)	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1997-98	2531.96	2975.18	3851.76	4371.43	8223.19	13730.33
1998-99	2769.01	3632.01	4239.95	5425.26	9665.21	16066.23
1999-2000	2506.81	3990.70	3703.75	4688.09	8391.84	14889.35
2000-01	3489.56	3525.02	3404.06	3458.67	6862.73	13877.31
2001-02	1998.68	4618.14	4904.70	4987.47	9896.17	16512.99
2002-03	2062.50	4517.34	3731.46	4050.16	7781.62	14361.46
2003-04*	1068.73	3079.00	--	--	5615.00	9762.73

Source: Commissionerate of Rural Development
• upto December 2003

4. Kudumbashree

14.26 Kudumbashree the innovative poverty reduction experiment launched in the State during 1998-99 has accomplished its mission to extend its activities throughout the State by 2002-03. Between 2000-01 and 2002-03 the programme has been scaled up to the entire rural areas of the State in three phases. The participatory poverty reduction approach has its focus on building organisations of the poor under the leadership of the Local Self Governments. The three tier Community Based Organisations (CBOs) of poor women is an effective platform for converging various anti-poverty programmes of the State and Central Governments. The different agencies such as the NABARD, financial institutions, welfare boards and other autonomous agencies and departments are also utilizing this platform for the effective implementation of their programmes. These CBOs are the poverty alleviation wing of Local Governments. The major activities carried out during the year 2002-03 and 2003-04 (upto October 2003) are given below:-

a. Community Based Organisations (CBOs) of the Poor

14.27 The Kudumbashree programme organised 1.16 lakh Neighbourhood Groups (NHGs), 13135 Area Development Societies (ADS) and 991 Community Development Societies (CDS) in the rural areas of the State.

The Community based organisations, which has coverage of 23.48 lakh families, mobilized a sum of Rs. 228.16 crore as thrift and disbursed credit to the tune of Rs. 367.92 crore to its members (Table 14.10).

14.28 The Panchayat functionaries and CDS/ADS office bearers etc. were trained utilizing the plan funds for strengthening the CBOs. A massive training programme for volunteers (5 persons per NHG) has been initiated during 2003-04.

b. Linkage Banking

14.29 The Linkage-Banking Programme was launched during 2002-03 after proper grading the NHGs as per NABARD norms. During 2002-03 and 2003-04 (upto December 31st 2003) 41018 NHGs were graded and 21149 NHGs were linked with banks under the scheme. A sum of Rs. 63.54 crore has been made available to the NHGs as loan. (Appendix 14.5)

c. Lease Land Farming

14.30 The Lease Land Farming Programme (2002-03) has been extended to 621 Grama Panchayats. In these Panchayats 15869 NHGs consisting of 1.86 lakhs families have participated in the Programme and 6754.40 hectares of land were brought under cultivation (Appendix 14.6).

d. Bala Sabha

14.31 During 2003-04 the Balasabha, which intends to prevent intergenerational transmission of poverty, has been extended to the rural areas. It is expected to constitute at least one Balasabha per Ward during the year. In December 2002, Kudumbashree organised a Bala sangamam at Kozhikode and 150 Balasabha functionaries from 13 districts of Kerala participated in the sangamam.

District-wise details of Balasabhas are given in Table

Table. 14.10
District-wise Details of Thrift and Credit Operation in the
Neighbourhood Groups (NHGs), 2003-04

(Rs. Crore)

Sl. No	District	No. of NHGs Formed	No. of ADS Formed	No. of families covered	No. of families started thrift	Amount of thrift	Amount of Loan	Velocity of lending
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	Thiruvananthapuram	12439	1090	253634	253766	24.55	26.65	1.08
2	Kollam	9568	1031	203619	203619	16.64	20.23	1.21
3	Pathanamthitta	5120	626	131282	121282	11.20	16.02	1.43
4	Alappuzha	9602	927	202573	201548	17.54	24.24	1.38
5	Kottayam	8386	946	174887	173416	13.34	12.67	0.95
6	Idukki	7345	606	130372	129570	18.03	28.45	1.57
7	Ernakulam	7914	1090	144036	139694	13.76	17.18	1.25
8	Thrissur	10181	1215	184391	180380	21.69	68.35	3.15
9	Palakkad	9377	1196	174574	174374	13.53	14.17	1.04
10	Malappuram	6985	1397	153895	153895	13.43	12.91	0.96
11	Kozhikode	10712	1090	236509	216697	22.84	40.12	1.75
12	Wayanad	6036	354	93168	93168	11.25	23.66	2.10
13	Kannur	7638	1039	161207	155561	18.98	32.38	1.70
14	Kasaragod	4713	528	104568	104599	11.38	30.89	2.71
	Total - Rural	116016	13135	2348715	2301569	228.16	367.92	1.61
15	Urban (58 VLBS)	7917	631	272074	272074	21.37	22.29	1.04
16	Tribal (5 Districts)	1772	---	24580	24580	2.30	2.29	0.99
	Grand Total	125735	13766	2645369	2608183	251.83	392.50	1.55

Box -14. 1

BALASABHAS

This is an innovative attempt by Kudumbashrede to tap the creative energies of children for their educational improvement and cultural enlightenment. On an average about 25 children in the age group 5-15 belonging to a neighbourhood irrespective of whether they are poor or not are formed into a group. Each group has a Leader and Assistant Leader and it meets every week for about 1½ to 2 hours. The first hour is spent on the theme related to education and the second hour is devoted to cultural activities. The key activities include:

- 1) Remedial coaching
- 2) Developing young entrepreneurs
- 3) Marketing of Kudumbashree Products
- 4) Developing creativity
- 5) Strengthening group feeling

1400 resource persons drawn from different walks of life have been specially trained to act as facilitators.

This is a process project and some of the interesting innovations are:

- i) Children's thrift in Kasaragod and Malappuram districts.
- ii) Bala Sabha Federation at the level of the Grama Panchayats in Palakkad
- iii) Children's Library in Karakulam Village Panchayat of Thiruvananthapuram
- iv) Telescope for children in Mundoor and Akathethara Grama Panchayats in Palakkad
- v) Junior Doctor system in partnership with Primary Health Centres in Idukki and Malappuram Districts

So far 7655 Balasabhas have been formed with more than 1000 in Kozhikode, Wayanad, Malappuram, Kasaragod, Alappuzha and Kottayam.

Table 14.11
District-wise Details of Balasabhas

Sl.No	District	No.of Balasabhas Formed
1	2	3
1	Thiruvananthapuram	1309
2	Kollam	275
3	Pathanamthitta	300
4	Alappuzha	24
5	Kottayam	43
6	Idukki	607
7	Ernakulam	74
8	Thrissur	10
9	Palakkad	450
10	Malappuram	1215
11	Kozhikode	1422
12	Wayanad	1513
13	Kannur	397
14	Kasaragod	16
Total		7655

Source: Kudumbashree

e. Destitute Identification, Rehabilitation and Monitoring

14.32 Kudumbashree has formulated a project "Ashraya" with the assistance of the Central Government, to reach out the downtrodden and reflected destitutes scattered throughout the State. During 2003-04, 101 Panchayats have already prepared individual specific projects for destitute care and rehabilitation. The projects formulated by the 101 Grama Panchayats envisages to assist 8239 destitute families in the respective Panchayats.

f. IT enabled services to the Poor

14.33 An innovative component in the Destitute Identification, Rehabilitation and Monitoring Project is the built in online monitoring system project. As per the project the CDS office will be computerized in the Panchayats, where the destitute rehabilitation project has been taken up and the computer systems provided would be best utilized for the benefit of the poor.

g. Kerashree

14.34 Kudumbashree has brought out a new branded coconut oil in the brand name of Kerashree. During the year 2002-03, Kudumbashree started 67 Kerashree units in the State.

h. Vidhyashree

14.35 In the IT education sector 148 Vidhyashree units in schools were set up by Kudumbashree to impart computer education to the students studying in 8th, 9th and 10th standards as per the curriculum prepared by the education department. The educated women entrepreneur groups set up the computer laboratories as micro enterprises by availing bank loan.

i. Micro Enterprises in Rural Areas

14.36 So far 200 group micro enterprises of women were set up in the rural areas.

j. Coconut tree Climbers Training

14.37 Forty four youths from different Grama panchayats were trained to use the innovative equipment to climb the coconut tree. The training is for 7 days and trained youth can climb a 30 feet tall coconut tree in 2 to 3 minutes.

k. Self sufficient, Self-reliant and Sustainable CDS.

14.38 With the objective of total eradication of poverty by 2005, the novel programme of 'Self-sufficient, self-reliant and sustainable CDS' was launched. The Venganoor Grama Panchayat in Thiruvnanathapuram District, Kodakara in Thrissur District and Munniyur in Malappuram District have voluntarily came forward to take up this venture.

5. Land Reforms

14.39 The major objectives of Land Reforms are re-ordering of agrarian relations in order to achieve an egalitarian social structure, elimination of exploitation in land relations, realising the age old goal of land to the tiller, enlarging the land base of the rural poor, increasing agricultural productivity and infusing an element of equality. Kerala is acknowledged to be ahead of most other States in land reforms. Over the years, this has also led to acute fragmentation of holdings and making agriculture an uneconomic activity for large sections of the people. Re-survey is continuing in the State. Out of 38863 Sq. Km to be resurveyed in the state, resurvey works of 23958 Sq. Km (62 percent) have been completed. Out of 1604 survey villages, the survey records of 681 villages (42 percent) have been handed over to the Revenue Department. The resurvey in 109 villages is in progress. To dispose of complaints in connection with survey, adalaths have been organised since 1995. About 12.47 lakh cases were

disposed so far in 681 villages. About 2659 staff were given training in computer and other modern survey equipments.

14.40 Distribution of surplus land is another important activity under Land Reforms. An extent of 45 acres of land was distributed to 226 families during 2003-04 (up to 31-8-2003). The beneficiaries of land reforms include 130 Scheduled Castes and 27 Scheduled Tribes. The extent of land distributed is 17 acres to Scheduled Castes and 21 acres to Scheduled Tribes.

14.41 Since the beginning, the total extent of land declared surplus in Kerala is 1.41 lakh acres. Out of this, about 0.96 lakh acres have been distributed to 1.66 lakh beneficiaries, of whom 42.47% belong to Scheduled Castes and 5.35% belong to Scheduled Tribes. An area of 0.25 lakh acres is involved in litigation. Apart from surplus land, an area of 4.57 lakh acres of government wastelands has been distributed among landless rural poor.

6. Attappady Environmental Conservation & wasteland Development Project

14.42 This is an eco-restoration project for reclamation of 507-sq. km degraded wastelands of Attappady and to provide sustainable livelihood for the local people, particularly tribal population. The project is assisted by Japan Bank for International Co operation (JBIC). Total project cost 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. Attappady Hills Area Development Society (AHADS) is the agency for implementing the Project. The contractor system, which was an instrument of exploitation of STs and poor has been avoided.

14.43 The Project implementation was officially inaugurated on 2000 April. AHADS has started works in forestry, soil conservation, hydrology, civil engineering, agronomy etc. About 5.45 lakh mandays of employment were created till 31st December 2002. The Comprehensive Development Programme for ST's and SC's was launched on 17th November 2002. The project is being implemented in 146 micro watersheds divided in to 15 Development Units. User Associations are constituted for every micro watersheds for implementing the project activities and 92 User Associations have been formed as registered societies. Further, 160 Ooru Vikasana Samithies have been formed for implementation of various activities in Tribal hamlets.

14.44 The works so far completed consist of afforestation (3414 ha.), production of seed lings (29 lakh), private waste land 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 (10227 m) etc. The project, as it has had a delayed start, is expected to continue beyond the original terminal year of 2005 upto the end of the Tenth Plan.

URBAN POVERTY REDUCTION PROGRAMMES

State Urban Development Agency (SUDA)

14.45 In Kerala the role of State Urban Development Agency (SUDA) is taken up by Kudumbashree. Implementation of Swarna Jayanthi Shahari Rozgar Yojana (SJSRY) and National Slum Development Programme (NSDP) are done by urban local governments through Kudumbashree. Training programmes are also undertaken by Kudumbashree for improving the functional skill of poor women and equipping them for starting micro enterprises.

14.46 Kudumbashree has organised Community Based Organisations in all the 53 Municipalities and 5 Corporations in the State. There are 7947 Neighbourhood Groups consisting of 272914 families below poverty line, 631 Area Development Societies (ADSs) and 58 Community Development Societies (CDSs). The CDS system acts as the delivery system for various Centrally Sponsored Urban Poverty Reduction Programmes. As on 30th November 2003 Community Based Organisations in urban areas mobilised thrift to the tune of Rs.21.62 crore and disbursed loan worth Rs.22.46 crores. District wise details of number of NHGs and thrift mobilised are given in Appendix 14.7

Swarna Jayanthi Shahari Rozgar Yojana (SJSRY)

14.47 Swarna Jayanthi Shahari Rozgar Yojana (SJSRY) is an anti poverty programme launched by the Government of India during 1997 for eradicating absolute poverty from urban areas. The Community Development Societies are the delivery system for the scheme. Identification of beneficiaries, selection of micro projects, monitoring of recovery, implementation, social audit etc. are done through Community Development Societies (CDS).

Table-14.12
Year wise Financial Achievement of SJSRY (1997-98 to 2003-04)

(Rs in Lakh)

Sl.no (1)	Year (2)	Fund released (3)	Expenditure (4)	Percentage (5)
1	1997-98	1117.47	1070.93	95.84
2	1998-99	502.79	549.93	109.26
3	1999-2000	597.76	472.74	79.09
4	2000-2001	386.32	459.36	118.91
5	2001-2002	354.97	239.12	67.36
6	2002-2003	451.99	453.04	100.23
7	2003-2004*	638.76	297.73	46.61
Total		4050.06	3542.25	87.46

Source: Kudumbashree * As on September 2003

14.48 SJSRY has two sub schemes, the 'Urban Self Employment Programme' (USEP) and 'Development of Women and Children in Urban Areas' (DWCUA).

Urban Self Employment Programme (USEP)

14.49 USEP assists individual urban poor for starting self employment ventures. Ordinarily the project cost is upto Rs.50,000/- per individual. But if two or more eligible persons join together in a partnership higher project cost is allowed, provided individual share does not exceed Rs. 50,000/-. Subsidy is provided at the rate of 15% of the project cost subject to a maximum of Rs.7,500/- per beneficiary. Beneficiary share is 5% of the project cost either as cash or in kind or as both. Out of the project cost 80% is sanctioned as loan by various financial institutions including Banks and Thrift and Credit Societies.

Development of Women and Children in Urban Areas (DWCUA)

14.50 DWCUA assists the urban poor women for start-

ing gainful employment through group activity. This scheme is extended to the poor women in urban areas who decide to setup self-employment enterprise as a group as opposed to individual efforts. Groups of urban poor women identify an economic activity suited to their skill, training, aptitude and local condition. Besides generating income, the synergy of the group helps the women to empower themselves for combating poverty. Minimum number necessary for a group is fixed as 10. Generally the project cost is Rs. 2.5 lakh or less. The DWCUA group is given a subsidy of Rs.1.25 lakh or 50% of the cost of project, which ever is less. To ensure the contribution of members, 5% of the project cost is brought in as their share, either in cash or in kind or as both. The banks normally sanction 95% of the project cost as loan amount. When the thrift of the poor population reaches a sizeable amount, the thrift and credit societies sanction loan to the needy.

14.51 Kudumbashree has so far organised 14,594 micro enterprises of which 1142 units are group ventures of poor women. The physical achievement of the scheme during 2002-03 and 2003-04 are given in Table 14.13.

Table - 14.13
Physical Achievement of SJSRY during 2002-03& 2003-04

Sl. No (1)	Components (2)	Achievement	
		2002-03 (3)	2003-04 * (4)
1	USEP - Individual self employment enterprises	803 units	98 units
2	DWCUA - Women group enterprises	181 groups	118 groups
3	UWEP - Man days created	0.10 lakh	--
4	Skill development training	1829 persons	2021 Persons

Source: Kudumbashree.

* Upto September 2003

Valmiki- Ambedkar Awas Yojana (VAMBAY)

14.52 VAMBAY is a Centrally Sponsored Scheme launched during 2001-02 for the benefit of the slum dwellers on a 50:50 sharing basis between Central and State Governments. It mainly aims at ameliorating the housing problems of the slum dwellers, who are living below poverty line. Concerned Urban Local Governments meet 50 per cent of the State Share.

14.53 The State Poverty Eradication Mission is the nodal agency for the implementation of VAMBAY in the State. The upper financial limit for construction of a house with sanitary toilet is Rs.40,000 /-.

The performance of the scheme are given in Table 14.14.

National Slum Development Programme (NSDP)

14.54 National Slum Development Programme is 100% Additional Central Assistance Scheme introduced in 1996 to tackle the problem of slum dwellers. The objective of this programme is up-gradation of urban slums by providing physical amenities like water supply, storm water drains, community bath, widening and paving of existing lanes, community latrines,

street light etc. Besides, funds under NSDP can be used for provision of community infrastructure and social amenities like pre school education, non-formal education, adult education, maternity, child health and primary health care including immunisation etc. The programme also has a component of shelter up-gradation and construction of new houses. The scheme is implemented through the Community Development Societies in Urban Local Governments. The Urban Local Governments are preparing the action plans of NSDP linking with SJSRY plan through the CDS according to the felt needs. Under this programme an amount of Rs.4932.97 lakh has been expended upto 30th of September 2003.

The physical achievement of the scheme so far are given in Table 14.15.

Multi purpose Job Clubs

14.55 Kudumbashree has started two multipurpose job clubs in collaboration with Scheduled Caste Development Department in Thiruvananthapuram City during 2003-04. These units provide all essential services such as plumbing, electrical, carpentry, masonry work, repairing of home appliances etc. at the door step in a

Table 14.14
Physical Achievement of VAMBAY (2001-02 to 2003-04)

Sl.No.	Year	Release of fund (Rs. Lakh)			No. of Houses	
		State	Central	Total	Targeted	Completed
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	2001-02	266.00	266.00	532.00	1330	478
2	2002-03	2305.65	2305.65	4611.30	11528	1004
3	2003-04*	1000.00	--	1000.00	8236	--

Source: Kudumbashree

* As on September 2003

Table 14.15
Physical Achievement of National Slum Development Programme *

Sl.No	Name of Component	Achievement
1	2	3
1	Construction of houses (Nos.)	29324
2	Shelter Upgradation (Nos.)	29624
3	Construction of latrines (Nos.)	25589
4	Construction of Wells (Nos.)	1064
5	Construction of Community bath rooms (Nos.)	2400
6	Garbage bins (Nos.)	932
7	Construction of roads and Pedestrial foot path (Km.)	4201
8	Wiring of Houses (Nos.)	8103
9	Water Connection (Nos.)	769
10	Street Light (Nos.)	786
11	Construction of Community hall (Nos.)	15
12	Sewerage (Nos.)	58
13	Storm Water drainage (Km.)	130

Source: Kudumbashree

* As on September 2003

cost effective and time bound manner. Unit cost of each club is Rs.5 lakh.

Social Security and Welfare

14.56 According to ILO there exist two types of security ie, preventive and promotional. In Kerala context the term social security should be used in its broadest sense. It may therefore be defined as consisting of all types of measures as designed to

- (a) Prevent deprivation (Preventive)
- (b) To assure every one a basic minimum income which would be adequate for meeting the basic needs. (Promotional)
- (c) To protect the income against loss or diminishing due to the occurrence of any contingency including sickness (Protective)

The measures may be statutory, non statutory, public or private

14.57 Kerala has several achievements in introducing social security measures for vulnerable segments of the society. Successive Governments in Kerala have introduced as many as 35 social security schemes and over 3% of the state budget is spent on social security measures. In states like Tamil Nadu and Karnataka social security expenditure as proportion of the state budget ranges between 2.2 and 2.5. The social security measures in the state can be broadly categorised into institutional care and pension schemes.

Institutional care and protection

14.58 There are 48 welfare institutions in the state un-

der the Social Welfare Department including 12 Mahila Mandirs , 9 old age homes, 3 Asha Bhavans and 3 homes for physically handicapped persons. Through a net work of 420 orphanages in the state run by NGO's, more than 29250 inmates are given care. The sanctioned strength and actual beneficiaries in different categories of homes are given in Appendix-14.8

14.59 In almost all the welfare institutions the number of inmates is far below the sanctioned strength. For instance, in 48 government welfare institutions sanctioned strength is 2870. But the inmates residing in these homes are only 901 – that is only 31.39% of the sanctioned strength.(see Table 14.16). This calls for revamping and restructuring of the working of different institutions to avoid waste and improve facilities.

Social Security and Pension Schemes

14.60 The floor level minimum wage fixed by central government meant for three units of consumption is around Rs.45 per day. The cost of subsistence of one consumption unit is Rs.15 per day or Rs.450 per month. Granting that a pension may not exceed fifty percent of a wage, the minimum pension should not be less than Rs.225 at current prices. In Kerala social security coverage is provided through more than 40 schemes of which 20 are entirely financed by the state. The other schemes are implemented by statutory and non-statutory boards, remaining outside budget but through registered welfare boards. As reflected in Appendix 14.9 about 17 lakh persons are benefited through the pension schemes alone and the highest coverage is in agricultural pension. In Appendix-14.10 the details of social security/pension schemes in the state including all welfare fund Boards are presented.

Table 14.16
Major Welfare Institutions: Inmates and Sanctioned Strength

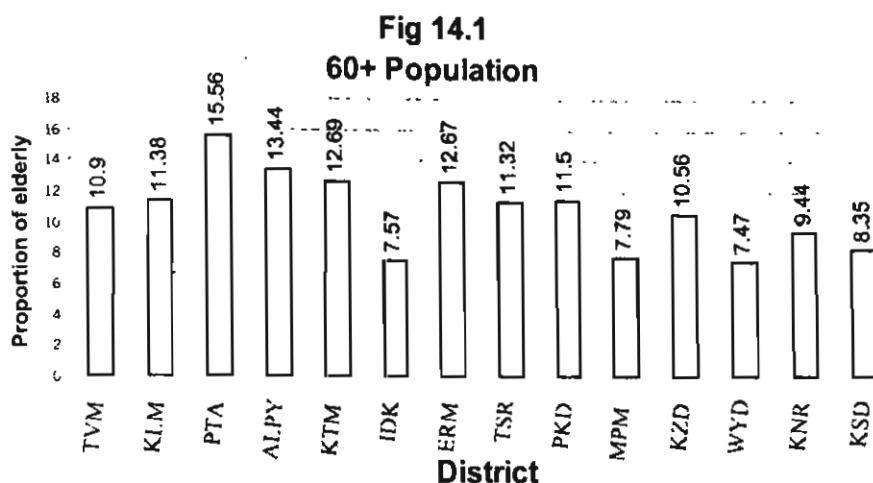
Sl. No.	Institutions	Numbers	Inmates (Nos)	Sanctioned Strength (Nos)
1	2	3	4	5
1	Mahilamandir	12	198	420
2	Home for physically Handicapped	3	52	175
3	After Care Home	3	-	300
4	Old Age Homes	9	309	1000
5	Rescue Homes	1	-	300
6	Observation Homes	13	192	425
7	Care for Disables	4	38	100
8	Home for mentally cured patients	3	112	150
	Total	48	901	2870

with qualifying conditions and rate of assistance provided with subsequent revision.

Social Security for the aged

14.61 There is more demand on social security measures with the ageing of population in Kerala. Population figures shows that the proportion of the population aged 60 years and above has steadily increased from 5.83% in 1961 to 10.95% in 2001. According to projections, the number of 60+ years is expected to exceed 20.22% in 2021 which will have far reaching implications in the economy. The demographic profile of aged in Kerala is reflected in Appendix 14.11.

abilities, it was estimated that about 1.9 percent of the population of the country were disabled and about 70% of the disabled lived in rural areas. As regards mental retardation, a sample survey conducted by the NSSO in 1991, estimated that about 3% suffer from delayed mental development. The number of leprosy affected person is estimated to be about 4 million of whom a fifth are children. Fresh cases of disability every year have been estimated to be 7.5 lakhs as per the 1991 sample survey. Hence, on an average 5% of population is estimated to be suffering from some kind of disability. In term of absolute numbers the estimated number of people having disability is about 50 million.



14.64 Based on 1991 Census the estimated number of disabled persons in India stood at 3.87 crores which is 4.6% of the total population out of which 58.6% were males. While 16.2 million people are physically disabled 2 million suffered from speech disability. Details are furnished in Table - 14.17

The proportion of elderly by district in Kerala as per Kerala Migration Survey- 1998, is reflected in the following Diagram.

14.65 The enactment of the Persons With Disabilities Act, 1995 is a major step taken by the Central Government to ensure equal opportunities for persons with disabilities and their full

14.62 The National Old Age Pension Scheme is a part of National Social Assistance Programme of Government Of India and was implemented from 1995 for persons above 65 years of age. Under this scheme central share of pension is Rs. 75 and State share is Rs. 35 per month. During 2002-03, the number of beneficiaries covered under this scheme is 1.34 lakhs and expenditure incurred was Rs. 1509.28 lakhs including Rs. 1242 lakhs as central assistance.

Table 14.17
Disability in India - 1991

Type of Disability	Rural		Urban		Total	
	Male	Female	Male	Female	Male	Female
Locomotor	4.4	2.4	1.4	0.8	5.8	3.2
Visual	1.5	1.8	0.3	0.4	1.8	2.2
Hearing	1.4	1.2	0.3	0.3	1.7	1.5
Speech	0.9	0.6	0.3	0.2	1.2	0.8
Physical	7.4	5.2	2.1	1.4	9.6	6.6

Source:- National Sample Survey Report - 1991

Box -14. 2

Out of the disabled in India 20.37% were in the age group 70 + and 9.86% in the age group 0-9 .

Social Security for the Disabled

14.63 As per the National Sample Survey of 1991, in the field of visual, hearing speech and locomotive dis-

participation in nation building. Chapter 4, part II of the Act deals with prevention and early detection of disabilities. Implementation of the Act is left with the respective State Government. The Xth plan approach towards empowering the persons with disabilities is for making as many disabled persons as possible active, self-reliant and productive contributors to the national economy.

14.66 Pension Scheme for persons with disabilities has been implemented in Kerala from 1982 and the rate of assistance was Rs. 75 per month. Through subsequent revision, the present rate is Rs. 110 per month,

Major Intervention measures for the disabled in Kerala are summarised below

Programmes	Implementing Department
I. Educational and Support facilities	
1. Special Schools	Directorate of Public Instruction
2. Educational assistance for mentally retarded	Non Governmental Organisation
3. Scholarships to students from Std I to plus two	Social Welfare Department
4. Integrated Education of Handicapped	Education Dept.,
5. Higher education for hearing impaired	National Institute for Speech and Hearing
II. Health Promotion facilities	
1. Distribution of aids and appliances	Kerala State Physically Handicapped Persons Welfare Corporation/Health Dept/Local Governments
2. Physical medicine and rehabilitation centers	Health Department
3. Welfare activities to the locomotor disable	Health Department
4. Early detection and intervention in hearing and speech impaired children	National Institute for Speech and Hearing
5. Early intervention and therapy services for prevention of neurological disability in children	Child Development Centre
6. Rehabilitation and training to children and adults with cognitive and communicative disorder	Institute for Cognitive and Communicative Neuro Science
7. Special training for the mentally retarded children	State Institute for Mentally Handicapped
III Social Security measures	
1. Institutional care	Social Welfare Dept.
2. Pension and allowances	Local Government
IV. Employment assistance and cells	
1. Special employment exchanges for Disabled	Directorate of employment
2. Vocational training centres	Govt. and private
3. Self Employment assistance	Kerala State Physically Handicapped Persons Welfare Corporation
V. Implementation of Persons with disability act - 1996	Commissionerate for disability
VI. Reservation and concerns to the disabled	Various Departments.

Box -14. 3°

Out of 25165 persons surveyed in Thrissur District, 308 are disabled which is 1.2% - Survey of The All India Rehabilitation Council of India.

benefiting about 1.48 lakh disabled persons in the state. The expenditure incurred during 2002-03 is Rs. 2631.78 lakhs.

14.67 Disabled population in Kerala is projected at 3.79 lakhs(Table -14.18) and out of them, 1.79 lakh

Table 14.18
Projected Total Disabled in Kerala :Disability wise

1	Visually impaired	28960	33997	62957
2	Hearing and speech impaired	25183	23923	49106
3	Physically Handicapped	103249	75548	178797
4	Mental Retardation	28985	22640	51625
5	Mental illness	28960	7555	36515
	Total	215337	163663	379000

Source:- SPB Committee Report on Disabled – 2000

Box -14. 4

Out of the estimated 379 lakh disabled in Kerala 47% are physically handicapped of which 58% are men.

Out of 37.8 lakh registants in employment exchanges, 0.33 lakhs are physically handicapped (1998).

33 special schools are there in Kerala benefiting about 3800 disabled children.

Source:- SPB Committee Report on disabled – 2000

(47%) are physically handicapped and 0.63 lakhs (17%) are visually impaired.

Social Protection Measures exclusively for Women

14.68 There are several schemes to provide social protection exclusively to women. The destitute/widow pension scheme was implemented in the state from 1973 onwards with a monthly pension rate of Rs. 55 and Rs. 5 for each of the minor children. The rate of pension is Rs. 110 per month during 2002-03 and Rs. 3956.01 lakhs was the expenditure incurred to benefit 2.08 lakh poor women. Of the total number of beneficiaries, Malappuram has the largest number with 29345 women and the lowest number is in Idukki district with 2792. Financial assistance is also provided to poor widows towards marriage expense of their daughters from 1978 onwards. In the beginning the rate of assistance was Rs. 1000 and has been enhanced to Rs. 5000/- from 2002. An amount of Rs. 109.9 lakh was expended under this scheme during 2002-03. Pension scheme for unmarried women above 50 years of age was implemented from 2001. The monthly rate of pension is Rs. 110 and Rs. 293.88 lakhs was incurred to benefit 24209 unmarried women during 2002-03.

Social Protection of unemployed.

14.69 Unemployment assistance scheme was introduced in the state in 1982 under non plan and is being implemented through local governments under the overall supervision of the employment Department.

The starting rate of assistance was Rs. 50 per month and after revisions the rate at present is Rs. 120. During 2002-03, 3.41 lakh unemployed candidates have been assisted. The highest coverage of candidates is in Thiruvananthapuram district with 65719 and lowest is in Wayanad with 3244.

Welfare of Prisoners

14.70 The Jail infrastructure in the state consists of 3 central prisons, an open prison, one prison for the women, three district Jails, five special sub jails, one Borstal school and 26 sub-jails. In 2002, there were 6730 prisoners out of which 173 were women. The details of district-wise jail infrastructure with inmates are furnished Table – 14.19.

Welfare Fund Boards and Welfare Measures

14.71 Welfare funds represents one of the models developed in Kerala for providing social security to the workers in the unorganised sector. Under this model funds are raised by levying a cess on the production, sale or export of specified commodities or by collecting contribution from various sources including the employers, employees and sometimes Government and the funds are used for meeting the expenditure on welfare of workers. But government plays lead role in the schemes. Welfare assistance consists of financial assistance for housing, education of children and marriage of daughters. Given the importance of education in Kerala and the premium attached to it even by the poorer households, educational assistance figures in the welfare benefits of a number of funds. The benefits of the various funds are the following. (1) Provident Fund (2) Gratuity (3) Monthly Pension (4) Disability and accident Cover (5) Health Cover (6) Unemployment relief (7) Educational assistance (8) Housing assistance (9) Marriage assistance (10) Funeral benefit.

14.72 In Kerala, there are 23 Welfare Fund Boards.

Table - 14.19
Jails in Kerala and District-wise prisoners - 2002

District	Central Jail		Distict Jail		Sub-Jail		Open Jail		Women Jail		Spl.Sub Jail		Grand Total	
	Total	Female	Total	Female	Total	Female	Total	Female	Total	Female	Total	Female	Total	Female
2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Trivandrum	1436	25	216	0	78	2	215	0	26	26	0	0	1971	53
Kollam	0	0	222	21	157	6	0	0	0	0	0	0	379	27
Pathanamthitta	0	0	0	0	186	13	0	0	0	0	0	0	186	13
Alappuzha	0	0	0	0	120	0	0	0	0	0	68	6	188	6
Kottayam	0	0	0	0	41	0	0	0	0	0	99	4	140	4
Idukki	0	0	0	0	107	2	0	0	0	0	0	0	107	2
Eranakulam	0	0	0	0	278	0	0	0	0	0	0	0	278	-
Thrissur	479	15	0	0	117	0	0	0	0	0	199	-	795	14
Palakkad	0	0	0	0	92	0	0	0	0	0	98	2	190	2
Malappuram	0	0	0	0	167	0	0	0	0	0	-	-	167	2
Kozhikode	0	0	559	26	62	0	0	0	0	0	0	0	621	26
Wayanad	0	0	0	0	67	3	0	0	0	0	0	0	67	3
Kannur	1448	22	0	0	66	0	0	0	0	0	64	0	1578	22
Kasargod	0	0	0	0	63	0	0	0	0	0	0	-	63	-
Total	3363	62	997	47	1601	18	215	0	26	26	528	12	6730	158

Source: - Jail Department

Details available for 15 Welfare Fund Boards shows that total number of members enrolled in these Boards is 34.13 lakh. Workers enrolled as members in the Welfare Fund Boards to total estimated workers in the respective sector, are low in most of the Boards. In Kerala Coir Workers Welfare Fund Board, there are 1.96 lakh members as against 5 lakh estimated workers. Nine Boards receive contribution directly from the Government.

14.73 Members of the Board of Directors are nominated by the Government and the representation is more or less equal from all three sides, that is unions, employers and Government. The establishment expenses are borne out of the income of the respective fund. Not more than 15 percent of the total income of a given fund is supposed to be spent on establishment charges. (ie. administrative cost). But all the funds considered (2003) have exceeded this limit. During 2002-03, 3.4 lakh members availed benefits through 13 Welfare Fund Boards. Total income of the Boards during 2002-03 was Rs. 338.51 crore as against Rs. 324.85 crore during 2001-02. Administrative expenditure of the 13 Boards during 2002-03 amounted to Rs. 127.28 crore

as against Rs. 110 crore during 2001-02. Expenditure on welfare measures during 2002-03 was Rs. 71.44 crores as against Rs. 42.63 crore during 2001-02. (See Table- 14.20).

14.74 Out of the total expenditure of 12 Boards during 2002-03, 76% was on administrative expenditure as against 72% during 2001-02. It shows that expenditure of welfare measures was only 24% of the total expenditure during 2002-03 as against 28% during 2001-02. Details are shown in Table-14.21.

An Assessment of Welfare Fund Boards

1. There is no uniform policy in the provision of benefit. There is therefore need for a rethinking on this aspect of the designing of welfare fund benefits.

2. The coverage of workers also poses problems. The total number of workers in the informal sector comes to nearly 30 lakhs. But the actual coverage is only about 35 to 40 percent. It implies that a majority of workers in the informal sector are out of the welfare fund net work.

Table – 14. 20
Number of Workers and number of Workers enrolled as
Members in the Welfare Fund Board

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	10
1	Kerala Coir Workers Welfare Fund Board	500000	36260	159740	196000	7	32	39	
2	Kerala Cashew Workers WFB	NA	7136	175448	182584				
3	Kerala Tody Workers WFB	40088	14502	140	14642	36.17	0.34	37	
4	Kerala Building and other Construction W WFB	1500000	NA	NA	62446			73	
5	Kerala Tailoring Workers WFB	500000	66890	215645	282535	14	43	57	
6	Kerala Bamboo, Kattuvalli and Pandanus Leaf W WFB	200000	834	6303	7137	0.85	3.15	4	
7	Kerala Agriculture W WFB	NA	NA	NA	1811491				
8	Kerala Head Load WFB	30061	30011	50	30061	99.83	0.17	100	
9	Kerala Artisans and Skilled W WFB	203555	103777	99778	203555	51	49	100	
10	Kerala Hand Loom Workers WFB	NA	12112	14732	26844				
11	Kerala Beedi and Cigar WWFB	170000	10036	28982	39018	6	17	23	
12	Kerala Akbari Workers WFB	3165	NA	NA	2255			71	
13	Labour Welfare Fund Board	NA	NA	NA	488802				
14	Kerala State Lottery WFB	37296	3791	156	3947	10.58	0.42	11	
15	Traders Welfare FB	NA	61300	75	61375				
	Total	3184165	346649	701049	3412692				

3. Mobilisation of funds and its management is a matter of serious concern. On the basis of available data, we find that (2003) majorities of the Board mobilise resources that exceed their total expenditure. There exist disproportionalities in the distribution of benefits. Some Boards have accumulated huge amount as investments in financial institution. The return from the investment is utilised for meeting the benefits. But now due to the decline in interest rate, the return from investments is on the decline.

4. Investment of the funds needs a relook.

5. Cost of administration has increased considerably. A major reason for this state of affairs is that each welfare fund has its own separate and independent ad-

ministrative body, thus multiplying the overhead cost. The share of administrative expenditure as percentage of total expenditure varies from 31 percent to 100 percent (2001-02) and 35 percent to 100 percent in 2002-2003. In reality what this means is that there is very little welfare payments, despite collection of contribution from the stakeholders.

6. The working of Welfare Fund Boards, the costs of administration of several Boards, the efficiency of the use of funds and the benefits obtained by the workers have to be urgently reviewed. So also, the social welfare and pension schemes of government.

**Table-14.21
Expenditure on Administration and Welfare Measures in Welfare Fund Boards**

Sl no	Name of the Board	Administrative Expenditure		Expenditure on Welfare Measure		Total Expenditure	
		2001-02	2002-03	2001-02	2002-03	2001-02	2002-03
1	2	3	4	5	6	7	8
1	Kerala Coir Workers Welfare Fund Board	564.05	624.31	404	377.78	968.05	1002.09
2	Kerala Cashew Workers WFB	443.5	411.74	553.36	336.87	996.86	748.61
3	Kerala Tody Workers WFB	1914.13	2508.2	250.06	2323	2164.19	4831.18
4	Kerala Building and other Construction W WFB	164.83	NA	702.9	812.7	867.73	812.7
5	Kerala Tailoring Workers WFB	1352.48	1628.7	133.72	236.72	1486.2	1865.45
6	Kerala Bamboo, Kattuvalli and Pandanus Leaf W WFB	4.8	4.5	NA	NA	4.8	4.5
7	Kerala Agriculture W WFB	185.08	277.15	338.8	607.4	523.88	884.55
8	Kerala Head Load WFB	3124	3431	1616	2281	4740	5712
9	Kerala Artisans and Skilled W WFB	2018.95	2337.2	77.47	43.88	2096.4	2381.04
10	Kerala Hand Loom Workers WFB	65	41.38	77.08	47.48	142.08	88.86
11	Kerala Beedi and Cigar WWFB	33	23.3	2.9	8.5	35.9	31.8
12	Kerala Akbari Workers WFB	867.42	1433.6	37.2	65.36	904.62	1498.96
13	Labour Welfare Fund Board	294.41	NA	66.23	NA	360.64	NA
14	Kerala State Lottery WFB	NA	NA	3.96	2.37	3.96	2.37
15	Traders Welfare FB	11.08	7.31	0.12	0.78	11.2	8.09
	Total	11042.7	12728.39	4263.8	7143.84	15306.51	19872.2

Safety of Workers.

14.75 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.

14.76 In Kerala, there are 18274 establishments which come under Factories and Boilers Act in 2003 as against 17942 in 2002 showing an increase of 782 (See Table – 14.22).

Table – 14.22
Establishments and workers coming under the purview of various acts Enforced by Factories and Boilers Department

Year	Establishments	Workers
1	2	3
2001	17942	656758
2002	17942	655034
2003	18274	66550

The programs conducted during 2003-04 by Factories & Boilers Department are given in Table- 14.23.

Training

Table – 14.23
Programs conducted during 2003-04 by Factories and Boilers Department

Sl.No	Programs	Nos.
1	2	3
1	Priority inspection of major Accident Hazard (MAH) Units	12
2	Air Monitoring studies in hazardous factories	12
3	Workshop/Training program for workers/managers	12
4	Inspection of hazardous factories by specialist inspectors	360

14.77 Kerala Institute of Labour and Employment was started in 1978 for conducting training and research in matters related to labour and employment with special reference to Kerala.

14.78 The Institute organises training programs, seminars, workshops, lectures for trade union representatives, management's representatives, Government Officers especially Officers in the Labour, Employ-

ment and Industrial Training departments and staff of various welfare fund boards. Details of training/seminar/workshops are given in Table – 14.24.

NUTRITION

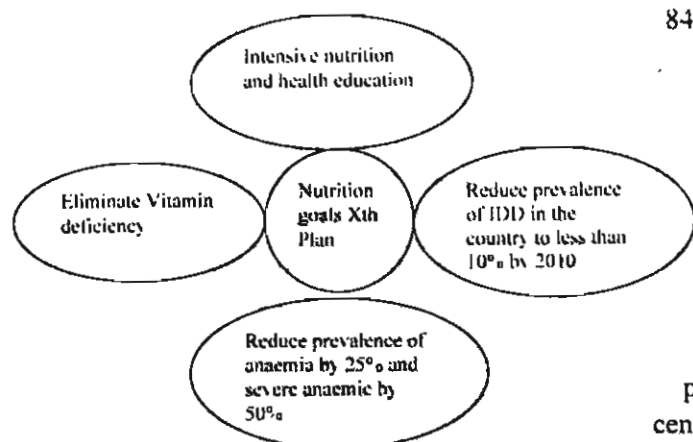
Table – 14.24
Training Programs/Seminars Conducted by Kerala Institute of Labour and Employment (2003)

Sl. No	Training Programs/Workshops	Participants (Nos)
1	2	3
1	Functional Competence building for staff of labour department	137
2	Revamping vocational Guidance and self employment program	31
3	Staff development programs for KSIDC	41
4	Residential program for Officers of Kerala building and other construction workers	32
5	Training Programs for ITC principles	38
6	Training for Officers of the employment exchange Office	41
7	National workshop on social security challenges	104
8	Workshop on Labour inspections skills and strategies in collaboration with ILO	130
	Total	554

14.79 Of the total population of India (2001 census), child population (0-14 years) account for 348 million (34%), of which 171.50 million are female. In Kerala, according to 2001 census, there are 36.53 lakh children (0-6 years), of which 49% are girls. The National Nutrition Policy (1993) advocates to achieve an optimal state of nutrition with special priority to women, mothers, and children who are the 'at risk' group of the society.

Box -14.5

During the period 1972 to 1994 calorie intakes per person rose in rural areas of four states – Kerala, West Bengal, Orissa and Maharashtra.



1. Integrated Child Development Services.

14.80 The Integrated Child Development Services launched in 1975 is a nation wide programme which aims at promoting the holistic development of pre-school children below 6 years and expectant and nursing mothers. It consists of a package of 6 services, viz. health check up, immunisation, referral services, supplementary nutrition, preschool education and health and nutrition education. It provides supplementary feeding to bridge the gaps that exists in the eligible beneficiaries.

14.81 With the support of World Bank in providing child development services, universalisation of ICDS was achieved by the end of 1995-96 in the country. While the World Bank ICDS project - I (1991-97) covered 301

projects in the states of Andra Pradesh and Orissa, the World Bank ICDS project - II (1997-2000) covered 849 projects in Bihar and Madhya Pradesh. The World Bank Phase - III project (1998-2004) started in Andhra Pradesh, Kerala, Tamil Nadu, Maharashtra, Rajasthan and Utter Pradesh covering 1003 projects. The expansion of ICDS projects in India and Kerala since inception is shown in Table 14.25.

14.82 At the all India level, starting from 33 blocks in 1975, the scheme now extends to 5652 projects through a network of 4.8 lakh anganwadi centres benefiting about 332 lakh children (0-6 years) and 62 lakh pregnant and lactating mothers. As far as Kerala state is concerned, of the total 163 ICDS projects, 43 are World Bank assisted projects. In Kerala, as on March 2003, there were 25393 anganwadi centers benefiting 10.16 lakh persons including 8.74 lakh children below six years. Table 14.26 shows the district-wise number of ICDS beneficiaries in Kerala during

Table - 14.26
District-wise ICDS beneficiaries in Kerala - 2003.

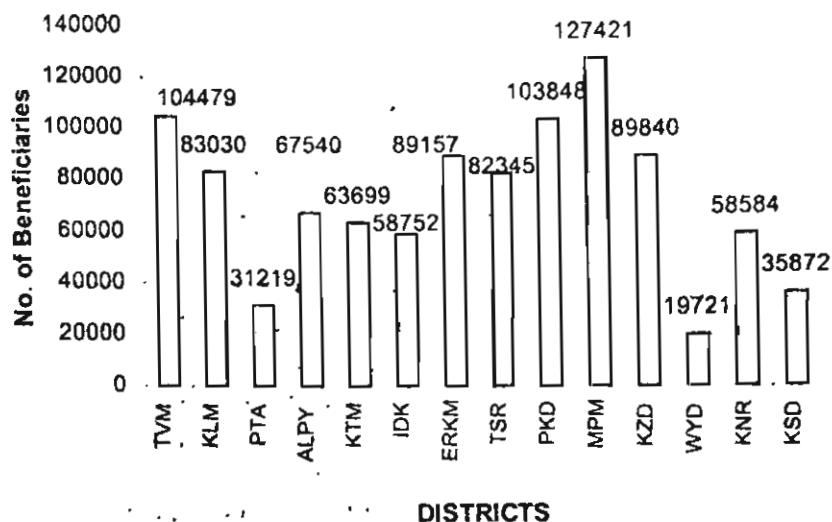
Sl. No	Name of District	0-3 years	3-6 years	Pregnant and lactating women
1	2	3	4	5
1	Thiruvananthapuram	45168	44464	14847
2	Kollam	30821	38427	13782
3	Pathanamthitta	9721	17558	3940
4	Alappuzha	26056	31710	9774
5	Kottayam	23414	31177	9108
6	Idukki	25935	23853	8964
7	Ernakulam	34965	41658	12534
8	Thrissur	29203	42132	11010
9	Palakkad	49626	38993	15229
10	Malappuram	50751	61226	15444
11	Kozhikode	32486	44760	12594
12	Wayanadu	7132	9417	3172
13	Kannur	20268	31417	6899
14	Kasargod	12364	18972	4536
	Total	397910	475764	141833

Table 14.25
Expansion of ICDS - Kerala & India

Year	India	Kerala
	No. of ICDS	No. of ICDS
1975	33	1
1990	2425	85
2000	4548	140
2003	5652	163

2003. During 2002, number of beneficiaries were 9.64 lakh. District-wise total number of beneficiaries under ICDS in Kerala is presented in the diagram. Out of the 5652 projects in India, 4533 are rural, 759 tribal and 360 urban slums. In Kerala out of the total 163 projects, 151 are rural, 11 are urban and one is tribal. The district-wise number of anganwadi centres sanctioned and operational in Kerala at present is given in Appendix 14. 12.

Fig 14.2
ICDS BENEFICIARIES IN KERALA - 2003



Midday Meal Programme:

14.83 Nutrition requisites are provided through mid-day meal programme in Kerala. The education department is implementing the programme in government and private aided primary schools from 1984. Government Of India scheme of NPNSPE (National Programme of Nutritional Support to Primary Education) stands merged with the existing noon feeding programme where these schemes are extended not only to standards I to V but also to pupils of standard VI and VII. Similarly while Government Of India provide 100 gm of rice per pupil, the supply is 60 gm rice and 30 gm pulse items in the state per pupil. Moreover cooked food is also served which is economically feasible. During 2003, about 26.04 lakh children in the primary section are benefited through this scheme in the state. Details of children benefited and expenditure incurred is given in Table - 14.27.

10th Plan strategy for prevention of under nutrition.

- Nutrition education to promote universal breast feeding up to 2 years.
- To provide take home food supplement to children 6-36 months.
- Massive Vitamine A dose to children at 18, 24, 30 and 36 months
- To organise, immunisation, maternal and child care in anganwadis once a month.
- Regular distribution of iron and folic tablets and ORS
- Promote universal use of iodised salt.

Box -14. 6

India was the first developing country to take up a National Nutritional Anaemia prophylaxis programme to prevent anaemia among pregnant women and children.

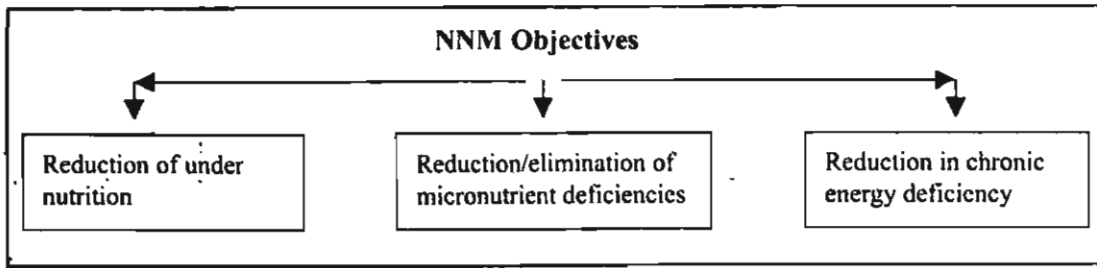
Table.14.27

Sl. No	Year	No. of Beneficiaries	Expenditure (Rs. Lakhs)
1	2	3	4
1	1997-98	2475681	36.34
2	1998-99	2358443	71.95
3	1999-00	2483599	94.47
4	2000-01	2825364	92.73
5	2001-02	2702434	79.46
6	2002-03	2603749	N.A

14.84 According to the National Family Health Survey report 2000, the proportion of low birth weight babies in Kerala was 16% and in Rajasthan it is 30%. The percentage of children affected by malnutrition has declined from 48 percent in 1992-93 to 37 percent in 1998-99 showing 11.5 percent point reduction in Kerala.

National Nutrition Mission.

14.85 The Prime Minister in his Independence Day speech on 15th August 2001 announced the setting up of a NNM to coordinate and monitor the implementation of the National Nutrition Policy, to strengthen the



existing programme and promote research and development, nutrition education. Under this, special central assistance to states are allocated to provide subsidised food grains to undernourished adolescent girls and pregnant and lactating mothers belonging to BPL families.

14.86 In Kerala, Palakkad and Malppuram districts have been selected and Government Of India sanctioned Rs. 469.96 lakhs for implementations of the project and released Rs. 266.21 lakhs. During 2003-04, Rs. 200 lakhs is provided to meet the cost of food grains, purchase of weighing machines, IEC training etc. to benefit about 57531 women and children in Malappuram district and 44681 in Palakkad district. The total number of adolescent girls benefited would be 93288 in these two districts. The anganwadi workers hold the key rôle for this programme.

Development of Scheduled Castes, Scheduled Tribes and Other Backward Classes
Scheduled castes and Scheduled Tribes
Population:

14.87 The Scheduled Caste population in Kerala was 28.86 lakhs accounting for 9.92 percent of the total population and 2.09 percent of Scheduled Caste population in India (1991 census). There are 5.94 lakh SC households in the State. The population of Scheduled Tribes in Kerala was 3.20 lakh (1991 census), which accounts for 1.10 percent of the total population of Kerala, and 0.47 percent of the Scheduled Tribes population of the country (1991 census). There are 69,441 ST households in the State.

Occupational Pattern:

14.88 Scheduled Castes contribute the vital manpower to the agrarian economy of State. Scheduled Tribe cultivators are becoming agricultural labourers due to deforestation and large scale land alienation. Among Scheduled Castes 41.21 percent are workers, of which main workers account for 36.83 percent and marginal

workers 4.38 percent. While 50.96 percent of males are workers, only 31.73 percent of females are workers. Among Scheduled Tribes 46.04 percent are workers. Main workers constituted 40.28 percent and marginal workers 5.76 percent.

14.89 Among the main workers of Scheduled Castes, 53.78 percent are agricultural labourers. Workers in forestry, fishing, hunting, plantation, orchards etc, constitute 10.87 percent and workers in other services account for 10.70 percent of main workers. Majority of main workers (55.47 percent) among Scheduled Tribes are agricultural labourers. A sizable number of Scheduled Tribes, 16.66 percent of the main workers, are cultivators. In Kannur, Wayanad, Malappuram, Palakkad, Pathanamthitta and Kollam districts majority of main workers are agricultural labourers.

14.90 In order to empower the tribal communities, the decentralised planning process has been specially modified. The salient features are described in the chapter on Local Governments.

Enrolment of Scheduled Caste/Scheduled Tribe students

14.91 During 2003, altogether 5.64 lakhs Scheduled Caste students and 65217 Scheduled Tribe students were enrolled in various educational institutions, which constitute 9.39 per cent and 1.08 per cent respectively of total students. The details of the enrolment of SC/ST students in various educational institutions are given in Table 14.28.

14.92 The proportion of Scheduled Caste and Scheduled Tribe to total students in schools was 10.71 per cent and 1.22 percent respectively during 2002-03. The dropout ratio beyond classes VIII is relatively high in the case of Scheduled Tribes. Among College students 9.63 percent belong to Scheduled Castes and 1.96 percent belong to Scheduled Tribes. Details of Sched-

Table 14.28
Enrolment of Scheduled Caste/Scheduled Tribe students in various educational institutions (2003)

Sl.No.	No. of Students	Number	Percent
(1)	(2)	(3)	(4)
1.	Scheduled Caste students	5,64,163	9.39
2.	Scheduled Tribe students	65,217	1.08
3.	Other students	53,79,764	89.53
Total Students		60,09,144	100.00

uled Caste and Scheduled Tribe students in Schools, Arts and Science Colleges, are given in Table 14.29 and 14.30 respectively.

14.93 The enrolment of Scheduled Caste and Scheduled Tribe students in Higher Secondary Education and Vocational Higher Secondary Education during 2003-04 are given in the Table.14.31 The enrolment of Scheduled Caste and Scheduled Tribe students in Higher Secondary Education constituted 10.01 percent and 0.54 percent respectively, whereas in Vocational Higher Secondary Education it was 3.36

percent and 0.39 percent. For both these courses together the percentage of enrolment among Scheduled Caste students was 7.61 per cent and among Scheduled Tribe students it was 0.48 percent.

Table. 14. 29
Scheduled Caste and Scheduled Tribe Students in School - 2002-03

Sl. No	Section	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	Lower Primary Section	1831302	207273	11.31	28559	1.55
2	Upper Primary Section	1504485	157385	10.46	17927	1.19
3	High School Section	1545798	158178	10.23	13485	0.87
Total		4881585	522836	10.71	59971	1.22

Source: Directorate of Public Instruction

Table. 14. 30
Scheduled Caste and Scheduled Tribe Students in Arts and Science Colleges 2002-03

Sl. No	Section	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	Degree	144199	13631	9.45	2473	1.71
2	Post Graduate	14768	1693	11.46	648	4.38
Total		158967	15324	9.63	3121	1.96

Source: Directorate of Collegiate Education

Table 14.31
Scheduled Caste and Scheduled Tribe Students in Higher Secondary/ Vocational Higher Secondary Education, 2003

Sl.No	Section	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	Higher Secondary Education	197804	19815	10.01	1071	0.54
2	Vocational Higher Secondary Education	111622	3757	3.36	443	0.39
Total		309426	23572	7.61	1514	0.48

Source:- Directorate of Vocational/Higher Secondary Education

14.94 The enrolment of Scheduled Caste and Scheduled Tribe students in Engineering Colleges during the period under review is given in Table 14.32.

14.95 The enrolment of Scheduled Caste and Scheduled Tribe students in Engineering Colleges during 2003-04 was 2285 and 566 respectively. The percentage of enrolment among Scheduled Caste and Scheduled Tribe students constitutes 7.99 and 1.97 respectively. Details are given in Table 14.32.

14.96 During 2003-04, altogether 191 students comprising 146 Scheduled Caste and 45 Scheduled Tribe students have been enrolled for various medical and para medical courses. Among them 54 Scheduled Caste students and 13 Scheduled Tribe students were admitted to MBBS course. The percentage of enrolment

among Scheduled Caste and Scheduled Tribe students to MBBS course is 8.02 and 1.93 respectively. In Medical Post Graduate courses 8.77 percent were SC students and 1.25 percent ST students. During the same period only 7.69 percent of SC students and 2.19 percent of ST students were enrolled for Dental Degree courses. The percentage of overall enrolment of SC/ST students to various Medical and Para-medical courses was 12.16 and 3.75 respectively. Details are given in Table 14.33.

Literacy rate and Employment seekers in Employment Exchanges:

14.97 The Scheduled Castes/Scheduled Tribes lags behind other communities in literacy rate. The literacy rate of Scheduled Castes in Kerala was 79.66 percent as against 89.81 percent for the state as a whole in 1991.

Table. 14.32
Scheduled Caste and Scheduled Tribe Students in Engineering Colleges during 2003-04

Sl. No	Section	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	Government Engineering Colleges	10212	817	8.00	204	1.99
2	State owned Self Financing Engineering Colleges	12814	1024	7.99	250	1.95
3	Private Aided Engineering Colleges	5560	444	7.98	112	2.01
	Total	28586	2285	7.99	566	1.97

Source: Directorate of Technical Education

Table. 14.33
Scheduled Caste and Scheduled Tribe Students in Medical and Para-medical Courses, 2003-04

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 P.G	319	28	8.77	4	1.25
2	Dental PG (MDS)	--	--	--	--	--
3	M. Pharm courses	13	1	7.69	--	--
4	M.Sc Nursing	24	2	8.33	--	--
5	MBBS	673	54	8.02	13	1.93
6	BDS	91	7	7.69	2	2.19
7	Certificate courses in Nursing for SC/ST only	80	54	67.5	26	32.5
	Total	1200	146	12.16	45	3.75

Source: Directorate of Medical Education

The highest literacy rate was in Kottayam (90.26 per cent) and the lowest literacy rate was in Kasaragod district (63.61 per cent). The literacy rate of Scheduled Tribes was 57.22 per cent in 1991. Among the districts highest literacy of Scheduled Tribes was in Kottayam with 88.69 per cent and lowest in Palakkad with 34.87 per cent. In Palakkad and Malappuram districts Tribal literacy was less than 50 per cent. Palakkad is the only district where male literacy among Scheduled Tribes was less than 50 per cent.

14.98 The low literacy rate is a bottleneck for occupational diversification of Scheduled Castes and Scheduled Tribes.

14.99 During 2003, 7.28 lakh Scheduled Castes and 31856 Scheduled Tribes persons were enrolled in the live registers of employment exchanges in the State. This constitutes 18.69% and 0.81% respectively of the total unemployed persons registered during the review period. District-wise details are given in Appendix 14.13. The percentage of employment seekers among Scheduled Caste is comparatively higher

Performance of SC/ST students in the S.S.I.C. Examination

14.100 The percentage of pass in the SSLC examination is a good indicator of educational development. During March 2003, the percentage of pass in SSLC was 43.41 per cent for Scheduled Caste students and 37.18 per cent for Scheduled Tribes whereas it was 69.04 per cent for other communities.

14.101 Among the districts, the highest percentage of Scheduled Caste students passed in Ernakulam (63.49%) followed by Kannur (57.64%) and Kottayam (57.51%) whereas the lowest was in Palakkad district (25.41%). With regard to the performance of Scheduled Tribe students, Kottayam district stood first (54.39%) followed by Thrissur (47.17%) and Ernakulam (44.76%). The lowest percentage of pass was recorded in Pathanamthitta district (16.18%). Even though, Wayanad district accounts for majority of Tribal population, only 30.85 percentage of ST students were successful in the SSLC examination. De-

tails are given in Appendix 14.14.

14.102 The low percentage of pass of SC/ST students in SSLC examination suggests their general backwardness. The variation of results across geographical regions is also of relevance.

Special Component Plan and Tribal Sub Plan through Local Governments

14.103 During the Ninth Five Year Plan a total of Rs. 888.25 crore was given to Local Governments as Plan grant under Special Component Plan and Rs. 150.25 crore as Tribal Sub Plan. During 2003-04 (the 2nd Annual Plan of the Tenth Five Year Plan) Rs. 263.33 crore has been allocated as Plan grant to Local Governments under SCP and Rs. 44.43 crore TSP. Details are given in Table 14.34.

Table 14.34
Plan Grant to Local Governments for Special Component Plan and Tribal Sub Plan (1997-98 to 2003-04)

Annual Plan	Plan Grant to Local Self Governments (Rs. crore)		
	Special Component Plan	Tribal Sub Plan	Total
1	2	3	
1997-98	194.00	39.00	233.00
1998-99	195.00	39.00	234.00
1999-00	200.00	40.00	240.00
2000-01	162.75	32.25	195.00
2001-02	136.50	--	136.50
Total (Ninth Plan)	888.25	150.25	1038.50
2002-03	201.37	--	201.37
2003-04	263.33	44.43	307.76
Total (2002-04)	464.70	44.43	509.13

Source: Budget Documents

14.104 Out of the total State Plan outlay earmarked for Tribal Sub Plan 50 per cent has been set apart to Local governments as grant-in-aid for undertaking Tribal Development Programmes proposed by Oorukkoottams.

Development Programmes

a. Development of Scheduled Castes

14.105 Major schemes implemented by the Scheduled Caste Development Department are for educational development. Programmes for education includes boarding and lodging facilities at pre-matric and post-matric levels, incentives and awards to talented stu-

dents, stipends, lump-sum grant, pocket money to students, special coaching and tutorial facilities to improve results, supply of books and equipments etc. Seven Model Residential Schools – one each at Palakkad and Alappuzha for girls, one each at Thrissur, Ernakulam, Kasaragod and Kozhikode for boys and one mixed at Idukki in Tamil medium provide residential school facilities. Thrust is given for professional courses in Electronics, Computer Science, Information Technology etc., which have high employment potential. The department also imparts post formal education training to ITI, ITC, Diploma/Degree holders in technical branches. Information-cum-guidance Centre, Pre-examination Training Centres and Civil Service Examination Society etc. are also run by the Department for Scheduled Caste candidates to equip them to appear for various competitive examinations.

14.106 Government have set up a Centre of Excellence to improve the competitiveness of Scheduled Caste/Scheduled Tribe candidates in advanced areas like management studies, bio-technology, life science etc. During 2002-03 the SC Department has constructed 4538 houses. Details are given in Appendix 14.15. The details of physical achievements of major schemes implemented for Scheduled Castes are given in Appendix 14.16.

b. Development of Scheduled Tribes

14.107 The Department provides educational concessions, scholarships and other kinds of assistance to tribal students from pre-primary to post graduate level. During the period under review educational concessions benefited 62766 students. Details of Scholarships and stipend distributed during 9th plan period under Plan/non-plan are given in Appendix 14.17.

14.108 Under the Department 14 Model Residential Schools, 4 Ashramam Schools (Primary), and 104 Pre-matric hostels are functioning. There are 38 single teacher schools for providing pre-primary education to tribal students living in very remote and inaccessible areas. Apart from 58 kindergartens functioning under Local Governments, there are 28 Industrial Training Centres under the Department to provide training to Scheduled Tribes. District wise details of institutions run by the Department is given in Appendix 14.18.

14.109 As part of the Tribal Mission Rehabilitation Programme, a total area of 2862.38 acres of land has been distributed among 2024 families in Kollam, Idukki, Kottayam, Alappuzha, Ernakulam, Kozhikode, Wayanad and Kannur districts. There are 22052 landless Tribals in the State. Number of landless Tribals are very high in Wayanad (13303) followed by Palakkad (5389) and Kannur (1395). Details are given in Appendices 14.19 to 14.21.

14.110 Housing problem is acute among Scheduled Tribes. The survey conducted by the ST Development Department in 2000-01 revealed that there were 9374 houseless ST families in the State. The ST Development Department, Rural Development Department, Forest Department, KSDC for SC/ST, Housing Board, Local Bodies are the major agencies involved in tribal housing in the State. During 2002-03 the ST Department constructed 1114 houses. Details are given in Appendix 14.22.

14.111 In order to provide better medical facilities to tribals the Health Services Department runs 63 Primary Health Centres in the State. The ST Development Department has 4 Mid Wifery Centres, 17 Ayurveda Dispensaries, 5 Allopathic Dispensaries/ OutPatient Clinics, one Ayurveda Hospital, 2 Mobile Medical Unit and one Allopathy hospital. Apart from this, Homoeo Dispensaries are also functioning in tribal areas under Tribal Sub Plan. Studies conducted by the State Health Services Department as well as the AIIMS, New Delhi, reveal that nearly 15% of the tribal families in Wayanad and Palakkad Districts have traits of the genetical problem "Sickle Cell Anemia". Hence a Sickle Cell Anemia Unit has been set up in Kozhikode Medical College. Details of physical achievements of major schemes implemented for Scheduled Tribes are given in Appendix 14.23.

Kerala State Development Corporation for Scheduled Castes and Scheduled Tribes

14.112 The Corporation implements various employment oriented schemes so as to enable the Scheduled Castes and Scheduled Tribes to become self-reliant. The major schemes among them are, Margin Money Deposit Scheme, Transport Schemes, Micro Credit Schemes, personal computer loan, assistance for agricultural land purchase, assistance to start self employment ventures, assistance for pursuing higher edu-

cation etc. Several housing schemes are also taken up by the Corporation.

14.113 During 2003-04, 143 persons were benefited under Agricultural Land Purchase Scheme. Micro credit scheme benefited 390 persons, assistance under transport schemes benefited 34 beneficiaries and 35 persons got assistance under beneficiary oriented schemes. Under housing scheme, 18 beneficiaries were given assistance as on 30th September 2003. A study conducted by KIRTADS on the performance of the Corporation reveals that the KSDC have been successful in bringing the Scheduled Caste and Scheduled Tribes to the main stream of society through its schemes (Box 14.1). The scheme-wise details of physical and financial achievements of the Corporation are given in Appendix 14.24.

Box -14. 7

PERFORMANCE OF KSDC

The loan schemes of KSDC have empowered the SC/ST people and have contributed positively to bring them to the main mainstream of society. It has provided a favourable condition for the economic upliftment of these communities and brought about significant changes in the occupational structure and socio-economic conditions of the Scheduled Castes and Scheduled Tribes in the State. However to ensure proper utilisation of borrowed funds by the beneficiaries, the KSDC should regularly carry out physical verification of assets created with the assistance received.

Source: Study Report of KIRTADS, 2001

Kerala Institute for Research, Training and Development Studies (KIRTADS)

14.114 The Institute is an agency mandated to conduct research and studies on Scheduled Caste and Scheduled Tribes in Kerala. It has conducted "A study on Kerala State Development Corporation for SC/ST and published a status report on "Scheduled Tribes of Kerala - at a Glance" during 2003. Training programmes are also being conducted for the wardens of Tribal Hostels, revenue officials, Tribal Extension Officers and other Officers in Scheduled Tribe Development Department. The anthropological cell of the In-

stitute helped the revenue authorities to give community certificates to genuine claimants and helped to train the officials, elected members of the Panchayats, Tribal Promoters and Oorumooppans.

Development of Other Backward Classes

14.115 The Backward Classes and minorities constitute a major section of the population of the State. In order to empower the Backward Classes educational concessions, stipends and self employment opportunities are being provided by the Government. The major institutions involved in the socio-economic upliftment of the backward classes in the State are the Kerala State Backward Classes Development Corporation, and Kerala State Development Corporation for Christian Converts from Scheduled Castes and the Recommended Communities.

Kerala State Backward Classes Development Corporation

14.116 The objective of the Corporation is to promote the socio-economic upliftment of the backward classes and minorities in the state. The Corporation provides assistance to individuals and groups belonging to backward classes and minorities by way of loan and advances for viable Self Employment schemes and projects and extends financial assistance by way of loan to backward classes for pursuing general, professional, technical education or training at graduate and higher levels. The Corporation mobilises funds from the National Backward Classes Finance and Development Corporation (NBCFDC), National Minorities Development and Finance Corporation (NMDFC) and from Government. The Corporation has introduced an innovative, "Swayam Saksham" scheme for professionally trained and educated unemployed youths belong-

Table 14.35
Financial and Physical Achievements of Kerala State Backward Classes Development Corporation.

Source of finance	Financial Achievements (Rs. lakh)		Physical Achievements (No. of Beneficiaries)	
	2002-03	2003-04	2002-03	2003-04*
1	2	3	4	5
NBCFDC	3399.42	1907.76	8823	4172
NMDFC	1164.61	280.81	2798	628
Own Fund	687.11	315.49	1738	1042
Total	5251.14	2504.06	13359	5842

Source: KSBCDC, Upto August 2003.

ing to other backward classes. The Corporation also provides loans for purchase of computer for students and schools, foreign employment etc. The source-wise expenditure and physical achievements of the Corporation during 2002-03 and 2003-04 are given in Table 14.35.

Kerala State Development Corporation for Christian Converts from Scheduled Castes and the Recommended Communities

14.117 The Corporation aims at the upliftment of the Christian converts from Scheduled Castes and the eleven recommended communities in the State. It provides assistance for foreign employment, agricultural land purchase, house construction, cash incentives to students, education loan etc. During 2003-04 the Corporation disbursed an amount of Rs. 99.84 lakh to various schemes and 182 persons were benefited.



PRICES AND FOOD SECURITY

CONSUMER PRICE INDEX

Consumer Price Index Number is a broad indicator of inflationary trend. The latest data available show that in Kerala the consumer price index went up by just 2 points (base: 1998-99=100) in 2003 compared to the same period in 2002, from 114 point in August 2002 to 116 point in August 2003. (Table 15.1). This was primarily contributed by the increase in prices of oil and oilseeds. Among the seventeen selected centres, indices of eight centres fell below the State average of 116 points. The highest index was recorded at Kollam (122 points), followed by Thiruvananthapuram (121 points). The lowest index was registered at Meppady and Punalur (113 points each). Based on Consumer Price Index, the annual rate of inflation went up by 1.75 per cent in 2003 (up to August), compared to the corresponding period in 2002. The month-wise movements of Consumer Price Indices are shown in Appendix 15.1. Movements of index are rather within a small range of 111-124 points. Increases are generally

higher in second quarter, than in the first quarter. Indices at Munnar and Meppady fell by one point and three points respectively in August 2003, compared to those in the same period in the previous year. Indices at Thiruvananthapuram and Kasaragod recorded the highest increases of 7 points each during the same period.

Retail Prices

15.2. The average retail prices of essential commodities as at the end of December, from 1998 to 2003, are shown in Table 15.2. When the prices of eighteen essential commodities in 2003 (upto September, the latest month for which data are available) were subjected to review, it is seen that the prices of as many as six items recorded negative growth, ranging between 0.1 per cent and 30 per cent compared to the same period in 2002. This was more pronounced among items under pulses group. Barring redgram, prices of all other items

Table 15.1
Annual Average Consumer Price Indices in Selected Centres of Kerala:2000-2003*
Base 1970=100 (up to 9/2001) Base 1998-99 =100 (from 10/2001)

Centres	Year						Percentage Change Over Previous Year		
	2000	2001#	2001	2002*	2002#	2003*	2001	2002#	2003*
1. Thiruvananthapuram	1108	1146	1152	115	1198	121	3.97	4.54	5.22
2. Kollam	1105	1146	1152	116	1196	122	4.25	4.36	5.17
3. Punalur	1060	1094	1100	113	1122	113	3.77	2.56	0.00
4. Pathanamthitta**				113		118			4.42
5. Alappuzha	1109	1149	1156	113	1181	115	4.24	2.79	1.77
6. Kottayam	1105	1153	1160	115	1190	116	4.98	3.21	0.87
7. Mundakayam	1075	1111	1116	112	1139	115	3.81	2.52	2.68
8. Munnar	1071	1117	1123	115	1151	114	4.86	3.04	-0.87
9. Ernakulam	1060	1102	1109	115	1135	117	4.62	2.99	1.74
10. Chalakudy	1124	1168	1175	113	1198	115	4.54	2.57	1.77
11. Thrissur	1082	1122	1127	114	1146	115	4.16	2.14	0.88
12. Palakkad	1093	1135	1142	112	1177	116	4.48	3.70	3.57
13. Malappuram	1084	1123	1130	114	1167	117	4.24	3.92	2.63
14. Kozhikode	1081	1122	1128	113	1141	115	4.35	1.69	1.77
15. Meppady	1150	1192	1198	115	1220	113	4.17	2.35	-1.74
16. Kannur	1078	1124	1129	114	1148	116	4.73	2.14	1.75
17. Kasaragod**				112		117			4.46
State Average	1092	1134	1140	114	1167	116	4.40	2.91	1.75

* Average from January to August. # Average from January to October ** New Centres

Source:- Department of Economics and Statistics

Table- 15.2
Average Retail Prices of Essential Commodities 1998-2003

Commodities	Unit	Prices at the end of December (Rupees)												% change over Previous Year			
		1998	1999	2000	2001	2002*	2002*	2003*	1999	2000	2001	2002	2003*	2002	2003*		
		3	4	5	6	7	8	9	10	11	12	13	14				
Cereals																	
1. Rice (red) OM Matta	Kg	12.58	13.90	13.34	12.20	12.90	13.40	13.74	10.49	-4.03	-8.55	9.84			6.51		
Pulses																	
2. Green Gram	Kg	26.96	26.70	26.11	30.29	30.37	30.32	29.02	-0.96	-2.21	16.01	0.10			-4.45		
3. Black gram split (without Husk)	Kg	31.96	34.71	42.57	35.38	32.89	29.59	25.06	8.60	22.64	-16.89	-16.37			-23.81		
4. Red gram	Kg	22.75	21.05	19.88	19.98	25.6	29.41	25.77	6.15	-5.56	0.50	47.20			0.66		
5. Dhall	Kg	41.50	33.63	29.35	29.7	31.32	31.03	30.57	-18.96	-12.73	1.19	4.48			-2.39		
Other Food Items																	
6. Milk (cow)	Litre	12.00	13.04	12.93	12.96	12.58	13.04	13.04	8.67	-0.84	0.23	0.62			3.66		
7. Egg (Hen Nadan)	Dozen	25.37	26.70	29.14	27.70	26.20	26.55	26.17	5.24	9.14	-4.94	-4.15			-0.11		
8. Sugar	Kg	15.12	14.99	15.19	15.17	14.61	13.31	14.63	-0.86	1.33	-0.13	-12.26			0.14		
Oil and Oil seeds																	
9. Coconut Oil	Kg	59.21	61.13	35.04	46.23	51.15	60.53	66.83	3.24	-42.68	31.93	30.93			30.65		
10. Ground Nut Oil	Kg	51.50	49.70	48.05	50.14	56.17	59.43	64.78	-3.50	-3.32	4.35	18.53			15.33		
11. Refined Oil (Postman)	Kg	75.11	64.34	61.34	60.32	64.72	76.06	89.68	-14.34	-4.66	-1.66	26.09			38.57		
12. Coconut (without Husk)	100 Nos	548.93	616.79	357.14	461.96	481.26	575.27	618.39	12.36	-42.10	29.35	24.53			28.49		
Spices & Condiments																	
13. Coriander	Kg	27.07	26.32	36.68	39.3	34.61	37.64	43.05	-2.77	39.36	7.14	-4.22			24.39		
14. Chillies (Dry)	Kg	69.17	50.29	41.01	44.68	45.63	51.55	53.79	-27.30	-14.75	8.95	15.38			17.88		
15. Onion (small)	Kg	16.70	9.95	13.00	15.82	16.65	18.89	11.65	-40.42	30.65	21.69	19.41			-30.03		
Tubers																	
16. Tapioca	Kg	4.43	5.43	5.68	4.79	5.71	5.96	6.04	22.57	4.60	-15.67	24.43			5.78		
17. Potato	Kg	13.54	9.16	8.91	12.84	11.6	10.28	9.06	-32.35	-2.73	44.11	-19.94			-21.90		
Fruits & Vegetables																	
18. Banana (Green)	Kg	10.68	11.36	13.21	11.01	11.71	10.78	14.67	6.36	16.29	-16.65	-2.09			25.28		

under pulses group – greengram, blackgram and dhal – recorded negative growths of 4.5 per cent, 23.8 per cent and 2.4 per cent respectively. Price of oil & oilseeds group witnessed heavy spurt. Price of refined oil shot up by 38.6 percent. Coconut and coconut oil also recorded heavy increases in their prices, by 28.5 per cent and 30.7 per cent respectively. When the prices of spices & condiments and tubers witnessed a mixed trend, price of banana under fruits and vegetables group increased steeply by 25.3 per cent. The month-wise movements of retail prices of essential commodities are given in Appendix-15.2. The prices of greengram, blackgram split, redgram and tamarind at the end of September 2003 came to a level lower than that in January 2003. Price of milk remained steady throughout the period between January and September. Price of coconut shot up by 7.9 per cent (Rs. 45.18), from Rs. 573.21 for 100 nos in January to Rs. 618.39 in September. Other commodities witnessed erratic trend in their prices within a moderate range.

Consumption Expenditure

15.3. The share of monthly consumption expenditure on different consumption items by various levels of family expenditure class in the State is given in the Table 15.3. In all levels of expenditure classes, food items entail a major share of the total consumption expenditure. It is followed by the share of expenditure on miscellaneous items and housing. Shares of expenditure on food and fuel are high in lower expenditure classes and they decline with the rise in the level of expenditure classes. Trend is just reverse in the case of housing and miscellaneous items. Share of expenditure on these items increases with the upward rise in level of expenditure classes. Average monthly expenditure (in rupees) under different groups by various levels of family expenditure class is shown in Table 15.4.

Wholesale Price Index

15.4. In 2002 (the latest year for which data are available), despite the fall in

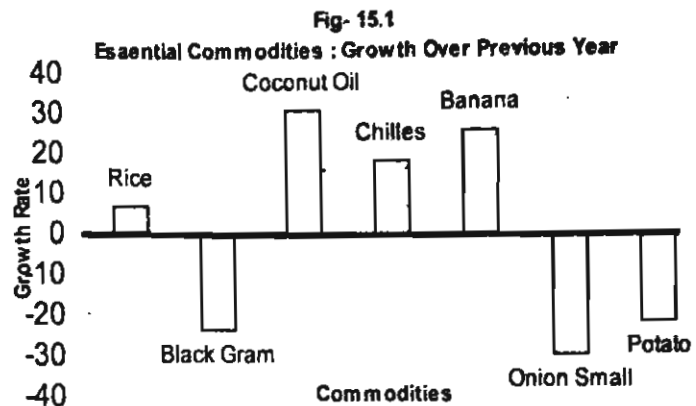


Table 15.3
Percentage Distribution of Monthly Expenditure under Different Groups by Family Expenditure Class (per cent)

1998-99						(per cent)
CLASSES	FOOD	FUEL	HOUSING	CLOTHING	MISC.	TOTAL
Up to 1000	67.96	6.21	9.59	6.34	9.91	100.00
1001-2000	65.60	7.42	9.12	4.97	12.89	100.00
2001-3000	63.07	7.40	9.70	5.16	14.67	100.00
3001-4000	57.07	7.71	10.73	4.75	19.74	100.00
4001-5000	54.74	7.33	12.26	5.26	20.42	100.00
5001-6000	52.01	6.75	14.35	5.00	21.88	100.00
6001-7000	50.32	6.18	14.67	5.24	23.59	100.00
7001-8000	47.74	6.02	17.69	5.36	23.19	100.00
8001-9000	45.21	5.53	21.93	5.43	21.89	100.00
9001-10000	45.02	5.52	21.50	5.26	22.69	100.00
Above 10000	42.64	4.49	23.19	5.75	23.93	100.00
Total	50.84	6.36	15.90	5.24	21.65	100.00

Source : Report on Family Budget Survey, 1998-99 (Directorate of Economics and Statistics)

Table 15.4
Average Monthly Expenditure Under Different Groups by Family Expenditure Class 1998-99 (Rupees)

CLASSES	FOOD	FUEL	HOUSING	CLOTHING	MISC.	TOTAL
Up to 1000	679.32	62.10	95.83	63.33	99.04	999.63
1001-2000	989.84	111.91	137.63	75.02	194.45	1508.84
2001-3000	1629.26	191.10	250.57	133.25	378.90	2583.08
3001-4000	2020.37	273.10	380.06	168.01	698.93	3540.47
4001-5000	2445.04	327.39	547.50	235.07	912.05	4467.05
5001-6000	2850.73	370.16	786.44	276.70	1199.11	5483.14
6001-7000	3252.24	399.61	947.93	338.36	1524.68	6462.83
7001-8000	3578.14	451.15	1325.79	401.83	1737.80	7994.70
8001-9000	3820.70	467.77	1853.66	458.94	1850.34	8451.41
9001-10000	4215.26	517.02	2013.35	492.49	2124.39	9362.61
Above 10000	5022.20	529.06	2730.86	677.62	2817.91	11777.64
ALL GROUPS	2738.34	342.67	856.47	282.44	1165.76	5385.68

Source: Report on Family Budget Survey 1998-99 (Directorate of Economics and Statistics)

price index of rice by 473 points, the wholesale price index of agricultural commodities recorded an increase of 74 points (3.56 per cent) from 2077 points in 2001 to 2151 points in 2002, as against a decrease of 335 points (13.90 per cent) in 2001, from 2412 points in 2000 to 2077 points in 2001 (Table 15.5). This was primarily contributed by the variations in the index of oilseeds, under non-food crops. Index of oilseeds which has a weight of 25.5 per cent in wholesale price computation shot up by 827 points (41.4 per cent) from 1996 points in 2001 to 2823 point in 2002. Condiments & spices and fruits & vegetables also witnessed uptrend in their indices by 325 points (15.3 per cent) and 240 points (7.9 per cent) respectively. Molasses (4.9 per cent) and plantation crops (2.4 per cent) recorded down trend in their indices. The month-wise movements of indices are shown in Appendix-15.3. The index of rice, after remaining steady at 1693.60 points from January to March declined to 1548.99 points in April and thereafter remained steady throughout the year. Indices of all other commodities witnessed fluctuations, without being steady in any two consecutive months.

Parity Index

15.5. 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 2002 (data are available only upto 2002), the parity index rose by one point from 48 points in 2001 to 49 points in 2002, as against a decline of 18 points in 2001 from 66 points in 2000 to 48 points in 2001. (Table-15.6). In 2000 also, the index declined by 16 points. Though an uptrend is seen in 2002, it cannot be taken as a clear indication of the trend

of the years to come, as it is evident from the Table that the indices have been generally on downtrend since 1997, with a negative growth rate of 5.6 percent. This implies that the price situation in the State has not been generally favourable to the farming community over the years, barring slight improvement in 2002. During the period 1993-2002, when the prices received by farmers increased by a growth rate of 2.5 per cent, the prices paid by farmers increased by a higher growth rate of 9.4 per cent. During the same period farm cultivation cost grew at a rate of 11.2 per cent and domestic expenditure grew at a rate of 7.7 per cent.

Wages

15.6. The average daily wage rates of skilled and unskilled workers in agricultural sector during the period from 1992-93 to 2001-02 are presented in Tables-15.7 and 15.8 respectively. In 2001-02, wages of carpenter increased by Rs. 6.27 (3.56 per cent) and those of mason increased by Rs. 6.21 (3.57 per cent) compared to

Table-15.6
Index of Prices Received and Price Paid by Farmers 1993-2002
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

Source: Department of Economics and Statistics

Table 15.5
Wholesale Price Index of Agricultural Commodities - 1997-2002

(Base 1952-53=100)

Crops	Weight	Whole Sale Price Index						%change over previous year				
		1997	1998	1999	2000	2001	2002	1998	1999	2000	2001	2002
1	2	3	4	5	6	7	8	9	10	11	12	13
A												
Food Crops	63.5	1806	1840	2599	2610	2232	2022	1.87	41.28	0.43	-14.48	-9.41
Rice	40.4	1162	1162	1888	2330	2058	1585	0.00	62.46	23.44	-11.69	-22.96
Condiments & Spices	10.4	2784	2872	4768	3161	2123	2448	3.19	66.00	-33.71	-32.83	15.31
Fruits and Vegetables	10.7	3185	3336	3326	3293	3041	3281	4.75	-0.32	-0.97	-7.67	7.89
Molasses	2.0	2338	2130	1847	1763	1988	1891	-8.90	-13.29	-4.56	12.78	-4.88
B												
Non Food Crops	36.5	2734	2453	2849	2068	1807	2375	-10.28	16.16	-27.41	-12.63	31.44
Oil Seeds	25.5	3237	2713	3295	2331	1996	2823	-16.19	21.43	-29.25	-14.36	41.40
Plantation Crops	11.0	1570	1851	1819	1461	1370	1337	17.94	-1.75	-19.69	-6.26	-2.35
C												
All Crops	100.0	2145	2064	2690	2412	2077	2151	-3.78	30.36	-10.33	-13.90	3.56

Source: Department of Economics and Statistics
Economic Review 2003

the previous year. Corresponding increases in 2000-01 were Rs. 10.80 (6.53 per cent) for carpenter and Rs. 9.15 (5.56 per cent) for mason. This shows that the wage rate increase was lower in 2001-02, compared to 2000-01. Wages of paddy workers also showed similar trend. The gap between wages of male paddy worker and female paddy worker is on the increase. The gap, which was 40.7 percent in 1980-81 went up to 69.45 percent in 1990-91 and then came down to 43.33 per cent in 2000-02, higher by 2.63 per cent compared to the level in 1980-81.

15.7 Tables-15.9 and 15.10 represent the average daily wage of skilled and unskilled workers in construction sector in the State. Wage of carpenter and mason, both in rural and urban areas, witnessed uniform increase of Rs.3 in 2001-02 over 2000-01. Wage of unskilled male worker in rural area increased by Rs.5 and that in urban area by Rs.3 in 2001-02. Wage of unskilled female worker, both in rural and urban areas, increased by Rs.3 during the same period.

Public Distribution System (PDS)

15.8. 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

Table 15. 7
Average Daily Wage Rates of Skilled Workers in Agricultural Sector 1992-93 to 2001-02

Year	Average daily Wage rates		Percentage changes over Previous year	
	Carpenter	Mason	Carpenter	Mason
1992-93	68.28	67.63	15.73	15.51
1993-94	76.49	76.57	12.02	13.22
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
1999-2000	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

Source: Department of Economics and Statistics

Table 15. 8
Average Daily Wage Rates of Unskilled Workers in the Agricultural Sector, 1992-93 to 2001-02 (Rupees.)

Year	Average daily wage rates Of paddy field workers		% change over Previous year	
	Male	Female	Male	Female
1992-93	48.40	32.31	16.97	23.70
1993-94	54.26	35.49	12.11	9.84
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

Source: Department of Economics and Statistics

Table - 15.9
Average Daily Wage Rates of Skilled Workers in the Construction Sector 1992-93 to 2001-02

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
1999-2000	171.09	172.21	168.77	171.94
00-01	182	184	181	183
01-02	185	187	184	186

Source: Department of Economics and Statistics

Table - 15.10
Average Daily Wage Rates of Unskilled Workers in the Construction Sector 1992-93 to 2001-02

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
1996-97	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
1999-2000	125.45	126.54	102.59	105.27
2000-01	130	133	108	111
01-02	135	136	111	114

Source: Department of Economics and Statistics

stocks foodgrains which are released every month for distribution through the Public Distribution System network across the country. Foodgrains mainly rice, wheat and kerosene are distributed to the public through a network of PDS outlets.

15.9. The Public Distribution System, till recently, was a general entitlement scheme to all consumers without any targeting. Since the 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 Targeted Public Distribution System w.e.f. 1st 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 the non-poor.

15.10. The recent shift in policy in the allocation and pricing of foodgrains, announced by the Central Government through its budget proposals for 2000-01, 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 Distribu-

tion 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 food grains 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.

15.11. 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 people (i.e. 25.43% of the states' population) as BPL families, the State Government has identified the number of BPL families as 20.19 lakh (i.e. 42 % of the population). The subsidised rice is

Table 15. 11
Public Distribution System in Kerala -A profile (1999-2003)

Sl. No	Items	Unit	1999	2000	2001	2002	2003
1	Ration cards and permits	No.	6162484	6262074	6344119	6383322	6268411
	a) No. of Ration cards for families						
	b) Ration Permits for institutions	No.	17663	17528	17127	16769	41860
2	No. of FCI Sub Depots as on 1st April-2003	"	20	23	22	23	23
3	No. of Wholesale Shops as on 1st April-2003	"	41	42	39	35	41
	a) co-operative Sector.						
	b) Others	"	329	303	305	286	270
	TOTAL	"	370	345	344	321	311
4	No. of ration shops as on April 2003	"	1025	966	953	953	828
	a) co-operative Sector						
	b) Others						
	TOTAL	"	13241	13266	13217	13217	13246
	TOTAL	"	14266	14232	14170	14170	14074
5	Sugar	MT	15382	152437	72766	45465	34022*
6	Kerosene Oil	KL	387511	361610	359437	314663	220136*

*-upto September 2003

Source: Directorate of Civil Supplies.

distributed to this additional 4.65 lakh families by meeting the subsidy portion from the State exchequer. Out of the total 63,50,978 ration card holders (as on 30th September 2003) in the state, 43,31,956 families are under APL and 20,19,022 families are under BPL category.

15.12. In Kerala, the coverage of ration population 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 slightly decreased from 63.83 lakh in 1st April 2002 to 62.68 lakh by 1st April 2003. At the same time the number of ration permits for institutions has gone up from 16769 in 2002 to 41860 in 2003. There are 14074

PDS outlets. This includes 828 shops in Co-operative Sector. Table 15.11 gives the details of Public Distribution System in Kerala.

15.13 Retail price of commodities issued through ration shops during 2003 are shown below in Table 15.12

15.14 Details of retail price of ration commodities from 1997 to 2003 are given in Appendix 15.4.

15.15 After introduction of TPDS, it is seen that APL families are not buyers on PDS shops for foodgrains. This is evident from the Tables: 15.13 & 15.14.

Table 15.12
Retail Price of Commodities issued through ration shops

Items	Price on April 2003 Rs/Kg
APL rice	8.90
Anthyodaya Annayojana Scheme	3.00
BPL Rice	6.20
Wheat	6.70
Sugar	13.50
Kerosene/Litre	9.50 to 9.70
Annapoorna rice	Free of cost

Source: Directorate of Civil supplies.

Distribution of Rice and Wheat

15.16 Distribution of rice and wheat through Public Distribution System in Kerala reveals a declining trend since 1998. Whereas in 1998 the off take of rice through Public Distribution System was 16.39 lakh tonnes and wheat 4.58 lakh tonnes, it declined to 4.23 lakh tonnes of rice and 1.40 lakh tonnes of wheat during 2002. It came down further to 3.72 lakh tonnes of rice and 1.12 lakh tonnes of wheat in 2003 (upto September). Table 15.15 illustrates this. Distribution of Rice and Wheat through PDS during the last seven years is detailed in the Appendices 15.5 & 15.6

Table 15.13
Foodgrain Distribution under PDS as on September 2003 (Qty in M.T.)

Sl. No	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
1	2	3	4	5	6	7	8	9	10	11	12
1	Trivandrum	No Wheat is Allotted under BPL Scheme	2857	64.98	4016	0	0	1451	24	0.18	14
2	Kollam		1264	25.25	2241	1260	42.28	1206	5	0.06	5
3	Pathanamthitta		1124	47.79	1178	360	24.32	274	0	0	8
4	Alappuzha		2739	59	3035	765	31.35	1101	0	0	6
5	Kottayam		4030	99.88	3753	0	0	1169	0	0	7
6	Idukky		2927	100	2564	400	28.57	740	0	0	2
7	Eranakulam		3220	99.41	3629	1266	36.48	2138	5	0.04	6
8	Thrissur		5688	99.48	5237	1140	32.76	1639	25	0.23	17
9	Palakad		4103	100	3689	877	29.83	780	45	0.47	11
10	Malappuram		5417	100	5857	650	17.62	912	0	0	11
11	Kozhikode		4434	100	4718	1256	41.45	1759	10	0.1	28
12	Wayanad		1886	100	2143	130	16.67	128	25	1	26
13	Kannur		4081	100	4030	730	27.24	634	41	0.54	32
14	Kasargod		2024	92.26	2137	170	13.71	143	20	0.57	20

Source: Directorate of Civil Supplies

Table:15.14
Foodgrain Distribution under PDS for the year 2003(upto September)

Sl. No	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
1	2	3	4	5	6	7	8	9	10	11	12
1	Jan-03	No Wheat is Allotted under BPL Scheme	43992	80.89	40795	6163	16.61	17071	188	0.17	271
2	Feb-03		34671	63.75	39841	13289	35.6	11296	167	0.15	191
3	Mar-03		35444	65.17	38654	14485	38.81	15577	144	0.13	249
4	Apr-03		42879	78.84	35519	12206	32.7	8979	669	0.59	506
5	May-03		29658	54.53	38734	9714	26.03	12403	201	0.18	278
6	Jun-03		43032	79.13	36483	13344	35.75	13022	183	0.16	197
7	Jul-03		40447	74.37	41476	8622	23.1	9123	420	0.37	527
8	Aug-03		48647	89.45	49387	14436	38.68	11405	607	0.54	540
9	Sep-03		45744	84.11	48227	9004	24.12	14074	200	0.18	194

Source: Directorate of Civil supplies.

Table- 15.15
Quantity of Rice and Wheat distributed through Public Distribution System in Kerala

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 (upto 9/03)	3.72	1.12

Source: Directorate of Civil supplies.

Central Allotment of Sugar and Kerosene

15.17 Central allotment of Sugar and Kerosene to Kerala has shown a decreasing trend during the last two years. The allotment of sugar during 2001 was 0.73 lakh tonnes. It was 0.45 lakh tonnes in 2002. Similarly the allotment of Kerosene to the state was 359437 Kilo Litres in 2001, and it came down to 314663 Kilo Litres in 2002.

Food Security

15.18 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 targeted 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-15.16. 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 old age pension scheme.

15.19 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.

Special Schemes

(1) Antyodaya Anna Yojana Scheme

15.20 This scheme which was implemented in the State with effect from 25.2.01 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 as 2,38,200 . Government of Kerala have enhanced the number of families to 2.74,109 by including all the tribal families in the State.

(2) Annapoorna Scheme

15.21 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.

Kerala State Civil Supplies Corporation

15.22. 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"

15.23 The Corporation has an authorized share capital of Rs.15 crore of which Rs. 8.56 crore is paid up. Government of Kerala have advanced an amount of Rs.132.6 crore as loan and Rs.293 crore as grant upto 31st March 2003 to the Corporation. During the current financial year, the Corporation has received Rs.10 crore as grant. 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.

15.24 The Corporation acts as a second line of public distribution system in the state by distributing essential commodities like Green Gram, Toordhal, Peasdhal, Lobia, Blackgram washed & split Bengalgram Chillies, Coriander, Mustard, Cumminseed and Methy through Maveli Stores/ Labham markets at subsidized price. The Corporation operates 833 Maveli stores, 21 Mobile Maveli Stores, 96 labham markets, 10 super markets, 35 medical stores, 10 petrol bunks, 4 LPG outlets and 1 Kerosene Depot. Of these, profit making ventures are Super markets, petrol bunks, LPG outlets and maveli medical stores. The sales turnover

Table 15.16
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+)			Pension for Agricultural Labourers			
Main Workers (Total cultivators + Al. 60+ Main Workers)			87	344.3	396	233
Male	Female	Total	(151)	(228)	(96)	
108	40	148				
(298)	(55)	(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				

of the Super markets during 2002-03 was Rs.22.53 crore. Turnover of non-maveli items during 2002-03 went upto Rs. 90.90 crore from Rs.65.56 crore in 2001-02.

15.25 During 2002-03, the Corporation organised 15 Onam fairs and 63 Onam markets in the state and the total turnover was Rs.3.47 crore. The Corporation conducts a hotel at Sannidhanam during Sabarimala season.

15.26 The Corporation is the sole distributor of levysugar for the entire state and it runs 10 sub depots for PDS items in seven districts. Under the mid day

meal programme the Corporation supplied 46478 M.T of rice and 9514 M.T of pulses to 23.4 lakh school children in 11265 schools in 2002-03.

15.27 The Corporation was running at a loss of Rs.43.29 crore during 2000-01. The loss has gone up to Rs.52.67 crore in 2001-02. The accumulated loss of the Corporation up to 2001-02 was Rs.348.25 crore. Since the inception of the Corporation in 1974-75, the Government of Kerala had provided an amount of Rs.239.77 crore as grant and the Corporation availed a loan of Rs.132.60 crore from commercial banks. The accumulated interest liability is Rs.327.90 crore up to 2001-02.

EXPORT AND IMPORT

Balance of Payment

India's balance of payments (BOP) improved significantly during 2002-03, with an overall surplus in each quarter. A surge in exports of merchandise and invisibles has pushed the current accounts into a surplus, in contrast to the previous year when a small current account surplus appeared due to lack of import demand. Growing openness in terms of the share of tradables in the economy is increasingly being driven by exports. The healthy rise in current receipts has had salutary effects on debt servicing capabilities and import purchasing power. Banking capital movements supported by stable non-resident deposits brought in higher net capital flows, notwithstanding substantial prepayments of multilateral debt.

16.2 On the external front, high merchandise export growth was maintained during 2002, averaging on 18.0% increase over the corresponding period in 2001. Similarly, import growth was also buoyant at 13.6% during 2002. However, with export growth exceeding import growth, the trade deficit declined in 2002, albeit marginally.

16.3 The current account surplus increased to \$ 3.7 billion during 2002 compared to 0.8 billion in 2001, implying a significant increase of the surplus in invisibles. In India the current account surplus was associated with a 17.7 percent growth in current receipts during 2002-03. As a result the debt service ratio remained one of the lowest after China and Malaysia. India's earnings on the invisibles account, predominantly comprise of private transfers in the form of remittance and exports of software services. India's share in global flows of private transfers is placed at around 3 percent which amounted to US \$ 14.8 billion in 2002-03. Exports of software and IT enabled services, which accounted for 17% of total world export of software and IT enabled services in 2001, recorded a robust growth of 27.1% during 2002. On the capital account; net inflows increased by about 29% during 2002 which is due to a surge in 'other' capital and banking capital inflows. The current account surplus and net capital inflows have increased foreign exchange reserves to over \$ 100 billion as on 20th December 2003. The reserves were equivalent of around 14

months of imports or about five years of debt servicing, amply satisfying the so-called "Guidotti rule". On August 15th 2003 India held the sixth largest stock of International reserve assets among emerging market economies at US \$ 85.4 billion. In view of India's burgeoning foreign exchange reserves, IMF has selected India as a member of its financial transactions plan under which the country contributes to IMF's liquidity to help other countries to tide over balance of payments problems. That is IMF has designated India as a creditor country under its Financial Transaction Plan (FTP).

Capital account

16.4 Capital account developments dominated the balance of payments in 2002-03, a phenomenon that was interrupted only once in 1995-96 since the surges of capital inflows began in 1993-94. This is indicative of the sustained international confidence in the strength of the economy, impervious to the down gradings by external credit rating agencies. Net capital flows were higher in 2002-03 than in any year so far.

External debt.

16.5 India's total external debt increased by US \$ 5.5 billion over the year, from US \$ 98.8 billion at the end of March 2002 to US \$ 104.2 billion at the end of March 2003.

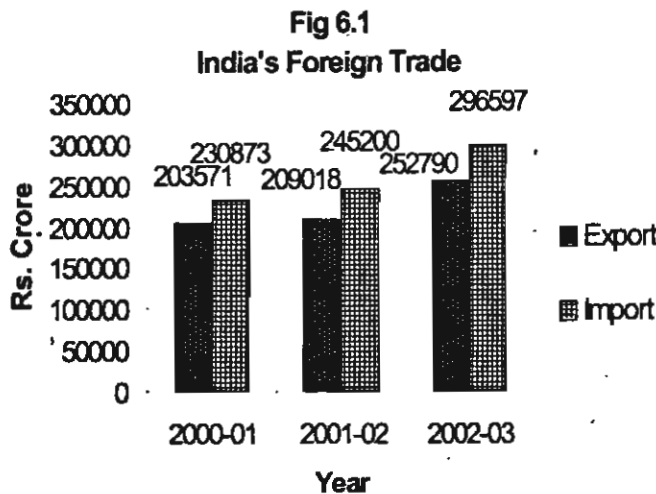
Foreign Investment

16.6 Foreign Direct Investment in India stood at US \$ 6.1 billion in 2001-02 and came down to US \$ 4.7 billion in 2002-03. Indian exports accounted for 0.5% of the world exports in the early 1990's. It reached 0.6% in 1996. Between 1996 & 2000 the share moved to around 0.65%.

16.7 The medium term export strategy of the government of India had set the target of raising India's export share in the world market to 1% by 2007. India's share in world export could have risen to 0.81% in 2002 from 0.71% in 2001. Exports grew by an impressive

16% during September 2003, the same growth recorded a year ago. During April-September 2003, however exports growth was lower at 9.9% as compared with 18.2% growth registered in the corresponding period of 2002. Imports went up by 21% as against 9.4% increase during the corresponding period of 2002. Trade deficit during April-September 2003 stood higher at \$ 7.15 billion as compared with \$ 3.5 billion deficit recorded in the corresponding period of 2002.

16.8 According to the International Monetary Fund projections, global GDP and trade volume growth may show some acceleration in 2003 to 3.2% and 4.3% respectively. The prospect for 2004 is brighter. India's foreign trade during the last three years is shown in the figure 16.1.



Cargo handled by Kochi Port

16.9 Total export of cargo through Kochi Port started declining since 1998-99. Total export (both coastal and foreign) from Kochi port was 24.3 lakh MT during 1998-99. It came down to 19.68 lakh M.T during 2001-02 but slightly increased to 21.25 lakh M.T during 2002-03. At the same time foreign export from Kochi port shows an increasing trend. The foreign export from Kochi port during 1998-99 was 9.52 lakh tonnes. It increased to 12.17 lakh tonnes during 2001-02 and slightly decreased to 11.09 lakh tonnes in 2002-03. On the contrary the total coastal export from Kochi port has declining since 1998-99. The total coastal export from Kochi port was 14.78 lakh tonnes during 1998-99. It decreased to 7.51 lakh tonnes in 2001-02. But in 2002-03 it increased to 10.16 lakh tonnes.

16.10 The trend of total import (both coastal and foreign) through Kochi port was just the opposite of export. Total import during 1998-99 was 102.51 lakh tonnes. It increased to 108.99 lakh tonnes in 2002-03 while coastal import through Kochi port declined from 71.46 lakh tonnes during 1999-2000 to 42.79 lakh tonnes in 2002-03, foreign import through Kochi port during 1998-99 was 61.69 lakh tonnes. It came down to 58.12 lakh tonnes during 2001-02 but again increased to 72.29 lakh tonnes in 2002-03 (see Table)

Commodity Composition of Kerala's Exports.

16.11 Commodity Composition of exports from Kerala is presented in Appendix.16.1. Out of

the total exports, miscellaneous items represent the 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 73.9 % during 2001-02. But one percent increase was recorded in 2002-03 against 2001-02. Export of tea, cashew Kernals, Coir products and spices through Kochi

Table - 16.1
Cargo handled at Kochi Port during 1997-98 to 2002-03 (In lakh M.T.)

TRAFFIC	EXPORT						IMPORT					
	1997-98	1998-99	1999-2000	2000-01	2001-02	2002-03	1997-98	1998-99	1999-2000	2000-01	2001-02	2002-03
Coastal	15.04	14.78	13.12	10.11	7.51	10.16	43.34	40.82	71.46	47.83	42.79	36.70
Foreign	10.39	9.52	8.93	10.72	12.17	11.09	54.48	61.69	34.9	62.78	58.12	72.29
Total	25.43	24.3	22.05	20.83	19.68	21.25	97.82	102.51	106.36	110.61	100.91	108.99

Source: Kochi Port Trust

port witnessed a steady growth in 2002-03 compared to 2001-02. Export of coffee steeply declined from 146166 tonnes in 2001-02 to 115156 tonnes in 2002-03 representing a decrease of 21.2 percent. So also the export of seafoods declined from 111070 tonnes in 2001-02 to 84216 tonnes in 2002-03 representing a decline of 24.2 percent.

16.12 Out of the total export through Kochi port coffee accounted for 5.4% followed by tea 4.9%, coir products (4.7%), cashew Kernels and seafoods (4%) and spices (2.2%).

16.13 Total value of foreign export through Kochi port increased from Rs. 6251.20 crore in 2001-02 to 6532.76 crore in 2002-03. Out of the total value of export in 2002-03 cashew Kernels accounted for Rs. 1585.47 crore followed by pepper (Rs.633.69 crore), seafoods (Rs.623.76 crore), Coir products (Rs.428.92 crores), coffee (Rs.387.37 crore), tea (Rs.325.23 crore), cardamom (Rs.25.21 crore), and ginger (Rs.14.86 crore).

Commodity composition of Kerala's Imports.

16.14 Commodity wise imports through Kochi port are given in Appendix 16.2. The category "miscellaneous" mostly consisting of petroleum products accounted for 89.34% of the total imports through Kochi port during 2002-03. Growth rate of import of raw cashew nuts grew by 19.56% in 2002-03 compared to the previous year. But during the previous year the increase was 242%. Import of cashew nuts through Kochi port was only 217249 tonnes in 2001-02, but rose to 259736 tonnes during 2002-03. Import of Iron, steel and machinery was 231033 tonnes in 2002-03 as against 144787 tonnes during 2001-02 registering an annual growth rate of 59.57% in 2002-03.

16.15 A peculiar feature of Import is that import of food grains recorded a 100% negative growth rate in 2002-03 as against 40.93% during 2001-02. So also the import of fertilizers and raw materials recorded a negative growth rate of 2.28% compared to the growth rate of 6.4% during 2001-02. Newsprint recorded a growth rate of 11.55% during 2002-03.

Marine Products

16.16 Export of marine products which started at a modest level in the early fifties with a turnover of Rs.2.46 crore has grown significantly during the last five decades and reached the level of Rs.6881.31 crore during 2002-03. The export of marine products has been increasing since 1998-99 to 2002-03 except in 2001-02. The growth in 2000-01 was 28.41% in quantity and 25.94% in value (19.11% in dollar terms). It

declined during 2001-02 by -3.63% in quantity by 7.56% in value. But during 2002-03 the export increased by 10.09% in quantity and 15.52% in value compared to the previous year.

16.17 India with a fishery production of 5.36 million M.T from both capture and culture sources, though ranked 4th among the fish producing countries, occupies only the 17th position among the fish exporting countries of the world. Frozen shrimp is the major item, contributing 66.97% in value and 28.85% in volume of the total export of marine products from India during 2002-03. Eventhough the share of shrimp export has come down from 30.09% of the previous year to 28.85% in quantity and from 69.50% of the previous year to 66.97% in terms of value it recorded a growth of 5.56%, 11.31% and 9.46% in terms of volume, rupee realization and in US dollar terms, respectively during 2002-03.

16.18 The share of frozen fish during 2002-03 was 42.01%, in volume compared to 41.22% in 2001-02 and 12.23% in value compared to 11.97% in 2001-02. There has been an increase in the export of frozen fish by 12.20% in quantity and 18.03% in rupee value respectively over the previous year. This year, export of cephalopods especially cuttlefish showed a growth, which was the tune of 35.37% in quantity and 48.92% in value. The export of Frozen squid also registered a growth of 16.59% in value terms over the previous year. However there was a shortfall of 4.91% in volume Live items like live whelk (Baigai) live fish and live crab showed an increase in exports while the export of live lobster live aquarium fish and live snail recorded a shortfall during the year. Export of chilled items recorded a decline both in quantity and value during this year. Details of item wise export of marine products from India during the last two years are furnished in Appendix.16.6.

16.19 Indian marine products are exported to about 60 countries across the globe. USA emerged as the single largest market for Indian marine products during 2002-03 relegating Japan to the second position. The share of USA reached 13.21% in quantity and 29.81% in value by registering a growth of 25.82% and 44.3% in volume and value respectively. The share of Japan was 11.75% in volume and 22.30% in value.

16.20 In spite of some issues the export to EU countries registered a growth of 14.5% and 21.21% in volume and value compared to the year 2001-02. The member countries of EU together accounted for 20.23% and 20.18% in the total quantity and value of Indian

marine products exported. In terms of quantity, China occupied the first position contributing 36.55% of the total exports from India. However China's share in value was only 11.08%. The export to South East Asia also increased by 19.24 % in value with a decline of 15.88% in volume compared to the last year. The export to Middle East market increased by 2.66% in quantity and 13.08% in value.

Kerala Scenario

16.21 Kerala is the second largest player in the export of marine products from India. The share of Kerala has come down since 2001 due to the poor landings and the increased production in culture sources in Andhra Pradesh.

16.22 During 2002-03 the share of Kerala in the overall export of marine products from the country was 17.42% in quantity and 15.20% in value. The share in the previous year was 17.14% and 15.97% respectively. In the year 2002-03 the total exports from Kerala was 81393 M.T and the value realized was Rs.1045.82 crore. This was 11.87% and 10.02% respectively more than the previous year 2001-02. The export details can be seen in Appendix 16.3.

16.23 European Union continued to be the major market for the seafood items exported from Kerala for the last three years. The share of EU was 46.5% in quantity and 48.35% in value followed by USA (13.07% and 18.37%) china (13.33% and 7.14%) Japan (7.6% & 13.10%) south East Asia (9.68% and 5.31%) Middle East (3.7% & 3.22%). Exports to European Union in 2002-03 was 37853 M.T valued at Rs. 505.62 crore Japan has imported 5831 M.T of seafood items and the value realised was Rs.136.99 crore, while that of China was 10848 M.T valued at Rs.74.67 crore during 2002-03. At the same time the marine export to USA was 10641 M.T valued at Rs.192.08 crore during 2002-03. The details are given in Appendix 16.5.

Spices Export performance of Indian spice industry

16.24 The growth rate of export of various spices during the past two decades shows that, during eighties, except black pepper all other commodities registered a negative growth rate in volume exported. Among the value added spice products, oils and oleoresins achieved the maximum growth rate of 42.93% in volume and 25.91% in value terms. Overall, there was a negative growth rate of 3.6 recorded for all spices during the period 1978-79 to 1987-88.

16.25 However, during the period from 1988-89 to 1997-98, except in cardamom (small) exports of all other commodities achieved a positive growth rate both in volume and value terms. Chilli and ginger have performed well. Unit price rise was more for pepper than for all other commodities exported. During this decade almost all the crops have recorded a positive growth rate in terms of value because of the continuous rising trend in prices.

16.26 The cumulative export of spices from India during 2002-03 is estimated as 250,950 tonnes valued at Rs.1790.00 crore (\$ 370.10million) as against 245,000 tonnes valued at Rs. 1625.35crore (\$341.60 million) during 2001-02 which shows an increase of 2% in terms of quantity and 10% in terms of Re..value (in dollar terms, there is an increase of 8%). Spice oil and oleoresins including mint oil contributed 40% of the total export earning followed by chilli (17%) and pepper (9%).

16.27 During 2002-03 the export of Chilly, ginger, Coriander, fennel and other seed spices like mustard seed, ajwanseed, dill seed, other spices like tamarind, nutmeg, vanilla, asafotida, curry powder, spice oils and oleoresins is higher in terms of quantity and value as compared to those of the previous year.

Pepper

16.28 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. But India was able to export less than half of Vietnam at 20000 tonnes. Even Indonesia with a production of 56000 tonnes will outstrip India exporting 42000 tonnes.

16.29 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.

16.30 The export of pepper came down in terms of volume, from 24000 tonnes in 2001-02 to 20000 tonnes in 2002-03. In value terms, it declined from Rs.211.93 crore to Rs.166.10 crore which is attributed to the lower unit value realization of Rs.83.05 per kg. as against Rs.169.52 per kg of the previous year 2000-01.

16.31 Export of pepper from Kerala came down from 21448 M.T during 2001-02 to 15094 M.T in 2002-03. But its value decreased from Rs.187.21 crore in 2001-02 to Rs.139.90 crore during 2002-03. However the export of pepper from Kerala had been 41332 M.T valued at Rs.856.99 crore during 1999-2000.

Cardamom (small)

16.32 Export of cardamom (small) from India sharply decreased during 2002-03 both in terms of quantity and value. The export during 2002-03 was 550 M.T valued at Rs.37.60 crore compared to 700 M.T valued at Rs.55.86 crore during the previous year. Export from Kerala during 2001-02 had been 630 M.T valued at Rs.40.32 crore as against 384 M.T valued at Rs.25.35 crore during 2002-03.

Cardamom (large)

16.33 During 2002-03 India exported 1300 M.T cardamom (large) valued at Rs.18.48 crore against 1250 M.T valued at Rs.20.38 crore during 2001-02.

Chilli

16.34 Export of Chilli during 2002-03 was 83000 tonnes valued at Rs.301.54 crore against 75000 tonnes valued at Rs.255.84 crore in 2001-02. Export of chilli increased by 11% in quantity and 18% in value during 2002-03.

Ginger

16.35 The export of ginger from India increased during 2002-03 from 8000 M.T. in quantity and Rs.25.04 crore in value in 2001-02 to 8500 M.T valued at Rs.24.09 crore. However the export of ginger from Kerala declined from 2560 M.T valued at Rs.14.14 crore in 2001-02 to 2415 M.T valued at Rs.13.71 crore during 2002-03.

Turmeric

16.36 Export of turmeric from India during 2002-03 was 32000 M.T and the value realized was Rs.99.38 crore, whereas it was 35000 M.T and the value realized was Rs.84.63 crore during the previous year. Export of turmeric from Kerala showed an increase. During 2000-01 Kerala's export was 2682 tonnes valued at Rs.11.90 crore. It increased to 4800 M.T and the export value was Rs.17.87 crore during 2001-02. But during 2002-03 export of turmeric recorded a slight decrease in quantity. The quantity exported was 4770 M.T and value realised was Rs.24.09 crore.

Coriander

16.37 During 2002-03 India exported 15500 M.T of Coriander valued at Rs.47.85 crore against 15000 M.T valued at Rs.45.05 crore of the previous year.

Curry Powder

16.38 Export of curry powder from India during 2001-02 was 6250 M.T. valued at Rs.40.48 crore which grew to 6750 M.T valued at Rs.46.40 crore during 2002-03. Export of curry powder from Kerala also increased. During 2001-02 Kerala's export was 1100 tonnes and the export value realised was to Rs.10.71 crore. It became 1695 M.T and Rs.16.99 crore respectively during 2002-03.

Spice oils and oleoresins

16.39 The export of spice oils and oleoresins from India during 2002-03 was 4250 M.T valued at Rs. 362.29 crore as against 4400 tonnes valued at Rs.386.48 crore of the previous year. Export of spice oils and oleoresins as value added products has been steadily growing over the past years.

16.40 Export of spice oils and oleoresins from Kerala also has increased in quantity and value. The export during 2002-03 was 3496 tonnes valued at Rs.309.96 crore as against 3150 tonnes valued at Rs.291.62 crore during 2001-02. But the unit value realised during 2001-02 was Rs.925.77 per kg, which came down to Rs.883.92 per kg during 2002-03. For details of spices see the Appendix 16.8.

Vanilla

16.41 The estimated area of vanilla cultivation in India is about 1600 hectares and production about 60 tonnes. Karnataka State is leading in area and production.

16.42 Total export of vanilla from India during April-October 2003 was 12.2 tonnes in quantity and the export value realised was Rs.1193.63 lakh and the unit value was Rs.9808. At the same time the export of vanilla from India during April-October 2002 was 8.7 tonnes in quantity and the export value realised was Rs.721.21 lakh and the unit value was Rs.8280.

Production of Raw Cashewnuts.

16.43 India is the largest producer of raw cashewnuts in the world followed by Brazil and Vietnam. The record production of raw cashewnuts in India during the last six years was during 1999-2000 which was 520000 M.T. It decreased to 470000 M.T in 2001-02

and again increased to 506000 M.T during 2002-03. 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 upto 90000 M.T in 2002-03.

16.44 Among the agricultural products exported from India during the year 2001-02 cashew ranked number two in position as a foreign exchange earner and contributed 0.86% of the total foreign exchange earnings of the country through exports.

Export of Cashew Kernels

16.45 The export of cashew Kernels from India is in an increasing trend since 1996-97. The value realised

kernels from India about 56% in quantity and 55% in value was from Kerala during the last five years. The export of cashew Kernels from Kerala during 2001-02 was 54717 M.T valued at Rs.971.11 crore which went up to 76119. M.T in quantity and the value realised was Rs.1188.6 crore during 2002-03. The average unit export price of cashew kernels came down from Rs.229.89 per kg during 2000-01 to Rs.182.13 per kg in 2001-02. Major markets of India's cashew kernels are USA, Netherlands, UK, Japan, UAE, France, Canada, Saudi Arabia, Spain, Israel, Singapore, Italy and Germany.

16.46 The export of cashew nut shell liquid from India during 2002-03 was 6023 M.T valued at Rs.8.36 crore which is an all time record. During

2001-02 it was 4178 M.T valued at Rs.5.93 crore. Kerala's share was 3365 M.T valued at Rs.4.56 crore during 2001-02 which grew to 5170 M.T valued at Rs.5.95 crore. The major markets are USA, Korea, Japan etc.

Table-16.2
Export of Cashew Kernels: Kerala and India (1996-97 to 2002-03)
(Quantity in MT and Value in Rs. Crores)

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	54
1998-99	43665	940.47	77076	1630.10	57	58
1999-2000	50022	1342.1	96805	2569.50	50	52
2000-01	49874	1152.36	89155	2049.60	56	56
2001-02	54717	971.11	98203	1788.70	56	54
2002-03 (P)	76119	1188.6	127227	2006.40	60	59

*Export through Cochin Port, P-Provisional

Source: The Cashew Export Promotion Council of India

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 M.T and valued at Rs.2569.50 crore during 1999-00. During 2002-03 the total quantity of cashew kernels exported was 127227 M.T. valued at Rs.2006.40 crore. During 2001-02 the exported quantity was 98203 M.T valued at Rs.1788.70 crore. Eventhough the quantity of export increased the value realised came down. On an average out of the total export of cashew

Table -16.3
Export of Cashew nut Shell Liquid - Kerala & India
(1996-97 to 2002-03)
(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 (P)	5170	5.95	6023	8.36

(P): Provisional

*Export through Cochin Port

** Various Custom Houses

Source: The Cashew Export Promotion Council of India

16.47 The total raw cashew nuts imported into India during the period 2001-02 was 3,55,556 M.T valued at Rs.950.01 crore. This was 42.57% more in quantity and 1.21% less in value as against 2,49,318 M.T raw cashew nuts valued at Rs.960.84 crore imported during 2000-01. During 2002-03 the total import of raw cashew nut increased to 401199 tonnes in quantity valued at Rs.1230.64 crore which is an all time record. Apart from African countries Indonesia was the major supplier of raw cashew nuts to India.

Table- 16.4

Import of Raw Cashewnuts: Kerala and India (1996-97 to 2002-03)
(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 (P)	252605	774.45	401199	1230.64

*Import through Cochin Port

** Various Custom Houses, P-Provisional

Source: The Cashew Export Promotion Council of India

Coffee

16.48 In India coffee plantation has been growing year after year. Total planted area was 92523 hectares in 1950-51. It increased to 346716 hectares in 2000-01 and to 346995 hectares in 2001-02. A peculiar feature of coffee plantation is that area of cultivation of Robusta is increasing and Arabica is decreasing since 1950-51. It reached a stage of fifty fifty in 1993-94. Since 1993-94 on an average the percentage of area of cultivation of Arabica is about 48 of the total planted area and the remaining 52 is cultivated with Robusta.

16.49 In Kerala during 2000-01 coffee plantations covered 84735 hectares which is 24% of the total cultivated area of India. It slightly increased to 87795 hectares during 2001-02. Kerala ranks second among Indian States on the total area and production of coffee while Karnataka ranks first.

16.50 Total coffee production in India shows a fluctu-

ating trend since 1950-51. The peak coffee production was 301200 M.T during 2000-01. It reduced to 275275 M.T during 2002-03 and post blossom forecast predicts a production of 275225 M.T coffee in India in 2003-04. Total production of coffee in Kerala was 66690 tonnes in 2001-02 which came down to 64425 tonnes in 2002-03 which is 23.4% of the total production in India.

16.51 Export of Coffee from India in quantity and value has shown an increasing trend since 1996-97 to 1999-00. After 2000-01 the all India export of coffee has

been decreasing in quantity and value. During 1996-97 India exported 181224 M.T Coffee valued at Rs.1466.33 crore. It went up to 244941 M.T in 1999-2000 in quantity and value realized was Rs.1901.21 crore. During 2001-02 India exported 213,586 tonnes of coffee and realised an amount of Rs.1050.36 crore as value. It came down to 207,265 tonnes coffee and value realised was slightly increased to Rs.1051.31

crore.

16.52 Export of coffee from Kerala has been decreasing both in quantity and value since 1998-99. Total coffee export from Kerala was 10087 tonnes valued

Table-16.5

Export of Coffee from India & Kerala (1996-97 to 2002-03)

YEAR	KERALA		INDIA	
	Quantity in MT.	Value (Rs. Lakhs)	Quantity in MT.	Value (Rs. Lakhs)
1996-97	593	440.7	1,81,224	1,46,633.3
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	2,07,265	1,05,131.0

Source: Coffee Board

at Rs.70.59 crore in 1998-99. It decreased to 3685 tonnes valued Rs.16.23 crore in 2001-02. The export again declined to 3103 tonnes and export value received was only Rs.11.63 crore in 2002-03.

Tea

16.53 Tea production in the world remained more or less static in 2002 at 3021.6 Million kgs. compared to

3021.4 M.kgs in 2001. India maintained its leading producer status in tea with a share of 27.3% followed by China (23.7%), Sri Lanka (10.3%) and Kenya (9.5%). India's total tea production was 826.2 Million kgs in 2002 compared to 853.7 Million kgs in 2001, registering a decline of 3.2 percent. The total production in South India fell to 194.4 million kgs. in 2002 from 202.9 million kgs in 2001, a short fall of 4.2%. The latest available information indicates that the production for the year 2003 would be significantly lower than that of 2002.

16.54 After the bleak tea export performance in 2001, the year 2002 provided some respite at least with regard to quantum of exports. Quantity of exports on All India basis increased by 8.5 percent i.e. from 182.6 million kgs. in 2001 to 198.1 million kgs in 2002. Export from South India was 97.2 million kgs in 2001 which increased to 106.4M.Kgs in 2002 accounting 54% of India's export. However, a decline in the unit value realization was noted irrespective of region.

16.55 After the removal of quantitative restrictions in April, 2001, one of the major threats faced by the tea industry is the increase in import of low priced tea into India. Import of tea into India increased by 31.5 percent from 16.6 million kgs in 2001 to 21.9 million kgs in 2002.

16.56 Tea was cultivated in an area of 36,800 ha. in Kerala during 1999-2000. The production of tea in Kerala decreased from 69.3 million kgs in 2000 to 66.1 million kgs in 2001-02. Again it has come down to 65.8 million kgs in 2002-03. Tea exported from South India was 111.1 million kgs

Box -16. 1

1. India has only 0.7 percent share in global trade, in a world where every sixth human is an Indian.
2. India's balance of payments in 1998-99 was 422 million U.S. dollars which increased to 11757 U.S. million dollars in 2001-02. In Rupee terms it was Rs. 18,245 crores in 1998-99 which went up to Rs. 56,592 crores in 2001-02.
3. India's external debt on March 2003 is US \$ 104.2 billion.
4. India's total export earnings was 18145 million U.S. dollars and in Rupee terms it was Rs. 32,558 crores during 1990-91. It jumped to 43827 million U.S. dollars during 2001-02. Then it decreased to U.S. \$ 38115 million in 2002-03.
5. India's Imports were only 24,073 million U.S. dollars and in Rupee terms it was 43,193 crores during 1990-91. It went up to 51413 U.S. million dollars during 2001-02. It came down to 43882 U.S. million dollars in 2002-03.
6. Foreign direct investment in India is US \$ 4.7 billion in 2002-03 while it was US \$ 6.1 billion in 2001-02.
7. International Monetary Fund designated India as a creditor country under its Financial Transaction Plan (FTP).
8. Total foreign exchange reserves of India during 1990-91 was 5,834 million U.S. dollars. It grew to 754288 million U.S. dollars during 2001-02. It again increased to US \$ 100 billion on 20th December 2003.
9. The growth rate of India's imports was declined from 16.5% during 1999-00 to 6.2 % during 2001-02.

and the value realised was 738.2 crore in 2000. It decreased to 97.2 million kgs and in value terms Rs.660.2 crore. The quantity of export from the South has slightly increased to 106.4 million kgs and the export value realised to Rs. 690.7 crore in 2002.

16.57 Tea exported through Kochi port during 2001-02 was 96155. M.T valued at Rs.205.48 crore. It increased to 103544 M.T valued at Rs.325.23 crore in

2002-03.

Table-16. 6
Export of Coir & Coir Products from India
(1995-96 to 2002-03)

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

Source: Coir Board

Coir & Coir Products

16.58 Export of Coir and Coir products from India during the period April 2002 to March 2003 was 84182.56 M.T valued at Rs. 352.71 crore as against export of 71334.81 M.T valued at Rs.320.58 crore achieved during the corresponding period of the previous year. The increase in quantity is 12847.75 M.T (18.01%) and the value increase is Rs. 32.12 crore (10.02%).

16.59 During 2002-03 export of coir pith, handloom mats, handloom mattings, coir other sorts, geo textiles, powerloom mats and rubberized coir have shown an increase compared to those of the previous year. A decrease in export was recorded in coir fibre, coir yarn, coir rugs & carpet, curled coir, powerloom mattings, tatted mats and coir rope both in quantity and value. Eventhough there was an increase in the export of coir fibre in quantity, a decrease in value was recorded.

16.60 Out of the total export of coir products from India during 2002-03, handloom mats constitute 39.27% in terms of quantity and 58.27% in terms of value followed by coir yarn (13.63% and 8.42%) ,coir pith (25.02% and 4.23%) in terms of quantity and value respectively.

16.61 Major markets of coir products are USA, Germany, U.K. France. 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, Sweden and Greece.

16.62 Export of coir products from Kochi Port during 2001-02 was 60861. M.T valued at Rs.394.74 crore, which increased to 99319 tonnes in quantity valued at Rs. 428.92 crore in 2002-03.

INSTITUTIONAL AND BANK FINANCE

The Economic reform measures are gaining momentum in Kerala and efforts are on to boost the level of investment in the State. In this context, the role of financial institutions including banks is crucial. To get a comprehensive picture of the level of investment in the State it is necessary, therefore, to analyse the financial assistance disbursed by all India financial institutions in the State

Institutional Finance

17.2 Importance given to agriculture sector as well as the stronger presence of co-operative sector in the State, makes the role of NABARD and NCDC significant in providing institutional finance to Kerala. During 2002-03, though the total disbursement of NABARD increased to Rs.7418.77 crore from Rs. 6682.91 crore in 2001-02 the share of Kerala declined over the previous year. The assistance received in 2001-02 was Rs.373.29 crore (5.59%) and that in 2002-03, Rs.307.70 crore (4.15%). But in the total disbursement by NCDC there has been a notable reduction during 2002-03. It declined to Rs.514.46 crore from Rs. 720.02 crore in 2001-02. Due to high interest rate, need for government guarantee and not- too-good recovery rate, it was not found attractive. However, the share of Kerala remained more or less the same, showing a negligible shortage, at Rs.50.18 crore (9.75%) in 2002-03, the share in 2001-02 being Rs. 51.61 crore. Taking NABARD and NCDC together, the total was Rs.357.88 crore, accounting for 4.50% of the total disbursements by the two institutions. However, this amount is less, by Rs. 67.02 crore, than that in the previous year. (See Appendix 17.1)

17.3 The details of state wise cumulative disbursement by NABARD and NCDC as at the end of March 2003 are shown in Appendix 17.2. Out of the cumulative disbursement of Rs. 72080.36 crore by these two institutions as at the end of March 2003, the major share of Rs. 64983.71 crore (90.15%) was accounted for by NABARD and Rs. 7096.65 crore (9.85%) by NCDC. Uttar Pradesh continued on top in credit absorption by availing of Rs. 10559.69 crore (14.65%) followed by Maharashtra, Rs .8176.24

crore (11.34%) and Andhra Pradesh, Rs.7063.17 crore (9.80%). Kerala received an amount of Rs.3330.02 crore from these two institutions, which is 4.62 per cent of the total (cumulative) disbursements.

17.4. There was a sharp decline in the total disbursement of financial assistance by all India financial institutions such as IDBI, IFCI, ICICI, UTI, GIC, LIC, NABARD and NCDC during 2001-02. The aggregate amount of assistance which was Rs.69731 crore in 2000-01 declined, by Rs.14491.10 crore to Rs.55239.90 crore in 2001-02. Accordingly the share of Kerala has also declined to Rs.648.6 crore in 2001-02 from Rs.817.2 crore in 2000-01. Details of state wise financial assistance disbursed by all India financial institutions during 2001-02 and disbursements as at the end of March 2002 are given in Appendix 17.3 and 17.4 respectively. A better picture on the level of activities of all India financial institutions in Kerala is provided by the per capita assistance disbursed by all these institutions in Kerala as against the all India level. For the last few years, per capita assistance disbursed in Kerala seems just less than half of per capita assistance disbursed at the all India level*. The per capita assistance disbursed by all the above institutions except NABARD and NCDC are given in Appendix 17.5.

Bank Finance

17.5 The number of branches, which stood at 8262 at the time of nationalisation, grew rapidly year after year. In March 2003 it was 66436 and by June 2003 it rose to 66692. Out of 66692 branches in June 2003, 32231 (48.33%) were in rural areas, 14875 (22.30%) in semi-urban areas, 10841 (16.26%) in urban areas and 8745 (13.11%) in metropolitan areas. A total number of 58841 branches are located in the 15 major states. In the midst of rapid expansion of bank branches, a specific feature can be noticed, that is the number of rural branches are steadily declining whereas the number of urban branches is increasing. Uttar Pradesh continues to remain in the top with largest number of branches, 8212 (12.31%) followed by Maharashtra with 6317 (9.47%) branches and

Andhra Pradesh with 5267 (7.9%) branches. The lowest number of bank branches is in Assam- 1220 (1.83%). Kerala stands tenth with 3370 (5.05%) branches.

17.6 Between July 2002 and June 2003, 337 branches were newly opened in the country. Of this, the highest number was in Andhra Pradesh (60) followed by Uttar Pradesh (43). The number of new branches opened in Kerala during this period was 36. Uttar Pradesh has the largest number of rural branches, 4858 (15.07%) followed by Bihar with 2495 (7.74%) and Andhra Pradesh with 2420 (7.51%). Kerala has the lowest number of rural branches and highest number of semi-urban branches. As of March 2003 there were 3351 bank branches in Kerala (accounting for 5 per cent of total number of bank branches in the country), of which, 351 (10.47%) are in rural areas, 2383

about 22000 and 21000 respectively. State-wise details of bank offices, in the country are shown in Table 17.1 and Appendix 17. 6

17.7 The volume of bank deposits and credit has grown rapidly after nationalisation. The quantum of business of nationalised banks increased from Rs. 6932 crore in 1969 to Rs. 1481737 crore in June 2003 marking an increase of 214 times. During the period deposits increased by 246 times but credit only 172 times. It is clear that credit disbursements are not keeping pace with deposit mobilisation. The level of credit deployment in the state has been analysed in terms of a number of parameters, the most prominent being the Credit –Deposit ratio. It is a simple and a useful concept to measure the extent of deployment of credit relative to the deposits raised by banks from a particular region. However,

Table - 17.1
State wise Distribution of Scheduled Commercial Bank Offices as at the end of March 2003.

STATE / STATION	Rural	% Total	Semi Urban	% to Total	Urban	% to Total	Metropol itan	% to Total	Total no of Branche	% to Total
1	2	3	4	5	6	7	8	9	10	11
1. Andhra Pradesh	2420	7.5	1243	8.4	1043	9.7	537	6.2	5243	7.9
2. Assam	792	2.5	260	1.8	164	1.5			1216	1.8
3 Bihar	2495	7.7	662	4.5	404	3.8			3561	5.4
4. Gujarat	1530	4.7	832	5.6	468	4.4	831	9.6	3661	5.5
5. Haryana	701	2.2	411	2.8	465	4.3			1577	2.4
6. Karnataka	2175	6.7	1035	7.0	803	7.5	769	8.9	4782	7.2
7. Kerala	351	1.1	2383	16.1	617	5.8			3351	5.0
8. Madhya Pradesh	1880	5.8	783	5.3	427	4.0	350	4.0	3440	5.2
9. Maharashtra	2266	7.0	1095	7.4	907	8.5	2020	23.3	6288	9.5
10. Orissa	1591	4.9	319	2.2	312	2.9			2222	3.3
11. Punjab	1126	3.5	705	4.8	564	5.3	211	2.4	2606	3.9
12. Rajasthan	1860	5.8	741	5.0	484	4.5	248	2.9	3333	5.0
13. Tamil Nadu	1747	5.4	1217	8.2	993	9.3	770	8.9	4727	7.1
14. Uttar Pradesh	4858	15.1	1353	9.1	1438	13.4	535	6.2	8184	12.3
15. West Bengal	2270	7.0	561	3.8	610	5.7	990	11.4	4431	6.7
TOTAL	28062	87.0	13600	91.8	9699	90.5	7261	83.8	58622	88.2
All India Total	32244	100.0	14813	100.0	10715	100.0	8664	100.0	66436	100.0

Source: Banking Statistics Qly Handout March 2003.

(71.11%) branches in semi-urban areas and 617 (18.41%) branches in urban areas. The average population per branch in the whole country was 65000 in 1969. It declined to 14000 in 1995. Since 2002 it has remained at 16000. The corresponding figures with respect to Kerala was 35000 in 1969 and from 1995, continued to remain at a level lower than 10000, which indicates extent of development of banking habits in the state. Assam and Bihar are the two states with larger population per branch with

CD ratio may not adequately capture the intensity of credit dispensation as the ratio is influenced by either the level of credit or the level of deposits. For example, high level of deposits underestimates CD ratio, even if there is no decrease in credit deployment. On the other hand, low deposit level overestimates the ratio even with the same level of credit. In the context of Kerala, huge inflow of non-resi-

dent deposits without any corresponding economic activity undertaken in the state, underestimates CD ratio. Hence, there have been suggestions to exclude non-resident deposits from total deposits to arrive at the CD ratio more realistically. However, the exclusion of non-resident deposit may not be appropriate as it would defeat the very purpose of assessing credit deployment out of deposits available in a geographical area. Further, if non-resident deposits are to be excluded, then the credit availed by non-residents from banks need to be excluded to get a realistic picture. The credit deposit ratio at all India level in respect of Public Sector banks was 77.9% in June 1969. It sharply declined to 55.2% in June 2002 and further to 54.3% in June 2003. Among the fifteen major states, those with credit-deposit ratio above the all India level were: Maharashtra (83.0%), Tamil Nadu (80.91%), Karnataka (66.7%) and Andhra Pradesh (65.4%). The CD ratio of public sector banks in Kerala though increased slightly and reached 43.6% in 2003, is less by 10.70 than the national average. Improvement in CD ratio was also noted in states like Assam, Bihar, Haryana, Orissa, Rajasthan etc. As at the end of June 2003, out of aggregate credit disbursement of Rs. 521680 crore by the public sector banks at all India level, the share of Kerala was Rs. 16933 crore-3.25% only. Tamil Nadu accounted for Rs.48760 crore (9.35%), Karnataka, Rs.34485 crore(6.61%) and Andhra Pradesh Rs.37353 crore(7.16%). Details of State wise deposits, credits and credit-deposit ratios are presented in Appendix 17.7.

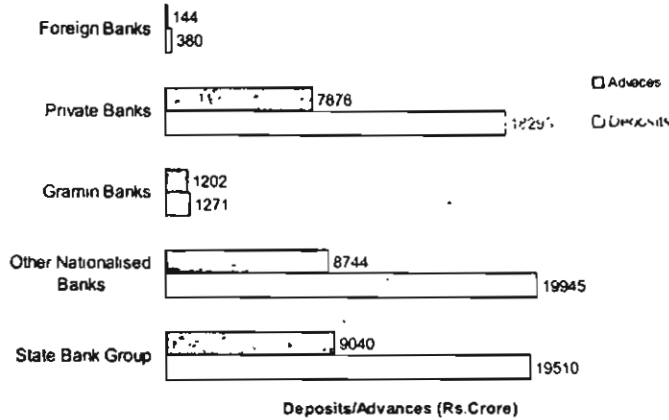
17.8 The activities of commercial banks in Kerala are focussed more on deposit mobilisation than on credit expansion as is evident from several factors. First, bank deposits in Kerala increased at an average annual rate of 18% over a period from 1993 to 2003, at the same period advances increased only at an average annual rate of 16%. Second, per capita deposit in the state was substantially higher at Rs.18679 as against Rs.12450 at all India level as at the end of March 2003. Likewise, deposits as per cent of state income at current prices, at 78.1 per cent were higher than the relevant proportion at the all India level at 57 per cent. Third, the average annual growth of deposits was higher than the growth of advances, especially during the 1990s*. These show the declining trend of CD ratio in the State over the years. Taking all banks together, the CD ratio, which was 62.87% in 1990 declined to 42.71% in March 2002 and slightly moved up and reached 45.47% in March 2003. By end of September 2003, it became 46.69%. Among the various groups of banks, the

highest CD ratio was recorded by the Gramin Banks (94.58%) followed by State Bank Group (46.33%) other nationalised banks (43.84%), Private banks (43.65%) and Foreign banks (37.97%). Public sector banks including Gramin Banks put together recorded a CD ratio of 46.62% in March 2003.

17.9 The total deposit mobilised as at the end of March 2003 by all the banks functioning in the State increased by Rs. 7743 crore (14.99%) from Rs. 51656 crore in 2002 to Rs. 59399 crore in 2003. Out of the total deposit of Rs. 59399 crore mobilised as at the end of March 2003, the largest share of Rs. 19945 crore (33.58%) was mobilised by the group of other nationalised banks, followed by the State Bank Group with Rs. 19511 crore (32.85%), Private banks with Rs. 18293 crore (30.80%), Gramin banks with Rs. 1271 crore (2.14%) and Foreign banks with Rs. 380 crore (0.64%). One peculiar feature of deposits mobilisation by banks in Kerala is the dominance of non-resident deposits. The share of non-resident deposits in the state rose steadily over the years from 27.4 per cent during the second half of the 80s to 35.5 per cent during the first half of the 1990s and further to 44.1 per cent during the second half of the 90s. During 2001-03, the average share reached 47.9 per cent. The growth of non-resident deposits was significantly higher than the growth of domestic deposits, especially so during the 90s*.

17.10 The performance of the banks with respect to advances is much different from that with respect to deposit mobilisation. As of March 2003, while the State Bank Group accounted for 32.85% of the deposits and provided 33.47% of total advances. The group of nationalised banks accounted for 33.58% of deposits and 32.38% of advances. Gramin banks accounted for only 2.14% of deposits but contributed 4.45% of advances. Private banks on the other hand accounted for 30.80% of deposits and 29.16% of advances. Foreign banks collected 0.64% of deposits, while their share in advances was 0.53%. Advances of commercial banks in Kerala grew reasonably well with the average annual growth being 15.1 per cent during the 19 year period from 1985 to 2003. Data given in Table 17.2 indicate that the annual rate of growth improved considerably from 1993 onwards. The average annual rate of growth during 1996 to 2000 was higher at 15.4 per cent. During the last three years, the rate of growth further improved to 19.3 per cent. A better picture could be had from the incremental advances, which after remaining relatively low till 1994 improved

Fig 1
Deposits mobilised and Advances disbursed by various groups of Banks - 2003



significantly from 1995 onwards. Average incremental advances during 2001-03 were at Rs. 3689 crore. A comparison shows that the rate of growth of credit in Kerala was very close to the rate of growth at the all-India level. While bank credit in

India rose by 16.1 per cent per annum, in Kerala the average growth was 15.1 per cent, ie 1.5 percentage points lower. Till the mid- nineties, the rate of growth of credit in Kerala was lower than all-India average, but during the subsequent period, the rate of growth was similar. The data from Table 17.2 shows that the credit increased from Rs. 2181 Crore in 1985 to Rs.27007 Crore in 2003. To get a comparative perspective, the rate of growth of credit has been estimated for the neighbouring states. During 1997 to 2003, the rate of growth of credit in Tamil Nadu (14.7%), Karnataka (16%), Andhra Pradesh (14.8%) was very close to that in Kerala (15.7%). Thus, the above analysis reveals that in absolute terms, the growth of credit in Kerala was comparable to all-India and other southern states*. For details of deposits, advances and CD ratio of various groups of banks see Appendix 17.8. The share of

Table- 17.2
Advances of Commercial Banks in Kerala
(Amount in Rs. Crore)

Year (end March)	Advances - Kerala		Incremental Advances - Kerala (Rs.)	Advances - India	
	Rs.	% of Growth		Rs.	% of Growth
1985	2181	-	-	48953	-
1986	2371	8.7	190	56067	14.4
1987	2769	16.8	585	63308	20.1
1988	3116	12.5	347	70536	11.4
1989	3701	18.8	585	84719	20.1
1990	4118	11.3	417	101453	19.8
1991	4638	12.6	520	116301	14.6
1992	5003	7.9	365	125592	8.0
1993	5818	16.3	815	151982	21.0
1994	6442	10.4	624	164418	8.2
1995	7797	21.0	1355	211560	28.7
1996	8961	14.9	1164	254015	20.1
1997	10482	17.0	1523	278401	9.6
1998	12274	17.1	1793	324079	16.4
1999	13577	10.6	1303	368837	13.8
2000	15941	17.4	2364	435958	18.2
2001	19180	20.3	3239	511434	17.3
2002	22062	15.0	2882	589723	15.3
2003	27007	22.4	4945	759210	28.7
Average					
1985-90	3043	13.6	387	70839	15.7
1991-95	5939	13.7	736	153971	16.1
1996-2000	12247	15.4	1629	332258	15.6
2001-03	22750	19.3	3689	620122	20.5
1988-2003	9339	15.1	1379	248239	16.6

Source : Bank credit in Kerala; an analysis of Trends and issues - RBI

various groups of banks in total deposits mobilised and advances disbursed in the state as at the end of March 2003 is shown in Figure -1

17.11 Since the concept of CD ratio has some limitations, the level of deployment of bank credit has to be assessed based on certain other parameters including credit as percentage to state income. As the growth of economy is one of the major objectives of credit deployment, the level of deployment of bank credit can be better assessed in relation to the growth of the state economy. The level of advances as a percentage of Net State Domestic Product (NSDP) can provide an indication about the extent of credit support for the growth of the economy. Data provided in Table 17.3 show that advances as a percentage of NSDP, at current prices,

anged from around 25 to 40 per cent during 1985-2002. A comparison reveals that bank advances in Kerala as a percentage of NSDP was relatively higher than the same at the all India level. During 1985-02, the average proportion was higher at 32.2 per cent in Kerala as against 26.0 per cent at the all-India level. However, the problem is the decline in the proportion during the nineties in Kerala (from an average of 37.7 per cent during 1985-90 to 27.9 per cent during 1996-02), when it was rising at the

all India level (25.2 per cent to 27.6 per cent). The proportion of advances to NSDP at 31.7 per cent in 2002 was significantly lower than the same during the second half of the eighties. The proportion of bank credit to state income in neighbouring states like Tamil Nadu and Karnataka was higher than Kerala. During 1997 to 2000, the average proportion in Tamil Nadu was 40.8 per cent and 32.9 per cent in the case of Karnataka as against 27.0 per cent in Kerala. Another indicator of low level of deployment of credit in Kerala is the estimate of credit per

account (CPA). The amount of outstanding CPA in Kerala in 2002 was Rs.59661, the lowest among the major southern States, except Andhra Pradesh and all India average. The CPA of Tamil Nadu in 2002 (Rs.108984) was almost the double of that in Kerala. A reflection of lower level of credit deployment in the State can also be found in the estimate of per capita credit (PCC). PCC in Kerala was lower than Tamil Nadu, Karnataka and all southern States taken together (Details in Table 17.4). At the same time the number of credit accounts per thousand population in Kerala was higher than other southern States. The number of credit accounts per thousand population in Kerala was around 118 in 2002 as against around 98 in other southern States (See Table 17.5). From the above facts, it could be inferred that banks are extending credit to relatively more number of people in Kerala, but the amount of credit provided per account was low. Small size of holdings, less number of medium and large scale industries, absence of bigger service providers etc could be the main reasons for the lower amount of credit disbursed per account.*

Table- 17.3
Advances as Percentage of State Income

YEAR	KERALA	INDIA
1985	35.5	24.4
1986	36.5	25.2
1987	37.7	25.5
1988	37.7	25.0
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	28.0	27.7
2001	30.4	30.1
2002	31.7	31.8
	Average	
1985-90	37.7	25.2
1991-95	31.8	24.8
1996-02	27.9	27.6
1985-02	32.2	26.0

Source: Bank Credit in Kerala: An Analysis of Trends And Issues.

17.12 Analysis of banking sector in Kerala shows differences between districts in respect of number of branches, amount of deposits and credits and even in CD ratios. As at the end of June 2003, there were 3370 bank branches in Kerala. Ernakulam district had the largest number of branches (497) and Wayanad the lowest number (73). During the period under review, Ernakulam district mobilised and disbursed the highest amount of deposit and credit, Rs. 1008024 lakh and Rs. 645199 lakh respectively. Though Wayanad district mobilised and disbursed the lowest amount of deposit and credit, Rs. 26948 lakh and Rs. 48332 lakh respectively, recorded the highest CD ratio in the State (179.4%). Pathanamthitta district continued to remain with the lowest CD ratio during the period under review also (16.6%). The CD ratio of Idukki increased to 90.3% from 86.5%

Table.17.4
Credit Per Account (CPA) and Per Capita Credit (PCC) in Southern States. (Rs. Crore)

STATES	1988		1999		2000		2001		2002	
	CPA	PCC	CPA	PCC	CPA	PCC	CPA	PCC	CPA	PCC
All India	61575	3403	73114	3969	84620	4705	102824	5496	116336	6656
Southern States	47093	4343	53774	4871	59499	5551	73417	6440	73411	7303
Andhra Pradesh	36329	3092	40693	3485	45157	3916	55917	4507	55376	5188
Karnataka	52074	4286	57853	4745	57146	5365	75204	6257	69187	7212
Tamil Nadu	63644	6215	74150	7005	87511	7969	108237	9240	108984	10129
Kerala	33594	3802	39996	4270	45690	5104	51638	5987	59661	7020

Source: Bank Credit in Kerala: An Analysis of Trends and Issues.

Table 17.5
Number of Accounts Per Thousand Population in Southern States- Scheduled Commercial Banks

STATE	1998	1999	2000	2001	2002
Andhra Pradesh	85	86	87	83	94
Karnataka	83	84	98	84	106
Tamil Nadu	96	92	90	85	92
Kerala	115	108	110	116	118

Source: Bank Credit in Kerala: An Analysis of Trends and Issues.

of June, 2002. The CD ratio of Emakulam was 64%. The district wise details of bank branches, deposits, credit and CD ratio are given in Appendix 17.9.

17.13 Credit deposit ratio of ten major banks operating in Kerala show wide variations among themselves. (See Table-17.6) CD ratio of State Bank of India declined from 54.20% in 1993 to 42.32% in March 2003. In the case of State Bank of Travancore, the CD ratio which was 49.50% in 1993

Box -17.1

Borrowings by State Government

Suggestions have been made in recent times that instead of borrowing from outside, the State Government should borrow the required money from banks within the State. The bank deposits in the state worth close to Rs. 60,000 crore are deployed as follows:

- i) Statutory deposit with the Reserve Bank of India (Cash Reserve Ratio: 4.5%).
- ii) Statutory Liquidity Ratio (Investment in Government Securities – 25%)
- iii) Credit deployed in the State (around 46%) and
- iv) Investment in other Government securities (around 6%).

Thus, around four-fifth of the deposits mobilised from the State are utilised for statutory obligations, credit deployment and investment. The remaining deposits of around 20 per cent are left with the banks and could be utilised in the State. However, due to lack of investment avenues in the State, they are deployed elsewhere. There are limits on a State's borrowing from the internal markets imposed by the Central Government for reasons of fiscal stability and crowding out effect. Hence it is not possible for the State to borrow amounts from the banking sector beyond the limit fixed each year by the Central Government. From the point of view of banks only a certain portion could be lent to government, because given the short-term nature of deposits mobilised, providing long-term loan to Government will lead to asset-liability mismatch, which will make it difficult for them to pay back the deposits in time. The State Government have in this context pointed out to the Central Government and the Twelfth Finance Commission, that instead of channeling part of the market loan as Central assistance for the Plan, through the Central Government, the State could be permitted to borrow the total amount directly from banks, subject to prudent caps.

Table -17.6
Credit- Deposit Ratio of Selected Major Banks Operating in Kerala (Credit- Deposit Ratio as at March end)

NAME OF BANK	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. State Bank of India	67.50	59.90	54.20	45.30	44.70	47.00	48.00	47.53	41.95	39.8	46.68	42.64	42.32
2. 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	48.06
3. 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	45.84
4. 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	32.33
5. 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	34.17
6. 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	31.78
7. 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	59.31
8. 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	35.26
9. 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	53.54
10. 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	44.44
State Average	59.0	51.00	48.00	43.10	44.70	44.40	45.50	44.88	43.06	41.28	42.77	42.71	45.47

Source : Banking Statistics of Kerala ; Reported by State Level Banker's Committee.

Source: Economic and Political Weekly, Nov. 22, 2003.

Table -17.7
Growth of Bank Deposit in Kerala (Rs. Crore)

YEAR (MARCH)	TOTAL DEPOSITS		NRE DEPOSITS		DOMESTIC DEPOSITS	
	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	20.5
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
Sept 2002	54585	15.8	26001	17.2	28584	14.6
Sept 2003	61119	12.0	28998	11.5	32121	12.4

Source: Banking Statistics of Kerala, Reported by State Level Banker's Committee.

Box -17.2

Credit Policy

The new credit policy has led to contradictions, first, the Central bank's interest rate objectives and what happens in reality and, second, the commitment to ensure adequate credit availability to the productive sectors and the growing neglect of agriculture and small and medium enterprises in actual credit dispensation. On both the issues, the new credit policy statement holds out credible actions and innovative measures. The refusal to reduce the bank rate and repo rate, combined with the insistence on a benchmark prime lending rate for commercial lendings with scope for considerable repricing of bank loans, has sought to address the first disjunction. The Reserve Bank of India has to accept that in the present scheme of things the bank rate has lost its relevance. The benefits of significant reductions in the Reserve Bank of India's benchmark rates have stopped at gilt-edged rates and of late, at deposit rates offered by the banks, but hardly touched their lending rates for the bulk of bank borrowers. On the gilt-edged front, the yield rates for ten year or even for 20 year loans have touched 5.50 - 6.0 per cent levels both at secondary and primary levels. Further reduction in the bank rate and repo rate would have pushed down further to unsustainable levels. Such downward revisions have also occurred in bank's term deposit rates, though many structural factors - long duration nature of deposits, high levels of operating expenses, large NPAs, regulated rates of interest on small savings and provident funds and persistent and large government market borrowings - were said to prevent flexibility in bank deposit rates and hence in lending rates. Reforms have taken place in all these areas but reductions in bank deposit rates have been affected much more drastically. Today the top six public sector banks offer 5.50 per cent to 5.75 per cent rate of interest on term deposits for over three year's maturity.

In the lending rates of banks the rigidity has to be broken. Bank's NPAs have said to have come down, operating costs have been arrested and the incremental costs of funds have been reduced; banks have even declared lower PLRs in the range of 9 to 12.25 per cent. A number of public sector banks are doing 60 per cent of business at rates of interest of 10 to 14.50 per cent, with higher rates charged for term loans. The Reserve Bank of India ought to have a rethink on the subject of asset-liability mismatches at least when it concerns investment credit.

Distribution of bank credit has arisen a wide gap between policy objectives and reality. It requires urgent address to achieve objectives of growth and employment generation. The credit policy statement has proposed advisory committees and working groups on flow of bank credit for agriculture and small scale industries sector. A number of committees were similarly appointed for speeding up credit delivery in the respective sectors. But the data suggest that the share of agriculture in total credit has steadily declined from about 15 per cent in the early 1990s to less than 10 per cent as of March 2002 and that of SSI units from 13 per cent to as low as 5.5 per cent. Public sector banks claim that they have fulfilled their priority sector targets, but these banks have moved away from the productive sectors in their lending programmes. As per the latest data, the share of the SSI sector in total credit of public sector banks has drastically come down from 15 per cent in March 2000 to 11 per cent in March 2003. A conducive credit culture can be achieved in letter and spirit only if a foolproof arrangement is made to monitor the credit delivery system amongst banks.

fluctuated to reach 48.06% in March 2003. The CD ratio of lead bank of the State- Canara Bank, has shown an increasing trend. The CD ratio of Canara Bank which has never leapt above the State average since 1993, crossed the mark for the first time and reached 45.84% in 2003, the State average being 43.84%.

17.14. The banks are flush with loanable funds and are resorting to Loan Melas for lending to housing, purchase of vehicles and household durables. There has been criticism from even within banking circles

Table -17. 8
Share of Non-Resident Deposits and CD Ratio of Major banks in Kerala-March 2003

Name of bank	Share of total non-resident deposits in Kerala	CD ratio
1. State Bank of Travancore	22.7	48.1
2. Federal Bank	14.3	45.8
3. State Bank of India	12.4	42.3
4. Canara Bank	12.1	45.8

Source : State Level Bankers' Committee.

Box -17. 3

Non Banking Financial Companies (NBFCs)

There are 23 public deposit accepting NBFCs in Kerala. The aggregate assets of these companies which stood at around Rs.140 crore in 2000, increased to Rs. 163 crore in the next year and further jumped up to nearly 200 crore as at the end of 2002. The major improvement in asset size can be attributed to the proportion of hire purchase lending which has gone up to 62%.

The public deposit acceptance by NBFCs is subdued. During 1999-2000, it was Rs.32.56 crore, which increased to Rs.35.80 crore in 2000-01 and further to Rs.50.27 crore in 2002. Only four NBFCs have obtained credit rating from approved agencies. The recent trend has been to shift from hire purchase to lending against gold mainly due to the low risk perceptions associated with gold loans. It is interesting to note that NBFCs in general have relatively low non- performing assets.

that banks are resorting to 'narrow', safe banking (also called 'lazy' banking) and are not proactive in lending to newly emerging needs in agriculture, industry and other sectors.

NRE Deposits

17.15 The NRE deposits mobilised by the banks in Kerala showed an appreciable growth rate in the year 2003. The rate of growth registered in NRE deposits was 14.5% in 2002; it increased to 17% in 2003. The amount of deposit increased by Rs. 4162 crore from Rs. 24534 crore in March 2002 to Rs. 28696 crore in March 2003. The amount of total deposits increased from Rs. 51656 crore in March 2002 to Rs. 59399 crore in March 2003 and the domestic deposit which was Rs. 27112 crore in 2002 increased to Rs. 30703 crore in March 2003 recording a growth rate of 13.3%. Out of the total NRE deposits of Rs. 28696 crore, the major share of Rs. 10124 crore (37.49%) was mobilised by the State

Bank Group, followed by the group of other nationalised banks with Rs. 9507 crore (35.20%) and Private Banks Rs. 8641 crore (32%). Gramin banks could mobilise Rs. 166 crore and Foreign banks, Rs. 258 crore. See Table 17.7 for the details of growth of bank deposits for the period from 1988 to 2003.

17.16 Questions are often raised whether the predominance of non-resident deposits caused the lower CD ratio. See Table 17.8 which provides data on share of non- resident deposits by major banks and their respective CD ratios. It may be observed therefrom that four banks, viz- State Bank of Travancore, Federal Bank, State Bank of India and Canara Bank together accounted for 61.5 per cent of non-resident deposits in the state. All the four banks are having CD ratio greater than / closer to state average. In other words, bank which are rais-

ing higher non-resident deposits extended more credit than other banks*.

AGRICULTURAL FINANCE

Priority Sector Advance

17.17 Priority sector advance as a percentage of net advance shows a declining trend in recent years. Priority sector advance which was 46.4% in 2001 declined to 45.9% in 2002 and further to 43.9% by the end of March, 2003. Out of the total bank advances of Rs. 22062 crore as at the end of March 2002, Rs. 10132 crore (45.9%) was to the priority sector. In 2003, total bank advances was Rs. 27007 crore and priority sector advance Rs. 11867 crore (43.9%). The priority sector advance as a proportion of total deposits was only 19.98%, in 2003, the total deposit being Rs. 59399 crore.

17.18 Out of the total advances of Rs. 27007 crore in 2003, Rs. 3507 crore (13%) was for agriculture sector and Rs. 2562 crore (9.5%) for SSI Sector. Table 17.9 shows the details of priority sector advance.

17.19. The 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.1596.42 crores followed by Ernakulam (Rs.1366.72 crores) and Thrissur (Rs.951.68 crores). In the case of disbursement in ag-

ricultural advances Malappuram shared Rs. 326.38 crores followed by Wayanad (Rs.312.01 crores) and Kozhikode (Rs.305.03 crores) . The details of district wise credit flow to priority sector and agriculture sector are furnished in Appendix 17.10

17.20 In agriculture, both direct and indirect advances were clubbed together for meeting the agricultural sub target of 18 per cent of net bank credit in 1993, subject to the stipulation that indirect lending to agriculture must not exceed one-fourth of total lending sub target or 4.5 per cent of net bank credit. The delineation of priority sector itself was widened to include financing and distribution of inputs for agriculture and allied sectors. The scope of direct agricultural advances under priority sector lending was widened so as to include all short term advances in traditional plantations including tea, coffee, rubber and spices, irrespective of the size of holdings. In 1991, 40.9 per cent of net bank credit was advanced to priority sectors and total credit to agriculture even though remaining below the prescribed level of 18 per cent was 16.4 per cent at the national level. In India, advance to agriculture declined from 16.4 per cent in 1991 to 15.3 per cent in 2002-03, while the fall is much sharper in the state, from 17.4 per cent to 12.99 percent during the period, well below the target of 18 per cent of net bank credit.

17.21. The fall in the ratio of priority sector lending to

Table -17.9
Priority Sector Advance Disbursed by Commercial Banks -Kerala
(Rs .Crore)

YEAR(March)	TOTAL ADVANCE	TOTAL PRIORITY SECTOR ADVANCE		AGRICULTURE SECTOR		SSI SECTOR	
		Amount	%to 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	-	-
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

Source : Banking Statistics of Kerala ,Reported by State-Level Banker's Committee .

deposits from 25.6 per cent in 1991 to 19.98 per cent in 2003 in Kerala was partly due to the decline in the overall credit deposit ratio of banks.

17.22. 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 from Rs. 10 lakhs to Rs. 20 lakhs under Priority sector for agriculture, inclusion of loans to the Agri-clinics and Agribusiness centre under direct finance to agriculture under priority sector are positive steps which need to be exploited in the State.

17.23. 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 SACPs prepared in the State.

17.24. The tendency of the shift of the disbursement from farm to non-farm sector is increasing reportedly due to less risks, lower transaction costs and better returns in the non-farm sector. The major findings of macro level analysis of credit flow to agriculture at the national level is shown in Box.17.4

17.25 Another important area that needs attention 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 recent decision of the Finance Ministry to reduce interests on farm loans upto Rs. 50,000/- to 9 per cent may perhaps help the growers. The current PLR of most of the banks is in the range of 11-12 per cent.

Performance of State Co-operative banks and District Co-operative banks

17.26 State Co-operative banks and District Co-operative banks channelise their own fund and fund of NABARD for disbursal. The total deposits of State Co-operative Bank increased to 2318.30 crores in 2002-03, which was Rs.1915.02 crores in 2001-02, showing an increase of 21 per cent. The total NPAs during 2001-02 of SCB was Rs. 7818.49 lakhs which formed 6.38 per cent of loans outstanding. The recovery reported as on June 2002 was 92.70 per cent, which is higher than the national average of 80.89 per cent of SCBs. The interest spread has increased from 0.98 per cent in 2000-01 to 1.46 per cent in 2002-03.

17.27 The working results of SCB shows a fall in borrowings from other institutions. During 2001-02 the borrowing was Rs.209.74 crores which was reduced to Rs. 81.66 crores in 2002-03. The net profit of the institution increased from Rs.0.71 crores to Rs.8.24 crores. The details are shown in Appendix 17.11. The purpose wise cumulative loan disbursed by the State

Box -17.4

Major observation 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

Co-operative Bank is furnished in Appendix 17.12. The cumulative outstanding loan by the bank during 2002-03 was slightly lower from Rs.1226.43 crores to Rs. 1225.31 crores. The credit disbursement during 2002-03 includes Procurement, Marketing Consumer activities, Cottage and Small Scale Industries, Housing etc. The total mobilised resources of the State Co-operative Bank was Rs.247482.00 lakhs. Out of which Rs.6817.00 lakhs (2.75%) was disbursed for agricultural purposes.

17.28 A substantial decline was noted in the credit flow to agriculture. The disbursement for agriculture which was to the tune of Rs. 175.72 crores in 1999 -00 had declined to Rs. 79.88 crores in 2001-02 and further down to Rs. 68.17 crores in 2002-03, where as the loan to the housing sector had increased from Rs. 23.58 crores to Rs. 128.82 crores and Rs. 139.15 crores during this period.

17.29 During 2002-03 total deposit of District Co-operative Bank had increased to Rs.5617.74 crores as against Rs.4975 crores in 2001-02. The amount dispensed as Loan and Advances was Rs.3697.53 crores, which was 66 per cent of total deposits. The average overdue to the demand was Rs. 3412 lakhs. The district wise operational indicators of District Co-operative banks are given in Appendix: 17.13.

17.30 During 2002-03, 13 District Co-operative Banks were on profit and the Trichur District Co-operative Bank was on loss and the average NPA was 19.95 per cent to loan outstanding of all DCBs which was higher than the national average of DCBs (18.98%) during 2001-02. The average recovery percentage as on June 2002 was 74.16 per cent which is slightly higher than the national average of 66.41 per cent for DCBs.

Short Term and Medium Term Loans

17.31 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. 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.

Credit flow to Agriculture in Kerala

17.32 The credit flow per hectare of net cropped area increased from about Rs. 3300 in 1993-94 to about 15966 per hectare during 2002-03. 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. 2901 crore during 2002-03 (see Table 17.10). During this period the production credit per ha of gross cropped area has increased from Rs. 1800 to Rs. 9579.

17.33 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.

17.34 A purpose wise analysis of the credit flow to the investment sector reveals that reduction in disbursement was mainly on plantation crops.

17.35 The major portion of short term and medium term credit requirements in the state are met by Co-operative banking sector consisting of the State Co-operative Banks, District Co-operative banks and Primary Agriculture Credit Societies which covers 1/5th of the activities and Commercial Banking sector.

Long term Credit

17.36 A net work consisting of Kerala State Co-op-

Table 17.10
Flow of Credit to Agriculture Sector (Rs. Crores)

Sl.no.	Year	Production credit	Investment credit	Total
1.	1999-2000	1911.49 (79%)	509.08 (21%)	2420.57
2.	2000-2001	2311.99 (80%)	595.75 (20%)	2907.74
3.	2001-2002	2310.97 (81%)	550.39 (19%)	2861.36
4.	2002-2003	2900.96(83%)	612.93 (17%)	3519.89

erative Agricultural and Rural Development Bank at the apex and 44 Primary Co-operative Agricultural and Rural Development Bank 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 etc. unlike other financial institutions, KSCARDB raises funds through flotation of debentures issued against Government Guarantee on land security provided by loanees. NABARD, Central and State Governments, NHB, LIC, SBI, and SBT are the financial institutions, which invested in the debentures floated by the KSCARDB. The total loan disbursement during 2002-03 was Rs.293.31 where as it was Rs.319.07 during 2001-02. Under this disbursement Rs.106.44 crores was for Agriculture (36%) crores and Rs.121.15 crores for Rural Housing (41%) and Rs.65.72 crores for Non Farm Sector (23%). The details of loan issue and debentures of PCARDB is given in Appendix 17.14 and 17.15 respectively.

17.37 As on March 2002, 15 PCARDBs were on profit and 29 were on loss and the loss amount estimated at Rs. 21.53 crores. The NPAs as percent to loan outstanding as on March 2002 was 24.64 per cent. The recovery reported as on June 2002 was 56.03 per cent to demand while recovery was 62 per cent in Haryana, 66 per cent in Punjab and 60 per cent in West Bengal.

17.38 NABARD has initiated action on the recommendations 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, agriculture sub sectors, private capital formation and steps to strengthen RRBs.

Regional Rural Banks

17.39 Two Regional Rural Banks, viz. North Malabar Gramin Bank (NMGB), Kannur and South Malabar Gramin Bank (SMGB), Malappuram are working in Kerala under the sponsorship of Syndicate Bank and Canara Bank respectively, covering 10 districts in the State. The average percentage of recovery to demand increased from 68.2 as on June 2000 to 71.4 in June 2002 at the national level. In the State the recovery reported as on March 2003 was 82 per cent, while it was 89 per cent in June 2001.

17.40 Key parameters of RRBs in Kerala are given in the Table: 17.11.

Refinance by NABARD

17.41 NABARD provides refinance support to both co-

Table: 17.11
Key Parameters of RRBs in Kerala as on 31.03.2003 (Rs. Crores)

Items	Nmgb	Smgb	Total
No. of branches	152	202	354
Deposits	519.67	752.55	1272.22
Borrowings	133.42	190.84	324.26
Investment	192.71	242.72	435.43
Loans outstanding	449.85	754.42	1204.27
Loans issued	327.13	662.84	989.97
CD Ratio	86.5 %	100 %	93.25 %
NPA	65.84	51.00	116.84
Average % of NPA loans outstanding	14.63	6.77	10.7
Profit	11.30	18.54	29.84
Average % of recovery	75.8	88.95	82.37

Source: NABARD

operatives and Commercial Banks. Data on agency-wise and purpose-wise disbursement is furnished in Appendix: 17.16. and Appendix: 17.17. The total refinance from NABARD as on 03/2003 was Rs.307.70 crores against Rs.373.29 crores in the previous year, showing a decline of 17%. The Kerala State Co-operative Agricultural and rural Development Bank Limited continued to avail the largest share of (86%) of refinance followed by Regional Rural Banks (7%) and State Co-operative Bank (4%)

17.42 The low intake of refinance by Co-operative sector was due to the denial of the concessional financial facility to the sector in lieu of minimum involvement of 40 per cent in the agriculture sector out of the own funds of the co-operatives insisted by NABARD as a criteria for eligibility.

17.43 Purpose-wise refinance assistance reveals that the non-farm sector availed 61 per cent of the total amount. Under farm sector Plantation and Horticulture availed 10 per cent followed by Land Development (9.6%) and Minor Irrigation (6.3%). The refinance availed by Commercial banks became negligible and it declined from 34 per cent in 1994-95 to 3 per cent in 2002-03. For State Co-operative bank it declined from 15 per cent to 4 per cent. There is a steady increase in the refinance of non-farm sector, which increased from 40 per cent in 1994-95 to 61 per cent in 2002-03. The poor disbursal of refinance to the sectors like Fisheries, Poultry and Agro processing which are very important in rural sector of Kerala, for income and employment generation calls for intervention.

* Extracts from "Bank Credit in Kerala: An Analysis of Trends and Issues", a paper presented by Shri P.D. Jeromi, Assistant Adviser in the Department of Economic Analysis and Policy in the RBI, at the 85th Annual Conference of the Indian Economic Association held at University of Kerala- 2002.

GENDER AND DEVELOPMENT

Out of the total population of 1027 million in India (2001 census), 495.7 million (48.3%) are women. During 1991, female population was 48%. Sex ratio is 933 in 2001 as against 927 in 1991. Female literacy rate is 54.2 percent in 2001 as against 29.8 in 1981. Life expectancy of females is at 65.3 years in 2001 as against 54.7 years in 1981. The work participation rate of women increased from 19.7 percent in 1981 to 25.7 percent in 2001. Similarly, maternal mortality rate (per lakh female population) decreased from 468 in 1981 to 407 in 2001. All these indicate that the gender indices, are gradually improving even though the present levels are still unsatisfactory. The constitution pro-

pects the rights of women. To develop the status of women in all spheres and empower them, Govt. of India formulated a comprehensive National Policy for Women in 2001. (Box 18.2). Similarly Five Years Plans especially the 10th Plan stress on social empowerment, economic empowerment and gender justice.

Status of Indian Women

18.2 According to UNDP Report 2001, India ranks 105th in Gender Related Development Index. India's position is below Srilanka but is marginally above Pakistan. The indicators giving country-wise situation is presented in Table 18.1.

Table-18.1
Status of Women in India – International Comparisons

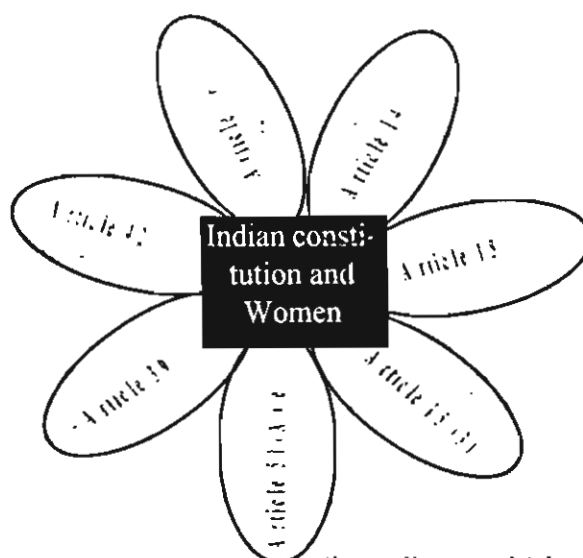
Hdi rank	Name of the Country	Gender Related Development Index (gdi)		Life Expectancy At Birth (Years)		Combined Primary, Secondary and Tertiary Gross Enrolment ratio (%)		Estimated Earned Income (Ppp Uss)	
		Rank	Value	Female	Male	Female	Male	Female	Male
1	2	3	4	5	6	7	8	9	10
High Human Development									
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
Medium Human Development									
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
Low Human Development									
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	Bangladesh	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

Box -18. 1

Indian Constitution & Women

- Article 14 - Equal rights and opportunities on men and women in political, economic and social spheres.
- Article 15 - Prohibits discrimination against any citizen on the ground of sex, religion, caste etc.
- Article 15(3) - Empowers the state to make affirmative discrimination in favour of women.
- Article 16 - Provides for equality of opportunities in public appointments of all citizens.
- Article 39 - Providing equal right to means of livelihood and equal pay for equal work.
- Article 42 - Directs the state to ensure just and humane condition of work and maternity relief.
- Article 51 (A) (e) - Mandates every citizen to renounce practices derogatory to the dignity of women.



National Policy

18.3 The approach on women development changed from viewing women as beneficiaries of social services to contributors of social and economic development process in nation building. Development approach has to address not only women's practical needs

(immediate needs) but also their strategic gender interests addressing inequalities in employment, political participation and cultural and legal status). India formulated a comprehensive National Policy for the Empowerment of Women in 2001. Tenth Five Year Plan justifies this approach and forms the basis.

Box -18. 2

National Policy for the Empowerment of women-2001

- Creating an environment through positive economic and social policies for full development of women to enable them to realise their full potential.
- The de-jure and de-facto enjoyment of all human rights and fundamental freedoms by women on equal basis with men in all spheres- political, economic, social, cultural and civil.
- Equal access to participation and decision making of women in social, political and economic life of the nation.
- Equal access to women to health care, quality education, career and vocational guidance, employment, equal remuneration, occupational health and safety, social security, public office etc.

Box -18. 3**Women Development and Tenth Plan Strategy : All India**

Social Empowerment- to create an enabling environment through various affirmative developmental policies and programmes for development of women besides providing them easy and equal access to all the basic minimum services so as to enable them to realise their full potentials.

Economic Empowerment- to ensure provision of training employment and income-generation activities with both 'forward' and 'backward' linkages with the ultimate objective of making all potential women economically independent and self reliant.

Gender Justice- to eliminate all forms of gender discrimination and thus, allow women to enjoy not only the de-jure but also the de-facto rights and fundamental freedoms on par with men in all spheres, viz. political, economic, social, civil, cultural etc.

Box -18. 4

- "Women must not be regarded as mere recipients of public support. They are, first and foremost, economic agents".

World Bank (1992)

- Empowerment of women and equality between women and men are pre-requisites for achieving political, social, economic cultural and environmental security among all people.

(UN Report on Women (1995))

Women & Population

18.4 According to 2001 Census population of Kerala is 31.84 million out of which 16.5 million are females which constitutes 51.8%. As against it, in 1991 female population was 14.8 million which

formed 50.88%. Decadal growth rate of female population in Kerala was 11.48 % during 1991-2001 compared to the national figure of 22.89%. Female population and sex ratio of Kerala and India from 1961 to 2001 are shown in Table 18.2 .

Table 18.2
Female Population and Sex Ratio – 1961 to 2001

Census Year	Kerala				India			
	Total Population (million)	Female (Million)	Growth Rate (%)	Sex Ratio (per 1000 men)	Total population (million)	Female (Million)	Growth Rate (%)	Sex Ratio (per 1000 men)
1	2	3	4	5	6	7	8	9
1961	16.90	8.50	23.19	1022	439.23	212.90	--	941
1971	21.35	10.80	27.06	1016	548.16	264.00	24.00	930
1981	25.45	12.90	19.44	1032	683.33	330.80	25.30	935
1991	29.09	14.80	14.73	1036	838.58	403.37	21.94	927
2001	31.84	16.50	11.48	1058	1027.02	495.70	22.89	933

Source: Census of India

18.5 The sex ratio indicates the survival scene of women. In Kerala, ratio has gone up from 1036 to 1058 in the decade after 1991. Kerala has the highest sex ratio among the states of India. The sex ratio of child (0-6 years) is 927 for India and 963 in Kerala (2001). It is highest at 986 in Sikkim and lowest at 820 in Haryana. District-wise sex ratio in Kerala as per 2001 census is depicted below.

Gender Development in Kerala.

18.6 Kerala presents a positive picture as far as women's development is concerned. Women awareness, women movements at the grass root level, greater mobility, education and women and child health interventions have all led to overall development of women in Kerala. Some major high lights of women in Kerala vis-a-vis India are furnished in Table 18.3.

Fig 18.1
Sex ratio in Kerala District-wise

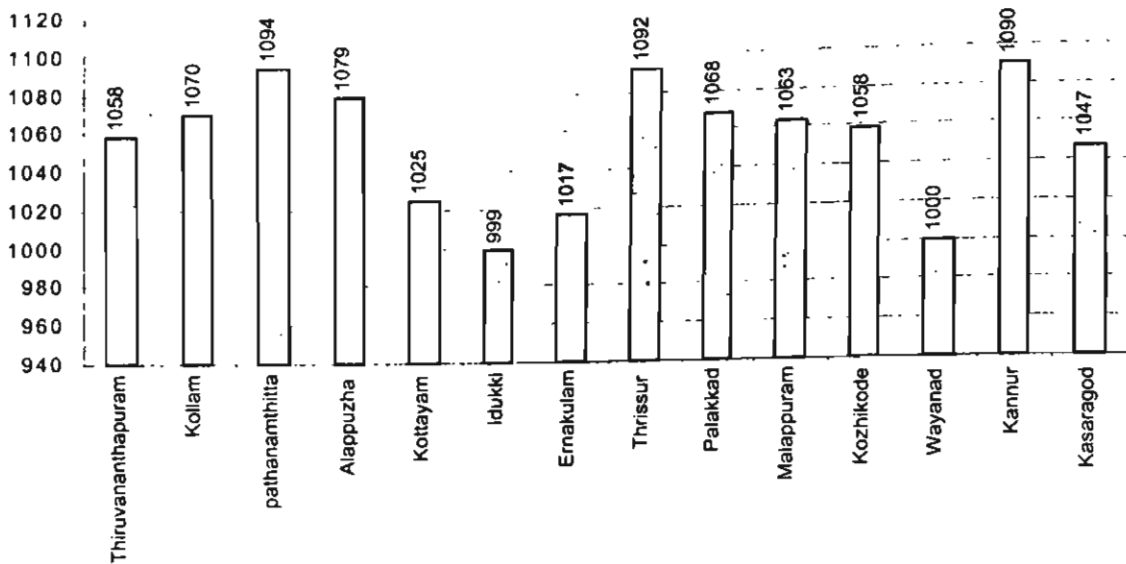


Table-18.3
Gender Development Indications - Kerala Vs. India - 1981 & 2001

Sl.no	Indicators	India		Kerala	
		1981	2001	1981	2001
1	Sex Ratio (Female /1000 Male)	935	933	1032	1058
2	Life Expectancy at Birth	54.7	65.3	71.8	74
3	Mean age at marriage	18.3	19.5	20	22
4	Birth rate (per 1000)	--	27.2	26.4	16
5	Death Rate (per 1000)	12.7	8.3	6.4	--
6	Infant mortality Rate	79	71	41	15.3
7	Maternal Mortality Rate(per lakh)	468	407	--	140
8	Total Fertility Rate(per women)	4.5	3.2	--	--
9	Literacy Rate (%)	29.76	54.16	--65.7	87.86
10	Gross Enrolments (millions)	--	--	--	--
	a. Primary School	28.5	49.8	--	0.9
	b. Upper primary School	6.8	17.5	--	0.08
11	Work participation Rate	19.7	25.7	16.6	15.3
12	Public Sector Employment (lakhs)	15	28	1.39	1.93
13	Administration (1987) and 2001	360 (5.40%)	645 (7.60%)	8 (5.9%)	18 (6.8%)

Source: Census and selected statistics

Women & Ageing

18.7 High female life expectancy indicates that the number of old women will be on the rise. The proportion of the aged females is highest in Kerala compared to other states. In Kerala, out of 14.8 million women in 1991, 9.32% were 60+, 3.71% were 70+, and 1.68% were 80+. District-wise status of 60+ female population in Kerala is given in Table 18.4.

Box -18.5

At the national level 45.8% of the female population are illiterate as against 12.4% in Kerala. Rajasthan has the highest percentage of illiterate women with 67.2%

Table 18-4
Elderly Women by Districts in Kerala – 1991 Census and Kerala Migration Survey 1998

SL. NO.	DISTRICT	PROPORTION OF FEMALE ELDERLY (%)			
		1991 Census 60+Years		1998 KMS 60+Years	
		Female	Male	Female	Male
1	2	3	4	5	6
1	Thiruvananthapuram	8.96	8.00	10.64	11.14
2	Kollam	9.27	8.51	10.74	11.99
3	Pathanamthitta	12.11	11.97	17.53	13.73
4	Alappuzha	11.77	10.35	13.86	13.04
5	Kottayam	11	10.26	12.75	12.64
6	Idukki	6.80	6.87	8.85	6.05
7	Ernakulam	10.15	8.66	12.09	13.26
8	Trissur	10.71	9.26	10.53	12.03
9	Palakkad	9.42	8.39	11.72	11.30
10	Malappuram	6.81	6.22	7.85	7.73
11	Kozhikkode	8.88	7.78	10.05	11.05
12	Wayanad	6.30	6.10	7.36	7.58
13	Kannur	8.97	7.85	8.67	10.23
14	Kasargode	7.14	6.97	8.03	8.63
	TOTAL	9.32	8.37	10.73	11.03

Source: CDS

18.8 District-wise analysis shows that female elderly outnumber males in all districts except Idukki. In Kerala there were 7628 widows among 60+, 5949 among 70+ and 4303 among 80+ as per 1991 census. District-wise sex ratio of elderly by marital status in Kerala is given in Appendix-18.1. Except Idukki, all districts of Kerala have registered higher proportion of female elderly than male elderly. Except Idukki and Wayanad, all districts in Kerala have reported higher sex ratios among the 60 plus, 70 plus and 80 plus age groups. The sex ratio of the widowed is in favour of women.

Women & Literacy

18.9 Literacy status of women in Kerala is unique with 88% compared to all India level of 54%. Female literacy rate in Kerala and India from 1951 to 2001 is given in Table 18.5. Some states are still lagging behind the level attained by Kerala in 1951. Male - female gap in literacy rate in Kerala has been declining at higher rate. For instance, in 1951, male-female literacy gap was 21.9 per cent and in 2001 it is only 6.3 per cent. At all India level the gap is 21.7 per cent in 2001. The district-wise female literacy rate in Kerala as per 2001 census is shown in Fig. 18.3. In five districts including Thiruvananthapuram, female literacy rate is below the state average of 87.86%. Kottayam district ranks first with 94.45% female literacy followed by Pathanamthitta with 93.7%.

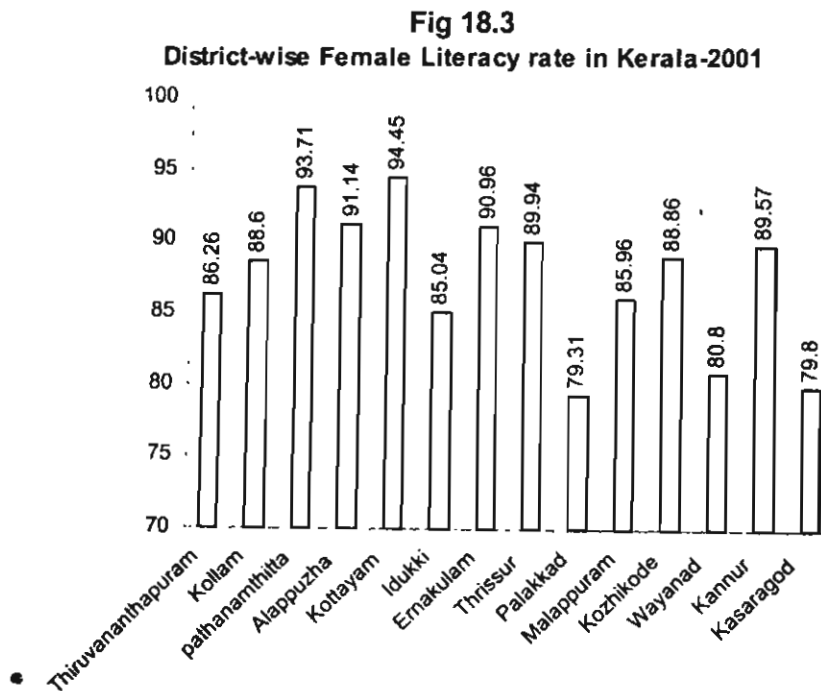
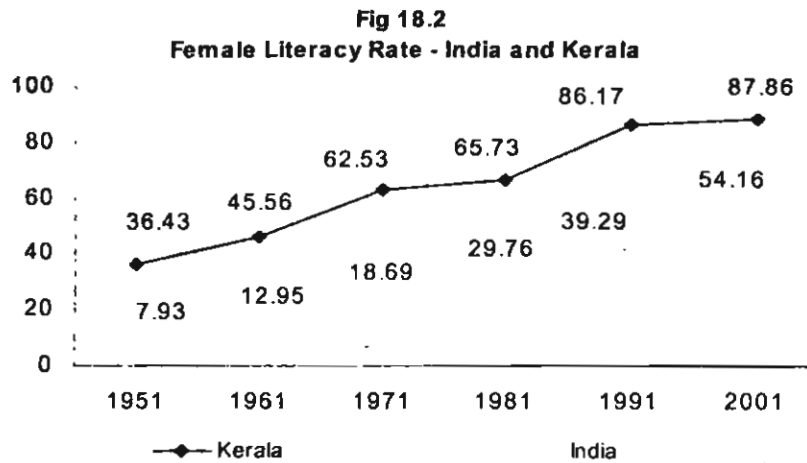


Table 18.5
Female literacy rate in Kerala and India - 1951 to 2001

Year	Kerala		India	
	Literacy (%) Female	Male-Female Gap	Literacy (%) Female	Male-Female Gap
1	2	3	4	5
1951	36.43	21.92	7.93	17.02
1961	45.56	19.33	12.95	21.49
1971	62.53	14.6	18.68	20.77
1981	65.73	9.53	29.76	26.62
1991	86.17	7.45	39.29	24.84
2001	87.86	6.34	54.16	21.69

Source : Census of India

Box -18.6

The minimum gap in male –female literacy rates any where in India has been observed for Mizoram (4.56% point). The female literacy rates have increased at faster rate than male literacy rate in all states and union territories except Dadra and Nager Haveli during 1991-2001.

Women & Health:

18.10 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 at all stages especially in the age group 15-35 years. Expectation of life at birth of females has been rising steadily in Kerala and India as shown in Table 18.6. In Kerala, female life expectancy increased from 50 years in 1960 to 73.6 years in 2000 where as in India increase was from 41 years to 65.3 years. Average life at birth of men in Kerala increased from 46.2 years to 68.2 years during the same period. Similarly the effective mean age at marriage for females has increased from 20 years to 22 years in Kerala as against 18.3 years in 1981 and 19.5 years in 1997 at the all India level.

Table 18.6
Expectation of life at birth from 1960 to 2001
(India & Kerala)

Year	Kerala		India	
	Male	Female	Male	Female
1960	46.17	50.00	42.00	41.00
1970	60.62	62.08	46.00	45.00
1980	64.70	69.00	51.00	50.00
1990	67.50	72.90	59.70	60.90
2000	68.23	73.62	62.30	65.30

Source: DHS

18.11 According to National Family Health Survey (NFHS) institutional deliveries increased from 25% in 1992-93 (NFHS-I) to 34% in 1998-99 (NFHS-II) at all India level. But in Kerala 89% of births were institutional in 1992-93 (NFHS-I) and 93% in 1998-99 (NFHS-II).

18.12 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 in India declined from 468 in 1980 to 407 in 1998; in Kerala it is 140 in 2001.

18.13 National Family Health Survey- II, (1998-

Box -18.7

Kerala's rate of expansion of female literacy has been faster than China's and faster decrease in fertility rate. While Chinese fertility rate decreased from 2.08 to 2.0 between 1979 and 1992 (when one – child policy was introduced) it fell from 3.0 to 1.8 in the same period, in Kerala without any coercion.

(Amartya Zen, *International Journal of Health Services*, 2001)

99) shows that while 1.9 percent of the adolescent married girls suffer from severe anaemia, 45.9 percent suffer from moderate anaemia at the all India level. Table 18.7 shows anemia levels for ever married 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 noteworthy that pregnant women have slightly lower than average levels of anaemia in Kerala with 11.6 percent mild and 8.7 percent moderate.

Education and Female Enrolment

18.14 The enrolment of girl students at school level in Kerala is the highest in the country with more than 49% of the total enrolment. Out of 50.02 lakh students enrolled in schools in 2003, 24.52 lakhs (49%) are girl students. The gap between female and male illiterates and dropouts is also

Table 18.7
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
Age				
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
Marital Status				
Currently married	22.5	19.4	2.6	0.5
Not currently Married	26.0	21.1	4.4	0.5
Residence				
Urban	20.4	16.9	3.0	0.5
Rural	23.4	20.3	2.6	0.5
Education				
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
Religion				
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
Pregnancy/breast Feeding status				
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

Source: NFHS-II 1998-99

on the declining trend in the country as a whole. Total enrolment of girls at primary level was 9.15 lakhs in 2003 and 7.52 lakhs in upper primary level. At the all India level the gross enrolment ratio of girls at primary level is 85.2 and at the middle level is 49.7 during 1999-2000. Out of the total enrolment of 144199 students in 2003 for degree courses in Kerala girls are 60.82%. The percentage of girls students in BA degree is

62.5% ; B.Sc degree is 62.7% and B.Com degree is 50.9%. In Post graduate courses such as MA, MSc and M.Com, girls constitute 65.4%, 73% and 55.8% respectively. Out of the total 10458 Arts and Science college teachers, 5493 (52.5%) are women. Details of enrolment of girl students in Kerala for various stages is given in Appendix 18.2. The dropout rate of girls, also shows declining trend from 1980-81 to 2002 - 2003.

Women and Employment

Box -18. 8

If women works were more fully accounted for, it would become clear how much women count in development.

Employment Exchange data is 38.56 lakhs in 2003 against 39.56 lakhs in 2002. Out of the total unemployed job seekers in 2003, 57% are women against 56% in 2002. It was 47% in 1990. The district-wise details of women work seekers in Kerala is shown in Table .18.8

18.16 According to 2001 Census, there are 102.91 lakh total workers and 82.37 lakh main workers in Kerala. Out of the main workers, 17.57 lakhs (21.3%) are female main workers. But out of 20.55 lakh marginal workers, 7.43 lakhs (36.5%) are female marginal workers.

rate increased from 19.7% in 1981 to 25.7% in 2001. But in Kerala female work participation rate decreased from 16.6% in 1981 to 15.3% in 2001. Female work participation rate in India and Kerala from 1981 to 2001 is given in Table 18.9. Work participation rate of women has always been lower than men in rural as well as in urban areas both at national level and in Kerala. However gap between male-female work participation rate is higher in Kerala as compared to India.

18.18. The district wise position of women employees in public and private sector in Kerala is shown in Ap-

Table 18.9
Work participation rates by sex 1981 to 2001- India and Kerala

Census	India						Kerala					
	Total		Rural		Urban		Total		Rural		Urban	
	M	F	M	F	M	F	M	F	M	F	M	F
	2	3	4	5	6	7	8	9	10	11	12	13
1981	52.6	19.7	53.8	23.1	49.1	8.3	44.9	16.6	45.2	17.7	43.4	11.8
1991	51.6	22.3	52.6	26.8	48.9	9.2	47.6	15.9	47.9	16.9	46.8	13.00
2001	51.9	25.7	52.4	31.00	50.9	11.6	50.4	15.3	50.2	15.9	50.8	13.5

Source: Census

18.17 At all India level, female work participation

Table 18.8
District-wise distribution of work seekers in Kerala -2002 &2003

Sl. No	DISTRICT	2002		2003	
		Men	Women	Men	Women
1	2	3	4	5	6
1.	Thiruvananthapuram	225938	323316	239260	341061
2.	Kollam	181344	256606	162975	238585
3.	Pathanamthitta	154504	211438	60531	89859
4.	Alappuzha	64803	93327	150380	202858
5.	Kottayam	111051	146374	106141	143089
6.	Idukki	54968	72414	55671	71011
7.	Ernakulam	179403	217185	167826	209658
8.	Trissur	153623	228911	132578	213736
9.	Palakkad	126409	129755	132448	136855
10.	Malappuram	123644	127375	116419	119462
11.	Kozhikkode	164488	203829	158055	201836
12.	Wayanad	39072	41414	38469	42629
13.	Kannur	104103	126752	44779	48236
14.	Kasargod	46303	47668	44779	48236
TOTAL		1729653	2226364	1666875	2189120

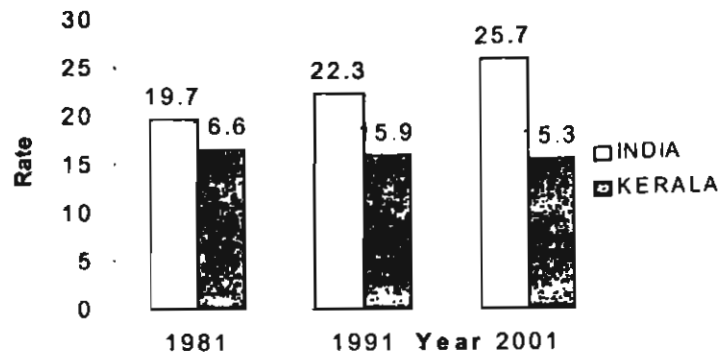
Source: Directorate of Employment

pendix 18.3. In the public sector in 2002, total employees were 6.38 lakhs and out of them 1.93 lakhs (30%) were women. But in the private sector out of 5.76 lakhs employees in 2002, 2.82 lakhs (49%) were women.

Women & Migration

18.19 According to a survey conducted by the state government in 1999, there are 2.18 lakh female migrants in the state constituting 15.72% of the total. 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.(Table. 1811) Among 60+ years 2162 are unemployed and 51 employed. An analysis of the unemployed female migrants shows that 59241(42%) are below 20 years and 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 in semi - government and 57592 (76%)in private firms. Marital status of the un employed shows that 71598 (51%) are married, 63610 (45%) unmarried, 3273 (2%) widow and 2528 divorced. (Table 18.12)

Fig 18.4
FEMALE WORK PARTICIPATION RATE



Box -18.9

Adverse Consequences on Migrant's wives

- More than half the number of the younger wives felt that loneliness was their biggest problem and younger women are affected by the separation problem more than the older ones.
- Increase in responsibilities is another common complaint of the Gulf wives. Increased responsibility comes in several areas, the most important among them being management of children's education.
- Increased anxiety arising from husband's migration about the family's future and problems with inlaws.
- Indebtedness due to loans raised at the time of emigration and inadequate financial returns from emigration.
- At the same time autonomy of woman seems to increase as she has to take important decisions for the family.

Table-18.10

District-wise Number of Women Employees – 2001 & 2002 in public and private sector

SL. NO	DISTRICT	2001				2002			
		Public		Private		Public		Private	
		Total	Women	Total	Women	Total	Women	Total	Women
1	2	3	4	5	6	7	8	9	10
1	Thiruvananthapuram	133800	37152	45527	24780	136289	38151	46219	24775
2	Kollam	51682	24570	52064	38707	51610	24585	50170	38061
3	Alappuzha	32750	11558	27665	11476	32769	11568	26244	11033
4	Pathanamthitta	26365	9372	15666	7404	26265	9293	14672	7129
5	Kottayam	34282	11000	28163	9486	34459	1154	27145	9166
6	Idukki	16534	4255	75729	40527	16584	4267	80177	41693
7	Ernakulam	92982	21275	68013	22557	90726	20743	68284	22095
8	Trissur	52527	19195	57725	27711	52632	19195	55045	27361
9	Palakkad	50223	10032	29927	11379	50841	10585	28319	10692
10	Malappuram	37956	11950	31644	14332	37098	11715	30139	14092
11	Kozhikkode	45460	115777	50188	18213	44692	11766	45063	17244
12	Wayanad	12652	3107	19598	11046	5748	1097	13003	6561
13	Kannur		11132	54499	23390	36909	11450	52686	22465
14	Kasargode		7336	40380	31396	21386	7967	38829	29945
	TOTAL	644906	193511	596788	292404	638008	193536	575995	282312

Source: Directorate of Employment

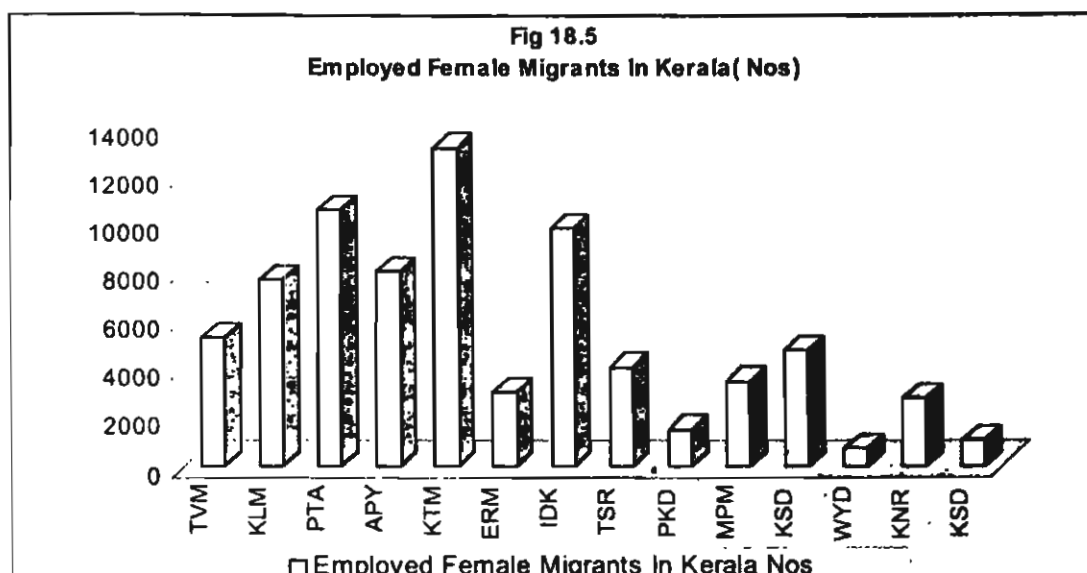


Table. 18.11
Marital Status of female migrants by age in Kerala

Sl. No.	Marital status	Less than 20	20-30	30-40	40-50	50-60	Above 60	Total
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
	Total	59655	60944	60477	25161	6052	5249	217538

Source: Department of Economics and Statistics

Table. 18.12
Marital Status of unemployed female migrants by age in Kerala

Sl. No.	Marital status	Less than 20	20-30	30-40	40-50	50-60	Above 60	Total
1	2	3	4	5	6	7	8	9
1	Married	1078	30061	26856	9290	2151	2162	71598
2	Un married	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
	Total	59241	34887	28554	10756	3101	5198	141737

Source: Department of Economics and Statistics

18.20 Out of the total employed female migrants, 17.3% are from Kottayam district and 13.9% are from Pathanamthitta. Employed female migrants from Malappuram is only 3529 which forms only

1.75% of the total female migrants. This is against total employed migrants of 201734 from Malappuram. District-wise female employed migrants in Kerala are depicted in the Diagram.

18.21 There are reports that female migrants especially doing lower end jobs often face harassment of different types but no normal study has been done in this problem. Nearly half of them are single women.

Women & Decision making

18.22 Women empowerment in society and family are closely linked to decision making influence. Women participation in decision making as reflection in share of high level national services like IAS, IPS etc. was 5.4% in 1987 and it in-

creased 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 were only 6.77%. Details from 1987 to 2000 at all India and Kerala are given in Table-18.13.

18.23 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 is furnished in Table 18.14.

Table-18.13
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	8	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

Fig 18.6
Percentage of women in Premier services

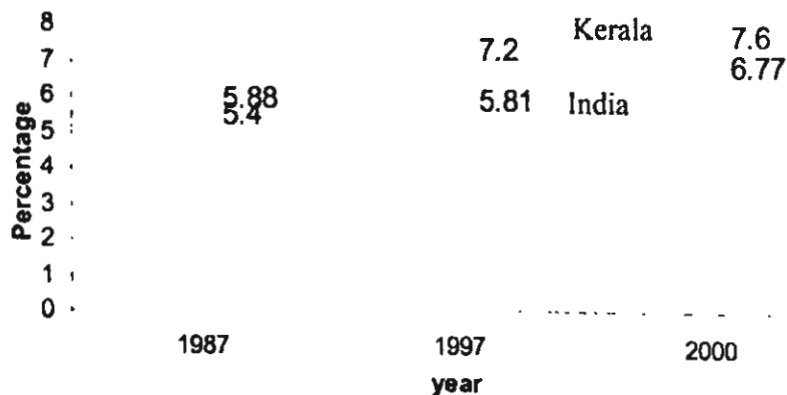


Table-18.14
Household decision of women in Kerala

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

18.24 In India 9.4% women are not involved in any kind of decision making whereas it is only 7.2% in Kerala. While 59% have access to money at the all India level it is 66% in Kerala. A detailed state wise analysis of autonomy enjoyed by women is presented in Appendix 18-4.

Women & Governance

18.25 After the enactment of the 73rd and 74th constitutional amendments in 1993, women's role in governance has increased in India at grassroot democratic institutions viz. Panchayat Raj Institutions and Nagara Palika Institutions.

18.26 Between 1993 and 1997,

women participation in Nagarapalika/Panchayat Raj institutions went beyond the mandatory requirement of one-third of total seats. In Karnataka women participation went to 43.45%, Kerala to 36.4% and West Bengal to 35.4%. District-wise representation of women in Local governments in Kerala during 2003, is given in Appendix-18.5. The number of seats reserved for women in LSGIs in Kerala is shown in

Table-18.15
Number of seats reserved for women in LSGIs in Kerala – 2003

Sl. No.	LSGIs	Total	Wards	SC	ST	General	Total
1	2	3	4	5	6	7	8
1	Grama Panchayat	991	13255	422	48	4330	4800
2	Block Panchayat	152	1638	39	5	585	629
3	District Panchayat	14	307	13	1	91	105
4	Municipality	53	1597	45	1	504	550
5	Corporation	5	298	11	0	89	100
	TOTAL	1215	17095	530	55	5599	6184

Source: State Election Commission

Box -18. 10

Of the 475 Zilla parishads in the country, 158 are chaired by women. Out of 51000 members of Block Samithis, 17000 are women. Nearly 1/3 of the Mayors of the Municipalities are Women

Table 18.15. Out of 16797 wards in Panchayat Raj/ Nagara Palika Institutions in Kerala 6084 wards are with women.

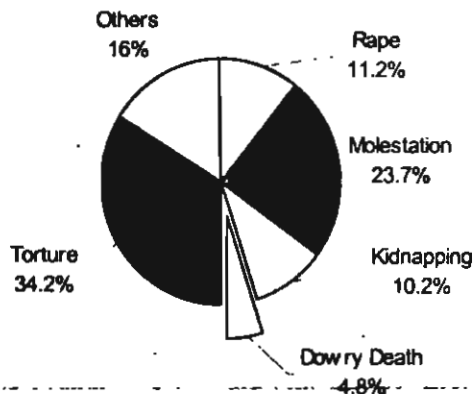
Women & Violence

18.27 Violence against women and the girl child, both at home and at work place, has been showing an alarming trend in the country. Data from State Crime Bureau, shows that total number of crimes committed against women has increased from 1.13 lakhs in 1997

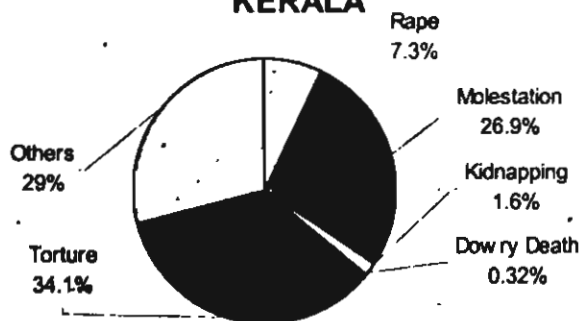
to 1.44 lakhs in 2001 at the national level. Crime rates against women in India by status and rank in 2001 is given in Appendix 18.6. Amongst the states while Uttar Pradesh reports the highest with 14.1 percent of total crimes, followed by Andhra Pradesh and Madhya Pradesh with 11.5% and 10.1% respectively. Kerala ranks in the 10th place with 3.79%.

Fig 18.7

Atrocities against Women -2001- INDIA



Atrocities against Women.2001- KERALA



Box -18. 11

Domestic violence against women is a significant social problem in Kerala. In a study conducted in Thiruvananthapuram District, "about 64.9% of ever married women report at least one form of psychologically abusive behaviour in their marital life and 35.7% reported experiencing at least one form of violent ophysical behaviour". The study also documents multiple forms and frequency of occurrence of violence (Panda-2002)

18.28 Eventhough Kerala is forerunner in several social and demographic development indicators, number of crimes committed against women was 7568 in 2001 which is 5.26% of all India cases. Of the total 7441 crimes against women in Kerala in 2002, torture claims the highest share of 36.4 percent, followed by molestation 29.4%. Dowry death sharply declined by 37.5 percent in 2002 over 2001 (Table 18.16). Dowry death in Kerala during 2001 is only 0.32 percent of the total crimes while it is 4.76 percent at all India. Crimes against women in India is increasing and in Kerala there is a decline of 1.68 percent. Details of district-wise atrocities committed against women in Kerala is given in Appendix 18.7

Women and Suicides

18.29 Kerala leads in suicide rates in India. Financial problems, incurable diseases and some acute socio-cultural problems are the major causes for suicide. Lack of adequate and effective interpersonal communication is a by-product of modern life. Most of the victims were found to be lacking timely advice or suggestion from competent persons. In Kerala, males commit more suicides than females. For instance of the total 9810 suicides in Kerala during 2002, 7165 were men and 2645 were women. During 2002, 1610 males committed suicide because of family problems and 1080 because of deadful diseases. Female suicides were only 690 and 423 respectively. While the total suicides in Kerala increased from 9572 in 2001 to 9810 in 2002, female suicides decreased from 2785 to 2645. Details are furnished in Appendix 18.8.

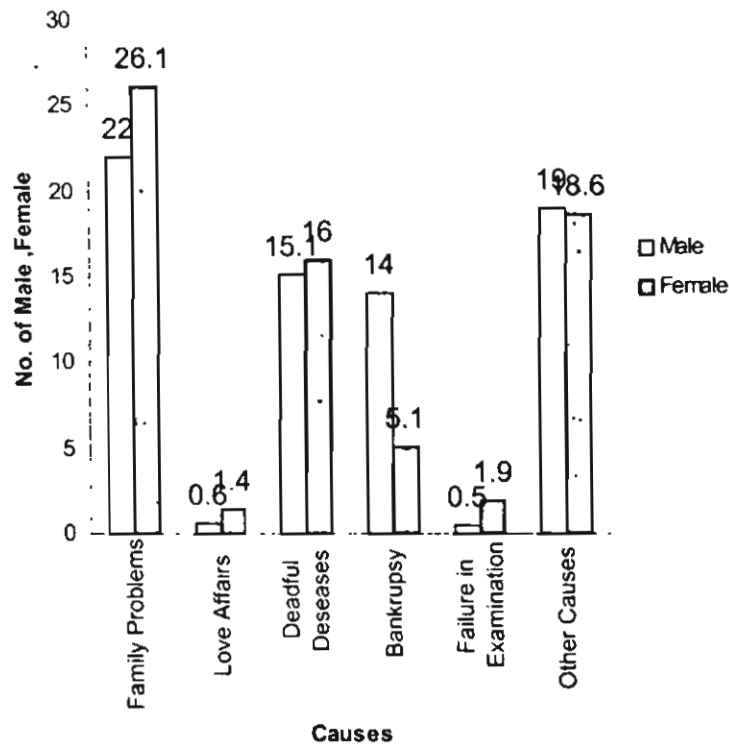
Gender and Budgeting:

18.30 In Kerala during 2001-02 there were as many as 30 schemes specifically drawn up and implemented benefiting women. In the Local Government plan, 10% of the plan outlay is utilized for projects benefiting women.

Table 18.16
Details of Atrocities committed against Women – Kerala and
All India

Sl. no	Offences	Kerala		India	
		2001	2002	2000	2001
1	2	3	4	5	6
1	Rape	550	483	16496	16075
2	Molestation	2033	2190	32940	34124
3	Kidnapping	125	106	15023	14645
4	Eye-teasing	86	109	--	--
5	Dowry Death	24	15	6995	6851
6	Torture	2579	2705	47778	49170
7	Others	2171	1833	24141	22930
	Total	7568	7441	141373	143795

Fig 18.8
Major causes of suicides in Kerala-2002



Women Development Agencies in Kerala:

18.31 In the state several agencies/government institutions and non-government institutions are involved in implementing specific women development pro-

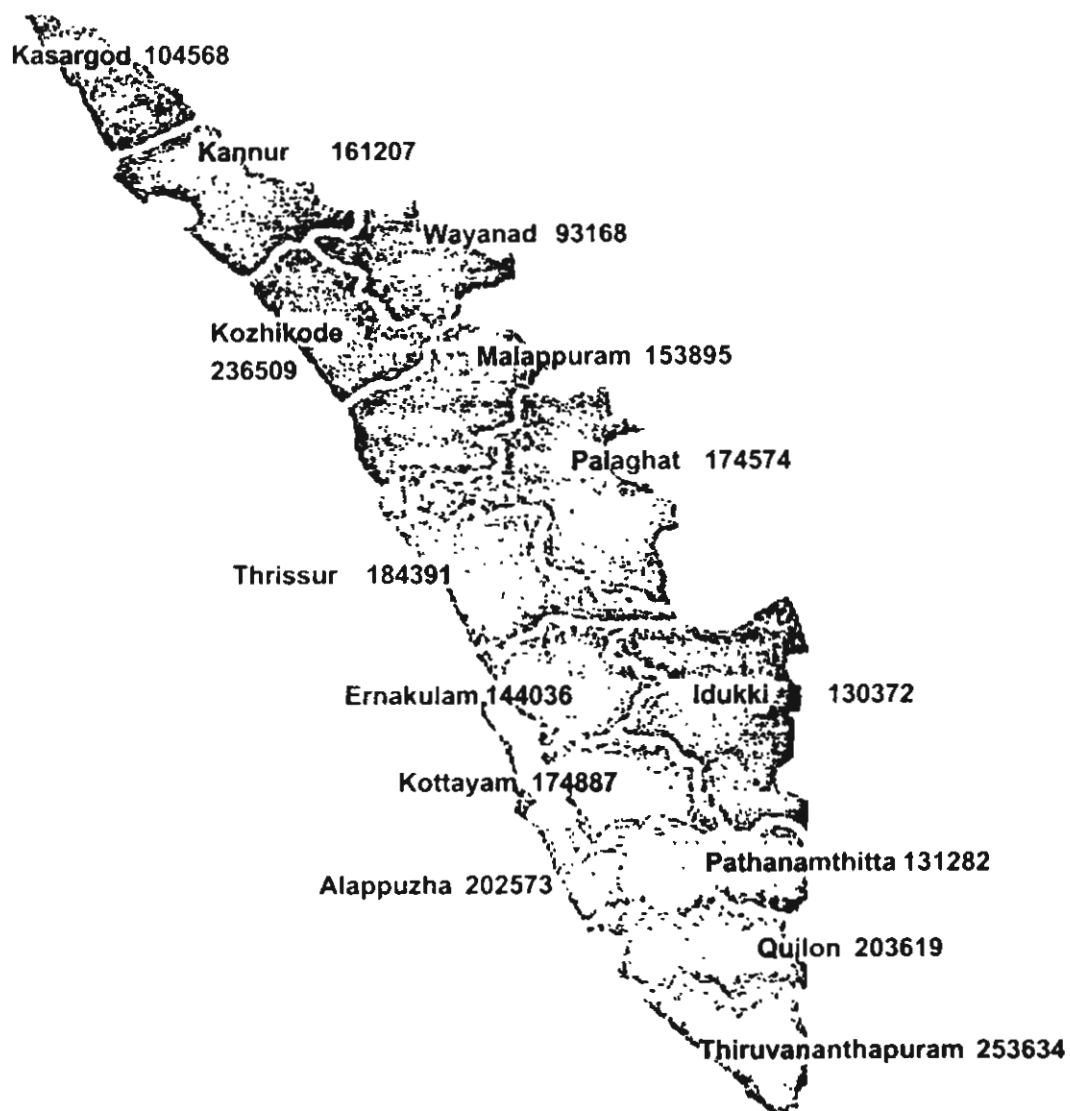
grammes. The major governmental institutions are Kerala State Women Development Corporation, Kudumbasree and Kerala State Women's Commission. The activities and achievements of these institutions are detailed below.

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 2002-03 ,Corporation mobilised Rs.100 lakhs from NBCFDC and Rs.100.62 lakhs from NMDFC. Provided self employment Assistance to 1029 women and training to 1058 women. Corporation is also running 6 working women hostels (Gandhinagar,Thrikkakkara, Mananthavady, Manjeri, Kannur and Tirur) benefiting 300 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 724735 NHGs and 631 ADSs are functioning in the urban areas covering 2.72 lakh families. In the rural areas 116016 NHGs and 13135 ADSs are functioning covering 23.49 lakh BPL families. About 26 lakh families in the rural and urban areas together were linked with the thrift programme and about Rs. 393 crores disbursed as loan during 2003. Kudumbasree has been identified by the Planning Commission and UNDP as one of the timely best practices in governance in the country. The district-wise details of performance is shown in Appendix.18.9
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 2003 (up to Sept..30), the Commission received 2988 complaints which include 250 related to violence, 389 on harassment by husband and 188 dowry cases. Of the total complaints Thiruvananthapuram district is in the forefront with 827 followed by Kollam 285. The lowest number of complaint is from Kasargode 66. Complaints related to child marriage is only from Malappuram. The district-wise details of complaints received by KWC during 2003 is shown in Appendix-18.10

18.32 Kerala has accepted the need for gender sensitivity in plans and has highlighted this aspect in the Xth Five Year Plan 2002-07. Women participation rate has increased every year in the Gramasabha. The quality of women component plan have improved over the last few years. Decentralisation has provided wider

opportunities for the women to discover their potential, and provided scope for interaction. The transformative process has to go further. However, the spectacular change in welfare, efficiency, mobility and self-confidence of the women at grass root level cannot be over looked.

Fig 18.9
Number of Families covered under Kudumbasree - 2003



LABOUR AND EMPLOYMENT

Employment strategy in Kerala

There has been a structural imbalance between the environment in the productive sectors infrastructure and the supply of concerned 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.

19.2 The comparison between Kerala and India as revealed in the distribution of employment by current weekly activity given in Table 19.1 shows that the unemployment rate for Kerala is 11.6% in rural areas and 12.2% in urban areas, whereas 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.

ISSUES RELATED TO THE EMPLOYMENT SITUATION IN THE STATE.

19.3 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

Changing structure of the economy.

19.4 The economy of Kerala has changed from one dominated by the agriculture to one dominated by the services sector. This is due to growth of the public services and to the growth of services necessitated 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.

Changing profile of job seekers

19.5 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.

Pattern of education

19.6 As has been suggested earlier higher education in Kerala follows a pattern dominated by general education in Arts and Science.. With the changing 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.

19.7 In the case of technical and

Table-19.1
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 Labaour	157	111	145	62
5. Unemployed	42	45	11	19
6. Unemployment Rate (%)	11.6	12.2	2.3	5.7

professional education particularly in the engineering and technology sectors, obsolete and obsolescent trades still dominate the curriculum. Difficulties of retraining the existing instructors and resistance to learn new things have contributed to the deterioration of those components of the professional education sector.

19.8 Due to acute budget constraints, the government did not 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.

Labour attitudes

19.9 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 attain 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 Dr. K.P. Kannan of Centre for Development Studies put it, gain in wages has often resulted in loss in jobs.

19.10 At the same time the unorganised sector like Headload Workers/ Construction Workers, have often resorted to unfair tactics bordering on extortion. Practices like 'Sons of the soil', Attimarry (extortionate wages) have tarnished the fair image of labour in the State and scared away many potential Investors.

19.11 Certain features of Kerala labour particularly in the unorganised sector like absence of off-season wages has 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.

Resistance to Technology

19.12 Instances are galore where in the interest of retaining existing jobs new technology has been resisted particularly by the affected labour. Farm mechanization, mechanization of traditional industries and computerisation were all delayed by such resistance. This has affected generation of jobs

Changes in agricultural economy

19.13 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 tenancy 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 land while 40 years later the same quantity purchase only about five mandays.

Poor Performance of Public Sector

19.14 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.

External shocks

19.15 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 farmer groups of Kerala have very little control. Similarly 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.

Collapse of traditional industries

19.16 Traditional industries of Kerala are in danger due to unfair terms of trade and due to substitution with machine made and synthetic products. Cashew industry which employs 0.25 lakh people, coir industry which employs 3.6 lakh people, the handicraft sector which employs 0.09 lakh people and the handloom sector which employs 1.35 lakh people are all in severe difficulties. Since the poor and weaker sections are employed in these sectors there is a social dimension to their decline.

Limits to Government jobs

19.17 For a State of Kerala's size, Government has been a major employer accounting for 3.25 lakh staff. The acute fiscal crisis of the State and the changing role of government would limit its expansion. 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.

Labour Force

19.18 In Kerala according to 2001 census there are 10.3 million workers. They form 2.6% of India's total workers. There are 8.2 million main workers and out of them 6 million are in rural areas and 2.2 million are in urban areas. The marginal workers are 2.1 million with 1.7 million in rural and 0.4 million in urban areas. Similarly there are 21.6 million non workers in the state and out of them 15.9 million are rural and 5.7 million are urban (See Table.19.2). District-wise percentage of total workers, main workers, marginal workers and non workers are given in Appendix - 19.1.

Table . 19.2
Category wise workers as per 2001 Census
(lakhs)

Sl. No.	Item	Kerala	India
1	2	3	4
1	Total Population	318.38	10252.51
2	Total Workers	102.91	4025.12
3	Main workers	82.37	3131.73
4	Marginal Workers	20.55	893.39
5	Non Workers	215.47	6227.39

Work participation rate

19.19 In Kerala, work participation rate is 32.3 (2001) and is slightly higher than the 31.4 recorded in 1991 Census. Among the districts, highest work participation rate is in Idukki (43.3%) and lowest is in Malappuram (24.3%). In 1991 census also Idukki district had the highest work participation rate (39.7%) and Malappuram the lowest (24.3%). In Pathanamthitta and Kollam Districts, total work participation rate of workers remained the same in 1991 and 2001 Census. Work participation rate of Kerala and India from 1981 to 2001 is given in Table - 19.3.

Table - 19.3
Work Participation rate in Kerala and India

Sl.no	Census year	Kerala	India
1	2	3	4
1	1981	30.5	36.7
2	1991	31.4	37.5
3	2001	32.3	39.3

Unemployment

19.20 Unemployment rate is highest in Kerala . During 1999-00, all India unemployment rate was only 7.29% when the rate was 20.77% in Kerala. Similarly unemployment rate was 15.5% in 1993-94 and 21.19% in 1987-88. Unemployment rate varies from 3% in Himachal Pradesh to 12% in Tamil Nadu and 15% in West Bengal. It is very interesting to note that a state like Kerala which has shown the sharpest decline in poverty also shows the highest rate of unemployment . The Planning Commission Task Force suggests the following hypothesis to explain variation. States where wages are kept higher than the neighboring regions either by strengthening the bargaining power of labour or by provision of social security have a higher incidence of unemployment.

19.21 Similarly youth unemployment rate (15-29 years) is also the highest in Kerala. For instance in 1999-00, youth unemployment rate was 36.3% in rural and 34.3% in urban areas against the national average of 11% and 15.4% respectively.

19.22 According to live registers of employment exchanges in Kerala, the total number of work seekers in 2002 was 36.80 lakhs, less from 44.31 lakhs in 2001. The total number increased to 38.56 lakh up to August

2003. The total number of general work seekers in the category below SSLC declined from 9.65 lakh in 2001 to 7.11 lakh in 2002, and has slightly increased to 7.27 lakh in 2003. The total number of work seekers who possess SSLC and above increased from 29.68 lakh in 2002 to 31.29 lakh in 2003. Their percentage share to total work seekers has increased from 80.6% in 2002 to 81.1% in 2003. This percentage was only 75 in 1996 and 1998.

19.23 The number of graduates who registered in employment exchanges stood at 2.42 lakh in 2002. It has increased to 2.46 lakh up to August 2003. The number of job seekers with postgraduate degree decreased from 0.53 lakh in 2002 to 0.33 lakh in 2003. At the same time their total number during 2001 was 0.66 lakh (Appendix 19.3)

19.24 The number of professional and technical job seekers has been increasing year after year, since 1996. The total number of professional and technical work seekers was 1.80 lakh in 2002. This number increased to 1.82 lakh in 2003. A notable feature among the medical graduates is that their total number has sharply increased since 1999. 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 2691 in 2001 and again to 3736 in 2002. Their total number up to August 2003 is 4072. The number of veterinary graduates has increased from 480 in 2002 to 546 in 2003. The number of job seeking agricultural graduates has also increased from 881 in 2002 to 992 in 2003.

19.25 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 0.46 lakh in 2001 which came down to 0.43 lakh in 2002 and further to 0.41 lakh in 2003 (See Appendix 19.4)

19.26 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. But the total number of women job seekers has also come

down marginally from 22.26 lakh in 2002 to 21.89 lakh in 2003.

19.27 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 5.80 lakh out of which 3.41 lakh were women and 2.39 lakh men. The second largest number of work seekers is from Kollam District. There are 4.02 lakh job seekers in Kollam District in 2003, out of which 2.39 lakh are women and 1.63 lakh men. The lowest number of work seekers is in Wayanad and Kasargode Districts. In Wayanad, there are 0.81 lakh work seekers, whereas in Kasargode the number is 0.93 lakhs in 2003.

19.28 According to the study "Activity status of Migrants and Returnees" conducted by the Department of Economics & Statistics in 1999 the total population of Kerala in 1999 is 314.67 lakh. Out of the total population, 40.90 lakh i.e. 13% are employed permanently and 58.69 lakh (18.65%) are engaged in various types of temporary employment and the remaining 215.08 lakh persons (68.35%) are unemployed. The number and percentage distribution of unemployed persons in

Table 19.4
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
Total		215.07	100

Source: Department of Economics and Statistics

the state is given in Table 19.4

Unemployment Assistance

19.29 Government of Kerala introduced an 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 handi-

capped needs 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 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 up to the age of 35 years from April 2000. During 2001 an amount of Rs. 21.76 crore was disbursed to 351685 beneficiaries. During 2002 even though the total number of beneficiaries was decreased to 332287 the amount disbursed has gone up to Rs.25.16 crore. As per the Kerala Panchayati Raj Act and Municipalities Act 1994 the scheme of unemployment assistance has been transferred to local governments for implementation since June 1998.

19.30 A Self employment scheme called KESRU (Kerala State Self Employment Scheme for the Registered Unemployed) has been implemented since March, 1999. All literate and registered unemployed candidates within the age group of 21 to 40 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. Students are not eligible to

apply. The loan amount admissible is between Rs.30000/- to Rs.50000/-. Two or more persons can join together and avail the loan facilities. Twenty per cent of the assistance amount is given as subsidy.

Employment in the Organized Sector

19.31 Total Employment in the organized sector has been increasing slightly since 1996, except in 2002. Total number of persons employed in the organized sector in December 1996 was 1175711 persons. The total number has grown to 1241355 persons in December 2000. Out of this 643576 persons worked in Public Sector and 597779 persons in Private sector during 2000. During 2001 total number of workers came down to 1234105 out of which 645670 persons were in public sector and the remaining 588435 persons were in private sector. District-wise employment in public and private sectors in Kerala as on 31st March of every year from 1998 to 2003 is included in the Appendix 19.9.

19.32 The EMI data given in Table 19.5 confirms the decline of agriculture sector, rise of the services sector and stagnation of the manufacturing sector over the last three decades.

Table-19.5
Employment in Public and Private Establishments in Kerala as on 31st March
(Covered under EMI)

Sl. No.	Industry	Number of Persons Employed					
		1971	1981	1991	2001	2002	2003
1	Agriculture and allied Industries	92055	103145	104727	108966	102681	105823
2	Mining and Quarrying	610	1340	3548	3571	3550	163408
3	Manufacturing	188924	323359	307038	321903	310851	139165
4	Construction	23562	25170	19327	25242	24383	38210
5	Electricity, Gas, Water & Sanitary Services	11850	16349	26642	26526	24779	27181
6	Trade, Restaurants & Hotels	23083	16376	21946	25580	24778	151352
7	Transport, Storage & Communication	54212	74422	97299	104596	104072	159765
8	Financing, Insurance, Real Estate & Business Services	0	47779	78739	86320	83871	267021
9	Community, Social & Personal Services	307470	409358	488598	538990	535038	167705
	Total	701766	1017298	1147864	1241694	1214003	1219630

Source:- Directorate of employment

Placement through Employment Exchanges

19.33 Total placement has been declining from 2001 onwards. Total placement through employment exchanges in 2001 was 15750 and 12409 in 2002 as against 23012 in 2000. As per data available till August 2003 the total placement is only 7092 persons.

Migration

19.34 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.

19.35 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.

19.36 According to CDS study on migration entitled as "Kerala Gulf connections", by 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.

19.37 According to Health Department's reports the year wise estimated number of emigrants from 1980 to 1998 is given below.

19.38 According to Statistics Department's study, the number of migrant employees is the highest in the UAE with 4.09 lakh followed by Saudi Arabia with 4.08 lakh. The number of migrant employees are least in Australia with 957 followed by U.K with 2610. Out of the total migrants 15.72 % i.e. 2.18 lakh are females.

19.39 According to Kerala Health Department's report on migration, 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%.

Table 19.6
Estimated Number of Annual Emigrants
1980-1998

Year	Number of Emigrants	Year	Number of Emigrants
Before 1980	35,038	1990	89,542
1980	11,679	1991	49,313
1981	31,794	1992	85,649
1982	33,741	1993	1,13,550
1983	40,878	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	TOTAL	13,61,954

Source:- Health Department.

Table 19.7
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
Baharain	5.7	77
Kuwait	5.1	69
Quatar	4.7	64
USA	2.2	30
Others	4.1	57
Total	100.0	1,363

Source:-Department of Health Services Report on Migration (1998)

19.40 In terms of emigrants per 100 households, Malappuram was in the lead with a rate of 49, Pathanamthitta came second with a rate of 33. Thrissur, Kozhikode & Palakkad had higher than average migration. The lowest was from Wayanad and Idukki.

19.41 According to Statistics Department's study report in 1999 the per capita expenditure of migrant families is 50% more than that of state average

Foreign Remittances in the Kerala Economy

19.42 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 12.53 times. 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.

19.43 According to the CDS study 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 households were 2.55 times 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 nearly two fold 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. As per the modified State Income including remittances, Kerala's per capita income not only caught up with the average per capita income for India but started exceeding it reaching 49% above the national; average by the end of 1990's. This tallies with per capita consumer expenditure in Kerala, which was of 41%

above the national average by the end of 1990's.

19.42 By the nineties savings rates in the Kerala economy seem to have reached such high levels as those comparable to the East and South East Asian countries. By the end of the nineties remittances reached such levels that they were well above the total State Government expenditure. Workers remittances to Kerala (about Rs. 13-14 thousand crores by the turn of the century) constituted as much as 22% of the Net State Domestic Product by 2000. Remittances in 2001 were larger than the annual budget of Kerala for the year 2001-02. In short migration seems to be the single most dynamic factor in the otherwise slow growth and dreary employment scenario of Kerala during the last 25 years.

19.45 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 99%. While the State average is 59% MPRs of the lowest range were recorded in Idukki (12%) and Wayanad (20%) Alappuzha, Thirissur and Malappuram recorded a level of higher than the state average.

Return Emigrants

19.46 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 followed by Kollam. The reasons for return to home land are (16.8%) Sent back, (16.31%) ill health, (14.94%) Retrenchment (13.25%) No life security, (7.07%) Re-migration for better job, (4.33%) Retirement, (2.08%) Bad Climate etc.: According to Kerala Health Services Department's Report on Migration, 7.5 lakh migrants are stated to have returned home. C.D.S study state it as 5.43 lakh.

19.47 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.

19.48 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 the following Table:

Table: 19.8
The sector wise percentage of employment

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 and Statistics

Placement through ODEPC

19.49 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 authorized share capital of the company is Rs. 1 crore and paid up capital is Rs.65.79 lakh. So far, the company has been able to deploy only 4215 personnel to various foreign countries like Saudi Arabia, UAE, Qatar, Oman, Bahrain, Kuwait, Libya, Singapore, Malaysia, Brunei, Cyprus etc. During the year 2003 only 54 persons were deployed, of them 42 to Saudi Arabia, 10 to Sultanate of Oman and 2 to Qatar. Out of those 54 persons 11 were Doctors, 14 nurses, 13 technicians, 7 paramedical staff, 3 Engineers, 4 Administrative staff and 2 supervisory staff. The turnover of travel division was Rs.101.52 lakh during 2001-02 which increased to 141.35 lakh in 2002-03.

HUMAN DEVELOPMENT AND SOCIO ECONOMIC WELL-BEING IN KERALA

The traditional concept of planning focused on the expansion of production of goods and services and the consequent growth in per capita income has been transformed to the enhancement of human well-being. Well-being as an indicator of prosperity is measured on how the planned efforts have succeeded in providing better opportunities for people especially the deprived and those who are living below the normative minimal poverty line, to enjoy a productive and socially meaningful life. As the economic prosperity measured in terms of percapita income does not always ensure enrichment in quality of life reflected in broader dimensions of well-being, it has to be measured using indicators such as Human Development Index (HDI) and the Incidence of Poverty, the indicators that are more sensitive in reflecting changes in attainment levels at different periods of time.

Human Development Index

20.2 Human Development Index is a composite Index which measures the three critical dimensions of well-being such as (a) longevity - the ability to live long and healthy life, (b) Education - the ability to read, write and acquire knowledge and (c) Command over resources - the ability to enjoy a decent standard of living and have a socially meaningful life. It is derived from the per capita consumption expenditure, incidence of poverty, access to safe drinking water, proportion of houses with pucca houses, literacy rate for the age group 7 years and above, intensity of formal education, life expectancy at the age one and the Infant Mortality Rate. As the Human Development Report for Kerala is under preparation only the details of the performance against some parameters are given below.

Incidence of Poverty

20.3 Poverty in its absolute term reflects the inability of an individual to satisfy certain basic minimum needs for a sustained healthy and a reasonably productive living. In order to identify the poor the level of personal expenditure that enables the individuals to satisfy a certain minimum consumption level is taken into ac-

count. Those proportion of population not able to attain the specified level of expenditure are considered as poor. -

20.4 It has been observed that compared to other States, Kerala has made substantial progress in reducing the incidence of both rural and urban poverty in the past three decades and during the subsequent years from 1999-2000 also there was considerable reduction in both rural and urban poverty in the State.

Educational Attainments and Well-being

20.5 Education in the present day world has been considered as the single most important means for the individuals for bringing about social and economic advancement through enlarging their available set of opportunities and choices, which provides sustained improvement in well being. The level and spread of education is not only an important precondition for economic development but also playing a critical facilitative role in the demographic, social and political transition in the society. Education is therefore the best social investment and as such it is the priority for countries seeking to develop and sustain their level and pace of development.

Box -20. 1

Education Promotes Equality - Some cross Country Evidence

Education increases equality. A study of 49 countries showed that about a fifth of income inequality could be explained by educational inequality. Another has shown that an increase in literacy rate from 10-60 percent has been associated with a 2.8 per cent increase in the income share for the poorest 40 per cent of the population. A lower level of development, in some cases expanding education could possibly increase inequality, but with development education does seem to generally have an income levelling effect.

Source : National Human Development Report - 2001

20.6 The UNDP in its HDR 1990 pointed out that literacy is a person's first step in learning and knowledge building and therefore literacy indicators are essential for any measurement of human development. There are many indicators such as literacy rate for population as a whole or part, such as adults, females, the deprived and the backward. Other indicators like enrolment, dropout rates, the proportion of population having higher and technical qualifications etc can also be used to capture the level of educational attainment in a society. A brief analysis of those important parameters pertaining to the Kerala State based on the data availability as per Census Report (Provisional) 2001 and from other sources are given below.

Literacy rate

20.7 The Census of India defines literacy rate as the proportion of literates to total population in age group 7 years and above. The Census figures show that there are large inter state variations in literacy rates in the country and Kerala has the highest literacy rate and stood at the top among other States with male literacy (94.20 per cent), female literacy (87.86 per cent) and total literacy (90.92 per cent) in 1991.

20.8 The literacy transition of Kerala compared with other Indian States and UTs as per the 1991 and 2001 Census are shown in Table. 20.1

Dropout Rate

20.9 Dropout rate, the percentage of students dropping out of a class/classes in a given year, gives an indication about the wastage of school education and tends to undermine benefits of increased enrolments. The drop out rate in class I-X in 1998-99 in Kerala was 24.7 per cent which was the lowest among all the States in India, when it stood at 67.4 per cent at the National level. During the period from 1998-99 to

2001-02 there has been considerable reduction in the dropout rates in all categories of students in the State

Teacher-Pupil-Ratio

20.10 Teacher Pupil Ratio is one of the indicators having a bearing on quality of education. The ratio refers to the number of students enrolled for every teacher appointed. The ratio is comfortably low in Kerala as compared to other States. In 1997-98 the teacher pupil ratio in the State was 30 for Primary, 29 for Upper Primary and 29 for Secondary levels. In 2002-03 it slightly increased to 45 for Primary, 34 for Upper Primary level and decreased to 18 for Secondary levels

Box -20.2

Correlates of Health Attainments – Some Evidence

Based on analysis of data from 115 low and middle income countries it turns out that educational level of adult females as well as generation and utilisation of new knowledge has a significant impact on improving health, longevity and demographic indicators. For instance, in explaining the reduction in under 5 mortality rate, improvement in female life expectancy at birth and reduction in total fertility rate (TFR), the percentage contribution of gain in income levels is less than 20 per cent, where as improvement in educational levels accounts for more than 30 per cent in case of first two indicators and nearly 60 per cent in case of TFR. The contribution of generation and utilisation of new knowledge is 45 per cent or above in case of first two indicators and just under 30 per cent in case of TFR.

Source: National Human Development Report – 2001

Table – 20.1
Literacy Rates > 80 Per cent

YEARS	MALES	FEMALES	PERSONS
1991	Kerala, Lakshadweep, Mizoram, Pondicherry, Goa, Daman, Diu, Delhi, Chandigarh	Kerala	Kerala, Mizoram, Lashadweep
2001	Kerala, Lakshadweep, Mizoram, Pondicherry, Goa, Daman, Diu, Delhi, Maharashtra, Andaman, Nichobar Islands, Himachal Pradesh, Chandigarh, Uttaranchal, Tamil Nadu, Tripura, Gujarat	Kerala Mizoram Lakshadweep	Kerala, Mizoram, Lakshadweep, Goa, Delhi, Chandigarh, Pondicherry, Andaman, Nichobar Islands, Daman, Diu.

Source : Human Development Report – 2001.

in the State.

Demographic and Health Indicators

20.11 It has been recognised that the demographic and health indicators are important for evaluating the development process carried out during a period of time. As health and poverty are interrelated the analysis of these variables throws light on the qualitative improvements brought out by the planned efforts during a period of time.

20.12 A detailed analysis of the change in demographic and health indicators in the State are given below.

Life expectancy at birth

20.13 Life expectancy of an individual is the number of years the person is expected to live, given the prevailing age specific mortality rates of the population to which he/she belongs. In Kerala the life expectancy for the period 1992-96 was 73 years (70 years for male and 76 for female) which was the highest at the national level.

Infant Mortality Rate

20.14 Infant Mortality Rate refers to the number of death per '000 live birth in the first year of child's life. It reflects the probability of a child dying before attaining the age of one year. The IMR in Kerala for 1991 was 42 which was the lowest at the national level. By 1998 it decreased to 16 and again in 2001 it has reached at 11 which is the lowest at the national level. Educational and Health improvements have contributed largely to this achievement.

Death Rate

20.15 Death Rate in Kerala in 1997 was 6.2 for 1000 persons which was the lowest at the national level. It became 6.6 in 2001. It is to be noted that the death rate of females is lower than that of males in general.

Couple Protection Rate

20.16 Couple Protection Rate is the percentage of currently married women

aged 15-49 using family planning (all methods). In 2001 it was 97 in Kerala, as reported by the Directorate of Health Services, Kerala which is the highest at the national level.

Total Fertility Rate

20.17 Total Fertility Rate, an indicator showing the prospect of population stabilisation is defined as the number of live births a woman would expect to deliver if she lives her productive years (age 15-49) and bears children at each age in accordance with the prevailing age specific fertility rates. The TFR in our State for 1995-97 was 1.8 which was the lowest at the national level. In 1999 it stood at 1.96 and in subsequent years also it has fluctuated around the above figure without any change in the position at the national level.

Table 20.2
Health Characteristics - Kerala

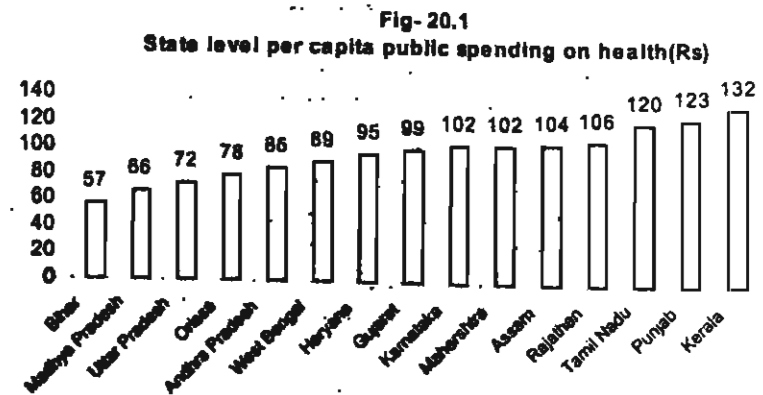
EXPECTATIONS OF LIFE AT BIRTH			IMR PER 000			DEATH RATE PER 000		
1996	2001	2002	1991	2001	2002	1997	2001	2002
69.80	73.33	73.33	12	N.A	11	6.20	N.A	6.4

BIRTH DELIVERED IN MEDICAL INSTITUTIONS (PER CENT)			COUPLE PROTECTION RATE (PER CENT)			TOTAL FERTILITY RATE (NO. OF CHILDREN)		
1999	2001	2002	1999	2001	2002	1997	2001	2002
93	97	97	N.A	65.98	65.98	N.A	1.96	N.A

OTHER HEALTH INDICATORS

Per capita Public Spending on Health

20.18 A World Bank Study in 2001 on the Indian Health Systems based on 15 major States in India reveals that there was steady increase in per capita public health spending levels. The Study shows that compared to other States, Kerala has the highest per capita public health expenditure. The Central and the State level per capita public spending on health made by 15 major States in India including Kerala is shown in figure: 20.1



Source : India Health Report

Average Total Expenditure per Hospitalisation

20.19 It is revealed by the 52nd NSS that the average total expenditure per hospitalisation at the National level in the Private sector was Rs. 4300 in rural areas and Rs. 5344 in urban areas and for the public hospitals it is Rs. 2080 for rural areas and Rs. 2195 for

HIV/AIDS Awareness

20.21 HIV today is the single largest infectious killer and the fourth leading cause of death in the world. In order to arrest the speedy spread of HIV it is essential to have intervention programmes by peer educators among high risk groups alongwith programmes for

raising awareness levels. Tamil Nadu has been the pioneer in implementing highly effective awareness campaigns and next comes Kerala in this case. The analysis of the details on the Statewise percentage of people who have heard of AIDS shows that Kerala, alongwith Tamil Nadu is at the top in this aspect which reflects the good awareness level of the people.

20.22 As per the Health Monitor 2003, 97% of males and 92% of females in Kerala are aware of AIDS. The District wise awareness level is given in Table. 20.5.

Table 20.3
Average Total Expenditure (Rs) Per Hospitalisation by Type of Hospital for Rural and Urban Areas of 15 Major States

STATE	RURAL			URBAN		
	Govt. Hospitals	Other Hospitals	All	Govt. Hospitals	Other Hospitals	All
Andhra Pradesh	2070	7822	6428	1310	7080	4886
Assam	2092	2003	1945	2201	7102	3790
Bihar	3488	4069	3860	2804	4512	3724
Gujarat	1465	3285	2663	1897	4185	3327
Haryana	2667	3496	3224	8888	5087	6537
Karnataka	1791	4100	2997	1564	4502	3593
Kerala	1616	2805	2293	1527	2254	1927
Madhya Pradesh	2207	3842	2191	1678	3889	2774
Maharashtra	1529	3836	3089	1439	5345	3997
Orissa	1681	2583	1641	2142	11829	3868
Punjab	3645	6171	4988	5436	6130	5712
Rajasthan	2634	3971	3038	2544	4949	3149
Tamil Nadu	751	4333	2840	934	5827	3934
Uttar Pradesh	4237	4521	4349	5191	6515	5896

Source : India Health Report

Table : 20.4

The Maternal care indicators in Kerala compared with the major 15 States in India 1998-99

urban areas. The survey results show that taking together all types of hospitals both in the private and public sectors the average total expenditure per hospitalisation in Kerala stood at Rs. 1927 which was the lowest among the 15 major States in India. (Table 20.3)

Maternal Care Indicators

20.20 The maternal care indicators such as percentage of birth delivered in medical institutions and the percentage of deliveries assisted by a health professional reveals the attainment level of the people in health aspects and the health consciousness. Kerala compares favourably with 15 major states, in the above two categories for 1998-99 and the trend continues in subsequent years. (Table 20.4)

INDIA/STATES	PERCENTAGE OF BIRTHS DELIVERED IN A MEDICAL INSTITUTION	PERCENTAGE OF DELIVERIES ASSISTED BY A HEALTH PROFESSIONAL
India	33.6	42.3
Andhra Pradesh	49.8	65.2
Bihar	14.6	23.4
Gujarat	46.3	53.5
Haryana	22.4	42.0
Jammu & Kashmir	35.6	42.4
Karnataka	51.1	59.1
Kerala	93.0	94.0
Madhya Pradesh	20.1	29.7
Maharashtra	52.6	59.4
Orissa	22.6	33.4
Punjab	37.5	62.6
Rajasthan	21.5	35.8
Tamil Nadu	79.3	83.8
Uttar Pradesh	15.5	22.4
West Bengal	40.1	44.2

Source : India Health Report

Table : 20.5
AIDS –Awareness - Kerala – 1998-99 (per cent)

DISTRICTS	MALES	FEMALES
Alappuzha	98.8	96.0
Ernakulam	98.8	95.2
Idukki	97.0	90.9
Kannur	98.2	92.8
Kasaragod	94.9	88.9
Kollam	96.3	90.9
Kottayam	96.6	97.4
Kozhikode	98.4	98.6
Malappuram	96.6	77.3
Palakkad	92.0	83.4
Pathanamthitta	96.9	95.6
Thiruvananthapuram	98.9	95.9
Thrissur	98.6	96.8
Wayanad	94.3	92.7
Kerala	97.1	92.0

Source : Health Monitor 2003.

Table 20.6
Number of Public and Private Hospitalisations
per 100000 persons

STATE	TOTAL
India	1653
<i>Group A: Under-five mortality less than 65</i>	
Kerala	7480
Maharashtra	2519
Tamil Nadu	2138
<i>Group B: Under-five mortality between 65 and 100</i>	
West Bengal	1441
Karnataka	1733
Punjab	1622
Haryana	2851
Gujarat	1711
Andhra Pradesh	1595
<i>Group C: Under-five mortality more than 100</i>	
Orissa	1320
Bihar	722
Rajasthan	1005
Uttar Pradesh	1004
Madhya Pradesh	1030

Source : India Health Report

Utilisation of Health Services

20.23 The access to health services and its effective utilisation results in better health outcomes. The utilisation rate in Kerala is high compared to other States. NSS data reveals that, at all India level 24% of the poorest quintile did not seek medical treatment when they are ill compared to 9% of the richest quintile. In Kerala as people have higher health seeking behaviour its utilisation of health services is comparatively high, which can be linked to its low mortality rates. A comparative study of the number of Public and Private hospitalisation per 100000 persons of 14 major States in India as shown in Table. 20.6 reflects the above fact.

OTHER INDICATORS OF ATTAINMENTS

Road Density

20.24 A good road connectivity especially in the rural areas with the sub divisional towns and District Head Quarters and other development centres/areas is a useful indicator of the inclusionary aspect of development process. Among all States in India, Kerala is at the top in terms of Road length per sq. kms and per lakh population. The Road Density which was 3495 in 1991-92 rose to 3543 in 2001-02 and further to 3556 in 2002-03. Even though Kerala has comparatively a comfortable road net work, it has to be viewed against the peculiar pattern of habitation

in the State, there are several habitations still unconnected. Kerala's road coverage is one of the factors behind its unique attainments on human and other indicators of development.

20.25 Road Density in terms of both area and population over the years is given in Table. 20.7

Access to Safe Drinking Water

20.26 As per the Census of India if a household has access to drinking water supplied from a tap or a hand pump/tube well situated within or outside the premises it is considered as having access to safe drinking water. The estimates in 1991 show that only 18.89 per cent of the total households in the State are having safe drinking water accessibility which rose to 23.39

Table 20.7
Road Density in km: Kerala

Years	Length in km per 1000 sq.km area	Length in km per one lakh population
1981-82	2571	410
1991-92	3495	467
2001-02	3543	432
2002-03	3556	434

per cent in 2001. But as per the report from the Kerala Water Authority as on April 2003, 64.02 per cent of the people in the State are having access to safe drinking water; which was 62.67 per cent during March 2002. A comparatively low percentage is shown in the Census report as it has not considered for estimation a good number of households who are meeting the drinking water requirements away from their houses

20.27 Details on the access to safe drinking water over the years is given in Table 20.8

Confederation of Indian Industries Study of States

20.28 A recent study conducted for the *Confederation of*

Table 20.8
Access to Safe drinking water
(Per cent of households) Kerala.

Years	Rural	Urban	Combined
1991	12.22	38.68	18.89
2001	..	..	23.39
2002*	57	78.50	62.67
2003*	58.59	79.17	64.02

* Percentage of Population covered

Indian Industries on the performance of different States in 14 selected categories of performance indicators throws light on the achievements made by Kerala in various development variables compared to other States. The Survey findings on the relevant indicators of Kerala are summarised below.

Infrastructure Penetration

20.29 The Infrastructure Penetration shows the spread of infrastructure within a state, which includes transport, communication and energy sectors. Water supply is also included under this category. Considering that the transport related variables include road length and rail route length (normalised by the total area of the State) and percentage of villages connected with pucca roads, electricity and water supply net working and the number of telephone connections, Kerala, alongwith Tamil Nadu, Maharashtra, Punjab and Karnataka gets 'A' ranking and rating 2.5. See

Table 20.9

Workforce Quality

20.30 The quality of the workforce includes the literacy rate of the population and is used as the basic measure of the quality of the workforce. The process of industrialisation and the development of information technology warrants the need for getting the labourforce more skilled. Alongwith Himachal Pradesh and Tamil Nadu, Kerala is at the top in this category also with Ranking A and rating 1.5. Table 20.9

Social Well-being

20.31 The Social well-being of the people, one of the basic indicators of economic performance assessed for the large 20 States in India based on the analysis of four sets of issues such as basic education levels, gender bias, health and general awareness shows that Kerala gets the highest rating and ranking and Maharashtra comes next to Kerala. Basic education is reflected in literacy levels, gender bias is reflected in female literacy rates, the health indicators are reflected in the proportion of children immunised and

Table 20.10
Mass Media Penetration
The performance of major 20 States in India

VARIABLE/UNIT	RADIOS/1000 HHDS	CABLE TV/1000 HHDS	NEWS PAPERS/POP. IN 000	LITERACY (%)
Large States				
Andhra Pradesh	262.9	191.5	15.4	61.1
Assam	522.4	12.9	17.6	64.3
Bihar	-	-	-	47.5
Chhattisgarh	-	-	-	65.2
Gujarat	264.1	188.2	46.0	70.0
Himachal Pradesh	-	-	21.1	77.1
Haryana	313.8	76.9	3.7	68.6
Jammu & Kashmir	-	-	33.4	54.5
Jharkhand	-	-	-	54.1
Karnataka	439.0	140.4	30.8	67.0
Kerala	660.1	67.7	62.3	90.9
Madhya Pradesh	-	-	-	64.1
Maharashtra	278.5	162.4	43.5	77.3
Orissa	194.9	18.1	31.4	63.6
Punjab	279.0	85.8	52.8	70.0
Rajasthan	238.3	58.0	-	61.0
Tamil Nadu	466.0	151.8	45.4	73.5
Uttar Pradesh	-	-	-	57.4
Uttaranchal	-	-	-	72.3
West Bengal	413.6	35.8	32.7	69.2
Bihar + Jharkhand	303.9	8.4	9.0	64.1
MP + Chhattisgarh	191.2	72.3	10.2	64.4
UP + Uttaranchal	248.4	24.6	19.6	58.1

Source : Report of the Study for the Confederation of Indian Industries

Table - 20.9
**RANKING AND RATING FOR MAJOR 20 STATES IN INDIA BASED ON
 THE PERFORMANCE IN SOME DEVELOPMENT INDICATORS**

States	Infrastructure Penetration		Workforce Quality		Social Well being		Law and Order		Mass Media Penetration		High Value Agriculture		Personal Finance		Affluence		General Achievement	
	Ranking	Rating	Ranking	Rating	Ranking	Rating	Ranking	Rating	Ranking	Rating	Ranking	Rating	Ranking	Rating	Ranking	Rating	Ranking	Rating
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Kerala	A	2.5	A	1.5	A	4	A	3.1	B	2.5	A	1.4	A	2.7	A	2.6	A	2.7
Himachal Pradesh	B	1.6	A	1.5	B	3	B	2.2	B	2.4	A	1.5	B	2.2	A	2.5	C	1.7
Punjab	A	2.5	C	0.7	B	2.4	D	0.9	B	2.1	C	0.9	A	2.9	A	2.3	A	2.7
Haryana	B	2	C	0.8	C	2.2	B	1.6	C	1.4	C	0.7	B	2.1	B	2.3	A	2.5
Jammu & Kashmir	C	1.5	B	1.2	E	0.9	C	1.3	C	1.4	A	1.5	B	2	C	1.9	B	2.3
Maharashtra	A	2.8	B	1	A	3	B	1.9	B	2.5	B	1	A	2.6	C	1.8	A	2.7
Uttaranchal	B	2	B	1	B	2.6	C	1.1	C	1.9	C	0.7	B	2.1	C	1.8	B	2.1
Karnataka	A	2.4	C	0.8	C	2.2	B	2	B	2.3	B	1.2	B	1.9	C	1.7	B	2.5
Gujarat	A	2.3	B	1.1	C	2.4	B	2.3	B	2.5	C	0.8	B	2.1	C	1.7	A	2.5
Tamil Nadu	A	2.6	A	1.4	B	2.7	B	2.7	B	2.6	A	1.3	C	1.6	C	1.6	A	2.7
Rajasthan	C	1.3	D	0.4	D	1.5	B	2.2	C	1.5	D	0.4	D	1.3	C	1.5	C	1.4
Andhra Pradesh	B	2.1	C	0.9	D	1.6	C	1.4	B	2.1	B	1.2	D	1.4	D	1.3	B	2.3
Uttar Pradesh	C	1	D	0.4	D	1.2	D	0.9	D	1.2	E	0.1	D	1.2	D	1.2	D	1
West Bengal	B	2	D	0.3	C	2.4	C	1.3	C	1.5	D	0.4	C	1.6	D	1.1	C	1.6
Madhya Pradesh	C	1.2	C	0.6	D	1.8	B	2.3	D	1.1	C	0.5	B	1.1	D	0.8	C	1.4
Jarkhand	D	0.6	C	0.4	E	0.8	D	0.9	D	1	C	0.8	D	1.3	D	0.5	D	0.7
Orissa	D	0.8	D	0.4	D	1.8	B	2.1	D	0.8	C	0.7	D	0.5	E	0.5	D	0.8
Chattisgadh	C	1.1	C	0.8	D	2	B	2.2	D	1	C	0.7	D	0.8	E	0.4	C	1.4
Assam	C	1.1	C	0.8	D	1.9	D	0.4	D	0.8	C	0.6	D	1	E	0.3	C	1.3
Bihar	E	0	E	0	E	0	D	0.9	D	0.1	E	0.2	D	0.7	E	0	E	0

Source: Report of the Study for the Confederation of Indian Industries

the availability of safe drinking water and the general awareness is reflected in newspaper sold, normalised by the population. See Table 20.9

Mass Media Penetration

20.32 The mass media penetration concept considers the outreach of media to the masses. It includes the penetration of mass media such as TVs, Cable TVs, Radios, News papers, supplemented by the literacy levels. In this category both audio and visual media are considered. In the visual media the number of cable connections per thousand households and in the audio media the number of radios per thousand households are used. Also newspapers sold per thousand households is used and as the literacy levels affect the reach of media to the masses it is also included.

20.33 Alongwith the major eight States Kerala is at the top with ranking B and the rating 2.6.

20.34 The performance of 20 major States in the above category is shown in Table. 20.10

High Value Agriculture

20.35 As a substantial portion of National Income is generated by the Agricultural Sector the performance of this sector is counted much for assessing the overall performance of the economy. Apart from the agriculture in general, the study considered high value agriculture which means production for purposes other than direct consumption or subsistence. This involves the production of cash crops. Proportion of land devoted to production of fruits and nuts, vegetables, cotton, oilseeds and other cash crops is included in this category. The yield per hectare is also taken in to account as the basic measure of production.

20.36 High value Agriculture is both the result of inherent potential as well as efforts to produce non-traditional categories. Kerala is at the top alongwith Himachal Pradesh and J & K with Ranking A and Rating 1.4 in this category. A detailed picture of the high value agriculture in the major 20 States including Kerala and its position are given in table. 20.11

Table 20.11
High Value Agriculture

Variable	Yield per hectare	Area under hvy/gross area sown	Area under vegetables/area under all crops	Area under fruits and nuts/area under all crops	Area under other cash crops/area under all crops	Area under oil seeds/area under all crops	Area under cotton/area under all crops
Unit	000 tonnes	%	%	%	%	%	%
Andhra Pradesh	2003.0	28.8	1.3	2.1	10.2	3.3	1.6
Assam	1288.0	39.9	11.8	0.3	0.4	1.1	0.0
Bihar	-	-	-	-	-	-	-
Chattisgarh	-	-	-	-	-	-	-
Gujarat	1426.0	24.1	1.7	0.6	19.2	4.0	2.2
Himachal Pradesh	1766.0	69.0	1.9	4.8	3.7	0.2	-
Haryana	2700.0	54.8	0.8	-	6.0	1.3	1.4
Jammu & Kashmir	1728.0	46.2	5.6	6.6	0.5	0.9	0.0
Jharkhand	-	-	-	-	-	-	-
Karnataka	1352.0	9.9	0.7	1.8	7.8	2.8	0.7
Kerala	1768.0	7.9	2.7	16.5	44.2	0.1	0.1
Madhya Pradesh	-	-	-	-	-	-	-
Maharashtra	974.0	-	1.7	1.6	17.3	2.3	2.8
Orissa	1080.0	46.2	1.7	0.2	0.8	1.0	0.1
Punjab	3741.0	77.3	0.6	0.3	13.2	0.4	1.1
Rajasthan	961.0	17.3	0.2	0.1	7.4	2.6	0.4
Tamil Nadu	2278.0	56.5	2.7	5.2	9.1	3.8	0.7
Uttarpradesh	-	-	-	-	-	-	-
Uttaranchal	-	-	-	-	-	-	-
West Bengal	2198.0	56.6	7.7	0.5	7.5	1.0	0.0
Bihar + Jharkhand	1441.0	76.9	2.4	0.1	0.9	0.2	-
MP + Chhattisgarh	1113.0	32.4	1.1	0.1	2.8	2.9	0.2
UP + Uttaranchal	1957.0	59.6	2.2	0.4	1.4	0.6	0.0

Source : Report of the Study for the Confederation of Indian Industries

Law and Order

20.37 The analysis of the Law and order conditions, a combination of low crime and a good justice mechanisms of major 20 States in India throws light on the performance of them in this category. Murders per reported crime, violence against females, economic crimes and the human rights violations have been considered as the measures of crime. The study reveals that Kerala scores the Ranking A with the highest rating in the achievement of good performance in this category – low crime and good justice mechanism.

Personal Finance

20.38 This category emphasises the financial activity of the individual and household. Whatever be the occupation or educational profile of a household or individual, personal finance is one of the key activities. The basic financial activity at the individual and household level is savings. Bulk of the savings may be held as deposits in banks and post office accounts. The extent of financial activity is measured by number of accounts held by individuals in commercial banks normalised by the population.

20.39 Punjab leads this category followed by Kerala and Maharashtra among the major States. Kerala's position in this category is at the top with ranking A and rating 2.7. See Table 20.9

Affluence

20.40 Affluence as a concept is based on the ability of households to purchase more than basic necessities. The proportion of affluent households has been calculated on the basis of proportion of expenditure spent on non-basic commodities.

20.41 For the size of its population, Kerala has the highest affluence levels. Among the major 20 States, Kerala has got ranking A and rating 2.6 in this category. See Table. 20.9

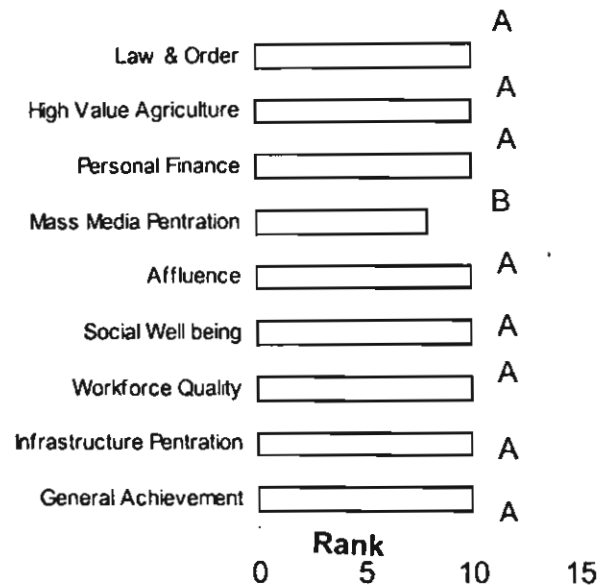
General Achievement

20.42 This category deals with the overall achievements of the State. As the State GDP is the most important determinant in this category it is taken into account by using per capita GSDP. General achievement reflects the strength of the economy, employment opportunities generated, distributional aspects of the economy and Government Finance. Alongwith larger States of Punjab, Maharashtra and Tamil Nadu. Kerala is also at the top with ranking A and rating 2.7, in this category. Table.20.9

20.43 Ranking of Kerala among major 20 states based on the selected development indicators is given in Figure : 20.2

Fig 20.2

Ranking of Kerala among large 20 States in selected development indicators



Source : Report of the Study for the Confederation of Indian Industries

Magnitude of Child Labour

20.44 Child Labour is a social problem which deprives children of their childhood and their dignity and is detrimental to their health, education and more importantly in developing capabilities and availing opportunities as normal individuals in the society. As per the 1991 Census there were 11.28 million child workers in India in age group of 5 – 14 years. At the national level for both boys and girls incidence of child labour was 5.4 per cent which was 7.6 per cent.

20.45 The state data for 1981 revealed that the working children and the 'no where children' together ac-

count for nearly two thirds of the total children in some states but in certain better off states this ratio was between 40-45 per cent but was just 19.2 per cent in Kerala. In 1991 also this proportion in Kerala is much lower than national levels.

20.46 Child labour is closely related to the school dropout rates. Wherever dropout rates are high at the primary and middle levels, incidence of child labour is high. Kerala has the lowest dropout rates and it has the lowest incidence of child labour, which reflects the effectiveness of the socio economic synergies in the state in addressing the problem of child labour.

Micro credit

20.47 The socio economic empowerment initiatives under Kudumbashree in Kerala have been emerged as a hope for the millions of rural poor, who have remained without having much role in the development efforts and decision making chance for participating the development process. As at the end of 2001 more than 30,000 SHGs have been formed, of which 9625 have been provided with the bank loan of Rs. 19.17 crore and NABARD refinance for Rs. 9.52 crore. As on November 2003 the number of SHGs formed has increased to 74,000 of which 25,918 have been provided with the bank loan of Rs.83.27 crores and NABARD refinance for Rs. 31.21 crores. This initiative has contributed largely to poverty reduction in the rural areas in the State.

Basic Issues in Human Development in Kerala

20.48 Kerala's achievement in Human Development indicators in comparison with other States clearly shows the exceptional nature of its development. HDR 1996 observed that the record of economic growth and the human development over the past thirty years shows that no country can follow a course of lopsided development for such a long time where economic growth is not matched by advances in human development or vice versa. Very high unemployment exists in Kerala along with shortage of labour for agriculture and certain types of manual and skilled work. The problem of labour redundancy in traditional sectors is still a serious issue in the State.

20.49 Along with the above basic issues Kerala is facing second generation challenges on the Human Development front. The growing old age population due to the demographic transition in the State and the changing pattern of diseases caused by shifting age structure of population, poses new problems in providing health care and social security. As the State economy could not generate enough revenue to finance and maintain its social development maintenance and upgradation of quality of the services have affected badly. The growing affluence and high consumption by increasing sections of the people (substantially triggered by remittances over a long period of years and their multiplier effect) leads to certain adverse aspects through its demonstration effect. To 'keep up with the Joneses', relatively poorer sections borrow more and more for consumption and get indebted beyond their repaying capacity. Suicide rates in Kerala are amongst the highest in the country. The deterioration of the environmental quality poses severe threat to the health of individuals, their longevity and on quality of life. As the environmental indicators have a direct bearing on the quality of life and at the same time affect sustainability of growth process and hence well-being of the people, the challenge it poses has to be specifically considered. Also deficiencies in governance in the State poses challenges to the service delivery mechanism which has implications for Human Development.

Box -20.3

Conceptualising Governance UNDP Approach

Governance is viewed as the exercise of political economic and administrative authority in the management of a country's affairs at all levels. It comprises mechanisms processes and institutions through which citizens and groups articulate their interests, exercise their legal right, meet their obligations and mediate their differences.

Source: National Human Development Report - 2001

Law and Order

20.37 The analysis of the Law and order conditions, a combination of low crime and a good justice mechanisms of major 20 States in India throws light on the performance of them in this category. Murders per reported crime, violence against females, economic crimes and the human rights violations have been considered as the measures of crime. The study reveals that Kerala scores the Ranking A with the highest rating in the achievement of good performance in this category – low crime and good justice mechanism.

Personal Finance

20.38 This category emphasises the financial activity of the individual and household. Whatever be the occupation or educational profile of a household or individual, personal finance is one of the key activities. The basic financial activity at the individual and household level is savings. Bulk of the savings may be held as deposits in banks and post office accounts. The extent of financial activity is measured by number of accounts held by individuals in commercial banks normalised by the population.

20.39 Punjab leads this category followed by Kerala and Maharashtra among the major States. Kerala's position in this category is at the top with ranking A and rating 2.7. See Table 20.9

Affluence

20.40 Affluence as a concept is based on the ability of households to purchase more than basic necessities. The proportion of affluent households has been calculated on the basis of proportion of expenditure spent on non-basic commodities.

20.41 For the size of its population, Kerala has the highest affluence levels. Among the major 20 States, Kerala has got ranking A and rating 2.6 in this category. See Table. 20.9

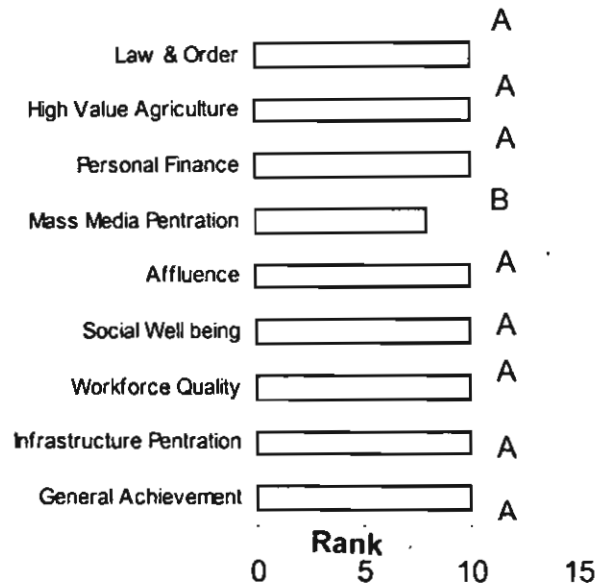
General Achievement

20.42 This category deals with the overall achievements of the State. As the State GDP is the most important determinant in this category it is taken into account by using per capita GSDP. General achievement reflects the strength of the economy, employment opportunities generated, distributional aspects of the economy and Government Finance. Alongwith larger States of Punjab, Maharashtra and Tamil Nadu. Kerala is also at the top with ranking A and rating 2.7, in this category. Table.20.9

20.43 Ranking of Kerala among major 20 states based on the selected development indicators is given in Figure : 20.2

Fig 20.2

Ranking of Kerala among large 20 States in selected development indicators



Source : Report of the Study for the Confederation of Indian Industries

Magnitude of Child Labour

20.44 Child Labour is a social problem which deprives children of their childhood and their dignity and is detrimental to their health, education and more importantly in developing capabilities and availing opportunities as normal individuals in the society. As per the 1991 Census there were 11.28 million child workers in India in age group of 5 – 14 years. At the national level for both boys and girls incidence of child labour was 5.4 per cent which was 7.6 per cent.

20.45 The state data for 1981 revealed that the working children and the 'no where children' together ac-

count for nearly two thirds of the total children in some states but in certain better off states this ratio was between 40-45 per cent but was just 19.2 per cent in Kerala. In 1991 also this proportion in Kerala is much lower than national levels.

20.46 Child labour is closely related to the school dropout rates. Wherever dropout rates are high at the primary and middle levels, incidence of child labour is high. Kerala has the lowest dropout rates and it has the lowest incidence of child labour, which reflects the effectiveness of the socio economic synergies in the state in addressing the problem of child labour.

Micro credit

20.47 The socio economic empowerment initiatives under Kudumbashree in Kerala have been emerged as a hope for the millions of rural poor, who have remained without having much role in the development efforts and decision making chance for participating the development process. As at the end of 2001 more than 30,000 SHGs have been formed, of which 9625 have been provided with the bank loan of Rs. 19.17 crore and NABARD refinance for Rs. 9.52 crore. As on November 2003 the number of SHGs formed has increased to 74,000 of which 25,918 have been provided with the bank loan of Rs.83.27 crores and NABARD refinance for Rs. 31.21 crores. This initiative has contributed largely to poverty reduction in the rural areas in the State.

Basic Issues in Human Development in Kerala

20.48 Kerala's achievement in Human Development indicators in comparison with other States clearly shows the exceptional nature of its development. HDR 1996 observed that the record of economic growth and the human development over the past thirty years shows that no country can follow a course of lopsided development for such a long time where economic growth is not matched by advances in human development or vice versa. Very high unemployment exists in Kerala along with shortage of labour for agriculture and certain types of manual and skilled work. The problem of labour redundancy in traditional sectors is still a serious issue in the State.

20.49 Along with the above basic issues Kerala is facing second generation challenges on the Human Development front. The growing old age population due to the demographic transition in the State and the changing pattern of diseases caused by shifting age structure of population, poses new problems in providing health care and social security. As the State economy could not generate enough revenue to finance and maintain its social development maintenance and upgradation of quality of the services have affected badly. The growing affluence and high consumption by increasing sections of the people (substantially triggered by remittances over a long period of years and their multiplier effect) leads to certain adverse aspects through its demonstration effect. To 'keep up with the Joneses', relatively poorer sections borrow more and more for consumption and get indebted beyond their repaying capacity. Suicide rates in Kerala are amongst the highest in the country. The deterioration of the environmental quality poses severe threat to the health of individuals, their longevity and on quality of life. As the environmental indicators have a direct bearing on the quality of life and at the same time affect sustainability of growth process and hence well-being of the people, the challenge it poses has to be specifically considered. Also deficiencies in governance in the State poses challenges to the service delivery mechanism which has implications for Human Development.

Box -20.3

Conceptualising Governance UNDP Approach

Governance is viewed as the exercise of political economic and administrative authority in the management of a country's affairs at all levels. It comprises mechanisms processes and institutions through which citizens and groups articulate their interests, exercise their legal right, meet their obligations and mediate their differences.

Source: National Human Development Report - 2001

INFORMATION TECHNOLOGY

Information and Communication Technology (ICT) sector in the State made significant advances in the year ending March 2003. All round progress in ICT sector was recorded in terms of investments, infrastructure development and employment generated in ICT sector through focused initiatives of the IT Department.

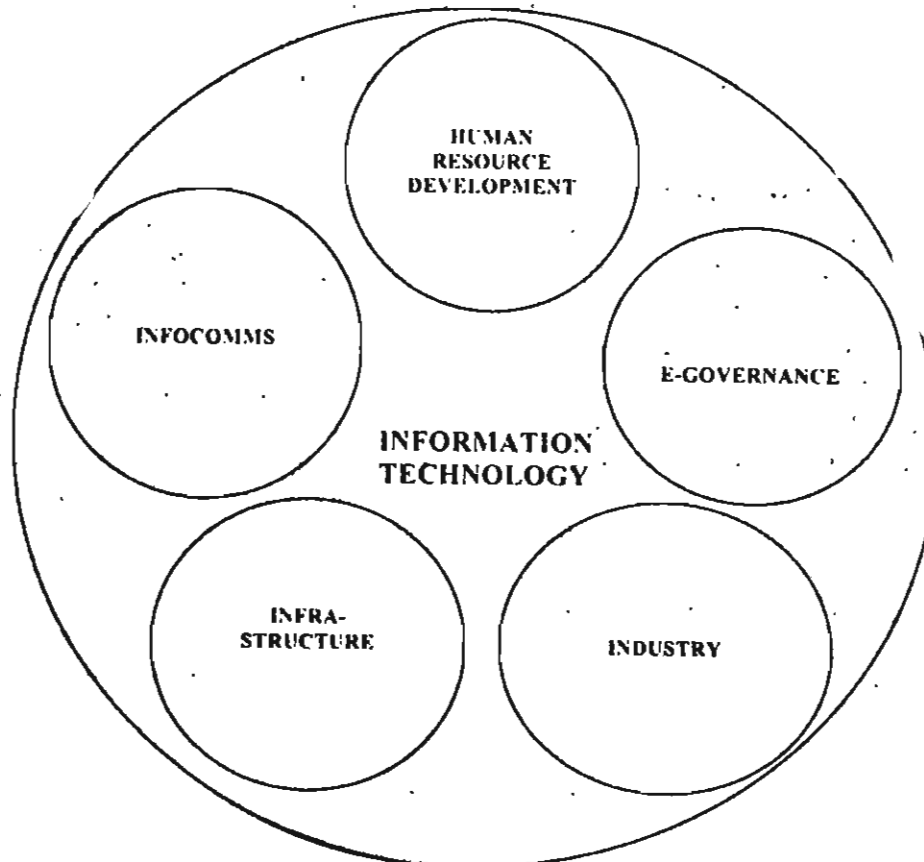
21.2 The State improved its positioning as a destination of choice for ICT investments backed by increased investor confidence, better IT physical infrastructure, manpower availability particularly in BPO and IT Enabled Services (ITES). The year also witnessed a major ICT initiative under bridging the digital divide program, viz. 'Akshaya Project' setting a direction for

SME (Small & Medium Enterprises) activities in ICT in rural areas in the state.

21.3 Kerala has core strengths to emerge an IT leader especially in the area of ITES. Kerala's traditional strengths like total literacy and high density of telecom usage make it a fertile ground for IT to thrive.

21.4 Overall, the investments in ICT sector in the State cover five major categories viz. (1) Infocomms (Telecoms), (2) Infrastructure, (3) Industry (Hardware & Software) (4) Human Resource Development and (5) E-Governance.

Fig 21.1
Investment Areas in IT



21.5 It is estimated that about 80,000 people are directly or indirectly employed in ICT related activities in the State. The total investments in the ICT sector over the last four years is estimated to be roughly Rs. 5,000 crores.

1. Infocomms

21.6 For the Infocomm sector, it was a year of consolidation of its infrastructure, backed with launch of new services and rapid expansion in the cellular/mobile phones segment. Investments of major Infocomm companies viz. Reliance, Bharti and Asianet availing the Rights of Way Policy and on-going support extended to build a wired state, touched nearly Rs. 3,000 crores. Asianet joining hands with Bharti laid Optical Fibre Cable (OFC) for additional length of 500 Kms in the State. Leading Infocomm investor, VSNL also expanded its facilities in Kochi. With international bandwidth availability of SEA-ME-WE 3 and SAFE. Kochi continues to be the bandwidth surplus city in the region, improving the prospects of setting up bandwidth intensive ITES companies in the State because of its high quality international connectivity with the lowest noise levels the direct OF connectivity planned from VSNL hub. Seventy percent of India's data traffic flows through Kochi. In terms of cost, SAFE brings tremendous advantage to the state.

21.7 The annual turnover of this sector is estimated to be approximately Rs. 1,800 crores which is to grow rapidly once the data lines on the new Optic Fibre infrastructure is fully commissioned.

2. Infrastructure

21.8 Creation of IT Infrastructure in terms of built up space matching with the demand from companies in ICT/ITES industry is of prime focus. The State has a total built up space of 1.5 Million sq.ft in Technopark Thiruvananthapuram, 1 Lakh in SDF Building in Kochi, KEPIP Park. Plans to build 200,000 sq. ft of premium space in Kochi are under way. Private sector also has come forward to invest in creating space for IT purpose of about 330,00 sq. ft in Kochi alone. To benefit the startup companies, 20,000 sq. ft space was created in Kochi in ITES Habitat, which is also functioning as an incubator.

Electronic Technology Parks – Kerala (Technopark)

21.9 Technopark was established for the development of electronics and Information Technology in the State. Now the Campus at Thiruvananthapuram covers an area of 184.72 acres. The park has a built up space of 12,12,000-sq. ft. of which 7,73,655 sq. ft. has been allotted to 55 companies. Balance area of 4,38,345-sq. ft. is still un-allotted as detailed in Table 21.3.

**Table 21.1
OFC Infrastructure**

CONNECTIVITY	
OFC Cable laying (length – km)	Achievement
Upto previous year	
Reliance	2413
Bharti	917
Asianet	310
Bharti+Asianet	325
Kochi-SEA-ME-WE 3 bandwidth availability By VSNL	Expansion works
BSNL	1111 digital exchanges
During 2002-03 Bharti + Asianet	500
Investment (Rs cr.)	
Upto March 2002	2500
During 2002-03	500
Upto March 2003	3000

Source: IT Department

Table 21.2
IT Infrastructure

Infrastructure created	Cumulative upto March 2002	During 2002-03	Cumulative upto March 2003
TRIVANDRUM			
Technopark			
Land (acres)	182*		182*
Built up area(Sq. ft.)	1,500,000		1,500,000
Investment (Rs. Cr.)	140.00	5.00	145.00
KOCHI			
KEPIP / InfoPARK			
Land (acres)	180	80	260
Built up area(Sq. ft.)	100,000	200,000	300,000
Investment (Rs. Cr.)	15.00	20.00	35.00
Park Infrastructure Investment (Rs. Cr.)	15.00	5.00	20.00
ITES Habitat			
Built up area(Sq. ft.)	...	20,000	20,000
Investment (Rs. Cr.)		2.00	2.00
MALAPPURAM			
KITEL Park			
Land (acres)	10		10
Investment (Rs. Cr.)	10.00	3.00	13.00
Total			
Land (acres)	372	80	452
Built up area(Sq. ft.)	16,00,000	2,20,000	18,20,000
Investment (Rs. Crores)	180.00	35.00	215.00

* Includes 26 acres at Aakkulam.

Source: IT Department.

Table 21.3
Built up space in Technopark

Year	Total Space available (cum.) (sq. Ft.)	No. Of Companies	Area allotted (cum.) (sq. Ft.)	Balance unallotted (cum.) (sq. Ft.)
1994-95	70963	5	12696	58267
1995-96	70963	4	33912	37051
1996-97	70963	3	55860	15103
1997-98	363563	4	75924	287639
1998-99	363563	1	88924	274639
1999-00	363563	10	162156	201407
2000-01	407563	9	310126	97437
2001-02	536563	4	368531	168032
2002-03	1212000	15	773655	438345
Total	1212000	55	773655	438345

Source: Technopark

21.10 Currently 55 companies operating at the campus provide direct employment to around 4500 professionals. Tata Consultancy Service provides training to 1500 software engineers. Government of Kerala so far released an amount of Rs.88.80 crores to Technopark, which has been fully expended. A total investment of Rs.194.06 crores was made by the companies in the park. (Foreign investment Rs.96.55 crores NRI Rs.59.63 crores and domestic Rs.30.88 crores) and this would be further classified as hardware Rs.20.00 crores and software/IT Rs.174.06 crores. The total turn over of these companies comes to Rs.208.20 crores. Details are given in Table 21.4.

Software Technology Parks of India – Thiruvananthapuram

21.12 Software Technology Park (STP) Scheme is a 100% export oriented scheme for the development and export of software. The major attraction of this scheme is single point contract service to the STP units. Because of the low investment requirement (Rs.5 lakhs) and incubation facility in the STPI-T complex it has been one of the most favourable locations for the small and medium level export oriented companies. STPI-T has its own Satellite Earth Station at Technopark

Table 21.4
Turnover of Companies in Technopark

Particulars	Foreign turnover	Nri turnover	Domestic turnover	Total turnover
Software/IT Turnover	83.25	77.00	27.95	188.20
Hardware	20.00	-	-	20.00
Total	103.25	77.00	27.95	208.20

Source: Technopark

21.11 Technopark has State-of-the Art facility.

Box -21. 1

Major Facilities Available in Technopark

- Built up space of 11,62000 sq.ft.
- Uninterrupted Power Supply
- Water supply with treatment plant
- Telecom services with 1000 lines exchange
- Data cum facilities from STPI-T, VSNL, BPL,Net.com, Asianet Data com, DDC Net, BSNL , Kelnet, I-Serve India Solutions Pvt. Ltd., Escotel, Relevance.
- Convention Centre with auditorium Conference hall, library, Technopark Business Incubator Centre etc.
- Direct OFC connectivity from Technopark to Kochi International gateway with 3 submarine cable landy's.

Initiatives of Technopark during 2002-03

- Technopark participated in Gitex 2002 held in Dubai.
- Technopark was host for IT Kerala 2002, an international level exhibition. An ICT Exposition and International Convention was conducted.
- Participated in the IT cum contribution held in Bangalore.
- Technopark Software Engineering Competency Centre (TSECC) was set up.
- Talenttrac is a joint initiative of Technopark and Kerala University.
- A workshop on HR Planning for IT enabled services was conducted jointly by Technopark and Kerala University.

campus for providing High-Speed Point-to-Point data circuits and internet facilities to the Software Exporting company under STPI. STPI-T has also started a networking station at Kinfra Park, Kochi for providing data com services to the software exporting units operating at Kochi.

21.13 During the year 2002-03 twenty seven units have been registered under STPI-T and the export was for Rs.165 crores sharing steady growth in software exports from Kerala.

3. IT Industry (Hardware & Software)

21.14 IT hardware sector (assembling and components) also recorded healthy growth in the year 2002-03. Domestic IT hardware turn over for the year closed at approximately Rs. 400 crores in 2002 -2003. In the period, 2002 - 2003, total export turn over in hardware and software was about Rs.315.00 crores.

21.15 For 2002-2003, the export turn over in hardware is estimated to be Rs. 180.00 crores. This turnover is mostly coming from the 100% EOU units in the Cochin Export Processing Zone (CEPZ).

21.16 The year 2002-2003 witnessed entry of major companies like RM Plc, Mckinsey & Company, Sherston Educational Software, BNS software and E&Y in Technopark. The Indian Software major Infosys announced its investment plans to set up a development center in Trivandrum, Kerala. 55 Companies operate out of Technopark employing over 6,000 IT professionals with a turnover of about Rs. 270 crores. In quality Certifications, Technopark companies made significant advances. There are five Capability Maturity Model (CMM) Level 5 and two CMM Level 3 companies. Several companies have secured ISO 9001 certification. Technopark instituted Software Engineering Competency Centre to facilitate exposure to quality development methodologies in Software Development. Technopark companies recorded robust growth of about 18% in the year.

21.17 There are 267 companies in the State registered with the STPI (including 42 Technopark

companies) and it is estimated that these companies posted an export turnover of Rs.165 crores in the last year. 30 Companies registered with Cochin Special Economic Zone contributed an export of over Rs.150 crores employing about 3,000 people.

21.18 The Investment Promotion and Management Cell (IPMC) has been facilitating investments in the State supporting companies in terms of extending promotional incentives and providing investment guidelines. IPMC coordinates with the Government for grant of necessary clearances to the investors and completion of technical formalities at different levels. The IT department facilitated the IT industry disbursing incentives to the tune of Rs.180 lakhs in accordance with the IT policy. In the year 2002-2003, 90 companies registered with IPMC.

21.19 Addressing the pressing need of the ITES employers in sourcing the people with the right skill sets for employment, Department of IT initiated ITES training program in the current year. The object of this activity is to make available highly skilled, promptly employable set of human resources to the ITES industry. Pilot programs were rolled out with the support of British Council for English language training, Karrox Technologies etc. for delivery of industry specific training, based out of ITES habitat at Jawaharlal Nehru International Stadium complex, Kochi. A broad-based roll out of the program is currently in discussion with NASSCOM that will involve IT/ITES majors and Educational Institutions.

21.20 Hardware assemblers and vendors in the state occupy a major space in Kerala's IT Industry scenario and employ close to 20,000 people. There are about 2,750 small-scale enterprises in the state under this category. About 350 Small and Micro Software Enterprises in IT sector account for a turnover of over Rs.40 crores. This sector employs about 4,000 IT professionals statewide.

Table 21.5
IT Industry Status 2003

IT Companies – Software Technology Parks of India (STPI) – Trivandrum	No of Industrial units	Employment (No. of persons)	Domestic Turnover (Rs. Cr.)	Exports Turnover (Rs. Cr.)
Technopark STPI companies	42			
Non Technopark STPI companies	225	2,350		
Total STPI Companies	267		1.40	165.00
IT Companies – Technopark				
STPI registered	42			
Non-STPI registered	13			
Technopark Total	55	6000		
CSEZ – Kochi Companies				
EOU Software	4			
SEZ Unit Hardware	14			130.00
SEZ Unit Software	12			20.00
SEZ Total	30	3000		150.00
Hardware Assembly/ Vendors	2,750	20,000	550.00	
Software Developers (Small & Micro)	350	4000	40.00	
Grand Total - IT Industries	3425	35350	591.40	

Source: IT Department

Exports from Kerala

21.21 Details of IT exports for the period from 99-2000 to 2002-03 are furnished in Table 21.6 & 21.7.

21.22 South India contributes to 56% of exports of software in the country. Kerala's share is very meager as can be seen in the graph.

Table 21.6
Software Exports (Rs Crores)

Financial year	Stpi units	Units in cepz	Total
1999-2000	66.64	1.63	68.27
2000-2001	112.37	5.38	117.75
2001-2002	150.00	12.84	162.84
2002-2003	165.00	20.00	185.00

Source: IT Department

Table 21.7
Hardware Exports (CEPZ Units) (Rs Crores)

Financial Year	Total
1999 – 2000	120.81
2000 – 2001	157.84
2001 – 2002	113.43
2002-2003	130.00

Source: IT Department

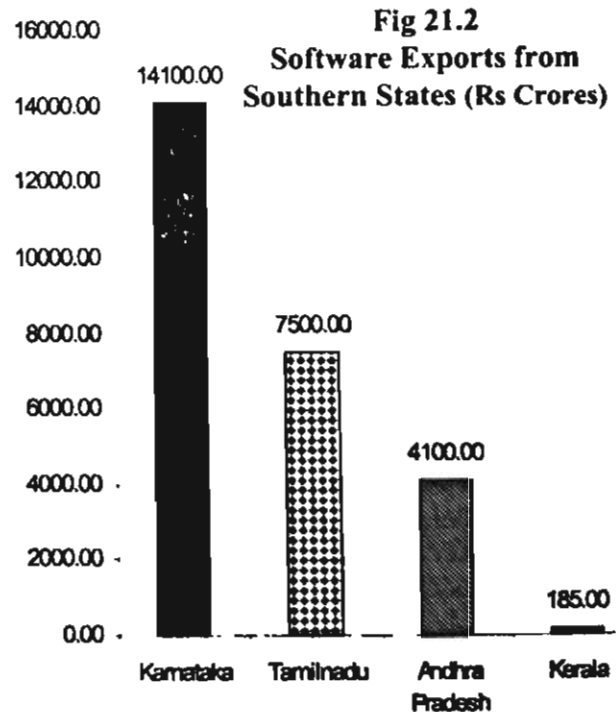
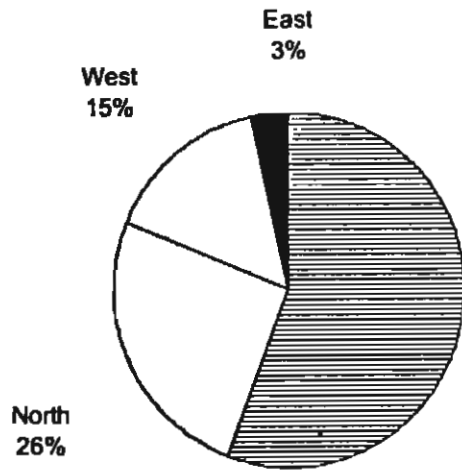


Figure 21.3
Software Exports from India 2002-03



4. Human Resource Development

21.23 The State has about 2,300 IT training institutes and close to 3,400 Internet cafes/DTP centres. About 9,200 IT professionals are employed in the Training Industry which accounts for a turnover of Rs. 48 crores. About 4,500 people find employment in Internet cafes.

Table 21.8
No. of Training Institutions, Employment & Investment

Training/ Cafés/ DTP Centres	Number of Units	Employment created (No. of persons)	Investment (Rs crores)
Training Institutes	2,300	9,200	48.00
Internet Café/ DTP Centres	3,400	4,500	40.00
Total	5,700	13,700	88.00

Source: IT Department

21.24 Buoyancy in ICT sector in terms of hardware, software, training etc. was clearly evident in the year, due to increasing number of educa-

Table 21.9
Growth of Internet Service Providers in Kerala

Financial Year	Active ISPs
2000 - 2001	4
2001 - 2002	6
2002 - 2003	7
2003 - 004	7

Source: IT Department

tional institutions including schools setting up IT laboratories.

5. E-Governance

21.25 FRIENDS (Fast Reliable Instant Efficient Network for Disbursement of Services), the flagship people-oriented project initiated by the IT Department has expanded to cater the requirements at all 14 district headquarters. FRIENDS seeks to extend the benefits of full fledged computerisation of individual departments to the citizens, even before the whole backend computerization is completed. Operating from an aggregate office space of over 25,000 sq. ft at prime locations, collections in FRIENDS centres has been growing steadily almost at 100% every year since its start. It is also proposed to provide FRIENDS facilities at Block/Panchayat levels, establishing connectivity among the FRIENDS Centres and introducing web-enabled payments. Overall investment in FRIENDS centres amounts to Rs.4.5 crores. The counters are equipped to handle around 1000 types of bills (in various combinations) originating out of various departments.

21.26 Government have adopted an E-Governance action plan and a budgetary outlay of Rs. 61.42 crores has been provided for departmental computerisation during 2003-04. E-Governance activities in the current year include Secretariat WAN project and computerisation of other departments. The following E-Governance initiatives are particularly important from the point of improved services to the public uses and increased collection of revenue to the Government.

Box -21. 2

Important E-Governance initiatives

- Secretariat WAN
- Documents Registration
- Computerisation of Treasuries
- Computerisation of Civil Supplies
- Computerisation of Employment Exchanges
- Computerisation of Land Records
- Computerisation of Motor Vehicles Department
- Computerisation of Local Self Governments

Progress of Implementation

21.27 Computerisation in 50 Sub Registrar offices have been completed. Treasury Computerisation is in good progress. Activities ranging from the study of local government system to field testing the software application developed have been completed. Site preparation for the installation of computer system in 656 Grama Panchayaths, 29 Municipalities and 4 Corporations completed. With regard to Kerala Water Authority, revenue billing, collection and consumer related functions fully computerised benefiting 3.3 lakh consumers. Computerisation in 22 KWA offices completed and 40 more offices in progress. Computerisation in 4 employment exchanges and 2 regional exchanges completed. Training to the employs in the Secretariat already completed. Over 600 nodes have been installed under Secretariat WAN project. E-Governance initiatives made significant progress in the current year.

IT Initiatives

State Information Infrastructure (SII) Project

21.28 A project initiated by Department of IT with GOI support, State Information Architecture (SII architecture) is in progress providing for distributed growth from the hubs at Thiruvananthapuram and Kozhikode. It can be seen that all the district centers can be linked to the nearest network center (Thiruvananthapuram, Kochi or Kozhikode).

Fig 21.4

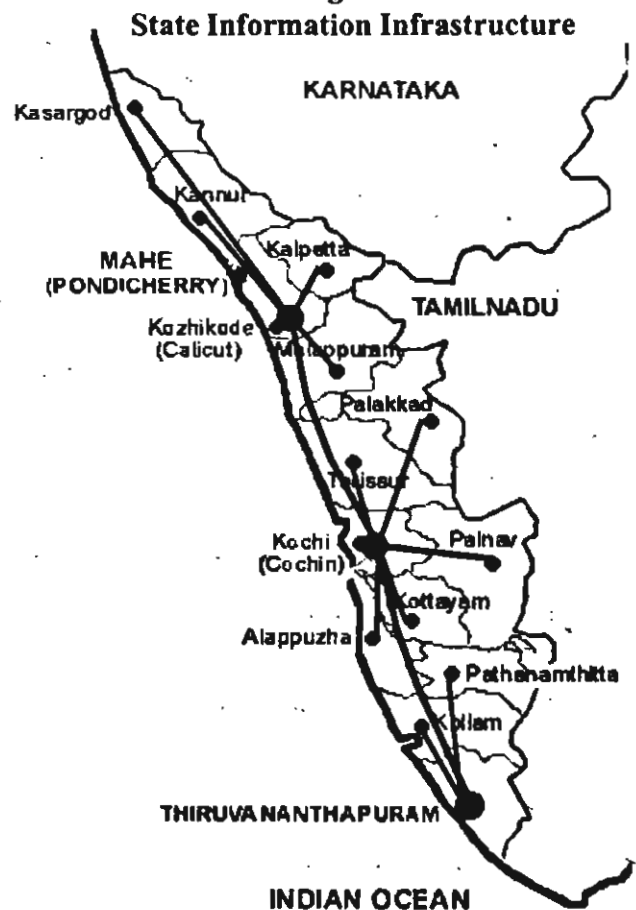


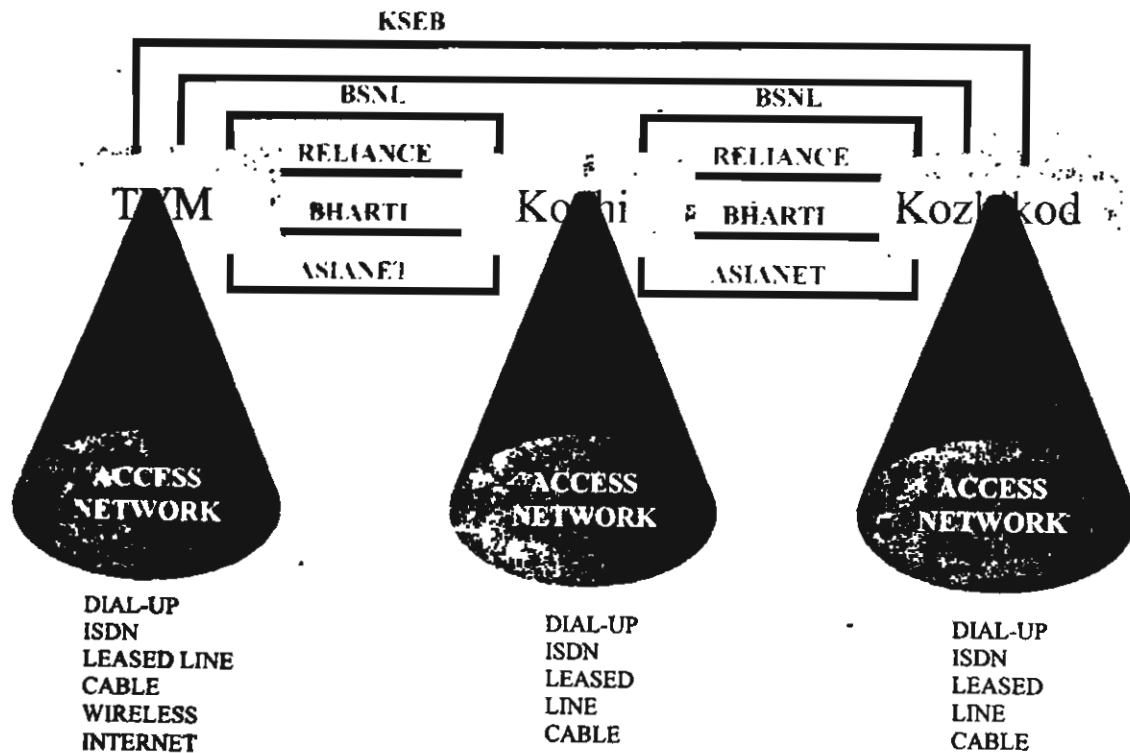
Table 21.10
E-Governance Investment

E-Governance	No.of Centres	Employment (No of persons)	Investment (Rs cr.)
FRIENDS	14 HQs	650	4.50
Department Computerisation	11 Departments		200.00
Secretariat WAN	Government Secretariat		8.00

Source: IT Department.

21.29 The Government of Kerala had declared a Rights of Way Policy, permitting private and public sector infrastructure providers, who propose to lay OFCs, to have the Rights of Way over public properties including National and State highways, village roads and other public properties for laying OFCs on a non-exclusive

basis. Integration of Optical Fibre Lines of BSNL, BHARTI, RELIANCE, ASIANET and usage of the free bandwidth offered by these providers are envisaged under the State Information Infrastructure. The project aggregates the bandwidth from the bandwidth providers to make it available to Govt. departments.



Major Projects as on 2003	Department	Networked/ Standalone
Documents Registration	Registration-NIC	Standalone
Treasury computerisation	Finance-NIC	Partly networked
Civil supplies computerisation	Civil supplies-NIC	Standalone
FRIENDS	IT Dept-CDIT	Standalone
CancerNet	RCC-ERDC	Networked
Billing	KWA-NIC	Standalone
Information Kerala Mission	Planning Board-IKM	Standalone
Treasury computerisation	Finance-NIC	VSAT/leased line
Civil supplies computerisation	Civil supplies-NIC	64 Kbps
Registration	Registration-NIC	
Video conferencing facility	IT Dept	128 Kbps
Billing	KWA-NIC	
IT@School	Education-GOK	
Educational grid	Education-IIITM-GOK	2MBPS
ICDS networking	Social Welfare-ERDC	
Employment exchanges	Labour	
IKM	Planning board-IKM	64 Kbps
Computerisation	Motor Vehicles-NIC	
Forest MIS	Forest	
Land records	Revenue-NIC	VSAT
Commercial tax	Taxes-KELTRON	
Police network	Police	64 kbps
KTDC network	KTDC	ISDN
Ministers' MIS	IT Dept	64 Kbps
KSEB billing	KSEB	

Akshaya

21.30 Government of Kerala launched Akshaya project aiming at improving governance and introducing reforms primarily to pave the way for improved delivery of essential services to citizens in terms of transaction enabled information and communication, particularly to the disadvantaged sections of the society. Akshaya Project took off very well in its pilot phase in Malappuram district. Rural Banking on Line, Online Technology resource centers, E-Enabled Education Centers, Tele-jobs, Assisted Health Care, E-post etc. are expected to evolve to maturity in the State.

21.31 The project brought in private sector Investments of over Rs.30 crores in the first phase. IT penetration in the area also has reached higher levels testified by the increasing number of computer labs coming up in the schools, institutions etc.

IT @ School

21.32 IT @ School project aims at providing information technology enabled education to all high school children in the State in a time bound manner. The project has three main components viz. Computers and infrastructural facilities in schools, software and multi media materials for teaching and training including IT curriculum and IT trained teachers.

21.33 During the year 2002-03 the following activities were done for the implementation of the scheme.

- 1st phase Advisory Campaign in 36 educational districts
- Started district wise Advisory Campaigns
- Government sanctioned Rs. 25 lakhs towards the training expenditure for the scheme.
- Training for Headmasters started
- Training of leading master trainers
- Publication of the I T Textbook for 8th Standard
- Training of new master trainers
- Selected agencies for empanelment
- 2nd phase advisory campaign started at the state level and district level
- Pilot survey coordinated in Kasaragod and Trichur districts on the activities of IT @ school project
- Workshop on the preparation of 9th class IT Text book

Box -21.3

Akshaya – Status

Akshaya

- ◆ 617 centres functional
- ◆ 5.00 lakh people trained
- ◆ Training of 50000 people going on
- ◆ 70 panchayats could achieve 100% e-literacy coverage
- ◆ Average investment of Rs.4 lakhs per centre – total investment around Rs.25 crores.
- ◆ Entire investment mobilised by the entrepreneurs.
- ◆ Each centre employs 3 to 4 people – total direct employment around 2000.
- ◆ High Level of motivation among entrepreneurs.
- ◆ Tremendous local enthusiasm.

The e-literacy programme

- ◆ 15 hour module
- ◆ Focus on enabling individuals to use computers without fear or inhibition.
- ◆ At the end of the training, people to be able to use internet.
- ◆ Connectivity at individual Akshaya centres essential for this.

21.34 The scheme has been implemented in 2046 schools as on 31-12-2003. Out of this computer labs were set up in 147 schools by the Kudumbasree units. Chertalai educational district is declared as the first complete computerised educational district in the State by establishing computerised labs in all the 46 High Schools.

Table 21.11
State wise Statistics of the computerization of schools

Sl. No	Name of the District	Total No. of Schools	No. of Schools set up Computer lab	No. of schools not set up computer labs	No. of schools have computers	No. of schools have internet connections
1	2	3	4	5	6	7
1	Thiruvananthapuram	212	191	21	111	21
2	Kollam	205	122	83	89	11
3	Pathanamthitta	161	125	36	77	18
	Alappuzha	185	183	2	129	23
5	Kottayam	225	190	35	86	37
6	Idukki	118	117	1	94	11
7	Ernakulam	262	254	8	186	19
8	Thrissur	228	211	17	122	33
9	Palakkad	139	111	28	22	8
10	Malappuram	162	131	31	72	58
11	Kozhikode	165	136	29	115	15
12	Wayanad	63	41	22	7	6
13	Kannur	162	149	13	119	5
14	Kasaragod	108	85	23	75	3
	Total	2395	2046	349	1304	268

Source: IT @ School project - 1st year Activity Report 2002-03, D P I Thiruvananthapuram

Kissan – Kerala

21.35 To enable, educate and empower the farmer through knowledge calls for setting up of IT facilitated process in supporting agricultural agencies and institutions. Kissan Kerala project, a joint venture of IIITM-K with department of agriculture was formally inaugurated on November 1st 2003. In this Kissan Kerala Project several departments / organisations like Agriculture, FIB, KAU, Soil Survey, Soil Conservation, Dairy Development, Fisheries, Land Use Board and IIITM-K are involved. This project for agriculture is a pilot implementation of application of IT through relevant Information System and net working to aggregate, share and disseminate information of importance and interest to the farmers, agriculture workers and officials in ways that enhance agricultural development and farmer's welfare in the State. The project aims to establish a farmer centric information system for agriculture, which would focus on catering to the various requirements and services to the farmers across the State.

21.36 A key feature of the proposed system is the interface provided to the rural farmers for accessing

any relevant agriculture related information through community information Kiosks which are being set up at the selected Krishi Bhavans. In the first phase these agriculture Kiosks will be set up in ten selected Krishi Bhavans in Kazhakoottam and Nedumangad blocks of Thiruvananthapuram District.

Police Portal for Community Interaction (PPCI)

21.37 The Police Portal for Community Interaction (PPCI) is one of the E-Governance initiatives in Kerala and the first of its kind in India incorporating both Knowledge Management and smart E-Governance concepts. The portal services are opened to the public in Thiruvananthapuram City. This Portal aims to remove the barrier of physical distance between the citizens and the police, thus enabling the citizens to approach the police Department (Police) using the net to lodge their grievances, suggestions, and opinions and also get the relevant information they seek from the Police without the need for visiting the police Stations. The portal provides for three-way interaction of (i) citizens to interact with fellow citizens in both open and closed

forums; (ii) two-way interactions between citizens and city police and (iii) police to interact with fellow police officers in disciplined ways as per the internal hierarchy and protocols of the Police department. Every citizen has the facility to give online complaints to any police officer. This will be especially useful in helping the public come forward with complaints relating to matters of general concern and which affect public at large. This can include problems like anti social activities etc. There is a citizens' interaction area, where a citizen can discuss any problem, give ideas, suggestions etc. In addition to the open discussion forum, which is available to everyone, there are restricted discussion forums in which the representatives of the Residents Associations and the local police officers can have regular discussions to identify and find solutions to problems. The portal gives a great opportunity to passport applicants to check the status of the passport veri-

fication process and also enables to lodge complaints, if any.

21.38 In order to encourage citizens to come forward and share information with the police fraternity, a facility has been created for citizens to register as informants and share confidential information. They will be able to do that while keeping their identity confidential. Also available is a facility for the public to ask questions, clarify their doubts etc. This facility will make the Police Department more accessible to the common man and respond to complaint.

IT Education Grid

21.39 IT Education Grid is being implemented by IITM-K for enhancing the quality of higher education in the state with the application of IT.

Business Process Outsourcing

Box -21.4

Achievements of the Kerala Education Grid project

- Established the Education Grid Operations Centre cum Resource Centre of the Kerala Education Grid at the Indian Institute of Information Technology and Management – Kerala. The operation Centre would coordinate the overall project, planning, coordination, Educational technology services for course ware development and would be the central course ware and knowledge repository for all the courses
- Established the Education Grid Resource Centres at National Institute Technology – Calicut, Cochin University of Science Technology and College of Engineering Thiruvananthapuram. The Resource Centres would co-ordinate the course ware development and maintenance activities in identified courses, organised teachers training in course ware usage and host the system required for hosting the resources of the KEG. These resource centres would be co-ordinated the KEG activities of the respective regions of the State.
- A frame work for content quality and pedagogy management for ensuring quality education through KEG has been developed
- Linkages established with the National Programme of Technology Enhanced Learning, a project funded by the MHRD, Government of India to enhance the quality of Engineering Education in the country by developing Curriculum based video and Web courses with the participation of seven IITs and IISC Bangalore
- Initiated activities for the development of Web based courseware in various subjects of Engineering
- Organised workshops and short courses for orientation of teachers in Technology Enhanced Learning and Teaching.

21.40 BPO started as an extension of outsourcing of materials and men, which in turn was born out of the necessity of business to reduce its costs. It is also called ITES. ITES generating refers to services delivered over telecom network or the internet to a lot of business processes. BPO refers more specifically is a contractual service to carry out business function that are general IT extensive. India is all set to become the hub of global business process outsourcing. What is needed is entrepreneurial initiatives that can tackle issues crucial to the success of a BPO venture. Southern States

together account for 26% share in the Indian ITES industry. Out of the total Rs.11700 crores of ITES revenue, Rs.2922 crores came from the South, excluding Kerala, with AP of Rs.1411 crores, Karnataka Rs.988 crores and Tamil Nadu Rs.523 crores. With the number of ITES companies growing States such as Karnataka have changed their positioning from a technology cluster to BPO unit. In this area Kerala has to go a long way to attain huge revenue as is being done by Karnataka (Rs.16000 crores) Tamil Nadu (Rs.523 crores) etc. in the current year.



CHAPTER 22

LOCAL GOVERNMENTS IN KERALA

Kerala has 991 Grama Panchayats, 152 Block Panchayats and 14 District Panchayats. In the urban areas it has 53 Municipalities and Five Corporations. The distribution of Grama Panchayats and Municipalities according to population class is given in Tables 22.1 and 22.2.

Table 22.1
Grama Panchayats

Range of population	Village Panchayats (No.)
(1)	(2)
Below 10,000	15
Between 10,000 and 20,000	297
Between 20,000 and 30,000	460
Between 30,000 and 40,000	173
Between 40,000 and 50,000	40
Above 50,000	6
Total	991

Table 22.2
Municipalities

Range of Population	Municipalities (No.)
(1)	(2)
Below 25,000	6
Between 25,000 and 40,000	18
Between 40,000 and 50,000	9
Between 50,000 and 60,000	7
Between 60,000 and 75,000	8
Between 75,000 and 100,000	2
Above 100,000	3
Total	53

22.2 The population of the five Corporations is shown in Table 22.3.

Table 22.3
Population of Corporations

Corporation	Population (No)
(1)	(2)
Thiruvananthapuram	704375
Kollam	346013
Kochi	564589
Thrissur	296788
Kozhikode	419831

22.3 The distribution of Grama Panchayats, Municipalities and Corporations according to area classes is shown in Table 22.4.

Table 22.4
Distribution of Grama Panchayats, Municipalities and Corporations According to Area

Range of Area (sq.km)	Grama Panchayats (No)	Municipalities (No)	Corporations (No)
(1)	(2)	(3)	(4)
Below 5 Sq. KM	2	—	—
Between 5 - 10 Sq.KM	48	4	—
Between 10 to 15 Sq.KM	133	10	—
Between 15 - 20 Sq.KM	188	10	—
Between 20 - 30 Sq. KM	290	13	—
Between 30 - 40 Sq.KM	125	9	—
Between 40 - 50 Sq.KM	46	2	—
Between 50 - 75 Sq.KM	72	3	1
Between 75 - 100 Sq.KM	34	1	2
Between 100 - 150 Sq.KM	31	1	2
Between 150 - 200 Sq.KM	6	—	—
Above 200 Sq.KM	16	—	—
Total	991	53	5

22.4 The distribution of Grama Panchayats, Municipalities and Corporations according to density of population classes can be seen in Tables 22.5, 22.6 and 22.7.

Table 22.5
Density of Population among Grama Panchayats

Density of Population (Persons per sq. KM)	Grama Panchayats (No)
(1)	(2)
Below 100	18
Between 100 and 500	161
Between 500 and 1000	324
Between 1000 and 1500	256
Between 1500 and 2000	128
Between 2000 and 3000	89
Above 3000	15
Total	991

Table 22.6
Density of Population among Municipalities

Density of Population (Persons per sq. KM)	Municipalities (No)
(1)	(2)
Below 1000	3
Between 1000 and 1500	14
Between 1500 and 2000	8
Between 2000 and 2500	11
Between 2500 and 3000	4
Between 3000 and 3500	7
Above 3500	6
Total	53

Table 22.7
Density of Population in Corporations

Corporation	Density of Population (Persons per sq. KM)
(1)	(2)
Thiruvananthapuram	4976
Kollam	6041
Kochi	5951
Thrissur	2927
Kozhikode	4880

22.5 The above data show that there are certain implications for decentralization. They are summed up below:

- (1) The Grama Panchayats have a viable population and size which make them ideal units of service for various public functions. Almost all the Grama Panchayats in the State have Primary Health Centres, Veterinary Hospitals, Krishi Bhavans, Schools etc.
- (2) There are no large urban agglomerations. There are only three Municipalities which have a population of more than 100,000. None of the City Corporations touch the one million mark. (See Box 22.1)
- (3) The density of population is very high in almost all the local governments with the coastal areas which have 89 Grama Panchayats, 13 Municipalities and 4 Corporations, having the highest concentration of population. This shows a semi-urban character and has implications for service delivery for civic services and social services as well as creation of infrastructure.
- (4) It has to be noted that the population is spread out. The traditional village system with a concentration of population in a habitat surrounded by a vast un-inhabited hinterland is absent in Kerala. This scattered nature of population implies that the cost of provision of infrastructure for communication, water supply, electricity etc. and the cost of delivery of civic services would be comparatively very high. Accordingly the cost of maintenance also be very high.
- (5) The relatively large size of Grama Panchayats and the relatively small area of District Panchayats make it difficult to have viable Block Panchayats with a large array of functions.
- (6) The large population and size of Grama Panchayats make it difficult to have general assembly of voters in the form of Grama Sabhas. Therefore Kerala has gone in sub-grama panchayat structures at the level of the Ward/Electoral Constituency, for general body meetings.

Box -22. 1

URBANIZATION IN THE STATE

About 16.30% of the total population lives in the Municipalities and Corporations. According to the 2001 Census, there are 98 Urban Agglomerations/Towns in Kerala accommodating 25.97 percent of the total population (see Table below). This is less than the national average of 27.78 per cent.

Population Distribution of Urban Areas in Kerala, 2001

Sl. No	Urban Area	Number of Towns	Urban Population		Percentage to Total Population
			Number	Percentage	
(1)	(2)	(3)	(4)	(5)	(6)
1	Corporations	5	2456654	29.72	7.72
2	Municipalities	53	2731093	33.03	8.58
3	Other Towns (census towns, townships etc.)	40	3079388	37.25	9.67
	Total:	98	8267135	100.00	25.97

Source: Census, 2001

Unlike other parts of the country the trend of urbanization in Kerala is not limited to the designated cities and towns. Barring a few Grama Panchayats in the hilly tracts and a few isolated areas, the entire State depicts the picture of an urban rural continuum.

The total number of Urban Areas/Towns in the State steadily increased from 21 in 1901 to 94 in 1951. The number of Urban Areas/Towns increased to 109 in 1991, recording the highest percentage of urban population (26.39%) to total population. In 2001, the number declined to 98 due to declassification and merging of towns. Trend in urbanization since 1901 is given in the following table.

Census Year	Total Number of Urban Areas/Towns	Total Population	Total Urban Population	Percentage of Urban Population	Percent
(1)	(2)	(3)	(4)	(5)	(6)
1901	21	6396262	454499	7.11	
1911	27	7147673	524661	7.34	+15.44
1921	44	7802127	680900	8.73	+29.78
1931	53	9507050	916330	9.64	+34.58
1941	62	11031541	1195550	10.84	+30.47
1951	94	13549118	1825832	13.48	+52.72
1961	92	16903715	2554141	15.11	+39.89
1971	88	21347375	3466449	16.24	+35.72
1981	85	25453680	4771275	18.74	+37.64
1991	109	29098518	7680294	26.39	+60.97
2001	98	31838619	8267135	25.97	+7.64

Source: Census, 2001

Box 22.1 Contd...

Kerala witnessed a steady increase in the share of urban population from the year 1901 to 1991. In 1901, only 7.11 percent of the total population was settled in urban areas, which increased to 13.48 percent in 1951 and to 26.39 percent in 1991 and then declined to 25.97 percent in 2001. The decennial growth of urban population was the highest (60.97%) during 1981-91 and the lowest (7.64%) during 1991-01.

The urbanization trend of Kerala has certain unique features. In other parts of the country urban population growth is a result of over concentration in the existing cities, especially in metropolitan cities. In contrast, population growth in Kerala is due to the increase in number of urban areas and urbanisation of peripheral areas.

Considering the urbanization trends in Kerala, the Government of Kerala has formulated an "Urban Policy and Action Plan" to provide basic services and promote economic growth in urban areas.

Key Elements of Urban Policy and Action Plan

- Preparation of development vision
- Promote private sector participation
- Identify growth centres for economic development
- Preparation of data base to assist urban land consolidation
- Conservation of heritage structures and open space
- Urban road planning
- Primary health care activities
- Urban drainage
- Priority to solid waste management and sewerage
- Reforms in accounting in urban local governments
- Plinth area based Property Tax
- Restructure Kerala Urban Development Finance Corporation
- Introduce IT enabled services.

The problems of urban poverty, deficiencies in urban infrastructure like water supply and sanitation, issues relating to environmental hygiene, disposal of solid waste, proper sewerage and drainage facilities, urban transport and housing, degradation in quality of life through congestion, pollution, accidents and rehabilitation of slum dwellers are the major areas of concern of urban development. Most of these concerns are being addressed by the urban local governments through decentralisation.

- (7) The rural – urban continuum implies that there can hardly be any difference in the quality and quantity of civic services provided by Municipality and by Panchayati Raj Institutions.
- (8) Since the cutting edge local governments are fairly large formal systems of governance both in terms of hardware and software, are required. Same formal arrangements and multi-village jurisdictions are not possible.

Strategy of Decentralisation in Kerala

22.6 Traditional wisdom calls for capacity building of local governments and then giving power to them in degrees to match the improvements in capacity. But real and effective decentralisation probably calls for a big bang approach – functions, powers and resources being transferred *at* one go. If decentralisation is effected in one fell blow, the suddenness would stun potential dissenters into silent acceptance; before people realize what they have lost, decentralization would have become a fait accompli. The 'reversals' - of giving re-

sponsibility and then building capacity, of giving powers and then creating procedures and systems, of giving funds and then setting up umpiring systems – help in another way. If Government transfers a lot of responsibilities and funds considerable pressure would build on Government from various sides to ensure that the responsibilities are carried out effectively and the funds are utilized properly. It would then become Government's responsibility to ensure that decentralization works.

22.7 Kerala followed this latter approach and hindsight shows that strategically it was a sound decision as it would have been impossible to transfer power in small doses.

22.8 To operationalise decentralisation, Kerala chose the path of participatory local level planning as the entry point. This succeeded to a considerable extent in harnessing public action in favour of decentralisation. In order to push the system and force the process a campaign approach was followed for decentralised planning - known as the 'People's Planning Campaign'. This campaign created a powerful demand factor for decentralisation to be guided along the right path. To a large degree the campaign succeeded in setting the agenda for decentralisation.

22.9 Though decentralized planning was the motive force, the State succeeded in using decentralisation to improve accountability and introduce good governance features in the administrative set up. The details are summarised below:

Setting up Accountability Systems

22.10 Since substantial responsibilities have been passed on to local governments accountability systems acquire special importance. In harmony with local government functioning and participatory budgeting and in addition to traditional systems of checks and balances, new forms of downward accountability to the people have also been structured in. The key accountability systems are given below:

(1) *Committee System of Decision Making*:- All decisions of local governments are to be taken by itself through consensus or by voting. Power is not concentrated in individuals.

(2) *Right to Information*:- All documents of local governments except very few ones like health records

of patients, contract documents before finalisation etc., have been declared as public documents by law. Any citizen has the right to peruse them or ask for photocopies. In a literate and politically conscious society this is a powerful Provision against corruption.

(3) *Participatory Budgeting*:- The evolution of a budget particularly for development works is through the comprehensive stage by stage planning process which allows space for citizen interaction and intervention, expert involvement and final budgeting before approval by elected bodies. This provides adequate protection against arbitrary decision making.

(4) *Due Process in Selection of Beneficiaries*:- This is ensured through the following steps.

(a) Clear enunciation of eligibility criteria and prioritisation criteria at the time of project formulation.

(b) Assigning weightages to each prioritisation criterion.

(c) Calling of application in writing.

(d) Enquiry process into applications with awarding of marks to each criterion.

(e) Reading out of marks in Grama Sabhas/Ward Sabhas.

(f) Opportunity to each applicant to see all records including application forms of others.

(5) *Technical Sanction*:- The process of giving technical sanction has been taken out of the departmental technical hierarchy. Technical Committees have been constituted at the Block/Municipal/Corporation/District levels consisting of engineering experts drawn from governmental, academic and non-governmental sources. This gives some protection against inflation of estimates and dilution of technical standards.

(6) *Audit Systems*:- The traditional audit system through Local Fund Audit Department has been strengthened with the technical support of the Accountant General. A special Concurrent Audit System has been designed, manned by surplus staff from the Panchayat and Urban Affairs Departments headed by an Officer of the Indian Audit and Accounts Service. This system called Performance Audit acts as an online corrective mechanism helping local governments to put their systems in

proper place. Performance Audit is conducted twice a year in all the local governments. Since the minimum grant-in-aid to a Grama Panchayat is Rs.25 lakh, the Accountant General also carries out grant-in-aid audit including Grama Panchayats. A Technical Audit Team has been put in place at the State level consisting of senior engineers mostly from outside Government who are selected for their integrity. This team looks into complaints regarding execution of public works.

(7) *Social Audit*:- A semi structured social audit is conducted in Grama Sabhas and Ward Sabhas where the accounts of Grama Panchayats, Municipalities and Corporations have to be presented and queries replied to.

(8) *Awareness Building*:- IEC campaigns have been conducted through the media of Press and TV explaining the right of the citizens vis-à-vis local governments. Special meetings of NGOs are held to tell them every thing about citizen entitlements vis-à-vis local governments.

(9) *Filing of the Property Statements*:- All elected members have to file their property statements immediately on election.

New Reforms under Implementation.

(i) *Appellate Tribunals*:- Judicial Tribunals are to be set up at the regional level to hear appeals against decisions by local governments in exercise of their regulatory powers. The Acts have been amended for this purpose and negotiations were on with the High Court regarding allotment of judicial personnel.

(ii) *Social Audit*:- A draft Social Audit Policy has been approved by the Government and an initiative to take up action research programme to build up good models of social audit has been cleared and Rs. 5.70 crore has been allotted in the current year's Annual Plan for this purpose.

(iii) *Citizen's Charters*:- This has been legislated for and in order to operationalise them Rs. 3.25 crore has been provided in the current year's Plan. Once the Citizens Charters are brought out accountability for provision of services would improve.

(iv) *Monitoring by Independent Institutions*:- Monitoring of local government programmes by independent institutions has been decided upon. Rs.

One crore has been set apart in current year's Plan for this purpose. Institutions have been identified and the working out of the methodology for concurrent monitoring is on through six pilot projects.

(v) *IT applications*:- The State has decided to computerise all its local governments and network them. The Information Kerala Mission has been set up for this purpose. They have evolved 12 softwares for this purpose. In the first stage IT applications would focus on the monitoring of development programmes and development expenditure. In the second stage different aspects of administration in local governments would be computerised. And in the third stage IT enabled services to the citizen would be taken up. Already a pilot version has been rolled out in Vellanad Grama Panchayat of Thiruvananthapuram. It is expected to cover all the local governments after the bids received in response to a BOLT proposal which are finalised.

(vi) *Citizen Education*:- A massive Citizen Education Programme is planned for. This would include publication of a booklet on citizen entitlements.

Good Governance Features.

22.11 Government has to play a conscious role to improve governance in local governments. Experience shows that it is relatively easier to introduce good governance features at the level of the local government. To recapitulate, some of the good governance features in the Kerala experiment are given below:-

- Transparency and right to information
- Public IEC campaigns
- Insistence on due process
- Participation in all stages
- De-bureaucratisation, especially in technical matters
- Accreditation of NGOs to act as support agencies for local governments
- Giving opportunities to young professionals to serve as apprentices in local governments eg: civil and agricultural engineers, IT professionals etc.
- Recognition of best practices by selecting Beacon Panchayats
- Strengthening independent umpiring institutions
- Introducing code of conduct for elected representatives and officials

- Making Citizen's Charter compulsory
- Revising office management systems to make them people friendly
- Simplification and modernization using information technology

Fiscal Decentralisation.

22.12 The architecture of Kerala's fiscal decentralisation is quite sound. Grama Panchayats, Municipalities and Corporations have been assigned own taxes namely, Property Tax, Profession Tax, Entertainment Tax, Advertisement Tax and Service Tax (a tax for providing services). They are also empowered to collect user charges.

22.13 In addition, in accordance with the recommendations of the First State Finance Commission, surcharge on Stamp Duty, the entire Basic Tax and 20% of the net collection of Motor Vehicle Tax are devolved to local governments.

22.14 A Rural Pool is constituted with 25% from the Basic Tax and with a corpus in the place of the erstwhile Specific Purpose Grants. This is given as a General Purpose Grant to Grama Panchayats.

22.15 For functions and schemes transferred after the constitutional amendments both Plan and Non-plan Grants are provided in a tied form. The unique feature of Kerala's decentralisation is the devolution of an untied plan grant equivalent to above one-third of the approved plan size of the State. This comes to Rs.1317 crore during 2003-04.

22.16 The key features of fiscal decentralisation in the State are summarised below:

- 1) The entitlements of individual local governments are decided as per the formulae. There is zero discretion in the allotment of grants.
- 2) All grants are provided in a separate document of the Budget called Appendix IV.
- 3) Though fiscal crisis has affected the total size of the untied plan grant, by and large, the grants are predictable and are fully devolved.
- 4) The formulae have a strong equalisation element with backwardness getting a weightage of nearly one third.
- 5) There is a high degree of autonomy in use of transferred resources. Within the framework prescribed

local governments can decide any scheme and prepare detailed projects according to their priority.

22.17 It is the Grama Panchayat which gets the larger share in consideration of its closeness to the people. The rural and urban shares are as per the population and within the rural share the Grama Panchayat gets 70% the remaining portion being equally shared by the Block and District Panchayats.

22.18 The details of resources transferred during the last 10 years to different tiers of local governments are given in Appendices 22.1 to 22.5.

22.19 The World Bank conducted a study on Fiscal Decentralisation to Rural Governments in India with special reference to Karnataka and Kerala. Some of the key findings of the study relating to Kerala are given below:

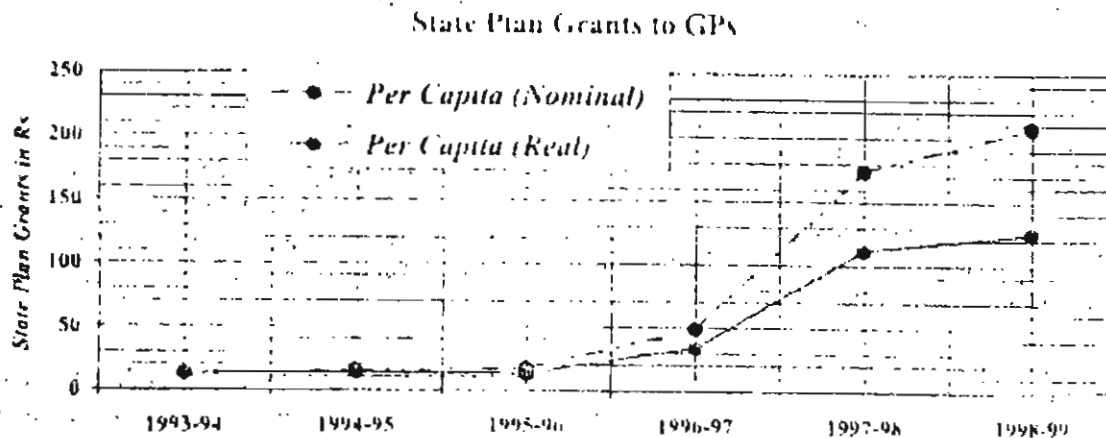
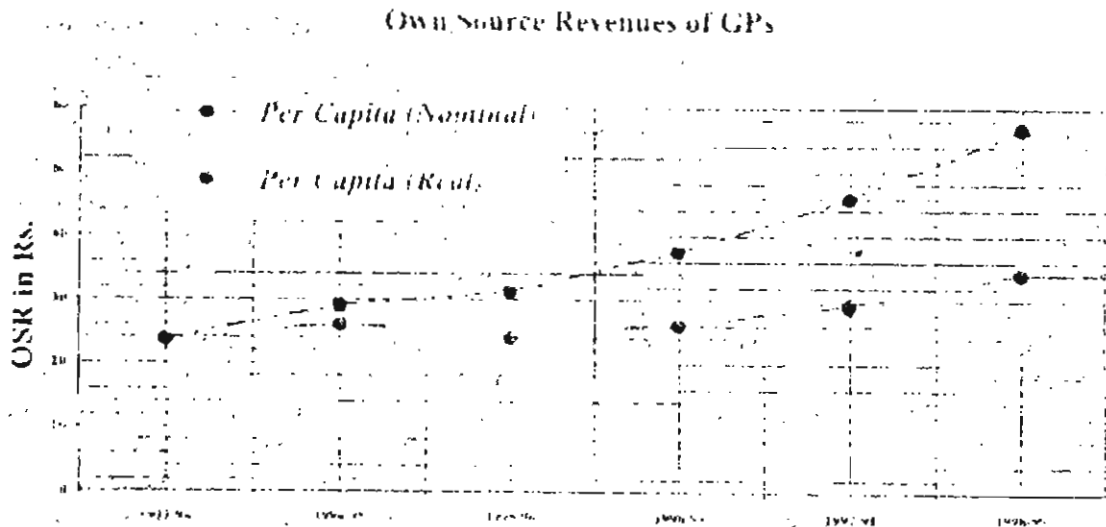
- (1) Kerala has devolved more discretion to local governments and through the decentralised planning process there is a built in mechanism for bottom up planning for the use of the funds. For example in 1995 only 32% of the expenditure for functions assigned to Grama Panchayats took place at the discretion of the Panchayats. Over a five year period even though this allocation has increased considerably the Grama Panchayats now have control over 68% of the expenditures.
- (2) Expenditure assignments are much clearer, functions have been divided according to various tiers and each function has been broken up into activities in most cases to avoid overlapping. This clarity of assignments has made the State Government more accountable in its implementation of decentralisation.
- (3) Though the administrative autonomy is not full there is some amount of freedom in the exercise of limited control over employees who have been transferred to the Panchayats.
- (4) The level of Grama Panchayat spending is significantly higher in Kerala. In 1999 the average Grama Panchayat spent Rs.328 per capita equivalent about 1.4% of GDP and 8% of State Government spending.
- (5) Local revenues as percentage of total revenues are small by international standards. However it is significant that in Kerala own revenues have increased even with large transfers. In 1999 own revenues accounted for about 18% of total revenues in

- Grama Panchayats. The level of per capita own resource revenues increased from Rs.24 in 1994 to Rs.57 in 1999 (Rs.33 in real terms).
- (6) Within own source revenues non-tax revenues have been more buoyant than tax revenues where per capita amounts have increased from Rs.7 in 1994 to Rs.29 in 1999. (this is significant in a State which has one of the lowest growth rate for non-tax revenue at the State level)(See Figures 22.1&22.2).
 - (7) There is evidence that panchayats are unwilling to push for higher taxes especially Property Tax. It is estimated that only about 40% of the revenue potential has been exploited.
 - (8) There are wide variations in per capita own revenues, per capita taxes range from Rs.4 to Rs. 327 and per capita non-tax revenue from

Rs.9 to Rs.586. Using a multiple regression analysis the Kerala study explains about 28% of the variations – per capita own source revenues are significantly higher in Grama Panchayats, where the level of economic activity is stronger, where population is larger, and where there is smaller land area. The percentage of Scheduled Castes/Scheduled Tribes population is not a significant determinant. However after all else is accounted for, Grama Panchayats in some districts raise significantly more revenue than those in other districts. This suggests the possibility of revenue effort being related to local cultural or leadership factors.

- (9) A transfer system is horizontally equalised.

Fig.22.1 & 22.2



Source: Data collected for the study, 2003 (Details in Volume IV)

- (10) Fiscal pressures in Panchayats are growing due to the increase of expenditure responsibilities.
- (11) The local government accounting system has been overwhelmed by requirements of decentralisation. Budgeting seems to have been reduced to a compliance formality with little use for fiscal planning. There is lack of reliable information about the assets required to be maintained by the Panchayats.
- (12) Kerala does not have an adequate information system on local finances.
- (13) Kerala is the only State in the country where full recognition has been given to the principle that the primary accountability of the local government institutions is downwards to the local community. However innovative tools and methods introduced during the People's Plan Campaign have not yet been perfected.
- 22.20 The study also makes certain recommendations which are summarised below:
- (i) There are practical principles from international experience for fiscal decentralization. They are generally relevant. (See Box 22.2).
 - (ii) Clarify expenditure assignments after rethinking the roles of the three tiers of rural local governments.
 - (iii) Strengthen local government autonomy especially over staff including the power to hire, fire and determine the compensation level.
 - (iv) Increase own revenues of Grama Panchayats.
 - (v) Specifically improve the structure of the Property Tax. (See Box 22.3 on local property taxation)
 - (vi) Relate transfers to State Revenues and not to outlays. (See Box 22.4)
 - (vii) Institute an incentive for revenue mobilisation (see Box 22.5).
 - (viii) Improve account keeping by overhauling the accounting and budgeting system.
 - (ix) Create an information system on local finances.

Box -22. 2

PRACTICAL PRINCIPLES FROM INTERNATIONAL EXPERIENCE FOR FISCAL DECENTRALIZATION

- (1) All of the key components of a decentralized fiscal system need to be addressed: significant expenditure responsibility and discretion, independent revenue raising powers, elected local council, and local officers and employees who are accountable to the elected local council.
- (2) Finance follows function – first should come the assignment of expenditure responsibility to local governments and then the assignment of revenue responsibility should be determined.
- (3) There must be a strong state ability to monitor and evaluate the intergovernmental fiscal system.
- (4) One intergovernmental system does not fit the urban and the rural sector – these governments have very different capabilities to deliver and finance services, and certainly different capabilities to borrow. These differences need to be recognized, i.e. where different local governments are given different financing powers and expenditure responsibilities.
- (5) The assignment of revenue powers to local governments should link revenue and expenditure decisions at the margin.
- (6) Higher level governments must follow the rules of the intergovernmental fiscal system that they themselves create. But the higher level government does not always keep the rules that it makes. For example the imposition of unfunded expenditure mandates on local government, the under funding of transfers programs etc.
- (7) The intergovernmental fiscal system should be kept simple.
- (8) Intergovernmental transfers should be designed to match a set of clearly specified objectives.
- (9) The intergovernmental fiscal system should be built on policies that consider impacts on all levels of government – central, state and local.
- (10) A hard budget constraint should be imposed on local governments.
- (11) The intergovernmental fiscal system should be flexible to accommodate changes.

Box -22. 3

LOCAL PROPERTY TAXATION

Most local governments in developing and developed countries are given the right to tax property, and most use this power. International "expert" opinion generally holds that this is a "good" tax for local governments. We may also note that most local governments in developing countries are fiscally strapped. They are usually assigned few tax bases, and they often are unable to effectively administer those taxes that they are given. This seems especially true for the property tax. So casual observation would suggest that the "good" local tax is not getting the job done.

There are significant advantages to the property tax. The property tax can be revenue productive, and is often the mainstay of local government fiscal systems. The property tax accounts for about 0.4 percent of GDP in developing countries, a share well below that in industrialized countries. While this may seem a small amount, it should be pointed out that it is large enough to finance about 11 per cent of sub national government spending.

Some have argued that there is fairness in the property tax in that property values, and therefore property taxes, rise with the provision of better local services to the property. There would seem to be fairness in asking the benefiting property owners to pay for these services. The property tax is most probably not regressive, and may vary from proportional to progressive. In an ability-to-pay sense, it could be viewed as equitable. A significant portion of the residential property tax, and some of the non-residential tax, is borne by landowners who usually sit atop the income distribution. Many of the poor are screened out of the tax, by explicit exemption of properties of value below a certain amount. Moreover, the property tax captures in its base those who hold wealth but may be missed by the income tax.

Perhaps the biggest disadvantage of the property tax is its unpopularity with local residents and voters. Why is the property tax so unpopular, and why does it draw out such protest? First, it is a very visible tax. Unlike the VAT, for example, where no one really knows how much they pay, the property tax is paid annually or in periodic submissions, and the taxpayer is quite clear about his/her liability. Second assessment is judgmental, unlike sales or income taxes. Taxpayers are uncomfortable with this. Third, the property tax is a levy on accrued income, not on realized income, which seems unfair to many taxpayers. Another major disadvantage is that administration costs are high if the tax is to be well administered. Valuation, done properly, is an expensive proposition, as is effective enforcement.

The major problems with the property tax becoming a significant revenue for local governments in developing countries are problems related to valuation and enforcement. With respect to the former, most countries just do not have the procedures or staff in place to carry out the job. With respect to the latter, there is some question about the willingness of local officials to enforce such an unpopular tax, especially when the burden often falls most heavily on local elites.

This set of advantages and disadvantages has led countries around the world to use the property tax as a revenue source, to widely varying degrees. Generally, industrialized countries make greater use of the property tax than do developing economies. As noted in the below, the report intensity of use of the property tax in India is quite low.

Sub National Property Tax as a Share of GDP in Selected Large Countries.

Country	Property Tax/GDP	Country	Property Tax/GDP
Canada	4.07	Indonesia	0.32
United States	2.87	Mexico	0.31
Australia	2.49	China	0.17
Russian Federation	1.24	India	0.10
Argentina	0.92		

Box -22. 4

SYSTEMS FOR VERTICAL SHARING OF INTERGOVERNMENTAL TRANSFERS

A crucial feature of the design of intergovernmental transfers is the determination of the vertical shares, i.e., the entitlement of the rural local government sector. It is important that this be transparent, so as to encourage efficient fiscal planning by local governments and to make possible the imposition of hard budget constraint on them. In theory, in an equalizing grant system, the vertical share is the amount necessary to fund that part of minimum expenditure needs that local fiscal capacity cannot fund. In practice, such a calculation is rarely made.

Generally, countries use three methods to establish the vertical share entitlement. The first is an ad hoc arrangement. Each year, or for a period of years, the higher level government decides on the amount of the entitlement. This gives the higher level government maximum discretion in adjusting the vertical share to fit the exigencies of the current budget situation. A variant of this is to appoint a commission that makes or recommends a decision on allocation for period of years, such as is done in India and Australia.

The second approach is to fix the vertical share as a percent of revenues of the higher level government. This is perhaps the most transparent of the approaches, and (if the higher level government follows through on its commitment under this approach) gives the local governments a guarantee as to resources to be received. Indonesia allocated 25 percent of internal taxes to the revenue sharing pool for local level governments, and the Philippines allocates more than one-third of total internal central revenue collections, lagged by two years. China, Russia, Mexico, Argentina and Brazil are countries that dedicate percents of their income tax and VAT revenues to the revenue sharing pool. Many countries mandate that a percent of the funds distributed to provinces/states be passed through to municipalities (Nigeria, Mexico and Brazil, for example).

The third approach is more in the vein of cost reimbursement. The higher level government determines those functions of local governments that it will support financially, and provides conditional grants that are determined in amount by the higher level government. Grants by states to local government in much of India ("schemes") are of this type. The most common functions that are singled out for conditional grants are basic infrastructure projects, teacher's salaries, and welfare-health related outlays. Virtually every country in the world has some form of conditional grants in its system of intergovernmental transfers.

Which is the better way of vertical sharing? It depends on the objectives that the government most wants to achieve with its system of intergovernmental transfers. A guaranteed share of revenues will probably give the local governments the most predictable revenue stream, and the most insulation from the political impacts on budget-making by the higher-level government while this would seem the approach most consistent with fiscal decentralization, it has the drawback of limiting the fiscal flexibility of the higher level government.

Box -22. 5**PROBLEMS IN REDESIGNING THE TRANSFER SYSTEM:
THE KERALA EXAMPLE**

The design of a transfer system is difficult, especially if the subjects are rural local governments. First, the quality of the data to be used in the distribution formula may be suspect, or the information may be dated. For Kerala, several indicators of service needs and fiscal capacity are available, but for many of these indicators, the data are missing for a significant number of GPs. These indicators would have to be eliminated as possible candidates for inclusion in the formula, or, the data set will need to be improved. The situation is no better in the case of measuring taxable capacity. There are no data on personal income or economic output at the GP level. Some data on housing might be gathered regularly (e.g. number of housing units of various types) and could be suitable for measuring property tax capacity, but gathering such data could be a costly proposition.

Measuring property is problematic. Official poverty rate indicators are not available at the GP level. Ideally, the state will allocate its resources more heavily to those GPs where the concentration of poor families is greatest. The measure used in this study, the percent of population in scheduled castes and tribes is imperfect at best. Yet it is poverty as much as any indicator that the state would like to factor into its distribution formulae. A second problem (constraint) is that an equalization formulae may allocate significantly more funds to smaller, poorer Gram panchayats. Will these local governments have the capacity to effectively use the additional funds?

A third constraint to grant reform is that any new formula will result in both "winners" and "losers." That is, some GPs will receive more than under the previous system, and some will receive less. Those who lose will object, probably strenuously, and will point out that at a minimum, there is need for an adjustment period. The result is that any new formula will need to be phased in over a period of time in order to protect the losers from a "shock effect." There are many ways to design a hold-harmless system, but an essential ingredient must be that the phase-in period has a clearly defined end point. In order to identify the extent of this constraint, we need to know how much the present system of distribution would be "shocked" by the introduction of a new system. The greater the shock, the more complicated the design of the hold harmless system.

A fourth constraint is that related to building an intergovernmental transfer system. The system feature implies that all the components (grants, statutory grants, etc.) fit together to achieve the same objectives. The easiest way to do this is to merge all transfers into one unified grant system. However, some will argue for more than one component and more than one objective, and this will raise the possibility of offsetting effects (e.g., component A will be equalizing while component B will be counter equalizing, etc.).

What this discussion points to is the need for the State to begin with some realistic decisions about the objectives it wants to achieve with its intergovernmental transfer system. In fact, there is no one best system, and everything depends on the goals that are laid down.

The study examined some options for the design of an optimal transfer system for Kerala (Details in Volume IV.) Below is a recommended transfer formula. From the simulations carried out there is much to recommend a per capita consolidated grant. It is simple and transparent and a straight population allocation recognizes needs and can be calculated with a minimum of arbitrariness. The data are more available than for other allocation schemes. The "shock" of transition to the consolidated per capita grant from the present system would not be so great. There would be about as many GPs that gain as would lose, and the average increase for a "winner" would be 14 percent while the average reduction for a "loser" would be 13 per cent. A kind of 'hold harmless' system to protect such outliers could be easily devised. There are also disadvantages to the per capita consolidated grant. The one shortcoming that most will call out is the failure of such a system to recognize the special needs of places that are poor, or that must serve large land areas. Moreover, there is no provision for rewarding those GPs that make a greater tax effort

Second State Finance Commission

22.21 The Government have approved most of the recommendations of Second State Finance Commission. The key recommendations are summarized below:

1. Five and a half percent of the annual own tax revenue of the State Government may be devolved to the Local Self Government Institutions (Local Self Government Institutions) as Grant-in-aid for maintenance of assets under the control of the Local Self Government Institutions including the transferred assets. This percentage may be determined on the figures certified by the Accountant General, which normally relates to the financial year two years before the budget year. All expenses related to running of institutions except wages, supply of medicines to health institutions, educational concessions/scholarships to students, supply of books and equipments, conducting noon-feeding in schools shall be borne by the Local Self Government Institutions. This should include payment of rent, repair of equipment including vehicles and meeting of telephone charges and vehicle operating expenses.
2. Three and a half of the own tax revenue of the State Government based on the figures certified by the Accountant General could be devolved to Local Self Government Institutions as General Purpose Grant in-lieu of assigned taxes, shared taxes and various statutory and non-statutory grant-in-aid, both specific purpose and general purpose. This grant-in-aid would subsume under it Basic Tax Grant, Surcharge on Stamp Duty, Vehicle Tax Compensation, Rural Pool Grants, the specific purpose and general purpose grants to and all other non-plan grants-in-aid devolved to Local Self Government Institutions from the Local Self Government Department.
3. The Eleventh Finance Commission Grants to Local Self Government Institutions should be passed down as such, over and above the grants suggested above.
4. For the above three streams of grants-in-aid the devolution formula and the distribution formula are

as suggested below:

(a) **Plan Grant-in-aid:** The existing devolution formula as well as the distribution formula may continue. However up to ten percent of the non-SCP/TSP funds may be distributed as an incentive for increased own revenue mobilization by the Village Panchayats and the . The actual percentage to be distributed as incentive grant-in-aid should be the same as the percentage of Village Panchayats and showing an increase in own revenue. And this amount could be shared as per the formula given below:

$$\theta_i = r_i P_i / \sum r_i P_i$$

θ_i – Share of Local Government

r_i - Percentage increase in its revenue

P_i – Population of the Local Self Government Institutions

22.22 The date of effect of the incentive system may be indicated to Local Self Government Institutions well in advance.

(b) **Maintenance Grant:-** The maintenance grants should be based on the current cost of replacement and the initial norms (which has to be updated periodically) may be as given in Table 22.8.

Table 22.8

(i)	Maintenance of buildings constructed before 1.4.1967	3% of capital cost
(ii)	Maintenance of buildings constructed after 1.4.1967	2% of capital cost
(iii)	Current construction cost	Rs. 400 per sq.ft.
(iv)	Frequency of resurfacing of black top/WBM roads	Once in five years
(v)	Annual repair expenditure of black-top roads	Rs. 25,000 per KM
(vi)	Annual repair expenditure of WBM roads	Rs. 23,000 per KM
(vii)	Annual repair expenditure of unsurfaced roads	Rs. 2,000 per KM
(viii)	Cost of re-surfacing black-top roads (3.8 Meter width)	Rs. 1.65 lakh per KM
(ix)	Cost of re-surfacing WBM roads (3.8 Meter width)	Rs. 1.84 lakh per KM

22.23 The distribution of the maintenance grant could be as follows:

- (i) On the basis of a price index work out at Rs. 140 crore at 2000-01 prices would amount to for the year for which the provision is being made. The deflator for the construction sector can be utilised for this purpose.
- (ii) One-seventh of this amount may be kept aside for the District and Block Panchayats and divided between them in the ratio 19:1. The share of the Block Panchayat should be divided equally among them. As regards District Panchayats, half of the share should be divided according to the ratio of dis-

tribution of the transferred village roads and other district roads and the other half based on norms for repair of non-road assets in their control (other than those created after 1995).

- (iii) Seven-eighth of the share of the Village Panchayats and Municipalities is to be distributed among the Village Panchayats, Municipalities and Corporations in the same ratio as Vehicle Tax Compensation is currently divided; one-eighth of the share of the Grama Panchayat and Municipalities should be distributed according to the maintenance needs of non-road assets, own and transferred (other than those created after 1995) – as determined by norms.
- (iv) The division formula mentioned above needs to be corrected by a series of iterations.
- (v) The remaining portion of the maintenance grants i.e.; the excess over Rs. 140 crore at 2000-01 prices may be distributed exactly in the same manner as Plan Grant-in-aid.

(a) General Purpose Grant:- The government may determine as a one-time exercise, the share of District Panchayat and Block Panchayats in the General Purpose Grant based on normative assessment of their establishment cost and office expense requirements. The remaining amount may be distributed as follows:-

Village Panchayats	-	78.5 percentage
Municipalities	-	8.5 percentage
Corporations	-	13.0 percentage

- (i) The *inter se* distribution among the Municipalities and Corporations should be entirely on the basis of population. As regards Village Panchayats, a corpus of Rs. 10 crore may be set apart and be used as per a gap filling formula – to fill the gap between obligatory expenditure (reckoned as establishment expenses, street-light and water supply charges) and the revenue usable for these purpose (calculated as the sum of own collected revenue and the share of the Village Panchayat from the General Purpose Grant). The entire gap could be filled in the case of second and third grade Village Panchayats, 50% of the gap in the case of first grade Village Panchayats and 25% of the gap in the case of Special Grade Panchayats. The remaining portion may be distributed according to the population criterion.
- (ii) In order to avoid hardships during transition period, it is recommended that no Village Panchayat or Urban Local Body should experience a real shortfall in its receipt on account of these transfers compared to the previous year.

(b) Eleventh Finance Commission Grant:- Eleventh Finance Commission Grant may be devolved on the basis of the population criterion in one instalment.

5. Own Resource Mobilisation by Local Self Government Institutions

- (1) For Property Tax the recommendations of the First SFC may be operationalised and the following scheme is suggested for classifying buildings and fixing the tax.
 - (i) Location Zone - Four Zones
 - (ii) Type of building -
 - (a) Ordinary building
 - (b) Medium type building
 - (c) Luxury building
 - (iii) Type of use-
 - (a) Commercial use
 - (b) Non-commercial use
 - (iv) The relative weights for the zone could be - 1 : 1.5 : 2 : 2.5
 - (v) The relative weights for the type of building could be - 1 : 1.5 : 2
 - (vi) The relative weights between non-commercial and commercial use could be - 1 : 3
 - (vii) Deduction for age and owner occupation may be as provided for in the Kerala Municipalities Act
- (2) On no account should there be a cap on increase or a limit to decrease when the new system is introduced.
- (3) A dual system of numbering is suggested so that incomplete buildings can get a provisional number and their completion tracked properly.
- (4) Presumptive Profession Tax may be introduced to bring certain self employed occupational groups into the tax net.
- (5) Entertainment Tax may be introduced for Cable and Internet.
- (6) In the case of Advertisement Tax the Government may fix the minimum rates for taxation for different kinds of advertisement for different types of locations by issuing Advertisement Tax Rules, which could set out the guidelines for Local Self Government Institutions to assess the tax.
- (7) There should be a system of authenticating advertisements to avoid unauthorized advertisements. Penal provisions for unauthorized advertisement should be at least five times the normal tax.
- (8) Conversion Tax may be realized at the rate of five per cent of the capital value in the case of conversion of paddy lands. Half this rate may be made applicable for other kinds of conversions. In the case of conversions without prior permission a severe penalty of ten times the Conversion Tax should

- be realised in the case of conversion of paddy land and an amount equivalent to the Conversion Tax could be realized in other cases.
- (9) The Service Tax should be made compulsory and be linked to the cost of performing obligatory functions and calculated as a percentage of Property Tax.
 - (10) The ceiling of Surcharges may be removed.
 - (11) In the case of Non-Tax Revenue the Government should fix the minimum fees for various kinds of licences in the case of Municipalities and Corporations through notification. In the case of Village Panchayats only the minimum amount may be fixed in the rules.
 - (12) In the case of licences and permits, which are renewed periodically, 25% of the licence, fees may be collected as fine for delay beyond a grace period of ten days, this penalty may be increased by 25% for every additional fortnight of delay.
 - (13) There must be compulsory display by Local Self Government Institutions at the point of realization of revenue like markets, sand mining area etc., and in the case of auctions a district level public notice should be given in December about to all the forthcoming auctions.
 - (14) For trade licences the present practice in Village Panchayats of calculation based on turnover may be done away with and for both Village Panchayats and , Government could notify the minimum rates for each trade with separate rates in each category for small, medium and large establishments.
 - (15) A separate numbering system should be adopted for trade establishments.
 - (16) The following fees may be enhanced:
 - (i) Building fee for Theaters
 - (ii) Licence fee under the Kerala Places of Public Resort Act.
 - (iii) Licence fee for Private Markets
 - (iv) Licence fee for Private Slaughter Houses
 - (v) Licence fee for Brokers, Commission Agents, Weigh men and Measures.
 - (vi) Licence fee for Butchers, Fishmongers, Poulterers.
 - (vii) Licence fee for premises where animals are kept for commercial purposes.
 - (viii) Market fee
 - (ix) Gate fee for public halting and parking places.
 - (x) Gate fee for slaughter houses
 - (xi) User charges for burial grounds, burning ghats and electric crematoria.
 - (17) The meat stalls and right to fish in water bodies may be auctioned every year by the concerned Local Self Government Institutions after giving due publicity.
 - (18) Village Panchayats may auction the right to set up temporary shops in public land just as are doing so under Section 376 of the Kerala Municipalities Act.
- 6. Follow up the First SFC Recommendations**
- (1) Rules for levy of Advertisement Tax in Village Panchayats and Urban Local Bodies may be issued immediately.
 - (2) Steps to finalize minimum land value for use in registering sales may be completed at the earliest.
 - (3) Tax mapping may be done immediately and unique premises numbering system introduced.
 - (4) A single financing agency for Local Self Government Institutions may be set up by merging Kerala Urban Development Finance Corporation and the Rural Development Board.
 - (5) 50% of building exemption fees and regularization fees may be given to the concerned Village Panchayats and Urban Local Bodies.
 - (6) The question of Village Panchayats and Urban Local Bodies levying daily fee for use of poramboke may be examined and decided by Government without further delay.
 - (7) Rationalisation of revenue village and Village Panchayats/ Urban Local Body boundaries may be done in such a way that no revenue village would lie within more than one Village Panchayat or Urban Local Body.
 - (8) Shortfall in devolution of assigned and shared taxes viz-a-viz the accepted level may be made good by Government.
- 7. Procedural Safeguards**
- (1) Necessary amendments to the Kerala Panchayat Raj Act and the Kerala Municipality Act may be made to specify the minimum shares of Local Self Government Institutions, of the Plan Grant, Maintenance Grant and General Purpose Grant.
 - (2) Local Self Government Institutions should get automatic allocations at the beginning of every month.
 - (3) A survey of assets transferred to Local Self Government Institutions as well as assets owned by them may be carried out to calculate the standard spending assessment for maintenance purpose and the result of the study should be utilized for devolution of maintenance funds.
 - (4) A separate Budget document indicating Local Self Government Institution-wise distribution of the three streams of grants-in-aid, grants-in-aid for pensions and for noon-feeding may be prepared. For other grants-in-aid, district-wise figures may

- be indicated along with formula for devolving them to individual Local Self Government Institutions.
- (5) A legislative provision may be introduced for indexing non-tax revenue items and taxes like Property Tax, Advertisement Tax and Service Tax. Two-yearly revisions are recommended for non-tax licence items and Advertisement Tax based on Consumer Price Index for non-manual workers for Thiruvananthapuram in the case of and Consumer Price Index for agricultural labourers for the state in the case of Village Panchayats; four-yearly revision may be done for Profession Tax and Service Tax.
 - (6) All proposals for staff creation should be cleared by the Ombudsman.
 - (7) A Local Government Staff Commission may be set up to suggest redistribution of staff among Local Self Government Institutions as well as from Government to Local Self Government Institutions.
 - (8) All Local Self Government Institutions should prepare annual maintenance plans.
 - (9) Unpermitted diversion of funds should be penalized by charging penalty of two percent per month from the persons responsible.
 - (10) Village Panchayats, Municipalities and Corporations should have a single account for crediting all their own collected revenues.
 - (11) In the case of Plan Grant-in-aid and Maintenance Grant-in-aid, bill system of drawing from treasuries should be introduced in the place of PD Accounts.

- (12) An Empowered Committee under the Chief Secretary may be set up to follow-up the accepted recommendations and implement them fully.
8. A Cell under the joint control of Finance and Local Self Government Departments may be created for concurrent monitoring of all financial matters of Local Self Government Institutions.

Financial Performance of Local Governments in Ninth Five Year Plan

22.24 The pre-final figures of expenditure by local governments during the Ninth Five Year Plan are now available. Though the allocation for the local governments during the Ninth Five Year Plan was Rs. 4614 crore only Rs. 4130.25 crore could be released. The total expenditure during the five years is reported to be Rs. 3455 crore constituting 83.65% of the release. The expenditure under different sectors are shown in Table 22.9 below:

22.25 The overall expenditure is creditable taking into account the fact that the expenditure responsibility was very high and the capacity of the local government was rather limited. But it has to be noted that the expenditure under SCP is significantly lower than the expenditure under general sector. Since social justice is constitutionally mandated as the objective of local level planning, this causes some concern.

22.26 The expenditure under Centrally Sponsored Schemes and State Sponsored Schemes are as given in Table 22.10

22.27 The consolidated data of expenditure of the gross plan i.e., plan including all source of financing in the Ninth Five Year Plan is given in Table 22.11.

Table 22.9
Details of Plan Grant Release and Expenditure in the Ninth Five Year Plan (1997-02) (Rs. in crore)

Sector	Release	Expenditure
1	2	3
General Sector	3101.75	2637.54
Special Component Plan	888.25	688.05
Tribal Sub Plan	140.25	129.33
Total	4130.25	3454.92

Table 22.10
Receipts and Expenditure under State and Centrally Sponsored Schemes in the Ninth Five Year Plan

Local Governments	State Sponsored Schemes			Centrally Sponsored Schemes		
	Receipts	Expdr.	% of Expdr.	Receipts	Expdr.	% of Expdr.
1	2	3	4	5	6	7
Grama Panchayat	489.37	327.64	67	235.87	156.36	66.29
Block Panchayat	131.73	86.90	66	528.50	420.82	79.63
District Panchayat	230.98	193.22	83.7	46.31	32.27	69.70
Municipality	63.63	35.36	55.6	44.20	34.42	77.90
Corporation	26.82	15.69	58.5	21.70	16.31	75.20
Total	942.53	658.81	69.9	876.58	660.18	75.3

Table 22.11
Consolidated Statement of Expenditure in Ninth Five Year Plan (1997-02)

(Rs. Crore)

Sl. No	Items	Grama Panchayats	Block Panchayats	District Panchayats	Municipalities	Corporations	Total
1	2	3	4	5	6	7	8
1	Grant-in-aid	1939.66	498.29	505.65	303.09	208.23	3454.92
2	Own Fund	457.21	1.47	0.10	59.78	79.27	597.83
3	State Sponsored	327.64	86.90	193.22	35.36	15.69	658.81
4	Centrally Sponsored	156.36	420.82	32.27	34.42	16.31	660.18
5	Co-operative Finance	5.89	16.93	90.91	2.20	0.00	115.93
6	Institutional Finance	29.60	145.35	1.21	7.81	14.74	198.71
7	Voluntary Contribution	67.70	5.43	3.42	6.22	1.33	84.10
8	Beneficiary Contribution	283.11	11.12	4.95	15.62	18.11	332.91
9	Others	73.57	9.59	31.65	3.74	5.41	123.96
	Total	3340.74	1195.90	863.38	468.24	359.09	6227.35

22.28 It is interesting to note that own funds to the tune of 17.3% of the grant-in-aid and beneficiary contribution and voluntary contribution to the extent of 12.1% has been raised by the local governments. This appears quite good. It is also interesting to note that the Grama Panchayats have mobilized the maximum beneficiary and voluntary contribution, that is, 84.1% of the total mobilization through these sources.

22.29 Details of receipts and expenditure of plan grant, State Sponsored and Centrally Sponsored Schemes, gross plan expenditure, percentage of gross plan expenditure etc. are given in Appendices 22.6 to 22.11.

Performance in the Annual Plan 2002-03

22.30 The sector wise distribution of plan grant in the Annual Plan 2002-03 is given in Table 22.12

Table 22.12
Sector-wise Allocation of Plan Grant in the Annual Plan 2002-03

(Rs. Crore)

Local Government	No. of Projects	Sector-wise Allocation of Plan Grant			
		Productive Sector	Service Sector	Infrastructure Sector	Total
1	2	3	4	5	6
1. Grama Panchayat	142109	270.67	444.24	239.64	954.55
2. Block Panchayat	19728	55.99	109.21	51.00	216.20
3. District Panchayat	4684	64.37	89.10	55.06	208.53
4. Municipalities	10306	19.62	64.76	55.07	139.45
5. Corporations	4037	15.67	50.50	38.26	104.43
Total	180864	426.32	757.81	439.03	1623.16
<i>% of Allocation</i>		26.26	46.69	27.05	100.00

22.31 The data show that 26.26% of the total allocation is in the productive sector and 46.7% is in the service sector. The sub sector-wise allocation (Table 22.13) shows that the following are the main priorities:

Table 22.13
Percentage of Sub Sector-wise Allocation (2002-03)

<i>Sl.No</i>	<i>Items</i>	<i>Percentage</i>
1	2	3
1	Paddy and other Crops	8.56
2	Animal Husbandry	3.15
3	Minor Irrigation and Soil Conservation	7.76
4	Small Scale Industries & Traditional Industries	4.60
5	Drinking Water	6.60
6	Health	2.65
7	Education	4.02
8	Sanitation	2.34
9	Housing	15.79
10	Nutrition	3.81
11	Roads	21.02
12	Public Buildings	3.48

22.32 The gross plan outlay of the Annual Plan 2002-03 is estimated as Rs. 2967.31 lakh from all sources. Approximately 9 percent of gross plan outlay is beneficiary contribution. The share of own fund works out to 7.53%. Details are given in Table 22. 14.

Table 22. 14
Resource Estimates in the Annual Plan (2002-03)
(Rs. Crore)

<i>Sl.No</i>	<i>Source</i>	<i>Estimates</i>	<i>Percentage to Total</i>
1	2	3	4
1	Grant-in-aid	1623.17	54.70
2	Own Fund	223.34	7.53
3	State Sponsored	112.22	3.78
4	Centrally Sponsored	354.44	11.94
5	Loan from Co-operative Institutions	25.07	0.84
6	Loan from Financial Institutions	111.09	3.74
7	Voluntary Contribution	30.95	1.04
8	Beneficiary Contribution	70.07	2.36
9	Beneficiary Contribution (Directly Spent)	195.81	6.60
10	Others	221.15	7.45
	Total	2967.31	100.00

22.33 The details of sector-wise distribution of projects, plan grant and gross plan outlay for major sub sectors are given in Table 22. 15.

22.34 Further details on distribution of plan grant and total plan outlay, gross plan outlay by sources, category-wise distribution of funds, sub sector-wise distribution etc. are given in Appendices 22.12 to 22.15.

22.35 The total plan grant available for the local governments during 2002-03 is estimated as Rs.1285.95 crore including the carry over amount Rs. 399.94 crore and release of Rs. 886.00 crore. The expenditure was Rs. 567.99 crore which constitutes 64% of the amount released. The category-wise details of receipts and expenditure of plan grant are given in Table 22.16.

22.36 The details of receipts and expenditure are given in Appendices 22.16 and 22.17 respectively.

22.37 The key indicators of physical achievement during 2002-03 are given in Table 22.17.

22.38 More details of physical achievement are given in Appendix 22.18

Key Initiatives during 2003-04

22.39 The key initiatives of the current year (2003-04) are summarised below:

1. Reforms in Fund Flow

The fund flow system has been restructured to make it monthly and automatic instead of quarterly and request based as was the practice till recently. However, funds remaining unspent as at the end of the financial year would automatically lapse (Earlier local Governments were allowed to carryover upto 25% of their closing balance.)

2. Restructuring of Non-Plan Devolution

The non-plan devolution is now as shares of certain not so buoyant or relatively small taxes like Basic Tax, Stamp Duty and Motor Vehicle Tax. Also department specific non-plan grants have been devolved for running of institutions and maintenance of assets. Now these have been rationalized and restructured as shares of

Table 22.15
Major Sub Sector-wise Distribution of Projects and
Percentage of Plan Grant and Gross Plan Outlay in the
Annual Plan 2002-03

<i>Sector</i>	<i>No. of Projects</i>	<i>Percentage</i>	
		<i>Plan Grant</i>	<i>Gross Plan</i>
<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
1. Agriculture And Allied Sector	20786	12.7	15.39
2. Irrigation and Flood Control	13772	8.04	6.52
3. Industries	5774	5.29	5.2
4. Micro Sectors	460	0.23	0.18
Productive Sector - Total	40792	26.26	27.29
5. Environmental Protection	105	0.06	0.12
6. Education, Art, Culture and Sports	12509	5.21	4.82
7. Health	25055	11.15	12.09
8. Social Welfare	15510	19.98	18.01
9. Mother and Baby Care	12338	8.46	7.65
10. General Economic Services	3064	1.21	0.97
11. Micro Sectors	1129	0.62	0.46
Service Sector - Total	69710	46.69	44.12
12. Energy	5115	2.12	1.58
13. Transport	60321	21.45	22.62
14. Public Buildings	4926	3.48	4.39
Infrastructure Sector - Total	70362	27.05	28.59
Grand Total	180864	100.00	100.00

Table 22.16
Annual Plan 2002-03
Release and Expenditure of Plan Grant (Provisional)
(Rs. Crore)

<i>Category</i>	<i>Amount Released</i>	<i>Expenditure</i>	<i>Percentage of Expenditure to Release</i>
<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
1. General Sector			
(i) Normal	651.98	446.16	68.43
(ii) EFC	55.95	18.25	32.60
2. SCP	178.07	100.83	56.63
3. TSP	--	2.75*	--
Total	886.00	567.99	64.10

* Expenditure from carry over fund

Table 22.17
Annual Plan 2002-03
Physical Achievements (Provisional)

<i>Sl.No</i>	<i>Items</i>	<i>Unit</i>	<i>Achievement</i>
1	2	3	4
1	Area brought under cultivation	Acre	40839.434
2	Beneficiaries of vegetable cultivation	No	132921
3	Distribution of tractors under agricultural development projects	..	36
4	Distribution of tillers under agricultural development projects	..	957
5	Poultry - egg rearing units	..	6566
6	Poultry - broiler units	..	414
7	Construction of cattle sheds	No	10392
8	Watershed development projects	No	1361
9	Land brought under cultivation through watershed development Projects	Ha.	6969.73
10	Micro enterprises started	No.	3331
12	Self employed persons	No.	24611
13	Self employment units started by poor people	..	3208
14	Self employment units for destitutes	..	440
15	Employment training programme for destitutes	..	499
16	Destitutes trained (Persons)	..	2220
17	Distribution of land to landless (Beneficiaries)	..	3224
18	Area of land distributed to landless	Ha.	3958.63
19	Houses constructed	No.	35012
20	Construction of sanitation units	..	76439
21	Drinking water projects	..	9798
22	Beneficiaries of drinking water projects	..	181826
23	Drinking water projects implemented with beneficiary contribution	..	4816
24	New wells	..	9894
25	Renovation of drinking water projects	..	402
26	Solid waste disposal projects	..	147
27	Solid waste disposed (Quantity)	Ton	1221.25
28	Distribution of equipment to physically and mentally challenged persons	"	1085

the total taxes of the State Government. It has been decided that from 2004-05, 3.5 percent of the States Own Tax revenue would be devolved as General Purpose Grants and 5.5 percent as Maintenance Grants. These are over and above the plan grants which would continue to be given as per the existing pattern.

3. *One-time Updation of Accounts*

Government have approved a massive initiative to update the accounts of all local governments to be done using in-house and outside expertise at a cost of Rs.39 crore. This would take care of the major shortcoming of Kerala's decentralization experience.

4. *Property Tax Reform*

Though Kerala Panchayat Raj Act and Kerala Municipality Act were amended in 1999 to provide for plinth area based Property taxation due to various reasons rules and operational instructions were not finalised. This has been now done and is expected to be brought into force shortly.

5. *Empowerment of Tribals within the Local Government System*

The Tribal Sub Plan which was taken away from the local governments in 2001-02 has been restored during 2003-04. In order to empower the tribals the hamlets have been taken as the unit and the general body of the hamlet called 'Oorukoottam' has been significantly empowered to prioritise these development needs as well as to implement their development programmes. A fairly detailed process of participatory planning, taking care of all the special requirements of the tribal people has been put in place. This process is to be refined further to enable the tribal groups to access their entitlements fully and exercise their powers to their advantage.

6. *Refining of the Anti Poverty Sub Plan*

As part of the Tenth Five Year Plan the concept of Anti Poverty Sub Plan was introduced at the level of local government for the first time in the country. Due to lack of expertise the preparation of the Anti Poverty Sub Plan was rather weak. Yet it is significant that substantial resources were earmarked to the poor even though integration and convergence both horizontally and vertically could not be fully achieved. The salient features of the Anti Poverty Sub Plan revealed from the data furnished by the local governments are outlined in the Chapter on Poverty and Special Programmes for Weaker Sections.

22.40 In order to fine tune the process the State Pov-

erty Eradication Mission has initiated a bottom up process of plan preparation as part of Kudumbashree using the Community Development Society (CDS) system. This is underway in five Grama Panchayats and is expected to throw up a viable methodology for preparation and implementation of Anti Poverty Sub Plans by local governments through community based organisations of the poor themselves.

22.41 A sub component of the Anti Poverty Sub Plan meant for the absolute poor called 'Ashraya' has been successfully prepared in 101 grama panchayats. This is to be extended to all the grama panchayats and urban local governments in the next one year. More details are given in Chapter on Poverty and Special Programmes for Weaker Sections.

Institutionalisation.

22.42 Four major initiatives have been launched for institutionalisation of decentralisation. They are:

(1) *Local Self Government Action Plan* - Though this was approved during the previous year much headway was made during the current year in implementing the different points of the Action Plan. They include:-

- (i) Reactivation of State Development Council
- (ii) Restructuring of Kerala Urban Development Finance Corporation to enable it to channel funds to all local governments.
- (iii) Identification of parallel structures at the district level with the objective of integrating them with the local government set up.
- (iv) Bringing into existence the Appellate Tribunal system.
- (v) Concurrent monitoring of local plans through independent agencies.
- (vi) Preparation of minimum standards for infrastructure and services in respect of schools and hospitals.
- (vii) Outsourcing of technical services to engineering colleges and academic institutions.
- (viii) Redeployment of technical personnel.
- (ix) Transfer of Single Village Panchayat Water Supply Schemes to Grama Panchayat.
- (x) Creation of the post of Finance Officer for District Panchayats.
- (xi) Allowing local governments to use income from assets transferred to them.

(2) *Modernising Government Programme* - The most important component of MGP is the package of initiatives related to strengthening local governments so that

the gains of decentralisation could be sustained and deficiencies got over. 33 out of the 100 initiatives of the Modernising Government Programme (MGP) relate to local governments. The important among them are listed below:

- (i) Put in place a new office management system for local governments.
- (ii) Preparation of management manuals in respect of institutions transferred to local governments.
- (iii) Developing a procurement manual appropriate for local governments.
- (iv) Preparing a public works manual for local governments providing for use of appropriate technology as well as community participation in the execution of public works.
- (v) Introduction of new budgeting system in local governments.
- (vi) Introduction of new accounting system in local governments.
- (vii) Operationalisation of social audit.
- (viii) Identification of opportunities for Local Economic Development through action research and development of capacity for planning and implementation of Local Economic Development schemes.
- (ix) Design of a service and performance standard system.
- (x) Developing a new social security system to be implemented through local governments.
- (xi) Preparation of asset management plans
- (xii) Preparation of plans for the physically and mentally challenged.
- (xiii) Developing a spatial plan with focus on connectivity.
- (xiv) Establishing a new monitoring system.
- (xv) Action research project through Beacon Panchayats giving them freedom from existing procedures and instructions so that new models could be developed.

22.43 Each of these initiatives has been developed into a Detailed Implementation Plan with milestones and resource requirements. The resources required are being provided under Plan.

(3) *Decentralisation Support Programme* - This is complementary to the Modernising Government Programme and is to be implemented with assistance from the Dutch Government. The important initiatives are:-

- (i) Develop long range plans for Scheduled Castes and Scheduled Tribes.
- (ii) Strengthen the Women Component Plan to move on to gender budgeting in local governments, to be implemented by gender auditing.
- (iii) Conduct of environmental auditing at the local level.
- (iv) Improve local data base to facilitate planning.
- (v) Strengthen District Planning Committees.
- (vi) Provide a system for NGO-Local Government partnership.
- (vii) Improve the functioning of Ombudsman.
- (viii) Revisit the formula of devolution of funds.

22.44 These initiatives are to be implemented on a mission mode through the Local Self Government Department.

(4) *Capacity Development for Decentralisation in Kerala* - This project supported by the Swiss Agency for Development and Co-operation (SDC) has two main components. The first component provides a platform for decentralization. This is basically to create a strategic forum for discussion and development networks to strengthen decentralisation. The second component is to develop high quality trainers and training modules and take up training programmes in three districts one in each of the regions of the State. This methodology is accepted by the State Government to be replicated in other districts. A grant of Rs.5.37 crore would be made available by SDC for three years starting from April 2003.

Development Index of Grama Panchayat

22.45 The development index of grama panchayat based on a research paper are given in Box 22.6

Box -22. 6

According to an interesting study* an Index of Development of 740 Grama Panchayats has been developed using the indicators of development given below:

Indicators of Development and their Weights

Indicator	Weights
<i>Primary Sector</i>	
Per capita Production of Paddy	0.0001
Per capita Production of Coconut	0.0056
Per capita Production of Rubber	0.0003
Per capita Production of Pepper	0.0012
Per capita Production of Cardamom	0.0001
Per capita Production of Arecanut	0.0969
Per capita Production of Coffee	0.0009
Per capita Production of Cashew	0.0795
Per capita Production of Banana	0.0806
Per capita Production of Plantain	0.0767
Per capita Production of Tapioca	0.0084
Per capita Production of Tea	0.0012
<i>Secondary Sector</i>	
Proportion of Population in Organized Sector	0.0034
<i>Urbanization</i>	
Distance from the nearest Town	0.2823
<i>Infrastructure</i>	
Non-earthen roads per Sq.Km	0.0015
Concrete houses per thousand population	0.2265
<i>Education</i>	
Number of educational institutions per sq.km.	0.1732
Adult literacy rate	0.0013
<i>Health</i>	
Number of hospitals per square km.	0.0008
<i>Culture</i>	
Number of seats in cinema houses per thousand population	0.0059
<i>Backwardness</i>	
Scheduled Caste and Scheduled Tribe population	0.0033
Households Below Poverty Line per thousand population	0.0002
Total	1.0000

The classification of 740 Grama Panchayats on the basis of the development index is given below

Description	Interval values	Panchayats (No)	% to Total
Least developed panchayats	$0 < pd < 0.0527$	146	6.21
Less developed panchayats	$0.0527 < pd < 0.146$	546	73.61
Moderately developed panchayats	$0.1461 < yd < 0.222$	44	5.94
Relatively developed panchayats	$0.2226 < yd < 0.282$	4	0.54
Developed panchayats	$0.2825 < yd < 1$	1	0.13

Whatever be the elements of the index it shows that there are a lot of less developed Panchayats.

* *Development Indices for Panchayats in Kerala: Report of a Preliminary Analysis by Ms. Shaheena.P. Kerala Agricultural University (2004) (Unpublished)*

Best Practices

22.46 Several Local Governments have come out with viable models in different development sectors and governance areas. Some of them have been documented by the State Planning Board and they are summarised in Boxes as follows:-

- | | | |
|----------------------------------|---|---|
| (1) Vengannur Grama Panchayat | : | Participatory Planning for Poverty Reduction (Box 22.7) |
| (2) Mangattidam Grama Panchayat | : | Successful Micro Enterprises for Poverty Reduction (Box 22.8) |
| (3) Nedumbassery Grama Panchayat | : | Innovative Social Security Projects for Destitutes (Box 22.9) |
| (4) Perambra Grama Panchayat | : | Preparation of Watershed Development Plan by the people with the support of a technical institute (Box 22.10) |
| (5) Kanjikuzhy Grama Panchayat | : | Sustainable Vegetable Cultivation Programme (Box 22.11) |
| (6) Adat Grama Panchayat | : | A Large Water Supply project with capital contribution from the public (Box 22.12) |
| (7) Karakulam Grama Panchayat | : | Community Based Environmental Hygiene to Prevent Epidemics (Box 22.13) |
| (8) Cheriyana Grama Panchayat | : | Success of a local government in an area outside its functional domain – Settling Litigation (Box 22.14) |
| (9) Idukki District Panchayat | : | Pioneering Role in Localised Energy Production through a Micro Hydel Plant (Box 22.15) |

Box -22. 7**PARTICIPATORY PLANNING FOR POVERTY REDUCTION IN VENGANNUR GRAMA PANCHAYAT**

Venganoor Grama Panchayat in Thiruvananthapuram District has an unusually high percentage of people below poverty line with 4478 families out of a total of 8130 families in the Panchayat. In accordance with the guidelines for the Tenth Five Year Plan, the Panchayat decided to mobilize the NHG network fully and convert itself into a self sufficient, self reliant and sustainable Panchayat (S3 Panchayat). The following methodology was adopted.

- Sensitization workshop for elected representatives and other stakeholders.
- Awareness building campaign at grassroots level
- A detailed benchmark survey of all BPL families through the Neighbourhood Groups.
- Sector wise training programme for NHG leaders
- Preparation of a household based micro plan for poverty reduction at the NHG level focusing on infrastructure and income generation.
- Integration of micro level plans into mini plans at the Panchayat Ward level by the Area Development Societies with focus on special problems of disadvantaged groups.
- Consolidation of the mini plans into anti poverty sub plan of the Grama Panchayat by the Community Development Society focusing on the following themes:
 - Health – Education – Child Development – Assistance to the Challenged – Geriatric Care – Infrastructure Development – Economic Development – Development of Agriculture – Development of Traditional Industry.

This sub plan has been adopted by the Panchayat and since the resources of the Panchayat would not be sufficient to meet the requirements, a convergence plan is being developed so that the anti poverty sub plan has a public fund component, institutional fund component and a people's fund component

The outstanding features of the anti poverty sub plan are:

- (1) It comes from within the poor;
- (2) It is prioritized on the community is understanding of deservingness;
- (3) It is cross sectoral and well integrated;
- (4) It is developed from an unchallengeable data base.

Box -22. 8

SUCCESSFUL INCUBATION OF MICRO ENTERPRISES – THE EXPERIENCE OF MANGATTIDAM GRAMA PANCHAYAT

Mangattidam Grama Panchayat in Kannur District has 2135 BPL families out of a total population 6500 households. 308 families do not have livable houses; 813 do not have drinking water facilities and 933 households do not have sanitary latrines. Mangattidam Village Panchayat decided to play a role of facilitator to solve the problem of poverty through micro enterprises. They organized 107 Neighbourhood Groups covering all BPL families under 15 Area Development Societies.

An intense search for micro enterprise opportunities was done through consultations with the NHGs using the expertise available within the Panchayat. They decided that the first investment should come from the thrift generated by the members of NHGs and the Panchayat assistance should be limited. According to the latest figures the thrift collection comes to nearly Rs. 29 lakh. This has been circulated as loan several times so that the total loan comes to Rs. 1.1 crore. 73 NHGs have achieved maturity for linkage with banks and Rs. 14.6 lakh has been obtained as Bank Loans. The Panchayat has given Rs. 7.3 lakh as its support to the NHGs equivalent to half the bank loans.

73 micro enterprises have been started employing 631 people. The important activities include:

- 1) Plantain Fibre Unit
- 2) Ethnic Food Units
- 3) Making of Curry Powder, Pappads
- 4) Catering
- 5) Garment Making
- 6) Umbrella Making
- 7) Lease Land Farming
- 8) Soap Making.

An intense effort is being taken by the Panchayat to market these products in the nearby Koothuparamba Municipality as well as in Kannur and Tellicherry areas

Box -22.9

PLANNING FOR DESTITUTES – THE EXPERIENCE OF NEDUMBASSERRY GRAMA PANCHAYAT

This Panchayat in Ernakulam District followed a highly participatory methodology as follows:

- (1) Two-day preliminary survey
- (2) Collation of data on the third day (225 destitute families identified)
- (3) Training on identification of destitutes held at Thiruvananthapuram.
- (4) Detailed two-day survey based on common methodology through the NHG network.
- (5) Collation of data collected (194 families)
- (6) Interactions with identified families and preparation of ward level micro plans
- (7) Discussion with voluntary and mass organizations (two rounds)
- (8) Re-verification of destitutes (156 families finalised)
- (9) Documentation of identified families through photographs, household discussions
- (10) Updation of projects prepared
- (11) Finalised integrated projects for Rs. 60 lakh with public contribution of Rs. 20 lakh

In addition to this elaborate methodology, two innovative features merit attention.

- (i) Bringing into use a detailed family-wise card containing every detail about the socio-economic profile of individual families. This data base is further strengthened with an integrated CD on all the families.
- (ii) Mobilising resources through local public and private agencies, donation from employees within the Panchayat and appeal to 450 individuals having jobs in the Gulf.

The Panchayat has also persuaded the Cochin Airport to part with 75 cents of land for an institution for the destitutes.

Box -22.10

**PREPARATION OF A WATERSHED BASED MASTER PLAN-
EXPERIMENT OF PERAMBRA BLOCK**

Perambra Block of Kozhikode District which is on the foothills of the Western Ghats and took upon itself the task of operationalizing the government guideline regarding preparation of an integrated watershed management plan. The Block Panchayat got in touch with Integrated Rural Technology Centre, Mundoor – a technology centre run by the well known People Science Organisation, KSSP. The following steps were followed:

- (1) Training of 101 master trainers from different walks of life like farmers, activists, politicians, students, professionals, officials and elected representatives for 4 days at IRTC.
- (2) Preparation of the map delineating 46 micro watersheds by the master trainers.
- (3) Training of selected persons from each watershed at the local level.
- (4) Formation of two survey teams of seven persons each for each micro watershed.
- (5) Formation of Watershed Committee at the level of the Village Panchayat.
- (6) Environment creation for watershed planning. This included a special Grama Sabhas, discussion in school assemblies, banners and posters, conduct of Jala Jatha etc.
- (7) Special survey of gullies and streams.
- (8) Conduct of transect walks.
- (9) Intensive meetings of Neighbourhood Groups of farmers.
- (10) Watershed Mahasabha in each micro watershed.
- (11) Preparation of an action plan for watershed based interventions.
- (12) Expert interventions in respect of agriculture, fisheries, soil conservation and special problems.
- (13) Finalisation of the watershed master plan. This was released by the Chief Minister.

The whole exercise took 16 1/2 months. In order to plan and implement the programmes, farmers' group called *Karshaka Koottaima* has been formed. To give a fillip to the activities on June 5th a call was given to dig one lakh contour pits as part of the World Environment Day - 82000 pits of dimension 90cm x 60 cm x 50 cm were dug as voluntary activity. Thereafter an innovative action to trace the Kuttiadi river was taken up in partnership with KFRI to "Know Your River". This exercise concluded with the planting of bamboo on the sides of the river.

This offers an excellent example of participatory watershed management plan preparation. The plans are to be implemented converging funds from the local governments, State Government and Central Government.

Recognising the path breaking feat of the Panchayat, KILA conducted a 'P to P' Training Programme in which nearly 120 Block Panchayat Presidents came to Perambra, studied the experience and resolved to replicate it in their area.

Box -22.11

**SUSTAINABLE VEGETABLE CULTIVATION IN
KANJIKUZHI GRAMA PANCHAYAT IN CHERTHALA TALUK**

Kanjikuzhi Panchayat in Cherthala Taluk initiated vegetable cultivation way back in 1997 utilising Rs.60,000 from untied funds for supply of seeds, fertilizers and pesticides. Nearly 6000 households participated in the cultivation of bitter gourd, cowpea, brinjal, chilly, ladies finger and snake gourd. In order to create the motivation, planting was done on a single day called "*Pachakkari Krishi Dinam*". In the next year 5000 people took part in the programme and only seed packets were distributed. Over all beneficiaries contributed Rs.2.5 lakh out of Rs.3.5 lakh spent and 50 hectares were covered resulting the production of 100 tonnes of vegetables. However the scheme tapered off in the next two years and in the year 2000-01 it was not implemented at all.

But again riding on the success of the Kudumbashree network tuber planting was initiated in 2001-02. In 2002-03, 101 self-help groups and 123 Kudumbashree units took up cultivation of vegetables in 50 hectares and produced 120 tonnes.

Simultaneously the departmental scheme of organizing farmers into Haritha Sanghom was launched. Five Haritha Sanghoms are now functioning well, each cultivating five hectares. In 2002-03 around 175 tonnes of vegetables have been produced by these Haritha Sanghoms.

In spite of slippages in between, marketing problems and frequent change of key officials, Kanjikuzhi Panchayat has succeeded in sustaining a novel project over a period of seven years. Unlike many Panchayats it has integrated the scheme with the departmental scheme with the Panchayat spending Rs.5.9 lakh and the Agriculture Department Rs.5.2 lakh in six years from 1997. About 120 hectares have been brought under vegetable cultivation resulting in the production of 295 tonnes of vegetables.

Box -22.12

PARTICIPATORY WATER SUPPLY PROJECT IN ADAT GRAMA PANCHAYAT, THRISSUR

About 20 years ago the Kerala Water Authority set up a drinking water supply scheme with a sump of 36000 liter capacity at Puzhakkal and ground level service reservoir of 1.5 lakh litre capacity at Chettikunnu with distribution through 75 taps covering just three wards of the Panchayat.

Since the scheme covered only a small portion, the Village Panchayat decided to go through a self-help method. A new scheme for Rs.221 lakh was formulated with two phases. The first phase consists of putting up a water tank of 3.5 lakh litre capacity and a new sump of 42000 litre capacity. The outlay is Rs.139 lakh of which the beneficiary contribution is expected to be Rs.90.25 lakh. This is to be followed up with a distribution system providing 2500 house connections and 260 street taps at a cost of Rs.82.5 lakh to be fully borne by the beneficiaries. Thus out of a total project cost of Rs.221.50 lakh the beneficiary contribution alone comes to Rs.172.75 lakh.

The Planning Process

The Planning process is summarized below:

- Household survey to identify the prospective contributors and assessment of requirement.
- Special Grama Sabhas to create awareness among the people on the requirement of generating beneficiary contribution and determination of spots for street taps.
- Beneficiary groups' meetings to interact with beneficiaries on problems at various stages of implementation and suggest remedies.
- Multi-level monitoring system.
 - a) At Panchayat level

For the purpose of effective implementation of the project, a Monitoring Committee headed by the President, the elected members, Executive Engineer (KWA), Executive Engineer (PWD), Head of the Department of Civil Engineering, Government Engineering College, Thrissur and representatives of beneficiary groups as members, was set up.

b) Ward level monitoring Committee

For the purpose of monitoring the implementation of distribution system, a committee headed by the Ward Member with representatives of Residents' Associations and beneficiary groups, Officers of Kerala Water Authority etc. as members for each ward has been set up.

Implementation.

The Village Panchayat got technical support both from KWA and the Government Engineering College Thrissur. The first phase of the project has been completed at Rs.132 lakh at a saving of Rs.7 lakh. Rs.30 lakh contribution has already been paid by the beneficiaries and the remaining Rs.60.25 lakh is under collection.

As part of the second phase beneficiary contribution is being paid at the rate of Rs.5025 per connection. Once the beneficiaries pay the amount, implementation would start.

Operation and Maintenance

The operation and maintenance costs are to be met by user charges and the KWA has undertaken to do the maintenance.

Box -22.13

HEALTH AND SANITATION INITIATIVES OF KARAKULAM GRAMA PANCHAYAT IN THIRUVANANTHAPURAM

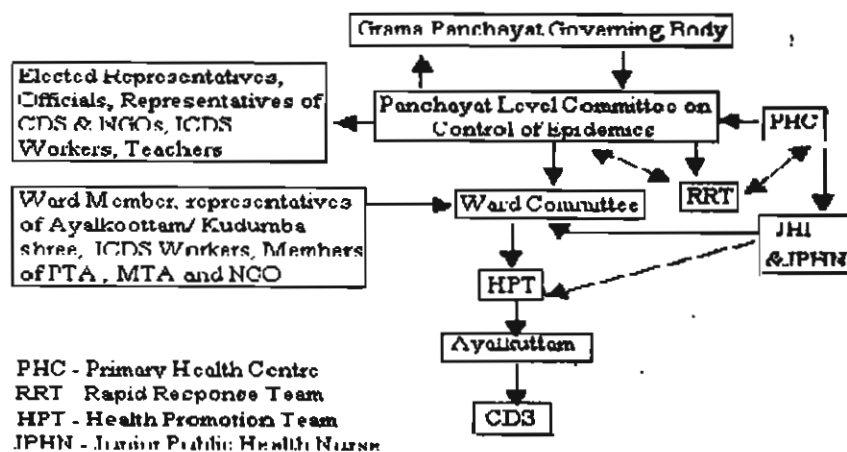
When the Dengue fever epidemic broke out in Trivandrum, Karakulam Gram Panchayat immediately mobilized the public, officials, social organizations and carried out a focused campaign with the objective of preventive action to control the breeding of mosquitoes and to put in a system for vigilant monitoring.

The major initiatives undertaken includes:

- Awareness campaign on communicable diseases and formation of awareness centres.
- Wide publicity on control measures by exhibiting notice boards and distribution of news letters.
- House to house visit by 400 volunteers of Kudumbashree in association with 800 college/higher secondary school students.
- Distribution of Guppy fish which eat away the mosquito larva
- Cleaning of public places and canals with public participation
- Special drive on disposal of waste management
- Special Grama Sabha on control of communicable diseases
- Preventive measures against dengue fever, leptospirosis etc.
- Vaccination for prevention of diseases
- Family planning measures
- Continuous house visits by the health workers
- Improvement of the facilities in PHC and its sub centres
- Medical camp
- Formation of schools health clubs under the supervision of trained teachers.
- Sanitation programmes with participation of merchants, traders etc.
- Workshop on sanitation for agricultural labourers, farmers, cattle breeders, rubber producers, tapping employees etc.

The organisational structure of the programme is shown below:-

Epidemic Control Programme – Organisational Structure



Through the launching of this intensive drive the Panchayat was able to ensure that not a single infection occurred within its jurisdiction.

The Panchayat followed this up with a system of solid waste management at important junctions where the full cost is met by the commercial establishments. This again is worthy of developing into a pocket model for replication in other local governments.

Box -22.14

**LITIGATION FREE PANCHAYAT -
PIONEERING EFFORTS OF CHERIYANAD GRAMA PANCHAYAT**

Cheriyamad Village Panchayat in Alappuzha District has provided the example of a Village Panchayat going beyond its statutory responsibilities and through its sheer power of leadership and persuasion being able to achieve significant results in an area which is considered beyond the limits of Panchayats in Kerala. Due to the strong political party affiliations of Panchayats the idea of 'Nyaya Panchayat' has not caught on in Kerala. But Cheriyamad Panchayat identified litigation as a major problem affecting people, resulting in conflicts, waste of resources and drain of energies. So it decided to focus on this problem even though it invited opposition from those who had vested interests in prolonging the disputes.

A Harmony Committee was constituted under the Panchayat President with three Standing Committee Chairpersons, a retired Superintendent of Police, a retired BDO, a College Professor and a Social Worker as members. The Panchayat members of each ward function in the Committee whenever cases related to their ward came up. The Committee conducted a household survey with the support of the State Legal Services Authority to ascertain the status of litigation in the Panchayat. This was followed up by visits to the households of the litigants and conduct of an impartial enquiry by the Committee. Thereafter the parties were invited for Lok Adalats in which the Harmony Committee allowed the parties to express their views and present facts in full. These were deliberated by the members of the Committee and a decision pronounced immediately. Then the parties moved the Courts concerned and presented the solution and got their case struck off on mutual consent. The Panchayat Court has been able to settle 163 cases during 2 ½ years. Then a special drive was launched and 147 cases settled in October and November 2003 alone. Now only 193 cases remain. The Panchayat intends to push ahead and make itself fully litigation free.

The key reasons for the successes of this venture are:

1. Public-spirited leadership;
2. Credibility of the Harmony Committee;
3. Detailed procedures and evidence taking and
4. Appeal to reason and economic sense of the litigants

Cheriyamad experience proves that a Panchayat can transform itself into a local government given the will to do so even without legal entitlements.

Box -22.15**MICRO HYDEL ELECTRIC PROJECT AT UPPUTHARA
IN IDUKKI DISTRICT**

Long before the new Electricity Act, Idukki District Panchayat took up the setting up of a micro hydel project in the remote Upputhara area using appropriate technology obtained from Centre for Appropriate Rural Technology, Mysore. Though the project idea was conceptualised in 1998, the Panchayat has to wait for two years to go through the formalities pointing out the need to standardise such processes and procedures.

Using the technology of reverse functioning of a water pump and utilising a 7.5 HP kirlosker motor as generator the project was commissioned with in 10 months implemented by District Nirmithi Kendra, Idukki.

Right from the beginning the stakeholders were consulted and their full ownership of the project ensured. A nine member managing committee has been set up. This committee has appointed an operator on payment of Rs. 1000 per month as remuneration. Each of the 45 households contribute Rs. 30 per month for which each houses allowed to use 4-6 lamps. But there is a collective social decision to use only CFL for energy saving. The monthly savings from the collection is pooled for maintenance.

The people have accepted the project in full. They conduct a social audit of accounts every year. Now they get power only for 10 months in a year. If an additional check dam is constructed this difference can also be got over.

This experience shows that a local government can meet a local need through the use of appropriate technology and with community consent move on a community management system ensuring the sustainability of the project.

SCIENCE AND TECHNOLOGY

Role of State S&T Councils

The role identified for State councils for Science and Technology is given in Box 23.1.

Box -23.1

Role of State S&T Councils

- Formulation, planning, coordination and promotion of S&T activities within their respective States.
- Preparation of State S&T Plans.
- Compilation and dissemination of S&T information.
- Take up programmes relating to promotion and utilization of S&T in the States (e.g. Popularization of Science, Rural Development, assisting the National Technology Missions, use of Remote Sensing Technology ect.)

23.2 A detailed review of environmental issues and the work being done in that field is given in chapter VI. In this chapter, S&T activities are reviewed.

23.3 The Kerala State Council for Science, Technology and Environment (KSCSTE), came into existence in November 2002 as a society registered under the Travancore Cochin Literary Scientific and Charitable Societies Registration Act, 1955. Originally, there were seven R&D centres amalgamated with the Council. However, with the attachment of ANERT with the Power Department, there are only six R&D centres under the Council now.

A brief account of activities and achievements of the Council during 2003 is given here.

KSCSTE Science Research Scheme

23.4 Under its "Science and Technology Promotion" programme KSCSTE promotes R&D projects in emerging and challenging areas of science and engi-

neering by providing financial support for the implementation of the projects. The maximum grant for a project is limited to Rs.10 lakhs for three years. The host institution is also eligible for an overhead of 10% of the grant. The project proposals are subject to peer reviewing, presentation by the Principal Investigator(P.I) and a selection process by the Research Council for Science and Engineering (RCSE). During the year under report, two RCSE meetings were held and 61 projects with a total outlay of Rs. 233.7 lakhs for three years were approved. The approved projects include 25 in agriculture, 24 in life sciences and 12 in physical sciences.

KSCSTE Research Fellowship

23.5 A research fellowship scheme to promote R&D interest in research among young research students was introduced in 2002. First five post graduate rank holders in Physics, Chemistry, Botany, Zoology, Engineering, Mathematics and Agriculture from the universities in Kerala are eligible to apply for the fellowship during the current year. The selection procedure involves a written test in general research aptitude and optional subject followed by an interview. Candidates selected could avail the fellowship grant and join for Ph.D programme in Kerala. During the year 2002, 5 candidates were selected (one fellowship was offered in each subject) while four students availed of the fellowship. During 2003, two fellowships were offered in each subject and a total of 14 candidates were selected. The fellowship amount is Rs. 8000/- per month during the first two years of Ph.D programme and Rs. 9000/- per month during the third year with an annual contingency of Rs. 10000/-

Sastraposhini – a scheme for establishing model science laboratories in schools.

23.6 The programme "Sastraposhini" was launched to create scientific interest and aptitude in high school students of the State by establishing model science laboratories in Government schools, one in each educational

district, with the help of the State education department.

23.7 In 2003 ten model laboratories were set up after imparting necessary awareness and training to teachers. Another sets of 10 model laboratories are being established and will start functioning by 26th January 2004. Model laboratories in all the 36 educational districts will be established by the end of March 2004.

Refresher Course 2003

23.8 The Council in association with the Indian Academy of Sciences has initiated a refresher course programme for college teachers in Kerala. Mahatma Gandhi University, Cochin University and University of Kerala were selected for conducting the courses in Chemistry, Physics and Biology respectively. Accordingly, one professor each from MG University, Cochin University and Kerala University were identified as nodal persons to conduct the programme. Refresher Course in Physics was conducted for two weeks in the Cochin University of Science and technology during October 2003 and was attended by 30 college teachers.

Patent Information Centre

23.9 A Patent Information Centre (PIC) was started in May 2003 to support patenting activities in Kerala and to create awareness on Intellectual Property Rights among researchers, academicians and industrialists. Besides, the Centre would provide search facility for patentability for inventions/discussions and assistance in filing patents to promising cases. The Centre acts as a satellite unit of the Technology Information Forecasting Centre (TIFAC), New Delhi.

Selective Augmentation of R & D

23.10 Selective Augmentation of R & D (SARD) is a scheme started by the Council for improving and promoting infrastructure in colleges and university departments such as, modernisation of laboratories, acquisition of essential equipments and upgrading the existing facilities for R&D activities. Eight projects were sanctioned in 2003. Eleven projects will be considered in January 2004.

Seminar/Symposia/Workshop/Training Programme

23.11 The Council is providing funds for promoting

Source: Kochi Port Trust

scientific seminars, symposia, workshops and training programmes. A new committee has been constituted in 2003 for this purpose. So far, 154 applications have been received of which 100 have been sanctioned.

Kerala Science Congress

23.12 KSCSTE conducted the 15th Kerala Science Congress 2003, which provided a venue for presentation of research papers on various themes. The aims of Science Congress are:

- Revitalise R&D in the State
- Sensitise young Scientists and in particular women scientists to the problems of development
- To shift focus of R&D towards solution of developmental problems of the State

23.13 The 16th session of the Kerala Science Congress will be held during 29th to 31st January, 2004, at CWRDM. Focal theme of the congress is: "Traditional and appropriate technologies for development of Kerala". Out of 350 research papers received, 161 papers were accepted. These included 20 in the contest category, 75 for oral presentation and 66 papers for poster presentation. Proceedings of the Congress will also be published.

GIAN Centre – Kerala

23.14 The National Innovation Foundation (NIF) has set up Gian Centres in different regions of the country primarily to provide a helping hand to grassroots innovators to convert their innovations into enterprises. There is a proposal to establish one such GIAN centre in Kerala also.

Scientometry

23.15 Data on the research outputs of all the R&D Centres both in Government and private sectors, affiliated colleges and university departments of Kerala are collected. 16 R&D centres, 38 affiliated colleges including universities, 11 industries and 2 non governmental organizations of the state were contacted. Details regarding research publications, on-going research projects, scientific strength etc of the state will be published with a view to helping assessment of scientific potential. Similarly,

the Council is also publishing the revised R&D Directory, 'Gaveshini' of 1986.

Kerala Coastal Zone Management Authority (KCZMA)

23.16 In exercise of the powers conferred by Environmental Protection Act, 1986 and in supersession of the notification of the Government of India in the Ministry of Environment and Forests Number 1001 (E) dated, the 26th November 1998, the Central Govt. has constituted an authority to be known as the Kerala State Coastal Zone Management Authority which functions in the KSCSTE. The authority mainly deals with the issuance of CRZ clearances for projects and CRZ related violations in the state. The KCZMA met four times during the year and cleared about thirty projects. It also deals with CRZ related legal disputes in the court.

Science Popularization Programmes

a. National Science Day - 2003

23.17 The National Science Day 2003 was celebrated on 28th February and KSCSTE organized a workshop at RQCB. This year's focal theme was "50 years of DNA and 25 years of IVF - The Blue Print of Life". A compendium on the focal theme was also released. Invited talks by eminent scientists along with various competitions for students were held. The Council also co-ordinated celebrations of National Science day by the selected scientific agencies all over Kerala and the entire programmes were conducted with the partial financial assistance of Department of Science and Technology, Government of India.

b. National Technology Day - 2003

23.18 As a part of this programme, a one day state level seminar was held in Thycaud guest house. Innovations made by the R&D centers of the Council were presented. A total of 88 agencies selected in the state, including Non Governmental Agencies, organized different programmes in connection with the National Technology Day.

Research and Development Activities through Major Institutions

23.19 The major activities of Research and Development Institutions are summarise-

1. National Transportation, Planning and Research Centre (NATPAC)

23.20 National Transportation, Planning and Research Centre (NATPAC) was established in 1976 as a unit of Kerala State Electronic Development Corporation (KELTRON). In 1982 NATPAC was reconstituted as an R&D institution under the Department of Science, Technology and Environment. NATPAC is undertaking research, sponsored projects and extension activities in the field of traffic engineering and transportation planning, highway engineering public transport system, alternative option for transport system, transport energy, inland water transport, tourism planning and rural roads.

Activities of NATPAC

- Research study on "Processions and Protest marches -its impact on general public"
- Research study on the Impact of Road Development on Road safety
- Organized State and Regional level Seminars/workshops on Road
- Safety and panel discussion on "Transportation needs of disabled and Senior citizens"

1. Tropical Botanic Garden and Research Institute (TBGRI)

23.21 Tropical Botanic Garden and Research Institute (TBGRI), founded in 1979, situated at Palode in Thiruvananthapuram is devoted to conservation and sustainable utilisation of tropical plant wealth. It also functions as the national Gene Bank for Medicinal and aromatic plants of peninsular India and has a Bioinformatics Distributed Information sub Centre of DBT.

Activities of T B G R I

- Over 300 accessions of medicinal plants, trees, palms, bamboos, orchids, ferns and rare endemic species were introduced into the Garden.
- Described 1 family, 1 genus and 27 species new to science, rediscovered 18 species and 12 species were recorded new to the country.
- Root cultures of 3 medicinal plants were developed for *in vitro* production of Phytochemical/Bioactive compounds.

- The Bioinformatics sub Centre has developed a database model "Plant Info" in which all types of data related to plants were stored.
- Ethnomedical informations on 30 plant species were gathered from different tribal communities.
- Ethnopharmacological assays were carried out with 3 important medicinal plants of the Western Ghats.
- Studies completed on the amphibian diversity of tropical evergreen forests of the Western Ghats lead to the identification of 230 species including 4 new genera and 120 new species.
- Population biology of endemic *Janakia arayalpathra* was completed..
- Collection, documentation and quantification of 65 Non Wood Forest Products (NWFPs) in South Kerala were accomplished.
- Brought out a comprehensive status report on Nilgiri and Gulf of Mannar Biosphere Reserves, in accordance with UNESCO's nomination forms..
- Basic practical training was given to over 75 individuals on Mushroom cultivation.
- Basic practical training was given to students of various Universities in Biotechnology, Molecular Biology, Microbiology and Phytochemistry.
- Scientists of the institute supervised student research programmes and 4 Ph.D were awarded.

3. KERALA FOREST RESEARCH INSTITUTE (KFRI)

23.22 The Kerala Forest Research Institute (KFRI), established in 1975 at Peechi, Thrissur undertake research on all aspects of forestry including wild-life management, agro forestry, wood science and man forest interaction. It provides technical support to the forest department, wood using industries and the general public of forest related matters and contributes to scientific understanding of the forest ecosystem.

Activities of K F R I

- Organised an International Teak Conference on "Quality timber Products of Teak from sustainable Forest Management"
- Project entitled "Linkage of trade and industrial processing of forest products to sustainable forest management and environmental conservation in India" has been approved for funding by the International Development Agency (IDA) of Global environmental Facility (GEF).
- A project to establish a Forest Seed Centre (FSC)

at Peechi at a total cost of Rs.6.86lkhs for three years.

- A Collaborative project - the Forest seed centre.
- Taken up construction of Herbarium
- **Twenty-three** Research Projects completed and Final Reports published/Submitted to the sponsoring agencies.
- Forty seven research projects were under operation.

4. Rajiv Gandhi Centre for Bio technology (RGCB)

23.23 The C-DEST (Centre for Development of Education, Science and Technology) which started functioning at Thiruvananthapuram in 1990, became the R&D Centre of excellence in Biotechnology under STEC in 1994. The Centre was renamed as Rajiv Gandhi Centre for Biotechnology (RGCB) in 1996, undertakes activities on research and manpower development in biotechnology, health care, animal science, agriculture, environment and in the basic sciences.

Activities of R G C B

- Remarkable progress in the ethnopharmacological screening of hepatoprotective agents.
- The peptide chemistry group has recently come up with new designs for the development of new matrix supports will provide an additional momentum in our peptide generation programmes:
- Studies on cervical cancer progression with reference to the biology of the nuclear transcription factor NFkB clearly indicated the activation of NFkB during cancer progression.
- The neurobiology research group, in one of their recent studies that has been published, observed that alle - Asn motif in the NR2A subunit of the neuronal N-methyl -D aspartate type glytamate receptor caused lowering of the affinity of NR2A towards calcium/calmodium dependent protein kinas II.
- The molecular endocrinology section that has been active in studies on the plasma membrane localized alternate form of uterine estrogen receptor and the receptor associated proteins provided the first ever evidence for a functional role for this receptor in post transcriptional control mechanisms including the nucleocytoplasmic transport of rib nucleoproteins.

5. Centre for Water Resource Development and Management (CWRDM)

23.24 Centre for Water Resource Development and Management (CWRDM) was established in 1978 carries out research, development and extension activities on surface and ground water hydrology, land and water management and water quality and environment.

Activities of C W R D M

- The Centre has completed 15 research projects and 42 ongoing projects
- Completed projects in surface water hydrology include sedimentation survey of hydroelectric reservoirs of Kerala, Preparation of water atlas for Lakshadweep and Andaman Nicobar islands, generation of hydrologic data in domestic, agricultural and environmental sectors in hydrologically sensitive areas of Kerala.

In the ground water hydrology programme, projects completed include innovative water harvesting structures for ethnic communities, evaluation of a mini drinking water scheme for Kozhikode district, hydrological information for Kasaragod district, assessment of water resources of Neyyattinkara Municipal area.

Completed project in land water management includes a modern water saving method for crop production and evaluation and surface drainage requirement in paddy cultivation.

In the water quality and environment programme, studies on the application of isotope techniques for ground water investigations, studies on the pollution to drinking water sources due to textile mill effluents were included.

The Centre undertook a total of 28 consultancy works during the reporting period. This mainly include feasibility studies of ground water extraction, rain water harvesting, water analysis, portability studies, environmental impact studies, analysis of heavy metals and on Eco restoration studies.

The extension project and programmes carried out by the Centre during 2000-2001 is for transferring methods, ideas and information to vari-

ous target groups in the conservation and utilization of resources.

- Cohile three extension projects are completed, four projects are continuing.
- CWRDM & AIR jointly organized a radio lesson in farum and Home programme.
- The Centre has furnished 38 articles in various national and international journals.
- 32 research/final reports, several popular articles, books and leaflets were also published.
- During the reported period, 44 research papers were published in international and national journals/proceedings.
- While twenty research reports have also been brought out, another twenty-five research papers are in the process.

Centre for Earth Science Studies (CESS)

23.25 CESS established with a core philosophy of integrating the research on lithosphere, atmosphere and hydrosphere has achieved many of its objectives that set in 1978. It has developed a unique multi disciplinary scientific culture even while establishing its credentials in the various studies related to Earth Systems, Natural Hazards, Natural Resources and Environment. The Programmes of CESS includes

- Natural hazard management with special emphasis on earthquakes
- Environmental studies with special emphasis on impacts
- Coastal Zone Management with special emphasis on coastal protection
- Geo dynamics and crustal evaluation with special emphasis on the establishment of sophisticated analytical facility
- Natural resources data management with special emphasis on local level development

Activities

23.26 During 2003 CESS has intensified its programmes under earth system studies. The most important among these are to unravel the palaeomagnetic history of the mafic dyke swarms of south India and to understand the evolution of granulite facies rocks of south India. On another front, considerable initiatives were made to understand the rainfall intensity and associated factors adding new dimension to our knowledge of monsoon. Studies of natural hazards

like landslides, earthquakes, lightning and coastal erosion continued.

23.27 CESS had been continuing its activities on coastal zone management. CESS initiatives in coastal regulation zone related works were extended to other states of India and it was gratifying to see that CESS expertise is sought for demarcating CRZ in states like Gujarat, Lakshadweep and Maharashtra.

23.28 This period was particularly productive for CESS in ground water research. The ground water prospecting map of Kerala was completed under the Rajiv Gandhi Drinking Water Mission. Also tribal settlement maps for the southern districts of Kerala were completed and the micro watersheds of the tribal areas received special attention. Considerable attention was given on various aspects such as quality, land use changes, EIA, etc. of Chalakudi basin.

23.29 CESS initiated pioneering work in local level resource mapping using high resolution remote sensing data. Recognising CESS initiatives ISRO has sponsored the above programme and supported to establish a Geomatics laboratory in CESS to take up further strides in this emerging area. The laboratory is now fully functional.

23.30 As in the past, CESS was extending its expertise in various spheres of developmental activities like pollution assessment, EIA and environmental management planning to various agencies. Also CESS expertise in these directions received considerable acclaim from Central Government departments responsible for giving clearances. Many corporates, both national and multinational, are approaching CESS for getting EIA clearances and it is a testimony to CESS' expertise.

23.31 Under the coordination of the KSCSTE, a major project for shoreline protection of Kerala with an outlay of Rs. 80 lakhs over a period of five years has been taken up by CESS with financial assistance from the Department of Ocean Development. The technical assistance would be received from the National Institute of Ocean Technology (NIOT), Chennai.

23.32 CESS initiatives in sand mining related environmental problems also received wide acclaim. CESS assessed the mineable quantities of sand from the various rivers of Kerala to help regulate illegal sand mining and the Government made use of CESS expertise to enact the sand mining act.

Biotechnology policy and programmes

23.33 The biotech revolution is now sweeping the world in agriculture, healthcare, industry and environment-related services through development of new products and processes. The biotechnological interventions are particularly relevant in an agrarian and developing economy like ours. The Kerala Biotechnology Board under the chairmanship of the Chief Minister and the Kerala Biotechnology Commission under the Chairmanship of Executive Vice President, KSCSTE, have been constituted. The BT policy of the State envisions the creation of biotech knowledgebase and human resources by establishing world-class centres of education and R&D in biotechnology and development and application of biotech tools for enhancing crop productivity, value addition to crop produce, conservation of biodiversity, improving healthcare, sustaining quality of the environment and facilitating intellectual property rights. Both the Board and Commission are functioning as part of the Council's activities.

23.34 The Council has taken steps to implement the recommendations of the Board in initiating R&D activities in agriculture and human and animal health. In this connection two workshops were held in the Rajiv Gandhi Centre for Biotechnology, Thiruvananthapuram, for identifying problems for biotech interventions to develop commercially viable products and processes. Three projects, one each on cancer and typhoid and the other on anthrax disease in animals are on the anvil. A workshop involving progressive farmers, agricultural extension functionaries, scientists and biotech firms, is to be held shortly to discuss the problems in productivity of black pepper and vanilla production, two important export-oriented spice crops of Kerala. The workshop will identify specific areas requiring biotechnological research. These initiatives are expected to yield results in a couple of years in terms of new products and processes suitable for commercial exploitation.

Biodiversity Action Plan

23.35 In line with the Biological Diversity Act 2003, KSCSTE has initiated steps for the constitution of the Kerala Biological Diversity Board, the proposal for which is under finalisation. The Board will have the following mandate.

- (a) Development of state-wide strategy for implementing biodiversity programmes.
- (b) Preparation of an exhaustive inventory of the biodiversity based on genetic, species and ecosystem criteria.
- (c) Training programmes for Panchayat level committees to implement the action plan

CHAPTER 24

GOVERNANCE

The governance reform programme of the Government, viz. the Modernizing Government Programme (MGP) which was conceptualized in 2002 was fleshed out in 2003 into 100 initiatives covering five themes. The logic of the themes shows the focus on poverty reduction through provision of minimum needs and generation of jobs through a pro-poor growth process. In order to achieve this, fundamental reforms would be carried out within Government and within Local Governments to build their capacity. To make the whole exercise sustainable, fiscal reforms are necessary. In order to take the gains of MGP to the people on a fast track mode, a cross cutting initiative drawing elements from the five themes has been set in motion for improving service delivery in selected institutions.

24.2 During the year, for each of the 100 initiatives detailed implementation plans (DIPs) have been got ready through an elaborate consultative process involving key officials from the related departments from all levels identified for their expertise and commitment to act as champions. Through this process, the initiatives have been internalized by the implementing agencies as key persons in the department have thought through the initiatives and they have fully understood the concept and the methodology of translating them into activities and monitoring them against performance targets.

24.3 Each initiative has been placed in a context and the objectives have been clarified. The activities required for completing the initiatives have been outlined along with time lines and responsibilities. The possible risks have been anticipated and mitigation measures proposed. The expected outputs and outcomes have also been stated clearly.

24.4 Most important of all the resources required for each of the initiatives is being provided in the plan budget. To prevent slippages and to ensure implemen-

Box -24.1

Conceptualising Governance –OECD* Approach

The concept of governance denotes the use of political authority and exercise of control in a society in relation to the management of its resources for social and economic development. This broad definition encompasses the role of public authorities in establishing the environment in which economic operators function and in determining the distribution of benefits as well as the nature of the relationship between the ruler and the ruled.

Source: *National Human Development Report.*

tation according to the stated objectives a very elaborate project monitoring system has been put in place. (Thus each initiative is a well-structured project). The 100 MGP initiatives have been approved in their fullness within a relatively short-time.

24.5 The key initiatives under each Theme are listed below:

I. Provision of Minimum Needs

- 1) Developing the non-monetary index of poverty, based on transparent and socially accepted criteria, ranking of the poor in the order of severity of poverty and linking entitlements appropriate to the level of poverty.
- 2) Multi-level monitoring of poverty through the community, independent agencies and government depart-

Box -24. 2**Poor or Loose Governance Results in:**

- Poor management of economies, persisting fiscal imbalances, disparities in the pace and level of development across regions and across districts;
- Denial of basic needs of food, water and shelter to substantial proportion of the population;
- Threat to life and personal security in the face of inadequate state control on law and order;
- Marginalisation, exclusion or even persecution of people on account of social, religious, castes or even gender affiliations;
- Lack of sensitivity, transparency and accountability in many facets of the working of state machinery, particularly those that have an interface with the public;
- Lack of credibility – the gap between the intent and the actions - of some institutions in the society;
- Perverse system of incentives/disincentives for people (particularly for a civil servant), subversion of rules, evasion of taxes and failure in getting timely justice;
- Despite a visible movement towards decentralisation through the Panchayati Raj Institutions, a significant number of voiceless poor with opportunities for participating even in institutions of Local Self Governance; and
- Deterioration of physical environment, particularly in urban areas.

Source: National Human Development Report-2001.

ments.

- 3) Evolving minimum standards for facilities and services in health institutions.
- 4) Developing treatment and referral protocols appropriate to each level in the health system.
- 5) Putting in place a new procurement system to ensure easy availability of required drugs.
- 6) Community led quality monitoring in government and aided schools.
- 7) Upgradation of vocational education with job oriented modern courses.
- 8) Quality improvement in higher secondary education.
- 9) Community led social monitoring of health institutions.

- 10) Developing managerial cadre in the health department.
- 11) Popularization of rainwater harvesting.
- 12) Providing water and sanitation facilities to the squatters.
- 13) Holistic waste management with proper regulatory framework and use of relevant technology.

II. Enabling Environment for Economic Growth and Employment Generation

- i) Removal of labour market rigidities through awareness building, consensus and institutional changes.
- ii) State level public enterprise reform.
- iii) Scientific estimation of demand – supply gap in infrastructure
- iv) Capacity building for high quality project preparation.
- v) Inculcating the culture of entrepreneurship.
- vi) Review of licensing and regulatory framework for simplification and speed.

III. Core Government Functions

- (1) Introduction of results based planning systems in four Government Departments.
- (2) Simplification of government rules.
- (3) Enunciation of Service Delivery policy
- (4) Computerization of Secretariat
- (5) Introduction of a new procurement system
- (6) Fast track implementation of selected recommendations of Kerala Administrative Reforms Committee.

(7) Design and implementation of State Civil Services

(8) Comprehensive training programme for Civil Servants.

(9) Computerized data base of civil servants and their entitlements

(10) Functional review of selected departments.

(11) Expansion of Akshaya

(12) Introduction of a knowledge based decision support system for E-governance.

IV. Effective, Efficient and Accessible Local Self-Governments

- 1) Action research through 'Beacon' Panchayats
- 2) Introduction of social security schemes for destitutes and disabled
- 3) Development of asset management plans
- 4) Preparation of a shelf of projects for public-private partnership
- 5) Issue of Citizen Charters focusing on performance standards
- 6) Identification of opportunities for local economic development
- 7) Operationalization of social audit
- 8) Introduction of new office management system
- 9) Preparation of Management Manuals for transferred institutions
- 10) Introduction of a modern and transparent system for procurement of goods and services.
- 11) Developing a Public Works Manual appropriate to the local government situation, facilitating a community contracting and providing absolute transparency.
- 12) Introduction of a new budget system in local governments
- 13) Putting in place a new accounting system in local governments
- 14) Developing practical resource mobilization model for local governments.

V. Fiscal Sustainability

1. Rescheduling of budget cycle preparation of rolling three-year forward systems.
2. Putting in place a liability management system

24.6 The cross-cutting initiative of improvement of service delivery focuses on selected institutions which are of vital importance in providing services to citizens especially to the poor people. The whole initiative would be based on a concrete service delivery policy to be finalized by the Government.

24.7 The institutions selected for improving service delivery includes Secretariat, all the Collectorates, a fourth of the District and Taluk level Hospitals, 10% of the Community Health Centres and Primary Health Centres, 10% of the Taluk Offices, 13% of the Village Offices, 16% of the Sub-Registrar Offices, 5% of Schools at Primary, Upper Primary, Secondary, Higher Secondary and Vocational Higher Secondary levels, all old age homes, 10% of Police Stations, 2% of Anganwadis, 10% of Village Panchayats, 15% of Municipalities, 3 out of 5 Municipal Corporations and all the Taluk/City Rationing Offices.

24.8 For each of these institutions implementing officers have been identified and they would prepare a detailed action plan in consultation with user groups. Improvement of assets, revamping of procedures and systems, identification of quality standards and performance standards, putting in place systems for performance measurement, conduct of citizen surveys etc. would be carried out under the plan. These would be documented, evaluated and upscaled suitably. This bids fair to become a pioneering project aimed at improving the quality of services provided to citizens.

E-Governance

The MGP initiatives would be complemented by a series of E-governance projects.

24.9 The major E-Governance initiatives taken up in the state are :

- 1) Computerization of Village Offices under Rev-

- enue
- 2) Computerized integration of Treasuries
 - 3) E-Governance implementation in Motor Vehicles Department
 - 4) Computerization of Registration activities
 - 5) E-Governance projects under Information Kerala Mission
 - 6) Computerization activities under Civil Supplies
 - 7) Computerization of Commercial Taxes
 - 8) IT @ School Project under General Education
 - 9) Computerization of Agriculture Department
 - 10) Secretariat Wide Area Network
 - 11) State Information Infrastructure or Diamond Project
 - 12) Centre for E-Governance Initiatives
 - 13) District Collectorate Computerization or DC Suite
 - 14) Computerisation of Employment Directorate

24.10 The current status of this project is described in **Annexure** to this Chapter.

24.11 In the previous year an innovative project called 'Akshaya' was launched in Malappuram District to bring about universal E-literacy. The project has now evolved as an innovative E-Governance platform for various Citizen to Government and Government to Citizen schemes. Broad band WiFi connectivity for the Akshaya centres in Malappuram district is almost completed for accessing E-Governance facilities at grass root level. This model is to be replicated in other districts.

24.12 One of the successful projects of Government of Kerala is the FRIENDS. So far three million people visited these centres for remittance of different kinds of taxes, fees etc. Total remittances for the previous year was Rs. 106 crores and in the current financial year till December 2003, it is more than 105 crores. The 100% growth rate of collection during the previous years shows the acceptance of the project by the citizen.

24.13 FRIENDS Centres were originally conceived as multi purpose service centres, i.e., not only offering payment facilities, but also other popular information based services, such as details of common Government programmes, help desks to access Government services etc. Now activities are in progress to set up a Call Centre, attached to the FRIENDS Centre at Thiruvananthapuram, which would provide information relating to common citizens transaction over telephone to the citizens of the State. What the Call Centre will do would be to basically compile and aggregate such information into an electronic database, which can be retrieved easily. Public queries relating to Government functions/activities/programmes will be handled by a group of agents who would be replying to the incoming calls. Database relating to the departments for which services available at the FRIENDS centres (Revenue, F & CS, Transport, Thiruvananthapuram Corporation, KSEB, KWA etc) are in the final stage of completion. Some other departments are also joining in this project by nominating Coordinating Officers for building the database.

Annexure

Revenue Department

SWIFT was launched. Computerization of 200 village offices is expected to be completed by the end of this financial year. Integration and networking of Registration Offices and Village Offices is under way.

Treasury Department

Seventy six Sub Treasuries have been fully computerised and hardware for the remaining treasuries have been purchased. Training at district level has already been over and to manage the systems they are looking for a Network Manager. Preliminary work relating to the integration of treasuries is in progress.

Motor Vehicles Department

RTO Office, Thiruvananthapuram has been fully computerized and the Computer Aided Driving License issue system has been implemented in Ernakulam and Kozhikode. Action to computerize RTO Office, Ernakulam with the assistance of Government of India is in progress.

Registration Department

Out of the 308 SROs, computerization of 114 have been completed. Administrative sanction for computerization of 103 SROs has been issued. Data entry is in progress with the assistance of various agencies. This project is expected to be completed during the current financial year. In order to leverage on the integrated delivery of services through networking of village offices and Registration offices, the project is scaled up as an MGP Programme.

Information Kerala Mission

Computerization programme of LSG Department is expected to be completed by 31/3/04 M/s. KSIDC has decided to initiate tender process for the software in BOLT mode. Regarding training, action is in progress. Software for tax collection by local bodies is ready. Milestones have been fixed for the implementation in time.

Civil Supplies Department

Administrative sanction for the total computerization of Civil Supplies Department at an estimated cost of Rs. 5 crores has been issued. The project aims at computerization of the Commissionerate of Civil Supplies, 14 District Supply Offices and 69 Taluk Supply Offices and 2 City Rationing Offices and networking. Of this, the computerization of District Supply Office, 4 Taluk Supply Offices and 2 City Rationing Offices in Thiruvananthapuram District has been completed. In other offices, computer rooms have been arranged and furniture supplied. Software package, namely, TETRA-PDS (Targetted Efficient Transparent Ration Allocation – Public Distribution System) has been developed and database of ration cards has been created. Timely upgradation of the database is also planned.

Commercial Taxes

Hardware purchases has been completed (953 Nos) for the total computerization of the Department with suitable networking. Software development is also completed and its pilot phase is running successfully. Training of the staff both in general software and also in the application software is almost completed. The official website of Commercial Taxes is nearing completion.

General Education Department

IT @ Schools project was launched in November 2000 as a time bound project to integrate IT into the high school curriculum as an effective tool for teaching, learning and research. Out of the 2401 schools, computer labs have been set up in 2046 schools. 268 schools are having internet connection. Other successful ongoing activities connected with this project are Advocacy campaigns, supply of IT text books and handbooks, free supply of software to schools and Training of teachers. Since it is a very massive programme, there is total involvement of Local Self Government Institutions. Further survey of the schools, Model examinations, IT competitions and awards are also part of this project.

Agriculture Department

Computerization of the Department is in progress with the installation of around 750 computers and 15 servers. The installations mainly concentrate on Krishi Bhavans at village panchayat level, Blocks, District offices and Directorate. Internet facility is available in 14 districts. Three web sites have been launched by Agriculture Department. The KISSAN project which is aimed to have dissemination of information to the agriculturists through ICT Media is continuing with the help of IITM-K. The information covers details relating to agriculture products, market positions etc.

Secretariat Wide Area Network

Secretariat WAN project has been envisaged to create a computerised network connecting Government Secretariat, Secretariat Annexe, Vikas Bhavan and Public Office building which houses the Heads of Department in Thiruvananthapuram. In the first phase computerization and networking of the Secretariat buildings alone were taken and the work is progressing. As part of this work, a network of lower capacity named as Secretariat INTERNET Communication System (SICS) has been completed and is using in its full capacity mainly for communication purposes. Preliminary work connected with the installation of a higher capacity network for communication, data transfer, video conferencing and file flow management is underway. Providing infrastructure facilities for the project is in the process of implementation.

State Information Infrastructure/Diamond Project

State Information Infrastructure Project, otherwise known as the 'Diamond Project' is envisaged to aggregate the available bandwidth from backbone providers and to set up network centres at Thiruvananthapuram, Kochi and Kozhikode and setting up of an E-Governance data centre at Thiruvananthapuram for development E-Governance accelerator programs. The total cost of the project is estimated as Rs. 14.80 crores and Government of India has agreed to give financial assistance to the project. The coordinating agency is the Kerala State IT Mission and technical assistance is being arranged by C-DAC (former ER & DC) who is also the implementing agency of the project. The bandwidth providers are Reliance, Asianet Satellite Communications, VSNL and BTSOL (Bharathi) as per the agreement executed in connection with the Rights of Way permission. The project is in the process of implementation, and on its completion all Government departments will be connected to this network backbone for the effective utili-

zation of data and communication of information.

Centre for E-Governance Initiatives

In order to have an integrated approach in the implementation of E-Governance projects Government have formulated an organization named as "Centre for E-Governance Initiatives (C-EGI)". This is an independent agency under Government of Kerala (IT Department) with the association of Computer Society of India (CSI) and Institute of Electrical and Electronics Engineers (IEEE).

The objectives of C-EGI are :

- Providing advisory and consultative support for designing, implementing, monitoring and documenting of E-Government programmes.
- Support E-Governance activities of Government of Kerala with appropriate background, skills and experience
- Provide techno-managerial inputs to E-Governance programmes on an ongoing basis.

District Collectorate Computerisation/DC Suite

District Collectorate is a large administrative set up of the Government dealing with a variety of subjects relating to the people of a district. Hundreds of people interact with this office for different types of issues. Hence it is one of the ideal areas where E-Governance can effectively be implemented. The Collector is the Head of this office assisted by a group of officials including Deputy collectors, superintendents, clerks etc. Each Deputy collector is assigned specific areas of work such as Revenue Recovery, Land Assignment, Election, Housing etc. In this regard, the preliminary study for implementation of E-Governance identified twenty one functional areas. Out of this, implementation has been initiated for three areas viz. File Management System, Public Grievances System and Revenue Recovery System. File Management System consists of File Distribution Management and Personal Registers. Public Grievances System consists of Counter based petitions, Web based petitions, IVR based petitions and E-mail based petitions. Demand monitoring, Collection monitoring and RR instalment monitoring are the components of Revenue Recovery System.

Computerisation of Employment Directorate

The Employment Directorate has started computerization of all the Employment Exchange Offices in Kerala in a phased manner. In the first phase, computerization was initiated in the Professional and Executive Employment Office, Thiruvananthapuram. The Directorate started computerisation of six Employ-

ment Exchanges during 2002-03 viz. District Employment Exchange, Thiruvananthapuram, Town Employment Exchanges at Neyyattinkara and Nedumangad, Special Employment Exchange for Physically Handicapped, Thiruvananthapuram, Regional Professional and Executive Employment Offices at Ernakulam and Kozhikode along with the Employment Directorate.



TOWARDS AN INVESTOR - FRIENDLY CLIMATE

Along with the steps to solve the fiscal crisis, the main focus of the reforms effected in the State of Kerala during the past three years has been on the promotion of investments.

25.2 Many innovative pro-investor, pro-enterprise **policy measures** have been announced in succession during the last two years by the State Government, namely, Industrial Policy, Biotechnology Policy, IT Policy, SEZ Policy and Labour Policy. These policy measures have set the background for the transformation of the State as the emerging industrial destination in the country. Special importance is being given to the development of infrastructure in the State; an Infrastructure Bill has been introduced in the Assembly and is under the consideration of a Select Committee. The salient features of the above policies are as given below –

A. INDUSTRIAL POLICY

- The Industrial Policy 2003 aims to accelerate the industrial growth in the State by attracting a steady stream of investment in industry, infrastructure and core strength sectors by creating a congenial investment climate in the State.
- The ultimate goals of the Industrial Policy are indicated below:
 - Enhanced and sustained industrial growth rate and generation of higher employment in industry.
 - Creation and maintenance of an investment friendly climate and facilitation of measures to maximize global and local investment in industry
 - Maximisation of private investment in infrastructure development, with Government investment only in areas/functions where private investment cannot be attracted.
 - Elimination of all restrictive labour practices, ensuring cordial industrial relations and establishment of a new work culture, with productivity orientation and productivity-linked wages.
 - Special legal dispensation enabling a more liberalized environment within notified industrial zones, parks and estates.
- Nurturing the scarce entrepreneurial talent for the sustainable creation of industrial wealth with special emphasis on technically qualified persons, those from the business community, women and disadvantaged sections.
- Co-ordination of industry with the educational system in order to produce and update the particular knowledge and skills required by industry from time to time.
- Re-engineering the Government's delivery mechanism (departments and agencies as well as systems and procedures) to make them responsive, result-oriented and transparent.
- Special development of sunrise sectors including information technology, biotechnology, food and agro processing, infrastructure and service with high growth potential.
- Maximisation of value addition within the State for indigenous produce and minerals and intensive growth (particularly export-oriented) of Kerala's products and services.
- Industrial development in a manner compatible with energy conservation and environmental concerns.
- Ensuring cost effectiveness and accountability by restructuring public enterprises.
- Providing a social safety net for those adversely affected by industrial restructuring.
- Reducing Government involvement in commercial activities and industrial production gradually.
- Empowerment of the traditional sector to face up to global challenges by appropriate technology, productivity improvement, design / development and marketing.
 - Kerala Institute of Entrepreneurship Development (KIED) has been established at Kalamassery with the objective of developing entrepreneurship

- and Entrepreneurship Development Clubs.
- Regarding sick units the role of government shall be enhanced from curative action to diagnosis and preventive action backed by an early warning system for industrial sickness. Government also proposes to bring out a one time settlement scheme for sales tax and electricity dues for sick industrial units so as to facilitate their revival.
 - The Government proposes to meet the threats faced by the traditional industries effectively by measures like introduction of appropriate mechanization and technology, removal of inefficiencies in the system, professionalising marketing and export and facilitating large investment of private capital in these sectors which are now mostly dominated by co-operatives.
 - To attract private sector investment badly needed in these sectors, a special scheme of investment subsidy with adequate incentives will be implemented, so that our reliance on co-operatives heavily dependant financially on the government for investment (often to the extent of 95% or more) will be reversed.
 - A cluster based approach for production, developing a brand equity for marketing and R&D efforts to create new processes are also proposed.
 - To uplift the handloom industry, The State plans to supplement the central schemes provided through DDHPY (Deen Dayal Hathkargha Prothshahan Yojana). The State plans to implement cluster development programme in selected centres.
 - In the coir sector, the government invites substantial private investment (now dominated by cooperatives). Entrepreneur development, research and technology up-gradation programmes are planned to enhance productivity and maintain the competitive edge.
 - Appropriate initiatives are proposed to revamp the Khadi and Village Industries by rectifying the mismatch in the spinning and weaving sectors, ensuring value addition especially to agriculture products.
 - Treating the handicrafts sector on par with the other traditional industries for incentives and concessions, cluster-based development, common facilities, mechanized production to reduce costs, targeting the global market and promotion of entrepreneurs in the business of production and marketing of handicrafts are the corner stones of the handicrafts development policy.
 - A special programme is proposed for cultivation of bamboo, creation of new designs for innovative products in the handicrafts sector along with the appropriate skill development, promotion of bamboo-based modern industries supported by technology adaptation and development by R & D organizations.
 - Modernization of the cashew industry to enhance productivity, lowering of the local costs of production to prevent the shifting of this industry to other low wage regions and strengthening further the dominant position of Kerala cashew in the global market are proposed.
 - The Government desires to correct the policy on textiles on the lines of the Government of India's Textile Policy. The Government also proposes for phased introduction of power looms in the state. The Governments aim in the Weaving / Garment Units sector are to promote state of the art units of international quality.
 - As agro/food-processing industry has enormous potential in the State, the Government will actively promote it, bringing immense benefits to the economy, adding value to agricultural produce, enhancing rural employment and incomes
 - Depending up on the specific sector and location of investment, investment subsidies varying from 10% subject to a maximum of Rs. 10 lakhs to 25% subject to maximum of Rs. 25 lakhs is proposed. Investment in pollution control devices, R&D, expansion, diversification, modernization etc are also eligible for subsidy.
 - Government to consider a special package of incentives, for investment above Rs. 50 crores.
 - Government will consider a special package of incentives for channelising FDI and for large infrastructure projects.
 - Exemption from Electricity Duty and Enhanced Tariff

Source: Kochi Port Trust

- Exemptions from Electricity Duty for five years to new industrial units from the date of commencement of their commercial production (as per G.O.(MS)No.71/90/ID dated 21-05-1990) to continue.
- All new industrial units starting commercial production between 01-01-2002 and 31-12-2006 will be charged for a period of five years the same tariff payable at the time of commencement of their commercial production irrespective of subsequent enhancements of tariff.
 - All new units being set up in the various industrial parks and Corridor/Zones declared by State Government or by Central Government will be exempted from payment of stamp duty and registration fee for the first registration.
 - The Government shall organize a well-planned and sustained marketing campaign to promote Kerala as an ideal investment destination. Periodic The task force headed by the Minister (Industries) will co-ordinate investment promotion activities. A Special Cell has been constituted in KSIDC to provide escort facilities to NRIs/ foreign direct investors, especially from the Gulf. It shall also function as a Technology Development Cell.
 - A State Level Export Promotion Committee has been constituted and KINFRA has been nominated as the nodal agency to sanction export related infrastructure projects under the Assistance to States for Developing Export Infrastructure Scheme
 - The Directorate of Industries & Commerce will be restructured to play the role of facilitator and to act as a promotional agency with simplified systems and procedures rather than as a regulatory agency.
 - The Single Window Clearance Boards at the State, District and Industrial Area levels will co-ordinate the issue of clearances required by new industrial units being set up in the State within specified time-frames. The PSUs that impose an unsustainable burden on the exchequer will be restructured. The State Government shall constantly co-ordinate with the Government of India, for ensuring higher Central investment in Kerala.
- The Government will help entrepreneurs and PSUs obtain patents/intellectual property rights (IPR).
- A task force headed by the Minister (Industries & Social Welfare) with the Principal Secretary (Industries), Secretary (IT), Secretaries (Industries), Managing Director, KSIDC and the Director of Industries and Commerce as members will be constituted. Investors/entrepreneurs would be free to approach the Secretary (Industries) who will be nominated as the Nodal Officer of this task force.

B. IT POLICY

- The IT Industry Policy document endeavours to delineate a strategy for harnessing the opportunities and the resources offered by Information Technology for the comprehensive social and economic development of the State. This strategy has been conceived keeping in view the fact that Information Technology constitutes the primary instrument for facilitating Kerala's emergence as a leading **knowledge society** in the region.

25.3 The Policy initiatives comprise a three pronged strategy aimed at:

- Creating an appropriate pro-business, pro-enterprise, legal, regulatory and commercial framework to facilitate the rapid growth of the IT industry in the state.
- Establishing Kerala as a global center for excellence in Human Resources, through the creation of a large pool of diverse, multi-skilled technically competent manpower in the State and
- Establishing an internationally competitive business infrastructure and environment for the IT industry in the State, on par with the best facilities and practices worldwide.
- In line with this broad strategy, the Government have set the following immediate

objectives for the promotion of the IT industry in the State.

- To establish Kerala as a leading IT destination in the country within the next five years.
- To provide a nurturing and enabling environment conducive to the vigorous growth of the local IT industry in the State.
- To significantly enhance direct and indirect employment creation in the IT sector.
- To attain a minimum growth level of 100% every year in IT.
- To significantly accelerate the levels of investment inflows including foreign capital into the hardware, software and ITES sectors.
- To aggressively promote the State as the destination of choice for emerging IT business opportunities including IT Enabled Services, new media products and E-services. To establish ITES as the definitive core competence of the State.
- To develop Kochi as an international media and ICT hub.

25.4. To consolidate and expand the Technopark, Trivandrum as a leading software and HR Centre in the region.

C. BIOTECHNOLOGY POLICY

- The BT policy for Kerala is designed to catalyse the development and application of BT, taking advantage of the State's resources and emphasizing its specific needs while meeting global requirements. The policy is aimed to ensure the rapid exploitation of pipeline technologies and opportunities available in the State to products and processes and to promote the sustained build-up of an elite knowledge cadre and knowledge base through the strengthening and creation of educational and R&D institutions, establishing infrastructure and putting in place administrative, regulatory, legal and financial framework conducive for investment and growth of BT enterprises, for the economic development and human welfare.
- To achieve the Kerala vision in Biotechnology, ensure hassle-free implementation and provide sustained leadership and resources, the following two major initiatives will be, undertaken to create:
 - Kerala Biotechnology Board
 - Kerala Biotechnology Commission
- The Chief Minister of Kerala would be Chairman of the **KERALA BIOTECHNOLOGY BOARD** with the ministers for Industry, Information technology, Agriculture and Health, Chief Secretary and Vice-Chairman of State's Planning Board, two eminent industrialists and two Biotechnology Scientists/Technocrats as Members with an eminent Scientist who is also the executive Vice-President of the Kerala State Council for Science, Technology and Environment as Convener.
- The Board will organize a corpus of Rs.100 Crores to create infrastructure in BT including BT Parks by collecting a Biotech Development Fund from the stake holding Departments of Industry, Health, Agriculture, Forest etc. The contribution of each Department will be in conformity with the anticipated benefits. In addition a BT Development Fund will earmark 1% of the Annual Plan Allocation of the Departments benefiting by BT. Another avenue is to seek grants from international Agencies and involve private and public Enterprises.
- The Biotechnology Board will take all top level administrative and financial decisions to create the best milieu in the country for growth of BT. The Board will liaise with National and International agencies and will ensure appropriate and timely implementation of the Policy. It will endeavour to provide the Biotechnology Enterprises of the State a consistent, competitive edge.

- **KERALA BIOTECHNOLOGY COMMISSION** will be responsible for the implementation of the BT policy and related guidelines laid down by the Biotechnology Board. The Chairman of the Commission will be an eminent scientist who is also the Executive Vice-President of the Kerala State Council for Science, Technology and Environment. The Commission will have five members including two leading biotechnologists and entrepreneurs/industrialists. Three of the Members will preferably be from outside of Kerala State. The Commission will co-opt concerned Government officials as Members as required. The Commission will be the effective think-tank of the Board and will identify focus areas of investment and prioritise projects for implementation and will be responsible for utilization of BT Development Fund. It will prepare a road-map of BT initiatives, encourage private-public sector interaction and assess and approve project proposals.
- Kerala State has decided to establish Biotech Parks with the lead taken by KINFRA. The essential components, apart from customized lab units, of the biotech park are:
 - **Bio resource Centre** as a hub to provide infrastructure, equipment, facilities and services to assist the tenants and clients of the park.
 - **Technology Incubator** with the capability to develop and license, in collaboration with R&D institutions, proprietary technologies to the tenants and clients in the State and elsewhere.
 - **Training Centre** where technology skill packages can be imparted in biotech streams, e.g., molecular biology, genetic transformation, immunology, tissue culture, fermentation and down stream processing and instrumentation.

D. SEZ POLICY

- Government of India have introduced the concept of Special Economic Zones (SEZ's) in the year 2000. The Exim Policy of the Government of India has been amended to define SEZ's as foreign territory for the purpose of trade operations, duties and tariff. The Customs Act, 1962 has also been amended to place the SEZ's outside the Customs territory of India
- The Cochin Export Processing Zone has already been converted into an SEZ. Government have already taken the lead to develop a Greater Cochin SEZ by adding on more phases of the SEZ at Cochin Port.
- The Government have already announced setting up of 3 other Industrial Development Zones at Thiruvananthapuram, Kanjikode (Palakkad) and Kozhikode. These IDZ's may also be converted to SEZ's subject to the framework of SEZ's determined by the Government of India from time to time.
- It has now been decided that the policy will apply to proposed SEZ's at Kochi, Thiruvananthapuram, Kanjikode (Palakkad), Kozhikode and at any other SEZ in Kerala subject to the framework of SEZ's determined by Government of India from time to time.
- An exclusive Development Commissioner of each SEZ will look after all matters pertaining to the SEZ's in the State. The Development Commissioner shall fulfill a three fold role:
 - **Regulation:** To provide clearances under various statues and regulations of Government of India and State Government.
 - **Facilitation :** To facilitate clearances not granted within the SEZ and to advise Government on issues requiring policy amendments or clarifications.
 - **Promotion :** To undertake marketing of the SEZ's along with the SEZ Developer. The Government shall endeavour to delegate to the Development Commissioner or to a body headed by the Development Commissioner such powers as are necessary for expediting clearances for Developers and units in the SEZ.

- SEZ's will be notified as an Industrial area under the Kerala Industrial Single Window Clearance Board and industrial Township Area development Act, 1999 and exempted from obtaining permits from Municipalities / Grama Panchayats / Town Planning Department / Development Authorities for construction of buildings for starting an industrial undertaking. Wherever the area of SEZ is large enough, the State Government will declare the SEZ's as Industrial Township under the Kerala Industrial Single Window Clearance Board and Industrial Township Area Development Act, 1999 to enable the SEZ's function as self-governing autonomous municipal bodies.
- A Single Window Clearance Board will be notified for each SEZ under the Kerala Industrial Single Window Clearance Board and Industrial Township Area Development Act, 1999 for providing fast-track clearances under that Act.
- The Government shall continuously endeavour to provide a simplified business working environment within the SEZ. All clearances outside the ambit of that Act will have pre-laid guidelines and time frames for processing approvals. A self-certification regime will be introduced for all industries in the SEZ. To the extent possible regulation and governance of the SEZ shall rest with the Development Commissioner. Physical inspections would be undertaken in accordance with a schedule prepared in consultation with Development Commissioner.
- Government by themselves or through the SEZ shall ensure the provision of adequate water supply within the SEZ.
- The SEZ Developer will ensure supply of uninterrupted good quality power to the SEZ's at competitive rates. To this end, the SEZ Developer shall have freedom to arrange dedicated provision of power for the SEZ including generation, transmission and distribution and in fixing tariffs for the SEZ subject to the approval of the statutory authority in this regard. The SEZ Developers may establish a Captive Power Plant (CPP) to meet the requirements of all consumers within the SEZ. The SEZ Developer may procure power from NTPC or any other IPP, which could be wheeled through the State grid at a charge to be mutually agreed upon. The SEZ Developer would be entitled to get the exclusive license for the retail distribution of power within the SEZ. The SEZ Developer will also be permitted to establish grid connectivity for distribution of power within the Zone, subject to his entering into a separate agreement with Kerala State Electricity Board (KSEB) on mutually acceptable terms. Power from the State grid shall be supplied as per requirement for which no 'stand-by charge' will be realized: it will be charged on 'pay and use' basis. Surplus electricity generated in the SEZ shall be purchased by the KSEB on mutually acceptable terms. Power generated within the SEZ's shall be exempted from payment of electricity duty for a period of 10 years from the date of commissioning.
- Developers of SEZ's and industrial units and other establishments within the SEZ's will be exempted from all State and local taxes and levies including Sales Tax, Purchase Tax, Entry Tax etc. in respect of all transactions made between units / establishments within the SEZ. If due to tax system constraints it is not advisable to grant direct exemption to the transactions the State taxes paid would be reimbursed.
- Amendments shall be made in State level rules and legislations governing levy of Sales Tax, Turnover Tax, Purchase Tax, Entry Tax, VAT, State Level Cesses, Betterment Levies etc. reflecting the position that the SEZ is foreign territory outside the Customs territory of India and hence outside the State for purposes of trade tariffs duties and taxes so that sales from the DTA into the SEZ shall count as exports and sales from the SEZ's to the DTA shall count as imports. SEZ Developers and units in SEZ's shall be exempted from payment of Stamp Duty and Registration fees for transactions involving land or built-up area in the SEZ's.
- The power of the Labour Commissioner, Government of Kerala shall be delegated to the designated Development Commissioner or other authority in respect of the area within the SEZ. Steps will be taken for grant of permissions / licences required from the Chief Inspector of Factories and Boilers within the SEZ's themselves by stationing exclusive personal for the purpose. Except in emergent circumstances the prior permission of the Development Commissioner or other designated authority of SEZ would be required for

the conduct of inspection of industrial units and other establishments within the SEZ by State Government agencies. Government also proposes to permit self-certification to the extent possible for SEZ Units and establishments in respect of various labour laws.

- Government proposes to institute a consolidated annual return format under various labour laws.
- The power to grant provisional and permanent SSI Registration and Letter of Intent and registration of Information Technology units, will be delegated to the development Commissioner or other designated authority in respect of units in SEZ's.
- Directorate of Industries & Commerce, Kerala State, Kerala State Industrial Development Corporation, Kerala Industrial Infrastructure Development Corporation, Resident Commissioner, Kerala House, New Delhi shall provide effective escort services to entrepreneurs promoters who are desirous or making investments in SEZ.
- The State Government shall make appropriate and exclusive arrangements within SEZ's for the maintenance of law and order.

E. LABOUR POLICY

- Labour policy initiatives are aimed at creating a favourable environment for a planned effort, facilitating industrial promotion and revival along with legislative and structural changes to bring in an environment devoid of restrictive labour practices, but protecting the rights and interests of the workers.
- Minimizing adversarial Labour relations and providing Labour market security, employment security, work security, and income security for the working population.
- Promote ideal employee-employer relationships and to curb undesirable labour practices and adversarial labour relations through suitable legislation, through conscientisation, awareness raising and appropriate administrative interventions.
- With in the purview of the existing laws, entrepreneur will have rights for engaging labour and shall not be inhibited by any claims from 'sons of the soil', displaced persons from acquired land, construction, contract labour and dependents of employees.
- All restrictive labour practices including intimidation, "gherao", harassment of managers and their families, and extortion of any kind will be treated as criminal offences and dealt with accordingly.
- Management will have the prerogative to deploy workers in any section of the unit as part of a multi craft approach.
- Government will endeavour to prevent stoppages of work in projects on account of industrial disputes; especially during the first five years of the project. The Government will also severely discourage deleterious practices such as 'go-slow'.
- To prevent the occurrence of disruptive wildcat strikes and lockouts, Government will declare certain vital industries and establishments as "public utilities" under the Industrial Disputes Act.
- Special conciliation mechanisms will be set up by Government if, required, exclusively for entrepreneurs and projects with investment of Rs 150 crores or more in order to ensure that labour disputes are handled on site in a pro-active manner.
- The viability of a project depends on the completion of construction and commissioning within the time and cost estimate. Work stoppages whether due to labour dispute or non-fulfillment of obligations by builders will not be permitted.
- Government will attempt to reduce the needless proliferation of Trade unions in establishments, without detriment to the rights and interests of the work force. Legislation will be enacted for conduct of referenda and laying down norms for the recognition of Trade Unions in industries and establishments.
- There is a need to expedite the industrial dispute resolution mechanism of the labour judiciary, including the Labour courts, Industrial Tribunals, Workmen's Compensation Commissioners etc. Government will make requisite amendments to the rule and procedures governing the functioning of these bodies to speed up and streamline this process. The provisions for publication of the awards of Labour Courts and Tribunals in the Government Gazette will be amended to expedite enforcement.
- The Government will also enact requisite State amendments to the Industrial Disputes Act to enable workmen or management to approach Labour Courts/Industrial Tribunals directly, if the conciliation process proves to be ineffective.

- The Kerala Headload Workers Act 1978 is an enactment providing social security net to a category of workers. However certain unforeseen practices relating to loading and unloading have since become an irritant phenomena perceived as a stumbling block for industrial growth in the State. A separate legislation to do away with these practices without affecting the rights and interests of the labour will be enacted.
- A special monitoring system will be instituted for ensuring work place security and dignified working conditions for women workers.
- Enforcement committees will be constituted at district levels on a sectoral basis for monitoring the enforcement of statutory rules, welfare measures and safety conditions of workers.
- For the effective implementation of the Minimum Wages Act, Government will expand the category of employment's under the schedule to the Act. Wages shall be revised for each category of employments without delay and the payment of minimum wages effectively supervised. Government shall take initiative to implement minimum wage for South Indian States, as part of the measures to implement the national minimum wage policy.
- The Child Labour (Prohibition & Regulation) Act will be aggressively enforced and Government will endeavour to make Kerala the first State in the country to be free of Child Labour.

25.5 The labour enforcement machinery is grossly inadequate to cope with the multitude of labour laws and the various establishments that require surveillance. The enforcement strategy will be to reduce the burden on the existing machinery and to encourage employers and other stakeholders to proactively participate in the implementation of this strategy on a voluntary compliance basis.

THE LABOUR SITUATION HAS SIGNIFICANTLY CHANGED IN THE STATE IN THE DIRECTION OF STABLE INDUSTRIAL RELATIONS AND REMOVAL OF NEGATIVE PRACTICES:

- ❖ Changes in the economic environment have improved the industrial relations scenario of Kerala. This is dramatically evident in the statistics. The number of industrial disputes in Kerala have plummeted dramatically.
- ❖ The number of disputes arising each year was

around 7800 in 1991, while it is around 3000 odd now.

- ❖ Government have enacted the "Kerala Loading and Unloading (Regulation of Wages and Restriction of Unlawful Practices) Act, 2002" for attracting Investment and eliminating residual negative perceptions about Kerala Labour".
- ❖ Certain retrograde practices in the loading and unloading sector have been made cognisable criminal offences.
- ❖ In specifically notified areas, employers have the right to carry out loading and unloading work by using workers of their own choice.
- ❖ Claiming wages above Ceiling wages is now a punishable offence.

Self-certification system has been introduced in IT/ITES and is being extended:

- ◆ To eliminate "Inspector raj", routine inspections by Labour Law inspectors have been eliminated in key sectors like IT/ITES.
- ◆ Establishments can give "Self Certification" declarations to the Labour Department, inspections would be resorted to only in case of substantive complaints.
- ◆ Self Certification regime will be extended to other sunrise industries.

The following enactments are expected shortly:

- "The Industrial Employment (Prohibition of Obstructive Practices) Bill" to eliminate irritants/impediments to new projects arising from local employment claims.
- An enactment to simplify the procedure in maintaining registers and records by employers.
- A Trade Union Recognition Bill for limiting the number of Tus in establishments and its recognition is underway.

25.6 The dispute resolution procedure has been simplified to enable early settlement of disputes.

25.7 TO FACILITATE UNINTERRUPTED WORKING several restrictions have been removed in sunrise industries.

- The following restrictions have been liberalised in sunrise sectors like IT/ITES:
 - ❑ Daily and weekly hours of work
 - ❑ Spreadover
 - ❑ Opening and closing hours
 - ❑ Closing of shops and granting of weekly

holidays

- Employment of women and persons below seven-teen years during night
- This will be extended to other key sectors.

The declaration of services as Public utilities has been extended:

- ◆ All Export oriented Units and all other units incidental thereto in the Cochin Special Economic Zone
- ◆ Fertilizers
- ◆ Transport other than railways for the carriage of passengers or goods, by land or water
- ◆ Agricultural Products processing
- ◆ Information Technology
- ◆ Infotainment
- ◆ Textiles other than Cotton textiles
- ◆ Film and Video
- ◆ High Tech
- ◆ Electronic Food Stuff Processing

25.8 In these industries wildcat strikes become illegal and punishable. More industries will be notified on a need basis.

NEW INITIATIVES

- ❖ For all major projects and investments, dedicated tripartite Industrial Relations Committees will be set up to settle issues on the spot.
- ❖ Handholding for investors on labour aspects - nodal officers for each key project.
- ❖ Government will actively discourage stoppages of work or other impediments to productivity.

25.9 In the wake of the liberal policy measures announced, the State Govt. launched a massive drive to bring investments to the State and the year 2002-2003 witnessed a major event - the first-ever effort of its kind by the Government of Kerala - **the Global Investor Meet (GIM)**. Organised on the 18th & 19th of January 2003 at the International Convention Centre, Kochi, the GIM was designed as the culmination of the efforts made and turned out to be the platform for a unique commune of local, national and international investors.

25.10 The efforts towards the conduct of GIM had been evolved over an year through road shows, interactions and meetings with prospective investors both from inside the country and abroad. An unprecedented and structured effort was put in by the State Government towards the conduct of GIM. Select projects across the core competencies of the State, namely Information Technology, Infrastructure, Tourism, Edu-

cation & Health, Agriculture & Biotechnology and Urban Development & Real Estate were identified in association with the various Dept.s of State Government through consultants of international repute and showcased during GIM.

25.11 The Global Investor Meet was a grand success. GIM attracted an unprecedented massive offer to the State, of **investment proposals** aggregating Rs. 26,000 crores, despite the present economic slowdown. MoUs have been entered into for 96 projects, totalling an investment of Rs. 11,159.45 crores. Additionally, investment decisions to the tune of Rs. 10,000 crores have been announced by major public sector enterprises such as NTPC and private sector groups that include Reliance Group, Infosys, Microsoft and Sutherland - USA. The major portion of this constitutes projects announced by the Hon'ble Prime Minister in the GIM Inaugural Function viz., expansion of Kochi Refineries and the Thermal Power Plant of NTPC, as also the joint sector Mineral Processing project between Indian Rare Earths Ltd. & National Mineral Development Corporation Ltd. And expressions of Interest called for in the context of GIM have resulted in responses received for an additional 12 projects, which together would augment investments to the tune of Rs. 2,210 crores. Other than the above, on account of this Government's initiatives prior to the GIM in the last financial year, about Rs. 3,000 crores worth of investments have been attracted into the State. (A detailed write-up on the investment proposals generated during GIM is given in Annexure 2).

25.12 In order that the MoUs signed during GIM may be examined on a case-to-case basis, the projects to be implemented prioritised, the possible bottlenecks in project development identified and smooth implementation ensured, the State Government devised a special mechanism for the implementation of projects taken up under GIM - **The Investment Promotion Board (IPB)**.

25.13 The IPB, devised as a fast track mechanism for clearing of projects, is a committee of secretaries headed by the Chief Secretary. The IPB performs the functions of an empowered committee of Government and gives its recommendations to the council of ministers where policy and interdepartmental issues are involved; as also in cases where decisions are to be taken by the Council. The IPB also recommend clearances for project proposals/project ideas taken up by the Board for consideration.

25.14 The Investment Promotion Board, during its initial meetings, had considered in detail the various aspects relating to i) the Functions of IPB ii) Nature of projects to be taken up by IPB and iii) the Method of Operation and forwarded to Government the recommendations in this regard. (The Govt. orders constituting the IPB and detailing the role and functions are given as Annexure 3). The requirements of prospective investors exploring investment opportunities in the State in the wake of GIM are also being given careful consideration by the IPB.

25.15 The **Kerala State Industrial Development Corporation** (KSIDC), the premier promotional agency of the State Government, has been re-structured to take on the task of developing industrial, economic and social infrastructure in the State. The Memorandum of KSIDC has been amended to include identifying the infrastructure needs of the State, structure projects to bridge the gaps and thereby spherehead a balanced growth over the core competencies of the State, viz., physical and social infrastructure. Innovative steps to achieve this mission have been taken already. Implementation of **Industrial Growth Centres**, a central Govt. initiative for the development of industrially backward districts, is being undertaken by KSIDC. (A note on the four industrial growth centres, at Kannur, Kozhikode, Alappuzha and Malappuram is provided as Annexure 4).

25.16 Kerala Infrastructure Development Corporation (KINFRA), the organisation specially constituted to provide requisite infrastructure for projects in the State, is actively involved in developing industry specific parks across the length and breadth of the State. (Details on the various projects developed by KINFRA as also the facilities provided therein are given in Annexure 5).

25.17 Also, a **Modernising Government Programme** (MGP) has been drawn up as part of the strategy of Government to overhaul and improve its services to the people of the State. The trust 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

25.18 The highlights of the development approach of Kerala conceptualised in the MGP strategy document recently approved by the Cabinet are

- To provide an effective support system to new investors.
- To provide effective guidance/advice to investors
- To provide escort service to investors so as to remove all hurdles in setting up enterprises.
- To ensure hassle-free issue of licenses and clearances from a single-point
- To eliminate the "Inspector Raj"
- De-layering of the decision-making mechanism
- To rationalise licensing and its procedure in tune with liberalised business environment so as to attract private investment in the State
- To streamline the regulatory framework so as to make it relevant to the present market requirement
- To reduce transaction costs in dealing with government while setting up and running a business
- To make the system more transparent and easily accessible

F. KERALA RENEWABLE ENERGY POLICY

25.19 In order to develop a proper energy mix in the State the policy of renewable energy has been enunciated. The focus of the policy is development of non-conventional energy sources and provision of single window services for technical assistance, sourcing of finances and project clearance. Private participation is to be encouraged along with facilitation of decentralised micro level power generation.

25.20 The key features of the policy include:

- 1) All Power producers generating grid-grade electricity using non-conventional energy source would be deemed as "eligible producers". In the case of small hydro projects installed station capacity should be below 25 MW.
- 2) Power producers generating electricity for captive consumption would also be treated as eligible producers.
- 3) There is no restriction on legal structure for entrepreneurs – companies, co-operatives, partnerships, local governments, registered societies, NGOs and individuals are eligible.
- 4) All new projects using renewable energy sources would be given industry status with eligibility for incentives available to industries.

- 5) Equipments for renewable energy would be exempted from Entry Tax.

G. POLICIES ON THE ANVIL

I. Kerala Infrastructure Development Bill:

25.21 This Bill outlines the Government policy for infrastructure development and is now before the Select Committee. The Bill provides for the following type of concession agreements.

- Build, Own, Operate and Transfer on the basis of user fees.
- Build, Own, Operate and Maintain on the basis of user fees.
- Building and Transfer on the basis of payment as per amortization schedule.
- Build, Lease and Transfer whereby during the lease period rent would be paid by the Government agency.
- Build, Transfer and operate whereby the ownership would be immediately transferred but the operation would be continued on user charges.
- Lease Management whereby a Government project is given for operation and maintenance on lease.
- Management whereby Operation and Management of the project is transferred as per agreement.
- Rehabilitate, Operate and transfer where an existing asset has to be rehabilitated.
- Rehabilitate, Own, Operate and Maintain where an existing project is vested in a person.
- Service contract for performance of services.
- Supply, Operate and Transfer in the case of machinery and equipment.
- Joint venture where joint financing and implementation is envisaged.

25.22 All these types of public-private partnership arrangements can be made by government, local governments, or government agencies in a fair and transparent manner once the law is enacted.

II. Draft Export Policy

25.23 The Export Policy under consideration has the following salient features:

➤ Export Incentive

25.24 Export activity will be declared as a public utility and the units which exports more than 50% of their production will be given special status. Some

of the export incentives for such units include.

- Exemption from sale tax or entry tax on raw material, consumables, material handling equipment, intermediaries, semi-finished and sub-assembled products.
- Total exemption from power cut.
- Investment subsidy to all the industry who exports a minimum of 50% of their total turnover.
- Refund of taxes paid on inputs.
- Green card facility for establishment and recognized Export Houses for free movement of export cargo from any point to the airport or sea port.
- Special Market Development Assistance Scheme in addition to the Central scheme.
- **Incentives and facilities for 100 percent Export Oriented Projects.**
 - Duty free import of capital goods, component, spare, office equipment, raw materials, consumable etc.
 - Supplies made to a 100 percent EOU from Domestic Tariff Area (DTA) are treated as deemed exports and exempted from taxes and duties.
 - Sales are allowed as DTA in the ratio of 25:75 in relation to export sales.
 - Liberal conditions for foreign equity participation.
 - Well streamlined procedures for all clearances.
 - Exemption for corporate income tax for a continuous block of 5 year during the first 8 years of operations.
 - Even more liberalized packages for export - oriented electronics Hardware Technology Parks.
- **Income Tax holiday**
Income Tax holiday for 5 years to industrial units in Idukki and Wayanad Districts.
- **Other Export Promotion Schemes**
 - Under Zero duties scheme capital goods can be imported without duty against the commitments of exports of six times CIF value of imported capital goods to be met over 8 years.
- **Special subsidies to tourism related projects.,**

III. Draft Policy For Development Of Maritime Sector And Port Infrastructure

25.25 The draft Port policy focuses on the following seven ports initially.

- 1) Vizhinjam
- 2) Thankassery
- 3) Alappuzha
- 4) Munambam
- 5) Ponnani
- 6) Beypore
- 7) Azhikkal.

25.26 The policy encourages private sector participation in existing Ports, development of new Ports especially for handling POL and Trans-shipment, development of Container Terminals, multi-purpose Jetties including captive Jetties, marinas, warehouses, provisions of port service including cranes etc.

25.27 The private partners would be selected through competitive bidding as well as in specific case through suo motu bids and "Swiss Challenge" approach.

25.28 Coastal shipping, tourism and travel, port related industries and marine industries would also be encouraged. The partnership agreements would be on the basis of those modes outlined in the Infrastructure Bill.

H. TOURISM VISION 2025

25.29 This Vision envisages increase of earnings at 10% per annum and generation of employment opportunities at 10,000 persons per year and also an annual rate of growth of 7% in foreign tourist arrivals and 9% in the case of domestic tourists. Focus areas include; development of infrastructure, quality assurance

through classification and monitoring, conservation of heritage sites, development of tourism oriented infrastructure, promotion of souvenir industry, development of specific tourism products like Eco-tourism, ethnic cuisine and Ayurveda, tourist security and so on.

25.30 The following incentives are proposed.

Incentives Offered To Private Sector Investments

➤ Investment subsidy

25.31 General investment subsidy of 10% of capital cost including land, building, furniture, furnishings, equipment, landscaping etc. subject to a maximum of Rs. 10.00 lakhs will continue for approved tourism units. Additional subsidy on the following will also be provided

- Investment in pollution control facilities and equipment's such as solid/liquid waste management equipment's for recycling of wastewater, sanitation facilities, captive power generation (generators) etc @ 15% of such investments subject to a separate ceiling of Rs. 5.00 lakhs
- Projects with capital investment exceeding Rs.50.00 crores may be considered for a special incentive package except tax – based incentives, not below the benefits otherwise eligible, on a case – to-case basis
- Special package of incentives will be considered for channeling foreign Director Investment (FDI) in tourism and infrastructure project

➤ Electricity tariff concession

25.32 The existing system of remitting the commercial tariff and getting the difference of commercial tariff and industrial tariff from Department of Tourism will continue.

APPENDIX TABLES

LIST OF APPENDIX TABLES

Appendix No.	Title	Page No.
Chapter - 3 Income and Population		
3.1	Gross National Product at Factor Cost - All India	S 1
3.2	Net National Product at Factor Cost - All India	S 2
3.3	Gross Domestic Product at Factor Cost by Economic Activity - All India (at Current Prices)	S 3
3.4	Gross Domestic Product at Factor Cost by Economic Activity - All India (at 1993-94 prices)	S 3
3.5	Gross Domestic Product (Kerala) at Factor Cost by Industry of Origin from 1997-98 to 2002-03 (At Current Prices)	S 4
3.6	Gross Domestic Product (Kerala) at Factor Cost by Industry of Origin (At Constant Prices) for the Years from 1997-98 to 2002-03	S 5
3.7	Net Domestic Product (Kerala) at factor cost by industry of origin (at current prices) for the years from 1997-98 to 2002-03	S 6
3.8	Net Domestic Product (Kerala) at factor cost by industry of origin (at constant prices) from 1997-98 to 2002-03	S 7
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 2000-2001 (at current prices)	S 8
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 2000-2001 (at constant prices)	S 9
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 2001-02 (at current prices)	S 10
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 2001-02 (at constant prices)	S 11
3.13	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)	S 12
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 2002-03 (at constant prices)	S 13
3.15	Population of States/Union Territories by sex and percentage share of population in total population - 2001	S 14
3.16	District-wise Population, Decadal Growth Rate, Sex ratio and Population Density	S 15
3.17	Total Workers, Main Workers and Marginal Workers in Kerala	S 16
Chapter - 4 Agriculture		
4.1	Number of Operational Holdings and area Operated by Size Class in Kerala ('995-96)	S 17
4.2	Percentage Distribution of Main Workers in Kerala (1961 & 1991)	S 17
4.3	District-wise Actual and Normal Rainfall (in mm) with Percentage Departure from Normal Rainfall for 2003 (up to 31.10.2003)	S 18
4.4	Month-wise Distribution of Normal and Average Rainfall for the last 10 years	S 19
4.5	District-wise Monthly Actual Rainfall for 2003 (up to 31 st October)	S 20
4.6	Area, Production & Productivity of Principal Crops	S 21
4.7	Index of Area, Production & Productivity of Crops in Kerala - Base - Average of Triennium ending 1979-80	S 22
4.8	Season-wise Area, Production & Productivity of Rice in Kerala (2000-01 to 2002-03)	S 23
4.9	Season-wise Coverage of HYV of Rice in Kerala	S 24
4.10	District-wise Area, Production and Productivity of Rice in Kerala	S 25
4.11	District-wise and season-wise Area, Production and Productivity of Rice for 2002-03	S 26
4.12	Area under HYV of Rice (1990-91 to 2002-03)	S 27
4.13	Production of HYV of Rice (1990-91 to 2002-03)	S 28
4.14	Productivity of HYV of Rice (1990-91 to 2002-03)	S 29
4.15	Area under Local Variety of Rice (1990-91 to 2002-03)	S 30
4.16	Production of Local Variety of Rice (1990-91 to 2002-03)	S 31
4.17	Productivity of Local Variety of Rice(1990-91 to 2002-03)	S 32
4.18	Area, Production and Productivity of Rice (Irrigated and Unirrigated)	S 33

4.19	Plantation Crops – Area, Production and Productivity (1999-99 to 2002-03)	S 34
4.20	Import of Rubber (1990-91 to 2002-03)	S 35
4.21	Consumption of Rubber in Kerala and India (1994-95 to 2002-03)	S 36
4.22	Production, Consumption, Export and Auction Price of Tea	S 36
4.23	Average Market Price of Natural Rubber in Domestic (Kottayam) and International (FOB, Kuala Lumpur) Markets	S 37
4.24	Price Trend of Rubber	S 38
4.25	Monthly Average Farm Price of Important Agricultural Commodities	S 39
4.26	Consumption of Fertilisers/Ha. of gross cropped area in Kerala (1995-96 to 2002-03)	S 40
4.27	Selected Indicators of Agricultural Development in Kerala (2000-01 to 2002-03)	S 41
4.28	Average Price of Agricultural Inputs (2000-01 to 2002-03)	S 41
4.29	Number of Students Admitted for Various Courses in Agricultural University and Number of Students Passed Out during 2002-03	S 42
4.30	Tariff Rates on Major Agricultural Commodities/Groups (as on 1.4.2003)	S 43
4.31	Composition of Cattle Population	S 44
4.32	Livestock Population – India and Kerala	S 45
4.33	Trend in Livestock Population of Kerala, Over the Census Periods 1966 to 2003	S 46
4.34	Sex-wise Classification of Bovine Population and Trend over the previous Census (1956 to 2000)	S 47
4.35	Trend in Poultry Population over Census Periods from 1977 to 2000	S 48
4.36	Distribution of Working Bullocks and Males Calves over the five Census periods and Percentage Variation over Previous Census, from 1977 to 2000	S 49
4.37	Trend in Distribution of Adult Female Cattle over the Census periods from 1977 to 2000, their Percentage Distribution and Percentage variation over the previous Census	S 50
4.38	Production of Milk and Egg in the Major States of India (1989-90, 1999-2000 & 2001-02)	S 51
4.39	Details of Milk production in the State – Results of Integrated Sample Survey (1991-92 to 2001-02)	S 52
4.40	Index of Milk and Egg Production in Kerala and India (Base year 1984-85)	S 53
4.41	Activities in the Animal Husbandry Sector (1994-95 to 2002-03)	S 54
4.42	Production and Distribution of Frozen Semen in Kerala (1993-94 to 2002-03)	S 55
4.43	Artificial Insemination Centres in the State, as on 31.3.2003	S 55
4.44	Other Important Activities of KLD Board during 2001-02 and 2002-03	S 55
4.45	Average Price of Livestock Products and Feeds in the State (1996-97 to 2002-03)	S 56
4.46	Performance of Kerala Co-operative Milk Marketing Federation (1996 to 2003)	S 57
4.47	Performance of the Dairies under Kerala Co-operative Milk Federation (2000 to 2003)	S 58
4.48	Average Quantity of Milk Procured per day by APCOS (1994 to 2003)	S 59
4.49	Price Revision Details of Milk	S 60
4.50	Price Spread of Milk (1993-94 to 2002-03)	S 61
4.51	Sale of Milk and Milk Products by KCMMF 2001-02 to 2002-03	S 61
4.52	District-wise Distribution of Fishermen Population in Kerala (2002-03)	S 62
4.53	Species-wise composition of Marine Fish Landings in Kerala (2000-01 to 2002-03)	S 63
4.54	Species-wise Land Fish Production in Kerala (1998-99 to 2002-03)	S 64
4.55	NCDC Assisted Integrated Fisheries Development Project (Physical and Financial Achievements, during 2002-03)	S 65
4.56	Welfare Activities of Fisheries Department (2000-01 to 2002-03)	S 66
4.57	Details of Welfare Relief Schemes Implemented by the Kerala Fishermen's Welfare Fund Board, 2002-03	S 67
4.58	Details on Fishery Harbours in Kerala	S 68
4.59	Details of Revenue Collection in various Fishing Harbours/Fish Landing Centres	S 69
4.60	Activity-wise Cumulative Sanction/Release of Funds to Kerala by NCDC	S 70
4.61	NCDC Release of Fund for Kerala (1997-98 to 2002-03)	S 71
4.62	Selected Indicators of Performance of the Primary Agricultural Credit Societies	S 72
4.63	Selected Indicators of the Credit Operations of the Primary Agricultural Credit Societies	S 73
4.64	Production and Sales of Chocolate by CMPCO	S 74
4.65	Operations of CAMPCO (1996-97 to 2002-03)	S 75
4.66	Important Activities of Major Co-operatives (1999-2000 to 2002-03)	S 76

Chapter – 5 Water Resources		
5.1	Details of Allocation & Expenditure and Reimbursement Status under National Hydrology Project	S 77
5.2	Physical Achievement under National Hydrology Project	S 78
5.3	Physical Achievements under Minor Irrigation Schemes	S 79
5.4	Ground Water Resources of Kerala as on 31.3.1999 (GEC-1997 Methodology)	S 80
5.5	Physical Achievements under Ground Water Development Schemes	S 81
5.6	Physical Achievements under Command Area Development Programme (1999-2000 to 2002-03)	S 82
5.7	Major Physical Cumulative Achievements under CAD Programme as on March 2003	S 83
5.8	Storage in the Reservoirs (Irrigation) – Basin-wise	S 84
5.9	District-wise Population covered by Water Supply Schemes as on 31.7.2003	S 85
5.10	District-wise & Category-wise number of water supply schemes under implementation	S 86
5.11	District-wise and Category-wise Number of Water Supply Schemes in Operation as on 31.10.2003.	S 87
5.12	District-wise details of Service Connections and Street Taps as on 1.4.2003	S 88
5.13	Water Tariff	S 89
5.14	Details of Income from Water Charges (1998-99 to 2002-03)	S 90
5.15	Receipts of Kerala Water Authority from various sources from 1998-99 to 2002-03	S 91
Chapter - 6 Environment		
6.1	Notified Wetlands in India	S 92
6.2	Area under Mangroves – 2001	S 93
6.3	Salient Features of the Floristic 'Hot Spots' of Kerala	S 94
6.4	Details of River Sand Mining from Various River Basins of Greater Kochi Region	S 95
6.5	Water Quality Status in India (1998)	S 96
6.6	Details of Industries in Periyar River Basin	S 97
6.7	Environmental Value of Growing Stock	S 98
6.8	Overview of Environmental Legislation and Executing Authorities	S 99
6.9	Western Ghat Development Programme for Natural Resource Management (Physical and Financial Achievements, 2002-03)	S 100
6.10	Division-wise Area of Forest in Kerala (as on 31.3.2003) – Provisional	S 101
6.11	Species-wise Area under Forest Plantation	S 102
6.12	Production of Major Forest Produce (1993-94 to 2001-02)	S 103
6.13	Forest Revenue in Kerala	S 104
6.14	Physical Targets & Achievements under General Forestry (2000-01 to 2002-03)	S 105
6.15	Kerala Forestry Project – Year-wise Financial Achievement	S 106
6.16	Kerala Forestry Project – Year-wise Physical Achievements	S 107
6.17	Wasteland in Kerala	S 108
Chapter - 7 Energy Development		
7.1	Growth of Kerala Power System at a Glance – 2002 and 2003	S 109
7.2	Profile of on-Going Hydro-Electric Projects in the State	S 110
7.3	Power Projects and Power Generation as on 31.3.2003	S 111
7.4	Average Tariff Rate	S 112
7.5	Average Realisation from Sale of Power	S 112
7.6	Pattern of Power Consumption and Revenue Collected During 2002-03	S 113
7.7	Sources of Funding of the Power Programmes of K.S.E.B. for the year 2002-03	S 114
Chapter – 8 Industry and Mining		
8.1	Index of Industrial Production 2000-01 & 2001-02 – Base (1980-81 =100)	S 115
8.2	Growth of Working Factories and Average Daily Employment in Kerala – 1990 - 2002	S 116
8.3	District-wise Distribution of Registered Working Factories in Kerala from 1990 to 2002	S 117
8.4	District-wise Distribution of Employment in Kerala – 1995 to 2002	S 118
8.5	Industrial Disputes Arose, Handled, Settled etc. in Kerala (1998-99 to 2002-03)	S 119
8.6	Central Sector Investment in Kerala	S 120
8.7	Central Sector Investment in Selected States as on 31.3.2002	S 121
8.8	Capital Investment and Employment in respect of Government of India Companies functioning in Kerala	S 121

8.9	Performance of Government of India Companies in Kerala in terms of value of Production and Sales Turnover	S 122
8.10	Production and capacity utilisation in Government of India Companies functioning in Kerala	S 123
8.11	District-wise break up of Medium and Large Scale Industries in Kerala as on 31.3.2003	S 125
8.12	Units assisted by KSIDC as on 31.3.2003	S 125
8.13	Capital Invested and Employment in respect of Govt. owned Companies in Kerala	S 126
8.14	Performance of Govt. owned companies in Kerala in terms of Value of Production and Sales Turnover	S 127
8.15	Production and Capacity Utilisation of Government owned Companies in Kerala during 2001-02 & 2002-03	S 128
8.16	Capital Invested and Employment in respect of Govt. Majority Companies in Kerala	S 130
8.17	Performance of Government Majority Companies in Kerala in terms of Value of Production and Sales Turnover	S 131
8.18	Production and Capacity utilisation of Government Majority Companies in Kerala during 2001-02 and 2002-03.	S 132
8.19	Details of Joint Stock Companies working in Kerala	S 134
8.20	District-wise details of Small Scale Industrial Units Registered in Kerala during the year 2002-03.	S 135
8.21	District-wise details of Small Scale Industrial Units Registered in Kerala as on 31 st March 2003	S 136
8.22	Working Status of Small Scale Units as on 31 st March 2003	S 137
8.23	Achievement under Self Employment Programme during 2002-03 (PMRY)	S 138
8.24	Industrial Co-operative Societies in Kerala as on 30.6.2003	S 139
8.25	Outstanding Credit to various sectors by Banks in Kerala	S 140
8.26	District-wise Number of Handloom Co-operative Societies in the State	S 140
8.27	Production and Productivity under Handloom Industry in Kerala	S 141
8.28	Working Results of Handloom Apex Society (Hantex)	S 143
8.29	Working Results of Kerala State Handloom Development Corporation (HANVEEV)	S 143
8.30	Production and Productivity under Powerloom Industry	S 144
8.31	Coir Co-operative Societies in Kerala	S 145
8.32	Activities of Coir Co-operative Societies	S 146
8.33	District-wise details of Coir Co-operative Societies (as on 31.3.2003)	S 147
8.34	Export of Coir and Coir Products from India during 2001-02 & 2002-03	S 147
8.35	Foreign Exchange Earnings of India from Cashew Industry	S 148
8.36	Import of Raw Cashew nuts into India	S 148
8.37	Production, Sales, Employment and Wages paid during 2001-02 & 2002-03	S 149
8.38	District-wise number of sales outlets & sales under Board during 2002-03	S 150
8.39	Physical Achievement under Sericulture for the year 2001-02 & 2002-03	S 151
8.40	Kerala State Industrial Development Corporation – Physical & Financial Performance 2002-03	S 152
8.41	Kerala Financial Corporation – Loan Operations as on 31.3.2003	S 153
8.42	District-wise details of Disbursement of Loan by KFC 2002-03	S 154
8.43	Industry-wise Classification of Loan sanctioned and Disbursed by the Kerala Financial Corporation as on 31.3.2003	S 155
8.44	Progress of the Working of Kerala Financial Corporation at a Glance	S 156
8.45	Selected Indicators of the Activities of SIDCO	S 157
8.46	Small Industries Service Institute (SISI) – Achievement during 2002-03	S 158
8.47	Small Industries Development Bank of India's Assistance to Small Scale Industries	S 159
8.48	Total Area Covered by Mining Leases	S 159
8.49	Production and Sale of Major Minerals other than Mineral Sand in Kerala – 2002-03	S 159
8.50	Production and Sale of Mineral Sand in Kerala – 2002-03	S 159

Chapter – 9 Tourism

9.1	Foreign Tourist Arrivals at Major Tourist Generating States/UT during 2001 & 2002	S 160
9.2	Growth of Foreign Tourist Arrivals in India and Kerala (1998 – 2002)	S 160
9.3	Flow of Domestic Tourist to Kerala (1998 – 2002)	S 160
9.4	Earnings from Tourism (1998 – 2002)	S 161
9.5	Details of Availability of Accommodation Facility in classified Hotels 2001 & 2002	S 161
9.6	State Plan Allocation for Tourism (1998 – 2003)	S 161
9.7	Central Financial Assistance for Tourism	S 161
9.8	Kerala Tourism Development Corporation Limited – Performance for the year 2002-03 (Provisional)	S 162

Chapter – 10 Infrastructure

10.1	Growth of Transport & Communications in Kerala since 1999 compared to 1975	S 163
10.2	District-wise and Category-wise Length of Roads Maintained by PWD (R&B) as on 31.3.2003	S 164
10.3	District-wise, Surface-wise & Category-wise length of roads maintained by Kerala PWD as on 31.3.2003	S 165
10.4	Surface-wise and Category-wise Length of PWD Roads added during 2002-03	S 166
10.5	District-wise and Surface-wise Length of Roads Maintained by PWD as on 31.3.2003	S 167
10.6	Number of Bridges and Culverts in PWD Roads as on 31.3.2003	S 167
10.7	District-wise details of vehicles newly registered in the State during the year 2002-03 (provisional)	S 168
10.8	Number of Motor Vehicles Having Valid Registration as on 31.3.2003	S 169
10.9	District-wise Growth of Motor Vehicles in Kerala and their Index (Base 1990-91=100)	S 170
10.10	Category-wise Growth of Motor Vehicles in Kerala since 1999 compared to 1990	S 171
10.11	District-wise Road Accidents in Kerala in which number of persons held during 2001-02 & 2002-03	S 172
10.12	Motor Vehicle Accidents in Kerala by Primary Causes of Accidents during 2002-03	S 173
10.13	Type-wise details of Motor Vehicles Involved in Road Accidents in Kerala during 2002-03	S 174
10.14	Motor Vehicle Accidents by time of day during 2002-03	S 175
10.15	Age-wise details of Vehicles owned by KSRTC as on 30.3.2003 & 31.8.2003	S 176
10.16	Major Indicators showing operational efficiency of KSRTC	S 177
10.17	KSRTC Operational Statistics during 2002-03	S 178
10.18	Fare Structure of KSRTC during 2003 (with effect from 1.10.2001)	S 180
10.19	KSRTC Operational Ratios during 2002-03	S 181
10.20	Category-wise Staff Position of KSRTC	S 184
10.21	No. of ships called at Cochin Port during 2001-02 & 2002-03 and their net registered tonnage (NRT)	S 184
10.22	Commodity-wise cargo handled at the Intermediate and Minor Ports of Kerala during 2002-03	S 185
10.23	Number and Tonnage of steamers and sailing Vessels which called at the Intermediate and Minor Ports of Kerala during 2002-03	S 186
10.24	Number of Harbour Crafts registered at the Intermediate and Minor Ports of Kerala during 2002-03	S 186
10.25	Category-wise break up of Revenue Collected at the Intermediate and Minor Ports of Kerala during 2002-03	S 187
10.26	Operational Statistics of Inland Water Transport Agencies in Kerala	S 188
10.27 (A)	Details of flights operated by various agencies from Thiruvananthapuram International Airport	S 189
10.27 (B)	Details of flights operated by various agencies from Kozhikode Airport	S 189
10.27 (C)	Details of flights operated by various agencies from Nedumbassery International Airport	S 189
10.28	Number of Passports issued from the Passport Offices in Kerala from 2000-01 to 2002-03	S 190
10.29	Growth of Post Offices in Kerala during the Last Five Years	S 190
10.30	Category-wise Offices in Postal and other Postal Services in Kerala	S 191
10.31	Division-wise and Category-wise Post Offices under Kerala Circle as on 31.3.2003	S 192
10.32	Urban/Rural Split of Post Offices as on 31.3.2003	S 193
10.33	District-wise details of area and population served by one post office during 2002-03	S 194
10.34	District-wise details of Telephone net work during 2002-03	S 195

Chapter – 11 Education		
11.1	Comparative statement showing literacy rate in India and States 1991 & 2001	S 196
11.2	Management-wise Number of Schools in Kerala 1998-99 to 2002-03	S 197
11.3	District-wise/Management-wise Number of Schools in Kerala – 2002-03	S 198
11.4	District-wise Number of Schools (other than state syllabus) in Kerala 2003	S 199
11.5	District-wise Details of Govt. Schools having Building Facilities – Kerala (2003)	S 200
11.6	District-wise Details of Govt. Schools having Drinking Water/Latrines/Urinal facilities in Kerala (2003)	S 200
11.7	Enrolment of Students in Schools District-wise and Stage-wise (2002-03)	S 201
11.8	Management-wise/Standard-wise enrolment of Students in Schools Kerala – 2002-03	S 202
11.9	Standard-wise Strength of SC/ST Students – 2002-03	S 203
11.10	Stage-wise and Management-wise number of Teachers in Schools in Kerala – 2002-03	S 204
11.11	Uneconomic Schools in Kerala (District-wise and Stage-wise) – 2003	S 205
11.12	Protected Teachers in Kerala, Stage-wise/District-wise – 2003	S 206
11.13	District-wise/Management-wise Number of Higher Secondary Schools in Kerala 2003	S 206
11.14	District-wise details of Vocational Higher Secondary Schools and Courses during 2003	S 207
11.15	Course-wise Intake of students in VHSE – 2003	S 208
11.16	Details of B.A Degree Enrolment in Colleges during the year 2002-03	S 209
11.17	Details of B.Sc Degree Enrolment in Colleges during 2002-03	S 210
11.18	Details of B.Com Degree Enrolment in Colleges 2003-04	S 210
11.19	Details of Enrolment of M.A Students in Colleges during 2002-03	S 211
11.20	Details of Enrolment of M.Sc Students in Colleges during 2002-03	S 211
11.21	Details of Enrolment of M.Com Students in Colleges during 2002-03	S 211
11.22	Year-wise Break up of Private Registration (2001 to 2003)	S 212
11.23	University-wise Number of Teachers in Arts & Science Colleges in Kerala (2001 to 2003)	S 212
11.24	Branch-wise Distribution of Seats in Engineering Colleges – 2003	S 213
11.25	Course-wise Annual Intake of Students in Government Engineering Colleges at Post Graduate Level – 2001-02 to 2003-04	S 214
11.26	Number of Students and Teachers in Polytechnics 2002 & 2003	S 214
11.27	Trade-wise Annual Intake of Students in Polytechnics – 2003	S 215
11.28	Department-wise Details of Courses in Cochin University of Science & Technology – 2003	S 216
11.29	District-wise Details of Trainees Admitted during 8/2003 in ITI/ITC/SCDD	S 218
11.30	Trade-wise intake and out turn in Govt. ITI's during 2002-03 as on 30.11.2003 (One Year Course)	S 219
11.31	Trade-wise intake and outturn in Govt. ITI's during 2002-03 as on 30.11.2003 (Two Year Course)	S 220
11.32	Institution-wise Details of Apprentices under Industrial Training Department	S 221
Chapter – 12 Health		
12.1	District-wise Medical Institutions and beds – Government Sector	S 222
12.2	Details of Infrastructure, Doctors and Nurses under Co-operative sector	S 223
12.3	Details of Infrastructure in the Directorate of Insurance Medical Service – District-wise as on 31.3.2003.	S 228
12.4	Medical Institutions and Beds in Kerala – Category-wise – 2003	S 229
12.5	Growth of Institutions (Allopathy) 1990 – 2003	S 230
12.6	Growth of beds under Allopathy System in Kerala 1990 – 2003	S 230
12.7	District-wise Number of Medical and Paramedical Personnel under DHS – 2003	S 231
12.8	Target and Achievement of Immunisation Programme	S 232
12.9	District-wise details of Dengue Fever – 2003	S 233
12.10	District-wise details of Leptospirosis – 2003	S 233
12.11	District-wise availability of Vehicles under DHS – 2003	S 234
12.12	Statement showing No. of attack and death due to major principal diseases during 2002 & 2003	S 234
12.13	Details of Blood Units collected in Blood Banks – Kerala	S 235
12.14	Details of Personnel (Clinical/Non-clinical) in Medical Colleges – 1997 – 2003	S 236
12.15	Medical and Para-medical courses conducted in the Medical College with an Annual Intake of Students	S 237

12.16	Annual Intake in different Nursing Courses – 2003	S 239
12.17	District-wise distribution of Institutions, Beds and Patients treated under Ayurvedic System of Medicine in Kerala (2002 and 2003)	S 240
12.18	Annual Intake of Students and Courses in Ayurveda Colleges	S 241
12.19	District-wise Distribution of Institutions, Beds and patients treated under Government Homoeopathy (2002 & 2003)	S 242
12.20	Annual Intake of Students and Courses in Homoeo Colleges	S 243
12.21	District-wise Couple Protection rate and Female Reproductive age group	S 244
12.22	Achievement of Family Welfare Programme (2002-03) District-wise	S 245
12.23	Per capita expenditure on Medical and Public Health	S 246
Chapter – 13 Housing and Urban Development		
13.1	Census houses – Uses and Conditions Kerala & India (2001)	S 247
13.2	Details-wise Households and housing amenities (2001)	S 248
13.3	Achievements under Major Housing Schemes	S 249
13.4	Houses Constructed by various agencies including LSGI's	S 250
13.5	Kerala State Housing Board – Mythri Housing Scheme	S 251
13.6	Details of Programmes Implemented by KESNIK (Kerala State Nirmithi Kendra)	S 252
13.7	Houses assisted and amount disbursed by Kerala State Co-operative Housing Federation Limited	S 252
13.8	HUDCO assistance given – Housing Schemes	S 253
13.9	Interest Rates of Different Financial Institutions on Housing Loan as on 10/2003	S 254
Chapter – 14 Poverty and Special Programme for Weaker Sections		
14.1	District-wise Number of Families Below Poverty Line According to Social Groups as on 31.8.2003.	S 255
14.2	Block –wise number of Families Below Poverty Line According to Social Groups	S 256
14.3	Resource Mobilisation of Projects under the Anti Poverty sub plan 2002-03 of Local Governments	S 260
14.4	Physical Achievement of Poverty Alleviation Schemes (2002-03 to 2003-04)	S 261
14.5	Target and Achievement under Linkage Banking of Kudumbashree, 2003	S 262
14.6	Achievement under Lease Land Farming – 2003-04	S 263
14.7	District-wise Urban Thrift Mobilisation (up to 2003-04)	S 264
14.8	District-wise Number of beneficiaries in Welfare Institutions - 2003+A23	S 265
14.9	Major Pension Schemes in Kerala – District-wise Beneficiaries – 2003	S 266
14.10	Details of Social Security Pension schemes in Kerala – 2002	S 267
14.11	Demographic Profile and aged in Kerala (Population in millions)	S 271
14.12	ICDS Projects (General) – 2002	S 272
14.13	District-wise Details of Unemployed SC/ST persons in the Live Registers of Employment Exchange, 2002-03 & 2003-04	S 277
14.14	District-wise details of SC/ST students appeared and passed in the SSLC Examination March 2003	S 278
14.15	District-wise details of houses constructed by SC Development Department during 2002-03 & 2003-04	S 279
14.16	Physical Achievements of Major Schemes for Scheduled Castes, 2002-03 & 2003-04	S 280
14.17	Physical and Financial Achievement under Pre-metric and Post metric Scholarships (1997 – 2003)	S 281
14.18	District-wise Details of Institutions under Scheduled Tribe Development Department	S 282
14.19	District-wise Area of Land Distributed to Tribal Families up to 26.12.2003	S 283
14.20	District-wise details of Landless Tribals and those own Less than 1.00 acre of Land	S 284
14.21	Details of Expenditure of Tribal Resettlement and Development Mission as on 30.12.2003.	S 285
14.22	District-wise details of houses constructed by ST Development Department, 2002-03 & 2003-04	S 286
14.23	Physical Achievements of Major Schemes for Scheduled Tribes, 2002-03 & 2003-04	S 287
14.24	Financial and Physical Achievements of Major Schemes implemented by the Kerala State Development Corporation for SC/ST, 2002-03 & 2003-04	S 288

Chapter – 15 Prices and Food Security		
15.1	Consumer Price Index (Cost of Living Index) Numbers for Agricultural and Industrial Workers – Kerala 2003	S 289
15.2	Month-end Average Retail Prices of Essential Commodities 2003	S 290
15.3	Month-wise Wholesale Price Index of Agricultural Commodities – Kerala (2002)	S 291
15.4	Retail Price of Ration Commodities from 1997 to 2003	S 292
15.5	Distribution of Rice through the Public Distribution System 1997-2003	S 293
15.6	Distribution of Wheat through Public Distribution System 1997-2003	S 293
Chapter – 16 Export and Import		
16.1	Commodity-wise Export through Kochi Port, 2000-01 to 2002-03	S 294
16.2	Commodity-wise Import through Kochi Port, 2000-01 to 2002-03	S 294
16.3	Kerala's Share in the Export of Marine Products from India, 1990-91 to 2002-03	S 295
16.4	Market-wise Export of Marine Products from India, 2000-01 to 2002-03	S 296
16.5	Market-wise Export of Marine Products from Kerala, 2000-01 to 2002-03	S 296
16.6	Item-wise Export of Marine Products from India, 2001-02 & 2002-03	S 297
16.7	Item-wise Export of Marine Products from Kerala, 2000-01 to 2002-03	S 298
16.8	Item-wise Export of Spices from India, 1998-99 to 2002-03	S 299
16.9	Export of Coir and Coir Products from India, 1998-99 to 2002-03	S 300
16.10	Leading Export Markets of Coir Products, 2002-03	S 301
Chapter – 17 Institutional and Bank Finance		
17.1	State-wise Financial Assistance Disbursed by NABARD and NCDC during 2002-03	S 302
17.2	State-wise Financial Assistance Disbursed by NABARD and NCDC as at the end of March 2003	S 302
17.3	State-wise Financial Assistance Disbursed by All India Financial Institutions during 2001-02	S 303
17.4	State-wise Financial Assistance Disbursed by All India Financial Institutions as at the end of March 2002	S 304
17.5	State-wise Per capita Assistance Disbursed by All India Financial Institutions During 1999-2000 to 2001-02	S 305
17.6	State-wise distribution of commercial bank branches and population per bank office	S 306
17.7	Deposits, Credits and Credit-Deposit Ratio of Public Sector Banks	S 307
17.8	Banking Statistics of Kerala – 1990 – 2003	S 308
17.9	District-wise distribution of number of branches, aggregate deposits, gross bank credit and CD ratio of Scheduled Commercial banks – Kerala – June 2003	S 310
17.10	District-wise flow of credit (2000-01 to 2002-03)	S 311
17.11	Operations of the Kerala State Co-operative Bank Limited (1991-92 to 2002-03)	S 312
17.12	Purpose-wise Outstanding Loans in the Kerala State Co-operative Bank Limited (1995-96 to 2002-03)	S 313
17.13	Operational Indicators of District Co-operative Banks during 2002-03	S 314
17.14	Annual Long Term Loan Disbursement and Debentures floated by Kerala State Co-operative Agricultural and Rural Development Bank Ltd.	S 315
17.15	Purpose-wise Classification of Long Term Loans issued by Primary Co-operative Agricultural & Rural Development Banks (1992-93 to 2002-03)	S 316
17.16	Agency-wise Disbursement of Refinance Assistance by NABARD in Kerala (1994-95 to 2002-03)	S 317
17.17	Purpose-wise Refinance by NABARD (1994-95 to 2002-03)	S 317
Chapter – 18 Gender and Development		
18.1	District-wise Sex Ratio of Elderly by Marital Status in Kerala – 1991 Census	S 318
18.2	Enrolment of Girl Students in Kerala at various stages (in 000's)	S 319
18.3	District-wise Number of Women Employees – 2001 & 2002	S 320
18.4	Women's Autonomy Levels by State	S 321
18.5	Women's representation in LSGI's in Kerala – 2003	S 322
18.6	Incidence & Rate of Crime Committed Against Women in States and Union Territory's during 2001 - India	S 323
18.7	District-wise Crime Against Women Reported in Kerala State during 2002	S 324
18.8	Number of Suicide cases by cause in Kerala for the period 2001 and 2002	S 325

18.9	Status Report of NHGs and Thrift & Credit under Kudumbashree as on 31.10.2003	S 326
18.10	Complaints received by Kerala Women's Commission during 2003 – District-wise (January 2003 to September 30, 2003)	S 327
Chapter – 19 Labour and Employment		
19.1	District-wise percentage of total Workers, Main Workers, Marginal Workers and Non-workers to total population	S 328
19.2	Total Work Seekers in Kerala as on 31.8.2003	S 329
19.3	Distribution of Work Seekers in Kerala by Educational Level	S 329
19.4	Number of Professional and Technical Work Seekers	S 330
19.5	District-wise Distribution of Work Seekers (as on 31.8.2003)	S 330
19.6	Unemployment Assistance and Self Employment Scheme	S 331
19.7	Employment in the Public and Private Sectors in Kerala	S 331
19.8	Number of Placements through Employment Exchanges and monthly average Number of Employers using Employment Exchanges in Kerala	S 332
19.9	District-wise Employment both in Public and Private Sectors in Kerala as on 31 st March	S 333
Chapter – 22 Local Self Government		
22.1	Transfer of Resources to Grama Panchayats Based on State Finance Commission Recommendations	S 334
22.2	Transfer of Resources to Block Panchayats Based on State Finance Commission Recommendations	S 335
22.3	Transfer of Resources to District Panchayats Based on State Finance Commission Recommendations	S 336
22.4	Transfer of Resources to Municipalities Based on State Finance Commission Recommendations	S 337
22.5	Transfer of Resources to Corporations Based on State Finance Commission Recommendations	S 338
22.6	Ninth Five Year Plan of Local Governments (1997-2002) Plan Grant Receipts	S 339
22.7	Ninth Five Year Plan of Local Governments (1997-2002) Plan Grant Expenditure	S 340
22.8	Ninth Five Year Plan of Local Governments (1997-2002) Receipts and Expenditure under State Sponsored Schemes	S 341
22.9	Ninth Five Year Plan of Local Governments (1997-2002) Receipts and Expenditure under Centrally Sponsored Schemes	S 342
22.10	Ninth Five Year Plan of Local Governments (1997-2002) Gross Plan Expenditure (Amount)	S 343
22.11	Ninth Five Year Plan of Local Governments (1997-2002) Gross Plan Expenditure (Percentage)	S 345
22.12	Sector-wise Distribution of Plan Grant and Gross Plan Outlay	S 347
22.13	Category-wise Distribution of Plan Grant and Gross Plan	S 348
22.14	Source-wise Distribution of Gross Plan	S 349
22.15	Sub Sector-wise Distribution of Plan Grant and Gross Plan	S 350
22.16	Receipts of Plan Grant to Local Governments	S 352
22.17	Plan Expenditure of Local Governments	S 353
22.18	Annual Plan of Local Governments (2002-03) Physical Achievement (Provisional)	S 354

Appendix 3.1

Gross National Product at Factor Cost - All India

(Rs. crore)

Year	At Current Prices		At Constant Prices	
	Amount	% change	Amount	% change
Old Series (Base 1980-81)				
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
New Series (Base 1993-94)				
1993-94	769265	16.4	769265	6.2
1994-95	901111	17.1	822649	6.9
1995-96	1053736	16.9	884388	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	1557781	10.1	15562.2	1007743	6.3	10067.4
2000-01@	1702454	8.8	16707	1050177	4.2	10306
2001-02*	1864292	9.5	17978	1115157	6.2	10754
2002-03**	1986027	6.5	18825	1161580	4.2	11010

@- Provisional, *- Quick Estimate

**- Revised 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	478468	522583	516020
2	Mining & Quarrying	20092	45376	46256	48369
3	Manufacturing	125493	301432	319932	348369
4	Electricity, Gas & Water Supply	18984	46584	49999	55008
5	Construction	40593	116557	125551	139188
6	Trade, Hotels, Transport & Communication	150500	412949	456918	504317
7	Financing, Insurance, Real Estate & Business Services	90084	238865	267119	292890
8	Community, Social & Personal Services	93632	277493	305655	338301
Gross Domestic Product at Factor Cost		781345	1917724	2094013	2242462

*-Provisional, ** -Quick Estimate, *** -Revised Advance 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	285877	302054	292310
2	Mining & Quarrying	20092	27929	28218	29633
3	Manufacturing	125493	206061	213065	225984
4	Electricity, Gas & Water Supply	18984	29807	31076	32300
5	Construction	40593	62821	65150	69866
6	Trade, Hotels, Transport & Communication	150500	273380	297213	320401
7	Financing, Insurance, Real Estate & Business Services	90084	150910	157701	167254
8	Community, Social & Personal Services	93632	161900	170952	182565
Gross Domestic Product at Factor Cost		781345	1198685	1265429	1320313

*- Provisional, ** - Quick Estimate, *** - Revised Advance Estimate

Source: Central Statistical Organisation

Appendix 3.5

Gross Domestic Product (Kerala) at Factor Cost by Industry of Origin from 1997-98 to 2002-03 (At Current Prices) (Rs. Lakh)

Sl. No	Industry of Origin	1997-98	1998-99	1999-2000	2000-01	2001-02	2002-03
						(Provisional)	(Quick)
1	2	4	5	6	7	8	10
1	Agriculture	1111503	1162233	1270793	1116493	1055377	1066195
2	Forestry and Logging	98529	104358	122311	196373	230512	275527
3	Fishing	116297	126496	153325	155234	172368	187708
4	Mining and Quarrying	10143	13025	14679	19994	23614	28937
	Sub Total: Primary	1336472	1406112	1561108	1488094	1481871	1558367
5	Manufacturing	562910	645220	700918	699137	750103	807717
5.1	Registered	298265	365455	408329	410165	450474	499618
5.2	Un-registered	264645	279765	292589	288972	299629	308099
6	Electricity, Gas & Water Supply	65056	82741	104370	167076	224116	301090
6.1	Electricity	58687	75599	95779	155628	210754	285327
6.2	Gas	1084	1109	1251	1322	1414	1512
6.3	Water Supply	5285	6033	7340	10126	11948	14251
7	Construction	452554	556848	514915	680073	893444	1082430
	Sub total : Secondary	1080520	1284809	1320203	1546286	1867663	2191237
8	Transport, Storage & Communication	432239	491807	557636	650252	758157	887628
8.1	Railways	15225	19581	21571	18934	20782	22798
8.2	Transport by other means	339826	372295	434417	503899	589709	691131
8.3	Communication	76250	98780	100544	126130	146255	112149
8.4	Storage	938	1151	1104	1289	1411	1550
9	Trade, Hotel & Restaurants	1010716	1187409	1317402	1559009	1819454	2124214
10	Banking and Insurance	226967	277067	306734	344325	395225	438464
11	Real estate ownership, Business, legal	278011	306129	351569	426012	486639	557140
12	Public Administration	219761	252750	340249	352779	413574	488713
13	Other Services	363761	418612	496543	610235	720771	852252
	Sub Total:Tertiary	2531455	2933774	3370133	3942612	4593820	5348411
	Gross State Domestic Product	4948447	5624695	6251444	6976992	7943354	9098015
	Mid Year Population('000)	31539	31856	32145	31935	32226	32519
	Per capita Income (Rs.)	15690	17657	19448	21847	24649	27978

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 1997-98 to 2002-03**

[Base year 1993-94]

(Rs.in lakh)

Sl.No	Industry of Origin	1997-98	1998-99	1999-2000	2000-01	2001-02 Provisional	2002-2003 Quick
1	2	4	5	6	7	8	9
1	Agriculture	707545	721098	733584	576701	567444	537674
2	Forestry and Logging	72889	76121	80620	69423	69116	68171
3	Fishing	62982	68012	73582	73462	75156	75793
4	Mining and Quarrying	7896	8876	9161	10816	11505	12681
	Sub Total: Primary	851312	874107	896947	730402	723221	694319
5	Manufacturing	376038	405645	435887	410022	413960	422842
5.1	Registered	204979	235007	260075	248585	257887	271486
5.2	Un-registered	171059	170638	175812	161437	156073	151356
6	Electricity, Gas & Water Supply	44719	51428	66544	101258	128400	163998
6.1	Electricity	40332	46956	61072	94320	120742	155400
6.2	Gas	742	725	797	801	810	822
6.3	Water Supply	3645	3747	4675	6137	6848	7776
7	Construction	237574	262920	229873	287801	341870	379172
	Sub total : Secondary	658331	719993	732304	799081	884230	966012
8	Transport, Storage & Communication	306963	335720	376540	424216	471652	530176
8.1	Railways	12141	13198	14382	15672	16620	17573
8.2	Transport by other means	226120	236610	265763	305128	338305	378906
8.3	Communication	68001	85159	95678	102567	115843	132772
8.4	Storage	701	753	717	849	884	925
9	Trade, Hotel & Restaurants	572037	614013	665954	786849	854491	937763
10	Banking and Insurance	173241	225614	253597	274620	314134	351372
11	Real estate ownership, Business, Legal	207740	215128	226279	235869	246186	257260
12	Public Administration	154980	157506	205105	204997	224360	248510
13	Other Services	253648	264343	294867	311010	333484	358629
	Sub Total:Tertiary	1668609	1812324	2022342	2237561	2444307	2683710
	Gross State Domestic Product	3178252	3406424	3651593	3767044	4051758	4344041
	<i>Population('000)</i>	31539	31856	32145	31935	32226	32519
	Per capita Income (Rs.)	10077	10693	11360	11796	12573	13358

Source : Department of Economics & Statistics

Appendix 3.7

**Net Domestic Product (Kerala) at Factor Cost by Industry of Origin
(At Current Prices) for the Years from 1997-98 to 2002-03**

(Rs.in lakh)

Sl.No	Industry of Origin	1997-98	1998-99	1999-2000	2000-01	2001-02 @	2002-03 @@
1	2	4	5	6	7	8	9
1	Agriculture	1068818	1114695	1222120	1067820	1006704	1012791
2	Forestry and Logging	97894	103613	121479	195541	229624	274606
3	Fishing	104198	111189	135343	136319	150913	163463
4	Mining and Quarrying	7067	9634	11249	15752	19047	23967
	Sub Total: Primary	1277977	1339131	1490191	1415432	1406288	1474827
5	Manufacturing	493201	558175	612334	603075	682150	689145
5.1	Registered	250334	301905	344959	342089	393402	416222
5.2	Un-registered	242867	256270	267375	260986	288748	272923
6	Electricity, Gas & Water Supply	43362	57794	77090	137799	189203	294935
6.1	Electricity	38445	51536	69490	127404	177092	279282
6.2	Gas	1084	1109	1251	1322	1415	1512
6.3	Water Supply	3833	5149	6349	9073	10696	14141
7	Construction	432857	534385	490976	651710	858230	1045075
	Sub total : Secondary	969420	1150354	1180400	1392584	1729583	2029155
8	Transport, Storage & Communication	279221	324347	376451	448039	524180	617148
8.1	Railways	8233	11155	12818	9170	10170	11113
8.2	Transport by other means*	221920	245683	298910	353109	413799	485751
8.3	Communication	48205	66440	63709	84565	98901	118843
8.4	Storage	863	1069	1014	1195	1310	1441
9	Trade, Hotel & Restaurants	991030	1167492	1295247	1534603	1792377	2094332
10	Banking and Insurance	221209	270687	300062	337028	387180	429757
11	Real estate ownership, Business, legal	211557	232654	269437	342265	398200	464801
12	Public Administration	190663	222145	307385	317024	374941	447606
13	Other Services	347270	399286	473431	584536	692146	820575
	Sub Total:Tertiary	2240950	2616611	3022013	3563495	4169024	4874219
	Net State Domestic Product	4488347	5106096	5692604	6371511	7304895	8378201
	Population('000)	31539	31856	32145	31935	32226	32519
	Per capita Income (Rs.)	14231	16029	17709	19951	22668	25764

@ - Provisional Estimate

@@ - Quick Estimate

Source : Department of Economics & Statistics

Appendix 3.8

Net Domestic Product (Kerala) at Factor Cost by Industry of Origin at constant prices from 1997-98 to 2002-03

[Base year 1993-'94]

(Rs. in lakh)

Sl. No	Industry of Origin	1997-98	1998-99	1999-2000	2000-01	2001-02	2002-03
						Provisional	Quick
1	2	4	5	6	7	8	9
1	Agriculture	677678	689962	701705	544822	536471	506784
2	Forestry and Logging	72479	75683	80182	68985	68578	67522
3	Fishing	53424	57329	62300	62180	63049	62791
4	Mining and Quarrying	5600	6520	6781	8436	9263	10584
Sub Total: Primary		809181	829494	850968	684423	677361	647681
5	Manufacturing	329021	350458	369687	353129	354398	359733
5.1	Registered	172039	193471	209064	207327	214765	225634
5.2	Un-registered	156982	156987	160623	145802	139633	134099
6	Electricity, Gas & Water Supply	29806	35933	48518	82447	76188	96149
6.1	Electricity	26421	32010	43589	76080	68927	87584
6.2	Gas	742	725	797	801	810	822
6.3	Water Supply	2643	3198	4132	5566	6451	7743
7	Construction	227233	252240	219186	266421	229674	236056
Sub total : Secondary		586060	638631	637391	701997	660260	691938
8	Transport, Storage & Communication	202925	223784	249511	286707	318332	357733
8.1	Railways	6549	6873	7933	8714	9338	9821
8.2	Transport by other means*	147665	152362	167971	200844	220395	243908
8.3	Communication	48066	63855	72954	76362	87779	103144
8.4	Storage	645	694	653	787	820	860
9	Trade, Hotel & Restaurants	562538	598017	648161	768898	834504	915086
10	Banking and Insurance	168681	220560	248188	269289	308500	345526
11	Real estate ownership, Business, legal	157287	165724	171367	167908	174185	180230
12	Public Administration	134495	137964	184368	183591	202572	226490
13	Other Services	242148	250192	281661	293708	314885	338449
Sub Total: Tertiary		1468074	1596241	1783256	1970096	2152978	2363514
Net State Domestic Product		2863315	3064366	3271615	3356516	3490599	3703133
Population('000)		31539	31856	32145	31935	32226	32519
Per capita Income (Rs.)		9079	9619	10178	10510	10832	11388

Source : Department of Economics & 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 2000-2001 (at Current Prices)

Sl.No	Industry of Origin	(Rs. in Lakh)															
		TVM	KLM	PTA	ALPA	KTM	IKI	EKM	TSR	PLKD	MLPM	KKD	WYD	KNR	KSD	STATE	
1		3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
1	Agriculture	85426	89697	57662	43781	95036	124935	90763	71544	77951	72612	73680	60866	71544	52323	1067820	
2	Forestry and Logging	9014	14724	28060	0	1467	47164	1467	18733	24638	18694	7489	14255	8819	1017	195541	
3	Fishing	6189	29334	164	12337	1009	68	26719	8602	518	12528	27196	0	5303	6352	136319	
4	Mining and Quarrying	847	784	337	526	567	187	1596	1145	910	1730	2818	232	3081	992	15752	
	Sub Total: Primary	101476	134539	86223	56644	98079	172354	120545	100024	104017	105564	111183	75353	88747	60684	1415432	
5	Manufacturing	54518	65313	11579	70077	28887	7659	79486	79425	43482	29852	43663	3558	50236	35340	603075	
5.1	Registered	30925	37048	6568	39751	16386	4345	45088	45053	24665	16933	24767	2018	28496	20046	342089	
5.2	Unregistered	23593	28265	5011	30327	12501	3315	34397	34372	18817	12919	18895	1540	21740	15294	260986	
6	Electricity, Gas & Water supply	23192	13123	6723	11542	12402	11251	16318	12524	8806	4771	9930	932	4335	1950	137799	
6.1	Electricity	19811	12677	6396	10804	11696	11161	14894	11809	8498	4255	9007	854	3822	1720	127404	
6.2	Gas	136	114	58	97	88	50	131	127	106	125	117	29	100	44	1322	
6.3	Water Supply	3245	332	269	641	618	40	1293	588	202	391	806	49	413	186	9073	
7	Construction	69928	41644	19877	39103	37082	12317	122588	69212	35974	50833	72340	7560	53766	19486	651710	
	Sub total : Secondary	147638	120080	38179	120722	78371	31227	218392	161161	88262	85456	125933	12050	108337	56776	1392584	
8	Transport, Storage & Communication	61196	30276	16931	26522	35973	6796	65120	53696	27255	41806	36845	18490	16046	11087	448039	
8.1	Railways	842	803	69	627	558	0	880	651	1371	942	819	0	796	812	9170	
8.2	Transport by other means	51519	23729	14372	20445	30156	5191	50283	43677	18997	34322	25883	17479	8934	8122	353109	
8.3	Communication	8727	5624	2478	5319	5032	1581	13791	9319	6791	6469	10131	964	6216	2123	84565	
8.4	Storage	108	120	12	131	227	24	166	49	96	73	12	47	100	30	1195	
9	Trade, Hotel & Restaurants	144099	112486	45117	107883	104046	36063	195048	170648	117704	123382	163896	24247	134892	55092	1534603	
10	Banking and Insurance	34680	21031	19278	23356	26625	11223	48835	36096	26153	20896	26524	7482	23019	11830	337028	
11	Real estate ownership, business & legal	38334	30393	16052	25156	22487	14478	34535	32413	27621	29606	28374	8385	23034	11397	342265	
12	Public Administration	75325	26852	14044	21526	23365	5263	34206	24601	20892	17183	24918	3709	20511	4629	317024	
13	Other Services	75697	43139	20342	43314	46412	16718	60207	56466	40333	54186	55180	13094	40918	18530	584536	
	Sub Total:Tertiary	429331	264177	131764	247757	258908	90541	437951	373920	259958	287059	325737	75407	258420	112565	3563495	
	Net State Domestic Product	678445	518796	256166	425123	435358	294122	776888	635105	452237	478079	572853	162810	455504	230025	6371511	
	Population('000)	3245	2590	1233	2109	1957	1130	3108	2984	2625	3649	2888	791	2418	1208	31935	
	Per capita Income (Rs.)	20907	20031	20776	20158	22246	26028	24996	21284	17228	13102	19836	20583	18838	19042	19951	

Source : Department of Economics & 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 2000-2001 (at Constant Prices)
(Rs. in Lakh)

Base Year 1993-94

Sl.No	Industry of Origin	TVM	KLM	PTA	ALPA	KTM	IKI	EKM	TSR	PLKD	MLPM	KKD	WYD	KNR	KSD	STATE
1	Agriculture	43586	45765	29420	22338	48489	63744	46310	36503	39772	37048	37593	31055	36503	26696	544822
2	Forestry and Logging	3180	5195	9899	0	517	16640	517	6609	8692	6595	2642	5029	3111	359	68985
3	Fishing	2823	13381	75	5627	460	31	12187	3924	236	5714	12405	0	2419	2898	62180
4	Mining and Quarrying	454	420	181	282	304	100	855	613	487	926	1509	124	1650	531	8436
	Sub Total: Primary	50043	64761	39575	28247	49770	80515	59869	47649	49187	50283	54149	36208	43683	30484	684423
5	Manufacturing	31923	38244	6780	41034	16915	4485	46542	46506	25461	17480	25567	2083	29416	20693	353129
5.1	Registered	18742	22454	3981	24091	9931	2633	27326	27305	14948	10263	15011	1223	17270	12149	207327
5.2	Unregistered	13181	15790	2799	16942	6984	1852	19217	19202	10513	7217	10556	860	12145	8544	145802
6	Electricity, Gas & Water Supply	13903	7843	4019	6904	7416	6720	9768	7491	5263	2857	5943	557	2595	1168	82447
6.1	Electricity	11830	7570	3819	6452	6984	6665	8894	7053	5075	2541	5378	510	2282	1027	76080
6.2	Gas	82	69	35	59	53	31	80	77	64	76	71	17	60	27	801
6.3	Water Supply	1991	204	165	393	379	24	794	361	124	240	494	30	253	114	5566
7	Construction	28587	17024	8126	15985	15159	5035	50114	28294	14706	20782	29573	3090	21980	7966	266421
	Sub total : Secondary	74413	63111	18925	63923	39490	16240	106424	82291	45430	41119	61083	5730	53991	29827	701997
8	Transport, Storage & Communication	38055	19417	10484	17115	22377	4396	42000	33910	18302	26307	24656	10844	11516	7328	286707
8.1	Railways	800	763	65	596	531	0	837	619	1302	895	778	0	756	772	8714
8.2	Transport by other means	29303	13497	8174	11629	17152	2952	28602	24844	10805	19522	14722	9942	5081	4619	200844
8.3	Communication	7881	5078	2237	4803	4544	1428	12453	8415	6132	5842	9148	871	5613	1917	76362
8.4	Storage	71	79	8	87	150	16	108	32	63	48	8	31	66	20	787
9	Trade, Hotel & Restaurants	72200	56360	22606	54054	52131	18069	97727	85501	58974	61819	82118	12149	67587	27603	768898
10	Banking and Insurance	27710	16804	15403	18662	21274	8967	39020	28841	20897	16696	21193	5978	18392	9452	269289
11	Real estate ownership, business & legal	18805	14910	7875	12341	11031	7102	16941	15900	13550	14524	13919	4114	11300	5591	167903
12	Public Administration	43621	15550	8133	12466	13531	3048	19809	14247	12099	9951	14430	2148	11878	2680	183591
13	Other Services	38035	21676	10221	21764	23320	8400	30252	28372	20266	27227	27726	6579	20559	9311	293708
	Sub Total: Tertiary	238426	144717	74722	136402	143664	49982	245749	206771	144088	156524	184042	41812	141232	61965	1970096
	Net State Domestic Product	362882	272589	133222	228572	232924	146737	412042	336711	238705	247926	299274	83750	238906	122276	3356516
	Population('000)	3245	2590	1233	2109	1957	1130	3108	2984	2625	3649	2888	791	2418	1208	31935
	Per capita Income (Rs.)	11183	10525	10805	10838	11902	12986	13257	11284	9094	6794	10363	10588	9880	10122	10510

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 2001-02 (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	80536	84563	54362	41275	89597	117784	85570	67449	73490	68456	69463	57382	67449	49328	1006704
2	Forestry and Logging	10586	17291	32951	0	1722	55385	1722	21998	28932	21952	8795	16740	10356	1194	229624
3	Fishing	6851	32476	181	13658	1117	75	29579	9523	573	13869	30107	0	5871	7033	150913
4	Mining and Quarrying	1025	949	408	636	686	227	1929	1385	1099	2091	3408	280	3724	1200	19047
	Sub Total: Primary	98998	135279	87902	55569	93122	173471	118800	100355	104094	106368	111773	74402	87400	58755	1406288
5	Manufacturing	61666	73877	13097	79266	32675	8663	89908	89839	49183	33766	49388	4025	56823	39974	682150
5.1	Registered	35564	42605	7553	45713	18844	4996	51853	51811	28364	19473	28482	2321	32770	23053	393402
5.2	Unregistered	26103	31271	5544	33553	13831	3667	38056	38028	20819	14293	20905	1704	24053	16921	288748
6	Electricity, Gas & Water Supply	31508	18134	9270	15876	17079	15614	22367	17245	12165	6510	13595	1276	5907	2657	189203
6.1	Electricity	27538	17621	8890	15017	16257	15513	20702	16416	11812	5915	12520	1187	5313	2391	177092
6.2	Gas	144	122	62	104	94	54	141	136	114	134	125	31	107	47	1415
6.3	Water Supply	3826	391	318	755	728	47	1524	693	239	461	950	58	487	219	10696
7	Construction	92088	54841	26176	51494	48833	16221	161433	91144	47374	66942	95264	9955	70804	25661	858230
	Sub total : Secondary	185262	146852	48543	146636	98587	40498	273708	198228	108722	107218	158247	15256	133534	68292	1729583
8	Transport, Storage & Communication	71632	35406	19829	31020	42091	7958	76217	62862	31829	48911	43100	21661	18731	12933	524180
8.1	Railways	934	891	76	696	619	0	976	722	1520	1044	908	0	883	901	10170
8.2	Transport by other means	60373	27807	16842	23959	35338	6083	58927	51187	22262	40221	30331	20483	10469	9517	413799
8.3	Communication	10207	6577	2898	6221	5885	1849	16131	10899	7942	7566	11848	1127	7269	2482	98901
8.4	Storage	118	131	13	144	249	26	183	54	105	80	13	51	110	33	1310
9	Trade, Hotel & Restaurants	168304	131381	52696	126004	124523	42121	227811	199312	137475	144107	191426	28320	157551	64346	1792377
10	Banking and Insurance	39841	24160	22147	26832	30587	12893	56103	41467	30045	24005	30471	8595	26444	13590	387180
11	Real estate ownership, business & legal	44598	35360	18676	29268	26162	16844	40177	37710	32135	34444	33011	9756	26799	13260	398200
12	Public Administration	89086	31758	16610	25458	27633	6224	40456	29095	24709	20322	29470	4387	24259	5474	374941
13	Other Services	89633	51080	24087	51288	54956	19795	71292	66861	47758	64162	65339	15504	48450	21941	692146
	Sub Total: Tertiary	503094	309145	154045	289870	302952	105835	512056	437307	303951	335951	392817	88223	302234	131544	4169024
	Net State Domestic Product	787354	591276	290490	492075	494661	319804	904564	735890	516767	549537	662837	177881	523168	258591	7304895
	Population('000)	3275	2609	1237	2120	1970	1136	3138	3009	2650	3707	2915	803	2435	1222	32226
	Per capita Income (Rs.)	24041	22663	23483	23211	25110	28152	28826	24456	19501	14824	22739	22152	21485	21161	22668

* 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 2001-2002 (at Constant Prices)(Rs.in Lakh)

Base Year 1993-94		TVM	KLM	PTA	ALPA	KTM	IKI	EKM	TSR	PLKD	MLPM	KKD	WYD	KNR	KSD	STATE
SI.No	Industry of Origin	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	Agriculture	42918	45064	28969	21995	47746	62767	45600	35944	39162	36480	37016	30579	35944	26287	536471
2	Forestry and Logging	3161	5164	9841	514	16541	514	6570	8641	6556	2627	4999	3093	357	68578	63049
3	Fishing	2862	13568	76	5706	467	32	12357	3978	240	5794	12578	0	2453	2938	9263
4	Mining and Quarrying	498	461	198	309	333	110	938	673	534	1019	1658	136	1812	584	9263
	Sub Total: Primary	49439	64257	39084	28010	49060	79450	59409	47165	48577	49849	53879	35714	43302	30166	677361
5	Manufacturing	32038	38381	6804	41181	15976	4501	46710	46674	25552	17543	25658	2091	29521	20768	354398
5.1	Registered	19415	23259	4123	24956	10287	2728	28306	28284	15485	10631	15549	1267	17890	12585	214765
5.2	Unregistered	12623	15122	2681	16225	5688	1773	18404	18391	10068	6912	10109	824	11631	8182	139633
6	Electricity, Gas & Water Supply	13109	7164	3687	6359	6820	6097	9058	6886	4806	2656	5518	515	2423	1090	76188
6.1	Electricity	10718	6858	3460	5845	6327	6038	8058	6390	4597	2302	4873	462	2068	931	68927
6.2	Gas	83	70	35	59	54	31	81	78	65	76	72	18	61	27	810
6.3	Water Supply	2308	236	192	455	439	28	919	418	144	278	573	35	294	132	6451
7	Construction	24644	14676	7005	13780	13068	4341	43202	24391	12678	17915	25495	2664	18948	6867	229674
	Sub total : Secondary	69791	60221	17496	61320	36864	14939	98970	77951	43036	38114	56671	5270	50892	28725	660260
8	Transport, Storage & Communication	42146	21548	11620	19011	24770	4897	46711	37632	20367	29146	27513	11943	12908	8120	318332
8.1	Railways	857	818	70	639	569	0	896	663	1395	959	834	0	811	827	9338
8.2	Transport by other means	32156	14811	8970	12761	18822	3240	31384	27262	11857	21422	16155	10910	5576	5069	220395
8.3	Communication	9059	5837	2572	5521	5223	1641	14317	9673	7049	6715	10516	1001	6452	2203	87779
8.4	Storage	74	82	8	90	156	16	114	34	66	50	8	32	69	21	820
9	Trade, Hotel & Restaurants	78360	61169	24534	58666	56579	19611	106066	92797	64006	67094	89125	13185	73353	29959	834504
10	Banking and Insurance	31745	19250	17646	21379	24372	10273	44701	33040	23940	19127	24279	6849	21071	10828	308500
11	Real estate ownership, business & legal	19509	15468	8169	12803	11444	7368	17575	16495	14057	15067	14439	4268	11723	5800	174185
12	Public Administration	48131	17158	8974	13755	14930	3363	21858	15720	13349	10979	15922	2370	13105	2958	202572
13	Other Services	40778	23239	10958	23333	26002	9006	32433	30417	21727	29190	29725	7053	22042	9982	314885
	Sub Total: Tertiary	260669	157832	81901	148947	157097	54518	269344	226101	157446	170603	201003	45668	154202	67647	2152978
	Net State Domestic Product	379899	282310	138481	238277	243021	148907	427723	351217	249059	258566	311553	86652	248396	126538	3490599
	Population('000)	3275	2609	1237	2120	1970	1136	3138	3009	2650	3707	2915	803	2435	1222	32226
	Per capita Income (Rs.)	11600	10821	11195	11239	12336	13108	13630	11672	9398	6975	10688	10791	10201	10355	10832

Source : Department of Economics & Statistics

Appendix 3.13

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. Lakh)

Sl.No	Industry of Origin	TVM	KLM	PTA	ALPA	KTM	IKI	EKM	TSR	PLKD	MLPM	KKD	WYD	KNR	KSKD	STATE
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	Agriculture	81023	85074	54691	41524	90138	118497	86087	67857	73934	68870	69883	57729	67857	49627	1012791
2	Forestry and Logging	12659	20678	39406	0	2060	66235	2060	26307	34600	26252	10517	20019	12385	1428	274606
3	Fishing	7421	35177	196	14793	1210	82	32039	10315	621	15022	32611	0	6359	7617	163463
4	Mining and Quarrying	1289	1194	513	800	863	285	2428	1742	1393	2632	4288	352	4688	1510	23967
	Sub Total: Primary	102392	142123	94806	57117	94271	185099	122614	106221	110338	112776	117299	78100	91289	60182	1474827
5	Manufacturing	62299	74634	13232	80079	33010	8752	90829	90760	49687	34113	49894	4066	57406	40384	689145
5.1	Registered	37626	45077	7991	48365	19937	5286	54859	54816	30010	20603	30134	2456	34671	24391	416222
5.2	Unregistered	24672	29558	5240	31714	13073	3466	35971	35944	19678	13510	19760	1610	22734	15993	272923
6	Electricity, Gas & Water Supply	48642	28437	14506	24792	26702	24585	34816	28950	19064	10080	21134	1980	9136	4111	284935
6.1	Electricity	43430	27789	14020	23683	25538	24465	32648	25889	18628	9328	19745	1871	8378	3770	279282
6.2	Gas	154	130	66	111	101	58	151	145	121	143	133	33	115	51	1512
6.3	Water Supply	5058	518	420	998	963	62	2017	916	315	609	1256	76	643	290	14141
7	Construction	112137	66780	31875	62705	59465	19752	198577	110987	57688	81516	116003	12123	86219	31248	1045075
	Sub total : Secondary	223078	169851	59613	167576	119177	53089	322222	228697	126439	125709	187031	18169	152761	75743	2029155
8	Transport, Storage & Communication	84286	41662	23349	36519	49505	9392	89823	74033	37452	57535	50849	25456	22111	15156	617148
8.1	Railways	1020	973	83	760	677	0	1067	789	1661	1141	992	0	965	985	11113
8.2	Transport by other means	70871	32642	19770	28125	41483	7141	69171	60087	26133	47215	35606	24045	12290	11172	485751
8.3	Communication	12265	7903	3482	7475	7071	2222	19383	13098	9543	9091	14237	1355	8735	2983	118843
8.4	Storage	130	144	14	159	274	29	202	59	115	88	14	56	121	36	1441
9	Trade, Hotel & Restaurants	196658	153515	61573	147232	141996	49217	266190	232890	160635	168384	223675	33090	184092	75185	2094332
10	Banking and Insurance	44222	26817	24582	29782	33951	14311	62272	46027	33349	26645	33822	9541	29352	15084	429757
11	Real estate ownership, business & legal	52058	41274	21799	34163	30537	19661	46898	44018	37509	40205	38532	11388	31281	15478	464801
12	Public Administration	106351	37912	19829	30392	32989	7430	48297	34734	29497	24260	35182	5238	28960	6535	447606
13	Other Services	106264	60558	28556	60805	65154	23468	84519	79268	56620	76067	77462	18381	57441	26012	820575
	Sub Total: Tertiary	589839	361738	179688	338893	354132	123479	597999	510970	355062	363096	459522	103094	353237	153470	4874219
	Net State Domestic Product	915309	673712	334107	563586	567580	361667	1042835	845888	592039	631581	763852	199363	597287	288395	8378201
	Population('000)	3306	2627	1242	2130	1983	1141	3168	3035	2675	3767	2942	816	2451	1236	32519
	Per capita Income (Rs.)	27686	25646	26901	26459	28622	31697	32918	27871	22132	16766	25964	24432	24369	23414	25764

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 2002-03 (at constant prices)

Sl.No	Industry of Origin	Base Year 1993-94															(Rs. In lakhs)		
		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	40543	42570	27366	20778	45104	59294	43077	33955	36995	34461	34968	28887	33954	24832	506784			
2	Forestry and Logging	3113	5084	9689	0	506	16288	506	6469	8508	6455	2586	4922	3045	351	67522			
3	Fishing	2851	13513	75	5683	465	31	12306	3962	239	5770	12527	0	2443	2926	62791			
4	Mining and Quarrying	569	527	226	345	381	126	1072	769	611	1162	1893	156	2071	667	10584			
	Sub Total: Primary	47076	61694	37356	26815	46456	75739	56961	45155	46353	47848	51974	33965	41513	28776	647681			
5	Manufacturing	32520	38959	6907	41801	17231	4569	47413	47377	25937	17807	26045	2122	29965	21080	359733			
5.1	Registered	20397	24436	4332	26219	10808	2866	29739	29716	16268	11169	16336	1331	18795	13222	225634			
5.2	Unregistered	12123	14523	2575	15582	6423	1703	17674	17661	9669	6638	9709	791	11170	7858	134099			
6	Electricity, Gas & Water Supply	16474	9069	4663	8034	8622	7737	11422	8700	6081	3337	6953	647	3042	1368	96149			
6.1	Electricity	13619	8715	4397	7427	8040	7672	10239	8119	5842	2925	6192	587	2628	1182	87584			
6.2	Gas	85	71	36	60	55	31	81	79	66	78	73	18	62	27	822			
6.3	Water Supply	2770	283	230	547	527	34	1102	502	173	334	688	42	352	159	7743			
7	Construction	25329	15084	7200	14163	13432	4461	44403	25069	13030	18412	26202	2738	19475	7058	236056			
	Sub total : Secondary	74323	63112	18770	63998	39285	16767	103238	81146	45048	39556	59200	5507	52482	29506	391938			
8	Transport, Storage & Communication	47209	24196	13032	21377	27728	5531	52618	42269	22940	32662	31121	13283	14676	9091	357733			
8.1	Railways	902	860	74	672	598	0	943	697	1467	1009	877	0	852	870	9821			
8.2	Transport by other means	35586	16391	9927	14122	20830	3585	34732	30171	13122	23710	17878	12073	6171	5610	243908			
8.3	Communication	10644	6859	3022	6488	6137	1929	16823	11366	8282	7891	12357	1176	7581	2589	103144			
8.4	Storage	77	85	9	95	163	17	120	35	69	52	9	34	72	22	860			
9	Trade, Hotel & Restaurants	85027	67076	26904	64331	62043	21505	116307	101758	70185	73573	97731	14458	80436	32852	915086			
10	Banking and Insurance	35555	21561	19764	23945	27297	11506	50067	37006	26811	21423	27193	7671	23599	12128	345526			
11	Real estate ownership, business & legal	20186	16004	8453	13247	11841	7624	18185	17068	14545	15589	14941	4416	12129	6002	180230			
12	Public Administration	53814	19184	10034	15379	16692	3760	24438	17576	14926	12276	17800	2650	14654	3307	226490			
13	Other Services	43829	24978	11778	25079	28873	9680	34860	32694	23353	31374	31950	7581	23691	10729	338449			
	Sub Total: Tertiary	286520	172899	89665	163358	172474	58606	296475	248371	172760	186897	220736	50059	169185	74109	2363514			
	Net State Domestic Product	407919	297805	146091	254171	258215	152112	456674	374872	264161	274301	331910	89531	263180	132391	3703133			
	Population('000)	3306	2627	1242	2130	1983	1141	3168	3035	2675	3767	2942	816	2451	1236	32519			
	Per capita Income (Rs.)	12339	11336	11763	11933	13021	13331	14415	12345	9875	7282	11282	10972	10738	10711	11388			

Source : Department of Economics & 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
	INDIA	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	Kerala	31,838,619	15,468,664	16,369,955	3.1	819
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.	
		Males	Females	1981-91	1991-01	1991	2001	1991	2001	
1	2	3	4	5	6	7	8	9	10	11
	Kerala	31838619	15468664	16367955	14.32	9.42	1036	1058	749	819
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	1759779	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	1574424	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.	%
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
1981	Urban	Persons	3486449	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
	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
1991	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
2001	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	1896629	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
2001	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
	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
2001	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
	Total	6298389	1712223	0.27

Source: Directorate of Economics and Statistics

Appendix 4.2
Percentage Distribution of Main Workers in Kerala (1961 and 1991)

Sl.No.	Item	1961	2001
1	2	3	4
1	Cultivators	20.92	7.20
2	Agricultural labourers	17.38	16.07
4	Household industry workers	8.68	3.54
3	Livestock, Forestry, Fishing, Plantation, Mining, Quarrying and allied sectors	8.65	} 73.19
5	Other workers	44.37	

Source: Census Reports.

Appendix 4.3

**District-wise Actual and Normal Rainfall (in mm)
with Percentage Departure from Normal Rainfall for 2003 (upto 31-10-2003)**

Sl.No	Districts	Actual	Normal	Percentage Deviation from Normal Rainfall
1	2	3	4	5
1	Thiruvananthapuram	1393.9	1685.5	-17
2	Kollam	1872.5	2182.5	-14
3	Alappuzha	2181.9	2536.6	-14
4	Pathanamthitta	2460.8	2576.2	-4
5	Kottayam	2601.6	2794.3	-7
6	Idukki	3068.9	2807.9	9
7	Ernakulam	2496.0	2877.9	-13
8	Thrissur	2200.3	2863.2	-23
9	Palakkad	1685.5	2091.2	-19
10	Kozhikode	2226.2	3264.0	-32
11	Malappuram	2131.3	2719.0	-22
12	Wayanad	1854.4	3280.8	-43
13	Kannur	2832.4	3220.4	-12
14	Kasargode	3025.9	3494.1	-13
State average		2288.0	2742.4	-17

Source: Meteorological Centre, Thiruvananthapuram

Appendix 4.4

Month-wise Distribution of Normal Rainfall and Average Rainfall for the last 10 years

(In mm)

Month	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003 *	Normal	Deviation from normal rainfall
	2	3	4	5	6	7	8	9	10	11	12	13
January	32.5	11.0	12.6	2.1	8.7	2.0	14.2	19.7	6.7	0.9	10.9	-10.0
February	31.0	7.2	8.4	3.8	1.5	23.9	67.4	29.2	9.8	49.7	14.9	34.8
March	20.3	41.3	13.5	37.5	10.8	22.1	23.0	6.9	34.5	71.4	36.1	35.3
April	145.7	173.6	134.4	62.9	64.9	124.2	98.8	230.1	116.9	139.1	110.9	28.2
May	151.9	348.5	71.0	134.0	170.6	471.0	129.8	246.7	340.7	93.0	256.8	-163.8
June	836.2	531.8	592.1	551.0	722.9	614.0	649.2	706.7	491.0	571.0	653.2	-82.2
July	941.0	719.7	680.0	941.9	600.1	656.9	335.9	587.4	318.9	529.6	710.9	-181.3
August	478.9	458.2	337.0	520.4	366.5	250.3	580.1	348.0	422.2	344.5	415.7	-71.2
September	205.8	293.3	329.4	291.0	516.4	85.4	198.8	224.9	89.8	93.5	246.0	-152.5
October	448.5	208.2	320.6	284.5	440.5	544.9	216.5	320.1	486.7	395.4	287.0	108.4
November	163.7	180.6	97.2	284.7	129.0	71.3	80.9	177.6	137.9	NA	NA	NA
December	42.5	0.1	88.4	92.7	87.6	5	70.2	10.0	2.3	NA	NA	NA
TOTAL	3498	2973.5	2684.6	3206.5	3119.5	2871	2464.8	2907.3	2515.1	2288.1	2742.4	-227.3

* Figures up to October 31

Source: Meteorological Centre, Thiruvananthapuram

Appendix 4.5
District-wise Monthly Actual Rainfall for 2003 (up to 31st October)

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	2.9	45.1	65.4	141.0	112.5	245.3	181.0	119.3	23.8	457.6		
2	Kollam	1.3	50.4	102.5	166.2	105.0	334.6	296.8	238.9	66.3	510.5		
3	Alappuzha	0.1	63.2	61.4	114.2	144.6	494.4	419.8	335.9	82.4	465.9		
4	Pathanamthitta	0.0	119.5	112.1	249.7	162.4	436.3	399.8	398.1	79.3	503.6		
5	Kottayam	2.0	58.6	178.4	156.5	118.7	511.1	507.7	463.0	76.7	528.9		
6	Idukki	0.0	38.6	142.3	176.2	127.1	470.6	678.8	611.7	142.2	681.4		
7	Ernakulam	0.0	46.0	71.7	142.8	143.8	542.4	593.1	406.8	101.9	447.5		
8	Thrissur	0.0	131.3	35.9	83.5	38.3	536.7	552.4	334.4	127.8	360		
9	Palakkad	0.0	64.1	88.2	124.1	44.4	362.4	342.9	238.2	56.6	364.6		
10	Kozhikode	5.0	26.7	5.2	117.0	68.6	792.8	613.1	224.8	142.0	231.0		
11	Malappuram	0.0	32.6	46.8	155.1	83.8	637.2	547.8	260.0	72.3	295.7		
12	Wayanad	1.2	16.9	73.2	151.4	91.9	412.5	476.2	278.4	67.2	285.5		
13	Kannur	0.0	2.5	1.7	112.4	40.0	1071.4	854.0	431.7	117.5	201.2		
14	Kasargode	0.0	0.3	14.4	56.6	21.1	1146.2	950.6	481.2	152.7	202.8		
	State Average	0.9	49.7	71.4	139.1	93.0	571.0	529.6	344.5	93.5	395.4		

Source: Meteorological Centre, Thiruvananthapuram.

Appendix 4.6

Area, Production and Productivity of Principal Crops

Sl. No.	Crops	Area (Ha)			Production (MT)			Productivity (kg/ha)		
		2000-01	2001-02	2002-03 [#]	2000-01	2001-02	2002-03 [#]	2000-01	2001-02	2002-03 [#]
1	Rice	347455	322368	310521	751328	703504	688859	2162	2182	2218
2	Jowar	463	2902	2780	236	1480	1329	510	510	478
3	Ragi	1955	1947	1999	1582	1575	1460	809	809	730
4	Other Cereals	2071	2658	2739	1605	2065	1921	775	777	701
5	Pulses	6986	8191	7357	5472	6281	5548	783	767	754
6	Sugarcane	3367	3267	3122	27555	26978	27304	8184	8258	8746
7	Pepper	202133	203956	201037	60929	58240	59744	301	286	297
8	Chillies	226	692	692	222	692	692	982	1000	1000
9	Ginger	11612	10706	10365	42699	40181	39886	3677	3753	3848
10	Turmeric	4127	3558	3388	9037	7895	7598	2190	2219	2243
11	Cardamom	41288	41336	44237	7580	8380	6480	184	203	146
12	Arecanut	87360	93193	92589	87947	84681	92039	1007	909	994
13	Banana	45059	50871	51805	327955	375903	379884	7278	7389	7333
14	Other Plantains	54353	55183	55412	403695	393182	408649	7427	7125	7375
15	Cashewnut	92100	89718	86623	66200	65867	63287	718	734	731
16	Tapioca	114609	111189	110297	2586903	2455880	2504391	22572	22087	22706
17	Sweet Potato	816	747	787	8963	8672	8781	10984	11609	11158
18	Groundnut	3677	2437	2340	2733	1812	1708	743	744	730
19	Sesamum	2002	878	871	797	284	293	398	323	336
20	Coconut *	925783	905718	905482	5536	5479	5338	5980	6049	5895
21	Cotton **	3847	3760	3572	6209	6069	4843	1614	1614	1356
22	Tobacco	213	71	45	1186	395	250	5568	5563	5556
23	Coffee	84735	84795	84139	70550	66690	64425	833	786	766
24	Tea	36847	36899	36821	69132	66090	65800	1876	1791	1787
25	Rubber	474364	475039	476047	579866	580350	594917	1222	1222	1250

Source : Directorate of Economics and Statistics & Directorate of Cashew and Cocoa

* Production in million nuts & Productivity in nuts/ha.

** Production in bales of 170 kg & Productivity in bales/ha.

Provisional except for Rice

Appendix 4.7
Index of Area, Production and Productivity of Crops in Kerala
Base - Average of Triennium ending 1979-80

Sl.No.	Crops	Average of 3 Years 1976-77 to 1978-79	2000-01	2001-02	2002-03
1	2	3	4	5	6
<u>AREA</u>					
A	Food Grains (1+2)	102.55	42.11	39.67	42.16
1	Cereals	102.59	43.10	40.40	43.10
2	Pulses	101.53	19.55	22.93	20.59
B	Non-Food Grains (3to9)	101.00	127.21	126.44	126.17
3	Oil Seeds	101.66	133.78	130.56	130.50
4	Plantation Crops	95.04	190.22	190.47	190.69
5	Condiments & spices	100.65	145.64	148.45	146.80
6	Drugs & Narcotics	82.29	28.41	26.29	21.86
7	Fruits	103.20	122.51	123.89	122.67
8	Tubers	100.00	38.36	37.20	36.90
9	Miscellaneous Crops	103.59	55.72	54.28	53.55
<u>PRODUCTION</u>					
A	Food Grains(1+2)	98.67	57.91	54.41	53.33
1	Cereals	98.85	58.36	54.73	53.66
2	Pulses	87.06	29.62	34.00	30.03
B	Non-Food Grains (3to9)	100.52	178.33	176.22	178.56
3	Oil Seeds	103.48	176.56	174.63	169.18
4	Plantation Crops	93.54	326.36	322.46	337.13
5	Condiments & spices	89.40	182.61	177.90	169.65
6	Drugs & Narcotics	89.54	63.50	32.35	21.10
7	Fruits	100.00	121.46	124.65	124.03
8	Tubers	100.00	62.76	59.58	60.76
9	Miscellaneous Crops	98.02	66.08	64.67	62.10
<u>PRODUCTIVITY</u>					
A	Food Grains (1+2)	96.22	135.73	135.90	133.03
1	Cereals	96.35	135.48	135.71	130.93
2	Pulses	85.25	151.48	148.30	145.84
B	Non-Food Grains (3to9)	99.52	137.52	136.03	138.20
3	Oil Seeds	101.79	129.22	130.82	127.96
4	Plantation Crops	98.74	178.47	176.66	164.66
5	Condiments & spices	88.82	116.36	109.59	112.49
6	Drugs & Narcotics	108.85	380.21	156.95	156.89
7	Fruits	100.00	107.05	108.78	109.17
8	Tubers	100.00	163.58	160.15	160.95
9	Miscellaneous Crops	94.62	117.04	117.61	120.36

Source: Directorate of Economics and Statistics

Appendix 4. 8
Season-wise Area, Production and productivity of Rice in Kerala (2000-01 To 2002-03)

Season	Area (Ha)*			Production (MT)						Productivity (kg/ha)		
	2000-01	2001-02	2002-03	2000-01	2001-02	2002-03	2000-01	2001-02	2002-03	2000-01	2001-02	2002-03
1	2	3	4	5	6	7	8	9	10			
Virippu	129752	116540	112438	260306	235838	233217	2006	2024	2074			
Mundakan	162445	161978	157004	336416	362634	343792	2071	2239	2190			
Puncha	55258	43850	41079	154606	105032	111850	2798	2395	2723			
All Seasons	347455	322368	310521	751328	703504	688859	2162	2182	2218			

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)		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
1985-86	83782	40650	38846	163278	279699	313423	85159	678281	29.95	12.97	45.62	24.07	29.95	12.97	45.62	24.07	29.95	12.97	45.62	24.07
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	205828	#VALUE!	63.41	92.64	107.90	#VALUE!	63.41	92.64	107.90	#VALUE!	63.41	92.64	107.90
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

Source: Directorate of Economics and Statistics
* Excluding Flood affected area

Appendix 4.10
District-wise Area , Production and Productivity of Rice in Kerala

Sl. No.	District	Area (Ha)			Production (MT)			Productivity (kg/ha)		
		2000-01	2001-02	2002-03	2000-01	2001-02	2002-03	2000-01	2001-02	2002-03
1	2	3	4	5	6	7	8	9	10	11
1	Thiruvananthapuram	6995	6810	6423	14469	14686	14119	2068	2157	2198
2	Kollam	14939	11459	11457	30812	24933	24204	2063	2176	2113
3	Pathanamthitta	6279	5218	5431	17159	12855	13521	2733	2464	2490
4	Alappuzha	37740	33111	29635	103544	72799	91561	2744	2199	3090
5	Kottayam	16677	15250	12264	43055	34651	30884	2582	2272	2518
6	Idukki	3473	4388	3785	7892	10726	8574	2272	2444	2265
7	Ernakulam	37433	32905	32072	65307	59723	60886	1745	1815	1898
8	Thrissur	39384	37012	37274	82105	84281	87272	2085	2277	2341
9	Palakkad	118701	115904	115910	262173	269302	243926	2209	2323	2104
10	Malappuram	23148	22654	19678	43797	44059	38981	1892	1945	1981
11	Kozhikode	6737	6402	5085	9045	8313	7167	1343	1299	1409
12	Wayanad	15000	12855	12988	33802	32076	31326	2253	2495	2412
13	Kannur	11791	10987	11323	20684	19463	20794	1754	1771	1836
14	Kasaragod	9158	7413	7196	17484	15637	15644	1909	2109	2174
	State	347455	322368	310521	751328	703504	688859	2162	2182	2218

Source: Directorate of Economics & Statistics

Appendix 4.11
District-wise and Season-wise Area, Production and Productivity of Rice for 2002-03

Name of District	Autumn						Winter						Summer			Total		
	Area (Ha)	Production (MT)	Productivity (kg/ha)	Area (Ha)	Production (MT)	Productivity (kg/ha)	Area (Ha)	Production (MT)	Productivity (kg/ha)	Area (Ha)	Production (MT)	Productivity (kg/ha)	Area (Ha)	Production (MT)	Productivity (kg/ha)	Area (Ha)	Production (MT)	Productivity (kg/ha)
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Thiruvananthapuram	3189	7246	2272	3231	6870	2126	3	3	1000	6423	14119	2198						
Kollam	4626	10122	2188	6807	14055	2065	24	27	1125	11457	24204	2113						
Pathanamthitta	815	1639	2011	2236	4890	2187	2380	6992	2938	5431	13521	2490						
Alappuzha	3721	9467	2544	17149	53102	3097	8765	28992	3308	29635	91561	3090						
Kottayam	2497	6532	2616	4961	12176	2454	4806	12176	2533	12264	30884	2518						
Idukki	1294	3111	2404	2205	4925	2234	286	538	1881	3785	8574	2265						
Ernakulam	12016	23859	1986	13448	25091	1866	6608	11936	1806	32072	60886	1898						
Thrissur	9740	20021	2056	19836	44167	2227	7698	23084	2999	37274	87272	2341						
Palakkad	57583	117326	2038	53203	112229	2109	5124	14371	2805	115910	243926	2104						
Malappuram	5781	11308	1956	12260	22569	1841	1637	5104	3118	19678	38981	1981						
Kozhikode	399	581	1456	3902	5185	1329	784	1401	1787	5085	7167	1409						
Wayanad				10490	24778	2362	2498	6548	2621	12988	31326	2412						
Kannur	6369	11911	1870	4636	8455	1824	318	428	1346	11323	20794	1836						
Kasaragode	4408	10094	2290	2640	5300	2008	148	250	1689	7196	15644	2174						
STATE	112438	233217	2074	157004	343792	2190	41079	111850	2723	310521	688859	2218						

Source: Directorate of Economics and Statistics

Appendix 4.12
Area under HYV of Rice (1990-91 to 2002-03)

		(in Ha.)												
District	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	
Thiruvananthapuram	7164	7467	7454	7904	7954	7928	6657	5395	4765	5080	4767	5593	5539	
Kollam	11983	12453	13819	13450	13242	11374	10263	9250	9128	10774	9397	6895	7024	
Pathanamthitta	8170	7382	9268	7923	7337	7878	7656	6005	4775	4730	5058	4173	4438	
Alappuzha	37431	37023	40411	39729	47520	36739	34926	38324	31949	33989	35662	26157	27871	
Kottayam	21227	20654	22227	22593	22542	22760	18016	12575	13476	15822	16101	14484	12130	
Idukki	816	833	796	5745	1392	990	1707	850	1549	2420	2574	3723	3379	
Ernakulam	19525	21240	21657	23097	19273	18357	15509	31146	41718	37389	33547	28457	28076	
Thrissur	17583	16940	17225	15860	14952	14563	13836	13292	11964	18394	24331	24067	27873	
Palakkad	10111	10572	9409	8656	8084	11777	16586	23148	26363	47830	60093	72611	100055	
Malappuram	11651	11692	12379	11127	11321	9065	8485	10065	9873	10433	12105	13022	11863	
Kozhikode	2681	2429	2599	2881	1316	1917	1938	1779	2038	1845	1731	2110	1441	
Wayanad	4797	6347	7152	7438	8689	9508	8715	8154	10966	11815	9989	9166	9524	
Kannur	6751	8003	7467	7684	7382	7187	5650	5811	5388	6296	7117	7431	7587	
Kasaragode	2926	3301	3232	4002	3441	3833	3385	2885	3146	4594	4215	4199	4004	
STATE	162816	166336	175095	172418	174445	163876	153329	168679	177098	211411	226687	222088	250804	

Source: Directorate of Economics & Statistics

Appendix 4. 15

Area under Local Variety of Rice (1990-91 to 2002-03)

(in Ha.)

District	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
I	2	3	4	5	6	7	8	9	10	11	12	13	14
Thiruvananthapuram	14513	12137	10907	10199	9384	9058	7304	5973	4833	2889	2228	1201	884
Kollam	18530	15166	14641	13325	12040	11878	11960	10773	8443	6652	5542	4467	4433
Pathanamthitta	6064	5771	3624	4268	3708	2982	3329	2262	2722	1986	1221	1032	993
Alappuzha	23244	18849	12932	11052	7344	7393	6521	4896	3176	1337	2078	1700	1764
Kottayam	5030	3201	3221	2103	2464	2118	2184	1179	917	421	576	646	134
Idukki	4262	4018	3601	3074	3304	3670	3392	3218	2297	1220	899	665	406
Ertakulam	43553	43761	44501	38190	40745	38176	38479	15006	8012	5505	3886	4448	3996
Trissur	56455	52125	49926	47648	47192	44140	37708	27685	27251	24493	15053	12720	9401
Pattakkad	135576	136494	136686	131113	131982	123853	111773	97661	81104	61874	58608	43293	15855
Malappuram	40283	38669	38529	32717	30742	28854	22613	18871	13945	13062	11043	9550	7815
Kozhikode	9381	9106	8156	17781	7141	6832	6378	6209	4805	4650	5006	4241	3644
Wayanad	15546	13235	13983	13508	14083	10880	8363	9772	4676	5489	5011	3689	3464
Kannur	12831	12330	10867	10465	9920	9614	9771	9837	8490	5414	4674	3472	3736
Kasaragode	11366	10129	10938	9971	8796	7826	7722	5101	4862	3792	4943	3172	3192
STATE	396634	374991	362512	335414	328845	307274	277497	218443	175533	138784	120768	94296	59717

Source: Directorate of Economics & Statistics

Appendix 4. 16
Production of Local Variety of Rice (1990-91 to 2002-03)

District	(in MT)													
	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	
I	2	3	4	5	6	7	8	9	10	11	12	13	14	
Thiruvananthapura	23451	19766	19764	17044	16042	16010	12269	9644	8180	5942	4321	2249	1802	
Kollam	31597	23485	26087	22952	21768	22796	21953	18995	15070	12456	10408	9625	8833	
Pathanamthitta	11448	10974	7853	9174	6540	6061	6618	4321	5752	4064	2673	2249	2053	
Alappuzha	43921	30801	17032	16771	8840	9840	8300	4950	2888	1541	2004	1882	2324	
Kottayam	9816	5775	6553	4145	4716	3969	4290	2087	1861	882	1081	1336	249	
Idukki	9441	9043	7450	6467	7070	8626	6561	6838	5524	3120	2086	1525	856	
Ernakulam	67613	72426	74019	61924	67600	67777	64967	23539	13325	11196	5805	7302	6483	
Thrissur	92825	84421	83387	77050	80876	74959	70200	51040	48133	46383	26330	23976	16630	
Palakkad	301445	323010	312795	298438	295830	254228	253143	208222	174597	128914	119856	95515	25928	
Malappuram	57762	57494	56946	48765	48889	45958	35443	28388	21268	20031	17503	15424	12917	
Kozhikode	10792	9881	9196	9172	8574	7943	7508	7223	4838	5640	6268	4856	4502	
Wayanad	28920	25359	40371	28096	28571	21664	16035	19088	9051	12923	9907	8122	6871	
Kannur	19870	16917	15929	14891	13816	13898	15803	14951	13105	8387	7316	5479	6134	
Kasargode	18300	16789	18284	17164	13706	12272	13323	8267	8849	6252	8354	5786	5977	
STATE	727201	706141	695666	632033	622838	566001	536413	407553	332441	267731	223912	185326	101559	

Source: Directorate of Economics & Statistics

Appendix 4. 17
Productivity of Local Variety of Rice

(in kg/ha)

District	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
I	2	3	4	5	6	7	8	9	10	11	12	13	14
Thiruvananthapuram	1616	1629	1812	1671	1710	1767	1680	1615	1693	2057	1939	1873	2038
Kollam	1705	1549	1782	1722	1808	1919	1836	1763	1785	1873	1878	2155	1993
Pathanamthitta	1888	1902	2167	2149	1764	2033	1988	1910	2113	2046	2189	2179	2067
Alappuzha	1890	1634	1317	1517	1204	1331	1273	1011	909	1153	964	1107	1317
Kottayam	1951	1804	2034	1971	1914	1874	1964	1770	2029	2095	1877	2068	1858
Idukki	2215	2251	2069	2097	2140	2350	1934	2125	2405	2557	2320	2293	2108
Ernakulam	1552	1655	1663	1621	1659	1775	1688	1569	1663	2034	1494	1642	1622
Thrissur	1644	1620	1670	1617	1714	1698	1862	1844	1766	1894	1749	1885	1769
Palakkad	2223	2366	2288	2276	2241	2053	2265	2132	2153	2083	2045	2206	1635
Malappuram	1434	1487	1478	1491	1590	1593	1567	1504	1525	1534	1585	1615	1653
Kozhikode	1150	1085	1128	1179	1201	1163	1177	1163	1007	1213	1252	1145	1235
Wayanad	1860	1916	2887	2080	2029	1991	1917	1953	1936	2354	1977	2202	1984
Kannur	1549	1372	1466	1423	1393	1446	1617	1520	1544	1549	1565	1578	1642
Kasargode	1610	1658	1672	1721	1558	1568	1725	1621	1820	1649	1690	1824	1872
STATE	1833	1883	1919	1884	1894	1842	1933	1866	1894	1929	1854	1965	1701

Source: Directorate of Economics & Statistics

Appendix 4. 18
Area, Production & Productivity of Rice (Irrigated and Un irrigated)

	Year	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Irrigated	Area (Ha.)	225063	228916	212576	209430	249885	234409	230087	202143	196927	208790	208047	183962	181561
	Production (MT.)	451106	473337	439552	427511	523971	521239	487152	421011	435963	494460	481279	433288	433748
	Productivity (kg / ha)	2004	2068	2068	2041	2097	2224	2117	2063	2214	2368	2313	2355	2389
Unirrigated	Area (Ha.)	334387	312591	325062	298402	253405	23741	200739	184983	155704	140984	139408	132422	128960
	Production (MT)	635452	587033	645326	576427	451094	431787	384209	343599	290780	276226	270049	270216	255111
	Productivity (kg / ha)	1900	1878	1985	1932	1780	1824	1914	1857	1868	1959	1937	2041	1978

Source: Directorate of Economics & Statistics

Appendix 4.19

Plantation Crops - Area, Production and Productivity (1998-99 to 2002-03)

	1998-99		1999-2000		2000-01		2001-02		2002-03	
	Kerala	India	Kerala	India	Kerala	India	Kerala	India	Kerala	India
1	2	3	4	5	6	7	8	9	10	11
AREA (Ha.)										
Tea	36826	436337	34793	437857	36847	438000	36899	438000	36821	510500
Coffee	83683	329238	84139	340306	84735	347000	84795	347000	84139	347000
Rubber	469924	553041	472900	558592	474364	562670	475039	566558	476047	566555
Cardamom	41449	72444	41491	72444	41288	72000	41336	72000	44237	72500
PRODUCTION (MT)										
Tea	68373	845158	61955	810767	69132	846500	66090	854000	65800	826200
Coffee	61150	265000	60470	292000	70550	301200	66690	300600	64425	275275
Rubber	559099	605045	572820	622265	579866	630405	580350	631400	594917	649435
Cardamom	4990	38500	6585	9290	7580	10489	8380	11365	6480	9000
PRODUCTIVITY (kg/ha)										
Tea	1857	1937	1780	1852	1876	1933	1791	1950	1787	1618
Coffee	731	805	719	858	833	868	786	866	766	793
Rubber	1190	1094	1211	1114	1222	1120	1222	1114	1250	1146
Cardamom	120	48	159	128	184	146	203	158	146	124

Source: UPASI, Rubber Board and Directorate of Economics & Statistics

Appendix 4. 20

Import of Rubber (1990-91 to 2002-03)

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

Source: Rubber Board, Kottayam.

Appendix 4.21
Consumption of Rubber in Kerala & India (1994-95 to 2002-03)

(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	1999-2000	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

NR- Natural Rubber

SR-Synthetic Rubber

RR- Reclaimed Rubber

Source: Rubber Board, Kottayam.

Appendix 4. 22

Production, Consumption, Export and Auction Price of Tea

Year	Production				Exports		Cochin Auction Price (Rs/kg)
	India ('000 MT)	('000 MT)	% of Kerala	('000 MT)	('000 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

Source : Association of Planters of Kerala

Appendix 4.23

**Average Market Price
of Natural Rubber in Domestic (Kottayam)
and international (FOB, Kualalumpur) markets**

Year	Kottayam (RSS - 4)	Kualalumpur (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*	4906	5031

Up to November 2003

Source: Rubber Board, Kottayam.

Appendix 4.24

Price Trend of Rubber

Month & Year	India (Rs. per 100 kg. of RSS 4) (Kottayam)	World (Rs. per 100 kg. of RSS 3) (Kualalumpur)
<i>1</i>	<i>2</i>	<i>3</i>
2002 April	3389	3422
May	3589	3426
June	3979	4047
July	3830	4058
August	3732	4090
September	3765	4329
October	3667	3989
November	3677	3936
December	4196	3943
2003 January	4300	4330
February	4384	4716
March	4517	5046
Average (2002-03)	3919	4111
April	5074	4755
May	4851	4628
June	4829	4786
July	4453	4590
August	4693	4763
September	4849	5032
October	5155	5737
November	5346	5954

Source: Rubber Board, Kottayam

Appendix 4.25
Monthly Average Farm Price of Important Agricultural Commodities

Commodity	(in Rs.)											
	2002						2003					
	July	August	September	October	November	December	January	February	March	April	May	June
1	2	3	4	5	6	7	8	9	10	11	12	13
Paddy (Qtl.)	615.69	627.80	659.57	661.71	666.19	667.06	662.55	652.22	655.08	653.22	651.59	671.32
Coconut with husk (100 Nos)	419.59	423.76	425.13	428.07	474.98	493.17	500.62	520.79	520.48	513.84	495.51	491.27
Areca nut (100 Nos)	43.23	38.66	33.81	28.94	25.88	25.11	25.91	27.26	28.67	31.19	36.35	45.34
Pepper (Qtl.)	7261.01	7796.23	8783.20	9386.43	9068.06	7780.43	7466.11	7501.73	7396.29	6908.10	7069.82	7351.79
Tapioca (Qtl.)	356.97	369.28	381.69	387.28	399.73	398.85	399.68	400.39	407.51	408.6	406.34	406.55
Ginger-dry (Qtl.)	2715.83	2753.33	2803.33	3243.33	3279.17	3504.26	3735.42	3949.92	4087.88	3337.63	3365.38	4018.88
Banana (100 Nos)	960.34	1036.63	925.73	899.97	861.93	866.85	988.19	1031.01	1043.62	1035.52	1033.68	986.75
Cashewnut (Qtl.)	1675.00	-	-	-	-	-	3039.58	3065.11	3037.28	2824.61	2418.18	2092.82

Appendix 4.26
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.

S 41
Appendix 4.27

Selected Indicators of Agricultural Development in Kerala (2000-01 to 2002-03)

SI.No	Particulars	Unit	2000-01	2001-02	2002-03
1	2	3	4	5	6
1	Fertilizer consumption				
	a) Nitrogen	MT	73756	76417	86659
	b) Phosphorus	MT	37600	37737	40212
	c) Potash	MT	61849	63471	77786
	Total	MT	173205	177625	204657
2	Plant protection measures				
	a) Fungicide (Liquid& Solid) in terms of technical grade	MT	497.36	608.4	157.535
	b) Insecticides (Liquid& Solid) in terms of technical grade	MT	144.64	568.29	112.563
	c) Weedicide (in terms of technical grade)	MT	98.41	142.79	8.279
	d) Rodenticides(in terms of technical grade)	MT	7.33	8.63	3.354
	e) Area under Plant Protection coverage	Lakh Ha.	5.63	8.65	0.785
	f) Rodent control operation	Lakh Ha.	0.09	0.09	0.32
	g) Biological control of Nephantic Serinopa-parasites liberated	Lakh No.	95.09	66.35	72.41
	h) Weed control	Lakh Ha.	0.49	0.71	0.02759
3	High Yeilding Varieties of paddy seeds	MT	681.96	854.49	357.47
4	Quality planting materials distributed				
	a) Coconut seedings	Lakh No.	3.53	4.77	3.548
	b) Rooted pepper cuttings	Lakh No.	48.43	43.63	71.69
	c) Cashew grafts	Lakh No.	9.21	4.95	5.14
5	Soil testing				
	Soil samples analysed	No.	245588	253602	219052

Source: Directorate of Agriculture

Appendix 4.28

Average Price of Agricultural Inputs (2000-01 to 2002-03)

(in Rs.)

SI No	Item	2000-01	2001-02	2002-03
1	2	3	4	5
I	Fertilizer (Price/MT)			
a	Urea	4600.00	4830.00	4830.00
b	Ammonium sulphate	-	-	-
c	Super Phosphate	2880.00	3060.00	3080.00
d	Muriate of Potash	4255.00	4455.00	4455.00
II	Paddy Seed			
a	Average NSC Price (per Qtl)	1200.00	1200.00	1500.00
b	State Seed Farm Price (per Qtl)	900.00	1200.00	1200.00
III	Green manure seed(per Kg.)			
a	Daincha	-	14.00	17.00
b	Sannhemp	-	-	25.00
IV	Coconut Seedlings (Per seedling)			
a	WCT	18.00	18.00	20.00
b	Hybrids	20.00	20.00	25.00
V	Cashew grafts	20.00	20.00	20.00
VI	Rooted pepper cuttings(price per cuttings)	1.50	1.50	1.50
VII	Pesticides (price per litre/kg)			
a	Phosphamidon (per lit)	365.00		
b	Quinal phos (per lit)	357.00	315.00	318.00
c	Monocrotophos (per lit)	350.00	380.00	380.00
d	Copper sulphate (per kg)	47.00	47.25	47.25

Source: Directorate of Agriculture

Appendix 4.29
Number of Students Admitted for Various Courses in Kerala
Agricultural University and Number of Students Passed Out during
2002-03

Courses	No. Admitted	No. Passed out
1	2	3
U G Programme		
B.Sc. (Ag)	105	177
B.V.Sc. & AH	99	81
B.F.Sc.	43	36
B.Sc. (C & B)	39	18
B.Sc.(Forestry)	15	9
B.Tech.(Ag.Engg)	20	19
B.S.c.(D.Sc. & Tech)	23	23
P G Programme		
M.Sc.(Ag)	46	39
M.Sc.(Hort)	18	14
M.Sc. (Ag.Stat)	2	-
M.Sc. (Forestry)	4	5
M.Sc. (C& B)	5	3
M.Sc. (FS & N)	7	10
M.Tech.(Ag.Engg)	1	0
M.V.Sc.	52	19
M.F.Sc.	4	2
Ph. D Programme	18	19

Source: Kerala Agricultural University

Appendix 4.30

Tariff Rates on Major Agricultural Commodities/Groups

(As on 01.04.2003)

Sl.No	Item description	Basic Duty (%)	Bound Duty (%)
1	2	3	4
1	Pulses other than peas	10	104
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	104
9	Coconut	70	104
10	Copra	70	104
11	Cloves	70	100
12	Cassia and cinnamon	30	100
13	Other spices	30/70	150/104
14	Chicken leg (processed); sausages	100	150
15	Fish	35	unbound
16	Sugar	60	150
17	Frozen vegetables-peas, beans, spinach, sweet corn etc.	30	150
18	Arecanut	30	104
19	Planting materials of oil seeds	5	10

Source : Agricultural Statistics, Govt. of India

Appendix 4.31

Composition of Cattle Population

(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	-
	Total	No	753	25.05	2253	74.95	3006	100
		%	100	-	100	-	100	-
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	-
	Total	No	659	21.28	2438	78.72	3097	100
		%	100	-	100	-	100	-
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	-
	Total	No	508	14.84	2916	85.16	3424	100
		%	100	-	100	-	100	-
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	-
	Total	No	384	11.31	3012	88.69	3396	100
		%	100	-	100	-	100	-
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	-
	Total	No	215	8.63	2275	91.37	2490	100
		%	100	-	100	-	100	-

Source : Livestock Census Report

Appendix 4.32
Livestock Population - India and Kerala

Species	1987		1992		1996		% share of Kerala		% increase over 1987 Census	
	India	Kerala	India	Kerala	India	Kerala	India	Kerala	India	Kerala
Cattle	1958.70	34.24	2045.16	33.96	2045.16	33.96	1.61	1.61	4.41	-0.82
Buffalo	769.70	3.29	842.39	1.65	842.39	1.65	0.20	0.20	9.44	-49.85
Goats	994.10	15.81	1162.81	18.61	1162.81	18.61	1.61	1.61	16.97	17.71
pigs	107.60	1.37	127.88	1.43	127.88	1.43	1.12	1.12	18.85	4.38
Poultry	2583.40	170.92	2840.25	256.46	2840.25	256.46	9.03	9.03	9.94	50.05
Ducks	234.90	8.46	220.86	11.87	220.86	11.87	5.40	5.40	-5.98	40.31

Source: Livestock Census - All India and Livestock Census-Kerala

Appendix 4.33

Trend in Livestock Population of Kerala, Over the Census Periods 1966 to 2003

Year of Census	(No. in lakhs)													
	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	-1.2
1972	28.56	-0.03	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	129.56	9.39	4.3	18.78	53.19	7.75
1982	30.97	3.03	4.09	-9.91	20.04	19.07	1.27	-26.16	145.19	12.06	5.3	23.26	56.45	6.12
1987	34.24	10.57	3.29	-19.56	15.81	-21.11	1.37	7.87	170.92	17.72	8.46	59.62	55.01	-2.54
1996	33.96	-0.82	1.65	-49.82	18.6	17.71	1.43	4.15	269.46	49.74	11.87	40	55.77	1.38
2000	24.91	-26.65	1.11	-32.72	15.98	14.09	0.88	-38.46	169.08	-37.25	10.43	-12.13	42.94	-23.01
2003*	21.21	-14.84	0.71	-35.66	12.05	-24.60	NA	0	123.33	-27.06	6.74	-35.30	NA	0

*Provisional

Source: Livestock Census report 1966, 1972, 1977, 1982, 1987, 1996, 2000 & 2003

Appendix 4.34
Sex-wise Classification of Bovine Population
and Trend over the previous Census (1956 to 2000)

(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	876	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

Source : A.H. Department - Livestock Census Reports of Various Years.

Appendix 4.35

Trend in Poultry Poppulation over Census Periods from 1977 to 2000

(No. in Lakhs)

Category	1977		1982		1987		1996		2000	
	No	% variation	No	% variation	No	% variation	No	% variation	No	% variation
1	2	3	4	5	6	7	8	9	10	
Broiler	-	1.11	-	4.63	317.00	38.79	738	34.71	-10.52	
Desi Fowls	60.77	65.65	8.03	153.35	134	134.93	-12.01	110.24	-18.29	
Improved Fowls	68.79	79.53	15.63	17.57	-77.91	121.53	592	24.13	-80.14	
Total Fowls	129.56	145.19	12.06	170.92	17.12	256.46	50.05	169.08	-34.07	
Ducks	4.30	5.30	23.46	8.46	59.53	11.87	40.35	10.43	-12.13	
Other Poultry(Turkey)	0.03	0.22	599.71	0.58	167.43	1.12	93.69	4.33	286.61	
Total-Poultry	133.89	150.83	12.66	179.96	19.31	269.46	49.74	183.84	-31.77	

Source: Livestock Census Reports

Appendix 4.36
Distribution of Working Bullocks* and Male calves over the Five Census Periods and Percentage
Variation over Previous Census from 1977 to 2000

Category	(In '000 Nos)									
	1977	1982	% variation	1987	% variation	1996	% variation	2000	% variation	
	2	3	4	5	6	7	8	9	10	
Working Bullocks	343.99	240.94	-29.96	120.66	-49.92	57.50	-52.35	17.46	-69.63	
Indigenous										
Cross bred	19.60	14.33	-26.89	18.70	30.50	63.88	241.60	17.13	-73.18	
Total	363.59	255.27	-29.79	139.36	-45.41	121.38	-12.90	34.59	-71.50	
Male calves	125.24	135.30	8.04	112.14	-17.12	52.36	-53.31	29.63	-43.41	
Indigenous										
Cross bred	136.53	165.55	21.26	132.76	-19.81	111.30	-16.10	89.99	-19.15	
Total	261.77	300.85	14.93	244.90	-18.60	163.66	-33.17	119.62	-26.91	

Source: Livestock Census Report - 1996 & 2000

* Includes bullocks used for work & those used for work and breeding

Appendix 4.37
Trend in Distribution of Adult Female Cattle over the Census Periods from 1977 to 2000,
their Percentage Distribution and Percentage Variation over the Previous Census

(In '000 numbers)

Category	1977		1982		1987		1996		2000					
	No. of distribution	% distribution	No. distribution	% distribution	No. distribution	% distribution	No. distribution	% distribution	No. distribution	% distribution				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Cattle in Milk Indigenous	334.29	47.41	392.79	45.45	17.50	451.80	44.51	15.02	329.66	29.57	-27.03	195.66	20.56	-40.64
Cross bred	370.75	52.59	471.48	54.55	27.17	563.17	55.49	19.45	785.36	70.43	39.45	756.01	79.44	-3.74
Adult Female Cattle Indigenous	684.96	49.96	785.71	51.94	14.71	812	47.73	3.35	569.53	31.71	-29.86	462.31	28.12	-18.83
Cross bred	686.02	50.03	726.91	48.06	5.96	889.33	52.27	22.34	1226.36	68.29	37.89	1182	71.88	-3.62

Source: Livestock Census Reports - 1996

Appendix 4.38
Production of Milk and Egg in the Major States of India
(1989-90, 1999-2000 & 2001-02)

State	Milk			Egg						
	Production('000 MT)	% increase over 1989-90	Production(Million Nos)	% increase over 1989-90	Production(Million Nos)	% increase over 1989-90				
	1989-90	1999-'00*	2001-02**	1989-'00*	2001-02**	1999-'00 2001-02**				
Andhra Pradesh	3030	5122	5145	69.04	69.80	3710	6345	6316	71.02	70.24
Assam	617	733	894	18.80	44.89	461	488	558	5.86	21.04
Bihar	3000	3740	4068	24.67	35.60	1328	1436	1566	8.13	17.92
Gujarat	3351	5255	5573	56.82	66.31	386	477	692	23.58	79.27
Haryana	3151	4679	4976	48.49	57.92	333	759	1166	127.93	250.15
Jammu & Kashmir	487	1286	1088	164.07	123.41	267	559	487	109.36	82.40
Karnataka	2291	4473	5357	95.24	133.83	1278	1992	2325	55.87	81.92
Kerala	1600	2673	2907	67.06	81.69	1501	2054	2466	36.84	64.29
Madhya Pradesh	4500	5600	6091	24.44	35.36	915	1412	1545	54.32	68.85
Maharashtra	3266	5706	6024	74.71	84.45	1957	3039	3249	55.29	66.02
Orissa	454	847	865	86.56	90.53	411	648	1173	57.66	185.40
Punjab	4972	7700	8375	54.87	68.44	1619	2782	3346	71.83	106.67
Rajasthan	4200	7260	6330	72.86	50.71	230	558	591	142.61	156.96
Tamil Nadu	3410	4574	4629	34.13	35.75	2461	3845	3699	56.24	50.30
Uttar Pradesh	9146	14153	16506	54.75	80.47	494	802	998	62.35	102.02
West Bengal	2805	3465	4079	23.53	45.42	2220	2678	3057	20.63	37.70
All India	51401	78779	84570	53.26	64.53	19964	30629	31770	53.42	59.14

Source: Animal Husbandry Department of States

Appendix 4. 39
Details of milk production in the state - Results of Integrated Sample Survey (1991-92 to 2001-02)

Particulars	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02
	2	3	4	5	6	7	8	9	10	11	12
Estimated no. of animals in milk (lakh)	4.778	4.764	4.688	4.681	4.072	3.905	3.105	2.927	2.496	2.132	1.698
	6.609	6.887	7.41	8.027	8.108	8.478	8.346	8.557	8.942	9.297	9.688
Total	11.387	11.651	12.129	12.708	12.18	12.383	11.451	11.484	11.438	11.429	11.386
Estimated no. of milch animals (lakh)	7.278	7.256	7.338	7.641	5.418	5.133	5.057	3.995	3.385	2.841	2.216
	9.256	9.651	10.701	11.614	11.058	11.448	11.877	12.241	11.793	12.388	12.698
Total	16.534	16.907	18.039	19.255	16.476	16.581	16.934	16.236	15.178	15.229	14.914
Average milk yield/animal in milk (kg.)	1.749	1.863	1.864	1.864	2.208	2.216	2.282	2.552	2.502	2.506	2.527
	5.259	5.372	5.385	5.388	5.625	5.63	6.201	6.234	6.433	6.556	6.733
Total	3.781	3.938	4.024	4.089	4.482	4.553	5.138	5.295	8.935	9.062	9.260
Average milk yield of milch animal/day (kg.)	1.155	1.223	1.191	1.142	1.662	1.686	1.401	1.869	1.845	1.879	1.936
	3.755	3.483	3.745	3.724	4.124	4.169	4.357	4.358	4.878	4.920	5.137
Total	2.611	2.713	2.666	2.700	3.314	3.4	3.474	3.746	6.723	6.799	7.073
ND	3.069	3.240	3.190	3.185	3.282	3.158	2.586	2.726	2.280	1.950	1.566
CB	12.688	13.507	14.626	15.786	16.641	17.420	18.889	19.471	20.996	22.247	23.810
Total	15.757	16.748	17.815	18.971	19.923	20.578	21.475	22.197	23.276	24.197	25.376
Buff.	1.069	1.0930	1.1023	1.0589	0.8529	0.8182	0.7405	0.7481	0.7003	0.635	0.630
Goat	1.019	1.0534	1.0956	1.1254	1.1467	1.1844	1.2140	1.2557	1.2772	1.221	1.173
Grand Total	17.845	18.894	20.013	21.182	21.922	22.581	23.430	24.200	25.253	26.053	27.179
Per capita per day availability of milk (gm)	169	176	184	192	196	199	204	207	214	220	219

* ND - Non-descript, CB - Cross bred

Source: Animal Husbandry Department

Appendix 4.40
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	221.03
2000-01	213.52	195.18	155.03	227.47
2001-02	222.79	203.86	152.59	235.76
2002-03	198.12	NA	102.67	NA

Source: Animal Husbandry Department & Economic Survey

Appendix 4.41

Activities In the Animal Husbandry Sector (1994-95 to 2002- 2003)

SI.No	Activities	'000	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
1	2	3	4	5	6	7	8	9	10	11	12
1	Cases treated	Nos.	3401	3441	3851	3725	3893	3738	3885	4161	4925
2	Operations Performed	Nos.	117	121	116	115	119	97	117	123	145
3	Castration done	Nos.	10	12	9	8	7	6	7	6	6
4	Vaccination done										
	1. Livestock	Nos.	2424	2502	355	285	691	530	461	524	1211
	2. Poultry	Nos.	4755	4864	1828	1794	1235	2073	1888	1995	3194
5	Anti Rabies Vaccinations done in Dogs	Nos.	47	49	96	45	132	127	102	65	116
6	Artificial Inseminations done	Nos.	1465	1240	1151	1259	1251	1391	1372	1249	1369
7	Calvings recorded	Nos.	307	324	318	327	314	349	361	333	402
8	Chicks hatched out in Department Poultry Farms	Nos.	921	947	651	915	1057	1639	533	566	707
9	Vaccines produced in Veterinary Biologicals										
	1. Poultry	Doses	15392	5702	4543	787	2645	5561	3627	5410	8318
	2. Livestock	Doses	1149	732	1026	254	303	250	202	230	203

Source: Animal Husbandry Department.

Appendix 4.42
Production and Distribution of Frozen Semen in Kerala
(1993-94 to 2002-2003)

(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

Source: KLD Board

Appendix 4.43
Artificial Insemination Centres in the State, as on 31.03.2003

Sl.No	Department/ Institutions	No. of A.I Centres
1	2	3
1	Department of Animal Husbandry (Both ICDP and Non-ICDP)	2523
2	Department of Dairy Development	12
3	Other Voluntary Organisation (Private)	140
4	APCOS	185
5	Tata Tea	27
Total:		2887

Source: Animal Husbandry Department & KLD Board

Appendix 4.44
Other Important Activities of KLD Board During 2001-02 and 2002-03

Sl.No	Name of Programme	Achievement	
		2001-02	2002-03
1	2	3	4
1	Liquid Nitrogen (Lakh litres)	6.40	1.49
2	Quantity of basic fodder seeds produced (kg.)	1150	946.50
3	Quantity of fodder seed supplied (MT)	20.68	12.57
4	No. of kids produced		
	(i) Malabari	284	244
	(ii)Boer	22	57
5	No. of Malabari kids distributed:	361	243
6	No. of personnel trained	309	292
7	No. of embryos collected	57	34
9	No of pigs distributed:		
	For breeding and rearing	1742	4412
	For meat	140	252

Source: KLD Board.

Appendix 4.45
Average Price of Livestock Products and Feeds in the State
(1996-97 to 2002-2003)

Item	Unit	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	Percentage increase over 2000-01	Percentage increase over 2001-02
1	2	3	4	5	6	7	8	9	10	11
Meat										
Chicken	Kg.	55	62.57	57.69	59.03	57.63	55.6	53.40	-3.52	-3.96
				Broiler ..		68	70.92	69.98	4.29	-1.33
				Desi ..						
Mutton	Kg.	92	99.12	106.20	107.00	109	113	114.43	3.67	1.27
Beef	Kg.	38	41.36	46.30	48.62	50	51	52.16	2.00	2.27
Pork	Kg.	47	50.53	56.33	57.00	60	63	60	5.00	-4.76
Egg										
Fowl	100Nos.	130	155	White ..	135	145.00	152	140	-7.89	-2.14
				Brown ..	170	196.00	254	210	-17.32	-2.38
Duck	100Nos.	209	217	228.00	245.00	260	252	268	-3.08	6.35
Milk										
Cow	Litre	10.55	11.87	12.00	12.66	12.80	12.70	12.65	-0.78	-0.39
Buffalo	Litre	12	13.24	14.00	14.56	15.32	15.10	15.89	-1.44	5.23
Feeds (price)										
Groundnut cake	Kg.	10.5	10.95	11.00	11.20	12.57	12.20	12.20	-2.94	0.00
Coconut cake	Kg.	9.5	10.70	10.83	11.21	10.80	9.84	10.38	-8.89	5.49
Gingely oil cake	Kg.	10	10.01	10.00	10.93	11.50	11.45	11.15	-0.43	-2.62
Straw	Kg.	3	3.44	4.04	4.19	4.04	3.61	3.50	-10.64	-3.05
Grass	Kg.	1.5	1.99	2.87	2.88	3.32	2.96	2.18	-10.84	-26.35

Source: Animal Husbandry Department.

Appendix 4.46
Performance of Kerala Co-operative
Milk Marketing Federation (1996 to 2003)

Sl. No	Particulars	1996	1997	1998	1999	2000	2001	2002	2003*
1	2	4	5	6	7	8	9	10	11
1	No. of Apcos registered (Cumulative)	1930	1983	2149	2235	2308	2424	2464	2517
2	No. of Apcos functional (Cumulative)	1784	1826	1985	2040	2082	2130	2250	2284
3	No. of members in apcos (Cumulative) (Lakh Nos)	5.11	5.27	5.72	5.99	6.25	6.53	6.79	6.85
4	No. of Women in Apcos (Lakh Nos)	0.67	0.75	0.81	0.83	0.84	1.03	1.09	1.13
5	No. of SC/ST members in Apcos (Lakh Nos)	0.28	0.31	0.34	0.40	0.39	0.42	0.40	0.42
6	Average milk marketed/day by KCMMF (MT)	516	529	568	611	629	659	699	743
7	Average milk procured per day. (MT) - Apcos	485	465	477	536	689	714	708	639
8	Direct employment generated (No. of persons)	3816	5242	5565	5709	5844	7060	7110	7288
9	No. of Veterinary routes.	16	25	51	43	41	18	13	16
10	No. of cases treated (Lakh Nos)	1.61	0.71	0.14	0.09	0.06	0.05	0.04	0.02
11	No. of emergency veterinary routes	16	17	19	19	17	20	38	38
12	No. of cases treated (Lakh Nos)	0.39	0.36	0.36	0.43	0.28	0.31	0.40	0.10
13	Cattle feed sold (MT)	28367	38743	43480	83071	121629	116790	102626	66301
14	Quantity of ghee produced (MT)	912	1213	1220	1582	1613	1709	1832	912
15	Quantity of ghee sold (MT)	1119	1055	1181	1435	1493	1786	1934	893

* as on June 2003

Source: KCMMF

Appendix 4.47

Performance of the Dairies under Kerala Co-operative Milk Marketing Federation (2000 to 2003)

Sl.No	Dairy	Capacity Ltr./day	Procurement (Ltrs.)				Sales (Ltrs.)			
			2000	2001	2002	2003*	2000	2001	2002	2003*
1	2	3	4	5	6	7	8	9	10	11
1	Thiruvananthapuram	200000	35703831	44997500	42855382	17166337	52097619	45866863	55211581	27221901
2	Kollam	100000	35588677	43295185	43168296	16938587	32154478	30454662	34095377	20177212
3	Alappuzha	60000	7301033	9636573	9150609	3598406	18549080	16053619	19390936	10150862
4	Kottayam	40000	8766872	8691677	7981790	3358395	12238403	9912875	11901755	6158851
5	Ernakulam	150000	38644363	40352098	37761528	16431213	32170932	31667883	38114237	19586410
6	Thrissur	60000	18392808	17596740	14982475	6504444	11576618	10197531	12192297	6227545
7	Palakkad	100000	32596767	35890129	34223303	14808581	15297940	13296420	16024022	8322200
8	Kannur	100000	28475565	29613828	33667508	15072139	27613759	24854518	28463593	11814678
9	Kozhikode	150000	19843503	18317042	16963738	7005814	27553944	25712292	30902884	16899198
10	Kasaragod	30000	0	0	446510	1090559	0	0	1568671	5047341
Total		960000	225313419	248390772	241201139	101974475	229252773	208016663	247865353	131606198

*as on June 2003

Source : KCMMF

Appendix 4.48

**Average Quantity of Milk Procured per day by APCOS
(1994 to 2003)**

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	708193	315
2003*	2284	638982	280

*as on June 2003

Source: KCMMF

Appendix 4.49
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				
TRCMPU				
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
ERCMPU				
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
MRCMPU				
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: KCMMF				

Appendix 4.50
Price Spread of Milk (1993-94 to 2002-03)

(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
2002-03 *				
TRCMPU&MRCMPU	10.71	10.33	14.00	3.29
ERCMPU	10.15	10.33	14.00	3.85

Source: KCMMF

* From 01/11/2003

Appendix 4.51
Sale of Milk and Milk products by KCMMF 2001- 02 to 2002- 03

Sl.No	Product	2000-01	2001-02	% change over 2000-01	2002-03	% change over 2000-01
1	2	3	4	5	6	7
1	Milk(Lakh Litr)	2389	2408	0.80	2663	11.47
2	Ghee (MT)	1596	1834	14.91	1992	24.81
3	Butter (MT)	262	270	3.05	377	43.89
4	Ice-cream (Ltrs)	165380	229191	38.58	310351	87.66
5	Peda (Kg.)	55406	62168	12.20	79025	42.63
6	SFM (Bottles)	403360	353124	-12.45	0	-100.00
7	Refresh/Trays	58096	52815	-9.09	31924	-45.05
8	Card Milk/ trays	3113	2689	-13.62	1055	-66.11
9	Sambharam (Ltrs.)	1646397	1531183	-7.00	1492023	-9.38
10	Curd (Ltr.)	7376450	8538026	15.75	10398558	40.97
11	Lassy (Ltr.)	16355	25386	55.22	17076	4.41
12	Kulfi (Cups)	22472	17299	-23.02	14475	-35.59
13	Sip up (Nos.)	2339261	3210544	37.25	3940167	68.44
14	Cream (Kg.)	172482	429734	149.15	146298	-15.18
15	Dairy Whitener (MT)	40	129	222.50	63	57.50
16	Cream Roll (Nos.)	9666	9799	1.38	5419	-43.94
17	Palada (Kg.)	6903	5138	-25.57	3078	-55.41
18	Milma Plus (Bot.)	0	23329	0	1107892	4648.99
19	Paneer (Kg.)	0	2400	0	4620	92.50
20	Chocolik (No.)	0	54394	0	135361	148.85
21	Yoghurt(Kgs)	0	0	0	22005	0.00
22	Skimmed Milk Powder(MT)	0	0	0	1	0

Source: KCMMF – Annual Reports

Appendix 4.52
District-wise Distribution of Fishermen Population in Kerala (2002-03)

Sl. No.	District	Marine						Inland			Marine & Inland Total	
		Male	Female	Children	Total	Male	Female	Children	Total	Total	Total	
1	2	3	4	5	6	7	8	9	10	11		
1	Thiruvananthapuram	52601	50929	72324	175854	457	482	478	1417	177271		
2	Kollam	31826	29138	38007	98971	11511	10972	13519	36002	134973		
3	Alappuzha	36576	35376	45514	117466	21585	20830	23025	65440	182906		
4	Pathanamthitta					610	743	1086	2439	2439		
5	Kottayam					8644	8450	9112	26206	26206		
6	Idukki					331	252	236	819	819		
7	Ernakulam	24847	24054	27567	76468	23045	22411	22182	67638	144106		
8	Thrissur	22650	22929	27998	73577	6892	6760	7270	20922	94499		
9	Palakkad					761	859	1122	2742	2742		
10	Malappuram	24880	25452	34053	84385	1461	1453	1689	4603	88988		
11	Wayanad					95	89	101	285	285		
12	Kozhikode	32717	31533	39890	104140	4024	3903	4790	12717	116857		
13	Kannur	18139	17225	23458	58822	2347	2286	2242	6875	65697		
14	Kasaragod	14870	14326	16940	46136	338	322	340	1000	47136		
	State	259106	250962	325751	835819	82101	79812	87192	249105	1084924		

Source: Directorate of Fisheries

Appendix 4.53
Species wise composition of Marine fish landings in Kerala
(2000-2001 to 2002-03)

		(In MT)		
Sl. No	Species	2000-01	2001-02	2002-03
1	Elasmobranchs	2683	2991	3197
2	Eels	90	143	181
3	Cat Fish	103	150	121
4	Chirocentrus	214	252	293
5(a)	Oil Sardine	195244	169851	180443
	(b) Lesser Sardine	23668	96831	28658
	(c) Anchovilla	21825	34925	29173
	(d) Trissoels	2914	2254	4366
	(e) Other Clupeids	20796	12694	10731
6	Saurida & Saurus	7620	5856	6817
7	Hemirhamphus & Belone	584	632	970
8	Flying fish	6		
9	Perches	49389	30212	40119
10	Red Mullet	64	1545	144
11	Polynemids	36	21	159
12	Sciaenids	1418	8863	6093
13	Ribbon fish	8381	18364	16082
14(a)	Caranx	19888	25110	24855
	(b) Chorinemus	4044	1022	536
	(c) Other Carangids	21844	23977	19118
15	Leiognathus	4114	5046	8619
16	Lactrious	1430	3839	2106
17	Pomfrets	746	1379	2557
18	Mackerel	30667	42446	54537
19	Seerfish	4798	2326	3499
20	Tunnies	14072	11014	15444
21	Sphyraena	2894	1562	3209
22	Mugil	333	28	89
23	Soles	15187	7946	14781
24(a)	Penaid Prawn	51390	53219	53627
	(b) Non Penaid Prawn	6522	3226	3350
	(c) Lobsters	217		891
	(d) Crabs	5051	3343	7772
	(e) Stomatopods	10458	335	16689
26	Cephalopods	29626	15698	26665
27	Miscellaneous	8255	6683	17395
TOTAL		566571	593783	603286

Source: Directorate of Fisheries

Appendix 4.54
Species-wise Inland Fish Production in Kerala (1998-99 to 2002-03)

Sl. No	Species	1998-99		1999-2000		2000-01		2001-02		2002-03	
		3	4	5	6	7	8	9	10	11	12
		Production	%	Production	%	Production	%	Production	%	Production	%
1	Prawns	14346	21.79	16459	22.2	18315	21.5	16388	21.0	16178	21.6
2	Etroplus	4756	7.22	4860	6.56	4963	5.8	6998	9.0	4394	5.9
3	Murrels	4369	6.64	4596	6.2	4600	5.4	4306	5.5	4460	5.9
4	Tilapia	7219	10.96	8510	11.48	8336	9.8	6868	8.8	7449	9.9
5	Catfish	4420	6.71	4816	6.5	5276	6.2	4517	5.8	4367	5.8
6	Jew Fish	3012	4.57	3054	4.12	3078	3.6	2426	3.1	2677	3.6
7	Others	27733	42.11	31835	42.94	40666	47.7	36536	46.8	35511	47.3
	Total	65855	100	74130	100	85234	100	78039	100	75036	100

Source: Directorate of Fisheries

Appendix 4. 55

**NCDC Assisted Integrated Fisheries
Development Project
(Physical and financial achievements, during 2002-03)**

Sl. No	Particulars	Physical Achievement	Financial Achievement (Rs. in lakhs)
1	Fishing inputs	Crafts: 384 Nos OBMs: 889 Nos Webbings: 101.97 Tone Accessories	307.58 534.81 285.06 23.32
2	Support for Direct Marketing		200.00
3	Marketing infrastructure- Kerosene bunks		130.00
4	No. of beneficiaries	2868	
TOTAL			1480.77

Source: Matsyafed

Appendix 4.58

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 2003 - 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	1487.87	704.00	690.50
2	Muthalapozhi	1366.00	-	2000	2005	249.25	1366.00	300.00
3	Thangassery	1980.50	4385.50 *	1991	Commissioned in 2001	3920.54	1980.50	990.25
4	Neendakara	622.00	-	1982	Commissioned in 1988	808.19	622.00	311.00
5	Kayamkulam	624.60	1770	1994	2005	658.96	624.60	300.00
6	Munambam	1167.20	1985.80 *	1998	Commissioned in 2000	1717.66	1167.20	683.60
7	Puthiyappa	527.00	962.5	1988	Commissioned in 1996	1149.09	962.50	481.25
8	Chombal	556.00	975.00 *	1992	Commissioned in 1999	876.09	556.00	370.00
9	Mopla bay	564.00	816	1992	Commissioned in 1999	1007.99	816.00	408.00
10	Ponnani	2759.40	-	2001	2005	243.45	2759.40	350.00
11	Thalai	1370.00	-	-	-	40.97	-	350.00

* Revised Estimate submitted to Government for sanction

Source : Harbour Engineering Department

Appendix 4.59
Details of Revenue Collection
in various Fishing Harbours/Fish Landing Centres

(In Lakh Rs.)

Sl.No.	Name of Project	Up to 2001-02	2001-02	2002-03	Total
1	2	3	4	5	6
I	FISHING HARBOURS				
1	Neendakara	588.413	74.786	76.81	740.009
2	Puthiyappa	86.067	31.568	37.57	155.205
3	Munambam	10.144	11.732	21.98	43.856
4	Mopla Bay	1.01	1.76	2.73	5.5
5	Chompal	22.71	9.917	9.73	42.357
6	Azheekal	3.12	3.51	0.75	7.38
7	Beypore	3.303	8.725	4.90	16.928
8	Thangassery	0.14	6.42	10.20	16.76
II	FISH LANDING CENTRES				
1	Munakkadavu	1.93	0.12	0.01	2.06
2	Thottappaly	1.43			1.43
3	Neeleswaram	1.15	0.20	0.42	1.77
4	Dharmadam	2.42	0.53	0.44	3.39
5	New Mahe	1.20	0.05	1.87	3.12
6	Vellayil Beach	4.36	0.74	0.44	5.54
7	Cheruvathoor	2.44	1.30	0.91	4.65
8	Chalilgopalapettah	0.74	0.07	0.35	1.16
9	Quilandy	0.78	0.25	0.45	1.48
10	Chettuva	4.50	0.61	1.00	6.11
11	Palacode	0.74	0.02	0.69	1.45
TOTAL		736.597	152.308	171.25	1060.155

Source: Harbour Engineering Department

Appendix 4.60

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 Toal release	Total release 2000-01	% to Toal release	Total release during 2001-02	% to Toal release	Total release during 2002-03	% to Toal release
1	2	3	4	5	6	7	8	9	10
1	Mktg. & Input Distribution	40.5744	9.17	5.98	8.66	8.75	16.95	14.98	29.85
2	Agro- Processing								
	a) Sugar	1.3944	0.31	-	-	-	-	-	-
	b) Spinning Mills	10.0451	2.27	1.078	1.56	-	-	-	-
	c) Oil Processing	74.2549	16.78	-	-	-	-	-	-
	d) Powerlooms	18.5343	4.18	5.515	7.99	0.956	1.85	2.46	4.90
	e) Rubber/others	34.3046	7.75	20.161	29.2	0.551	1.07	1.57	3.13
3	Storage	13.5417	3.06	0.364	0.53	0.813	1.57	2.41	4.80
4	Rural consumer / Student stores	20.6757	4.67	2.065	2.99	1.959	3.8	10.67	21.26
5	ICDP	66.1930	14.95	7.736	11.2	20.945	40.58	7.63	15.21
6	Weaker Section								
	a) Fisheries	88.9167	20.08	11.437	16.57	16.594	32.15	5.63	11.22
	b) Handloom	15.7211	3.55	0.741	1.07	0.716	1.39	1.11	2.21
	c) Coir	48.7536	11.01	10.571	15.32	0.093	0.18	1.23	2.45
	d) SC-ST Co-ops.	2.1811	0.49	0.683	0.99	-	-	0.09	0.18
	e) Poultry	0.0980	0.02	-	-	-	-	-	-
	f) Dairy	0.0250	0.01	-	-	-	-	-	-
7	Promotional/Development Projects	4.7612	1.08	-	-	-	-	-	-
8	computerisation	2.705	0.61	2.705	3.92	0.237	0.46	2.40	4.79
Total:		442.6798	99.9870	69.036	100	51.614	100	50.18	100.06

Source: NCDC..

Appendix 4.61

**NCDC Release of Fund for Kerala
(1997-98 to 2002-2003)**

(In Lakh Rs.)

SI.No.	Name of Schemes	1997-98	1998-99	1999-2000	2000-01	2001-02	2002-03
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	55.750	11.000	134.270	53.630	413.130	260.060
	(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
	Organic manure	-	-	-	-	-	49.080
2	Processing Unit						
	(a) Rubber	119.190	62.075	319.025	1967.06	55.145	156.530
	(b) Spices Powdering Unit	4.990	37.764	58.800	49.055	-	-
3	Storage	98.005	29.200	79.000	36.407	81.276	241.071
4	Fisheries (a) Marine	695.438	653.881	1335.484	1143.72	1659.36	562.500
	(b) Inland	116.441	239.363	208.466	-	-	-
	(c) Fish marketing cell	-	-	42.200	-	-	-
5	Coir Co-operatives	608.434	371.847	397.826	1057.087	9.320	123.349
6	Handloom Co-operatives	181.923	141.849	264.173	74.140	71.593	111.250
	(a) Spinning Mills	-	220.810	150.000	107.990	-	-
	(b) Powerloom	538.675	117.790	382.850	551.555	95.620	245.630
7	SC/ST Co-operatives	24.320	23.840	51.965	68.310	-	8.890
8	Sugar Factory	-	24.000	-	-	-	-
9	Computerisation	-	-	249.660	270.520	23.730	240.130
10	Tech/Promb Cell	-	-	-	-	-	-
11	Project Reports Study etc. Others	-	0.500	-	-	-	-
12	EEC-Coconut Development Project (KERAFED Project)	223.370	439.100	120.850	-	-	-
13	INTE-Co-operative Development Project (I.C.D.P)	455.456	1228.010	945.517	773.632	2094.527	763.063
14	Consumer Schemes	114.080	826.900	443.130	205.050	188.800	1066.580
15	Student Stores	1.358	2.120	7.140	1.500	7.130	0.650
16	Animal Husbandry Department	-	-	-	-	-	-
	Poultry Co-operatives	-	-	-	-	-	-
17	Godown to dairy	-	9.800	2.500	-	-	-
	Total:	3237.430	4726.849	5605.756	6904.056	5161.481	5018.183

Source: NCDC

4/17/2004-S6A

Appendix 4. 62
Selected Indicators of Performance of the Primary Agricultural Credit Societies

Sl.No.	Indicators	Unit	2000	2001	2002	2003
1	2	3	4	5	6	7
1	Average membership per society	No.	7015	12671	13377	13882
2	Average Share Capital per Society	Lakh Rs.	17.95	20.00	21.00	31.00
3	Average deposit per society	Lakh Rs.	328.12	386.00	427.00	536.00
4	Average deposit per member	Rs	4677.18	3043.16	3192.4	3860.08
5	Average working capital per society	Lakh Rs.	449.48	507.05	555	653.04
6	Average loan per member	Rs	3496.75	2593.24	2599.54	3871.90
7	Percentage of borrowing members to total	%	56.03	44.44	42.09	44.13
8	Average loan advanced per advancing society	Lakh Rs.	245.31	328.58	347.75	537.5
9	Average loan advanced per borrowing members	Rs	6240	5835.03	6175.93	8215.21
10	Percentage of overdue to demand	%	20.78	21.87	23.84	25.36
11	Percentage of overdue to outstanding	%	18.40	25.67	23.54	25.36

Source: Registrar of Co-operative Societies, Kerala.

Appendix 4.63
Selected indicators of the Credit Operations of the
Primary Agricultural Credit Societies

Sl.No.	Indicators	Unit	2000	2001	2002	2003
1	2	3	4	5	6	7
1	No. of Societies	Nos.	1628	1682	1685	1628.00
2	No. of Members	No. in crores	114	2.1312	2.2541	2.26
	(i) of which SC	No. in lakhs	12.96	8.429	8.951	9.69
	(ii) of which ST	No. in lakhs	2.23	1.0198	1.1987	1.31
3	Paid up share capital	Rs. in crores	292.17	337.0195	361.3958	506.35
4	Reserves	Rs. in crores	236.23	320.999	372.2008	925.34
5	Deposits	Rs. in crores	5341.81	6485.577	7195.995	8723.77
6	Working Capital	Rs. in crores	7317.48	8528.576	9351.775	10631.50
7	Loans Issued	Rs. in crores	3993.63	5526.709	5859.624	8750.50
	(i) short-term	Rs. in crores	2593.26	3549.578	3746.013	6301.10
	(ii) Medium-term	Rs. in crores	1183.14	1498.429	1606.113	1859.43
	(iii) Long - term	Rs. in crores	217.23	478.702	507.498	589.97
8	Loan Outstanding	Rs. in crores	4401.91	5774.563	6267.657	6802.23
9	Loan Overdue	Rs. in crores	809.9	1482.206	1475.175	1724.97
10	S.T Loan for agricultural purpose alone	Rs. in crores	738.46	1263.284	1401.557	3739.29
11	S.T Loan for non- agricultural purpose	Rs. in crores	1854.79	2290.688	2583.476	2561.81
12	M.T loan for Agricultural purpose	Rs. in crores	349.79	455.879	504.465	560.89
13	M.T loan for non-Agricultural purpose	Rs. in crores	833.35	1014.01	1125.818	1298.54
14	L.T. Loan for Agricultural purpose	Rs. in crores	57	181.383	194.66	254.79
15	L.T. Loan for non-agricultural purpose	Rs. in crores	160.22	260.449	310.048	335.18
16	Value of Fertilizers Sold	Rs. in crores	871.02	179.803	284.793	52.26
17	Value of Agricultural Produce Marketed	Rs. in crores	180.83	84.974	74.506	206.17
18	Dormant Societies	No.	26	126	109	27
19	Societies on Profit	No.	720	654	663	754
20	Profit Amount	Rs. in crores	57.97	101.004	116.063	94.27
21	Societies on loss	Nos.	836	1134	913	874
22	Loss Amount	Rs. in crores	153.28	307.501	397.443	203.70
23	Societies without profit or loss (U/L)*	No.	46	1	0	0
24	Societies having paid Secretaries	No.	1559	1559	1558	1560
25	Societies having own Godowns	No.	1457	1302	1309	1313
26	Societies having Hired Godowns	No.	493	169	176	172
27	Viable Societies	No.	1432	1334	1347	754
28	Computerised societies	No.	153	289	426	452
29	Self Help Group Formed PACS	No.	1307	5905	5878	7384
30	State Contribution to Agri. Credit	Rs. in Lakhs	92.88	96.2	90.93	30.90
31	Assistance for insurance	Rs. in Lakhs	0	0.002	0	0

*U/L: Under Liquidation

Source: Registrar of Co-operative Societies, Kerala.

Appendix 4.64

Production and Sales of Chocolate by CAMPCO

Sl. No.	Item	Production		Sales
		Qty.(MT)	Qty. (MT)	Value (Rs. in Lakhs)
1	2	3	4	5
1996-97				
1	Chocolate	517.3	509	517.0
2	Semi finished	642	969.3	696.2
3	Internal Sales for Nestle	2433.2	349.4	467.0
1997 - 98				
1	Chocolate	687.2	627.1	695.9
2	Internal Sales for Nestle	-	454.1	698.6
1998-99				
1	Chocolate	571.4	580.6	784.2
2	Internal Sales for Nestle	-	378.6	597.7
1999-2000				
1	Chocolate	1386.42	1318	1591.6
2	Internal Sales for Nestle	-	285.6	463.6
2000-01				
1	Chocolate	1732.86	1697.38	2081.9
2	Internal Sales for Nestle	-	359.6	424.9
2001-02				
1	Chocolate	2457.93	1851.3	2441
2	Internal Sales for Nestle	-	293.17	354.9
3	Sales to Amul	-	482.03	-
2002-03				
1	Chocolate	2192.75	2219.14	3067.72
2	Internal Sales for Nestle	-	154.20	205.78
3	Sales to Amul	-	52.53	45.68

Source : CAMPCO

Appendix 4.65
Operations of CAMPCO (1996-97 to 2002-2003)

(Quantity in MT, Value in Lakh Rs.)

Sl. No.	Commodity	1996-97		1997-98		1998-99		1999-2000		2000-01		2001-02		2002-03	
		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	Areca nut														
	a) Procurement	27923	23003	27172	22142	28693	28246	23576	30930	35049	32491	41242	23859	44990	27809
	b) Sales	26055	22328	26990	23217	31323	31614	20940	29813	34451	33598	38370	24948	42400	28273
2	Cocoa Procurement														
	a) Cocoa Pods	17	1	17	1	14	1	98	6	13	0.52	13	0.39	6	0.20
	b) Wet Beans	4908	956	6339	1255	4851	960	5203	1008	3565	550	4769	717	5621	1391.90
	c) Dry Beans	3	2	18	13	17	12	0	0	3	2	82	51	128	85.65
3	Copper Sulphate Sales	250	138	289	155	253	124	221	117	301	146	366	188	252	138.26

Source : CAMPCO

Appendix 4. 66

Important Activities of Major Co-operatives (1999-2000 to 2002-2003)

Schemes	Unit	1999-00	2000-01	2001-02	2002-03
<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>
1. Procurement of Natural Rubber by RUBCO	MT	28631	23135	4806	12805
	Lakh Rs.	8856	7108	1508	5089
2. Sales of Natural Rubber					
(a) Domestic	MT	21433	21274	6011	1048
	Lakh Rs.	6684	6461	1836	355
(b) Export	MT	4032	10633	252	13415
	Lakh Rs.,	1052	2895	71	4434
3. Hawaii Chappal.- Sales Turnover	Lakhs Rs.	33	230	349	440.69
4. Performance of KERAFED	MT	13518	7000	1778	5199
(a) Copra procured	MT	--	11198	990	7
(b) Copra sales	Lakh Rs.	--	13712	521	2
	MT	5109	5688	7512	4219
(c) Coconut Oil procured	Lakh Rs.	3321	2091	2935	2297
	MT	--	1810	2711	1877
(d) Coconut Oil cake procured	Lakhs Rs.	--	138	126	155

Source: Annual Reports of Major Co-operatives

Appendix 5.1
Details of Allocation & Expenditure and Reimbursement Status under National Hydrology Project

Sl. No.	Item	Surface Water Component							Ground Water Component						
		Financial				Reimbursement Status			Financial				Reimbursement Status		
		Revised allocation	%	Expdr. Cum. 9/03	%	Claimed	Received	Revised allocation	%	Expdr. Cum. 9/03	%	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		
	Total	1615.10	100	1402.71	100	1104.77	1070.66	1339.30	100	1296.51	100	1002.14	973.68		

Source: Water Resources Department

Appendix 5.2

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)	1	1	2	2
5.	Buildings (Level II)	-	-	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)	Metereological				
	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 5.3

Physical Achievements under Minor Irrigation Schemes

(Area in Ha.)

SI.No.	Name of Schemes	Physical Achievement (net area)				
		1998-99	1999-2000	2000-01	2001-02	2002-03
1	2	3	4	5	6	7
1	Minor Irrigation - class -I	2184	2766	924	714	1630
2	Minor Irrigation - class -II	1716	2458	821	587	834
3	Lift Irrigation	378	943	512	160	458
4	Jaladhara Padhathy	735	--	--	--	557
5	EEC assisted M.I Programme	1544	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	1	2	3	4	5	6	7	8	9	10	11
		Total Annual Ground Water Recharge	Natural Discharge during Non-Monsoon Season	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 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		
	TOTAL	6840.80	611.76	6229.04	1596.02	1097.36	2693.38	1411.79	3221.23	43.24		

Source: Water Resources Department (GWD)

Appendix 5.5

Physical Achievements under Ground water development Schemes (1999-2000 to 2002-03)

Sl.No	Items	Unit	1999-00	2000-01	2001-02	2002-03
1	2	3	4	5	6	7
1	Detailed hydrological survey(Site selection)	No.	....	2491	1757	3058
2	Siting and providing technical assistance for open wells	No.	511	245	142	850
3	Siting and construction of different types of drilled wells	No.	473	554	460	510
4	Creation of additional irrigation facilities	ha.	1036	1214	...	...
5	Training of personnel	No.	28	7	2	108
6	Failed well compensation	No.	5	3	5	...
7	Drought sample analysis	No.	308	...	...	...
8	Water sample analysis	No.	....	1531	1283	2160

Source: Water Resources Department (GWD)

Appendix 5.6
Physical Achievements Under Command Area Development Programme
(1999-2000 to 2002-03)

SI No.	Item	Unit	Achievement				
			1999-00	2000-01	2001-02	2002-03	
1	2	3	4	5	6	7	
1	Construction of field channels	ha.	2593	2858	926	776	
2	Construction of field drain	ha.	21228	18456	8207	15580	
3	Warabandhi works	ha.	5743	994	-	678	
4	Training Programme for farmers	No.	305	400	129	298	
5	Adaptive Trials	ha.	392	102.5	-	635	
6	Large scale demonstration	ha.	12082	10896	5201	8045	
7	Subsidy to small & marginal farmers	No.	..	104	40	456	
8	Beneficiary farmers associations organised and registered	No.	41	26	2	5	
9	Detailed Soil survey conducted	ha.	3035	1750	-	1320	
10	Land levelling & shapping	ha.	82	111.5	31.75	52	
11	Bench mark and Evaluation Survey conducted	ha.	3084	309.28	1262.8	1167.27	
12	Crop Estimation Survey	ha.	..	3243.2	7248	-	
13	Yield Estimation survey on Principal Crops	No.	1742	1857	1348	1111	
14	Evaluation Reports published	No.	3	1	3	4	
15	Reclamation of water logged areas	ha.	3367	3649	1635	3462	

Source : CADA

Appendix 5.7
Major Physical Cumulative Achievements under CAD Programme
as on March 2003

(in Ha.)

SI No	Name of Project	Total CCA	Physical Achievements				Reclamation
			Field Channel	Field drain	Warabandhi	6	
1	2	3	4	5	6	7	
1	Mangalam	3639.00	3639.00	3490.00	3639.00	276.38	
2	Peechi	18623.00	18623.00	16664.00	18623.00	2495.89	
3	Vazhani	5182.00	5182.00	5040.00	5182.00	163.70	
4	Cheerakuzhy	1619.00	1089.00	1188.00	1619.00	...	
5	Chalakudy	19696.00	19696.00	11564.47	19696.00	897.15	
6	Neyyar	12013.00	12013.00	7803.72	11655.00	1630.18	
7	Chitturpuzha	15700.00	15700.00	14471.00	10975.00	937.12	
8	Kuttiyadi	15540.00	15070.00	14064.00	12776.00	2164.30	
9	Periyar Valley	32800.00	32800.00	20875.00	32800.00	961.39	
10	Pamba	21135.00	6405.00	145.00	13348.00	500.35	
11	Malampuzha	21732.00	21732.00	18969.00	21732.00	1028.00	
12	Walayar	4122.00	4122.00	2387.00	...	266.00	
13	Pothundy	5466.00	5466.00	4621.00	5466.00	361.43	
14	Gyathri	5466.00	5466.00	4902.00	5466.00	431.95	
15	Kanhirapuzha	9710.00	119.80	...	...	...
16	Pazhassi	11530.00	...	...	...	...

Source: CADA

Appendix 5.8
Storage in the Reservoirs (Irrigation) - Basin wise

Sl.No.	Reservoirs	River Basin	Live storage capacity (MCM)	Full reservoir level (Mtrs.)
A. Completed				
1.	Kuttiyadi	Kuttiyadi	120.5	43.54
2.	Peechi	Karuvannoor	113.00	79.25
3.	Vazhani	Keecheri-puzhakkal	18.12	62.48
4.	Walayar	Bharathapuzha	18.40	203.00
5.	Gayathri	Bharathapuzha	25.00	310.44
6.	Mangalam	Bharathapuzha	25.34	77.88
7.	Periyar Valley	Periyar	...	34.95
8.	Malampuzha	Bharathapuzha	226.00	115.06
9.	Pothundi	Bharathapuzha	50.91	108.20
10.	Neyyar	Neyyar basin	106.18	84.73
11.	Chimmoni	Karuvannoor	176.36	NA
12.	Kallada	Pallickal-Kallada	504.92	116.20
13.	Malankara	Muvattupuzha	27.00	...
14.	Pazhassi	Valapattanam	...	26.52
15.	Pamba	Pamba Basin	6.5	...
16.	Siruvani	Bhavani	184.00	...
17.	Kanhirapuzha	Bharathapuzha	70.83	97.50
B. Under Construction				
18.	Karapuzha	Kabani	72.00	...

Source: Water Resources Department

Appendix 5.9

District-wise population covered by Water Supply Schemes as on 31-7-2003

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	1477911	68.99	916344	83.86	2394255	74.01
2	Kollam	1075859	50.79	453781	97.41	1529640	59.19
3	Pathanamthitta	592674	53.49	107700	87.15	700374	56.86
4	Alappuzha	1154817	77.65	521854	84.43	1676671	79.64
5	Kottayam	812061	49.12	292663	97.63	1104724	56.57
6	Idukki	504908	47.13	55012	96.11	559920	49.61
7	Ernakulam	1467865	90.5	1303990	88.31	2771855	89.46
8	Thrissur	1547278	72.44	696877	83.01	2244155	75.42
9	Palakkad	1151025	50.92	253839	71.21	1404864	53.68
10	Malappuram	1676401	51.21	344860	96.88	2021261	55.68
11	Kozhikode	593495	33.39	747527	67.9	1341022	46.58
12	Wayanad	555354	73.36	14835	50.11	570189	72.49
13	Kannur	578945	48.44	708332	58.2	1287277	53.36
14	Kasaragod	633132	65.3	143298	61.3	776430	64.32
15	TOTAL	13821725	58.64	6560912	79.36	20382637	64.02

Source: Kerala Water Authority.

Appendix 5.10
District wise & category wise number of water supply schemes under implementation

Sl.No	Name of District	Rural Water Supply Schemes							Urban Water Supply Schemes				Total
		ARWSP	TM	PMGY	State Plan	LIC	AUWSP	State Plan	LIC/HUDCO	Others			
1	2	3	4	5	6	7	8	9	10	11	12		
1	Thiruvananthapuram	21	31	7	12	5	2	5	5	2	83		
2	Kollam	4	1	17	3	7	1	1	1		34		
3	Pathanamthitta	41	33	4	4	4	1	1	1		83		
4	Alappuzha	153	57	12	4	4	1	1	1	1	229		
5	Kottayam	43	32	7	3	3	1	1	3	7	96		
6	Idukki	29	3	1	3	3				8	44		
7	Eranakulam	34	26	25	13	1	1	2	2	4	105		
8	Thrissur	48	16	58	4	4	3	3	5		139		
9	Palakkad	48	14	41	6	1	1	1	3	2	118		
10	Malappuram	78	31	49	8	1	1	1	2	4	173		
11	Kozhikode	140	30	39	3	3	2	2	2	7	224		
12	Wayanad	20	7	1					1	3	32		
13	Kannur	96	10	41			1	1	8	4	160		
14	Kasaragod	56	3	9	61	5				1	135		
15	Total	811	10	316	349	72	3	17	34	43	1655		

Source: Kerala Water Authority.

Appendix 5.11
District - wise and Category-wise Number of Water Supply schemes
in Operation as on 31.10.2003

Sl.No.	Name of District	Urban Water Supply Schemes	Rural Water Supply Schemes		Total
			Multi Panchayat	Single Panchayat	
1	2	3	4	5	6
1	Thiruvananthapuram	5	40	80	125
2	Kollam	3	31	57	91
3	Pathanamthitta	3	16	33	52
4	Alappuzha	5	1	72	78
5	Kottayam	5	50	99	154
6	Idukki	1	98	88	187
7	Eranakulam	11	53	81	145
8	Thrissur	7	141	103	251
9	Palakkad	3	130	48	181
10	Malappuram	5	105	46	156
11	Kozhikode	2	108	77	187
12	Wayanad	0	29	29	58
13	Kannur	6	49	90	145
14	Kasaragod	2	55	49	106
Total		58	906	952	1916

Source: Kerala Water Authority.

Appendix 5.12
District wise details of Service Connections and Street taps as on 1.4.2003

Sl.No	Name of District	Water Supply Connections				Street taps		
		Non-		Industrial	Total	Panchayat	Cor'/Mun'	Total
		Domestic	Domestic					
1	2	3	4	5	6	7	8	9
1	Thiruvananthapuram	180137	20893	59	201089	10257	4198	14455
2	Kollam	60216	3691	95	64002	11373	3218	14591
3	Pathanamthitta	23510	2103	15	25628	8275	1433	9708
4	Alappuzha	57357	2285	42	59684	15088	4201	19289
5	Kottayam	44711	4025	27	48763	10074	2079	12153
6	Idukki	8882	858	4	9744	2786	496	3282
7	Eranakulam	202936	15395	755	219086	18792	14459	33251
8	Thrissur	71181	3112	35	74328	18441	3627	22068
9	Palakkad	46854	3928	92	50874	9797	2788	12585
10	Malappuram	30004	2126	13	32143	8437	2835	11272
11	Kozhikode	39822	2978	9	42809	5374	2549	7923
12	Wayanad	4683	909	1	5593	2647	186	2833
13	Kannur	20711	3251	46	24008	3766	1805	5571
14	Kasaragod	12702	769	15	13486	3190	210	3400
Total		803706	66323	1208	871237	128297	44084	172381

Source: Kerala Water Authority

Appendix 5.13

WATER TARIFF

CONSUMPTION PER MONTH	TARIFF FROM 01/04/1999
A. DOMESTIC CATEGORY	
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.NON-DOMESTIC CATEGORY	
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
C.INDUSTRIAL CATEGORY	
For entire consumption	Rs.10.60 per 1,000 litres Minimum Charge Rs.200
D.LOCAL BODIES	
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 (1998-99 to 2002-03)

Year	Urban Schemes			Rural Comprehensive Schemes			Rural Single Panchayat Schemes				(Rs. in lakhs)
	Domestic, Non- domestic & Industrial	Street Taps	Total	Domestic, Non- domestic & Industrial	Street Taps	Total	Domestic, Non- domestic & Industrial	Street Taps	Total	Grand Total	
1998-99	3112	1123	4235 (60.90)	778	831	1609 (23.14)	389	721	1110 (15.96)	6954 (100)	
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)	

Note:- Figures in brackets denote percentage to total
Source:- Kerala Water Authority.

Appendix 5.15

Receipts of Kerala Water Authority from various sources from
1998-99 to 2002-03

(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
1998-99	6954	13275	4513	4942	3953	288	33925
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

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
Ashtamudi	Kerala	5071.07
Sasthamkotta	-do-	354.69
Kolluru	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 Datye, 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>Chandrashekharariaea</i> , <i>Baeolepis</i> , <i>Kanjarum</i> , <i>Meteromyrtus</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. ²)	Estimated Sand reserve (10 ⁶ m ³)	Panchayats involved in Sand mining	Volume of Sand extracted (10 ⁶ m ³ / year)	Sustainable yield (M ³ /year)	No. of labourers
<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>
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 ³ /d
Periyar Chemicals Ltd, Edayar	Formic acid, sodium sulphate	330 m ³ /d
Binani Zinc Ltd, Edayar,	Zinc, Cadmium, Sulphuric acid	550m ³ /d
FACT Ltd, Eloor	Nitrogen & Phosphorus Fertilisers, Oleum & Ammonium Sulphate	25,400 m ³ /d
FACT, Petrochemical	Caprolactam, Nitric acid, Ammonium sulphate, Soda ash	5,040 m ³ /d
Trancore Cochin Chemiclax	Hydrochloric acid	6,680 m ³ /d
Indian Aluminium Company, Eloor	Aluminium products,	2,700 m ³ /d
Trava Chemical & Mfg. Kalamassery	Copper products	720 m ³ /d
United Catalysts Ltd, Edayar	Chemicals, Catalyusts	537 m ³ /d
Hindustan Insecticides, Eloor	DDT, BHC, Endosulfan, Difocol	1,000 m ³ /d
Indian Rare Earths, Eloor	Rare earths, Tri sodium phosphate	3,000 m ³ /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
Malayattoor	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, 2002-03)**

I. Financial Achievement			
Sl. No.	Component	Expenditure (In lakh Rs.)	
1	Soil Conservation	149.25	
2	Minor Irrigation	112.63	
3	Forestry Schemes	NA	
4	Foot Bridges	70.00	
5	Others	981.70	
TOTAL		1313.58	
II. Major Physical Achievements			
Sl. No	Component	Unit	Achievement
1	Soil Conservation	Ha.	2000
2	Distribution of Milk Cows	Nos	300
3	Fodder Development	Ha.	500
4	Construction of Wells	Nos	NA
5	Check Dams/Cross Bars/ Weirs	Nos	NA
6	Foot Bridges	Nos	50

Source: Western Ghat Development Cell

Appendix 6.10
Division-wise Area of Forest in Kerala (as on 31-3-2003) - Provisional

<i>Area in Sq.kms</i>					
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	1050.336	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	655.486	5.257	31.409	692.152
10	Vazhachal	413.944	-		413.944
11	Chalakkudi	279.710	-		279.710
12	Malayattoor	617.241	0.525		617.766
13	Thrissur	204.293	-	5.715	210.008
14	Mannarkkad	209.982	-	319.586	529.568
15	Nilambur North	57.920	0.017	340.703	398.640
16	Nilambur south	267.389	-	97.763	365.152
17	Palakkad	73.410	-	162.669	236.079
18	Nenmara	205.517	-	150.314	355.831
19	Kozhikode	24.164	22.730	243.088	289.982
20	Wayanad North	134.024	15.064	66.062	215.150
21	Wayanad South	67.518	6.845	272.706	347.069
22	Kannur	206.388	5.497	90.196	302.081
23	Thiruvananthapuram W.L	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	89.516	-		89.516
31	Senthuruni	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
Total:		9284.864	141.567	1837.448	11263.879

Source : Forest Department

Appendix 6.9

**Western Ghat Development Programme for Natural Resource Management
(Physical and Financial Achievements, 2002-03)**

I. Financial Achievement			
Sl. No.	Component	Expenditure (in lakh Rs.)	
1	Soil Conservation	149.25	
2	Minor Irrigation	112.63	
3	Forestry Schemes	NA	
4	Foot Bridges	70.00	
5	Others	981.70	
TOTAL		1313.58	
II. Major Physical Achievements			
Sl. No	Component	Unit	Achievement
1	Soil Conservation	Ha.	2000
2	Distribution of Milk Cows	Nos	300
3	Fodder Development	Ha.	500
4	Construction of Wells	Nos	NA
5	Check Dams/Cross Bars/ Weirs	Nos	NA
6	Foot Bridges	Nos	50

Source: Western Ghat Development Cell

Appendix 6.10
Division-wise Area of Forest in Kerala (as on 31-3-2003) - Provisional

<i>Area in Sq.kms</i>					
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	1050.336	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	655.486	5.257	31.409	692.152
10	Vazhachal	413.944	-		413.944
11	Chalakkudi	279.710	-		279.710
12	Malayattoor	617.241	0.525		617.766
13	Thrissur	204.293	-	5.715	210.008
14	Mannarkkad	209.982	-	319.586	529.568
15	Nilambur North	57.920	0.017	340.703	398.640
16	Nilambur south	267.389	-	97.763	365.152
17	Palakkad	73.410	-	162.669	236.079
18	Nenmara	205.517	-	150.314	355.831
19	Kozhikode	24.164	22.730	243.088	289.982
20	Wayanad North	134.024	15.064	66.062	215.150
21	Wayanad South	67.518	6.845	272.706	347.069
22	Kannur	206.388	5.497	90.196	302.081
23	Thiruvananthapuram W.L	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	89.516	-		89.516
31	Senthuruni	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
Total:		9284.864	141.567	1837.448	11263.879

Source : Forest Department

Appendix 6.13

Forest Revenue in Kerala

(Rs. in Lakhs)

Sl.No.	Items	Sale Proceeds				
		1998-99	1999-00	2000-01	2001-02	2002-03
1	2	3	4	5	6	7
I	Revenue from Forests					
	1. Timber	10183.28	9932.44	11393.74	9121.82	12761.97
	2. Firewoods & Charcoal	163.45	112.41	110.89	20.90	60.33
	3. Livestock	7.26	65.27	2.70	6.56	9.13
	4. Others	1236.59	954.33	1437.08	1619.69	1708.19
	Sub total	11590.58	11064.45	12944.41	10768.97	14539.62
II	Other receipts	627.23	376.50	1201.86	605.16	462.51
	Total Receipts	12217.81	11440.95	14146.27	11374.13	15002.13
III	Refunds	114.77	113.54	22.40	3.81	44.90
	Net Revenue	12103.04	11327.41	14123.87	11370.32	14957.24

Source : Forest Department

Appendix 6.14

Physical Targets & Achievements under General Forestry (2000-01 to 2002-03)

Sl. No.	Item	Unit	2000-01		2001-02		2002-03	
			Target	Achievement	Target	Achievement	Target	Achievement
1	2	3	4	5	6	7	8	9
1	Survey of Forest Boundaries							
a	Boundary demarkation	km	1530	1490.32	-	-	-	-
b	Cairns constructed	Nos	2850	725	10430	434	10170	4617
2	Fire Protection Works							
a	Fireline	km	2183.9	193.6	1440	747.7	1145.99	772.13
b	Fire Watch Tower	Nos	4	3	4	1	-	-
c	Check dam	Nos.	2	-	-	-	-	-
d	Shed	Nos.	3	2	4	-	-	-
e	Pump set	Nos.	-	2	-	-	-	-
3	Cultural Operations							
a	Special tending	Ha.	1242.1	640.81	555	66.36	-	-
b	Clumber cutting	Ha.	1620.2	1303	-	-	-	-
c	Loranthus cutting	No	86000	15000	-	-	-	-
4	Roads							
a	Metalling and Tarring	Km	9.2	4.5	25	4	114.25	67.95
b	Other Road Works	Km	15.2	25.91	29.9	6	-	-
c	Culvert	Nos.	2	-	2	-	2	1
5	Buildings							
a	Spill over works	Nos	-	-	11.5	-	1	1
b	Fire Watch Tower	Nos	-	-	1	1	-	-
c	Check Post	Nos	3	-	-	-	-	-
d	Other Buildings	Nos.	10	-	12	5	1	1
6	Fast Growing Species (IRM)							
a	Replanting/Augmentation	Ha.	6070	25	31	44	86	86
7	Teak							
a	Planting	Ha.	1800	675	225	408	21.75	Nursery raised
8	Soft Wood							
a	Replanting/Augmentation	Ha.	-	-	150	138.5	-	-
9	Bamboo & Reeds							
a	Planting	Ha.	4700	3819	1090	1091	50	25.1
10	Rosewood Project							
a	Planting	Ha.	28	15	-	-	-	-
b	Rosewood Nursery	Nos.	-	-	10	10	-	-
11	Fuelwood & Fodder Development (50% CSS)							
a	Planting Augmentation	Ha.	315	588	244	258	193.6	179.95
b	Nursery beds	Nos.	-	85	170	169	80	80
12	Regeneration of denuded Forests							
a	Planting	Ha.	168	462.62	120	45	25	25
13	Regeneration of desired species							
a	Planting	Ha.	121.5	122.26	57	30	75.5	52.4

Source: Forest Department

Appendix 6.15
KERALA FORESTRY PROJECT
Year-wise Financial Achievement

(Rs. in Lakhs)

Sl. No.	Items / Components of Project	2000-01	2001-02	2002-03	TOTAL
1	2	3	4	5	6
1	Institutional Development & Human Resource Development	32.08	50.69	108.68	191.45
2	FMIS	78.51	159.54	261.15	499.20
3	Project Management	274.51	223.68	181.17	679.36
4	Management of Natural Forests	1197.48	989.26	831.63	3018.37
5	Sustainable Management of Taek Plantation	135.01	181.21	255.94	572.16
6	Productivity Improvement of Pulpwood Plantation	260.99	305.18	277.25	843.42
7	Participatory Management of Degraded Natural Forest areas	43.25	144.40	189.56	377.21
8	Quality improvement of Seed Handling	3.23	7.84	31.40	42.47
9	Quality and Quantity improvement of Planting Stock	293.72	217.95	216.35	728.02
10	Research application in improving Seed Handling and Plant Quality	75.12	122.73	3.46	201.31
11	KFDC Clonal Planting	40.00	158.00	158.25	356.25
12	Extension and Information Services	33.62	36.69	26.85	97.16
13	Tree Management in Public Institutions	10.92	-0.15	0.00	10.77
14	Improvement of fire protection system	172.51	136.20	185.50	494.21
15	Strategy Establishment on Statewide Biodiversity Conservation	1.31	0.30	5.56	7.17
16	Strengthening of Sustainability of PA System	279.69	93.20	56.20	429.09
17	Expansion of Village Eco Development	16.82	42.07	24.71	83.60
18	Understanding public support for Biodiversity Conservation	61.22	53.16	34.77	149.15
19	Others	4.22	0.00	1.30	5.52
Total:		3014.21	2921.95	2849.73	8785.89

Source : Kerala Forest Department

Appendix 6.16
Kerala Forestry Project
 (Yearwise Physical Achievements)

Sl. No.	Items/Components of the Project	Unit	2000-01	2001-02	2002-03
1	2	3	4	5	6
1	Treatment Areas				
	Assisted Natural Regeneration (ANR)	Ha	7355	3157	3214
	Reeds, Rattans & Bamboos (RRB)	Ha	1754	1337	1275
	Rehabilitation of Degraded Forest (RDF)	Ha	4544	1892	1805
	Plantation Teak P1	Ha	358	430	598
	Plantation Pulpwood P2	Ha	1107	934	915
	Sub Total		15118	7750	7807
2	Civil Works				
	Quarters	No	54	45	3
	Office Buildings	No	1	-	-
	Roads / Trekpaths	Km	60	-	-
3	Consultant Studies	No	-	-	25
4	Traing /Workshops/Study tour	No	88	52	221
5	Equipments (Computers & Accessories)	No	45	235	0
6	Vehicles	No	2	11	0

Source : Kerala Forest Department

Appendix 6.17
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	Ernakulam	8454
8	Thrissur	7198
9	Palakkad	28356
10	Malappuram	12367
11	Wayanad	5184
12	Kozhikode	2761
13	Kannur	6980
14	Kasaragod	9814
KERALA		144818

Source: Land Use Board & KSRSEC

Appendix 7.1

Growth of Kerala Power System at a Glance - 2002 and 2003

Sl. No	Particulars	Position as on	
		31-3-2002*	31.3.2003
1	2	3	4
1	Installed Capacity -MW	2601.62	2601.62
2	Maximum Demand _ (System) MW .	2333	2347
3	Generation Per Annum-M.U	7142.18	5521.27
4	Import Per Annum -M.U	5447.51	7330.8
5	Export Per Annum - M.U	11.9	121.2
6	Energy Sales Per Annum-M.U	8667.32	8752.07
7	Energy Losses of Percentage of Energy Available for Sales	30.84	30.41
8	Per capita Consumption- Kwh	395	392
9	220 K.V Lines- CT Km	2577.89	2577.89
10	110 K.V Lines- CT Km	3518.55	3557.59
11	66K.V Lines- CT Km	2924.69	2933.08
12	11 K.V Lines- CT Km	30971.19	31406.00
13	L.T. Lines- CT Km	191930.8	194948.00
14	Step up Transformer Capacity -MVA	2346.48	2346.48
15	No. of EHT Sub Stations	194	198
16	Step down Transformer Capacity -MVA	10573.5	11243.50
17	Distribution Transformers		
	a) Numbers	32282	33039
	b) Capacity - MVA	4217	4228
18	No. of Villages Electrified	1384	1384
19	No. of Consumers(in lakhs)	66.62	69.47
20	Connected Load -M.W	8917.06	9394.40
21	No.of Street Lights	797053	820201
22	No.of irrigation pumps	405900	417640
23	Total Revenue per Annum(Rs. Lakhs)	194599.67	248068.91

Source : KSEB

* Revised

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)	Originally scheduled year of completion	Latest Estimated cost (Rs. in Lakhs)	Expenditure upto 3/2002 (Rs. in Lakhs)	Outlay for- 2003-04 (Rs. in Lakhs)	Expected Year of commissioning (Expected)
1	2	3	4	5	6	7	8	9	10	11	12
1	Malankara 10.5 MW	IDK	65	Au-86	Nov-99	780		4113.00	860.98	740.00	2003
2	Chembukadavu I SHE scheme										
2	2.70 MW	KKD	6.59	Jun-00	Jul-00	1654(1+2)		1138.00			Aug-03
3	chembukadavu II (3.75 MW)	KKD	9.03	Jun-00	20.7.01			1272.00	1248.16	225.00	Aug-03
4	Urumi I -3.75 MW	KKD	9.72		Apr-01			1320.00			2003
5	Urumi II -2.40 MW	KKD	6.28		Nov-01			1095.00			2003
6	Vadakkapuzha Diversion	IDK	12	24-4-01		131		514.00	157.39	60.00	2003
7	Vazhikkadavu Diversion	IDK	24	Jun-89	23-2-00	185		1599.00	799.15	40.00	2003(paritally commissioned final year 2005)
8	Kuttiyadi Tail Race-3.75 MW	KKD	15	May-89	19-10-2000	397		1494.00	814.74	350.00	Apr-03
9	Kuttiayar Diversion	IDK	37	Feb-89	May-92	214		949.00	381.32	300.00	Apr-03
10	Athirapally HE project-163 MW	TCR	386			10254		31590.00	Nil	1000.00	not fixed
11	Bhothathankettu (Private)-16MW		61.5	30-12-94		3283	31-3-99				2006
12	Karikkayam(SHEP) (pvt)-15MW		72.7			3860	31-3-99				2006
13	Kuttiyadi Addl.Extension(100 MW)	KKD	240		Nov-02	6200				1000.00	2005
14	Kuttiyadi Augmentation	KKD	223			1305				1300.00	1-Jun 2005
15	Lower Meenmutty(3.5 MW)	EKM	9.9	Oct-94		495		1238.00		50.00	2005

Appendix 7.3
Power Projects and Power Generation as on 31-3-2003

Sl.No.	Name of Projects and Districts	Installed Capacity (MW)	Firm Power (MW)	Units Generated during 2002-03 (M.U) Gross Energy
1	Pallivasal - Idukki	37.50	32.5	165.15
2	Sengulam- Idukki	48.00	20.8	129.84
3	Neriamangalam- Idukki	45.00	27.0	230.77
4	Panniyar -Idukki	30.00	18.0	80.29
5	Peringalkuthu + LBE Thrissur	32+16	19.6+9.8	208.81
6	Sabarigiri- Pathanamthitta	300.00	153	804.89
7	Sholayar- Thrissur	54	20.6	138.56
8	Kuttiady - + Kuttiyadi Extension-Wayanad	75+50	30.6+8.56	304.34
9	Idukki - Idukki	780	280.2	1914.26
10	Idamalayar-Ernakulam	75	43.3	258.04
11	Kallada- Mini-Kollam	15	6.05	35.79
12	Kanjikode Wind Farm - Palakkad	2	0.4	2.44
13	Peppara- TVPM	3	1.30	4.07
14	Lower Periyar- Idukki	180	56.3	413.13
15	Brahmapuram- Ernakulam	106	73	278.54
16	Madupetty - Idukki	2	0.7	4.04
17	Kakkad, Pathanamthitta	50	30	150.89
18	Kayamkulam (NTPC)	359.00	0	1857.53
19	Kozhikkode (KDPP)	128	102.4	396.27
20	Kasargode Power Corporation	21.93	0	147.65
21	Maniyar (Private)	12	3.70	23.19
22	Kuthungal(Hydro-Captive)	21		23.59
23	BSES (gas-IPP)	157		305.51
24	Malampuzha	2.5		1.15
Grand Total		2602.00	937.8	7878.74

Source: KSEB

Appendix 7.4
Average Tariff Rate

Sl.No	Consumer Category	Average Tariff(in paise/unit)	
		2001-02	2002-03
	2	3	4
1	Domestic	109.42	146.00
2	Commercial	586.10	623.00
3	Public Lighting	152.99	163.00
4	Agriculture	92.26	97.00
5	Public Water Works	206.35	398.00
6	Industry (LT)	362.37	398.00
7	Industry (HT & EHT)	261.56	344.00
8	Railway Traction	198.66	314.00
9	License (HT & EHT)	183.80	205.00
	Overall Average	223.95	280.00

Source: KSEB

Appendix 7.5

Average Realisation from Sale of Power

(Ps per Unit)

Sl.No	Category of Consumer	Average Realisation (Including Electricity duty)	
		31-3-02	31-3-2003
	2	3	4
1	Domestic		
	(a) Paying Group	121.80	161.04
	(b) Non-paying Group		
2	Commercial	636.33	677.39
3	Public lighting	153.17	163.57
4	Irrigation and Dewatering	99.28	106.32
5	Public works	217.04	
6	Industrial		428.39
	(a) LT	388.60	
	(b) HT & EHT	270.95	353.34
7	Bulk Supply	182.21	205.28
8	Outside Suplies		
9	Railway Traction	198.66	314.55
10	Inter State		391.97

Source: KSEB

Appendix 7.6

Pattern of Power Consumption and Revenue Collected During 2002-03

Sl. No.	Category	No. of Consumers as on 31-3-2003	Connected Load as on 31-3-2003 (M.W)	Energy Sold (M.U)	Consumption as % to total	Revenue Collected (Rs. Lakhs)	Revenue As percentage to Total
1	Domestic						
	(a) Paying Group	5414544	5586.90	3792.42	43.42	55585.19	22.41
	(b) Non-paying Group	44540	11.90	7.83			
2	Commercial L.T.+HT	990420	1127.70	1091.46	12.47	52034.19	20.97
3	Public lighting	2325	88.90	155.62	1.78	2543.45	1.02
4	Irrigation&Dewatering-LT+HT	390524	711.30	183.47	2.09	1678.27	0.68
5	Public Water Works.L.T.						
6	Industrial **						
	(a) LT	104281	1131.60	679.27	7.76	27035.79	10.90
	(b)HT & EHT	978	641.30	2492.47	28.48	99232.64	40.00
7	Railway Traction	4	24.50	46.40	0.53	1459.52	0.59
8	Bulk Supply to licensee	7	24.30	182.65	2.09	3749.20	1.51
9	Outside Supply(TNEB Sales)@			121.20	-	4750.66	1.92
10	Miscellaneous *	180	45.9	120.51	1.38	-	-
	Total	6947803	9394.3	3873.3	100	248068.91	100

Source: KSEB

Total excluding NPG *

* NPG: Non Paying Group

@Percentage of consumption is arrived excludes TNEB sales

** Including Public Water works L T

* Including Non-domestic, Non-commercial

Appendix 7.7

Sources of Funding of the Power Programmes of K.S.E.B. for the year 2002-03

(Rs. Lakhs)

No.	Particulars	2001-02	2002-03
1	2	3	4
1 a)	Loan from State Government under Section 64 of Electricity Supply Act 1948	1484.00	1900.00
b)	Loan from Rural Electrification Corporation Ltd.	52353.03	78817.67
2	Borrowings under Section 65	--	--
a)	Loan from LIC of India	--	3000
b)	Assistance from IDBI	8046.89	5151.28
c)	Loan from PFC	925.21	--
d)	Loans from Banks through REC	388.63	--
e)	Loan from SIDBI	762.82	618.68
f)	Foreign Currency Loan	479.03	2537.24
g)	OEFC	357.06	--
3	Non-SLR Bonds	--	19061
4	Receipts under OYEC Scheme/Service Connection Charges/Contribution from Panchayats	9718.66	11887.96
5	Medium Term Loan	--	--
6	Borrowings and Reserves	--	--
a)	Pension Fund/Provident Fund *	10877.68	(-)2689.28
b)	Deposits and other Debit Heads	3696.57	16399.74
7	Other Internal Resources	--	--
8	Loan from Kerala PFC	2488.86	23088.41
9	EDC Kuttiyadi	434.64	--
10	EDC-PSP	1311.25	434.49
11	Loan from State Government for APD R P	--	3000
12	Loan from State Government for PMGY (RE)	--	416.15
	Total	93324.33	163623.34

*Payment of GPF advance is more than the recovery of PF subscription

Appendix 8.1

Index of Industrial Production 2000-2001 & 2001-02 : Base (1980-81=100)

SL. NO.	Item	Weight	Index for	
			2000-2001	2001-02
1	2	3	4	5
	General Index	100.00	360.20	302.29
1	Manufacture of Food Products	8.82	143.990	119.181
2	Manufacture of beverages, tobacco and related products	1.46	128.195	191.497
3	Manufacture of Cotton Textiles	8.02	135.923	151.688
4	Manufacture of wool, silk and man made fibre textiles	1.26	72.496	33.054
5	Manufacture of Textile products	3.26	17.134	17.207
6	Manufacture of wood and wood products	1.35	43.781	31.521
7	Manufacture of Paper and Paper products	3.16	0.000	0.000
8	'Manufacture of basic chemicals and chemical products (Except Petroleum and Coal)	19.78	308.943	426.998
9	'Manufacture of rubber, plastic, petroleum and coal products and processing of unclear fuels.	10.06	193.725	177.996
10	Manufacture of non-metallic mineral products	3.42	175.005	267.228
11	Basic Metals and Alloys Industries	3.43	92.422	79.944
12	Manufacture of metal products and parts except machinery and equipment	0.50	787.536	660.355
13	Manufacture of Machinery and equipments other than transport equipment	9.46	2066.235	1226.269
14	Manufacture of Transport equipment and parts	2.67	9.019	9.820
15	Other Manufacturing Industries	1.42	39.883	28.650
16	Electricity generation, transmission and distribution	21.93	194.694	187.811

Source : Directorate of Economics & Statistics, Tpm.

Appendix 8.2

Growth Of Working Factories And Average Daily Employment
In Kerala - 1990-2002

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(p)	18038	564	18602	328875	108465	437340

* Revised

(p) provisional

Source : Directorate of Economics and Statistics , Thiruvananthapuram

Appendix 8.3
District Wise Distribution of Registered Working Factories in Kerala from 1990 to 2002

No	Districts	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001*	2002(p)
1	Thiruvananthapuram	655	606	712	864	855	809	850	868	892	923	898	897	901
2	Kollam	1179	1188	1415	1440	1425	1498	1654	1735	1787	1899	1927	1905	1908
3	Pathanamthitta	292	586	329	366	442	363	382	430	470	498	526	532	534
4	Alappuzha	750	802	901	921	1098	1024	1059	1111	1140	1194	1211	1213	1218
5	Kottayam	963	799	1098	1127	1126	1180	1247	1283	1293	1302	1294	1297	1301
6	Idukki	278	289	292	302	251	290	303	305	303	341	325	326	325
7	Ernakulam	1931	1933	2274	2299	2294	2364	2543	2686	2700	2924	2931	2937	2946
8	Thrissur	1692	1591	1939	1986	1987	1944	2084	2188	2364	2547	2557	2559	2563
9	Palakkad	1220	1330	1574	1638	1692	1620	1774	1972	1966	2028	1993	1975	1980
10	Malappuram	672	650	816	856	857	815	894	912	924	963	995	1003	1008
11	Wayanad	122	125	129	126	128	128	151	180	176	139	140	141	142
12	Kozhikode	1386	1981	1565	1635	1703	1582	1656	1778	1777	1749	1764	1768	1770
13	Kannur	1137	1182	1359	1369	1296	1473	1579	1614	1636	1738	1716	1729	1734
14	Kasargode	171	193	205	203	151	241	258	274	291	259	267	272	272
	Total	12448	13255	14608	15132	15305	15331	16434	17336*	17719	18504	18544	18554	18602

* Revised

(p) Provisional

Source: Directorate of Economics & Statistics, Thiruvananthapuram

Appendix 8.4
District wise Distribution of Employment in Kerala- 1995 to 2002

Sl.No.	District	No. of Employment									
		1995	1996	1997	1998	1999	2000	2001*	2002(P)		
1	Thiruvananthapuram	28431	29013	28300	29582	29502	29123	29188	29202		
2	Kollam	103706	120973	139283	143957	134112	137014	135518	135723		
3	Pathanamthitta	8522	9302	9863	10880	11873	12325	12660	12702		
4	Alappuzha	22366	23719	24058	24839	25149	26359	26216	26312		
5	Kottayam	17482	17544	17692	18389	17436	17504	17508	17610		
6	Idukki	6269	7668	7958	7887	7982	8032	7842	7840		
7	Ernakulam	65626	70117	70340	71988	64949	64815	64102	64307		
8	Thrissur	40376	36361	38261	41338	37599	36206	36213	36115		
9	Palakkad	19552	23036	24329	24442	24425	24462	24337	24457		
10	Malappuram	9144	9869	9954	10344	12917	13357	13409	13497		
11	Kozhikode	30358	31506	28978	29371	26653	25822	17004	17108		
12	Wayanad	2377	2759	3387	2600	16983	17001	25722	25712		
13	Kannur	18595	20286	23278	23807	23810	23562	23484	23550		
14	Kasarode	2344	2914	4159	4417	3084	3168	3207	3205		
	TOTAL:	375148	405067	429840	443841	436474	438750	436410	437340		

* Revised

(P) Provisional

Source:- Directorate of Economics and Statistics, Thiruvananthapuram

Appendix 8.5
Industrial Disputes Arose, Handled, Settled etc. in Kerala (1998-99 to 2002-03)

Sl.No.	Particulars	1998-99	1999-00	2000-01	2001-02	2002-03
1	2	3	4	5	6	7
1	No. of disputes pending at the beginning of the year	3844	3287	2409	2241	2263
2	No. of disputes that arose during the year	5272	5339	4123	3356	4005
3	No. of disputes handled during the year(1+ 2)	9116	8626	6532	5597	6268
4	No. of disputes settled during the year					
	a.By voluntary negotiation between parties	1228	1310	791	578	866
	b. By conciliation	1520	1630	1210	922	1391
	c. By withdrawal	2575	2603	1834	1428	1230
	d.Referred for Arbitration	0	0	0	0	0
	e. Referred for Adjudication	506	674	456	406	392
	f.Total number of disputes settled (a to e)	5829	6217	4291	3334	3879
5	Number of disputes pending at the year (3 - 4)	3287	2409	2241	2263	2389
6	Number of disputes led to		0			
	a. Strike (including pending previously)	16	28	21	9	7
	b. Lockout including pending previously	23	45	40	38	49
	c. Total (a + b)	39	73	61	47	56
7	No. of workers affected due to					
	a. Strike	4754	166603	198040	29827	403510
	b. Lockout	7316	13661	8553	6700	12412
	c. Total (a + b)	12070	180264	206593	36527	415922
8	Mandays lost					
	a. Strike	369234	1507008	279914	392172	6404348
	b.Lockout	719419	813197	0	1405805	1772811
	c. Total (a + b)	1088653	2320205		1797977	8177159

Source: Office of the Labour Commissioner - Thiruvananthapuram

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	480518	13504	2.81

Source: Reports of the Public Enterprises Survey, Government Of India.

Appendix 8.7
Central Sector Investment in Selected States as
on 31-03-2002

Name of State	As on 31-03-2002	
	Gross Block (Rs. Crores)	Employment (No. lakhs)
Kerala	13504	0.40
Karnataka	18041	0.94
Andhra Pradesh	38172	1.11
West Bengal	28712	2.85
Gujarat	34418	0.53
Maharashtra	81278	2.43
Orissa	27131	0.75
Uttarpradesh	33551	1.07
Assam	21192	0.60
Tamilnadu	33058	1.10
All India	480518	18.84

Source: Survey of Public Enterprises, 2001-02

Appendix 8.8
Capital Investment and Employment in respect of Government of India
Companies functioning in Kerala

Sl.No	Name of Company	(Rs. Lakh)			
		Investment in capital as on		Employment as on	
		31-3-2002	31-3-2003	31-3-2002	31-3-2003
1	Hindustan Organic Chemicals Ltd.	3342	3342	472	466
2	Hindustan Newsprint Ltd.	8253.99	N.A.	1253	N.A.
3	Cochin Refineries Ltd.	84931	74464	2005	1976
4	Hindustan Latex Ltd.	1731.31	1635.52	1806	1837
5	Vijayamohini Mills	1637.05	1847.97	338	322
6	Hindustan Machine Tools Ltd.	3761.72	4046.43	994	870
7	Fertilizers and Chemicals Travancore Ltd.	90055.46	99271.94	6466	5788
8	Alagappa Textiles(Cochin) Mills	2045.04	2553.2	830	815
9	Instrumentation Ltd.	2781.43	2840.62	379	351
10	Cannanore Spinning & Weaving Mills	657.44	658.86	190	179
11	Kerala Lekshmi Mills, Thrissur	1580.26	1915.85	536	536
12	Indian Rare Earths Limited	9318.23	10029.74	572	536
13	Modern Food Industries(India) Ltd.	..	..	..	158
14	Hindustan Insecticides Ltd.	6895.45	6293.29	566	534
15	Cochin Shipyard Ltd.	35047.05	32825.13	2232	2189

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	
		2001-02	2002-03	2001-02	2002-03
1	2	3	4	5	6
1	Hindustan Organic Chemicals Ltd.	17760	27777	16085.32	28079.37
2	Hindustan Newsprint Ltd.	N.A.	N.A.	96042	N.A.
3	Cochin Refineries Ltd.	588099	947401	675825	104820
4	Hindustan Latex Ltd.	10191.00	11813	11905.22*	13231.41
5	Vijayamohini Mills	1532.33	1329.15	1019.48	1105.13
6	Hindustan Machine Tools	5166	4373	5578	4419
7	Fertilisers and Chemicals Travancore Ltd.	114768	99296	127396.00	118150
8	Algappa Textiles (Cochin) Mills Ltd.	1574	1293	1587	1305
9	Instrumentation Ltd.	2968	3150	3530	3765
10	Cannanore Spinning and Weaving Mills	1229	1495	1276.00	1413.00
11	Kerala Lekshmi Mills, Thrissur	2984	2149	1833	1955
12	Indian Rare Earths Limited	4646	4061	7722	10429
13	Modern Food Industries(India) Ltd.	1536	1451	1903	1782
14	Hindustan Insecticides Ltd.	Nil	8561	7831	6069
15	Cochin Shipyard Ltd.	20929	23119	21025	23516

* Revised

Source: Reports of Companies Concerned

Sl.No.	Name of Company	Name of Product	Unit	Installed capacity as on					Production during					Capacity utilisation %	
				31-03-2002	31-03-2003	31-03-2002	31-03-2003	31-03-2002	31-03-2003	31-03-2002	31-03-2003	31-03-2002	31-03-2003		
1	2	3	4	5	6	7	8	9	10						
8	Alagappa Textiles(Cochin) Mills	Cotton, Yarn/Blended yarn	Kgs(Lakh)	49532 (Spindles)	49532 (Spindles)	16.84(L.)	15.95(L.)	..	..				
9	Instrumentation Ltd.	1.Process control valves 2.Safety relief valves & Pr.Reducing Valves 3.Orifice plates & Flow measuring Devices	Nos	7500	7500	2104	3643	2849	1721						
10	Cannanore Spinning & Weaving mills	Yarn in different counts	Kgs(Lakhs)	24800	24800	13.91	16.36	..	..				
11	Kerala Lekshmi Mills	Cotton and PC/PV Blended yarn	Kgs(Lakhs)	41328	41328	20.21	20.35	..	..				
12	Indian Rare Earths Limited	Ilmanite	MT	154440	154440	138951	104374	90	68						
		Zircon	MT	11220	11220	13075	11782	147	105						
		Rutile	MT	9900	9900	7212	5736	73	58						
		Sillimonite	MT	7080	7080	6759	4406	95	62						
		Leocoxene	MT	1440	1440	478	208	33	14						
		Zirflor	MT	5000	5000	8282	4062	105	81						
		Microzir	MT	800	800	112	115	14	14						
13	Modern Food Industries(India) Ltd.	Modern Bread/Cake	400g. SL	287	287	255.98	230.45	89	80						
14	Hindustan Insecticides Ltd.	Tech. DDT	MT	..	..	760.12	667.23	..	..				
		Form DDT	MT	..	..	1316.4	1193	..	..				
		Tech. Endosulphan	MT	..	..	796.36	1532.2	..	..				
		Form Endosulphan	KL	..	..	783.32	967.48	..	..				
		Dicofol Tech.	MT	..	..	107.11	95	..	..				
		Dicofol Form	MT	..	..	78.98	32.31	..	..				
		Hilban	MT	..	..	172.45	142.62	..	..				
		Mancozeb	MT	..	..	..	45.58	..	..				
15	CochinShipyard Ltd.	Ship (Building)	DWT	150000	150000	55200	68166	37	45						

Source: Reports from Companies concerned

Appendix 8.11
District wise break up of Medium and Large Scale Industries
in Kerala as on 31-03-2003

Sl.No.	Districts	Central sector	State sector	Co			Total
				operative sector	Joint sector	Private sector	
1	2	3	4	5	6	7	
1	Trivandrum	2	14	1	4	60	81
2	Kollam	2	7	2	..	19	30
3	Alappuzha	1	6	..	3	24	34
4	Kottayam	1	2	2	..	22	27
5	Pathanamthitta	..	1	1	1	5	8
6	Idukki	..	..	1	1	14	16
7	Eranakulam	12	8	1	4	209	234
8	Thrissur	2	8	1	7	39	57
9	Palakkad	2	2	2	6	71	83
10	Malappuram	..	5	1	2	19	27
11	Kozhikode	..	3	1	1	23	28
12	Wayanad	..	..	..	..	5	5
13	Kannur	1	6	3	..	13	23
14	Kasargod	..	1	..	..	1	2
TOTAL:		23	63	16	29	524	655

Source: Kerala State Industrial Developmet Corporation (KSIDC), Thiruvananthapuram

Appendix 8.12
Units assisted by K.S.I.D.C AS ON 31-3-2003

Sl.No.	Districts	No. of Units		Project Cost (Rs.Lakhs)	
		Public Sector	Private Sector	Public Sector	Private Sector
1	2	3	4	5	6
1	Thiruvananthapuram	9	38	14502	19892
2	Kollam	4	10	3297	2899
3	Alappuzha	3	28	2161	25930
4	Pathanamthitta	1	17	644	938
5	Idukki	..	6	..	6373
6	Kottayam	..	14	..	19368
7	Ernakulam	4	154	20293	183695
8	Thrissur	4	37	2086	23186
9	Palakkad	1	73	1373	82020
10	Malappuram	..	21	..	6057
11	Kozhikode	3	16	1628	5362
12	Wayanad	..	6	..	1132
13	Kannur	1	10	220	17458
14	Kasargode	1	1	87	178
TOTAL:		31	431	46291	400488

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. in lakhs)						Employment (Nos.)		
		as on 31-3-2002		as on 31-3-2003		as on 31-3-2002		as on 31-3-2003		
		3	4	3	4	5	6	5	6	
1	Kerala Electrical and Allied Engineering Co. Ltd, Kochi	7598.81*	7372.55	1325	1278					
2	Kerala State Electronics Development Corporation Ltd, Thiruvananthapuram	27157.58	28751.25	1653	1540					
3	Malabar Cements Ltd, Palakkad	3033.74	2973.86	1086	1075					
4	Kerala Clays & Ceramics Products Ltd, Kannur	131.82	131.82	386	366					
5	Sitaram Textiles Ltd, Thrissur	2618.48	2834.5	382	682					
6	Kerala Hitech Industries Ltd, Thiruvananthapuram (KFI TFC)	2056.8	2056	256	247					
7	Autokast Ltd, Alappuzha	5848.27	N.A.	466	N.A.					
8	Kerala Automobiles Ltd, Thiruvananthapuram	1227.33	1110.92	384	377					
9	Steel Industrials Kerala Ltd, Thrissur	7216.89	7065.78	357	343					
10	Kerala State Textile Corporation Ltd, Thiruvananthapuram	3543.52	3653.03	1213	1166					
11	Kerala Minerals and Metals Ltd, Kollam	3093.27	3471.4	1328	1380					
12	Steel and Industrial Forgings Ltd, Thrissur	1461.00	1461	260	257					
13	Scooters Kerala Ltd, Alappuzha	472.00	N.A.	70	N.A.					
14	Foam Mattings India Ltd, Alappuzha	515.23	N.A.	189	N.A.					
15	Kerala State Drugs & Pharmaceuticals Ltd., Alappuzha	3274.94*	3304.94	408	402					

Source:- Reports of Companies Concerned

* Revised

Appendix 8.14

Performance of Govt. owned companies in Kerala in terms of Value of Production and sales Turnover
(Rs. Lakhs)

Sl. No.	Name of Company	Value of Production			Sales Turnover		
		2001-02	2002-03	2002-03	2001-02	2002-03	2002-03
1	2	3	4	5	6		
1	Kerala Electrical and Allied Engineering Co. Ltd, Kochi	3109.76	5655.29	3453.98*	4945.75		
2	Kerala State Electronics Development Corporation Ltd, Thiruvananthapuram	4633.98	3307.71	6927.84	6903.58		
3	Malabar Cements Ltd, Palakkad	12867.52	10418.34	12185.62	10946.4		
4	Kerala Clays & Ceramics Products Ltd, Kannur	302.75	271.03	296.29	370.08		
5	Sitaram Textiles Ltd, Thrissur	629.82	352.89	717.18	406.3		
6	Kerala Hitech Industries Ltd, Thiruvananthapuram (KELTEC)	NA	NA	712.24	897.13		
7	Autokast Ltd, Alappuzha	1193.47	NA	1244.36	NA		
8	Kerala Automobiles Ltd, Thiruvananthapuram	4183.93	4463.32	4429.51	4607.71		
9	Steel Industrials Kerala Ltd, Thrissur	NA	NA	1715.84	1980.33		
10	Kerala State Textile Corporation Ltd, Thiruvananthapuram	4336.45*	4409.98	3913.99	3961		
11	Kerala Minerals and Metals Ltd, Kollam	17288.1	19537.44	29797.97	29314.07		
12	Steel and Industrial Forgings Ltd, Thrissur	1542	2115	1850.00*	2026		
13	Scooters Kerala Ltd, Alappuzha	75.61	NA	114	NA		
14	Foam Mattings India Ltd, Alappuzha	NA	NA	2137.59	NA		
15	Kerala State Drugs & Pharmaceuticals Ltd., Alappuzha	NA	NA	477.40*	472.96		

Source:- Reports of Companies Concerned

* Revised

**Appendix 8.15
Production and Capacity Utilization of Government Owned Companies in Kerala during 2001-02 and 2002-03**

Sl. No.	Name of Company	Name of products	Unit	Installed Capacity as on						Production During		Capacity Utilization %	
				31-3-2002	31-3-2003	2001-02	2002-03	2001-02	2002-03	2001-02	2002-03		
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	KVA TON Nos TON Nos Nos Nos	120000 1200 120000 1500 1500 133000 3000	120000 1200 120000 1500 1500 133000 3000	210032 415 455 200427 687	228411 655 232580 778	175.03 34.58 30.33 150.7 22.9	190 44 175 26				
2	Kerala State Electronics Development Corporation Ltd, Thiruvananthapuram	Various Electronic Products											
3	Malabar Cements Ltd, Palakkad	Portland Cement	M.T	420000	420000	393710	410439	93.74	98				
4	Kerala Clays and Ceramic Products Ltd, Kannur	ChinaClay Bricks Laterite	M.T.S Nos M.T.S	N.A N.A N.A	N.A N.A N.A	9505 174277 16323	10286 192732 16917	.. .. ..	.. .. ..		
5	Sitaram Textiles Ltd, Thrissur	Cotton Yam Cotton Fabrics	Kg mts.	12064 10000	12064 10000	542775 ..	326545 ..	.. ..	.. ..		
6	Kerala Hitech Industries Ltd, Thiruvananthapuram (KELTEC)												
7	Autokast Ltd, Alappuzha	GI Castings SGI Castings Steel Castings	MT MT MT	.. 23000 ..	.. 23000 ..	Not available 2824.32 489.19 ..	N.A N.A N.A	.. .. ..	.. .. ..		

Production is reported in terms of value and not in terms of quantity

Sl. No.	Name of Company	Name of products	Unit	Installed Capacity as on					Production During					Capacity Utilization %	
				31-3-2002	31-3-2003	2001-02	2002-03	2001-02	2002-03	2001-02	2002-03	2001-02	2002-03		
1	2	3	4	5	6	7	8	9	10						
8	Kerala Automobiles Ltd, Thiruvananthapuram	Autorickshaw	Nos	7200	7200	6460	6900	89.72	96						
9	Steel Industrials Kerala Ltd, Thrissur	Structural Steel Fabrication Cast Iron	MT MT	3000 1200	3000 1200	207.00* 397	148 153	7 33.08	5 13						
10	Kerala State Textile Corporation Ltd,	Cotton/Blended Yarn	Spindles	86236	86236	27.05 (Kg lakh.)	26.75(Kg. lakh)	..	..				
11	Thiruvananthapuram Kerala Minerals & Metals	Titanium Dioxide	MT	22000	22000	25612	28136	116.42	128						
12	Steel and Industrial Forgings Ltd, Thrissur	Steel Forgings	MT	7500	7500	2063	2115	27.51	28						
13	Scooters Kerala Ltd, Alappuzha	Iron & Steel Products		production details not reported											
14	Foam Mattings (India) Ltd, Alappuzha	Mattings plant Latex backing plant	M2 M2	523000	523000	131643	..	25.17	..						
15	Kerala State Drugs & Pharmaceuticals Ltd., Alappuzha	Tablets Powders Capsules Liquids Parentrals 1. Bottles 2. Vials 3. Ampules 4. Vitamin A	Lac Nos Lac Pkts. Lac Nos Lac Ltr. Lac Nos Lac Nos Lac Nos Mmu	2514 0 149 2.25	2514 0 149 2.25	2433.2 3.58* 66.38* 0.51*	1764 3.38 52.01 0.38	96.78 .. 45 23	70 .. 35 17						
				4.5	4.5	5.7	7.24	127	161						
				15	15	0.58	1.96	4	13						
				60	60	29.75*	12.55	50	21						
				30	30	1.0472	3.28	3.49	11						

Source: Reports of the Companies Concerned

*Revised

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.)	
		2001-02	2002-03	2001-02	2002-03
1	2	3	4	5	6
1	Traco Cable Company Ltd, Kochi	2677.01	N.A.	714	N.A.
2	Travancore Titanium Products Ltd, Thiruvananthapuram	176.75	176.75	1380	1293
3	The Travancore Cochin Chemicals Ltd, Kochi	7144.45	6990.58	1000	962
4	Keltron Electroceramics Ltd, Malappuram	502.64	495.38	101	100
5	The Travancore Cements Ltd, Kottayam	50	N.A.	544	N.A.
6	Keltron Counters Ltd, Thiruvananthapuram	1614.07	N.A.	265	N.A.
7	The Metal Industries Ltd, Shoranur	184*	215.86	106	98
8	United Electrical Industries Ltd, Kollam	NA	N.A.	NA	N.A.
9	The Travancore Sugars and Chemicals Ltd.	229.51	229.51	153	152
10	Forest Industries (Travancore) Ltd, Aluva	248.51	N.A.	134	N.A.
11	Keltron Magnetics Ltd, Kannur	308.84	350.7	29	29
12	Transformers and Electricals Kerala Ltd.	1382.14	1386.07	1342	1342
13	Keltron Resisitors Ltd, Cannanore	243.57	245.84	47	47
14	Keltron Component Complex Ltd.	1929.85	2287.78	320*	320
15	Keltron Crystals Ltd.	1003.00*	1128.4	85*	85

*Revised

Source: Reports of the Companies Concerned

Appendix 8.17

Performance of Government Majority Companies in Kerala in terms of value of production and Sales Turn over

(Rs. Lakh)

Sl. No.	Name of Company	Value of Production		Sales Turnover	
		2001-02	2002-03	2001-02	2002-03
1	2	3	4	5	6
1	Traco Cable Company Ltd, Kochi	3805.07	N.A.	3430.70	N.A.
2	Travancore Titanium Products Ltd, Thiruvananthapuram	9834.48	6783.55	9428.87*	6802
3	The Travancore Cochin Chemicals Ltd, Kochi	10868.00	8705.00	10988.26	8672.09
4	Keltron Electroceramics Ltd, Malappuram	279.08*	352.23	378.35	376.14
5	The Travancore Cements Ltd, Kottayam	2807.25	N.A.	2798.25	N.A.
6	Keltron Counters Ltd, Thiruvananthapuram	425.52	N.A.	486.02	N.A.
7	The Metal Industries Ltd, Shoranur	86.80	200.00	220.00	269
8	United Electrical Industries Ltd, Kollam	NA	N.A.	NA	N.A.
9	The Travancore Sugars and Chemicals Ltd.	459.54*	297.87	320.76	161.46
10	Forest Industries (Travancore) Ltd, Aluva	329.00	N.A.	340.78	N.A.
11	Keltron Magnetics Ltd, Kannur	160.81*	200.95	183.83	255.78
12	Transformers and Electricals Kerala Ltd.	5968.00	7930.00	6524.30	8290.6
13	Keltron Resisters Ltd., Cannanore	149.30	138.66	170.68	154.2
14	Keltron Component Complex Ltd.	2237.55	2822.39	2693.29	3014.21
15	Keltron Crystals Ltd.	67.96	61.47	74.11	68.3

* Revised

Source: Reports of companies concerned

Appendix 8.18

Production and Capacity Utilization of Government Majority Companies in Kerala during 2001-02 and 2002-03

Sl. No.	Name of Company	Name of Products	Unit	Installed Capacity as on			Quantity of Production			Capacity Utilization %	
				31-3-2002	31-3-2003	31-3-2002	31-3-2002	31-3-2003	31-3-2002	31-3-2003	
1	Forest Industries (Travancore) Ltd, Aluva	Wooden Furniture and Joineries	m ³	1500	N.A.	530.098	N.A.	35.34	N.A.	N.A.	
2	The Travancore Cements Ltd	1.White Cement 2.Cement Paint	M.T M.T	30000 2500	30000 2500	22355 1618	.. ..	74.52 64.72	.. ..	.. ..
3	Keltron Counters Ltd, Thiruvananthapuram	1.Counting Devices 2.Defence Products 3.Electronic Energy Meters	Nos. Nos. Nos.	.. .. ..	.. .. ..	336311 1764 11930	.. .. ..	.. .. ..	.. .. ..	.. .. ..
4	Keltron Magnetics Ltd, Kannur	1.Servo Controlled Voltage Stabilizer 2.Uninterrupted Power Supply Systems 3.MPPCAPS	Nos. Nos. No	100 50 720000	100 .. 720000	6 .. 611702	.. .. 13311	6 .. 84.96	6 .. 88.74	.. .. 126.35
5	Travancore Titanium Products Ltd, Thiruvananthapuram	Titanium Dioxide Spirit I.M.F.L.(lakh)	M.T B.L B.L	15000 2820000 6.21	15000 2820000 6.21	13311 263380 6.92	11137 483844 3.05	88.74 9 111	74.25 17 49	N.A. N.A. N.A.	
7	Traco Cable Company Ltd, Kochi	AAC / ACSR PVC Covered Conductors JFTC	MCM LCKM JFTC	32.918364 2.5 15	N.A. N.A. N.A.	0.606 0.59 6.67	N.A. N.A. 86.71	1.84 23.6 44.47	N.A. N.A. ..	N.A. N.A. ..	
8	The Metal Industries Ltd, Shoranur	JFTC 1.Mammatties 2.All Axes 3.Pick Axes 4.Crow Bar 5.Sledge Hammer 6.Others	MT MT MT MT MT MT	272 272	272 272	17.09 8.34 43.66 8.76	31.49 5.86 101.66 22.28	.. .. .. ..	.. .. .. ..	.. .. .. ..

Appendix 8.19
Details of Joint Stock Companies working in Kerala

SLNo	Particulars	Private Limited	Public Limited	Total
1	2	3	4	5
1	Number of Joint Stock Companies in Kerala as on 31.3.2002	10909	1408	12317
2	Number of Companies newly registered during 2002-03	695	28	723
3	Number of Companies transferred from other States during 2002-03	..	..	..
4	Number of Companies wound up dissolved / struck off/amalgamated during 2002-03	68	3	71
5	Number of Companies transferred to other States during 2002-03	2	2	4
6	Net addition to the total No.of Joint Stock Companies in Kerala during 2002-03 (Item (2+3)- (4+5))	625	23	648
A	No.of companies converted from public to private	0	0	11
B	No.of companies converted from private to public	0	0	17
7	Total No.of Joint Stock Companies in Kerala as on 31.3.'2003 (Item 1+6)	11534	1437	12971
8	Total No.of Government Companies registered in Kerala as on 31-3-2003	60	51	111
9	Total No.of Government Companies registered in Kerala during 2002-03	..	..	..
10	No.of government Companies wound up during 2002-03	..	..	..
11	Net addition to the total No.of Government Companies in Kerala during 2002-03 (Item 9-10)	..	..	..
12	Total No.of Government Companies in Kerala as on 31.3.2003 (Item 8+11)	60	51	111
13	Name of Government Companies, newly registered in Kerala during 2002-03	..	..	..
14	Name of Government Companies, wound up during 2002-03	..	..	..
15	No.of other major companies would up during 2001-02	..	..	..

Source : Registrar of Joint Stock Companies, Kochi.

Appendix 8.20
District - wise details of Small Scale Industrial units Registered in Kerala during the year 2002-03

District -	Number of SSI units promoted by						Investment(R s. in lakhs)	Value of goods and services produced (Rs. in lakhs)	Employment provided (Nos.)	Total No. of units commenced commercial operations
	SC	ST	3	4	5	6					7	8	9	10
Thiruvananthapuram	23	2	453	905	1383	1821.85	7781.18	5876	1383	
Kollam	36		365	1234	1635	1153.72	2125.62	4214	1635	
Pathanamthitta	17		327	363	707	477.97	1593.88	1835	707	
Alapuzha	6		397	532	935	939.71	6732.37	3454	935	
Kottayam	19		314	950	1283	1576.56	5255	3030	1283	
Idukki	8	2	94	135	239	775.69	1824	797	239	
Ernakulam	-		443	1113	1556	4564.29	128224.5	6873	1556	
Thrissur	4		253	990	1247	1499.4	6110.26	4373	1247	
Palakkad	7		108	808	923	1024.13	4245.06	2060	923	
Malappuram	1		101	458	560	1513.16	7593.52	2371	560	
Kozhikode	27		141	740	908	1144.69	7226.01	2671	908	
Wayanad			46	89	135	193.17	49.33	1109	135	
Kannure	-		74	520	594	1100.84	5386.95	2168	594	
Kasaragode				229	229	689.97	2787.42	1227	229	
Total	148	4	3116	9066	12334	18475.15	186935.1	42058	12334	

Source : Directorate of Industries & Commerce, Tvpm.

Appendix 8.21
District-wise Details of Small Scale Industrial Units Registered in Kerala as on 31st March 2003

District	Number of SSI units promoted by				Total	Investment (Rs lakhs)	Total Value of goods and services produced (Rs lakhs)	Employment provided (Nos)
	SC/ST	Women	Others	4					5	6	7	8
Thiruvananthapuram	1323	6065	21530	28918	32626.58	111356.6	114286	
Kollam	1867	6208	18082	26157	33360.59	82645.89	167751	
Pathanamthitta	748	2748	9616	13112	11978.4	26629.49	43999	
Alapuzha	760	5297	18434	24491	26912.3	100125.78	112768	
Kottayam	580	4555	22606	27741	31534.1	69863.64	91242	
Idukki	458	2335	4288	7081	8821.48	25608.75	24976	
Ernakulam	855	5007	29321	35183	87225.54	481061.7	164356	
Thrissur	1205	4226	22841	28272	52880.04	158061.7	114594	
Palakkad	708	3878	16930	21516	30664.02	58832.09	99671	
Malappuram	875	1880	9969	12724	20530.13	74285.49	50563	
Kozhikode	453	2753	16689	19895	21531.36	85510.42	83694	
Wayanad	308	1639	2605	4552	5194.33	10630.77	16613	
Kannure	338	1646	11796	13780	19430.33	101044.86	93278	
Kasaragode	165	864	5893	6922	8429.33	22715.51	37741	
Total	10643	49101	210600	270344	391118.53	1408372.69	1215532	

Source : Directorate of Industries & Commerce

Appendix 8.22

Working Status of Small Scale Units as on 31st March 2003

District	Total No. of Units	Number of UNits identified as			Units revived by D I C during 2002-03
		Sick	Registered	Revived	
1	2	3	4	5	6
Thiruvananthapuram	28918	498	269	122	
Kollam	26157	511	275	125	4
Pathanamthitta	13112	244	59	55	3
Alappuzha	24491	468	227	191	7
Kottayam	27741	621	316	254	9
Idukki	7081	130	49	23	
Ernakulam	35183	1641	279	124	
Trissur	28272	470	148	63	4
Palakkad	21516	301	118	52	9
Malappuram	12724	225	62	6	3
Kozhikode	19895	402	251	106	2
Wayanad	4552	80	46	17	1
Kannur	13780	250	117	38	
Kasaragod	6922	100	4	5	
Total	270344	5941	2220	1181	42

Source : Directorate of Industries & Commerce

Appendix 8.23

Achievement under Self Employment Programme during 2002-03(PMRY)

District	Target	Applications sanctioned and amount disbursed during 2002-03			
		Sanctioned		Disbursed	
		Number	Amount (Rs.in lakhs)	Number	Amount (Rs. In lakhs)
1	2	3	4	5	6
Thiruvananthapuram	1900	1281	662.27	693	360.43
Kollam	1700	1446	754.8	773	419
Pathanamthitta	750	638	385.08	463	265.85
Alappuzha	1250	1090	554.15	736	366.32
Kottayam	1750	1495	847.34	857	527.17
Idukki	600	520	297.9	213	103.59
Emakulam	1900	1903	1306.6	750	514.4
Trissur	1900	1719	997.76	893	479.01
Palakkad	2100	2119	713.35	1138	359.02
Malappuram	1900	1198	754.69	659	402.48
Kozhikode	1600	1300	715.35	526	290.2
Wayanad	400	312	117.5	213	72.9
Kannur	1000	903	634.83	492	297.26
Kasaragod	500	373	240.05	230	148.4
TOTAL	19250	16297	8981.67	8636	4606.03

Source : Directorate of Industries & Commerce

Appendix 8.24
Industrial Co-operative Societies in Kerala as on 30.6.2003

District	Industrial Co-operative societies registered during 2002-03 7/02-6/03	Total Number of Industrial Co-operative Societies as on 30-6-20003				Total No. of societies
		SC	ST	Women	Others	
Thiruvananthapuram	12	43	7	68	99	217
Kollam	1	65	7	34	41	147
Pathanamthitta	1	4	4	31	9	48
Alappuzha	2	31	4	41	43	119
Kottayam	1	8	0	39	5	52
Idukki		15	4	1	21	41
Ernakulam	2	10	1	56	17	84
Trissur	1	5	7	32	23	67
Palakkad	1	28	7	25	15	75
Malappuram	4	19	5	32	21	77
Kozhikode		16	1	13	28	58
Wayanad		38	3	61	63	165
Kannur	1	10	1	9	8	28
Kasaragod	1	1		14	28	43
TOTAL	27	293	51	456	421	1221

Source : Directorate of Industries & Commerce

Appendix 8.25
Outstanding Credit to various sectors by Banks in Kerala

(Rs. in crores)

Year	Total Credit	Primary sector	Secondary sector	Tertiary Sector	Credit to S S I sector
1999	13995	1951	1827	2219	1827
2000	15941	2231	1991	2618	1991
2001	19180	2747	2262	3885	2262
2002	22062	3035	2540	4557	2540
2003	27007	3508	2562	5798	2562

Source : State Level Bankers' Committee.

Appendix 8.26
District-wise Number of Handloom Cooperative Societies in the State

Sl.No	District	No. of societies	
		2001-02	2002-03
1	Thiruvananthapuram	360	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
Total		755	758

Source : Directorate of Handlooms & Textiles, Tvpm.

Appendix 8.27

Production and Productivity under Handloom Industry in Kerala

Sl.No	Item	2001-02	2002-03
1	2	3	4
1	Co-operative Sector		
i	Number of looms	41256	45788
ii	Production of Handloom cloth (M.M)	68.88	54.95
iii	Value of Production (Rs. crores)	309.96	247.25
iv	Productivity (M/L/A)	1480	1200
v	No. of weavers in the co-operative sector	128861	129000
vi	Employment generated during the period (mandays in lakhs)	530	423
vii	No. of women employed	24763	27500
2	Corporate sector/unorganised/private sector		
i	Number of looms	2500	2500
ii	Production of Handloom cloth (M.M)	1.87	1.87
iii	Value of production (Rs. crores)	8.2	8.41
iv	Productivity (M/L/A)	749	750
v	No. of weavers	5892	5900
vi	Employment generated during the period (mandays in Lakhs)	22	23
vii	No. of women employed	800	1142
3	Total: Co-operative, corporate and unorganised sector		
i	Number of looms	43756	48288
ii	Production of Handloom cloth (M.M)	70.75	56.82
iii	Value of Production (Rs. crores)	318.16	255.66
iv	Productivity (M/L/A)	2229	1950
v	No. of weavers	134753	134900
vi	Employment generated during the period (mandays in Lakhs)	552	446
vii	No. of women employed	25553	28642

Sl.No	Item	2001-02	2002-03
1	2	3	4
	Assistance Extended by way of loan and grant for the development of Handloom industry (Rs. lakhs)		
4	Loan		
a	State Government	78.55	90
i	Central Government	0	0
ii	N.C.D.C, NABARD, HUDCO	31.46	320.66
iii	Total (a)	110.01	410.66
b	Grant		
i	State Government	874.71	338.5
ii	Central Government	315	249.67
iii	N.C.D.C, NABARD, HUDCO	0	4.29
	Total (b)	1189.71	592.46
c	Amount spent as Rebate on the sale of Handloom cloth:		
i	State Government	1724	836.53
ii	Central Government	66.73	732.86
	Total (c)	1790.73	1569.39
5	Value of unsold stock (Rs. crores)		
a	In the Cooperative Sector	142.08	94.5
b	In the Corporate Sector	-	16.06
c	Unorganised/ private sector	NA	NA
6	Number of Co-operative Societies		
a	Factory type:		
1	working	93	112
2	Dormant	26	26
3	under liquidation	11	11
4	Not started working	5	6
	Total (a)	135	155
	cottage type:		
1	Working	458	440
2	Dormant	60	60
3	under liquidation	81	81
4	Not started working	21	
	Total (b)	620	603
	Total - 6 (a+b)	755	758

Source : Directorate of Handlooms & Textiles.

Appendix 8.28
Working Results of Handloom Apex Society (Hantex)

Sl.No	Particulars	2001-02	2002-03
1	2	3	4
1	Sales turnover (Rs. crores)	19.16	18
2	Value of cloth produced (Rs. crores)	11.28	5.3
3	Value of Yarn Purchases (Rs. Crores)	2.86	1.25
4	Value of Yarn distributed (Rs. crores)	3	1.35
5	No. of Exhibitions conducted	41	32
6	No. of primary societies registered as members (cumulative)	450	450
7	Paid up share capital (Rs. in lakhs)	1202.00	1287.27

Source: HANTEX

Appendix 8.29
Working Results of Kerala State Handloom Development Corporation (HANVEEV)

(Rs lakhs)

Sl.No	Particulars	2001-02	2002-03
1	2	3	4
1	Paid up capital (as at the end of the year)	1250.48	1315.48
2	Total Borrowing (as at the end of the year)	1266.43	1306.43
3	Gross Block (as at the end of the year)	2516.91	2621.91
4	Value of production through clusters and sponsored societies (as at the end of the year)	354	335
5	Income through sales of products (as at the end of the year)	1688	990
6	Other income:-		
a	Export of handloom cloth by K S H D C		
b	Grants, M D A, Interest, Processing charges etc.	228.9	177.53
7	Expenditure on Raw Materials		
a	Yarn	607	165
b	Dyes and Chemicals	18	16
c	Fabrics	183	42
8	Expenditure on personal payments	333.5	348.4
9	Provision of Depreciation	20	16.5
10	Expenditure towards interest and bank charges	173	176.6
11	Other Expenses		
a	Trading expenses	112	83.5
b	Administration and selling expenses	187.57	285.27
12	Stock differential	(-)126	(-)147.9
13	Net Profit (+), Net loss(-)	(-)207.17	(-)448.64
14	Accumulated loss at the end of the year	992.65	1441.29

Source : Directorate of Handlooms & textiles, Tvpn.

Appendix 8.30

Production and Productivity under Powerloom Industry

Sl.No	Items	2001-02	2002-03
1	Total No. of Powerlooms in the state	2500	3900
2	No. of looms in the cooperative sector	1037	1481
3	percentage of 2 to 1	42	38
4	No. of Powerloom cooperative societies in the state	29	33
5	No. of members in the cooperative sector	6500	6600
6	No. of women employed in Powerloom sector	681	1233
7	Co-operative sector		
a	Production of cloth (lakh metres)	98.15	112.56
b	Value of production (Rs. Lakh)	1088.11	1378.86
c	Productivity(Metre/loom)	360.81	340.52
8	Un organised/private sector	Nil	Nil
9	Total (Cooperative and Unorganised/private sectors)		
a	Production of cloth (lakh metres)	98.15	112.56
b	Value of Production (Rs. Lakh)	1088.11	1378.66
c	Productivity (Meter/loom)	360.81	340.52

Source : Directorate of Handlooms & textiles, Tvp.m.

Appendix 8.31

Coir Co-operative Societies in Kerala

Sl.No	Type of Society	No. of Societies as on 31-3-2002	No. of Societies as on 31-3-2003
1	2	3	4
1	Primary Coir Co-operative Societies		
a)	Working	424	395
b)	New Societies which have not started working	5	8
c)	Dorment societies	104	153
	Total	533	556
2	Manufacturing Societies		
a)	Working (Started production)	53	8
b)	New Societies which have not started working	4	18
c)	Dorment societies	13	18
	Total	70	118
3	Small Scale Producers Co-operative Societies		
a)	Working	12	16
b)	New Societies which have not started working	5	6
c)	Dorment societies	..	..
	Total	17	22
4	Husk Procurement and Distribution Societies		
a)	Working	1	..
b)	New Societies which have not started working	1	1
c)	Dorment societies	..	1
	Total	2	2
5	Fibre Societies (Defibering Mill Societies)		
a)	Working	29	31
b)	New Societies which have not started working	39	32
c)	Dorment societies	6	14
	Total	74	77
6	Co-operative Coir Marketing Federation	1	1
7	Total number of coir Co-operative societies		
a)	Working	519	524
b)	New Societies which have not started production	54	65
c)	Dorment societies	123	186
d)	Societies under liquidation	158	160
	Grand total	855	936

Source : Directorate of Coir Development, Trpvm.

Appendix 8.32
Activities of Coir Co-operative Societies

a. Yarn Sector											
Year	No. of working Societies	No. of Workers (1000)	Husk purchased		Fibre purchased		Yarn produced		Wages paid		
			Number (in lakhs)	Value (Rs. in lakhs)	Qty (Tonnes)	Value (Rs. in lakhs)	Qty (Tonnes)	Value (Rs. in lakhs)	Qty (Tonnes)	Value (Rs. in lakhs)	
2001-02	443	185	245	151	1371	315	2050	1088	700		
2002-03	394	163.8	261.3	126.86	1349.47	428.67	2918.83	3691.82	522.04		
b. Product Sector											
Year	No. of working Societies	No. of Workers	Value of production (Rs. in lakhs)		Wages paid (Rs. lakh)						
2001-02	51	6766	1575.5		281						
2002-03	72	1572	397.64		341.25						

Source : Directorate of Coir Development, Typm.

Appendix 8.33

District-wise details of Coir Co-op. Societies (as on 31-3-2003)

Sl. No	District	Project Offices	No. of Coir Societies		
			Working & New	Dormant	Total
1	2	3	4	5	6
1	Thiruvananthapuram	Chirayinkil	44	21	65
2	Kollam	Kollam	92	37	129
3	Alappuzha	Alappuzha	134	16	150
		Kayamkulam	53	28	81
4	Kottayam	Vaikom	29	2	31
5	Idukki				
6	Ernakulam	North Paravoor	14	13	27
7	Thrissur	Thrissur	20	10	30
8	Malappuram	Ponnani	27	2	29
9	Palakkad				
10	Kozhikode	Kozhikode	71	18	89
11	Kannur	Kannur	62	25	87
12	Kasargode				
Total			546	172	718

Appendix 8.34

Export of Coir and Coir Products from India during
2001-02 & 2002-03

Sl.No.	Items	2001-02		2002-03	
		Qty(Tonnes)	Value(Rs. Lakh)	Qty(Tonnes)	Value(Rs. Lakh)
1	2	3	4	5	6
1	Curled Coir	572.53	80.64	492.37	80.05
2	Coir Fibre	1010.30	122.16	1036.86	103.80
3	Coir Rugs & Carpet	1329.97	1039.76	1327.09	932.42
4	Coir Pith	13725.65	1014.30	21064.20	1493.01
5	Coir Rope	348.64	108.04	332.39	102.05
6	Coir(other sqrts)	272.91	106.82	372.85	138.56
7	Coir Yarn	13206.90	3728.59	11482.46	2996.76
8	Coir Geo-textiles	1752.05	780.13	2140.69	985.22
9	Handloom Mat	26147.89	17009.85	33058.75	20711.80
10	Powerloom Mat	686.50	458.19	954.85	585.53
11	Tufted Mat	7129.55	4112.39	6429.03	3434.71
12	Handloom Matting	4423.27	2921.04	4772.62	3191.45
13	Powerloom Matting	274.04	226.10	183.18	111.79
14	Rubberised Coir	454.64	350.37	535.21	403.43
Total		71334.84	32058.38	84182.55	35270.58

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 (Rs. crore)	Net Foreign Exchange earned
	Cashew Kernels	Cashewnut shell liquid			
1	2	3	4	5	6
1998-99	1630.1	4.21	1634.31	958	676.31
1999-2000	2569.5	3.74	2573.24	1186.2	1387.04
2000-2001	2049.6	3.89	2053.49	960.84	1092.65
2001-02	1788.68	5.93	1794.61	950.01	844.6
2002-03 (P)	2006.4	8.37	2014.77	1230.6	784.17

Source: Cashew Export Promotion Council, Kochi

Appendix 8.36
Import of Raw Cashewnuts into India

Year	Kerala		India	
	Quantity (M.T)	Value (Rs. crores)	Quantity M.T	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	252605	774.45	401199	1230.6

Source: Cashew Export Promotion Council, Kochi.

Appendix 8.37
Production, Sales, Employment, and Wages paid during 2001-02 & 2002-03

(Amount in Rs. Lakh)

Sl. No.	Name of Industry	Value of production		Value of sales		Employment(Nos)		Wages paid	
		2001-02	2002-03	2001-02	2002-03	2001-02	2002-03	2001-02	2002-03
1	2	3	4	5	6	7	8	9	10
I	Khadi	474.58	539.48	1065.00	1201.60	6556	5644	342.20	354.00
II	Village Industries								
1	Cottage Match	1016.63	1008.00	1119.80	1020.00	6592	6592	397.41	393.60
2	Agarbathy	281.78	273.00	296.72	280.00	1435	1435	79.56	78.60
3	Village leather	1641.89	1645.00	1712.28	1714.00	1635	1635	182.69	186.50
4	Fibre & screwpine	579.20	559.39	581.30	560.60	59888	59706	459.06	461.09
5	Rubber based industry	1662.66	1666.00	1713.04	1717.00	1885	1885	237.41	240.00
6	Handmade paper	314.58	316.00	344.00	349.00	514	514	56.52	59.00
7	Village pottery	2148.00	2136.00	2506.00	2496.00	21262	21262	816.34	816.34
8	Gurkhandasari	197.00	168.00	199.20	174.00	2431	2250	79.10	76.30
9	Service Industry	434.05	435.00	432.85	435.00	949	949	361.93	364.00
10	Non-edible oil & Village oil	1020.00	1010.00	1060.00	1046.00	1105	1076	156.00	149.00
11	Textile	1026.00	1021.00	1041.00	1023.00	6142	6142	292.80	292.00
12	Palmgur	201.00	171.10	201.50	171.20	8452	8255	82.70	82.28
13	Bee-keeping	222.19	224.50	277.23	279.00	17861	17961	154.22	155.00
14	Processing of cereals & pulses	846.80	835.00	932.96	842.00	14450	14450	662.45	662.00
15	Ayurvedic medicines	158.70	158.30	168.15	166.65	1106	1107	29.50	32.05
16	Fruits & vegetable preservation	591.88	580.00	610.27	584.00	3104	3104	156.70	154.50
17	Lime	1534.90	1527.70	1661.25	1530.99	9234	9171	790.50	794.40
18	Cane & Bamboo	257.21	250.00	268.79	260.00	3118	3118	151.10	150.00
19	Carpentry & Blacksmithy	1704.05	1696.30	1783.48	1731.00	6531	6481	1134.80	1138.10
20	Aluminium industry	696.60	697.20	699.90	698.10	920	899	139.50	142.13
21	Electronics	355.50	358.40	384.40	379.50	880	883	42.40	44.30
22	Polyvastra	63.97	66.57	95.38	90.95	801	578	35.77	39.35
23	PVC	128.10	136.15	134.80	135.60	217	222	24.70	26.18
Total II		17082.69	16938.61	18224.30	17683.59	170512	169675	6523.16	6536.72
Grand Total		17557.27	17478.09	19289.30	18885.19	177068	175319	6865.36	6890.72

Source: Khadi & Village Industries Board, Thiruvananthapuram.

Appendix 8.38

Districtwise number of sales outlets & sales under Board during 2002-03

Sl. No.	Name of project	No. of sales outlets	Sales during 2002-03 (Rs. Lakh)
1	Thiruvananthapuram	18	84.65
2	Kollam	19	73.02
3	Pathanamthitta	10	16.6
4	Alappuzha	19	46.29
5	Kottayam	14	51.12
6	Idukki	4	14.42
7	Ernakulam	11	63.72
8	Thrissur	16	31.81
9	Palakkadu	17	55.77
10	Malappuram	12	15.69
11	Kozhikkodu	27	138.72
12	Kannur	1	24.39
13	Payyannur Khadi Centre	66	345.14
Total		234	961.34

Source: Khadi & Village Industries Board, Thiruvananthapuram.

Appendix 8.39
Physical Achievement under Sericulture for the year 2001-02 & 2002-03

Sl. No.	District	Mulberry Cultivation (acres) (Cumulative)			No. of farmers (Cumulative)			DFLs supplied (Nos.)			Cocoon Production (in Kg.)			Silk production (in Kg.)		
		2001-02	2002-03	2001-02	2002-03	2001-02	2002-03	2001-02	2002-03	2001-02	2002-03	2001-02	2002-03	2001-02	2002-03	
1	2	3	4	5	6	7	8	9	10	11	12					
1	Thiruvananthapuram	27.6	77.38	47	144	3850	2075	908.52	571.6							
2	Kollam	26.5	94.49	66	152	4345	3090	841.25	662.94							
3	Pathanamthitta	8.5	73	14	110	3300	2015	430.45	414							
4	Alappuzha	52.85	114.65	127	242	6127	5335	1266.81	1143.28	891.5	956.807					
5	Kottayam	28.25	83.5	53	157	5375	3835	1057.05	940							
6	Ernakulam	22.7	70.45	48	134	5230	4940	1333.06	1740.95							
7	Idukki	93.5	222.85	125	291	20344	7829	6623.6	3189.2							
8	Thrissur	37	102.27	55	187	6798	8490	1463.31	4058.9							
9	Palakkad	46	130.75	61	160	12622	10665	3687.96	4750.75	475.9	420.835					
10	Malappuram	71.75	132.5	108	208	13700	15175	3884.95	4678.3							
11	Kozhikkodu	20.15	58.4	54	128	5085	4000	1238.1	884.1							
12	Kannur	56.8	93.1	110	196	14215	14535	3677.98	4652.245							
13	Wayanadu	45.9	108.85	80	178	7795	12875	2573.3	4511.05							
14	Kasaragod	18.25	52	31	79	4500	3510	948.2	1031.8	1113.7	1224.88					
Total		555.75	1414.19	979	2366	113286	98369	29934.54	33229.115	2481.1	2602.522					

Source: SERIFED, Thiruvananthapuram.

Appendix 8.40

**Kerala State Industrial Development Corporation
- Physical & Financial Performance 2002-03**

(Rs. Crores)

Sl. No.	Particulars	2002-03
	Physical	
1	Projects Completed	
a.	No. of projects	15
b.	Aggregate cost	94
c.	Employment (Nos.)	1149
2	Projects under implementation	
a.	No. of projects	39
b.	Aggregate cost	799
c.	Employment (Nos.)	2796
3	Projects cleared by KSIDCB	
a.	No. of projects	32
b.	Aggregate cost	153
c.	Employment (Nos.)	1390
4	MOU signed with private parties	
a.	No. of projects	37
b.	Estimated aggregate cost	6959
	Financial	
a	Gross sanction	52
b	Disbursement	24
c	Recovery	58
d	Operating profit	12

Source : KSIDC, Tvp.m.

Appendix 8.41
Kerala Financial Corporation: Loan Operations as on 31.3.2003 (Rs. In Lakh)

Sl.No	Particulars	During the year 2002-03				Since Inception upto 31.3.2003				Total			
		S.S.I		Others		S.S.I		Others		No.	Amount		
		No.	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount		
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Application pending as on 1.4.2002	26	733.4	20	897.5	46	1630.9	..	..	..	..	..	..
2	Application Received during 2002-03	398	8942.28	395	11922.87	793	20865.15	20967	176429.13	17582	144340.5	45549	320769.66
3	Total application for consideration	424	9676.00	415	12820	839	22496	28515	186936.00	17983	149449	46498	336385.00
4	Application withdrawn/ rejected or otherwise disposed off	63	3032	47	1801.00	110	4833	4351	30163.00	1474	18284	5825	48447.00
5	Application Sanctioned (gross)	339	6133	357	9440.00	696	15573	22973	129588.00	16573	125959	39546	255547.00
6	A. Application cancelled/reduced out of current year sanction	0	9	0	5	0	14	0	0.00	0	0	0	0.00
	B. Application cancelled/reduced out of previous year sanction	3	405	4	335	7	741	0	0.00	0	0	0	0.00
	C. Total cancellation/ reduction (6A+B)	3	414	4	340	7	755	3062	15731.00	1310	8047	4372	23778.00
7	Application sanctioned effectively (5-6A)	339	6124	357	9435	696	15559	0	0.00	0	0	0	0.00
8	Net Sanctioned (5-6C) Amount disbursed along with number of newly assisted units	336	5719	353	9100	689	14818	19911	113857	15263	117912	35174	231769
9	Application pending as at the end of the period	322	4291	325	6939.00	647	11231	20715	101102.00	14726	97047	35441	198149.00
10	Application pending as at the end of the period	22	510	11	1580	33	2090	..	..	..	..	..	..

Source : Kerala Financial Corporation, T/vpm.

Appendix 8.42

District wise details of Disbursement of Loan by KFC 2002-03

Particulars	Effective No:	Sanction Amount	(Rs. In lakh) Disbursement	
			No.	Amount
Backward Districts				
Category - A				
Idukki	30	892.77	28	790.33
Wayanad	47	357.26	37	316.24
Category - B				
Alappuzha	23	291.65	27	356.31
Malappuram	24	626.35	27	452.99
Kannur	21	365.6	22	353.76
Kasargode	32	285.39	33	277.7
Category - C				
Thiruvananthapuram	62	1887.23	49	1354.1
Thrissur	76	2370.06	61	1671.22
Total	315	7076.31	284	5572.65
Non Backward Disrticts				
Pathanamthitta	19	574.02	20	314.24
Kollam	78	1257.22	87	975.17
Kottayam	21	700.85	20	393.3
Ernakulam	123	4034.17	117	2418.79
Palakkad	59	1156.39	38	888.49
Kozhikode	81	760.07	81	668.12
Total	381	8482.72	363	5658.11
GRAND TOTAL	696	15559.03	647	11230.76

Source : Kerala Financial Corporation, Typm.

Appendix 8.43

Industry-wise Classification of Loan sanctioned and Disbursed by the Kerala Financial Corporation as on 31-3-2003 (Rs. Lakh)

Sl.No	Type of Industry	Amount Sanctioned	% of total loans sanctioned	Amount disbursed	% of total loan Disbursed
1	Mining	7129.43	2.93	6372.63	3.22
2	Crude Petroleum	264.39	0.11	119.73	0.06
3	Petroleum Refining	13.37	0.01	11.31	0.01
4	Other Food Products	20306.91	8.35	18052.97	9.11
5	Textiles	7387.82	3.04	4610.06	2.33
6	Paper & Paper Products	5389.20	2.22	4343.04	2.19
7	Leather & Leather Products	566.33	0.23	544.40	0.27
8	Rubber Products	17011.05	6.99	13909.25	7.02
9	Chemical & Chemical Products	6527.55	2.68	5276.62	2.66
10	Cement	110.20	0.05	84.07	0.04
11	Basic Metals				
	a). Iron & Steel	2869.59	1.18	2149.23	1.08
	b). Non Ferrous	773.11	0.32	603.58	0.30
12	Metal Products	6110.63	2.51	3803.00	1.92
13	Capital Goods				
	a).Non-Electrical Machinery	1795.05	0.74	1535.42	0.77
	b). Electrical Machinery	2369.09	0.97	1947.33	0.98
	c). Transport Equipment	1572.32	0.65	1036.02	0.52
14	Electricity Generation	114.04	0.05	35.27	0.02
15	Services				
	a). Hotels & Shopping Complex	50471.30	20.75	39498.48	19.93
	b.) Hospitals	9494.26	3.90	6634.15	3.35
	c).Others	42399.10	17.43	41289.96	20.84
16	Others	60607.81	24.91	46292.08	23.36
	Total	243282.55	100	198148.60	100

Source : Kerala Financial Corporation, Tvpm.

Appendix 8.44
Progress of the Working of Kerala Financial Corporation at a Glance

(Rs. In lakh)

Year	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	187.54
1996-1997	114654.93	92606.32	47689.69	1453.29	210.90
1997-1998	138787.45	112550.05	58812.82	1148.22	224.67
1998-1999	158218.83	131663.26	66852.52	1148.49	242.73
1999-2000	173205.80	146634.75	68229.39	719.22	-1059.99
2000-2001	202451.78	169324.19	76660.33	1801.50	-2437.72
2001-2002	216851.40	186917.81	78517.40	104.81	-2882.97
2002-2003	231669.40	198148.57	74552.92	115.48	-630.48

Source : Kerala Financial Corporation, Tyvm.

Appendix 8.45
Selected Indicators of the Activities of SIDCO

Activities	Unit	Period	
		2001-02	2002-03
1	2	3	4
1. Raw Material Distribution			
1.1 SSI units assisted for procurement of raw materials	Nos	2400 Units	2400 UNIts
1.2 Quantity of Raw Materials Distributed			
(a) Iron and Steel including pig iron	M.T	5898.222	4102
(b) Cement	M.T	1967	1302
(c) Coal	M.T	Nil	Nil
(d) Paraffin wax	M.T	1536.105	935
(e) Titanium Dioxide	M.T	668.3	378.05
(f) Others			
1) Pipe	Mtrs	8176.47	2679
2) IPCL	M.T	1532.872	1242 MT
3) Aluminium sheet	M.T	1.15	-
4) IOC products			
(a) Lubricants	Litre	48973	52553
(b) Bitumen	M.T	138.492	1114.15
2 Over dues	Rs. Lakhs	0	-
a No. of Units	Nos.	124	-
b. Amount of over dues	Rs. Lakhs	45.79	-
3 Marketing of SSI products			
3.1 SSI UNits assisted in marketing of products	Nos	254	68
3.2 Value of SSI products marketed through SIDCO	Rs. Lakhs		
(a) Domestic		1161.68	960
(b) Export		Nil	Nil
(c) Total		1161.68	960
4. Rehabilitation of Sick Units			
4.1 SSI Units revived	Nos	6	
4.2 Amount Disbursed	Rs. lakhs		
a. State Government Fund		2.2	
b SIDCO Fund		0	0
c Other Sourcdes (specify - loan		9.51	
Total		11.71	
5 Industrial Estates & Infrastrucutre Development			
5.1 Major Estates			
(a) major Estates	Nos	17	17
(b) Sheds available	Nos	527	527
(c) Shed occupied	Nos	510	507
(d) SSI Units	Nos	751	788
1) working	Nos	616	630
ii) Defunct, Idling or closed	Nos	135	163

Source: SIDCO, Thiruvananthapuram

Appendix 8.46

**Small Industries Service Institute (SISI) -
Achievement during 2002-03**

Sl.No	Name of Activity	Unit	Achievement
1	2	3	4
1	Units visited for providing technical assistance	(NO.)	319
2	Visitors rendered assistance at SISI premises	"	
	a. Assistance to prospective entrepreneurs	(No.)	3706
	b. Assistance to existing entrepreneurs	"	369
	c. Manangement and Marketing Related Assistance	"	375
3	Preparation of State profile	"	1
4	Preparation of Industrial Potential survey report for Kerala	No. of Districts	2
5	project profiles	No	25
6	Ancillary Development Programmes	"	7
7	Motivation campaigns	"	7
8	EDPs - 4/6 weeks duration		
	1. Courses undertaken	No	8
	ii. Persons trained	No	226
9	Management Development Programmes		
	1. Courses undertaken		
	ii. Persons trained	No	8
		No	170
10	Common Facility Workshop/Lab performance		
	1.Training (including skill development programme)	No	23
	ii. Persons trained	No	164
11	Export Packaging Training		
	1. Courses undertaken	No	2
	ii. Persons Trained	No	77
12	PMRY Beneficiaries Training		
	1. Courses undertaken	No	2
	ii. Persons Trained	No	77
13	Computer Training Programme		
	1. Courses undertaken	"	3
	ii. Persons Trained	"	28

Source : SISI, Trissur.

Appendix 8.47
Small Industries Development Bank of India's Assistance to Small Scale Industries
 (Rs. Crore)

year	Sanction and Disbursement				performance - Kerala as	
	All India Sanction	Disbursement	Kerala Sanction	Disbursement	% of All India	
					Sanction	Disbursement
1	2	3	4	5	6	7
1998-99	8880	6285	348	205	3.92	3.26
1999-2000	10265	6964	356	317	3.47	4.55
2000-01	10821	6441	556	389	5.14	6.04
2001-02	9026	5919	535	396	5.93	6.69
2002-03	10904	6789	615	214	5.6	3.2

Source : SIDBI, Ernakulam.

Appendix 8.48
Total Area Covered by Mining Leases

Sl. No.	Name of Mineral	Area in Hectares
1	China Clay	87.01
2	Silica Sand	24.17
3	Bauxite	1.57
4	Lime Shell	509.62
5	Lime Stone	245.69
6	Mineral Sand	260.42
7	Quartz	1.5

Source : Directorate of Mining & Geology

Appendix 8.49
Production and Sale of Major Minerals other than Mineral Sand in Kerala - 2002-03

(In Tonnes)

Sl. No.	Name of Mineral	Production (Processed)	Sales (Processed)
1	China Clay	330931	330931
2	Silica Sand	112704	112704
3	Bauxite	22250	22250
4	Lime Shell	78580	78580
5	Lime Stone	362204	362204
6	Quartz	1825	1825

Source : Directorate of Mining & Geology

Appendix 8.50
Production and Sale of Mineral Sand in Kerala - 2002-03

(In Tonnes)

Sl. No.	Name of Mineral	Production	Sales (Rs. Crores)
1	Siliminite	10755	0.08
2	Illimenite	158000	0.85
3	Zircon	12500	0.49
4	Rutile	10650	0.57

Source : Directorate of Mining & Geology

Appendix 9.1
Foreign Tourist Arrivals at Major Tourist Generating States/UT During 2001 & 2002

State/U T	No. of foreign Tourist		Percentage of variation
	2001	2002	
1	2	3	4
Kerala	208830	232564	11.37
Tamil Nadu	773073	N.A	N.A
Karnataka	140703	N.A	N.A
Andra Pradesh	67147	N.A	N.A
Goa	260071	271645	4.45
Maharashtra	915399	N.A	N.A
Rajasthan	608283	N.A	N.A
Uttar Pradesh	795000	N.A	N.A
Delhi	830092	N.A	N.A

N.A - Not Available

Source: Department of Tourism

Appendix 9.2
Growth of Foreign Tourist Arrivals in India and Kerala (1998-2002)

Year	India (Nos.)	Percentage change	Kerala (Nos)	Percentage change	Kerala's share (%) in country's tourism
1	2	3	4	5	6
1998	2358629	-0.65	189941	4.12	8.05
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

Source: Department of Tourism

Appendix 9.3
Flow of Domestic Tourist to Kerala (1998 -2002)

Year	Number of Tourist	Percentage Variation over the previous year
1	2	3
1998	4481714	-9.52
1999	4888287	9.07
2000	5011221	2.51
2001	5239692	4.52
2002	5568256	6.27

Source: Department of Tourism

Appendix 9.4
Earnings from Tourism (1998-02)

Year	Earnings (Rs. Crores)
1998	302.08
1999	416.07
2000	525.30
2001	535.00
2002	705.67

Source: Department of Tourism

Appendix 9.5
Details of Availability of Accommodation Facility in classified Hotels 2001 and 2002

Category of Hotels	2001			2002		
	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	1	93	183	2	247	494
5 Star	6	594	1141	5	373	752
4 Star	9	571	904	10	544	1108
3 Star	46	2094	3867	60	2374	4571
2 Star	34	848	1604	41	1130	2219
1 Star	24	728	1290	21	681	1208
Heritage Resort	7	112	290	9	234	423
Total	127	5040	9279	148	5583	10775

Source: Department of Tourism

Appendix 9.6
State Plan allocation for Tourism (1998-2003)

Year	Allocation (Rs Crores)
1998-99	37.20
1999-2000	36.00
2000-2001	46.00
2001-2002	40.00
2002-2003	74.25

Source: Department of Tourism

Appendix 9.7
Central Financial Assistance for Tourism (1998-2003)

Year	Allocation (Rs crores)
1998-1999	6.99
1999-2000	9.30
2000-2001	5.93
2001-2002	4.40
2002-2003	8.61

Appendix 9.8
Kerala Tourism Development Corporation Ltd. - Performance for the year 2002-2003
(provisional)

Sl. No.	Name of Units	(Amount Rs. in lakhs)											
		3	4	5	7	8	9	10	11	12	Total Expenditure before interest	Depreciation	Net Income
1	Mascot Hotel, TVM.	18250	24	2487	388	165.79	156.59	24.05	180.64	-14.85			
2	Hotel Chaitram, TVM.	54750	36	19116	793	250.61	213.19	27.50	240.69	9.92			
3	Hotel Samudra, Kovalam.	46720	27	3218	1239	226.85	202.80	10.73	213.53	13.32			
4	Aranya Nivas, Thekkady	26280	37	2156	877	254.04	114.75	4.37	119.12	134.92			
5	Periyar House, Thekkady	32120	24	11595	1109	108.37	80.14	5.25	85.39	22.98			
6	Bolgatty Palace Hotel, Kochi.	18980	27	1350	782	159.20	145.32	9.22	154.54	4.66			
7	Garden House, Malampuzha..	11680	21	2554	11	41.80	37.99	4.45	42.44	-0.64			
8	Hotel Nandanam, Guruvayoor.	29930	27	8529	11	29.26	37.65	1.00	38.65	-9.39			
9	Mangalya, Guruvayur	13140	43	5619	0	64.09	58.46	6.08	64.54	-0.45			
10	Water Scapes, Kumarakom	15330	49	9430	1242	226.64	163.48	10.78	174.26	52.38			
11	Malabar Mansion, Kozhikode.	18980	29	2682	221	97.22	77.11	13.66	90.77	6.45			
12	Tea County, Munnar	31390	53	13733	1082	231.46	160.83	11.07	171.9	59.56			
13	Anjanam, Guruvayur.	12045	39	4950	0	4.35	4.08	1.63	5.71	-1.36			
14	Agasthya House, Neyyattam	4380	27	699	64	22	16.78	3.76	20.54	1.46			
15	Motel Arams	20440	201	3201	91	338.44	251.03	43.07	294.1	44.34			
16	Yatri Nivases	41620	212	22552	1755	257.91	220.13	26.52	246.65	11.26			
17	Sabala Restaurants & Beer Parlours	0	0	0	0	648.21	435.91	108.30	544.21	104.00			
18	Miscellaneous Group	0	0	0	0	201.00	174.56	7.90	182.35	18.65			
19	Head Office and centralized expenditure	0	0	0	0	51.2	302.39	30.16	332.55	-281.35			
	Grand Total	396035		113871	9665	3378.44	2853.19	349.39	3202.58	175.86			

Source: Kerala Tourism Development Corporation

Appendix 10.1
Growth of Transport & Communications in Kerala since 1999 compared to 1975

Sl. No.	Item	Unit	1975	1999	2000	2001	2002	2003
1	2	3	4	5	6	7	8	9
1	Road Length (PWD)	Kms.	14870	21938	21731	21508	21347	21467
2	Road Length (PWD) per sq.km.	"	0.38	0.56	0.56	0.55	1.8*	1.81
3	Road Length (Panchayats)	"	54812	77356	81790	87094	92084	95516
4	Motor Vehicles	Nos.	119720	1708938	1910237	2111885	2315372	2552171
5	Motor Vehicles per 100 sq.km.	"	308	4397	4945	5434	5958	6567
6	Buses & Stage Carriages	"	7828	48884	58888	65681	71966	79713
7	Good Vehicles	"	15875	151082	163443	173856	184176	195363
8	Buses owned by KSRTC	"	2212	3928	4093	4562	4421	4302
9	Railway route length	Kms.	896	1198	1119	1148	1148	1148
10	Post Offices	Nos.	4024	5051	5070	5071	5074*	5077
11	Telephone Exchanges	"	286	850	924	988	1088	1179
12	Total Equipped Capacity	"	70410	1704395	2203954	2584236	3153418	3653413
13	Public Call Offices	"	2352	23485	27388	36926	48321	59444

* Revised

Appendix 10.2
District-wise and Category-wise Length of Roads Maintained by PWD (R&B) as on 31-3-2003

SI.No	Name of District	State Highways	Major District Roads	Other District Roads	Village Roads	Total
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
	Total	3784.717	11711.264	5315.518	655.993	21467.492

Source : P.W.D. (R & B)

Appendix 10.4**Surface-wise and Category-wise Length of P.W.D. Roads added during 2002-2003**

(in Kms.)

Item	State Highways	Major District Roads	Other District Roads	Village Roads	Total
1	2	3	4	5	6
Cement Concrete					
Length as on 31.3.2002	6.191	0.572	0	0	6.763
Length added in 02-03	..	0.142	0	0	0.142
Length as on 31.3.2003	6.191	0.714	0	0	6.905
Black topped					
Length as on 31.3.02	3570.721	11118.121	4954.219	464.883	20107.944
Length added in 02-03	-57.275	353.177	51.601	-85.064	262.439
Length as on 31.3.2003	3513.446	11471.298	5005.82	379.819	20370.383
Water Bound Macadam					
Length as on 31.3.2002	7.370	64.614	68.003	116.972	256.959
Length added in 02-03	-4.120	-13.346	-10.220	-9.770	-37.456
Length as on 31.3.2003	3.250	51.268	57.783	107.202	219.503
Others					
Length as on 31.3.02	264.874	224.279	255.129	231.437	975.719
Length added in 02-03	-3.044	-36.295	-3.214	-62.465	-105.018
Length as on 31.3.03	261.830	187.984	251.915	168.972	870.701
Total					
Length as on 31.3.02	3849.156	11407.586	5277.351	813.292	21347.385
Length added in 02-03	-64.439	303.678	38.167	-157.299	120.107
Length as on 31.3.03	3784.717	11711.264	5315.518	655.993	21467.492

Source : PWD (R&B)

Appendix 10.5

District-wise and Surface-wise Length of Roads Maintained by P.W.D. as on 31.3.2003

(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
Total		6.905	20370.383	219.503	870.701	21467.492

Source : P.W.D. (R & B)

Appendix 10.6

No. of Bridges and Culverts in P.W.D. Roads as on 31.3.2003

Sl. 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 2002-2003 (Provisional)

Sl.No	District	Goods Vehicles				Buses		Cars and Station Wagons			Three wheelers			Two Wheelers			Tractors			Total
		Four wheelers & above	Three wheelers including Tempos	Stage carriages	Contract Carriages/ Omni Buses	Cars	Station wagons	Taxis	Jeeps	Auto rickshaws	Motorised Cycle rickshaws	Motorised cycles	Motorised cycles	Scooter/ Motor cycles	Tractor Articulated	Tillers	Trailers	Others		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
1	Thiruvananthapuram	534	269	153	992	6213	-	266	26	1292	-	-	20616	9	5	23	30398			
2	Kollam	441	249	116	454	2847	-	322	42	2324	-	-	13597	9	1	37	20439			
3	Pathanamthitta	286	394	68	366	2351	-	346	8	532	-	-	7236	5	4	38	11634			
4	Alappuzha	262	480	103	404	2146	-	713	2	530	..	..	12796	7	10	27	17460		
5	Kottayam	491	292	131	483	2960	-	1164	59	1108	-	-	9863	8	9	36	16604			
6	Idukki	190	64	47	75	252	-	226	16	369	-	-	2084	4	0	35	3362			
7	Ernakulam	1199	1027	394	928	5050	-	1360	59	2235	-	-	28624	48	1	370	41298			
8	Thrissur	506	729	197	501	2935	-	385	35	1563	-	-	18172	37	0	45	25105			
9	Palakkad	465	295	125	361	697	-	260	135	953	-	-	13735	64	0	35	17125			
10	Malappuram	736	605	354	242	1184	-	209	148	3843	-	..	11056	37	12	28	18454			
11	Kozhikode	428	306	211	220	1742	-	155	9	1668	-	-	11524	4	4	37	16308			
12	Wayanad	74	23	72	40	246	-	40	25	135	-	-	1307	6	0	29	1997			
13	Kannur	340	278	281	265	1437	-	300	81	1755	-	-	6778	2	4	60	11581			
14	Kasaragod	131	93	98	66	636	-	88	7	1018	-	-	2880	1	0	36	5054			
	Total	6083	5104	2350	5397	30696	5834	652	19325	160268	0	241	836	236819	1	52	836	236819		

Source : Motor Vehicle Department

Appendix 10.8
Number of Motor Vehicles Having Valid Registration as on 31.3.2003

Sl.No.	District	Goods Vehicles													Tractors					Total
		Buses			Four Wheelers				Three Wheelers			Two Wheelers			Tractors					
		Four wheelers and above	Three wheelers including Tempos	Stage Carriages	Contract Carriages /Omni Buses	Cars	Stat- ion wag- ons	Taxis	Jeeps	Autori- cks	Motorise d Cycle rickshaws	Motorised cycles	Scooters/ Motor cycles	Tractor Trailor Articula ted	Tractors	Tillers	Trailors	Others		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
1	Thiruvananthapuram	12656	5804	6306	7556	45035	-	10623	7010	28036	6	0	224274	201	85	135	2728	350455		
2	Kollam	10637	1870	788	3422	34754	-	4261	4359	24294	13	1110	102723	309	233	318	255	189346		
3	Pathanamthitta	8786	2015	753	1887	19270	-	7604	3465	12511	0	0	60414	116	167	30	686	117704		
4	Alappuzha	6614	5400	837	3216	21509	-	3826	563	12480	5	6	101136	198	108	240	873	157011		
5	Kottayam	11845	2791	1902	5277	35345	-	7051	10965	26515	37	0	108202	426	102	41	2505	213004		
6	Idukki	3044	398	550	640	5445	-	1334	6144	4336	0	0	16346	186	114	10	1174	39721		
7	Emakulam	30825	5803	3301	6452	60121	-	9331	1952	33478	0	3	283280	673	1284	118	10338	446959		
8	Thrissur	16358	4814	3646	9474	28779	-	9766	4308	26926	0	0	158377	599	433	572	2613	266665		
9	Palakkad	11004	2230	1663	2892	12519	-	5741	3283	15391	0	0	90975	3618	935	61	1569	151979		
10	Malappuram	14010	6005	3260	4622	20221	-	12510	8131	40719	2	5	80291	648	501	62	1971	192958		
11	Kozhikode	12932	2617	2618	2010	31923	-	6132	8146	21848	0	0	116359	282	172	73	2005	207117		
12	Wayanad	2109	345	367	308	2489	-	2317	3476	5628	0	0	14527	90	230	24	1639	33550		
13	Kannur	9122	1553	2544	2288	11428	-	6065	5990	20594	0	0	66858	1324	252	72	1590	129680		
14	Kasaragode	2860	916	714	319	7745	-	1509	3072	12336	0	0	25521	32	364	67	567	56022		
	Total	152802	42561	28249	50464	336583	0	68070	70864	285092	63	1124	1449283	0	8700	4980	1823	30513	2552171	

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		1998-99		1999-00		2000-01		2001-02		2002-03	
		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	puram	101980	100	241932	237	266174	261	293199	287	320061	314	350455	344
2	Kollam	57694	100	124611	216	137020	237	152526	264	168907	293	189346	328
3	Pathanamthitta	35555	100	78662	221	86776	244	96241	271	106070	298	117704	331
4	Alappuzha	39545	100	95794	243	111346	282	125327	317	139551	353	157011	397
5	Kottayam	39758	100	159596	401	172040	433	183614	462	196400	494	213004	536
6	Idukki	12812	100	28690	224	31015	242	33477	261	36359	284	39721	310
7	Ernakulam	105622	100	297682	282	333022	315	369168	350	405661	384	446959	423
8	Thrissur	70831	100	183941	260	200542	283	220607	311	241560	341	266665	376
9	Palakkad	37623	100	100597	267	112213	298	123526	328	134854	358	151979	404
10	Malappuram	30671	100	111216	363	138434	451	157240	513	174504	569	192958	629
11	Kozhikode	55939	100	135523	242	154301	275	172387	308	190809	341	207117	370
12	Wayanad	8379	100	22243	265	26712	319	29737	355	31553	377	33550	400
13	Kannur	36540	100	90344	247	98023	268	108022	296	118115	323	129680	355
14	Kasaragode	14793	100	38107	258	42619	288	46814	316	50968	345	56022	379
Total		647742	100	1708938	264	1910237	295	2111885	326	2315372	357	2552171	394

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
1	2	3	4	5	6	7	8
I	GOODS VEHICLES						
1	Four Wheelers and above	51530	126908	135058	142168	146719	152802
2	Three Wheelers including Tempos	9576	24174	28385	31688	37457	42561
II	BUSES						
1	Stage Carriages	15056	22809	23537	25161	26899	29249
2	Contract Carriages/ Omni buses	5234	26075	35351	40520	45067	50464
III	CARS AND STATION WAGONS						
1	Cars	116676	228824	257796	282996	305887	336583
2	Station Wagons	849	0	0	0	0	0
3	Taxi Cars	37638	59724	71581	75628	82236	88070
4	Jeeps	24351	82416	67497	69261	70212	70864
IV	THREE WHEELERS						
1	Authorickshaws	58165	197595	227895	248350	265767	285092
2	Motorised Cycle rickshaws	62	64	58	58	163	63
V	TWO WHEELERS						
1	Motorised Cycle	70	1159	1124	1124	1124	1124
2	Scooter/ Motor Cycles	248374	904961	1020797	1151735	1289035	1449283
VI	Tractor Trailer, Articulated	2661	4890	0	0	0	0
VII	Tractors	4115	5801	7782	8177	8459	8700
VIII	Tillers	1927	5098	4763	4763	4979	4980
IX	Trailers	580	728	1506	1576	1771	1823
X	Others	4190	17712	27107	28680	29697	30513
	Total	581054	1708938	1910237	2111885	2315372	2552171
	Per centage increase over the previous year	11.03	13.32	11.78	10.56	9.63	10.23

Source: Motor Vehicle Department

Appendix 10.11
District-wise Road Accidents in Kerala in which number of persons held during 2001-02, 2002-2003

Sl.No	Name of District	No. of Accidents		Increases / Decreases %		No. of Persons injured		Increases/ Decreases %		No. of persons Killed		Increases / Decrease %
		2001-02	2002-03	2001-02	2002-03	2001-02	2002-03	2001-02	2002-03	2001-02	2002-03	
1	2	3	4	5	6	7	8	9	10	11		
1	Thiruvananthapuram	4067	4662	14.60	4650	6037	29.8	279	289	3.6		
2	Kollam	3041	3146	3.50	3902	3779	-3.20	263	287	9.1		
3	Pathanamthitta	1482	1550	4.60	1967	2111	7.30	108	119	10.2		
4	Alappuzha	3286	3059	-6.90	3909	3740	-4.30	227	241	6.2		
5	Kottayam	2811	3116	10.90	3610	3584	-0.70	143	187	30.8		
6	Idukki	1063	1035	-2.60	1604	1419	-11.50	63	67	6.3		
7	Ernakulam	7349	7048	-4.10	8258	7915	-4.20	347	405	16.7		
8	Trissur	4369	4452	1.90	5673	5490	-3.20	303	305	0.7		
9	Palakkad	2139	2080	-2.80	3266	3111	-4.70	213	232	8.9		
10	Malappuram	2453	2399	-2.20	3778	3754	-0.60	194	222	14.4		
11	Kozhikode	3369	3521	4.50	4297	4114	-4.30	251	236	-6.0		
12	Wayanad	544	525	-3.50	821	780	-5.00	46	43	-6.5		
13	Kannur	1646	1593	-3.20	2734	2441	-10.70	129	135	4.7		
14	Kasaragode	734	781	6.40	1275	1175	-7.80	82	71	-13.4		
	Total	36353	38967	1.6	49744	49450	-0.6	2648	2839	7.2		

Source : Director General of Police, Thiruvananthapuram

Appendix 10.12
Motor Vehicle Accidents In Kerala by Primary Causes of Accidents during 2002-2003

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	4439	6	4	1	12	94	2	0	33	71	4662
2	Kollam	3059	0	1	0	1	45	0	0	17	23	3146
3	Pathanamthitta	1508	3	0	0	0	25	0	0	3	11	1550
4	Alappuzha	3046	2	0	0	0	5	1	0	3	2	3059
5	Kottayam	3101	0	0	1	4	3	1	0	2	4	3116
6	Idukki	1013	0	0	0	0	10	0	0	5	7	1035
7	Ernakulam	6930	4	0	0	2	37	0	0	51	24	7048
8	Trissur	4452	0	0	0	0	0	0	0	0	0	4452
9	Palakkad	2070	1	0	0	0	3	1	0	3	2	2080
10	Malappuram	2398	0	0	0	0	0	1	0	0	0	2399
11	Kozhikode	3514	0	0	0	3	2	2	0	0	0	3521
12	Wayanad	518	2	0	0	0	4	0	0	1	0	525
13	Kannur	1588	0	0	0	0	1	0	0	3	1	1593
14	Kasaragode	779	1	0	0	0	1	0	0	0	0	781
	Total	38415	19	5	2	22	230	8	0	121	145	38967

Source : Director General of Police, Thiruvananthapuram

Appendix 10.13
Type-wise details of Motor Vehicles Involved in Road Accidents in Kerala during 2002-2003

Sl.No	District	KSRTC Buses	Other Buses	Goods Vehicles	Motor Cars	Jeeps	Autorick shaws	Two wheelers	Miscellaneous vehicles	Class not known	Total
1	2	3	4	5	6	7	8	9	10	11	12
1	Thiruvananthapuram	357	176	236	764	162	774	1749	394	50	4662
2	Kollam	126	251	122	457	181	563	1068	364	14	3146
3	Pathanamthitta	64	118	72	231	145	347	405	137	31	1550
4	Alappuzha	112	191	164	605	48	459	1081	323	76	3059
5	Kottayam	88	347	155	422	187	672	950	228	67	3116
6	Idukki	20	124	16	97	202	269	206	88	13	1035
7	Ernakulam	146	859	276	1014	235	964	2722	721	111	7048
8	Trissur	76	592	289	541	118	753	1705	320	58	4452
9	Palakkad	37	334	228	197	159	350	543	220	12	2080
10	Malappuram	25	505	82	206	213	536	494	299	39	2399
11	Kozhikode	46	717	225	336	334	591	997	238	37	3521
12	Wayanad	28	60	12	39	80	80	156	66	4	525
13	Kannur	24	327	122	134	186	372	307	118	3	1593
14	Kasaragode	25	80	55	72	73	222	177	69	8	781
Total		1174	4681	2054	5115	2323	6952	12560	3585	523	38967
Percentage to Total		3.01	12.02	5.27	13.13	5.96	17.84	32.23	9.20	1.34	100

Source : Director General of Police, Thiruvananthapuram

Appendix 10.14

Motor Vehicle Accidents by time of day during 2002-2003

SI.No	District	Day light	Darkness	Time not known	Total
1	2	3	4	5	6
1	Thiruvananthapuram	3229	994	439	4662
2	Kollam	2193	830	123	3146
3	Pathanamthitta	1126	392	32	1550
4	Alappuzha	1962	816	281	3059
5	Kottayam	2132	859	125	3116
6	Idukki	628	222	185	1035
7	Ernakulam	4940	2048	60	7048
8	Thrissur	3228	1198	26	4452
9	Palakkad	1495	559	26	2080
10	Malappuram	1569	406	424	2399
11	Kozhikode	2282	874	365	3521
12	Wayanad	357	157	11	525
13	Kannur	1100	446	47	1593
14	Kasaragode	523	211	47	781
Total		26764	10012	2191	38967
Percentage to Total		68.68	25.69	5.63	100

Source : Director General of Police, Thiruvananthapuram

Appendix 10.15

Age-Wise Details of Vehicles Owned by KSRTC as on 30-3-2003 & 31.08.03

Sl. No.	Age-Wise Classification	Numbers as on	
		31-3-2003	31-8-2003
1	2	3	4
1	10 Years and above	574	394
2	Above 7 Years and below 10 Years	1332	1477
3	Above 5 Years and below 7 Years	838	693
4	Below 5 Years	1558	1610
Total		4302	4174

Source : KSRTC

Appendix 10.15

Age-Wise Details of Vehicles Owned by KSRTC as on 30-3-2003 & 31.08.03

Sl. No.	Age-Wise Classification	Numbers as on	
		31-3-2003	31-8-2003
1	2	3	4
1	10 Years and above	574	394
2	Above 7 Years and below 10 Years	1332	1477
3	Above 5 Years and below 7 Years	838	693
4	Below 5 Years	1558	1610
Total		4302	4174

Source : KSRTC

Appendix 10.16

Major indicators showing operational efficiency of KSRTC

Sl. No.	Items	Year		Increase / Decrease
		2001-02	2002-03	
1	2	3	4	5
1	Fleet strength (Nos)	4421	4260	(-)3.64
2	Gross revenue earnings (Rs. in crores)	605.31	647.31	(+)6.94
3	Gross revenue expenditure (Rs. in crores)	712.06	777.35	(+)9.17
4	Gross operating loss (Rs. in Crores)	106.75	130.04	(+)21.82
5	No. of schedules operated as on 31st March 2003 (Nos.)	3576	3651	(+)2.10
6	Average earnings per vehicle on road per day (Rs.)	4119	5264	(+)27.80
7	Average earnings per Km. of bus operated (Paise)	1204	1570	(+)30.40
8	Average earnings per passanger (Paise)	512	591	(+)15.43
9	Average route length (Kms.)	57.00	50.01	(-)12.26
10	Average Kms. run per bus per day	340.00	335.00	(-)1.47
11	Average number of buses held daily (Nos.)	4402	4338	(-)1.45
12	Passangers carried (Lakhs)	11087.16	11096.76	(+)0.09

Source : KSRTC

Appendix 10.17
K.S.R.T.C. Operational Statistics during 2002-03

Sl.No	Name of Transport Unit	No. of buses held as on		No. of routes as on 31.3.03	Route Distance (kms)	Gross Kms. Operated		Effective Kms. Operated	Passengers carried		Average carrying capacity per bus
		31.3.03	31.3.03			7	8		9	10	
1	Parassala	66	61	106	5796	6445298	6809291	9626240	55		
2	Neyyattinkara+ Vellarada	117	104	243	7829	11150419	11382901	37784264	55		
3	Poovar	63	58	64	2440	5441159	5729012	18055240	55		
4	Vizhinjam	64	56	38	1524	5112663	5411109	17452726	55		
5	Kattakada	73	62	83	2903	5916983	5919729	21837441	55		
6	Thiruvananthapuram City	130	115	227	2528	8032750	7369536	34950000	44		
7	Pappanamcode	106	102	199	2202	7670024	7258217	35216212	44		
8	Thiruvananthapuram Central	105	77	38	11705	16002251	17654174	19469581	55		
9	Vikas Bhavan	87	73	127	2877	5588970	5619781	24542228	44		
10	Peroorkada	79	72	168	2703	5017119	5058134	30408812	44		
11	Nedumangad+Palod+										
12	Aryanad+ Vithura	138	118	315	10285	11733811	11220476	38235069	55		
13	Vellanadu	47	41	69	1472	3205874	337641	14843257	44		
14	Kaniyapuram	48	41	38	1472	3849124	4363083	14623137	55		
15	Venjaramoodu	30	24	98	7638	3378982	2176112	8138588	55		
16	Chathannur	40	37	127	4952	3710694	3675120	11185022	55		
17	Attingal	82	72	71	1222	7356178	7741321	22507432	55		
18	Kilimanoor+Chadaya- mangalam, Pathanapuram	130	116	225	7189	11281877	9850429	44558409	55		
19	Kollam	94	86	120	6500	9933437	9495737	33664795	55		
20	Kottarakkara	127	112	134	7457	11614745	11121786	29307554	55		
21	Punaloor+Kulathupuzha	68	64	232	6882	6321266	6476258	25927129	55		
22	Karunagapally	66	61	143	2755	6209278	6018033	21326873	55		
23	Edathuva + Mallappally	36	34	20	1120	3231270	3222129	4471250	55		
24	Pathanamthitta	58	50	75	4880	6547623	6136565	14798487	55		
25	Adoor, Pandalam	57	50	77	4849	5107197	4847164	19521935	55		
26	Thiruvalla	43	35	72	3498	4113300	3829657	9456739	55		
27	Kayamkulam	65	64	112	5059	6952626	6598059	19436850	55		
28	Harippad	38	36	69	3234	3670458	3210606	9283416	55		
29	Mavelikkara	43	37	26	1323	4368254	4513943	10959501	55		
30	Alappuzha	92	84	66	3098	8390154	9277681	23289190	55		
31	Cherthala	93	86	32	1699	8805587	7953996	23764873	55		

1	2	3	4	5	6	7	8	9	10
31	Chengannur	53	48	33	1550	5359889	5043317	19807727	55
32	Changanassery	57	48	23	1679	5133825	4317601	14338660	55
33	Kottayam	130	103	57	4944	13180070	13148283	27000614	55
34	Ponkunnam + Erumelly	47	29	77	3012	4061512	3896071	8262820	55
35	Pala	66	56	56	3690	6993239	6580530	14943830	55
36	Erattupetta	50	43	21	2962	4943890	5239723	12749483	55
37	Vaikom	42	30	15	1114	3570338	4054403	8114112	55
38	Muvattupuzha	52	46	48	2115	5099979	5195243	14235573	55
39	Thodupuzha, Moolamattom	60	45	46	4093	5804604	5400827	13379600	55
40	Kothamangalam+ Munnar	44	37	42	3897	4745405	4151106	6977340	55
41	Ernakulam	80	56	49	4634	8720748	8485687	20372534	55
42	Aluva	64	57	37	2960	6108440	6191701	17585478	55
43	Ankamaly	35	30	40	1200	3235561	3402640	10558848	55
44	North Paravoor	60	52	91	3422	5708381	5327548	14394408	55
45	Perumbavoor	44	38	21	1839	3983924	3981933	16115112	55
46	Chalakkudy	40	34	36	1245	3882228	3876542	10287082	55
47	Iringalakuda	11	11	9	372	1348396	1257188	2057400	55
48	Mala + Kodungalloor	53	42	93	3372	5067786	5168488	10023074	55
49	Thrissur + Ambailur	110	74	37	3900	13013836	12657068	20239317	55
50	Puthukkad	11	10	22	726	1117801	1139935	3773817	55
51	Guruvayoor	44	36	24	4563	5546196	5934314	7753260	55
52	Ponnani	32	25	29	2448	3518362	3728447	6124427	55
53	Perinthalmanna	25	21	17	2164	3090142	3283203	4781700	55
54	Malappuaram + Nilambur	64	54	68	2075	7552641	7616280	10764450	55
55	Palakkad, Vadakkanchery,								
55	Chittoor	131	109	62	7171	17170394	17433128	44470719	55
56	Mannarkadu	15	11	18	4945	1771310	1773709	2379066	55
57	Thottipalam	24	20	26	1566	2208336	2194002	4005480	55
58	Kozhikode, Vadakara	95	84	48	3955	11450570	12108287	19625574	55
59	Thamarassery	43	36	48	2860	398377	4259567	9249285	55
60	Kannur	102	84	52	6867	11278002	12035963	18956643	55
61	Payannur	62	57	38	2551	6352046	7707557	15524293	55
62	SulthanBathery	64	55	25	2621	6083100	6274172	11856165	55
63	Kasargode	85	76	43	2897	8835478	9128592	20986492	55
64	Mananthavady	48	38	39	2504	4480055	4917169	10223206	55
65	Kalpetta	32	28	39	2122	2900671	3250977	8155792	55
	Total	4260	3651	4843	233046	412444853	412282313	1130679401	

Source: KSRTC

Appendix 10.18**Fare structure of KSRTC during 2003 (with effect from 1.10.2001)**

Sl.No	Type of service	Basic fare per KM (paise)	Minimum fare (paise)
<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
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	0	0
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 2002-03

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 PS)	Earning per km of buses operated (in Ps)
1	2	3	4	5	6	7	8	9	10
1	Parassala	71	337	74	54.78	1025	36.10	5269	1562
2	Neyyattinkara+ Vellarada	121	323	78	32.22	457	15.90	5098	1580
3	Poovar	70	318	67	38.12	476	16.20	5137	1617
4	Vizhinjam	67	302	69	40.11	481	15.80	5053	1676
5	Kattakada	69	298	78	34.98	438	14.60	4916	1650
6	Thiruvananthapuram City	130	230	74	11.14	360	9.90	3675	1600
7	Pappanamcode	110	221	86	11.07	327	9.40	3387	1532
8	Thiruvananthapuram Central	110	479	83	308.03	1527	44.30	9074	1896
9	Vikas Bhavan	83	242	76	22.65	348	9.80	3785	1561
10	Peroorkada	76	217	83	16.09	263	7.10	3531	1625
11	Nedumangad+Palod+Aryanad +Vithura	138	301	77	32.65	489	16.80	4892	1626
12	Vellanadu	47	248	76	21.33	373	9.30	4371	1764
13	Kaniyapuram	49	289	74	38.74	398	14.20	4460	1542
14	Venjaramoodu	31	304	70	77.94	425	15.80	4512	1483
15	Chathannur	41	311	80	38.99	490	17.90	4681	1506
16	Atingal	81	331	75	17.21	562	17.60	5802	1753
17	Kilimanoor+Chadaya-mangalam, Pathanapuram	122	314	81	31.95	369	13.60	4664	1485
18	Kollam	94	354	81	54.17	478	15.90	5848	1654
19	Kottarakkara	115	345	80	55.65	585	21.40	5189	1506
20	Punaloor+Kulathupuzha	72	307	79	29.66	381	13.10	4893	1596
21	Karunagapally	65	320	82	19.27	468	15.70	5244	1639
22	Edathuva + Mallappally	39	322	70	56.00	1088	38.90	4958	1536
23	Pathanamthitta	63	357	79	65.07	690	23.90	5684	1590
24	Adoor+Pandalam	58	321	75	62.97	390	14.10	4886	1521
25	Thiruvalla	42	344	77	48.58	691	23.40	5577	1620

1	2	3	4	5	6	7	8	9	10
26	Kayamkulam	75	340	75	45.17	577	19.30	5597	1645
27	Harippad	36	332	84	46.87	638	21.30	5473	1646
28	Mavelikkara	46	353	74	50.88	603	21.50	5441	1543
29	Alappuzha	90	326	78	46.94	588	19.40	5433	1665
30	Cherthala	97	323	77	53.09	560	20.00	4979	1541
31	Chengannur	57	302	85	46.97	443	14.60	5051	1671
32	Changanassery	59	321	75	73.00	571	19.30	5226	1628
33	Kottayam	133	365	74	86.74	790	26.30	6034	1652
34	Ponkunnam + Erumelly	46	345	70	39.12	745	26.50	5331	1545
35	Pala	65	360	82	65.89	704	25.20	5525	1536
36	Erattupetta	53	335	76	141.08	639	20.90	5637	1681
37	Vaikom	37	336	79	74.27	639	23.70	4981	1480
38	Muvattupuzha	52	325	83	44.06	609	19.30	5624	1733
39	Thodupuzha, Moolamattom	57	363	77	88.98	696	23.39	5939	1636
40	Koithamangalam+ Munnar	43	383	79	92.79	1040	36.67	5980	1560
41	Ernakulam	81	359	83	94.57	691	23.10	5908	1648
42	Aluva	66	295	86	80.00	506	18.70	4393	1488
43	Ankamaly	37	307	79	30.00	454	16.50	4641	1510
44	North Paravoor	63	309	80	37.60	556	21.40	4425	1431
45	Perumbavoor	45	303	81	87.57	379	13.30	4748	1566

1	2	3	4	5	6	7	8	9	10
46	Chalakkudy	41	338	77	34.58	610	20.30	5575	1652
47	Iringalakuda	12	390	79	41.33	1061	35.30	6437	1652
48	Mala + Kodungalloor	54	341	76	36.26	783	27.26	5381	1580
49	Thrissur + Amballur	110	410	79	105.41	959	34.66	6235	1522
50	Puthukkad	12	318	79	33.00	481	16.00	5275	1657
51	Guruvayoor	46	446	74	190.12	1084	38.60	6895	1546
52	Ponnani	32	374	81	84.41	796	31.00	5288	1414
53	Perinthalmanna	25	451	75	127.29	917	34.80	6535	1448
54	Malappuram + Nilambur	66	315	74	30.66	984	37.82	6105	1432
55	Palghat, Chittur,								
	Vadakkancherry	135	437	79	115.66	588	20.82	6788	1503
56	Mannarkadu	15	405	78	274.72	1092	40.10	6053	1496
57	Thottilpalam	25	340	72	60.23	790	29.70	4971	1463
58	Kozhikode, VDRA	105	382	78	82.40	826	31.46	5527	1445
59	Thamarassery	44	317	78	59.58	604	23.10	4552	1436
60	Kannur	107	386	75	132.06	797	32.10	5280	1367
61	Payyannur	69	356	71	67.13	540	22.10	4791	1346
62	SulthanBathery	69	321	76	104.84	710	27.70	4527	1413
63	Kasargode	86	346	81	62.28	572	22.70	4793	1387
64	Mananthavady	52	348	68	64.21	639	23.60	5171	1486
65	Kalpetta	32	313	80	54.41	505	19.20	4530	1449
	Total	4339	21751	5031	4306	41345	1449.38	341661	101619

Source : KSRTC

Appendix 10.20
Category-wise Staff Position of K S R T C

Sl.No	Category	As on 1.4.2002			As on 1.4.2003		As on 31.10.2003	
		2	3	4	5	6	7	8
1	Administrative Staff (including watch and ward)		3104	2893		2714		
2	Traffic personnel		18018	18450		16823		
3	Maintenance personnel		4832	4221		3945		
	Total		25954	25564		23482		

Source : K S R T C

Appendix - 10.21
No. of ships called at Cochin Port during 2001-21 and 2002-2003 and their net registered tonnage (NRT)

Sl. No.	Types of Vessel	No. of ships			% Variation		Net Registered Tonnage		% Variation	
		2001-02	2002-03	4	Increase (+)	Decrease (-)	2001-02	2002-03	Increase (+)	Decrease (-)
1	2	3	4	5	6	7	8	9	10	11
1	Container	429	433	0.9	2494416	2119209	-15.0			
2	Break Bulk	130	129	-0.8	165092	242415	46.8			
3	Dry Bulk	59	52	-11.9	443253	536102	21.0			
4	Liquid Bulk	359	330	-8.1	4737160	4781222	0.9			
5	Passenger Carriers	21	11	-47.6	206588	52122	-74.8			
6	Others	192	219	-14.1	227450	84174	-63.0			
	Total	1190	1174	-1.3	8273959	7815244	-5.5			

Appendix 10.22

Commodity - wise cargo handled at the Intermediate and Minor ports of Kerala during 2002-03

(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
Beypore	Copra	124.5	0	124.5	0	0	0	124.5
	Empty barrel	1770	0	1770	0	0	0	1770
	Soda Ash	18729	0	18729	0	0	0	18729
	Wheat and wheat products	425	0	425	0	0	0	425
	Ground nut extract	0	0	0	0	0	0	0
	Coir and fiber	169.5	0	169.5	0	0	0	169.5
	Chaik powder	2083.5	0	2083.5	0	0	0	2083.5
	Fish	276	0	276	0	0	0	276
	Miscellaneous	420.5	0	420.5	847	0	847	1267.5
	Timber	5	0	5	264	0	264	269
	Machinery and vehicles	47.5	0	47.5	178	0	178	225.5
	Bauxite	550	0	550	0	0	0	550
	Cement	16026	0	16026	6941	0	6941	22967
	Iron & Steel	0	0	0	577.5	0	577.5	577.5
	Vegetable and fruits	0	0	0	228.5	0	228.5	228.5
	provision and Stationery	0	0	0	613.5	0	613.5	613.5
	Granite Metal & Jelly	0	0	0	7167	0	7167	7167
	Pol. Products	0	0	0	9274.5	0	9274.5	9274.5
	Sand	0	0	0	127	0	127	127
	Food and foodgrains	5	0	5	279	0	279	284
	Furniture and house hold articles	61.5	0	61.5	401.5	0	401.5	463
	Salt	0	0	0	144	0	144	144
	Edible oil	0	0	0	85.5	0	85.5	85.5
	Tiles & Bricks	0	0	0	4257	0	4257	4257
	Coke	519.5	0	519.5	0	0	0	519.5
	Cattle feed	497		497				497
	Oil Cake	12.5		12.5				12.5
	Pig Iron	5842.5	0	5842.5	0	0	0	5842.5
	Scrap	101		101				101
	Cow	0	0	0	40		40	40
Hardware Items				489		489	489	
LPG				269		269	269	
Sub Total		47665.5	0	47665.5	32183	0	32183	79848.5
Azhikkal	..							0
	Clay bricks	0	0	0	100	0	100	100
	Iron Scrap	100	0	100	0	0	0	100
	Cement black	0	0	0	0	0	0	0
	Granite Jelly	0	0	0	0	0	0	0
Sub Total		100	0	100	100	0	100	200
Kovalam/ Vizhinjam	Cement	2287		2287	0			2287
	Oil Cake	310.30		310.30	0			310.3
	Food Item				0	6584.72	6584.72	6584.72
Sub Total		2597.3		2597.3	0	6584.72	6584.72	9182.02
Kannur Thalassery Vadakara Alleppy Valiyathura/ Ponnani Munambam Kasaragod								
Grand Total		5036.28	0	5036.28	0	6584.72	38867.72	89230.52

Source : Port Directorate

Appendix 10.23

Number and Tonnage of steamers and sailing Vesels which called at the Intermediate and Minor Ports of kerala during 2002-32.

Name of Port	Coastal / Foreign	Steamers		Sailing Vessles		Total No. of Vessels	Total Tonnage
		No.	Tonnage	No.	Tonnage		
1							
Kasaragod	0	0	0	0	0	0	0
Azhikkal	0	0	0	2	247.58	2	247.58
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	74	22357	211	31218	285	54145
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	41	7409	32	3444	73	10853
Grand Total	0	115	29766	245	34909.58	360	65245.58

Source: Directorate of Ports.

Appendix 10.24

Number of Harbour Crafts registered at the Intermediate and Minor Ports of Kerala during 2002-03

Name of Port	Cargo boats including Barges	Canoes including boats	Mechanised fishing vessels	Others	Total
1	2	3	4	5	6
Kasaragod	0	114	112	0	226
Azhikkal	0	0	0	0	0
Kannur	0	0	0	0	0
Thalassery	122	0	5	0	127
Vadakara	0	0	0	0	0
Kozhikode / Beypore	0	0	0	242	242
Ponnani	0	0	0	0	0
Munambam	0	0	152	0	152
Alappuzha	0	0	1173	0	1173
Neendakara	0	0	100	0	100
Valiyathura	0	0	0	0	0
Kovalam / Vizhinjam	0	0	0	0	0
Total	122	114	1542	242	2020

Source: Directorate of Ports.

Appendix 10.25
Category - wise break up of Revenue Collected at the Intermediate and
Minor Ports of Kerala during 2002-03

Name of Ports	Port dues	Export/ Import dues	Tughire charges	Pilotage fees	Registration and other fees	Miscellaneous		Private dredging charges	Total
						Ground rent, shed rent etc.	7		
1	2	3	4	5	6	7	8	9	
Kasaragod	0	0	0	0	60026	637652	0	697678	
Azhikkal	1074	928	0	0	0	69128	0	71130	
Kannur	3575	0	0	0	0	38456	0	42031	
Thalassery	3575	0	0	0	12646	666347	0	682568	
Vadakara	0	0	0	0	0	0	0	0	
Kozhikode	80792	886197	0	0	14759	654991	0	1636739	
Beypore	1956	11278	803540	0	23496	1462424	0	2302694	
Ponnani	0	0	0	0	442	16211	0	16653	
Munambam & Alappuzha	0	0	0	0	537954	29562	0	567516	
Neendakara	0	0	94500	0	52885	203092	0	350477	
Valiyathura	0	0	0	0	0	47623	0	47623	
Kovalam / Vizhinjam	37374	91500	0	0	0	216813	0	345687	
Directorate of Ports						27667		27667	
Total	128346	989903	898040	0	702208	4069966	0	6788463	

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	
	2001 - 02	2002 - 03	2001 - 02	2002 - 03
1	2	3	4	5
No. of boats/Jhankars	86 (Total)	85 (Total)	(12+2) 14	(12+2) 14
Boat in operation	Nil	Nil	(10+2) 12	(9+2) 12
No. of trips on Schedule	646	646	45260	47729
No. of passengers carried (in lakhs)	216 (approximate)	188 (approximate)	65.00	58
Gross Route Distance (in KM)	7272	6775	5745.00	491896
Volume of Cargo Carried (000 tonnes)	Nil	Nil	684	604
Total Revenue Receipts (in lakhs)	488.85	500.29	631.55	618.75
Total Revenue Expenditure (Rs lakhs))	1257.74	1278.46	619.35	589.61
No. of Employees (Total)	1110	967	319	312
Profit/Loss (in lakhs)	768.89	778	12.20 (final)	29.00 (provl.)

Appendix 10.27(A)
Details of flights operated by various agencies from Thiruvananthapuram
International Airport

Airlines	2001-2002				2002-2003			
	No. of Flights		No of Passengers		No. of Flights		No of Passengers	
	DOM	INT	DOM	INT	DOM	INT	DOM	INT
2	3	4	5	6	7	8	9	10
Air India	2	1222	385	161503	0	1616	0	180268
Indian airlines	2276	756	148711	82634	2556	1072	163010	89866
Gulf Air	0	732	0	134375	0	668	0	135967
Oman Air	0	526	0	78198	0	712	0	90577
Kuwait Airways	0	418	0	66082	0	412	0	58686
Air Lanka	0	558	0	82969	0	828	0	94430
Qatar Airways	0	730	0	90102	0	790	0	87755
Jet Airways	1402	..	74079	..	1458	0	76896	0
Chartered Fit.	0	42	0	8897	0	28	0	7869
Cargo Frieghters	0	194	0	..	0	72	0	0
Silk Air	0	310	0	31011	0	312	0	27438
Others	730	0	0	0	0	0	0	0
Total	4410	5488	223175	735771	4014	6510	239906	772856

Source: Airport Authority of India

Appendix 10.27 (B)
Details of flights operated by various agencies from Kozhikode Airport

Name of Operator	2001-02				2002-03			
	No. of Flights		Passengers		No. of Flights		Passengers	
	DOM	INT	DOM	INT	DOM	INT	DOM	INT
2	3	4	5	6	7	8	9	10
Indian Airlines	1961	1727	67567	176381	2839	1914	26556	110211
Air India	651	579	71708	95164	604	1318	35563	100607
Jet Airways	730	..	48657	..	730	..	21131	..
Skycabs (Cargo)	..	..	..	..	..	..	..	..
Usbekistan Airways	..	..	..	..	..	..	..	..
IAC, AIC Joint Venture	..	1009	..	52543	..	53	..	..
Expo Cargo	26	..	..	..	..	..	..	..
Others	188	..	..	..	..	..	..	..
Total	3556	3315	187932	324088	4173	3285	83250	210818

Source: Airport Authority of India, Kozhikode.

Appendix 10.27 (C)
Details of flights operated by various agencies from
Nedumbassery International Airport

Airlines	2001-02				2002-03			
	No. of Flights		Passengers		No. of Flights		Passengers	
	DOM	INT	DOM	INT	DOM	INT	DOM	INT
2	3	4	5	6	7	8	9	10
Air India	..	2537	..	301131	..	..	..	..
Indian Airlines	3542	1359	135033	71729	..	..	..	..
Jet Airways	3628	..	278532	..	..	..	..	..
Oman Air	..	266	..	34544	7137	6309	419568	590718
Silk Air	..	140	..	10625	..	..	..	..
Kuwait Airways	..	6	..	1277	..	..	..	..
Total	7170	4308	413565	419306	7137	6309	419568	590718

Source: Cochin International Airport

Appendix 10.28
Number of Passports issued from the Passport Offices in Kerala from 2000-01 to 2002-2003

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

Source: Passport Offices Thiruvananthapuram Kochi and Kozhikode

Appendix.10.29

Growth of Post Offices in Kerala During the Last Five 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

* 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 <i>1</i>	As on 31st March	
	2002 <i>2</i>	2003 <i>3</i>
(a) Postal Services		
1. Head Post Offices	51	51
2. Sub Post Offices	1462	1463
ii) Extra Departmental Sub Post Offices	527	527
3. Branch Offices	3034	3036
Total (a)	5074*	5077
(b) Speed Post Centres National		
National	8	9
State	40	35
Total	48	44
© Other Postal Services		
1. Head Record Office	3	3
ii) Sorting Mail Offices	28	29
iii) Sub Record Office	24	26
iv) Transist Mail Offices	8	11
v) R.M.S. Sections	19	19
vi) Press Sorting Office	2	2
vii) Parcel Sorting Office	3	3
Patrika Channel Office	1	5
Mail Motor Service Division unit	1	1
Central Stamp Depot	1	1
Total (C)	90	90

* Revised

Source : CPMG, Kerala Circle, Thiruvananthapuram.

Appendix 10.31
Division-wise and Category -wise Post Offices under Kerala Circle
as on 31.3.2003

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	112	197
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	63	30	62	157
6	Alappuzha	2	48	30	44	124
7	Mavelikara	2	52	22	50	126
8	Changanacherry	2	48	12	106	168
9	Idukki	2	52	13	223	290
10	Kottayam	3	79	44	131	257
11	Ernakulam	2	72	5	59	138
12	Auva	3	72	32	147	254
13	Thrissur	3	106	32	156	297
14	Irinjalakuda	2	62	22	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	97	173
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
Total - (Kerala Circle)		51	1463	527	3036	5077

Source : CPMG, Kerala Circle, Thiruvananthapuram.

Appendix 10.32
Urban/Rural Split of Post Offices as on 31-3-2003

	Head Office		Sub Office				EDSO				EDBO				Grand Total		
	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Total
TV North	0	2	43	32	7	1	93	19	143	54	197						
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	52	11	29	1	57	5	138	19	157						
	2	10	269	107	123	6	574	40	968	163	1131						
Alappuzha	0	2	23	25	24	6	32	12	79	45	124						
Mavelikara	0	2	45	7	22	0	47	3	114	12	126						
Changanacherry	1	1	44	4	12	0	104	2	161	7	168						
Kottayam	0	3	56	23	39	5	128	3	223	34	257						
Idukki	1	1	48	4	13	0	221	2	283	7	290						
Ernakulam	0	2	19	53	2	3	42	17	63	75	138						
Aluva	0	3	40	32	29	3	141	6	210	44	254						
Thrissur	1	2	68	38	22	10	136	20	227	70	297						
Irinjalakuda	0	2	38	24	20	2	89	18	147	46	193						
Lakshadweep	0	0	6	0	3	0	1	0	10	0	10						
	3	18	387	210	186	29	941	83	1517	340	1857						
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	97	0	164	9	173						
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						
	3	15	309	181	149	34	1249	147	1710	377	2087						
Grand Total	8	43	965	498	458	69	2766	270	4197	880	5077						

Source: CPMG, Kerala Circle

Appendix 10.33

District - wise details of area and population served by one post office during 2002-2003

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	419	2192	5.23	3234707	7720
2	Kollam	365	2491	6.82	2584118	7079
3	Pathanamthitta	312	2642	8.46	1231577	3947
4	Alappuzha	296	1414	4.77	2105349	7112
5	Kottayam	411	2203	5.36	1952901	4751
6	Idukki	293	5019	17.12	1128605	3851
7	Ernakulam	393	2407	6.12	3098378	7883
8	Thirussur	489	3032	6.20	2975440	6084
9	Palakkad	456	4480	9.82	2617072	5739
10	Malappuram	438	3550	8.10	3629640	8286
11	Kozhikode	413	2344	5.67	2878498	6969
12	Wayanad	163	2131	13.07	786627	4825
13	Kannur	380	2966	7.80	2412365	6348
14	Kasaragod	235	1992	8.47	1203342	5120
	Kerala	5063	38863	7.67	31838619	6288
	UT of Lakshadweep	10	3200	3.20	60595	6059
	UT of Pondichery	4	871	2.18	35119	8779
	Total	5077				

Source: CPMG Kerala Circle, Thiruvananthapuram

Appendix 10.34
District - wise details of Telephone net work during 2002-03.

1	2	3	4	5	6	7	8
SI.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	Alleppey	69	229604	198351	1414	140.28	94.23
2	Calicut	82	283972	222891	2344	95.09	77.45
3	Cannanore	112	280474	210011	2966	70.81	87.07
4	Ernakulam	121	476630	399028	2407	165.78	128.80
5	Idukki	81	111732	88678	5019	17.67	78.55
6	Kasaragod	58	123832	96538	1992	48.46	80.25
7	Kottayam	93	284641	243390	2203	110.48	124.69
8	Lakshadweep	10	11776	8679	32	271.22	142.28
9	Malappuram	85	291602	230836	3550	65.02	63.59
10	Palakkad	102	202976	161660	4480	36.08	61.77
11	Pathanamthitta	77	201650	183236	2642	69.36	148.73
12	Pondicherry (Mahe)	1	6000	4638	10	463.80	154.60
13	Quilon	84	285982	240139	2491	96.40	92.93
14	Trichur	80	386782	327420	3032	107.99	110.06
15	Trivandrum	94	412364	358893	2192	163.73	110.94
16	Wayanad	30	63396	46523	2131	21.83	59.11
	Total	1179	3653413	3020911	38905	77.65	94.62

Source : CGMT, Kerala.

Appendix 11.1
Comparative statement showing literacy rate in India and States 1991 & 2001

Sl. No	India/States/Union Territories	Literacy rate 1991			Literacy rate 2001		
		Persons	Male	Female	Persons	Male	Female
1	2	3	4	5	6	7	8
	India	52.21	64.13	39.29	65.38	75.85	54.16
1	Jammu & Kashmir	-	-	-	54.46	65.75	41.82
2	Himachal Pradesh	63.86	75.36	52.13	77.13	86.02	68.08
3	Punjab	58.51	65.66	50.41	69.95	75.63	63.55
4	Chandigarh	77.81	82.04	72.34	81.76	85.65	76.65
5	Utharanchal	-	-	-	72.28	84.01	60.26
6	Haryana	55.85	69.10	40.47	68.59	79.25	56.31
7	Delhi	75.29	82.01	66.99	81.82	87.37	75.00
8	Rajasthan	38.55	54.99	20.44	61.03	76.46	44.34
9	Uttar Pradesh	41.60	55.73	25.31	57.36	70.23	42.98
10	Bihar	38.48	52.49	22.89	47.53	60.32	33.57
11	Sikkim	56.94	65.74	46.69	69.68	76.73	61.46
12	Arunachal Pradesh	41.59	51.45	29.69	54.74	64.07	44.24
13	Nagaland	61.65	67.62	54.75	67.11	71.77	61.92
14	Manipur	59.89	71.63	47.60	68.87	77.87	59.70
15	Mizoram	82.27	85.61	78.60	88.49	90.69	86.13
16	Tripura	60.44	70.58	49.65	73.66	81.47	65.41
17	Meghalaya	46.10	53.12	44.85	63.31	66.14	60.41
18	Assam	52.89	61.87	43.03	64.28	71.93	56.03
19	West Bengal	57.70	67.81	46.56	69.22	77.58	60.22
20	Jharkand	-	-	-	54.13	67.94	39.38
21	Orissa	49.09	63.09	34.68	63.61	75.95	50.97
22	Chattisgarh	-	-	-	65.18	77.86	52.40
23	Madhya Pradesh	44.20	58.42	28.85	64.11	76.80	50.28
24	Gujarat	61.29	73.13	48.64	69.97	80.50	58.6
25	Daman & Diu	71.20	82.66	59.40	81.09	88.40	70.37
26	Dadra & Nagar Haveli	40.71	53.56	26.98	60.03	73.32	42.99
27	Maharashtra	64.87	76.56	52.32	77.27	86.27	67.51
28	Andhra Pradesh	44.09	55.13	32.72	61.11	70.85	51.17
29	Karnataka	56.04	67.26	44.34	67.04	76.29	57.45
30	Goa	75.51	83.64	67.09	82.32	88.88	75.51
31	Lakshadweep	81.78	90.18	72.89	87.52	93.15	81.56
32	Kerala	89.81	93.62	86.17	90.92	94.20	87.80
33	Tamil Nadu	62.66	73.75	51.33	73.47	82.33	64.55
34	Pondicherry	74.74	83.68	65.63	81.49	88.89	74.13
35	A & N Islands	73.02	78.99	65.46	81.18	86.07	75.29

Source: Census 2001

Note: The 1991 Census was not held in Jammu & Kashmir.

Appendix 11.2
Management-wise Number of Schools in Kerala 1998-99 to 2002-03

Year	Management	LP Sections in UPSchools			LP Sections 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	
	Total			6755	2241	730	2966	2046	2585	
1999-2000	Govt.			2552	899	436	959	838	979	
	Aided			4035	1279	191	1873	1043	1397	
	Unaided			161	61	105	134	171	220	
	Total			6748	2239	732	2966	2052	2596	
2000-01	Govt.			2565	898	438	960	844	985	
	Aided			4035	1296	183	1873	1051	1412	
	Unaided			158	56	101	124	172	218	
	Total			6758	2250	722	2957	2067	2615	
2001-02	Govt.			2565	899	439	960	846	986	
	Aided			4031	1304	185	1874	1051	1415	
	Unaided			158	58	99	125	171	217	
	Total			6754	2261	723	2959	2068	2618	
2002-2003	Govt.			2551	888	440	957	845	984	
	Aided			4003	1308	178	1870	1038	1409	
	Unaided			158	68	100	124	164	215	
	Total			6712	2264	718	2951	2047	2608	

Source: Directorate of Public Instruction, Thiruvananthapuram.

Appendix 11.3
District-wise/ Management-wise Number of Schools in Kerala -2002-03

Sl. No.	District	High Schools						U.P.Schools						L.P.Schools						H.S.+U.P.S.+L.P.S																
		G	A	UA	T	6	7	G	A	UA	T	8	9	G	A	UA	T	10	11	G	A	UA	T	12	13	G	A	UA	T	14	15	G	A	UA	T	16
1	Thiruvananthapuram	118	94	27	239	98	102	15	215	302	181	14	497	518	377	56	951																			
2	Kollam	76	127	10	213	62	139	7	208	268	189	16	473	406	455	33	894																			
3	Pathanamthitta	47	111	7	165	43	84	13	140	168	238	13	419	258	433	33	724																			
4	Alappuzha	58	127	7	192	67	77	2	146	193	198	14	405	318	402	23	743																			
5	Kottayam	59	166	16	241	67	128	8	203	169	267	21	457	295	561	45	901																			
6	Idukki	53	73	10	136	40	63	3	106	83	136	5	224	176	272	18	466																			
7	Ernakulam	87	175	34	296	92	102	13	207	183	274	23	480	362	551	70	983																			
8	Thrissur	80	149	21	250	55	162	6	223	116	381	10	507	251	692	37	980																			
9	Palakkad	59	78	16	153	63	159	13	235	194	352	10	556	316	589	39	944																			
10	Malappuram	82	80	29	191	113	225	16	354	349	478	8	835	544	783	53	1380																			
11	Kozhikodu	67	96	16	179	74	240	9	323	181	531	7	719	322	867	32	1221																			
12	Wayanadu	40	23	4	67	34	39	3	76	91	53	5	149	165	115	12	292																			
13	Kannur	82	77	10	169	77	278	12	367	113	610	5	728	272	965	27	1264																			
14	Kasaragod	76	33	8	117	72	72	4	148	141	115	7	263	289	220	19	528																			
	Total	984	1409	215	2608	957	1870	124	2951	2551	4003	158	6712	4492	7282	497	12271																			

Source: Directorate of Public Instruction, Thiruvananthapuram.

Appendix 11.4

District wise Number of Schools (other than state syllabus) in Kerala 2003

Sl.No.	District	CBSE	ICSE	Kendriya Vidyalaya	Jawahar Navodaya
1	2	3	4	5	6
1	Thiruvananthapuram	36	11	4	1
2	Kollam	19	9	0	1
3	Pathanamthitta	17	13	1	1
4	Alappuzha	28	9	1	1
5	Kottayam	31	5	2	1
6	Idukki	11	4	0	1
7	Ernakulam	70	11	6	1
8	Thrissur	37	4	1	1
9	Palakkad	29	2	3	1
10	Malappauram	40	2	1	1
11	Kozhikode	25	1	2	1
12	Wayanadu	8	1	1	0
13	Kannur	30	1	3	1
14	Kasaragod	15	2	2	1
Total		396	75	27	13

Source: Directorate of Public Instruction, Thiruvananthapuram.

Appendix 11.5

District - wise Details of Govt.Schools having Building Facilities - Kerala (2003)

Sl.No.	District	No.of Schools having Pucca Building				No.of Schools having Thatched Sheds				Number of Schools working in Rented Building.			
		L.P	U.P	H.S	Total	L.P	U.P	H.S	Total	L.P	U.P	H.S	Total
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Thiruvananthapuram	188	64	62	314	46	43	72	161	0	0	0	0
2	Kollam	224	50	72	346	9	11	17	37	2	0	0	2
3	Pathanamthitta	163	41	47	251	3	0	0	3	1	0	0	1
4	Alappuzha	177	55	36	268	8	12	15	35	0	0	0	0
5	Kottayam	312	137	136	585	0	2	1	3	0	0	0	0
6	Idukki	63	31	41	135	0	0	2	2	0	0	0	0
7	Ernakulam	187	91	88	366	0	0	1	1	2	0	0	2
8	Thrissur	107	50	76	233	0	0	19	19	22	0	1	23
9	Palakkad	173	57	47	277	1	5	14	20	64	7	2	73
10	Malappuram	314	82	60	456	7	24	15	46	120	32	2	154
11	Kozhikode	158	54	48	260	7	12	16	35	56	14	3	73
12	Wayanad	54	17	27	98	1	2	10	13	2	4	1	7
13	Kannur	100	67	53	220	5	13	27	45	35	22	6	63
14	Kasaragod	126	60	23	209	3	6	28	37	20	8	8	36
	Total	2346	856	816	4018	90	130	237	457	324	87	23	434

Source: Directorate of Public Instruction, Thiruvananthapuram.

Appendix. 11.6

District - wise Details of Govt. Schools having Drinking water/Latrines/Urinal Facilities In Kerala (2003)

Sl.No.	District	No. of Schools 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	290	97	110	497	193	93	105	391
2	Kollam	235	59	69	363	215	52	67	334
3	Pathanamthitta	135	25	46	206	60	22	46	128
4	Alappuzha	161	48	55	264	128	51	51	230
5	Kottayam	135	64	56	255	144	65	53	262
6	Idukki	78	24	30	132	71	33	43	147
7	Ernakulam	116	84	84	284	115	75	82	272
8	Thrissur	105	48	65	218	73	40	61	174
9	Palakkad	182	58	57	297	174	55	56	285
10	Malappuram	319	110	78	507	280	92	66	438
11	Kozhikode	161	72	63	296	130	61	42	233
12	Wayanad	82	33	38	153	53	29	21	103
13	Kannur	100	74	76	250	79	60	67	206
14	Kasaragod	139	68	72	279	70	31	30	131
	TOTAL:	2238	864	899	4001	1785	759	790	3334

Source: Directorate of Public Instruction, Thiruvananthapuram.

Appendix 11.7
Enrolment of Students in Schools- District-wise and Stage-wise (2002- 03)

Sl.No	Districts	L.P.S			U.P.S			H.S			TOTAL		
		Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Thiruvananthapuram	83584	85771	169355	72866	70668	143534	75045	74190	149235	231495	230629	462124
2	Kollam	65841	65456	131297	59709	56054	115263	60772	59143	119915	186322	180653	366975
3	Pathanamthitta	27181	27216	54397	25258	23579	48837	29041	27444	56485	81480	78239	159719
4	Alappuzha	48938	48338	97276	44908	41866	86774	48893	46220	95113	142739	136424	279163
5	Kottayam	50040	49161	99201	42742	39689	82431	42665	42622	85287	135447	131472	266919
6	Idukki	28660	27659	56319	24965	21856	46821	23342	21938	45280	76967	71453	148420
7	Ernakulam	72971	72168	145139	64316	61037	125353	65117	65403	130520	202404	198608	401012
8	Thrissur	89736	87705	177441	74571	68955	143526	71355	71327	142682	235662	227987	463649
9	Palakkad	86856	84249	171105	72522	67600	140122	71882	71385	143267	231260	223234	454494
10	Malappuram	151835	144195	296030	129032	118614	247646	120465	117786	238251	401332	380595	781927
11	Kozhikode	89124	85622	174746	78039	71467	149506	77935	75785	153720	245098	232874	477972
12	Wayanad	26356	25070	51426	20659	19246	39905	19333	19108	38441	66348	63424	129772
13	Kannur	75136	71605	146741	646451	59391	124042	63860	62501	126361	203647	193497	397144
14	Kasaragod	42166	40479	82645	34420	32025	66445	32749	30632	63381	109335	103136	212471
	Total	938424	914694	1853118	808658	752047	1560705	802454	785484	1587938	2549536	2452225	5001761

Source: Directorate of Public Instruction, Thiruvananthapuram.

Appendix 11.8
Management-wise/Standard-wise enrolment of Students in Schools -Kerala-2002-03 (Students in Nos.)

Management	LP			UP			HS					Total I to X		
	I	II	III	IV	V	VI	VII	VIII	IX	X	Total			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Govt.														
Boys	79505	83007	83494	87304	333310	78531	82082	91279	251892	104341	103845	81544	289730	874932
Girls	78022	80283	80512	82847	321664	73437	75490	83708	232635	93575	98245	87307	279127	833426
Sub-Total	157527	163290	164006	170151	654974	151968	157572	174987	484527	197916	202090	168851	568857	1708358
Aided														
Boys	134844	138863	135622	138559	547888	160495	167042	187083	514620	176202	169086	130600	475888	1538396
Girls	134766	135124	131992	133972	535854	154344	156648	171449	482441	165676	164577	142045	472298	1490593
Sub Total	269610	273987	267614	272531	1083742	314839	323690	358532	997061	341878	333663	272645	948186	3028989
UnAided														
Boys	14785	14420	14434	13587	57226	14301	14025	13820	42146	13837	12337	10662	36836	136208
Girls	14595	14668	14313	13600	57176	12540	12302	12129	36971	12285	11449	10325	34059	128206
Sub-Total	29380	29088	28747	27187	114402	26841	26327	25949	79117	26122	23786	20987	70895	264414
Total-Boys	229134	236290	233550	239450	938424	253327	263149	292182	808658	294380	285268	222806	802454	2549536
-Girls	227383	230075	226817	230419	914694	240321	244435	267286	752047	271536	274271	239677	785484	2452225
Grand Total	456517	466365	460367	469869	1853118	493648	507584	559468	1560705	565916	559539	462483	1587938	5001761

Source: Directorate of Public Instruction, Thiruvananthapuram.

Appendix 11.9
Standard -wise Strength of SC/ST Students - 2002-03

(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	157527	23098	4262	269610	29070	3772	29380	997	118
II	163290	22808	3867	273987	28887	3248	29088	1012	110
III	164006	22024	3278	267614	26558	2831	28747	974	110
IV	170151	22277	3504	272531	26923	2925	27187	937	125
V	151968	19285	3187	314839	31469	3172	26841	647	130
VI	157572	19769	3043	323690	32935	2843	26327	666	123
VII	174987	22218	2999	358532	37812	2982	25949	593	116
VIII	197916	25203	2753	341878	34639	2222	26122	624	111
IX	202090	24717	2640	333663	33062	1958	23786	590	78
X	168851	18902	1836	272645	24281	1431	20987	511	62
Total	1708358	220301	31369	3028989	305636	27384	264414	7551	1083

Source: Directorate of Public Instruction, Thiruvananthapuram.

Appendix 11.10
Stage-wise and Management-wise number of Teachers in Schools in Kerala - 2002-03

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	4378	9598	13976	7247	18917	26164	181	930	1111	11806	29445	41251
Upper Primary School Teachers	4924	8210	13134	9960	21718	31678	219	662	881	15103	30590	45693
High School Teachers	12335	19919	32254	15507	35080	50587	1333	4583	5916	29175	59582	88757
TTI	197	202	399	91	429	520	0	0	0	288	631	919
Total	21834	37929	59763	32805	76144	108949	1733	6175	7908	56372	120248	176620

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
		UPS		HS		Total	UPS		HS		Total	LPS	UPS	HS			
		LPS	UPS	LPS	HS		LPS	HS	LPS	HS							
1	2	3	4	5	6	7	8	9	10	11	12	13	14				
1	Thiruvananthapuram	86	13	6	105	23	6	1	30	109	19	7	135				
2	Kollam	84	7	0	91	33	4	0	37	117	11	0	128				
3	Pathanamthitta	100	29	9	138	189	25	4	218	289	54	13	356				
4	Alleppuzha	92	19	3	114	73	11	4	88	165	30	7	202				
5	Kottayam	103	38	11	152	94	22	3	119	197	60	14	271				
6	Idukki	51	18	13	82	36	10	3	49	87	28	16	131				
7	Ernakulam	97	35	6	138	66	23	2	91	163	58	8	229				
8	Trissur	37	9	2	48	74	10	0	84	111	19	2	132				
9	Palakkad	41	2	0	43	41	0	0	41	82	2	0	84				
10	Malappuram	16	1	0	17	11	0	0	11	27	1	0	28				
11	Kozhikkode	55	8	3	66	155	9	0	164	210	17	3	230				
12	Wayanad	30	2	0	32	4	0	0	4	34	2	0	36				
13	Kannur	73	20	11	104	331	41	1	373	404	61	12	477				
14	Kasaragod	65	5	1	71	25	6	0	31	90	11	1	102				
	Total	930	206	65	1201	1155	167	18	1340	2085	373	83	2541				

Source: Directorate of Public Instruction, Thiruvananthapuram.

Appendix. 11.12

Protected Teachers in Kerala, Stage wise/District wise - 2003. (in No.)

Sl.No.	District	HSA	P.D.Teachers	Special Teachers	Total
1	2	3	4	5	6
1	Thiruvananthapuram	5	18	13	36
2	Kollam	50	207	148	405
3	Pathanamthitta	42	59	60	161
4	Alappuzha	89	109	110	308
5	Kottayam	13	20	34	67
6	Idukki	4	18	31	53
7	Ernakulam	86	177	197	460
8	Thrissur	18	99	47	164
9	Palakkad	12	189	63	264
10	Malappuram	126	150	31	307
11	Kozhikkode	52	623	74	749
12	Wayanad	14	33	4	51
13	Kannur	76	418	146	640
14	Kasaragod	18	45	10	73
TOTAL		605	2165	968	3738

Source: Directorate of Public Instruction, Thiruvananthapuram.

Appendix 11.13

District-wise/Management-wise Number of Higher Secondary Schools in Kerala -2006.

Sl.No.	District/Taluk	Number of Higher Secondary Schools				Number of batches			
		Govt.	Aided	Unaided	Total	Science	Humanities	Commerce	Total
1	2	3	4	5	6	7	8	9	10
1	Thiruvananthapuram	46	45	37	128	316	90	84	490
2	Kollam	35	46	19	100	216	64	57	337
3	Pathanamthitta	14	35	26	75	169	54	45	268
4	Alappuzha	26	47	14	87	198	68	55	321
5	Kottayam	29	60	23	112	259	81	59	399
6	Idukki	15	25	14	54	104	29	27	160
7	Ernakulam	36	63	48	147	331	74	103	508
8	Thrissur	41	43	35	119	240	60	73	373
9	Palakkad	33	22	22	77	149	47	36	232
10	Malappuram	36	38	42	116	231	61	59	351
11	Kozhikkode	30	38	24	92	177	50	49	276
12	Wayanad	13	11	7	31	55	23	15	93
13	Kannur	43	28	19	90	177	42	52	271
14	Kasaragod	19	11	9	39	74	22	19	115
Total		416	512	339	1267	2696	765	733	4194

Source: Directorate of Higher Secondary Education, Thiruvananthapuram.

Appendix 11.14

District-wise details of Vocational Higher Secondary Schools and Courses during 2003

Sl.No.	District	No. of Schools			No. of batches		
		Government	Aided	Total	Government	Aided	Total
1	2	3	4	5	6	7	8
1	Thiruvananthapuram	30	11	41	74	36	110
2	Kollam	20	32	52	51	109	160
3	Alappuzha	14	7	21	35	21	56
4	Pathanamthitta	10	17	27	26	51	77
5	Kottayam	21	10	31	49	26	75
6	Ernakulam	22	12	34	54	39	93
7	Idukki	11	5	16	31	15	46
8	Thrissur	26	10	36	64	32	96
9	Palakkad	17	7	24	37	20	57
10	Malappuram	23	3	26	53	7	60
11	Kozhikode	20	8	28	51	23	74
12	Wayanad	5	2	7	13	5	18
13	Kannur	15	1	16	38	2	40
14	Kasaragod	13	3	16	30	8	38
TOTAL:		247	128	375	606	394	1000

Source : Directorate of Vocational Higher Secondary Education.

Appendix 11.15
Course wise Intake of students in VHSE- 2003

Sl.No.	Name of Course	Sanctioned Intake (in Nos.)	Actual Intake (in Nos.)
1	2	3	4
1	Civil Construction and Maintenance	1188	1058
2	Maintenance and Repairs of Two Wheelers and Three Wheelers	429	328
3	Maintenance and Repairs of Automobiles	462	419
4	Maintenance and Repairs of Radio and Television	2574	2190
5	Maintenance and Repairs of Domestic Appliances	1914	1639
6	Mechanical Servicing (Agro Machinery)	99	86
7	Refrigeration and Air conditioning	660	600
8	Printing Technology	726	588
9	Rubber Technology	99	72
10	Textile B28Dyeing and Printing	33	20
11	Textile Weaving	33	0
12	Computer Science	1518	1390
13	Computer Application	1254	1080
14	Plant Protection	2046	1876
15	Fruits and Vegetables	825	725
16	Nursery Management and Ornamental Gardening	1716	1581
17	Sericulture	99	89
18	Livestock Management (Dairy Husbandry)	726	688
19	Livestock Management (Poultry Husbandry)	429	388
20	Dairying (Milk Products)	165	155
21	Aquaculture	297	273
22	Fishing Craft and Gear Technology	132	106
23	Maintenance and Operation of Marine Engines	198	183
24	Fish Processing Technology	495	437
25	Medical Laboratory Technician	4587	4149
26	Maintenance and Operation of Bio Medical Equipment	990	914
27	ECG and Audiometric Technician	297	273
28	Domestic Nursing	495	437
29	Dental Technology	99	92
30	Physiotherapy	33	33
31	Physical Education	66	63
32	Clothing and Embroidery	561	439
33	Cosmetology and Beauty Parlour Management	198	175
34	Creche and Pre-School Management	66	62
35	Travel and Tourism	792	709
36	Office Secretaryship	2145	1878
37	Accountancy and Auditing	2706	2308
38	General Insurance	462	388
39	Marketing and Salesmanship	825	715
40	Reception, Book-keeping and communication	165	130
41	Catering & Restaurant Management	99	90
42	Banking Assistance	297	263
Total		33000	29089

Source Directorate of Vocational Higher Secondary Education

Appendix 11.16
Details of B.A Degree Enrolment in Colleges during the year 2002-03.
(Students in Nos)

Sl.No	Subject	First Year		Second Year		Third Year	
		Total	of which girls	Total	of which girls	Total	of which girls
1	2	3	4	5	6	7	8
1	Economics	6455	4421	6124	4360	6220	5122
2	History	3418	2122	3352	2231	3240	1715
3	Sociology	962	624	902	528	741	335
4	Politics	998	498	1029	595	940	425
5	Philosophy	510	310	679	400	514	248
6	Geography	95	40	79	25	73	30
7	Psychology	270	148	214	113	154	73
8	English	4059	2120	3910	2275	2814	1610
9	Malayalam	3041	2150	2793	1585	2637	1715
10	Hindi	910	432	852	615	609	304
11	Islamic History	292	145	217	102	169	73
12	Arabic	380	202	293	135	250	65
13	Sanskript	240	85	183	95	170	30
14	Kannada	25	10	23	12	22	10
15	Tamil	53	20	46	12	53	20
16	Music	45	15	53	19	45	20
	Total	21753	13342	20749	13102	18651	11795

Source: Directorate of Collegiate Education

Appendix.11.17
Details of B.Sc.Degree Enrolment in Colleges during 2002- 2003
(Students in Nos.)

Sl.No	Subject	First Year		Second Year		Final Year	
		Total	of which girls	Total	of which girls	Total	of which girls
1	2	3	4	5	6	7	8
1	Mathematics	5309	3330	5115	3108	4810	2690
2	Physics	4041	2518	4125	2459	4205	2535
3	Chemistry	4155	2585	4113	2340	3920	2145
4	Zoology	3765	2280	3616	2275	3410	1950
5	Botany	3015	2390	2522	2202	2410	1890
6	Statistics	281	156	210	150	155	115
7	Geology	190	174	137	88	144	90
8	Hornescience	63	69	30	65	35	80
9	Bio Chemistry	94	35	60	55	40	15
10	Polymer Chemistry	132	50	80	33	90	45
11	Bio Technology	28	20	20	30	22	8
12	Computer Science	110	45	83	40	62	20
13	Industrial Fish and Fisheries	40	18	33	12	25	10
14	Electronics	82	35	62	16	70	20
15	Analytical Chemistry	15	5	10	5	5	5
Total		21320	13710	20216	12878	19403	11618

Source: Directorate of Collegiate Education

Appendix 11.18
Details of Bcom degree enrolment in colleges 2003-04

Year	Boys	Girls	Total
First Year	3810	4012	7822
Second Year	3785	3962	7747
Third Year	3261	3277	6538
Total	10856	11251	22107

Source: Directorate of Collegiate Education

Appendix 11.19

Details of Enrolment of M.A. Students in Colleges during 2002- 2003 (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	242	615	857	373	570	943
2	History	128	310	438	179	328	507
3	Sociology	7	8	15	8	8	16
4	Politics	73	155	228	90	156	246
5	Philosophy	12	30	42	27	33	60
6	Geography	6	25	31	11	15	26
7	Psychology	12	35	47	8	30	38
8	English	203	470	673	203	399	602
9	Malayalam	70	330	400	85	161	246
10	Hindi	60	150	210	48	207	255
11	Geology	22	15	37	18	14	32
12	Arabic	121	45	166	117	58	175
13	Sanskrit	20	43	63	39	12	51
14	Kannada	5	9	14	8	5	13
15	Islamic History	38	49	87	61	53	114
16	Tamil	5	8	13	7	12	19
Total		1024	2297	3321	1282	2061	3343

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	140	528	668	145	432	577
2	Statistics	115	315	430	98	245	343
3	Physics	146	363	509	149	338	487
4	Chemistry	123	345	468	128	337	465
5	Zoology	138	309	447	135	325	460
6	Botany	112	350	462	110	360	470
7	Home Science	7	10	17	8	9	17
8	Geology	12	10	22	15	15	30
9	Analytical Chemistry	8	9	17	4	10	14
10	Bio-Chemistry	4	5	9	0	0	0
Total		805	2244	3049	792	2071	2863

Appendix. 11.21

Details of Enrolment of M.Com Students in Colleges during 2002-03(in Nos)

Sl.No	Category	Enrolment		
		Boys	Girls	Total
1	2	3	4	5
1	First Year	481	615	1096
2	Second Year	487	609	1096
Total		968	1224	2192

Source: Directorate of Collegiate Education, Thiruvananthapuram

Appendix 11.22
Year-wise Break up of Private Registration (2001 to 2003)

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

Source: Universities in Kerala

Appendix. 11.23
University-wise Number of Teachers in Arts & Science Colleges in Kerala(2001 to 2003)

Sl.No.	Name of University	Number of Teachers								
		2001		2002		2003				
1	2	Men	Women	Total	Men	Women	Total	Men	Women	Total
1	Kerala	1344	2132	3476	1799	1934	3733	1535	1634	3169
2	Calicut	1881	2241	4122	1354	1537	2891	1370	1458	2828
3	Mahatma Gandhi	1584	1408	2992	1548	1728	3276	1738	1985	3723
4	Kannur	214	369	583	325	360	685	322	416	738
	TOTAL:	5023	6150	11173	5026	5559	10585	4965	5493	10458

Source: Directorate of Collegiate Education, Thiruvananthapuram

Appendix 11.24
Branch-wise Distribution of Seats in Engineering Colleges-2003

Sl.No	Name of Course/Branch	Total Sanctioned Seats
1	2	3
1	Civil Engineering	902
2	Mechanical Engineering	1711
3	Electrical Engineering	2400
4	Electronics and Communication	4785
5	Computer Science & Engineering	4410
6	Applied Electronics and Instrumentation	600
7	Architecture	80
8	Industrial Engineering	30
9	Chemical Engineering	150
10	Production cum Plant Engineering	60
11	Production Engineering	N.A
12	Instrumentation and Control Engineering	120
13	Computer Engineering	N.A
14	Electronics Engineering	60
15	Bio-medical Engineering	100
16	Mechanical Engineering (Automobile)	120
17	Mechanical Engineering (Production)	145
18	Polymer Engineering	120
19	Information Technology	2535
20	Electronics and Instrumentation	165
21	Bio-Technology	120
22	Production Technology	60
Total		18673

Source: Directorate of Technical Education, Thiruvananthapuram.

Appendix 11.25

**Course-wise Annual Intake of Students in Government Engineering
Colleges at Post Graduate Level - 2001-2002 to 2003-04**

Sl.No.	Name of Course	Annual (Intake In Nos.)				
		2001-02	2002-03	2003-04	2003-04	2003-04
1	2	3	4	5	5	
1	Civil Engineering	42	42	42	42	42
2	Mechanical Engineering	36	36	36	36	36
3	Electrical Engineering	36	36	36	36	36
4	Electronics & Communication Engg.	28	28	28	28	28
5	Architecture	7	7	7	7	7
6	Chemical Engineering	8	8	8	8	8
Total		157	157	157	157	157

Source: Directorate of Technical Education, Thiruvananthapuram

Appendix 11.26

Number of Students and Teachers in Polytechnics 2002 & 2003

Type of Institutions	Students (in Nos)			Teachers (in Nos)								
	2002			2003			2002			2003		
	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	15324	8252	23576	15145	8895	24040	1030	330	1360	1030	330	1360
2. Private	2732	1471	4203	2691	1449	4140	240	79	319	240	79	319
Total	18056	9723	27779	17836	10344	28180	1270	409	1679	1270	409	1679

Source: Directorate of Technical Education, Thiruvananthapuram.

Appendix 11.27
Trade-wise Annual Intake of students in Polytechnics - 2003

Sl.No.	Name of Trade	Sanctioned Intake	Actual Intake
1	Civil	980	980
2	Mechanical	1270	1270
3	Electrical	970	970
4	Electronics	1710	1710
5	Chemical	90	90
6	Automobile	240	240
7	Textile Technology	160	160
8	Computer Engineering	1640	1640
9	Instrument Technology	110	110
10	Polymer Technology	140	140
11	Computer hardware Maintenance	430	430
12	Tool & Die	50	50
13	Electronic Production Technology	120	120
14	Architecture	70	70
15	Electronics & Communication	340	340
16	Electrical & Instrumentation	260	260
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	40	40
23	Information Technology	40	40
Total		9380	9380

Source: Directorate of Technical Education, Thiruvananthapuram.

Appendix 11.28
Department wise Details of Courses in Cochin University of
Science & Technology- 2003

SI. No.	Name of the Courses	Duration of courses	Sanctioned Intake	Actual Intake
1	2	3	4	5
1	Integrated MSc Degree course in Photonics	5 Years	20	20
2	MSc Statistics	2 Years	17	15
3	M Tech (Engineering Statistics)	2 Years	11	10
4	MPhil (Statistics)	1 Year	6	-5
5	M Tech (Opto-electronics and Laser Technology)	4 Sem.	10	10
6	M Phil (Photonics)	2 Sem.	6	
7	M Sc (Industrial Fisheries)	2 Years	19	19
8	MSc (Biotechnology)	2 Years	13	12
9	M Tech (Computer & Information Science)	4 Sem.	18	18
10	M Tech (Software Engg.)	4 Sem.	18	16
11	MBA (Full time)	2 Years	50	50
12	MBA (Part time)	3 Years	30	30
13	MIB (Full time)	2 Years	30	30
14	M Phil (Commerce)	1 Year	6	6
15	M Sc (Marine Biology)	2 Years	20	18
16	M Phil (Life Science)	1 Year	6	5
17	M Sc (Electronics)	2 Years	26	25
18	M Tech (Electronics Science)	2 Years	26	23
19	M Sc (Physics)	4 Sem.	26	26
20	M Phil (Physics - PT)	2 Sem.	22	14
21	M Phil (Physics - FT)	2 Sem.	8	
22	MA (Hindi)	4 Sem.	28	28
23	PG Diploma in Translation,Administrative Drafting & Reporting in Hindi	1 Year	28	-
24	M.Phil (Hindi)	1 Year	10	-
25	M.Sc (Environmental Technology)	2 Years (4 Sem.)	12	12
26	LLB	6 Sem.	60	60
27	LLM	4 Sem.	36	38
28	B.Tech Instrumentation	4 Years	30	27
29	M Sc (Meteorology)	2 Years	13	12
30	M Tech (Atmospheric Science)	2 Years	12	9
31	M Sc (Applied Chemistry)	4 Sem.	10	10
32	M Tech (Industrial Catalysis)	4 Sem.	14	9
33	M.Phil Chemistry	2 Sem.	9	5
34	B.Tech (Naval Architecture & ship Building Technology)	8 Sem	40	39
35	M.Tech (computer aided structural analysis & Design)	4 Sem.	15	15
36	M Sc (Oceanography)	2 Years	12	12
37	M.Tech (Ocean Technology)	2 Years	8	7

Sl. No.	Name of the Courses	Duration of courses	Sanctioned Intake	Actual Intake
1	2	3	4	5
38	PG Diploma in Coastal Zone Management	1 Year	10	3
39	MCA (Regular)	3 Years	32	32
40	MCA (Cost- sharing)	3 Years	81	76
41	B.Tech (polymer Science & Rubber Technology)	4 Years	20	16
42	M.Tech (Polymer Technology)	2Years	10	13
43	M.Tech (Polymer Technology -PT)	1 1/2 years	15	16
44	M.Sc (Marine Geology)	2Years	10	8
45	M.Sc (Marine Geophysics)	2Years	10	10
46	MSc (Hydrochemistry)	2Years	13	12
47	Master of Business Economics	2Years	18	18
48	M.Phil Applied Economics	1 Year	10	5
49	M.Sc (Mathematics)	4 Sem.	21	20
50	M.Sc (Operations Research & Computer Applns.D46)	4 Sem.	15	12
51	Certificate course in German	1 Year	40	32
52	Certificate course in French	1 Year	40	31
53	Certificate course in Japanese	1 Year	25	5
54	Diploma in Japanese	1 Year	25	8
55	Certificate in Russian	1 Year	25	1
56	PG Diploma in Communicative English	1 Year	25	20
57	M.Tech (Civil) PT	5 Sem	15	
58	M.Tech (Mechanical)PT	5 Sem	15	
59	ME (By Research) PT	4 Sem.	Variable	
60	ME (By Research) FT	5 Sem	Variable	
61	M.SC (Software Engg)	10 Sem	40	
62	PG Diploma in Coir Technology	2 Sem.	20	
63	B.Tech (Electronics & Communication English)	8 Sem.	150	
64	B.Tech (Computer Science)	8 Sem.	150	
65	B.Tech (Information Technology)	8 Sem.	150	
66	B.Tech (Mechanical Engineering)	8 Sem.	150	
67	B.Tech (Electrical & Electronics)	8 Sem.	120	
68	B.Tech (Civil Engineering)	8 Sem.	60	
69	B.Tech (Safety & Fire Engineering)	8 Sem.	30	
70	B.Tech (Marine Engineering)	8 Sem.	30	
71	BCA	3 Year	50	

Appendix 11.29
DETAILS OF TRAINEES ADMITTED DURING 8/200 IN ITI/ITC/SCDD ON DISTRICT WISE

SI.No	Name of District	No. of trainees admitted										Total		
		ITI	ITC	4	5	6	7	8	9	10	PH			
1	2	3	4	5	6	7	8	9	10					
1	Trivandrum	2133	1738	249	11	359	86	8	3957					
2	Koliam	841	2642	185	2	409	55	7	3538					
3	Alappuzha	715	1678	689	2	289	47	1	2440					
4	Pathanamthitta	108	1105	240	1	596	129	1	1251					
5	Idukki	134	210	93	1	251	15	1	344					
6	Kottayam	785	702	146	1	169	38	2	1533					
7	Ernakulam	606	1892	91	2	14	103	4	2531					
8	Thrissur	751	1091	76	2	167	57	25	1899					
9	Palakkad	668	426	207	41	61	110	4	1204					
10	Malappuram	150	323	176	7	27	33	4	473					
11	Kozhikode	727	1027	36	6	2	103	5	1789					
12	Wayanad	111	50	4	4	115	35	5	161					
13	Kannur	644	566	69	8	2	121	2	1230					
14	Kasargod	227	347	43	6	84	38	5	612					

Appendix 11.31
Trade wise in take and out turn in Government ITI's during 2001-03 as on 30.11.2003 (two year course) (in Nos)

Sl.No	Name of Trade	Students admitted in 2001										Students passed					
		Total		SC		ST		Total		SC		ST					
		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	454	..	..	20	..	12	138	75	7	3				
2	D/Civil	290	30	17	..	..	..	65	89	6	12			
3	D/Mech	101	..	3	..	..	..	31	3	1	1			
4	MRAC	303	21	11	..	..	3	141	..	12	1				
5	Surveyor	73	40	2	..	..	..	86	112	24	32			
6	Fitter	663	..	25	..	..	..	403	..	56	4			
7	Wireman	339	..	..	..	..	..	..	..	..	..
8	Electronic Mech.	518	..	8	..	..	..	..	126	17	20			1
9	Electrician	531	..	2	..	..	1	335	2	25	2			2	
10	MMV	335	..	..	..	..	..	50	..	5	1			1
11	Turner	305	..	..	..	..	..	186	..	12	..			..
12	Mechinist	338	..	..	..	..	..	225	1	13	1			1
13	Painter General	38	..	..	..	..	..	44	..	10	..			..
14	Instrument Mech.	91	..	2	..	..	..	65	..	1	..			1
15	Watch and Clock Maker	39	9	1	..	..	..	26	..	..	..			..
16	Electro Plater	38	..	..	..	..	..	9	..	..	..			..
17	MM Tol Maintenance	15	..	..	..	..	..	..	..	..	..			..
18	Agriculture Mechniery	19	..	..	..	..	..	5	..	1	..			..
	Total	4490	100	95	16	2030	408	68	190	13	1						

Appendix 11.32
Institution Wise Details of Apprentices Under Industrial Training Department

Sl. No	Name of Insitutue	Seat Strength				Apprentices Trained			
		2002		2003		2002		2003	
		3	4	5	6	Boys	Girls	Boys	Girls
1	Thiruvananthapuram R.I.C	1112	1136	470	55	486	52		
2	Kollam	683	705	344	54	243	31		
3	Allapuzha	675	553	615	44	504	36		
4	Kottayam	507	531	351	45	331	42		
5	Kalamassery	1050	1097	941	64	1018	56		
6	Thrissur	735	771	552	53	697	46		
7	Palakkad	526	532	464	20	452	29		
8	Kozhikode	560	560	335	18	369	25		
9	Kannur	280	303	210	30	235	29		
10	Chenneerkara I.T.I	308	308	114	12	91	13		
11	Kattappana	218	218	83	15	20	7		
12	Areacode	240	271	231	9	230	3		
13	Kasaragode	69	69	25	..	23	10		
14	Kalpatta	88	70	39	5	26	..		
	Total	6951	7124	4774	424	4725	379		

Source:- Industrial Training Department.
R.I.C.- Related Instructions Centre

Appendix 12.1

District wise medical institutions and beds - Government sector

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	118	7800	78	813	55	285	251	8898	275
2	Kollam	90	2426	60	190	40	75	190	2691	104
3	Pathanamthitta	68	1939	43	100	26	25	137	2064	168
4	Alappuzha	94	4864	65	180	44	75	203	5119	243
5	Kottayam	90	4377	50	150	47	175	187	4702	241
6	Idukki	64	872	34	160	35	50	133	1082	96
7	Ernakulam	120	5278	74	419	54	85	248	5782	187
8	Thrissur	123	4504	94	273	40	25	257	4802	161
9	Palakkad	115	2450	79	160	40	25	234	2635	101
10	Malppuram	125	2392	76	220	44	50	245	2662	73
11	Kozhikode	96	4961	59	210	49	175	204	5346	186
12	Wayanad	41	811	24	120	20	25	85	956	121
13	Kannur	106	2815	68	316	39	25	213	3156	131
14	Kasaragode	60	735	41	100	24	75	125	910	76
TOTAL		1310	46224	845	3411	557	1170	2712	50805	160

NB. Including medical college hospitals
Population based on 2001 Census

Appendix 12.2
DETAILS OF INFRASTRUCTURE, DOCTORS AND NURSES UNDER CO-OPERATIVE SECTOR

Sl.No	Name of Co-operative Hospital	No. of Doctors	No. of Nurses	Other Para Medical Staff	No. of Beds	No. of Patients Treated During 1998		Specialities if any
						OP	IP	
1	2	3	4	5	6	7	8	9
1	Kollam Co-operative Group Hospital Co-operative Society Ltd. No. Q 494	3	6	5	100	14400	1440	Doctors in General Medicine, Gynecology, Paediatric, ENT and Surgery
2	Kollam District Co-operative Hospital Society Ltd.No. Q .952, Kollam	3	6	4	15	18000	4215	Paediatric, General Medicine
3	Kollam district Homoeo co-operative hospital society Ltd.No..Q 932	..	..	2	..	..	..	Nil
4	Vettikkavala Co-operative Hospital Society Ltd. No.461, Kollam	1	..	--	..	760	..	Nil
5	Kottarakkara taluk panchayat Co-operative hospital society Ltd.	1	2	2	..	1080	..	..
6	Neduvathoor panchayat Co-operative hospital society Ltd.	..	..	..	..	..	..	..
7	Pathanamthitta District Co-operative Hospital Ltd. No.A.292, Kulanada	1	3	3	25	20032	5700	Nil
8	Kottayam District co-operative hospital K.764	2	2	20	..	..	..	Pathology, Bio-chemistry,Radiology
9	Kaduthuruthy Co-operative Hospital Ltd.No.K.379, Kottayam	5	4	2	35	34784	2102	Paediatric, Skin and V.D, ENT
10	Alappuzha District Co-operative Hospital Society Ltd No.A.805	1	3	2	10	2051	251	Nil
11	Mavelikkara Taluk hospital co-operative society A. 899	..	..	..	..	..	..	..
12	Deshabhimani T.K. Madhavan memorial co-operative hospital	..	..	..	..	..	..	..
13	Chingoli co-operative hospital A. 324	..	..	..	..	..	..	..
14	N.Sreedharan memorial co-operative hospital society A 849	..	..	..	..	..	..	..

1	2	3	4	5	6	7	8	9
15	Idukki District Co-operative Hospital Society Ltd.No. I. 177	9	15	13	100	38456	3819	General Medicine, General Surgery, Gynaecology, Orthopaedic, Dental Surgery, ENT,Physiotherapy, Anesthesiology and Phychiatry.
16	Indira Gandhi Co-operative Hospital Society Ltd. No. E. 288, Ernakulam	33	34	15	480	105029	9737	Cardiology , Neurology, Oncology, Paediatric Surgery
17	Thrikkakara Grama Panchayat Co-operative Hospital Ltd. NO. E. 993	18	26	5	33	20530	10400	General Medicine, Paediatric, E.N.T., General Surgery, Skin & V.D., Gynaecology, Ortho, Ophthalmology
18	Koottattukulam Co-operative Hospital Society Ltd. No. 303, Ernakulam	10	16	35	150	14363	1944	General Medicine, E.N.T., Gynaecology, Ortho. Paediatric, Anesthesia
19	Thrissur District Co-operative Hospital Ltd. No. R. 306, Thrissur	27	63	22	240	41686	8931	Cardiology , Neurology, Gastro-enterology, Urology, Plastic and Cosmetic Surgery, General Medicine, Surgery, Gynaecology, Paediatrics, Ortho, E.N.T., Skin & V.D., Physiotherapy, Ophthalmology, Neuro Psychiatry, Dental Surgery
20	Manalur Co-operative Hospital Ltd.No. R.330, Thrissur	1	..	1	..	2465	..	Nil
21	Thrissur District Mahatma Super Speciality Co-operative Hospital Ltd.No. R.816, Thrissur	5	6	2	12	1642	--	Paediatrics, General Medicine
22	Thrissur District Ayurvedic Co-operative Hospital Society Ltd. No.814, Thrissur	8	6	12	12	5248	212	Back pain clinic and Infertility Clinic
23	Thrissur district prakrithi chikitsa co-operative hospital, Ltd. No. Rs. 713; Thrissur	4	..	3	10	1318	142	Nil
24	Irinjalakuda Co-operative Hospital Society Ltd.No. R.954, Thrissur	24	52	30	50	8846	1920	General Medicine, Paediatric, Radiology, Surgery
25	Kodungallur Co-operative Hospital, Thrissur	1	1	--	--	547	--	Nil

1	2	3	4	5	6	7	8	9
26	Palakkad District Health Family Welfare Co-operative Hospital Society Ltd. No. P. 965, Nenmara	5	3	4	10	3000	..	E.N.T., Gynaecology, Children, Dental, Eye Care Unit
27	The Palakkad District Co-operative Hospital Ltd.No. P.878	20	24	6	100	608	6410	Dust allergy Dept., Gynaecology Orthopaedic, I.C.C. Unit, ENT, Neurology, Ultra Sound Scan unit, Skin Specialists, Ophthalmology
28	P.M.S.A. Memorial Malappuram District Co-operative Hospital Ltd.No. 352	12	36	12	150	38950	6820	General Medicine, Gynaecology, ENT., Ophthalmology, Paediatrics, General Surgery, Psychiatry, Anaesthesiology, Orthopaedic, Dermatology and Super Speciality Urology
29	E.M.S. Memorial Co-operative Hospital and Research Centre Society Ltd. No. 549, Perinthalmanna	11	17	50	100	31637	5955	General Medicine, Gynaecology. Ophthalmology, Orthopaedics, Paediatrics, Psychiatry
30	Nediyiruppu Co-operative Dispensary Ltd No.9, Nediyiruppu	1	3	1	10	2578	28	Nil
31	Edakkara Co-operative Hospital Ltd. No.17 Edakkara	..	..	..	..	..	..	Nil
32	Kottakkal co-operative hospital Ltd.No. 594	1	2	2	5	4268	30	
33	Parappur co-operative dispensary Ltd. No.19	..	..	..	..	..	..	..
34	Nonnamukku panchayat co-operative hospital Ltd. No. 15	..	..	..	..	..	..	..
35	Tirur co-operative hospital research centre Ltd. No.633	..	..	..	..	..	..	..
36	Atholi Panchayat Co-operative hospital, Kozhikode	2	2	4	20	61320	12099	Nil
37	Vadakara Co-operative Hospital	10	15	20	60	79250	18200	Paediatrics, ENT, Ophthalmology, Gynaecology
38	C.H.Muhammedkoya Memorial Co-operative Hospital Ltd. No.D.2600, Kozhikode	8	11	10	50	21000	3600	Nil
39	Nadapuram Sahakarana Hospital, Kallachi, Kozhikode	2	4	2	15	8439	539	ENT, Ophthalmology

1	2	3	4	5	6	7	8	9
40	Chombala Co-operative Clinic and Maternity Clinic, Kozhikode	1	2	..	--	5927	--	Nil
41	The Kozhikode district co-operative hospital	36	26	19	115	47481	4953	Gynaecology, Ophthalmology, ENT, Physiotherapy, Paediatrics, Ortho, General Surgery and General surgery
42	Kozhikode district ayurvedic hospital	..	..	..	..	..	..	Nil
43	Kozhikode Co-operative Homoeo Hospital	2	..	1	..	1200	..	Nil
44	Elathur Co-operative Dispensary, Kozhikode	2	1	5	12	8994	742	Nil
45	Kozhikode Regional Ayurvedic Co-operative Hospital, Thiruvambady, Kozhikode	2	--	2	3	4256	1526	Nil
46	Koyilandy Co-operative Hospital Society, Koyilandy, Kozhikode	2	4	6	20	39000	31400	Nil
47	EMS Memorial Co-operative Hospital, Perambra (Clinic not started)	..	..	..	..	..	..	..
48	Kerala state co-operative hospital for Advanced Medical Science							
49	Iritty co-operative hospital, Kannur	2	16	8	35	24000	4125	Nil
50	Cannanore Co-operative Hospital Society Ltd. No. C 834, Kannur	36	39	65	350	146085	14915	Gynaecology, Ophthalmology, ENT, Physiotherapy, Paediatrics, Ortho, Surgery, Medicine, Skin, Dental, Urology, Anesthesiology, Casualty
51	A.K.G. Memorial Co-operative Panchayat Dispensary Society, Peralasseri, Kannur	3	5	2	30	34583	1043	
52	Kolavalloor co-operative dispensary	1	1	2	12	18800	85	Nil
53	Panoor co-operative dispensary	..	..	..	..	..	..	..
54	Taliparamba co-operative hospital	10	22	15	75	28500	3800	3 specialities
55	Rajeev Gandhi memorial co-operative hospital			Not functioning				
56	Matha mangalam co-operative hospital			Not functioning				
57	Payyannur block Co-operative Hospital, Kannur	24	36	25	200	125000	32125	Nil

1	2	3	4	5	6	7	8	9
58	Payyanur Co-operative dispensary, Kannur	12	20	18	75	38500	4200	Nil
59	Mambaram Co-operative Hospital Society, Kannur	24	36	25	200	125000	32125	
60	Alakode Bhawaniamma Thamburan Co-operative Hospital, Kannur	1	5	6	30	15000	985	Nil
61	Payyanur Block Co-operative Hospital Society, Kannur	1	5	28	10	3550	575	Nil
62	Thalassery Co-operative Hospital, Kannur	31	97	105	250	80395	12976	Cardiology, Neurology, Neuro Surgery, Urology, Nephrology, Ortho, General Medicine, E.N.T., Ophthalmology, Paediatrics, Paediatric Surgery, Gynaecology, Anaesthesia, Physical Medicine, Radiology, Ultra sound, Gynaecology, General medicine
63	Kasaragod District Co-operative Hospital Society Ltd. No.S42	6	12	12	40	13690	2347	
64	Kasaragod District Co-operative Homeo Hospital Society Ltd. NO. S. 34	3	4	3	--	2100	--	Nil
65	Karibil Kunhikonam Memorial Co-operative Hospital Ltd. No. 943, Kasargod	1	5	2	25	6230	468	Nil
66	Kasargod district ayurvedic co-operative hospital	1	1	1	--	--	--	Nil
67	EMS Memorial Co-operative Hospital Society Ltd. No. S 290, Kasargod	1	4	2	5	6504	104	Nil
68	Mahatmaji Co-operative Integrated Medical care Society Ltd. No. S 266, Kasargod	1	2	4	20	3420	1610	Nil
69	Rajeev Gandhi Memorial Co-operative Hospital Society Ltd. No. S. 182, Kasargod	1	4	1	7	2843	76	Nil
TOTAL		433	709	646	3306	1363345	254674	

Source:- Office of the Registrar, Co-operative Societies

Appendix 12.3
DETAILS OF INFRASTRUCTURE IN THE DIRECTORATE OF INSURANCE MEDICAL SERVICE -
District wise as on 31-3-2003

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	Dispensaries	Hospital (OP)	Dispensaries (OP)	Hospital (IP)		
											5	6	7	8	11	12	13
1	2	3	4	5	6	7	8	11	12	13		
Thiruvananthapuram	1	128	11	28	23	38	26	27379	475169	3026		
Kollam	2	238	30	41	99	89	160	21376	2599451	6516		
Pathanamthitta	--	--	3	--	7	--	12	--	78427	--		
Alappuzha	1	60	14	16	23	22	34	4909	518541	1781		
Kottayam	1	65	7	17	13	22	21	15829	363294	1726		
Idukki	--	--	1	--	1	--	2	--	18384	--		
Ernakulam	2	220	20	45	43	66	68	70202	1022805	6053		
Thrissur	2	202	15	32	28	52	46	20764	391234	1517		
Palakkad	1	50	7	16	9	20	15	3998	84355	802		
Kozhikode	1	100	12	22	56	26	56	22334	426802	4296		
Malappuram	--	--	4	--	4	--	8	--	34207	--		
Kannur	1	50	11	16	14	20	31	6681	129989	633		
Kasaragod	--	--	1	--	1	--	2	--	5121	--		
TOTAL:	12	1113	136	233	321	355	481	193472	6147779	26350		

Source: Directorate of Insurance Medical Services

Appendix 12.4
Medical Institutions and Beds in Kerala - Category-wise - 2003

District	Hospitals		PHCs including MCH Centres		Community Health Centres		Dispensaries		T.B. Clinics/Centres		Grant in aid institutions		Sub centres	Leprosy Control Clinics/ Units
	No.	Beds	No.	Beds	No.	Beds	No.	Beds	No.	Beds	No.	Beds		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Thiruvananthapuram	17	3997	77	424	10	502	7	34	1		3	386	455	1
Kollam	7	1384	65	254	9	413	..	..	3	50	3	325	449	3
Pathanamthitta	7	636	51	241	4	199	1	..	1	0	4	863	260	..
Alappuzha	10	2457	65	243	8	307	2	..	2	76	4	750	368	1
Kottayam	11	1245	61	425	8	392	..	..	2	48	6	1021	359	..
Idukki	3	328	52	368	6	176	2	..	1	..	..	..	231	..
Ernakulam	22	3010	78	661	10	477	3	80	4	40	3	1010	351	..
Thrissur	16	2558	87	459	9	323	5	6	1	..	1	170	492	2
Palakkad	8	1147	82	589	12	527	8	..	1	..	3	187	471	1
Malappuram	7	1302	95	582	10	386	6	..	2	52	2	70	508	3
Kozhikode	8	2115	69	233	11	356	3	..	1	..	..	..	389	2
Wayanad	2	331	25	216	6	264	7	..	1	..	..	..	204	..
Kannur	9	1693	80	222	7	244	8	56	1	..	..	..	352	..
Kasargode	3	433	46	143	5	160	3	..	1	..	..	..	205	2
TOTAL:	130	22636	933	5060	115	4726	55	176	22	266	29	4782	5094	15

Source: Directorate of Health Services

Excluding Medical colleges and attached Institutions

Appendix 12.5

Growth of Institutions (Allopathy) 1990 - 2003

Year	Govt. Hospitals	Govt. Dispensaries and T.B.Clinics	Primary Health Centres including MCH Centre	Grant in aid institutions with beds	Others including CHCs	Total No. of institutions
1	2	3	4	5	6	7
2000	143	74	944	36	120	1317
2001	143	75	943	29	120	1310
2002	143	75	941	29	122	1310
2003	141	77	933	29	130	1310

Source: Directorate of Health Services

Appendix 12.6

Growth of beds under Allopathy System in Kerala 1990 - 2003

Year	No.of beds	Growth Index	No.of beds per lakh of population
1	2	3	4
1990	38223	206	128
1995	42126	227	137
2000	45684	247	139
2001	46791	253	147
2002	46800	253	147
2003	46224	250	145

Beds related to Government Sector and Grant-in-aid institutions

Appendix 12.7
District-wise Number of Medical and Paramedical Personnel Under DHS - 2003

District	1	2	3	4	5	6	7	8	9	10
	Medical Officers	Dentists	Senior Nurses	Junior Nurses	Lady Health Inspectors	Pharmacists	JPHN (ANMS)	Junior Health Inspectors	Health Inspectors	
Thiruvananthapura	413	5	233	1051	71	186	489	238	69	
Kollam	227	6	76	319	74	101	390	248	81	
Pathanamthitta	138	4	27	170	44	67	258	164	39	
Alappuzha	234	6	142	605	65	133	326	172	49	
Kottayam	201	4	93	634	61	106	311	173	51	
Idukki	89	2	19	127	55	63	288	196	56	
Ernakulam	306	7	171	561	75	143	398	198	64	
Thrissur	271	4	166	609	99	149	488	274	64	
Palakkad	203	2	73	341	63	120	509	233	71	
Malappuram	273	6	66	350	91	136	579	319	69	
Kozhikode	250	5	193	787	64	152	403	251	63	
Wayanad	93	3	24	128	24	45	198	124	30	
Kannur	218	4	102	355	67	129	404	273	67	
Kasargode	116	2	31	128	19	59	231	154	38	
TOTAL:	3032	60	1416	6165	872	1589	5272	3017	811	

Source: Directorate of Health Services

Appendix 12.8

Target and achievement of Immunisation programme

Sl.No	Item	Unit	2001-02		2002-03	
			Target	Achievement	Target	Achievement
1	2	3	4	5	6	7
M.C.H. Programme						
a) Immunisation Programme						
(I)	D.P.T	Dose	536006	559387	577318	553212
(ii)	Polio	Dose	536006	555271	577318	550225
(iii)	B.C.G.	Dose	536006	613663	577318	594573
(iv)	Measles	Dose	536006	517596	577318	522961
(v)	T.T for Pregnant women	Dose	546717	663189	636708	548423
(vi)	T.T. for 5 Years	Dose	495811	462061	530012	472862
(vii)	T.T. for 10 Years	Dose	529124	516685	562249	551384
(VIII)	T.T. for 16 Years	Dose	513856	495873	554010	526192
b) Prophylaxis against nutritional anaemia						
(I)	Women	Dose	592883	439649	636708	575086
(ii)	children'	Dose	..	..	..	..
c) Prophylaxis against Blindness due to vitamin A deficiency in children						
		Dose	536006	477124	556697	509559

Source: Directorate of Health Services

Appendix 12.9

District wise details of Dengue fever - 2003

(Nos.)

District	Patients treated	Patients cured	Death reported
1	2	3	4
Thiruvananthapuram	709	692	17
Kollam	176	167	9
Pathanamthitta	150	148	2
Alappuzha	214	210	4
Kottayam	188	183	5
Idukki	223	223	--
Ernakulam	297	295	2
Thrissur	325	321	4
Palakkad	143	135	8
Malppuram	533	527	6
Kozhikode	66	62	4
Wayanad	41	41	--
Kannur	151	146	5
Kasaragode	116	116	--
Total	3332	3266	66

Source: Directorate of Health Services

Appendix 12.10

District wise details of Leptospirosis - 2003

(Nos.)

District	Patients treated	Patients cured	Death reported
1	2	3	4
Thiruvananthapuram	48	46	2
Kollam	80	70	10
Pathanamthitta	70	66	4
Alappuzha	118	105	13
Kottayam	342	314	28
Idukki	170	168	2
Ernakulam	191	183	8
Thrissur	97	87	10
Palakkad	7	4	3
Malppuram	20	17	3
Kozhikode	50	40	10
Wayanad	64	64	--
Kannur	32	31	1
Kasaragode	54	52	2
Total	1343	1247	96

Source: Directorate of Health Services

Appendix 12.11

District-wise availability of Vehicles under DHS -2003

Sl.No	Disrtict	Vechicles in Running condition	Vechicles in repair/ workshop	Unrepairable	Total
1	2	3	4	5	6
1	Thiruvananthapuram	172	7	105	284
2	Kollam	42	7	22	71
3	Pathanamthitta	38	7	6	51
4	Alappuzha	54	3	23	80
5	Kottayam	58	9	3	70
6	Idukki	45	2	23	70
7	Ernakulam	53	5	16	74
8	Thrissur	51	2	24	77
9	Palakkad	76	7	33	116
10	Malappuram	75	6	31	112
11	Kozhikode	66	3	14	83
12	Wayanad	48	3	27	78
13	Kannur	58	6	2	66
14	Kasaragod	31	3	11	45
TOTAL:		867	70	340	1277

Source: Directorate of Health Services

Appendix 12.12

Statement showing No.of attack and death due to major principal diseases during 2002, 2003

Sl.No.	Name of.Diseases	Attack		Death	
		2002	2003	2002	2003
1	2	3	4	5	6
1	Acute Diarrhoeal Diseases	561355	539863	19	26
2	Diphtheria	14	2	2	..
3	Acute Poliomyelitis	..	..	..	..
4	Tetanus-Others	10	7	1	1
5	Neonatal Tetanus	1	1	..	1
6	Whooping Cough	293	237	..	..
7	Measles	3234	2170	..	1
8	Acute Respiratory Infection	6896930	7049771	368	228
9	Pneumonia	24539	18972	52	64
10	Enteric Fever	7521	8408	6	5
11	Viral Hepatitis-A	4632	5333	6	1
12	Viral Hepatitis-B	597	810	6	17
13	Japanese Encephalitis	2	1	..	..
14	Menningococal Menningitis	27	148	4	3
15	Rabies	11	12	11	12
16	Syphillis	99	71	..	..
17	Gonococcal Infection	704	401	..	..
18	Pulmonary Tuberculosis	27348	22325	221	136
19	Chickenpox	8943	8530	6	5
20	Dengue Fever	74	163	..	66
21	Weills Disease	2582	2928	129	199
22	All Other Diseases	20519678	20391771	8407	6983
Total		28058594	28051924	9238	7748

Source: Directorate of Health Services

Appendix 12.13

DETAILS OF BLOOD UNITS COLLECTED IN BLOOD BANKS - KERALA

Sl. No	Name of Category	Blood units collected (Nos.)				
		1999	2000	2001	2002	2003
A GOVERNMENT SECTOR						
1	Medical College Hospitals	49690	50395	75232	50060	34409
2	General Hospitals	3792	4524	6359	7312	5678
3	District Hospitals	7065	8570	14169	12739	9925
4	Women and Children Hospitals		--	--	--	--
5	Taluk Head Quarters Hospitals	7762	9585	11253	10688	7563
6	Other Hospitals	--	73	186	--	--
SUB TOTAL :		68309	73147	107199	80799	57575
B AUTONOMOUS INSTITUTIONS						
1	Regional Cancer Centre	--	--	5255	6383	4403
2	Sree Chitra thirunal Institute of Science and Technology	4967	4774	6315	6849	4419
SUB TOTAL :		4967	4774	11570	13232	8822
C PRIVATE SECTOR		81062	91035	290763	116826	84304
TOTAL : (A+B+C)		154338	168956	409532	210857	150701

Appendix 12.14

Details of Personnel (Clinical/Non-clinical) in Medical Colleges -1997-2003

Sl. No.	Category	No. of Clinical/Non-clinical Personnel						
		1997	1998	1999	2000	2001	2002	2003
1	2	3	4	5	6	7	8	9
Medical Education								
1	Director	..	..	..	
2	Professor	207	233	248	202	207	207	189
3	Associate Professor	240	265	296	242	236	236	236
4	Assistant Professor	379	536	570	449	490	490	431
5	Tutor/Lecture	611	924	966	711	1877	1877	613
	Sub Total	1437	1958	2080	1604	2810	2810	1469
Nursing Education								
6	Director	3	3	3	3	3	3	3
7	Professor	4	7	7	7	7	7	8
8	Associate Professor	15	15	16	18	17	17	16
9	Assistant Professor	23	23	25	27	25	25	23
10	Tutor	42	42	42	40	29	29	32
	Sub Total	87	90	93	95	81	81	82
M.L.T. Course								
11	Director	1	1	1	..	..	..	..
12	Assistant Professor	6	6	6	3	..	..	..
13	Tutor	14	14	14	5	3	5	9
14	Tutor Technician	14	14	14	14	..	..	..
	Sub Total	35	35	35	22	3	5	9
Dental								
15	Principal	2	2	2	2	3	3	3
16	Professor	16	16	16	16	16	16	17
17	Associate Professor	6	6	14	12	4	4	8
18	Assistant Professor	25	25	26	25	24	24	20
19	Tutor/Lecture	44	44	49	44	43	43	45
	Sub Total	93	93	107	99	90	90	93
Pharmacy								
20	Director	1	1	1	1	5	5	5
21	Professor	4	4	4	3	4	4	4
22	Associate Professor	4	5	5	7	5	5	4
23	Assistant Professor	11	11	13	13	12	12	12
24	Lecture	27	26	30	30	27	27	28
	Sub Total	47	47	53	54	53	53	53
TOTAL:		1699	2223	2368	1874	3037	3039	1706

Source: Directorate of Medical Education

Appendix 12.15
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
<i>Degree Courses</i>						
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	--	--	--	--	--
Sub Total	352	320	210	100	100	100
<i>Post Graduate Courses</i>						
1. M.Sc. Nursing	16	8	4	--	--	--
2. M.D.S.	18	10	--	--	--	--
3. M.D.Anaesthesia	7	5	3	--	--	--
4. M.D.Biochemistry	1	2	--	--	--	--
5. M.D.Forensic medicine	1	2	--	--	--	--
6. M.D.Dermatology and Venerology	3	3	2	--	--	--
7. M.D.General Medicine	10	9	6	--	--	--
8. M.D Microbiology	2	1	--	--	--	--
9. M.D Obstetrics and Gynaecology	6	6	3	1	--	--
10. M.D.Pathology	5	1	2	1	--	--
11. M.D.Pharmacology	3	1	--	--	--	--
12. M.D.Physiology	2	2	1	--	--	--
13. M.D.Paediatric	5	4	2	2	2	--
14. M.D.Psychiatry	1	2	4	--	--	--
15. M.D Radio Diagnosis	2	1	--	--	2	--
16. M.D.Radiotherapy	2	--	--	--	--	--
17. M.D Community Medicine	2	2	1	--	--	--
18. M.D.T.B And Respiratory Diseases	3	2	2	--	--	--
19. M.S. Anatomy	1	2	2	--	--	--
20. M.S.ENT	1	2	1	--	--	--
21. M.S.General Surgery	15	9	7	1	--	--
22. M S Orthopaedics	3	3	2	--	--	--
23. Ophthalmology	5	3	2	--	--	--
24. M.O.Physical Medicine	2	1	2	--	--	--
25. M.Pharm	16	--	--	--	--	--
Sub Total	132	81	46	5	4	0
<i>Super Speciality course</i>						
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 and Surgery	2	1	2	--	--	--
10. D M Nephrology	1	1	1	--	--	--
Sub Total	18	14	10	0	0	0

Name of Courses	No. of seats in Medical Colleges					
	Thiruvananthapuram	Kozhikode	Kottayam	Alappuzha	Thrissur	Kannur
1	2	3	4	5	6	7
Diploma Courses						
1 Diploma in Anaesthesia	6	4	5	2	--	--
2. Diploma in child Health	5	9	4	2	--	--
3. Diploma in Clinical Pathology	3	4	--	--	--	--
4. Diploma in Dermatology and Venerology	--	2	--	--	--	--
5. Diploma in Larynology and Otology	6	4	2	--	--	--
6 D M.R D	2	1	--	--	--	--
7 D M R.T	2	2	--	--	--	--
8. Diploma in Obstetrics and Gynaecology	9	9	7	1	--	--
9. Diploma in Ophthalmology	2	5	3	--	--	--
10. Diploma in Orthopaedic Surgery	6	5	4	--	--	--
11 Diploma in Physical Medicine and Rehabilitation	4	4	--	--	--	--
12 Diploma in Psychiatric Medicine	5	--	--	--	--	--
13 Diploma in Public Health	9	--	--	--	--	--
14 D T C D	2	3	--	--	--	--
Sub Total	61	52	25	5	0	0
Diploma / Certificate Courses.						
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**	--	--	--
Sub Total	235	190	95	65	105	0
TOTAL:	798	657	386	175	209	100
*SC:ST only. **For ST only						
Source: Directorate of Medical Education						

Appendix 12.16

Annual intake in different Nursing courses - 2003

(Nos.)

Sl.No.	Name of Institutions	Institutions	Annual intake
1	2	3	4
I	Integrated General Nurse-cum-Midwives (3 year course)		
a)	Government Nursing schools	12	323
b)	Private Nursing schools	163	4300
c)	Medical College, Kozhikode	1	30
d)	Medical College, Thiruvananthapuram	1	30
II	Junior Public Health Nurses (18 months)		
a)	Government Nursing schools	4	180
b)	Private Nursing schools	16	388
III	BSc. Nursing (4 Year course)		
a)	Medical College, Kottayam	1	50
b)	Medical College, Thiruvananthapuram	1	50
c)	Medical College, Kozhikode	1	50
	MSc. Nursing (2 Year course)		
a)	Medical College, Thiruvananthapuram	1	16
b)	Medical College, Kozhikode	1	8

Source: Directorate of Health Services

Appendix 12.17
District-wise distribution of Insitutions, Beds and Patients treated under Ayurvedic system of Medicine in Kerala (2002 and 2003)

Sl. No.	District	Hospitals		Beds			Dispensaries			Institutions		Patients treated in 2002		Doctors-2002
		2002	2003	2002	2003	2003	2002	2003	2002	2003	2002	2003	2002	
1	2	3	4	5	6	7	8	9	10	11	12	13		
1	Thiruvananthapuram	14	14	285	285	63	63	77	77	3685	2085872	96		
2	Kollam	9	9	190	190	51	51	60	60	2690.	1337479	75		
3	Pathanamthitta	5	5	100	100	38	38	43	43	630	789868	47		
4	Alappuzha	10	10	180	180	55	55	65	65	2334	1636689	77		
5	Kottayam	8	8	150	150	42	42	50	50	1404	1141012	62		
6	Idukki	3	3	160	160	31	31	34	34	2215	648821	50		
7	Ernakulam	13	13	280	280	60	60	73	73	2610	2265809	78		
8	Thrissur	15	15	273	273	79	79	94	94	2028	1824239	105		
9	Palakkad	6	6	160	160	73	73	79	79	1294	1051928	78		
10	Malappuram	11	11	220	220	65	65	76	76	34084	2434301	83		
11	Kozhikode	7	7	210	210	52	52	59	59	1570	156618	58		
12	Wayanad	3	3	120	120	21	21	24	24	1106	548997	34		
13	Kannur	6	6	216	216	61	61	67	67	1864	1077624	69		
14	Kasargode	5	5	100	100	36	36	41	41	889	654403	46		
TOTAL:		115	115	2644	2644	727	727	842	842	58403	17653660	958		

(Nos.)

Appendix 12.18**Annual intake of students and courses in Ayurveda Colleges**

Sl.No.	Name of College	Annual intake of students	
		BAMS	P.G.Degree
Government			
1	Ayurveda Medical College, Thiruvananthapuram	70	42
2	Ayurveda Medical College, Trippunnithura	50	--
3	Ayurveda Medical College, Kannur	40	10
Government aided			
4	Vaidyaratnam Ayurveda college, Ollur	40	--
5	Vaidyaratnam P.S.Varrier Ayurveda college, Kottakkal	50	10
	Total	250	62
Self-financing			
6	Pankajakasthuri Ayurveda Medical college, Kattakkada, Thiruvananthapuram	50	--
7	Parassinikadavu Ayurveda Medical College, Pappinisseri	50	--
8	Vishnu Ayurveda College, Shornur	40	--
9	Santhigiri Ayurveda Medical College, Palakkad	50	--
10	Nangelil Ayurveda Medical College, Kothamangalam	50	--
11	Santhigiri Siddha Medical College, Pothencode, Thiruvananthapuram	50	--
	Total	290	--
Grand Total		540	62

Appendix 12.19
District-wise Distribution of Institutions , Beds and patients treated under Government Homoeopathy (2002 & 2003)

SI.No.	District	(Nos.)															
		Hospitals			Beds			Dispensaries			Institutions			Patients treated in 2002			Doctors-2002
		2002	2003	2003	2002	2003	2003	2002	2003	2002	2003	2003	2002	2003	2003	Inpatients		Outpatients
1	2	3	4	5	6	7	8	9	10	11	12	13					
1	Thiruvananthapuram	4	4	185	185	50	50	54	54	54	54	4395	2356456	62			
2	Kollam	3	3	75	75	37	37	40	40	40	40	1034	1858430	43			
3	Pathanamthitta	1	1	25	25	25	25	26	26	26	NR	NR	1275430	27			
4	Alappuzha	3	3	75	75	41	41	44	44	44	44	1135	2338916	47			
5	Kottayam	3	3	175	175	44	44	47	47	47	47	1669	269073	53			
6	Idukki	2	2	50	50	33	33	35	35	35	35	3260	1539330	37			
7	Ernakulam	3	3	85	85	51	51	54	54	54	54	1277	2277615	57			
8	Thrissur	1	1	25	25	39	39	40	40	40	40	461	1853527	41			
9	Palakkad	1	1	25	25	39	39	40	40	40	40	670	2144930	41			
10	Malappuram	2	2	50	50	42	42	44	44	44	44	973	1487030	46			
11	Kozhikode	3	3	75	75	45	45	48	48	48	48	1725	2043589	51			
12	Wayanad	1	1	25	25	19	19	20	20	20	20	222	1111401	21			
13	Kannur	1	1	25	25	38	38	39	39	39	39	179	1695741	40			
14	Kasarode	3	3	75	75	21	21	24	24	24	24	455	1339940	27			
TOTAL:		31	31	970	970	524	524	555	555	555	555	17455	23585408	593			

Source: Directorate of Homoeopathy

Appendix 12.20

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
	Government		
1	Homoeopathic Medical college, Thiruvananthapuram	50	18
2	Homoeopathic Medical college, Kozhikode	50	18
	Government aided		
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	--

Appendix 12.21
District wise Couple protection rate and female reproductive age group

District	Couple protection rate	Female reproductive age group (15-49) (nos.)
1	2	3
Thiruvananthapuram	84.4	479100
Kollam	74.1	357312
Pathanamthitta	79.3	185872
Alappuzha	58.9	280991
Kottayam	70.6	257420
Idukki	76.16	160000
Ernakulam	67.6	362065
Thrissur	68.1	422727
Palakkad	61.88	359063
Malppuram	51.59	556284
Kozhikode	61.7	444350
Wayanad	68.02	114691
Kannur	61.19	369629
Kasaragode	52.3	131666
Total	65.98	4481170

Source: Directorate of Health Services

Appendix 12.22
Achievement of Family Welfare Programme (2002-03) District -wise

Sl.No.	District	Vasectomy	PPS	Minilap	Laposcopic	Total (3+4+5)	Cu-T	Nirodh supplied CC	Oral pills	Induced Abortion
1	2	3	4	5	6	7	8	9	10	11
1	Thiruvananthapuram	53	12641	949	4630	18220	4714	1180294	24678	4499
2	Kollam	51	11545	537	399	12481	5114	1040408	16010	3068
3	Alappuzha	141	6812	1080	153	8045	4094	656087	17945	2062
4	Pathanamthitta	23	4760	268	1600	6628	3592	628061	17764	2660
5	Kottayam	492	6009	256	820	7085	6638	571934	20741	3430
6	Idukki	34	7006	657	501	8164	3805	409546	14952	674
7	Ernakulam	217	16272	637	3068	19977	8142	732132	22973	2513
8	Thrissur	25	8868	938	3814	13620	7237	969585	30844	2463
9	Palakkad	37	9593	595	2905	13093	8874	973977	18918	2945
10	Malappuram	10	12701	446	491	13638	8236	1127325	36475	508
11	Kozhikode	152	9665	1800	86	11551	6160	781987	15324	4427
12	Wayanad	98	4527	608	86	5221	4189	851733	12717	435
13	Kannur	150	9679	731	517	10927	6242	829490	22463	3012
14	Kasarode	49	2454	357	1023	3834	3590	442361	14194	1039
TOTAL:		1532	122532	9859	20093	152484	80627	11194920	285998	33733

Source: Directorate of Health Services

Appendix 12.23

Per capita expenditure on medical and public health

Year	Population (lakhs)	Expenditure on Health including family welfare (Rs.lakhs)	Index of growth	Expenditure per head (Rs.)	Index of growth
1	2	3	4	5	6
1985-86	274.05	12681.25	100	46.27	100
1990-91	290.11	22199.04	175	76.52	165
1995-96	311.12	41787.82	330	134.31	290
2000-01	318.38	70431.56	555	221.26	478
2001-02	318.38	75858.36	598	238.26	515
2002-03	318.38	73731.37(RE)	581	231.58	501
2003-04	318.38	86559.8(BE)	682	271.88	588

Source: Detailed Budget Estimates

Appendix 13.1
Census houses - Uses and Conditions Kerala & India (2001)

SI No	Items	Kerala	India
1	2	3	4
1	Total Houses	93.56	2490.96
2	Vacant houses	7.31	158.11
3	Occupied houses	86.25	2332.85
4	Residence & Residence cum other houses	65.32	1871.62
5	Households	65.95	1919.64
	a. Good	36.82 (55.8)	964.47 (50.2)
	b. Livable	23.74 (36.0)	849.64 (44.3)
	c. Dilapidated	5.39 (8.2)	105.53 (5.5)
6	Type of Structure		
	a. Permanent	44.94 (68)	994.32 (51.8)
	b. Semi Permanent	14.24 (21.6)	576.64 (30)
	c. Others	6.77 (10.3)	348.68 (18.2)
7	Households by Source of Drinking water		
	Total Households	65.95	1919.64
	a. Drinking water within premises	47.2 (71.6)	748.03 (39)
	b. „ near „	10.85 (16.4)	851.12 (44.3)
	c. „ away „	7.9 (12)	320.48 (16.7)
8	Source of Lighting		
	a. Electricity	46.33 (70.3)	1072.09 (55.8)
	b. Kerosene	19.19 (29.1)	831.28 (43.3)
	c. Others	0.43 (0.6)	16.27 (0.9)

Source : Census 2001

Note: Figures in bracket indicates Percentage

Appendix 13.2
District wise Households and housing amenities(2001) (No)

Sl.No	District	House Holds	Source of drinking water			Source of lighting			No lighting
			Tap	Well	others	Electricity	Kerosene	others	
1	Thiruvananthapuram	750567	199892	518166	32509	562442	183241	4565	319
2	Kollam	585616	79742	481817	24057	427473	154022	3895	226
3	Pathanamthitta	290848	40344	234549	15955	208185	80297	2292	74
4	Alappuzha	478523	128534	279903	70086	356974	118712	2686	151
5	Kottayam	426527	78092	327048	21387	331474	92064	2824	165
6	Idukki	266462	64240	115461	86761	151292	112605	2488	77
7	Ernakulam	666753	316037	332035	18681	566051	97447	3109	146
8	Thrissur	625382	123269	449224	52889	483406	137930	3699	347
9	Palakkad	522258	139908	337648	44701	314782	204561	2774	147
10	Malappuram	598031	45195	518785	34051	381762	212321	3813	135
11	Kozhikode	555360	64799	462930	27631	356267	196334	2675	84
12	Wayanad	164039	23325	120816	19898	68829	93650	1521	39
13	Kannur	444547	26042	390637	27868	297786	143921	2766	74
14	Kasargod	220293	16226	169935	34132	125999	91555	2507	232
	Kerala	6595206	1345646	4738954	510606	4632722	1918660	41614	2210

Source:- Census 2001

Appendix 13.3
Achievements under Major Housing Schemes

Sl.No	Schemes	Up to 31-3- 1986	1987-88	1990-91	1993-94	1996-97	1999-00	2002-03	2003-04 upto 30.9.03
1	2	3	4	5	6	7	8	9	10
1	Provision of House sites to rural landless workers	7863	1869	2634	2402	937			
2	Huts/Houses for rural workers	8440	366	396					
3	Village Housing Project	10453		52					
4	Low income group Housing	10698		66	3767	1701			
5	Middle income group Housing	4515	22	68	1621	1367			
6	Co operative housing scheme for economically weaker sections	51964							
7	Subsidised aided self help housing scheme with co operation of voluntary agencies	27585							
8	Rental Housing Scheme	4889		258	16				
9	Public Housing scheme	11645	544	276	188	449			
10	Kudikidappukar Housing	7094							
11	Scheduled caste/Scheduled Tribes Development Corporation	24917	1916	1249	1683	771	618	31	16
12	Tribal Welfare Department	4250	350	404	880	583	310	1754	245
13	Scheduled castes Development Department	18389	1166	818	2030	173	7163	18764	
14	Fishermen Housing	33332	3870	2211	1547	594	1541		
15	Kerala State Co-Operative Housing Federatuib	25612	8658	4577	6231	8360	8934	7380	2779
16	Rehabilitation Housing Scheme		9840	29611	32				
17	N R E P	3871	7560						
18	R.L.E.G.P	6847	11040						
19	Jawahar rozgar Yojana/ IndiraAwas Yojana			14225	16999	29952	24358	32107	9839
20	Other Schemes implemented by KSHB				2256	5922	68245	8686	3830
21	Completed/Discontinued Schemes	12308							
22	ROMHS Housing complex				996	205			
23	Agricultural Bank						11038	13448	5000
24	Sainik Welfare						61	69	50
25	Police Housing						273	0	101
26	LIC Housing Fianance						3268	3000	786
27	GIC Housing Finance						595	741	41
28	Kudumbasree							1330	504
29	HDFC						2479	4880	1810
30	Canfin Homes						299	413	98
31	KUDFC						4021	5	0
32	PWD							0	
33	Nationalised Scheduled Bank						6565	40620	26027
Total		274672	47201	56845	40648	51014	139768	133228	51126

Source - Housing Commissioner

Appendix 13.4
Houses Constructed by various Agencies including LSGI's

Sl.NO.	Agency	Year					2003-04 *
		1996-97	1999-00	2002-03	2003-04	7	
1	2	4	5	6	7		
	Kerala State SC/ST						
1	Development Corporation	771	618	31	16		
2	SC Dev. Dept.	173	7183	18764	..		
3	ST. Dev. Dept.	583	310	1754	245		
4	Fisheries Dept.	594	1541	..	..
5	Agricultural Bank	..	11038	13448	5000		
6	Sainik Welfare	..	61	69	50		
7	Police Housing	..	273	..	101		
8	LIC Housing Finance	..	3268	3000	786		
9	GIC Housing Finance	..	595	741	41		
10	Rural Commissionerate	29952	24358	32107	9839		
11	Kudumbasree	..	..	1330	504	
12	HDFC	..	2479	4880	1810		
13	Canfin Homes	..	299	413	98		
14	HOUSE FED	8360	8934	7380	2779		
15	Local Bodies	..	28478	..	..
16	KSHB	5922	68245	8686	3830		
17	KUDFC	..	4021	5	..		
18	Nationalised Scheduled Bank	..	6565	40620	26027		
	Total	46355	168266	133228	51126		

Source: Housing Commissioner

* upto 30.9.03

Appendix 13.5
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	11318	352	
2	Kollam	14153	14143	10	1272.87
3	Alappuzha	29994	23245	6749	2092.05
4	Pathanamthitta	16044	14667	1377	1320.03
5	Kottayam	29945	29665	280	2669.85
6	Idukki	26131	25410	721	2286.9
7	Ernakulam	36532	32102	4430	2889.18
8	Thrissur	16769	15917	852	1434.53
9	Palakkad	16934	16555	379	1489.95
10	Malappuram	17918	14742	3176	1326.78
11	Kozhikode	19866	17459	2407	1571.31
12	Wayanad	9218	8743	475	786.87
13	Kannur	22521	21424	1097	1928.16
14	Kasargod	14543	12855	1688	1156.95
State Total		2882238	258245	23993	23242.05

Source Kerala State Housing Board

Appendix 13.6
Details of Programmes implemented by KESNIK (Kerala State Nirmithi Kendra)

Sl.No	Items	Units	2001-02	2002-03	2003-04 upto 30.9.03
1	2	3	4	5	6
1	Projects taken up	Nos	85	161	31
2	Project Completed	..	118	189	69
3	Persons trainedc	..	270	154	16
4	Low Cost houses constructed	..	181	6	2
5	Training	..	15	16	56
6	Workshops	..	20	44	84

Source - Kerala State Nirmithi Kendra

Appendix 13.7
Houses Assisted and Amount disbursed by Kerala State Co-operative Housing Federation Limited

Sl.No.	Category	Amount distributed (Rs.lakhs)				Houses Assisted (Nos)			
		2001-02	2002-03	2003-04 upto 30.9.03	2001-02	2002-03	2003-04 upto 30.9.03	2003-04 upto 30.9.03	
1	2	3	4	5	6	7	8	8	
1	EWS	1046.88	957.86	435.56	3958	3702	1473	1473	
2	LIG	2544.6	2078.47	863.37	4407	3953	1548	1548	
3	MIG	1820.33	1345.49	434.87	1415	1107	453	453	
4	Others (Repair)	1648	1333.31	537.42	2531	2064	809	809	
	Total	7060.63	5715.13	2271.22	12311	10826	4283	4283	

Source - Kerala State Co-operative Housing Federation.

Appendix 13.8
HUDCO Assistance given - Housing schemes

Sl.No.	Institutional Agencies	Amount Released (Rs. in lakhs)		
		2001-02	2002-03	2003-04
1	2	3	4	5
1	Great India Health care Management Ltd	545.00		
2	Kerala State Co-operative Housing Federation Ltd	133.08		
3	Kerala Police Housing and Construction Corporation	817.88	237.44	
4	Kerala State Co-operative Bank Ltd	1999.80		
5	Priya Nikethan	4.00		
6	Pathanamthitta Municipal Council	63.00		
7	Roads and Bridges Development Corporation of Kerala Ltd	750.00	2150.00	550.00
8	Vandanmedu Development Society	57.87		
9	Kerala State Handicrafts Apex Co-op Society Ltd		15.91	
10	Kerala Urban Development Finance Corporation		1036.10	500.00
11	District Panchayat Ernakulam			1322.16
12	Kerala State Road Transport Corporation			2500.00
13	Perumbavoor Municipality			60.00
14	Kerala State Housing Board			2000.00
	Total (Institutions)	4370.60	3439.45	6932.16
15	Loan released to Individuals	1617.00	42396.00	561.00
	Grand Total	5987.63	45835.45	7493.16

Source:- HUDCO

Appendix 13.9

Interest Rates of Different Financial Institutions on Housing loan as on 10/03 (percentag

Sl.No.	Name of Institution	Upto 5 Years	upto 10 years	upto 15 years	upto 20 years
1	2	3	4	5	6
1	State Bank of India	7.75		8.25	8.5
2	Bank of Baroda	7.75	8.5	9	
3	State Bank of Travancore	8.25	9	9.25	
4	Syndicate Bank	8.25	8.75	9	9.25
5	Corporation Bank	7.5	8.5	9	
6	HUDCO	9.5	9.75	10	
	<i>EWS</i>		9.25		
7	HDFC	8.75	9		9.5
	<i>Flexible</i>				
	<i>Fixed</i>	9	9.25		9.75
		8.25	8.50	9	
8	LIC	(1-6Years)	(7-12years)	(above 13 yrs)	
9	HSBC	7.75	9		
				8.5	9
10	Sundaram Home Finance	8.25		(6-15 yrs)	(16 to 20 yrs)
11	GIC	8	8.5		
12	Dewan Housing Finance	8.75	9.25	9.5	9.75
		9.75			
13	Bob Housing Finance	(all periods)			
14	Canfin Homes	8.25	9	9.5	9.75
15	Dhanalekshmi Bank	up to Rs. 10 lakhs above Rs. 10 lakhs	10.5	11	
16	House Fed	upto Rs. 50,000 Rs. 50,001 to Rs. 1,25,000 Rs. 1,25,001 to Rs 2.00 lakhs Above Rs. 2.00 lakh			10.25 11.5 11.75 12.5
17	Kerala State Co-op Agricultural and Rural Development Bank Ltd				
	(a) NABARD	up to Rs.25,000 Rs.25,000 to Rs.50,000 Rs.50,000 to Rs.1.50 lakhs Rs.1.50 lakhs to Rs. 2.00	9.5 10 10.5 11.5		
	Repair/Renovation				
		Rs.25000 to Rs.50,000 Rs.50,000 to Rs.1.50 lakhs	10.5 11		
	(b) NHB	Rs.2 to Rs. 3 lakhs	11.5 (upto 7 yrs)		
		Rs 2 lakhs to Rs 3 lakhs		12.5 (above 7 yrs)	
		Rs.3 lakh to Rs. 5 lakhs	11.5	12.5 (above 7 yrs)	
	Repair /Renovation	above Rs. 2 lakh	12	13 (above 7 yrs)	
18	Bank of India	7.95	8.25	8.95	(above 10 yrs)
19	Kerala State Co-Op. Bank Ltd	10	10.25	10.5	
20	Canara Bank				
		upto Rs. 10.00 lakhs above Rs 10.00 lakhs	7.75 8.75	9	
21	Kerala State Housing Board				
	<i>EWS</i>		5		
	<i>LIG</i>		10 to 13.5		
	<i>MIG</i>		12 to 14.5		
	<i>HIG</i>		12.5 to 15.5		

Source - Housing Commissioner

Appendix 14.1

District-wise Number of Families Below Poverty Line According to Social Groups
as on 31.8.2003

Sl. No	District	Number of Families			Total		
		SC	ST	Others	No. of Families	No. of BPL Families	% of BPL Families
1	2	3	4	5	6	7	8
1	Thiruvananthapuram	38816	2629	146865	481223	188310	39.13
2	Kollam	41166	1532	132919	446630	175617	39.32
3	Pathanamthitta	21364	1401	52091	226435	74856	33.06
4	Alappuzha	23415	1235	131501	339857	156151	45.95
5	Kottayam	8139	1149	49894	326926	59182	18.10
6	Idukki	5810	3856	24769	225177	34435	15.29
7	Ernakulam	20306	805	78410	374728	99521	26.56
8	Thrissur	42957	1516	114488	473916	158961	33.54
9	Palakkad	51595	2812	150198	392461	204605	52.13
10	Malappuram	32738	2128	145509	438016	180375	41.18
11	Kozhikode	22882	1215	107684	378224	131781	34.84
12	Wayanad	4068	19502	41224	129927	64794	49.87
13	Kannur	10201	3174	108692	314171	122067	38.85
14	Kasaragod	11823	3893	57185	163981	72901	44.46
State Total		335280	46847	1341429	4711672	1723556	36.58

Source:- Commissionerate of Rural Development

Appendix 14.2

Block wise number of Families Below Poverty Line According to Social Groups

Sl.No.	Block	Number of BPL Families			Total
1	Thiruvananthapuram District				
1	Parassala	2793	124	17593	20510
2	Perumkadavilla	4205	459	19168	23832
3	Athiyannoor	2968	51	14304	17323
4	Nemom	3159	84	12846	16089
5	Trivandrum rural	1698	64	5665	7427
6	Kazhakuttom	3118	88	9990	13196
7	Vellanad	2925	756	15402	19083
8	Nedumangad	1804	221	10689	12714
9	Vamanapuram	4190	590	14000	18780
10	Kilimannoor	5087	100	10639	15826
11	Chirayinkeezhu	3849	57	10096	14002
12	Varkala	3020	35	6473	9528
	<i>Sub Total</i>	<i>38816</i>	<i>2629</i>	<i>146865</i>	<i>188310</i>
2	Kollam				
13	Ochira	1160	30	6456	7646
14	Karunagapally	1994	71	9353	11418
15	Sasthamkotta	3027	65	7433	10525
16	Vettikavala	4698	224	11137	16059
17	Pathanapuram	3301	141	9126	12568
18	Anchal	4518	418	14478	19414
19	Kottarakkara	3971	48	8685	12704
20	Chittumala	2049	55	5899	8003
21	Chavara	1903	28	8134	10065
22	Anchalumoodu	1931	71	9251	11253
23	Mukathala	3805	119	13673	17597
24	Ettikara	3977	127	10993	15097
25	Chadayamangalam	4832	135	18301	23268
	<i>Sub Total</i>	<i>41166</i>	<i>1532</i>	<i>132919</i>	<i>175617</i>
3	Alappuzha				
26	Thikattusseri	1773	144	9551	11468
27	Panakakadu	3070	142	17302	20514
28	Kanzhikuzhi	1864	250	19926	22040
29	Ariyadu	725	98	9953	10776
30	Ambalapuzha	731	49	13084	13864
31	Champakulam	1669	34	9318	11021
32	Valiyanadu	1023	43	7387	8453
33	Chengannoor	4047	154	10210	14411
34	Harippadu	1148	80	7648	8876
35	Mavelikkara	3392	107	8499	11998
36	Bharanikavu	1938	23	6419	8380
37	Mudhukulam	2035	111	12204	14350
	<i>Sub Total</i>	<i>23415</i>	<i>1235</i>	<i>131501</i>	<i>156151</i>

Sl.No.	Block	Number of BPL Families			Total
4	Pathanamthitta				
38	Mallappally	1879	86	5575	7540
39	Pulikozy	1538	30	4096	5664
40	Kozhiparam	1875	68	5292	7235
41	Elanthur	2048	47	4978	7073
42	Ranni	2351	908	9260	12519
43	Konni	2182	94	6719	8995
44	Pandalam	1927	10	3137	5074
45	Parakodeu	6258	141	11969	18368
46	Kulanada	1306	17	1065	2388
	<i>Sub Total</i>	<i>21364</i>	<i>1401</i>	<i>52091</i>	<i>74856</i>
5	Kottayam				
47	Vikkom	329	9	2631	2969
48	Kaduthurithi	17	0	66	83
49	Ushavoor	1110	69	7223	8402
50	Laalam	867	59	4630	5556
51	Erattupetta	530	568	5840	6938
52	Pambadi	902	123	9635	10660
53	Pallam	1435	143	9025	10603
54	Madapally	2758	171	10120	13049
55	Vazhoor	191	7	724	922
	<i>Sub Total</i>	<i>8139</i>	<i>1149</i>	<i>49894</i>	<i>59182</i>
6	Idukki				
56	Adimally	862	1069	4437	6368
57	Devikulam	1133	662	963	2758
58	Nadumkandom	374	90	2875	3339
59	Elamdesom	543	793	4242	5578
60	Idukki	466	753	4022	5241
61	Kattappana	1244	313	4792	6349
62	Thodupuzha	310	50	1839	2199
63	Azhutha	878	126	1599	2603
	<i>Sub Total</i>	<i>5810</i>	<i>3856</i>	<i>24769</i>	<i>34435</i>
7	Ernakulam				
64	Paravoor	1424	94	6987	8505
65	Alangadu	1322	37	3824	5183
66	Angamali	2110	66	9552	11728
67	Kuvapadi	467	9	2221	2697
68	Vazhikulam	508	60	1286	1854
69	Edappally	830	35	2659	3524
70	Vippin	2193	92	7708	9993
71	Palluruthi	464	17	4590	5071
72	Vatiila	700	20	2634	3354
73	Mulamthurithi	1685	16	5013	6714
74	Vadavukode	2752	88	5670	8510
75	Kothamangalam	1893	94	11294	13281
76	Pambakuda	2068	50	9131	11249
77	Parakkadavu	1870	125	5251	7246
78	Moovattupuzha	20	2	590	612
	<i>Sub Total</i>	<i>20306</i>	<i>805</i>	<i>78410</i>	<i>99521</i>

Sl.No.	Block	Number of BPL Families			Total
8	Thrissur				
79	Chavakkadu	2197	25	6887	9109
80	Chovannur	2361	43	6681	9085
81	Vadakkancherry	4702	68	13052	17822
82	Pazhayannoor	4617	125	13690	18432
83	Ollukara	2230	228	7846	10304
84	Puzhakkal	2386	23	5760	8169
85	Mallasseri	1960	16	4094	6070
86	Thalikulam	2928	28	4517	7473
87	Anthikkadu	1951	11	4006	5968
88	Charppu	2287	33	4836	7156
89	Kodakara	3135	246	10626	14007
90	Iringalakkuda	2276	38	4171	6485
91	Vallangallur	2132	31	4971	7134
92	Mathilagam	2405	69	6049	8523
93	Kodungallur	747	46	4458	5251
94	Mala	2131	47	5580	7758
85	Chalakkudi	2512	439	7264	10215
	<i>Sub Total</i>	<i>42957</i>	<i>1516</i>	<i>114488</i>	<i>158961</i>
9	Palakkad				
86	Ottappalam	3376	11	8148	11535
87	Sreekrishnapuram	3677	58	9613	13348
88	Mannarkadu	4903	399	21918	27220
89	Palakkad	4750	90	13432	18272
90	Kzhalmandam	6443	38	11979	18460
91	Chottur	3961	845	15246	20052
92	Kollamkodu	3428	843	6741	11012
93	Nenmara	3199	145	10599	13943
94	Alatoor	5542	170	21306	27018
95	Malampuzha	3240	185	9719	13144
96	Thrithala	4235	14	9130	13379
97	Pattambi	4841	14	12367	17222
	<i>Sub Total</i>	<i>51595</i>	<i>2812</i>	<i>150198</i>	<i>204605</i>
10	Malappuram				
98	Nilambur	3504	1547	19192	24243
99	Kondotti	3028	17	9932	12977
100	Vandoor	5072	200	13870	19142
101	Aricode	3274	173	11661	15108
103	Malappuram	1296	10	9435	10741
104	Perunthalmanna	3225	32	10175	13432
105	Magada	2557	32	13830	16419
106	Kuttiapuram	1835	14	7079	8928
106	Vengara	1282	18	9043	10343
107	Thiruvangady	1763	37	10118	11918
108	Thanur	829	11	9490	10330
109	Thiroom	1652	22	9236	10910
110	Ponnani	2118	4	5488	7610
111	Porambaduppu	1303	11	6960	8274
	<i>Sub Total</i>	<i>32738</i>	<i>2128</i>	<i>145509</i>	<i>180375</i>

Sl.No.	Block	Number of BPL Families			Total
11	Kozhikode				
112	Vadakara	140	15	4244	4399
113	Tunari	250	192	6374	6816
114	Kannummal	640	143	13116	13899
115	Thonoor	589	13	5574	6176
117	Maladi	1178	15	6473	7666
118	Perambra	2819	72	11197	14088
119	Balusseri	4368	73	11152	15593
120	Panthalayini	847	11	3362	4220
121	Chaloor	2821	53	7416	10290
122	Koduvalli	3433	286	15608	19327
123	Kunnamangalam	4246	268	11444	15958
124	Kozhikode	1551	74	11724	13349
	<i>Sub Total</i>	<i>22882</i>	<i>1215</i>	<i>107684</i>	<i>131781</i>
12	Wayanad				
125	Mananthavadi	1000	7096	14223	22319
126	Sulthan Bathery	1530	8018	15866	25414
127	Kalpetta	1538	4388	11135	17061
	<i>Sub Total</i>	<i>4068</i>	<i>19502</i>	<i>41224</i>	<i>64794</i>
13	Kannur				
128	Paayyanoor	2173	26	15065	17264
129	Thaliparambu	2927	103	16319	19349
130	Irikkoor	1924	272	17251	19447
131	Knor	624	12	4237	4873
132	Adakadu	741	50	8389	9180
133	Thalaserry	428	24	11810	12262
134	Koothuparambu	344	539	14910	15793
135	Irutti	602	654	10856	12112
136	Paravoor	438	1494	9855	11787
	<i>Sub Total</i>	<i>10201</i>	<i>3174</i>	<i>108692</i>	<i>122067</i>
14	Kasaragode				
137	Manjeswaram	2114	1759	10447	14320
138	Kasaragode	2797	1095	13660	17552
139	Kanhangad	3871	908	15451	20230
140	Neeleswaram	3041	131	17627	20799
	<i>Sub Total</i>	<i>11823</i>	<i>3893</i>	<i>57185</i>	<i>72901</i>
	State Total	335280	46847	1341429	1723556

Source: Commissionerate of Rural Development

Appendix 14.3

Resource Mobilisation of Projects under the Anti Poverty Sub Plan 2002-2003 of Local Governments

Sl. No	Local Government	(Rs. Crore)															Total
		3	4	5	6	7	8	9	10	11	12	13	14	15	16		
		Grant-in-aid	Own Fund	State Sponsored	Centrally Sponsored	Loan from Co-operative Institutions	Loan from Financial Institutions	Voluntary Contribution	Beneficiary Contribution	Others	Beneficiary Contribution (Directly Spent)	District Panchayat Contribution	Block Panchayat Contribution	Grama Panchayat Contribution	Externally Aid		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
1	Grama Panchayat	235.97	11.07	9.31	10.57	4.05	16.67	6.81	19.29	10.66	58.51	5.79	7.48	1.38	1.78	399.34	
2	Block Panchayat	58.77	1.5	4.21	49.57	3.19	23.45	1.78	1.94	4.74	5.25	1.57	2.1	4.45	1.42	163.94	
3	Municipality	27.14	4.98	2.89	7.22	1.37	3.94	0.8	1.53	1.16	2.7	0.07	0	0	0.93	54.73	
4	Corporation	10.46	0.1	0.05	0.3	0	0.18	0	0.23	0.79	0.96	0	0	0	0.3	13.37	
5	District Panchayat	16.48	0.22	0.32	1.73	0.09	0.57	0.1	0.14	3.88	2.31	2.26	2.49	4.36	0.06	35.01	
Total		348.82	17.87	16.78	69.39	8.7	44.81	9.49	23.13	21.23	69.73	9.69	12.07	10.19	4.49	666.39	

Appendix 14.4

Physical Achievement of Poverty Alleviation Schemes (2002-03 to 2003-04)

Sl No	Name of Scheme	Unit	2002-03		Tenth Plan		2003-04	
			Target	Achievement	Target	Achievement	Target	Achievement
1	2	3	4	5	6	7	8	8
1	SGSY (Total families assisted)	Nos.	46000	19778	230000	46000	4098	
2	IAY (No. of Houses Constructed)	Nos.	31300	32107	156500	31300	12394	
3	JGSY (SGSY II - EmploymentGenerated)	LMD	40	34.62	200	40	15.37	
4	EAS (SGRY I - Employment Generated)	LMD	40	36.34	200	40	22.29	
5	SGRY I & II	LMD	80	70.96	400	80	37.66	

Source: Commissionerate of Rural Development

Appendix 14.5
Target and Achievement under Linkage Banking of Kudumbashree, 2003

Sl.No	Name of District	No.of NHGs Proposed for Linkage during 2003-04	No.of NHGs Graded	No.of NHGs Linked	Amount of Loan Disbursed (Rs. in Lakh)
1	2	3	4	5	6
1	Thiruvananthapuram	2715	5573	1499	365.91
2	Kollam	1976	6156	1912	926.55
3	Pathanamthitta	1067	1163	894	176.67
4	Alappuzha	2036	4114	2363	719.33
5	Kottayam	2625	2268	1104	280.92
6	Idukki	1556	2505	1400	431.30
7	Ernakulam	1936	1731	1581	325.25
8	Thrissur	2362	2387	1875	734.62
9	Palakkad	2048	2267	1161	107.18
10	Malappuram	1746	570	537	604.41
11	Kozhikode	2325	2708	1394	442.14
12	Wayanad	1349	3763	2173	629.80
13	Kannur	1817	4185	1432	381.54
14	Kasaragod	1346	1628	1824	229.09
Total		26904	41018	21149	6354.71

Source Kudumbashree

Appendix 14.6
Achievement under Lease Land Farming, 2003-04

Sl. No	Districts	No. of Panchayats	No. of NHGs	No. of families	Crops Cultivated											
					3	4	5	6	7	8	9	10	11	Area Cultivated (Ha.)		
1	Thiruvananthapuram	52	607	7082	*	*	*	*	*	*	*	*	*	*	*	139.59
2	Kollam	32	500	10025	*	*	*	*	*	*	*	*	*	*	*	209.00
3	Pathanamthitta	22	186	1468	*	*	*	*	*	*	*	*	*	*	*	20.00
4	Alappuzha	39	1996	23522	*	*	*	*	*	*	*	*	*	*	*	347.14
5	Kottayam	11	370	5041	*	*	*	*	*	*	*	*	*	*	*	405.91
6	Idukki	42	3398	37469	*	*	*	*	*	*	*	*	*	*	*	1673.88
7	Ernakulam	68	1788	17204	*	*	*	*	*	*	*	*	*	*	*	1132.00
8	Thrissur	84	674	7335	*	*	*	*	*	*	*	*	*	*	*	275.10
9	Palakkad	61	921	16660	*	*	*	*	*	*	*	*	*	*	*	553.62
10	Malappuram	33	72	1200	*	*	*	*	*	*	*	*	*	*	*	146.94
11	Kozhikode	59	794	8525	*	*	*	*	*	*	*	*	*	*	*	221.13
12	Wayanad	25	2001	20176	*	*	*	*	*	*	*	*	*	*	*	1107.52
13	Kannur	57	1459	22020	*	*	*	*	*	*	*	*	*	*	*	272.42
14	Kasaragod	36	1103	8325	*	*	*	*	*	*	*	*	*	*	*	250.15
Total		621	15869	186052	13	14	14	14	14	14	14	14	14	11	11	6754.40

Source: Kudumbashree

Appendix 14.7

District-wise - Urban Thrift Mobilisation (upto 2003-04*)

(Rs. in Lakh)

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	1253	83	5	200.62	172.18
2.	Kollam	488	33	3	203.12	222.49
3.	Pathanamthitta	214	20	3	57.97	58.66
4.	Alappuzha	633	48	5	219.02	135.25
5.	Kottayam	244	24	4	58.32	50.56
6.	Idukki	54	5	1	15.93	10.46
7.	Emakulam	1768	130	9	740.14	933.23
8.	Thrissur	407	31	7	127.85	127.00
9.	Palakkad	618	47	4	95.09	170.83
10	Malappuram	461	68	5	103.23	62.13
11	Kozhikode	1003	69	3	194.26	187.63
12	Wayanad	60	5	1	21.08	16.92
13	Kannur	522	48	6	86.58	67.32
14	Kasaragod	222	20	2	38.90	31.77
Total		7947	631	58	2162.11	2246.43

Source: Kuchumbashree

* As on 30-11-2003

Appendix 14.8 District-wise Number of beneficiaries in Welfare Institutions - 2003

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	19	11	17	13	20	..	20	8	25	14	28	..	13	10	198	420
2	Home for Mentally Deficient children	..	..	..	..	..	..	..	..	..	..	21	..	..	..	21	50
3	Home for Physically Handicapped	23	..	..	..	..	..	14	..	..	..	15	..	..	..	52	175
4	Home for the cured mental patients (Asha Bhavan)	50	..	..	..	..	..	..	20	..	..	42	..	..	..	112	150
5	Care Home for Disabled	..	9	11	..	..	..	..	9	..	..	..	..	9	..	38	100
6	Old Age Home	100	25	..	25	23	..	42	8	..	17	26	..	18	25	309	1000
7	After Care Home	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	300
8	Observation Home	23	10	6	..	12	..	15	13	6	8	83	..	8	8	192	425
9	Juvenile Homes	62	30	45	..	75	..	..	52	..	..	219	..	..	..	483	800
10	Government Baalsadan	..	..	30	..	..	..	..	..	..	..	..	..	..	..	30	200
11	Rescue Home	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	300
12	Children's Home, Nooranad	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	100
13	Special Home for Boys and Girls	7	..	..	..	..	..	..	..	..	..	..	..	..	..	7	200
14	After Care Home for Women	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	100
Institutions run by NGO's																	
15	Orphanages	1905	1779	900	1002	2622	1061	4087	2200	1981	4386	4049	941	1758	579	29250	44428
16	Fondling Home	50	..	..	..	50	..	42	23	60	15	1	9	18	..	209	440
17	Begger Homes	120	125	..	..	120	..	..	..	..	..	..	..	..	..	365	..
18	Home for Aged Infirm	..	..	9	..	..	22	..	..	19	..	..	..	23	..	73	..
19	Oldage homes	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4920

Source: Social Welfare Department

Appendix 14.9
Major Pension Schemes In Kerala- District-wise Beneficiaries - 2003

Sl. No.	Name of Scheme	Thiruvananthapuram	Kollam	Alappuzha	Pathanamthitta	Kottayam	Idukki	Ernakulam	Thirissur	Palakkad	Malappuram	Kozhikode	Wayanad	Kannur	Kasaragod	State Total
1	Agricultural Workers	91024	33077	68500	17833	33560	7979	33870	50650	57154	52846	62085	11843	42908	15635	527647
2	Widow/Despote Pension Scheme	26484	28133	13989	6636	10770	2792	16426	19143	19593	28345	27280	4475	15185	10131	208445
3	Special Pension for persons with disabilities	17367	15761	12711	5270	7770	3400	10885	13254	12282	15426	18186	2571	8506	5184	148553
4	Leprosy, Cancer patients	1613	2346	353	218	120	42	395	406	185	831	324	1545	92	30	8500
5	Building and Construction Workers	6817	2765	2566	1743	1747	938	4883	2554	2881	1805	3128	318	4543	1281	37969
6	Handloom Workers	1434	952	69	11	143	--	206	138	501	102	1358	--	2372	121	7407
7	Tailoring Workers	819	738	661	343	373	58	529	503	336	132	319	45	483	111	5450
8	Second World War Veterans	793	490	819	341	374	87	571	354	270	303	432	110	689	57	5690
9	Pension to Journalists	67	30	28	1	70	3	58	43	20	5	49	1	20	3	398
10	Fishermen	5329	4353	5234	--	1828	--	3693	1868	1535	1808	1808	--	1165	1317	14929
11	Pension to Toddy Workers	127	502	1439	452	1782	1041	2987	2630	1569	425	439	--	1218	318	14929
12	Ration Dealers	50	51	45	21	14	1	24	22	9	3	3	1	5	3	252
13	Coir Workers	8676	10659	30991	--	4067	--	3010	2533	612	400	4450	300	1100	202	67000
14	Abkari Wrokers	10	7	3	2	3	3	7	16	2	5	12	2	25	--	97
15	Cine Artists	72	4	17	5	12	0	13	10	5	2	5	0	1	0	146
16	Unemployment assistance	65719	57469	48878	11372	22217	12563	19110	18358	9889	18644	33363	3244	14281	5942	341049
17	Khadi Workers	3	--	--	--	1	--	--	4	--	1	4	--	4	--	17
18	Freedom Fighters															8880
19	National Old Age Pension	9292	15971	7569	3641	8890	3930	13994	11708	18748	15175	9454	1448	9171	5609	134600
20	Unmarried Women above 50 years	2891	696	3895	460	765	50	1540	4110	1518	1151	4139	50	2572	372	24209

Source: Different Welfare Fund Boards/Departments.

Appendix 14.10
Details of Social Security Pension Schemes in Kerala - 2002

Sl. No.	Welfare Institution	Qualifying condition	Year	Year of Revision and Rate of assistance						
				5	6	7	8	9	10	11
1	Agricultural Workers Welfare Scheme	1. Pension - Above 60 years. Annual family income Rs.11,000 2. Retirement benefit - minimum one year membership	1980 1990	Rs.40/m Rs.25000	Rs.45/m (1985)	Rs.60/m (1987)	Rs.70/m (1991)	Rs.80/m (1996)	Rs.100/m (1997)	Rs.120/m (2000)
2	Kerala Widow Pension Scheme	Death of husband/divorced/not remarried. Income Rs.300/m	1973	Rs.55/m	Rs.65/m (1991)	Rs.80/m (1995)	Rs.100/m (1996)	Rs.110/m (1997)		
3	Special Pension for the Disabled and Mentally Retarded Persons	40% Disability. Medical Certificate. Family income below 500/m.	1982	Rs.75/m	Rs.110/m (2000)					
4	Pension to Sportsmen	Income Rs. 1100 per annum. Inter District/State level participation	1978	Below 60 yrs Rs.100/m 60 to 70 yrs Rs.150/m 70 years and above Rs.200/m	Below 60 yrs Rs.200/m (1993) 60 to 70 yrs Rs.300/m 70 years and above Rs.400/m	Below 60 yrs Rs.400/m (1998) 60 to 70 yrs Rs.600/m 70 years and above Rs.800/m				
5	Ind World War Veterans	Participated in the 2nd World War. Non recipient of any other assistance. Annual income Rs.6000.	1997	Rs.200/m	Rs.300/m (2000)					
6	Freedom fighters Pension Scheme	Participated in the National Movement.	1971	Rs.300/m	Rs.1000/m (1996)	Rs.1500/m (1997)	Rs.2000/m (1998)	Rs.3000/m (2000)		
7	Financial Assistance to Leprosy and Cancer Patients	Certificate from hospitals. Income Rs. 200/m.	1976	Rs.50/m	Rs.115/m (1991)	Rs.200/m (1997)				
8	Pension to Journalists/ Dependents	1. Living Journalist who are unemployed due to illhealth and overage 2. Pension to journalist who retired after 10 year service 3. Pension to daily workers. Minimum 10 year service for full pension, 50% pension for 5 year service.	1976 1983	Rs.300/m Rs.1000/m	Rs.500/m (1987) Rs.1400/m (2001)					
			2000	Rs.1000/m						

Sl. No.	Welfare Institution	Qualifying condition	Year	Year of Revision and Rate of assistance								
				4	5	6	7	8	9	10	11	
9	Welfare Fund for Cine Artists	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)	Rs.1000 (1998)					
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.75/m	Rs.100/m (1997)							
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.60/m	Rs.180/m (1991)	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.115/m	Rs.10000 (1995)							
16	Kerala Toddy Workers Welfare Scheme	1. Pension - Not less than 10 years membership 2. Assistance to Disabled workers	1997	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							
				6	7	8	9	10	11		
17	Kerala Head Load Workers Welfare Scheme			Normal death Rs.10000 Accidental death Rs.20000							
		1. Death benefit	1987	Rs.15000 and Rs.30000 respectively							
		2. invalid Pension	1990	Rs.150/m 2400 (2000)							
18	Kerala Motor Workers Welfare Scheme	1. Death benefit - 3 months continuous service	1986	Rs.5000							
		2. Retirement benefit		Rs.12000 for 5 years service and Rs.60000 for 15 years service							
19	Kerala Fishermen Welfare Scheme	1. Pension - Completed 60 years. Annual Income Rs.5000	1987	Rs.75/m	Rs.85/m (1992)	Rs.100/m (1996)	Rs.120/m (2000)				
		2. Accidental death/missing - 18 to 70 years.	1986	Rs.15000	Rs.21000 (1990)	Rs.25000 (1992)	Rs.50000 (1996)	Rs.100000 (1999)			
		3. Permanent disability	1986	Rs.7500	Rs.10500 (1990)	Rs.25000 (1992)	Rs.50000 (1996)	Rs.100000 (1999)			
20	Kerala Tailoring Workers Welfare Scheme	1. Pension - Completed 60 years. Minimum 9 years service.	2000	Rs.100 to Rs.430/m							
		2. Disability Pension	1997	Rs.100/m							
21	Kerala Artisans & Skilled Workers Welfare Scheme			Rs.50000 for 40 years of service.							
		1. 60 years and above and is a member	1986	Rs.600 for 2 yrs service							
		2. Death Benefit		Rs.10000							
		3. Permanent disability		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								
				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	1997	Rs. 10000								
			2001	Rs. 110/m								

Source: Deferent Welfare Fund Boards/Departments.

**Appendix 14.11
Demographic Profile of aged in Kerala (Population in millions)**

Year	Population								Proportion to total Population			
	Total Population	60 +	70 +	80 +	60 +	70 +	80 +	60 +	70 +	80 +		
1	2	3	4	5	6	7	8					
1961	169.0	9.86	3.63	0.85	5.83	2.15	0.50					
1971	213.5	13.28	4.96	1.25	6.22	2.32	0.59					
1981	254.5	19.10	7.12	1.86	7.5	2.8	0.73					
1991	290.7	25.74	10.01	2.9	8.85	3.44	1					
2001	318.4	34.87	15.72	4.49	10.95	4.94	1.41					
2011	342	48.84	22.60	7.08	14.28	6.61	2.07					
2021	356.3	72.05	32.23	10.39	20.22	9.05	2.92					
2031	359.7	100.01	49.06	15.38	27.8	13.64	4.27					
2041	353.2	115.84	67.58	24.04	32.8	19.13	6.80					
2050	334.5	118.61	74.39	32.56	35.46	22.24	9.73					

Source: CDS.

Appendix 14.12
ICDS PROJECTS (GENERAL) - 2002

Sl.No.	Name of Project	Year of sanctioning	Type of project	No. of AWCs	
				Sanctioned	Operational
1	2	3	4	5	6
Thiruvananthapuram					
1	Thiruvananthapuram (Ull)	94-95	Urban	410	106
2	Thiruvananthapuram (Rural)	82-83	Rural	122	114
3	Kilimanoor	93-94	Rural	164	164
4	Nemom	82-83	Rural	115	115
5	Perumkadavila	82-83	Rural	134	134
6	Vamanapuram	86-87	Rural	219	219
Kollam					
7	Sasthamkotta	82-83	Rural	87	87
8	Ithikkara	83-84	Rural	138	138
9	Vettikavala	82-83	Rural	179	179
10	Chittumala	85-86	Rural	123	123
11	Pathanapuram	88-89	Rural	186	172
12	Anchal	93-94	Rural	190	190
13	Kottarakkara	93-94	Rural	144	144
14	Chadayamangalam	94-95	Rural	203	201
Pathanamthitta					
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	244	103
19	Konni	88-89	Rural	178	178
20	Kulanada	89-90	Rural	141	85
21	Paracode	82-83	Rural	152	152
22	Mavelikkara	93-94	Rural	117	117
23	Bharanikave	93-94	Rural	183	183
24	Chengannoor	99-2000	Rural	171	171
Kottayam					
25	Lalam	82-83	Rural	121	114
26	Pampady	82-83	Rural	122	122
27	Madappally	85-86	Rural	235	231
28	Kanjirappally	89-90	Rural	226	223
Idukki					
29	Adimali	90-91	Rural	158	131
30	Azhudai	86-87	Rural	195	184
31	Devikulam	83-84	Rural	112	112
32	Elamdesam	79-80	Rural	110	110
33	Idukki	82-83	Rural	118	118
34	Kattappana	88-89	Rural	207	207
35	Nedumkandam	91-92	Rural	161	161
36	Thodupuzha	93-94	Rural	104	103
Ernakulam					
37	Vadavucode	82-83	Rural	127	127
38	Mulamthuruthy	89-90	Rural	144	138
39	Vytilla	93-94	Rural	50	50

1	2	3	4	5	6
	Thrissur				
40	Anthikad	80-81	Rural	101	101
41	Chavakkad	78-79	Rural	199	196
42	Chalakudy	83-84	Rural	157	157
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	106	96
47	Pazhayannoor	86-87	Rural	166	166
48	Thalikulam	85-86	Rural	121	109
49	Vellangallur	93-94	Rural	96	96
50	Vadakkanchery	93-94	Rural	174	174
	Palakkad				
51	Kuzhalmannam	80-81	Rural	117	84
52	Kollengode	81-82	Rural	137	103
53	Alathur	83-84	Rural	138	138
54	Sreekrishnapuram	83-84	Rural	138	137
55	Chittur	86-87	Rural	160	160
56	Ottappalam	86-87	Rural	174	174
57	Mannarkad	88-89	Rural	250	250
58	Trithala	89-90	Rural	186	186
59	Palakkad	90-91	Rural	303	231
60	Pattambi	91-92	Rural	226	226
61	Nenmara	93-94	Rural	71	71
	Malappuram				
62	Andathode	93-94	Rural	134	134
63	Manjeri	83-84	Rural	127	127
64	Kondotty	81-82	Rural	138	138
65	Kuttippuram	91-92	Rural	157	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	134	134
70	Vengara	75-76	Rural	135	135
71	Wandoor	90-91	Rural	253	253
	Kozhikode				
72	Balusseri	89-90	Rural	244	227
73	Koduvally	82-83	Rural	158	123
74	Perambra	83-84	Rural	144	144
75	Kunnamangalam	83-84	Rural	134	139
	Wayanadu				
76	Sulthan Battery	82-83	Rural	139	138
77	Kalpatta	82-83	Rural	194	194
	Kannur				
78	Kannur (Urban)	82-83	Urban	37	34
79	Kuthuparamba	83-84	Rural	138	138
80	Peravoor	86-87	Rural	136	136
81	Irikkur	93-94	Rural	214	214
82	Edakkad	82-83	Rural	143	143
83	Iritty	93-94	Rural	163	163
	Total			13208	12397

1	2	3	4	5	6
World Bank assisted strengthening Projects					
Thiruvananthapuram					
1	Thiruvananthapuram (UI)	77-78	Urban	101	100
2	Athiyannoor	82-83	Rural	127	126
3	Chirayinkeezhu	81-82	Rural	146	140
4	Kazhakuttam	94-95	Rural	230	230
5	Varkala	93-94	Rural	130	108
Kollam					
6	Chavara	78-79	Rural	152	152
7	Ochira	80-81	Rural	73	73
8	Anchalummood	82-83	Rural	114	114
Alappuzha					
9	Pattanakkad	81-82	Rural	196	195
10	Thycatusery	79-80	Rural	111	105
11	Kanjikuzhy	82-83	Rural	143	143
12	Alappuzha Urban	82-83	Rural	186	147
13	Champakulam	82-83	Rural	116	116
14	Ambalappuzha	81-82	Urban	117	117
15	Harippad	82-83	Rural	117	117
16	Muthukulam	83-84	Rural	182	182
Kottayam					
17	Vaikom	79-80	Rural	108	108
Ernakulam					
18	Vypin	83-84	Rural	125	122
19	North Paravoor	80-81	Rural	113	113
20	Mattanchery	79-80	Rural	110	110
21	Kochi (Urban)	94-95	Urban	463	177
Palakkad					
22	Attappady	79-80	Tribal	123	123
Malappuram					
23	Ponnani	80-81	Rural	108	108
24	Thanur	83-84	Rural	124	124
25	Thirur	82-83	Rural	140	137
26	Thirurangadi	85-86	Rural	192	192
Kozhikode					
27	Melady	82-83	Rural	122	80
28	Calicut (UI)	77-78	Urban	101	101
29	Calicut (UII)	83-84	Urban	111	111
30	Mananthavady	78-79	Rural	184	184
Kannur					
31	Kannur (Rural)	93-94	Rural	158	140
32	Payyannur	93-94	Rural	342	329
33	Thaliparamba	81-82	Rural	170	170
34	Thalassery	93-94	Rural	247	239
Kasaragod					
35	Kanhangad	80-81	Rural	195	195
36	Kasaragod	85-86	Rural	224	216
37	Manjeshwar	93-94	Rural	211	211
Total				5912	5455

1	2	3	4	5	6
World Bank Assisted Phase III Projects					
Thiruvananthapuram					
1	Nedumangad	99-2000	Rural	147	147
2	Vellanad	2000-01	Rural	207	207
3	Parassala	2000-01	Rural	171	171
Kollam					
4	Karunagapally	99-2000	Rural	181	145
5	Mukhathala	2000-01	Rural	254	254
6	Kollam Punalur	2000-01	Urban	186	143
Pathanamthitta					
7	Mallappally	99-2000	Rural	115	115
8	Koipuram	2000-01	Rural	122	122
Alappuzha					
9	Ariad	99-2000	Rural	111	111
10	Veliyanad	99-2000	Rural	90	90
Kottayam					
11	Kaduthuruty	99-2000	Rural	156	156
12	Pallam	99-2000	Rural	234	234
13	Vazhoor	99-2000	Rural	109	108
14	Uzhavoor	2000-01	Rural	144	144
15	Ettumannur	2000-01	Rural	191	191
16	Erattupettah	2000-01	Rural	98	98
Ernakulam					
17	Koovappady	99-2000	Rural	133	133
18	Parakkadavu	99-2000	Rural	127	127
19	Vazhakullam	99-2000	Rural	177	176
20	Pampakuda	99-2000	Rural	92	92
21	Palluruthy	2000-01	Rural	58	58
22	Alangad	2000-01	Rural	114	114
23	Angamali	2000-01	Rural	180	180
24	Kothamangalam	2000-01	Rural	178	176
25	Edappally	2000-01	Rural	87	84
26	Muvattupuzha	2000-01	Rural	137	137

1	2	3	4	5	6
	Thrissur				
27	Puzhakkal	99-2000	Rural	164	164
28	Ollukkara	99-2000	Rural	225	215
29	Cherpu	2000-01	Rural	181	165
30	Kodungallur	2000-01	Rural	94	94
31	Kodakara	2000-01	Rural	196	196
32	Mathilakam	2000-01	Rural	137	137
	Palakkad				
33	Malampuzha	99-2000	Rural	167	167
	Malappuram				
34	Malappuram (U)	2000-01	Urban	158	148
	Kozhikode				
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	167	152
40	Thodannur	2000-01	Rural	119	119
41	Thuneri	2000-01	Rural	126	126
42	Vadakara	2000-01	Rural	114	113
	Kasaragod				
43	Neeleswaram	99-2000	Rural	237	237
	Total			6664	6523

Appendix 14.13
District-wise Details of Unemployed SC/ST persons in the Live Registers of Employment Exchange, 2002-03 and 2003-04

District (1)	2002 *			2003 **				
	SC (2)	ST (3)	Others (4)	SC (6)	ST (7)	Others (8)	Total (9)	
Thiruvananthapuram	70323	4219	524625	599167	74682	4120	501517	580319
Kollam	56770	372	425727	482869	57773	403	343384	401560
Pathanamthitta	27701	659	141049	169409	24476	745	125169	150390
Alappuzha	47693	657	327266	375616	45206	707	307325	353238
Kottayam	29305	3425	222247	254977	28690	3703	216837	249230
Idukki	13951	6111	118781	138843	14523	5521	106638	126682
Ernakulam	49324	1093	352103	402520	49855	1316	348636	399807
Thrissur	61382	455	296421	358258	261156	526	84632	346314
Palakkad	47193	1232	251785	300210	44431	1434	223438	269303
Malappuram	47084	484	191077	238645	49661	593	185597	235851
Kozhikode	44349	437	335302	380088	46815	455	330689	377959
Wayanad	4341	7696	80081	92118	4904	8341	67853	81098
Kannur	17143	1077	230307	248527	17945	1083	212650	231588
Kasaragod	7912	2953	81268	92133	8376	2909	81730	93015
Total	524471	30870	3578039	4133380	728493	31856	3136005	3896354

Source:- Directorate of Employment, Thiruvananthapuram

* As on March 2002

** As on August 2003

Appendix 14.14
District-wise details of SC/ST students appeared and passed in the SSLC Examination March 2003

Sl.No.	District	No. of students appeared in the SSLC Examination			No. of students passed in the SSLC Examination			Percentage of Pass					
		SC (3)	ST (4)	Total (5)	SC (7)	ST (8)	Total (9)	SC (11)	ST (12)	General (13)	Total (14)		
1	Kasaragod	956	398	16133	17487	348	138	9160	9646	36.40	34.67	56.78	55.16
2	Kannur	1374	167	35113	36654	792	44	26015	26851	57.64	26.35	74.09	73.26
3	Wayanad	514	940	8915	10369	286	290	5884	6460	55.64	30.85	66.00	62.30
4	Kozhikode	2726	74	40911	43711	1336	26	27354	28716	49.01	35.14	66.86	65.70
5	Malappuram	5005	92	63106	68203	1746	21	30879	32646	34.89	22.83	48.93	47.87
6	Palakkad	5923	197	34078	40198	1505	73	16526	18104	25.41	37.06	48.49	45.04
7	Thrissur	4278	53	36056	40387	2382	25	27793	30200	55.68	47.17	77.08	74.78
8	Ernakulam	3185	1327	34502	39014	2022	594	28344	30960	63.49	44.76	82.15	79.36
9	Idukki	1581	438	10512	12531	687	166	7646	8499	43.45	37.90	72.74	67.82
10	Kottayam	1878	228	22953	25059	1080	124	18742	19946	57.61	54.39	81.65	79.60
11	Alappuzha	2612	34	25266	27912	1325	15	18876	20216	50.73	44.12	74.71	72.43
12	Pathanamthitta	2435	68	15058	17561	901	11	10885	11797	37.00	16.18	72.29	67.18
13	Kollam	4081	95	31568	35744	1661	22	22516	24199	40.70	23.16	71.33	67.70
14	Thiruvananthapuram	5470	308	40026	45804	2169	94	27042	29305	39.65	30.52	67.56	63.98
	Total	42018	4419	414197	460634	18240	1643	277662	297545	43.41	37.18	67.04	64.59

Source:- Pareeksha Bhavan

Appendix 14.15
District-wise details of houses constructed by SC Development Department during
2002-03 & 2003-04

Sl.No.	Name of District	2002-03		2003-04 *	
		No. of houses, constructed	Amount spent (Rs.lakhs)	No. of Houses under construction	Amount Disbursed
1	2	3	4	5	6
1	Thiruvananthapuram	177	71.05	1259	142.600
2	Kollam	298	164.85	692	90.025
3	Pathanamthitta	267	151.90	499	67.546
4	Alappuzha	201	89.95	1395	149.079
5	Kottayam	319	129.85	704	64.590
6	Idukki	836	471.80	203	13.852
7	Ernakulam	596	304.50	1418	200.658
8	Thrissur	59	41.30	1269	144.136
9	Palakkad	593	311.15	903	83.204
10	Malappuram	402	248.15	1035	123.226
11	Kozhikode	234	115.85	1117	80.723
12	Wayanad	225	105.70	223	23.688
13	Kannur	82	37.45	1349	144.068
14	Kasaragod	249	94.85	723	72.605
Total		4538	2338.35	12789	1400.000

Source: Directorate of SC Development Department

* Upto August 2003

Appendix 14.16
Physical Achievements of Major Schemes for Scheduled Castes,
2002-03 & 2003-04*

Sl.No	Name of Scheme	Unit	Physical Achievements	
			2002-03	2003-04
(1)	(2)	(3)	(4)	(5)
1	Scholarships & Stipends	Students	420860	139600
2	Special Incentives to talented students and Award to schools	"	3489	1114
3	Coaching & Allied Scheme (50% SS)	"	18	58
4	Post-Matric Hostels	"	1002	924
5	Book Banks in Professional Colleges and Polytechnics (50% SS)	Students	1112	
6	Bharat Dharshan	Institutions	85	--
7	Financial Assistance to failed students (special coaching)	students	50	--
8	Upgradation of performance level of SC students in sports	students	4784	218
9	Production -cum - training centres and Industrial Training Centres	students	190	28
10	Protection of Civil Rights & Enforcement of PCR Act (50%SS)	students	1356	--
11	Assistance to the Dependants of Safai Karmachari (50%SS)	Families	394	5
12	Modernisation of offices	Families	1550	--
13	Enforcement of prevention of Atrocities Act 1989 (50% SS)	Computer	58	--
14	Model Residential Schools	Families	59	--
15	Grant to Civil Service Examination Society	8 MRS	661	661
16	Training in Electronics Computer Information Technology and Other Hi-tech Courses	Students	18	--
17	National Trade and Arts fare of Scheduled Castes	Students	15000	--
18	Honorarium and Training to SCP Promoters	No.	1	--
19	Advocate Clerk-cum-Typist-cum-Computer Programmer	Promoters	1175	--
20	Para Medical Studies	Persons	270	--
21	Ayyankali Memorial Talent Search and Development Studies	Institutions	5	--
22	Corpus Fund under Special Component Plan	Students	550	--
23	Special Central Assistance to Special Component Plan	Families	10291	--
24	Kerala State Development Corporation for SC/ST (51% SS)	Beneficiaries	2500	246
25	Self Employment	Beneficairies		
26	Apprenticeship to ITI/ITC/Diploma Degree holders in Technical Branches	Families	--	27
27	Tuition system in Pre-Matric Hostels	Individuals	--	54
28	Development Programme for the Vulnerable Communities	Students	1717	--
29	Better Education to Bright SC sutudents	Families	24	--
30	Pre primary Education	Students	537	--
31	Post-Matriculation Studies (OBC)	"	1697	--
32	Pre-Matriculation Studies	students	64944	--
		"	89013	--

Source: Directorate of SC Development Department

* Upto August 2003

Appendix 14.17

Physical and Financial Achievement under Prematric and Postmatric Scholarships (1997-2003)

Year	Prematric/Post-matric	Physical Achievement	Financial Achievement	
			Plan	Non Plan
(1)	(2)	(3)	(4)	(5)
1997-98	Pre-matric	61157	--	241.3
	Post-matric	3709	49.99	125.01
1998-99	Pre-matric	60485	--	230.51
	Post-matric	3818	41.02	99
1999-2000	Pre-matric	59627	--	230.99
	Post-matric	3834	50.03	93.98
2000-01	Pre-matric	52324	--	229.61
	Post-matric	3942	50	99.74
2001-02	Pre-matric	58635	--	222.21
	Post-matric	3987	50.15	105.94
2002-03	Pre-matric (N.P.)	58243	--	243.34
	Post-matric (Plan)	4523	177.84	104.8

Source: Directorate of ST Development Department

Appendix 14.16
Physical Achievements of Major Schemes for Scheduled Castes,
2002-03 & 2003-04*

Sl.No	Name of Scheme	Unit	Physical Achievements	
			2002-03	2003-04
(1)	(2)	(3)	(4)	(5)
		Students	420860	139600
1	Scholarships & Stipends	Students		
2	Special Incentives to talented students and Award to schools	"	3489	1114
3	Coaching & Allied Scheme (50% SS)	"	18	58
4	Post-Matric Hostels	"	1002	924
5	Book Banks in Professional Colleges and Polytechnics (50% SS)	Students	1112	
6	Bharat Dharshan	Institutions	85	--
7	Financial Assistance to failed students (special coaching)	students	50	--
8	Upgradation of performance level of SC students in sports	students	4784	218
9	Production -cum - training centres and Industrial Training Centres	students	190	28
10	Protection of Civil Rights & Enforcement of PCR Act (50%SS)	students	1356	--
11	Assistance to the Dependants of Safai Karmachari (50%SS)	Families	394	5
12	Modernisation of offices	Families	1550	--
13	Enforcement of prevention of Atrocities Act 1989 (50% SS)	Computer	58	--
14	Model Residential Schools	Families	59	--
15	Grant to Civil Service Examination Society	8 MRS	661	661
16	Training in Electronics Computer Information Technology and Other Hi-tech Courses	Students	18	--
17	National Trade and Arts fare of Scheduled Castes	Students	15000	--
18	Honarium and Training to SCP Promoters	No.	1	--
19	Advocate Clerk-cum-Typist-cum-Computer Programmer	Promoters	1175	--
20	Para Medical Studies	Persons	270	--
21	Ayyankali Memorial Talent Search and Development Studies	Institutions	5	--
22	Corpus Fund under Special Component Plan	Students	550	--
23	Special Central Assistance to Special Component Plan	Families	10291	--
24	Kerala State Development Corporation for SC/ST (51% SS)	Beneficiaries	2500	246
25	Self Employment	Beneficairre s		
26	Apprenticeship to ITI/ITC/Diploma Degree holders in Technical Branches	Families	--	27
27	Tuition system in Pre-Matric Hostels	Individuals	--	54
28	Development Programme for the Vulnerable Communities	Students	1717	--
29	Better Education to Bright SC sutudents	Families	24	--
30	Pre primary Education	Students	537	--
31	Post-Matriculation Studies (OBC)	"	1697	--
32	Pre-Matriculation Studies	students	64944	--
		"	89013	--

Source Directorate of SC Development Department

* Upto August 2003

Appendix 14.17

Physical and Financial Achievement under Prematric and Postmatric Scholarships (1997-2003)

Year	Prematric/Post-matric	Physical Achievement	Financial Achievement	
			Plan	Non Plan
(1)	(2)	(3)	(4)	(5)
1997-98	Pre-matric	61157	--	241.3
	Post-matric	3709	49.99	125.01
1998-99	Pre-matric	60485	--	230.51
	Post-matric	3818	41.02	99
1999-2000	Pre-matric	59627	--	230.99
	Post-matric	3834	50.03	93.98
2000-01	Pre-matric	52324	--	229.61
	Post-matric	3942	50	99.74
2001-02	Pre-matric	58635	--	222.21
	Post-matric	3987	50.15	105.94
2002-03	Pre-matric (N.P.)	58243	--	243.34
	Post-matric (Plan)	4523	177.84	104.8

Source: Directorate of ST Development Department

Appendix 14.18
District-wise Details of Institutions under Scheduled Tribe Development Department *

District- (1)	Bala Wadies/Nursery Schools		Boys Hostels		Girls Hostels		Model Residential Schools		Other Institutions	
	Own Building (2)	Rented Building (3)	Own Building (4)	Rented Building (5)	Own Building (6)	Rented Building (7)	Own Building (8)	Rented Building (9)	Own Building (10)	Rented Building (11)
Thiruvananthapuram	7	--	--	1	1	--	2	--	6	--
Kollam	2	--	2	--	2	--	1	--	4	--
Paathanamthitta	1	--	--	1	1	--	1	--	3	--
Alappuzha	--	--	--	--	--	1	--	--	--	--
Kottayam	4	--	--	--	2	--	--	1	4	--
Idukki	8	--	7	1	3	3	2	--	10	--
Ernakulam	--	--	1	1	--	1	--	--	1	--
Thrisur	2	--	2	1	1	--	1	--	--	--
Palakkad	6	--	12	1	4	--	2	--	5	--
Malappuram	3	--	1	5	2	1	1	--	3	--
Kozhikode	2	--	2	1	1	--	--	--	--	--
Wayanad	17	--	11	11	8	--	5	--	13	--
Kannur	2	--	1	6	3	--	1	--	4	--
Kasaragod	4	--	1	1	--	--	1	--	1	--
Total	58	0	40	30	28	6	17	1	54	--

Source: Directorate of ST Development Department

* As on August 2003

Appendix 14.19
District-wise Area of Land Distributed to Tribal Families upto 26.12.2003

Sl. No	District	Location	No. of Families	Total Area (Acres)	Type of Land	Date of Distribution
1	2	3	4	5	6	7
1	Wayanad	Kunnathidavaka	40	40	Revenue	10.5.03
		Sugandhagiri	0	0		26.8.03
2	Kannur	Pazhassi	132	145.2	Irrigation P	23.3.02
		Koodali, Kolayad, Cheruvancherry	17	17	Surplus land	Oct. 02
		Kandamkunnu Neerveeli	6	5.8	Surplus land	7.6.03
		Thrippangottur	10	10	Surplus land	Nov. 03
3	Kozhikode	Muthukad	41	41	Escheat land	20.9.02
		Vattachira Farm	39	195	Tribal Project	10.4.03
			6	30		6.9.203
			30	30		6.9.03
		Perambra*	202	202		6.9.03
4	Ernakulam	Kuttampuzha	168	400	Tribal Settlement	Record of rights
5	Idukki	Marayoor	242	363	Revenue	1.1.02
		Kundala	72	360	Revenue	1.1.02
		Pooppara	47	47	Revenue	16.4.02
		Alakkode	3	3	Revenue	7.10.02
		Chinnakanal	301			29.4.03
			68	471	Revenue	28.4.03
			34	34		4.9.03
			30	30		7.11.03
			277	277		26.12.03
6	Alappuzha	Cherthala	33	7.62	Surplus land	6.2.03
		Kallada IP	79	20.08	Irrigation P	30.5.03
7	Kottayam	Madukka	19	19	Revenue	12.10.02
8	Kollam	Kuroyottumala	128	100	AH Dept	26.4.03
		Kottarakkara		14.68	Surplus land	6.4.03
	Total		2024	2862.38		

Source: Tribal Resettlement and Development Mission

* 102 acres will be distributed to 102 landless families belonging to Wayanad district on 31.12.2003

Appendix 14.20

District-wise Details of Landless Tribals and Those Own Less than 1.00 acre of Land

Sl. No	District	Landless Tribals		< 1.00 Acre Land	
		Number	Percent	Number	Percent
1	2	3	4	5	6
1	Kasaragod	226	1.02	171	0.53
2	Kannur	1395	6.33	2249	7.00
3	Wayanad	13303	60.33	12184	37.92
4	Kozhikode	318	1.44	889	2.77
5	Malappuram	339	1.54	2224	6.92
6	Palakkad	5389	24.44	2637	8.20
7	Thrissur	271	1.23	840	2.61
8	Ernakulam	132	0.60	888	2.76
9	Idukki	190	0.86	5436	16.92
10	Kottayam	153	0.70	1340	4.19
11	Alappuzha	117	0.53	568	1.77
12	Pathanamthitta	68	0.3	1032	3.21
13	Kollam	138	0.63	572	1.78
14	Thiruvananthapuram	13	0.05	1101	3.42
Total		22052	100	32131	100

Source: Tribal Resettlement and Development Mission

Appendix 14.21
Details of Expenditure of Tribal Resettlement and
Development Mission as on 30.12.03

Sl. No	Item of Expenditure	Amount (Rs. lakh)
1	2	3
I.	Amount placed at the disposal of the District Collectors for Mission activities	
1	District Collector, Kannur	21.00
2	District Collector, Wayanad	25.00
3	District Collector, Malappuram	2.00
4	District Collector, Palakkad	3.00
5	District Collector, Idukki	16.00
6	District Collector, Emakulam	1.00
7	District Collector, Thrissur	2.00
8	Project Officer, ITDP, Kanjirappally	0.60
9	District Collector, Kozhikode	3.75
10	District Collector, Alappuzha	0.50
11	District Collector, Pathanamthitta	0.50
12	District Collector, Kollam	0.75
13	District Collector, Thiruvananthapuram	0.30
14	Director of Survey and Land Records	2.00
	<i>Sub Total I</i>	78.40
II	Administrative Expenses of Mission including assets procured	38.60
III	Amount allotted for free rations to Collectors	472.08
IV	Amount allotted to PCK	240.57
V	Amount allotted to Sugandhagiri (District Collector, Wayanad and Kerala Co-operative State Agricultural Rural Development Bank)	452.85
VI	Amount allotted to resettled sites for development (from TRDM)	385.20
	Total Expenditure	1667.70

Source: Tribal Resettlement and Development Mission

Appendix 14.22

District wise details of houses constructed by ST Development Department,
2002-03 & 2003-04

Sl.No.	Name of District	2002-03		2003-04 *	
		No. of houses constructed	Amount spent (Rs.lakh)	No. of houses under construction	Amount Disbursed (Rs.lakhs)
1	2	3	4	5	6
1	Thiruvananthapuram	181	32.06	19	1.60
2	Kollam	14	33.97	39	7.50
3	Pathanamthitta	17	38.41	34	15.00
4	Alappuzha	-	12.67	57	7.50
5	Kottayam	159	91.52	145	27.79
6	Idukki	54	106.32	383	10.0
7	Ernakulam	13	64.41	22	9.91
8	Thrissur	2	84.96	169	20.00
9	Palakkad	188	105.43	105	7.16
10	Malappuram	111	34.70	3	5.50
11	Kozhikode	11	21.93	46	8.00
12	Wayanad	222	190.27	263	69.74
13	Kannur	--	111.43	46	--
14	Kasaragod	142	187.36	436	21.50
Total		1114	1115.44	1767	211.20

Source: Directorate of ST Development Department

* Upto August 2003

Appendix 14.23
Physical Achievements of Major Schemes for Scheduled Tribes,
2002-03 & 2003-04

Sl.No.	Name of Scheme	Unit	Physical Achievement	
			2002-03	2003-04*
(1)	(2)	(3)	(4)	(5)
1	Improvement of Tribal Hostels	Hostel	37	5
2	Tutorial scheme for school going & failed students	student	3899	10,000
3	Girls Hostel (50% state share)	Hostel	2	4
4	Boys Hostel (50% state share)	"	2	4
5	Providing better Education facilities to Talented students	students	48	100
6	Purchase of land for construction of hostels	Hostel	2	10
7	Bharat Dharshan	students	53	60
8	Incentive to specially Talented Students	"	25	100
9	Special Programme for primitive Tribal Groups	Beneficiaries	5432	6000
10	Tribal promoters	promoters Nos.	1000	1000
11	Housing programme under PTG (25% CSS)	House	28	28
12	Housing programme	House	1087	spill over
13	Special Incentive to Brilliant students	students	493	600
14	Assistance for marriage of ST Girls	Beneficiaries	74	100
15	Enforcement of prevention of Atrocities Act 1989 (50% state share)	persons	11	
16	Providing Health care package to Tribal Individuals affected by diseases	beneficiaries	1880	1615
17	Food Support Programme	beneficiaries	35302	40131
18	Extension of Kudumbashree in Tribal Areas	Unit	100	200
19	Ayyankali Memorial Talent Search and Development Scheme	students	392	300
20	Organisation of Oorukootom	Number	624	500
21	Assistance to Non-Government Organisations	project	10	5
22	Opening of Grain Banks	centres	3	3
23	Resettlement of landless Tribals	families	328	1500
24	Model Residential Schools (18 Nos)	students	3004	3126
25	Corpus fund for Tribal Sub Plan	beneficiaries	4412	--
26	Special Central Assistance to Tribal Sub Plan	families	6500	6000
27	Vocational Training Institute	Institute students	3	66 students
28	Post matric scholarship	students	3211	3000
29	Implementation of prevention of Atrocities Act 1989 (50% CSS)	persons	11	8 claims
30	Financial assistance to marriage of ST Girls	beneficiaries	74	60
31	Indira Awaz Yojana	beneficiaries		249
32	Sampoorna Gramin Rozgar Yojana	Lakh Mandays		580
33	Swarna Jayanthi Grama Swarozgar Yojana	beneficiaries		19
34	Upgradation of merits of ST students	students	9	10
35	Primitive Tribal Group Housing	beneficiaries	28	28
36	Award of Research fellowship	Research Fellows	1	3

Source: Directorate of ST Development Department

* Anticipated

Appendix 14.24
Financial and Physical Achievements of Major Schemes implemented by the Kerala State Development Corporation for SC/ST, 2002-03 & 2003-04

Sl.No.	Scheme	Financial Achievement			Physical Achievement Number of Beneficiaries		
		2002-03	2003-04 *	2002-03	2003-04 *	2003-04 *	
1	2	3	4	5	6	6	
1	Agricultural Land purchase Scheme (KSDC)	364.25	89.61	283	70		
2	Beneficiary oriented schemes	9.25	11.99	29	35		
3	Education loan	11.97	11.39	28	29		
4	Foreign Employment Scheme	0.75	0.5	3	2		
5	Agricultural land purchase Scheme (HSFDC)	115.48	96.49	104	73		
6	Transport Schemes (12 Nos.)	101.75	26.69	95	34		
7	Micro credit schemes	121.53	54.44	1030	390		
8	Training Programme	--	0.59	--	31		
9	Safai - Bos	3.75	1.9	13	8		
10	New Ambedkar	0.73	0.31	18	5		
11	Housing Schemes No. Vill & IX	2.03	0.59	31	18		
	Total	731.49	294.5	1634	695		

* Upto August 2003

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
 (Base: 1998-99=100)

Sl. No.	Centre	2002												2003					Variation	
		Aug. 3	Sept. 4	Oct. 5	Nov. 6	Dec. 7	Jan. 8	Feb. 9	March 10	April 11	May 12	June 13	July 14	Aug. 15	Index 19	Index 20	Percent			
1	Thiruvananthapuram	117	117	117	118	119	120	120	121	122	122	121	122	124	124	124	7	6.0		
2	Kollam	118	118	118	119	121	121	121	121	122	122	122	122	124	124	124	6	5.1		
3	Punalur	113	113	113	113	113	114	114	113	112	111	111	112	113	113	113	0	0.0		
4	Pathanamthitta	115	115	115	116	116	116	117	117	117	118	118	119	120	119	119	4	3.5		
5	Alappuzha	113	113	113	114	114	114	114	114	115	115	115	116	116	115	115	2	1.8		
6	Kottayam	115	115	115	116	116	116	116	115	116	117	117	117	117	117	117	2	1.7		
7	Mundakkayam	114	114	114	114	115	115	114	114	114	114	114	115	116	115	115	1	0.9		
8	Munnar	116	115	115	115	115	114	114	113	114	114	114	115	115	115	115	-1	-0.9		
9	Ernakulam	115	115	115	116	116	116	116	116	117	117	117	118	118	117	117	2	1.7		
10	Chalakudy	113	113	113	114	114	114	114	114	115	115	115	116	116	115	115	2	1.8		
11	Thrissur	114	114	114	115	115	115	115	115	116	115	115	116	116	116	116	2	1.8		
12	Palakkad	114	114	114	115	115	115	115	115	116	116	116	116	116	116	116	2	1.8		
13	Malappuram	115	114	114	115	115	116	116	116	117	118	118	119	119	118	118	3	2.6		
14	Kozhikode	113	113	113	114	114	114	114	113	114	114	115	116	117	116	116	3	2.7		
15	Meppady	116	115	115	115	115	114	114	113	113	112	112	112	113	113	113	-3	-2.6		
16	Kannur	115	114	114	115	115	115	115	115	116	115	115	117	117	117	117	2	1.7		
17	Kasaragod	113	113	114	115	115	115	116	116	118	117	117	119	120	120	120	7	6.2		
	Average	115	114	114	115	115	116	116	115	116	116	117	117	117	117	2	2.1			

Source: Department of Economics & Statistics

Appendix 15. 2
Month-end Average Retail Prices of Essential Commodities 2003*

(Rupees)

			2003								
Sl.	Name of Commodity	Unit	Janu.	Febru.	March	April	May	June	July	Aug.	Sept.
1	2	3	4	5	6	7	8	9	10	11	12
A. Cereals											
1	Rice Matta(OM)	Kg	13.29	13.32	13.33	13.12	13.18	13.6	13.7	13.89	13.74
2	Rice White(OM)	Kg	12.54	12.55	12.49	12.43	12.65	12.86	13.30	13.24	13.15
B. Pulses											
3	Greengram	Kg	29.62	29.71	29.75	29.92	30.39	30.22	30.09	29.99	29.02
4	Blackgram spilt (without husk)	Kg	27.83	27.11	27.15	27.09	26.98	29.47	26.19	25.94	25.06
5	Redgram	Kg	26.4	25.4	25.59	25.71	25.63	25.41	25.44	26	25.77
6	Dhall (Tur)	Kg	30.18	30.71	30.34	30.32	31.04	30.87	30.86	30.54	30.57
C. Other Food Items											
7	Sugar(OM)	Kg	13.29	13.18	13.11	13.32	13.3	13.34	14.58	15.23	14.63
8	Milk (Cow's)	Ltr	13.04	13.04	13.04	13.04	13.04	13.04	13.04	13.05	13.04
12	Egg(Hen's Nadan))	Dozen	25.97	26.25	24.28	24.4	24.52	24.91	26.71	26.55	26.17
13	Egg(Hen'sWhite Lagon)	Dozen	16.41	15.99	14.91	15.55	16.02	18.6	17.79	16.1	16.79
D. Oil and Oil Seeds											
14	Coconut oil	Kg	59.41	62.59	61.16	58.96	57.42	55.59	59.83	63.32	66.83
15	Groundnut Oil	Kg	59.29	62.15	65.58	66.14	66.09	66.3	66.14	66.58	64.78
16	Refined oil (Postman)	Kg	74.14	75.14	75.1	76.14	77.14	80.63	88.06	86.55	89.68
17	Gingelly oil	Kg	62.74	66.08	68.43	69.49	70.5	69.92	69.62	68.72	67.41
18	Coconut (without Husk)	100Nos	573.21	591.19	594.96	579.64	561.14	539.02	561.70	590.88	618.39
E. Spices and Condiments											
19	Corriander	Kg	37.76	38.22	38.61	40.29	43.32	44.22	44.39	43.64	43.05
20	Chillies(dry)	Kg	50.33	49.48	50.94	51.46	51.08	52.16	54.14	54.91	53.79
21	Onion (small)	Kg	11.43	11.32	10.88	12.39	15.07	15.39	14.77	12.09	11.65
22	Tamarind (without seed)	Kg	24.57	22.83	22.74	22.55	22.77	22.76	23.13	23.59	23.82
F. Tubers											
23	Chennai (Elephant Foot)	Kg	10.07	12.03	13.2	15.23	16.14	17.61	14.07	11.24	10.7
24	Tapioca(Raw)	Kg	5.98	5.95	5.98	6.12	5.98	5.82	5.87	5.92	6.04
25	Potato	Kg	8.88	8.41	8.55	9.85	10.35	10.71	10.8	9.74	9.06
26	Colocassia	Kg	11.7	12.36	12.98	14.31	14.7	16.23	16.88	16.76	17.16
G. Fruits and Vegetables											
27	Onion(Big)	Kg	6.46	5.84	5.82	7.26	7.59	8.63	9.22	8.98	9.13
28	Brinjal	Kg	8.94	8.7	8.50	10.11	11.09	11.89	11.45	13.37	14.29
29	Pumpkin	Kg	6.04	5.93	5.95	6.66	7.09	9.82	9.73	7.20	6.75
30	Cucumber	Kg	7.04	7.19	6.49	6.89	7.46	8.14	9.04	8.59	7.27
31	Lady's Finger	Kg	10.26	10.55	13.1	13.89	10.83	11.32	10.71	11.22	12.91
32	Cabbage	Kg	8.3	8.08	7.99	8.98	9.09	14.71	13.73	10.52	10.41
33	Bittergourd	Kg	12.5	12.07	12.2	13.65	14	17.29	17.13	16.01	16.323
34	Ash gourd	Kg	6.3	6.28	6.16	6.52	6.74	7.95	8.65	7.24	7.38
35	Snakegourd	Kg	8.67	8.38	8.58	9.23	9.93	11.11	12.52	10.69	11.57
36	Chillies (Green)	Kg	15.67	13.5	13.94	16.55	13.91	23.21	21.71	13.42	16.21
37	Banana(Green)	Kg	12.84	13.29	12.66	12.92	11.21	11.82	12.08	12.28	14.67
38	Plantain(Green)	Kg	9.01	9.15	8.71	9	8.30	9.05	9.29	9.27	9.37

Source : Department of Economics and Statistics

Appendix 15.3
Month-Wise Wholesale Price Index of Agricultural Commodities - Kerala (2002)

		2002											
Crops		Jan.	Feb.	Mar.	April	May	June	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Rice	1693.60	1693.60	1693.60	1548.99	1548.99	1548.99	1548.99	1548.99	1548.99	1548.99	1548.99	1548.99
2	Molasses	2007.64	1966.26	1897.30	1953.97	1847.43	1817.23	1757.78	1821	1818.84	1941.79	2004.5	1856.77
3	Condiments & Spices	2134.64	1974.99	2392.62	2741.87	3539.5	3180.94	2898.07	2506.47	2255.51	2082.07	1932.91	1738.69
4	Fruits & Vegetables	2863.36	3410.90	3420.93	2937.98	3138.8	3251.96	3298.47	3368.61	3384.27	3426.09	3466.93	3401.74
5	Food Crops	1973.23	2038.42	2105.98	1991.13	2151.67	2111.38	2071.23	2021.28	1982.95	1965.68	1950.28	1902.87
6	Oil Seeds	2549.63	2474.83	2559.00	2496.65	2546.41	2821.02	2952.46	2943.69	2808.46	2862.98	3385.07	3474.42
7	Plantation Crops	1240.90	1195.16	1312.89	1408.24	1416.39	1416.19	1344.58	1349.52	1384.50	1361.22	1320.94	1332.80
8	Non-food Crops	2154.39	2088.37	2182.67	2167.95	2205.14	2396.76	2466.88	2462.25	2378.42	2409.45	2761.70	2827.65
9	All crops	2039.35	2056.65	2133.97	2055.67	2171.19	2215.54	2215.64	2182.23	2127.30	2127.66	2246.45	2240.41

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	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	2.90
01/01/98	3.90	7.50	6.50	5.00	5.00	10.10.97	11.50	23.3.00	5.80	5.90
29/11/99	5.00	9.60	8.60	6.50	7.00	15.2.99	12.10	30.9.00	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	7.90
04/01/00	6.40	12.40	11.40	9.60	9.60	3.1.01	13.35	17.4.02	9.50	9.70
06/11/00	6.40	12.40	10.40	9.60	9.60	1.3.02	13.50	1.4.03	9.30	9.50
27/7/2000	6.20	11.90	10.00	8.90	8.90			1.7.03	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					

- State Govt. stopped subsidy to APL card holders

(N) Normal Rice

(S) Subsidy Rice

(SS) State Subsidy.

Source: Directorate of Civil Supplies

Appendix 15.5
Distribution of Rice Through the Public Distribution
System 1997-2003 (Qty in Metric Tonnes)

	1997	1998	1999	2000	2001	2002	2003
JAN	146876	136046	138232	88093	38929	36768	41066
FEB	129502	112660	108267	82613	35036	33049	40032
MAR	137075	131583	116805	98473	40502	33248	38903
APR	78065	119852	118740	46178	38348	34770	36025
MAY	89132	121130	113673	44304	32906	33079	39012
JUN	124446	133337	113699	43408	34160	33173	36680
JUL	128211	131529	123327	49007	37023	33802	42003
AUG	134496	150679	121994	42551	44021	38724	49927
SEP	133384	132660	99980	43199	43451	37014	48421
OCT	130188	159147	107977	39519	39507	35723	
NOV	125450	156205	100746	36589	37645	38710	
DEC	138351	154936	94322	42685	39231	35350	
TOTAL	1497171	1639767	1357761	656619	460758	423411	372069

Source: Directorate of Civil Supplies

Appendix 15.6
Distribution of Wheat through Public Distribution
System 1997-2003

(Quantity in MT)

	1997	1998	1999	2000	2001	2002	2003
JAN	39220	38063	27077	10858	2234	8481	17071
FEB	37007	43647	25649	10058	1791	8530	11296
MAR	40823	51298	26306	12107	1773	9447	15577
APR	36234	40209	21081	3457	1565	14551	8979
MAY	46614	39052	17974	4655	1509	21670	12403
JUN	22187	37880	21881	4339	1202	14560	13022
JUL	17243	37580	26542	3963	2669	5638	9123
AUG	14733	36832	25044	3855	10824	7404	11404
SEP	19140	31833	20325	3048	10860	10311	14074
OCT	21397	36819	22679	2880	12343	12094	
NOV	25653	32678	22266	2577	16418	12670	
DEC	31855	32128	14038	2481	15896	14309	
TOTAL	352105	458016	270862	64277	78906	139666	112949

Source: Directorate of Civil Supplies

Appendix 16.1

Commodity-wise Export through Kochi Port, 2000-2001 to 2002-03 (Quantity in M.T)

Commodity	2000-2001			2001-02			2002-03		
	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	94839	4.6	22.6	96155	4.9	1.4	103544	4.9	7.7
Cashew Kernels	57447	2.7	-1	66104	3.4	15.1	84764	4	28.2
Sea Foods	104064	5	9	111070	5.6	6.7	84216	4	-24.2
Coir Products	58140	2.8	3.5	60861	3.1	4.7	99319	4.7	63.2
Spices	32582	1.6	-47.2	34031	1.7	4.4	46284	2.2	36
Coffee	169482	8.1	8.4	146166	7.4	-13.7	115156	5.4	-21.2
Miscellaneous	1565999	75.1	-7.9	1453977	73.9	-7.2	1591876	74.9	9.5
Total	2082573	100	-5.6	1968364	100	-5.5	2125159	100	8

Source:- Cochin Port Trust

Appendix 16.2

Commodity-wise Import through Kochi Port, 2000-01 to 2002-03 (Quantity in M.T)

Commodity	2000-2001			2001-02			2002-03		
	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	621646	5.6	-7	645515	6.4	3.8	630778	5.79	-2.28
Foodgrains	7128	0.1	-93.3	9218	0.1	40.93	0	0	-100
Iron, Steel & Machinery	134948	1.2	1.8	144787	1.43	7.29	231033	2.12	59.57
Newsprint	20413	0.2	-47.3	36471	0.36	47.85	40682	0.37	11.55
Cashewnut	63540	0.6	-58.9	217249	2.15	241.9	259736	2.38	19.56
Miscellaneous	10213419	92.3	7.1	9037516	89.56	-11.4	9736627	89.34	7.74
Total	11061094	100	3.9	10090756	100	-8.7	10898856	100	8.01

Source: Cochin Port Trust

Appendix 16.3
Kerala's Share in the Export of Marine Products from India, 1990-91 to 2002-03

(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	286277	3501.11	78895	856.90	26.63	24.48
1996-97	378199	4121.36	92288	936.22	24.40	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	88652	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

Source : Marine Products Export Development Authority

Appendix 16.4

Market-wise Export of Marine Products from India, 2000-01 to 2002-03

Sl.No.	Market	2000-01							2001-02							2002-03																																																																															
		Qty.	% to total	Value	% to total	Qty.	% to total	Value	% to total	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	2	3	4	5	6	7	8	9	10	11	12	13	14																																																																				
1	Japan	68983	15.66	2560.39	39.74	64905	15.29	1820.69	30.56	54916	11.75	1534.76	22.3	41747	9.48	1164.4	18.07	49041	11.55	1421.38	23.86	61703	13.21	2051.12	29.81	68827	15.63	1025.36	15.91	82572	19.31	94541	20.23	1388.47	20.18	182771	41.49	827.42	12.84	134767	31.75	597.23	10.03	170811	36.55	762.48	11.08	40748	9.25	462.97	7.18	52424	12.35	538.75	9.04	44097	9.44	642.38	9.33	17236	3.91	188.32	2.92	19159	4.51	181.06	3.04	19668	4.21	204.74	2.98	20161	4.58	215.03	3.34	21602	5.02	252.45	4.16	21561	4.61	297.36	4.32	440473	100.00	6443.89	100.00	424470	100.00	5957.05	100.00	467297	100	6881.31	100
TOTAL		440473	100.00	6443.89	100.00	424470	100.00	5957.05	100.00	467297	100	6881.31	100																																																																																		

Source : Marine Products Export Development Authority

S 296

Appendix 16.5

Market-wise Export of Marine Products from Kerala, 2000-01 to 2002-03

Sl.No.	Market	2000-2001							2001-02							2002-03																																																																																	
		Qty.	% to total	Value	% to total	Qty.	% to total	Value	% to total	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	2	3	4	5	6	7	8	9	10	11	12	13	14																																																																						
1	Japan	9310	10.48	189.09	18.07	8939	12.29	178.2	18.75	5831	7.16	136.99	13.1	13384	15.06	230.86	22.06	10435	14.34	166.3	17.50	10641	13.07	192.08	18.37	29228	32.9	369.38	35.30	32239	44.31	402.71	42.37	37853	46.51	505.62	48.35	24123	27.15	126.92	12.13	5550	7.63	63.67	6.70	10848	13.33	74.67	7.14	6364	7.16	51.48	4.92	8774	12.06	61.78	6.50	7879	9.68	55.5	5.31	2110	2.37	30.38	2.90	2190	3.01	27.03	2.84	2582	3.17	33.72	3.22	4333	4.88	48.36	4.62	4629	6.36	50.86	5.36	5759	7.08	47.24	4.52	88852	100.00	1046.47	100.00	72756	100.00	950.55	100.00	81393	100	1045.82	100
TOTAL		88852	100.00	1046.47	100.00	72756	100.00	950.55	100.00	81393	100	1045.82	100																																																																																				

Source : Marine Products Export Development Authority

Appendix 16.6
Item-wise Export of Marine Products from India, 2001-02 & 2002-03
Quantity in MT, Value in Rs. Crore

Item	% share to total	Quantity/ Value	2002-03	2001-02	Variation	%
Frozen Shrip	28.85	Q	134815	127709	7106	5.56
	66.97	V	4608.31	4139.92	468.39	11.31
Frozen Fin Fish	42.01	Q	196322	174976	21346	12.20
	12.23	V	841.65	713.11	128.54	18.03
Frozen Cuttlefish	8.85	Q	41381	30568	10813	35.37
	6.06	V	417.09	280.07	137.02	48.92
Frozen Squid	8.1	Q	37838	39790	-1952	-4.91
	5.59	V	384.37	329.67	54.7	16.59
Dried Items	1.75	Q	8178	8307	-129	-1.55
	1.22	V	84.23	67.96	16.27	23.94
Live Items	0.45	Q	2115	1628	487	29.91
	0.78	V	53.66	40.57	13.09	32.27
Chilled Items	0.72	Q	3350	3284	66	2.01
	0.86	V	59.14	63.66	-4.52	-7.10
Others	9.27	Q	43298	38208	5090	13.32
	6.29	V	432.86	322.09	110.77	34.39
Total	100	Q	467297	424470	42827	10.09
	100	V	6881.31	5957.05	924.26	15.52

Q-Quantity, V-Value

Source: Marine Products Export Development Authority

Appendix 16.7
Item-wise Export of Marine Products from Kerala, 2000-01 to 2002-03

Sl. No.	Item	2000-01			2001-02			2002-03					
		Quantity	% to Total	Value	Quantity	% to Total	Value	Quantity	% to Total	Value			
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Frozen Shrimp	28300	31.85	596.76	57.03	28023	38.52	549.49	57.81	27496	33.78	543.19	51.94
2	Frozen Fish	24956	28.09	97.8	9.35	11351	15.60	57.32	6.03	18387	22.59	77.33	7.39
3	Frozen Cuttle Fish	14475	16.29	154.74	14.79	13819	18.99	153.21	16.12	16865	20.72	218.26	20.87
4	Frozen Squid	14915	16.79	139.01	13.28	12318	16.93	115.18	12.12	11903	14.62	138.11	13.21
5	Dried Items	97	0.11	1.47	0.14	95	0.13	4.10	0.43	42	0.05	0.7	0.07
6	Live Items	164	0.18	7.29	0.70	272	0.37	12.32	1.30	156	0.19	12.14	1.16
7	Chilled Items	377	0.42	4.78	0.46	540	0.74	6.76	0.71	739	0.91	9.7	0.93
8	Others	5568	6.27	44.62	4.26	6338	8.71	52.17	5.49	5805	7.13	46.39	4.44
	TOTAL	88852	100.00	1046.47	100.00	72756	100.00	950.55	100.00	81393	100	1045.82	100

(Qty. in M.T., Value in Rs. Crore)

Source : Marine Products Export Development Authority

Appendix 16.8
Item-wise Exoort of Spices from India, 1998-99 to 2002-03

Item	1998-99		1999-2000		2000-01		2001-02		2002-03	
	QTY	Value	QTY	VALUE	QTY.	VALUE	QTY.	VALUE	QTY.	VALUE
Pepper	35109	63479.88	42803	88482.88	19250	32632.75	24000	21192.5	20,000	16610.12
Cardamom (small)	476	2525.27	646	3201.84	1100	5654.7	900	5586.25	550	3760.25
Cardamom (large)	1288	1269.46	1,211	1696.89	1645	2768.75	1250	2038	1,300	1848
Chilli	68019	25287.26	64,776	25065.89	61000	19523.5	75000	25584	83,000	30154.73
Ginger	8683	4058.32	8,773	3060.15	6580	2295.4	8000	2503.5	8,500	2409
Turmeric	37298	12914.49	35556	12168.69	34500	9106	35000	8462.5	32,000	9937.5
Coriander	21044	4547.06	13,973	3496.77	11700	2742.5	15000	4504.5	15,500	4784.88
Cumin	10595	5980.91	6,145	3428.17	13800	11743.5	14000	12334.5	10,000	7615.05
Celery	4038	957.26	3,497	1059.55	5250	1700.5	4500	1357	4,250	1345.5
Fennel	5296	1541.56	2,953	1441.53	4000	1778	4000	1628	4,200	1666.75
Fenugreek	10221	1920.23	10,901	2095.41	9050	1787.5	6000	1510	11,250	2499.87
Other	2178	822.95	2,349	1026.46	2425	896.25	5000	1767	12,250	2924
Seeds (1)	3978	597.01	8,542	1326.87	11000	1040.3	1100	387.05	1,250	570.5
Nutmeg & Mace	20395	7646.06	22,015	8855.64	35000	14490	1350	1990.2	1,400	2635
Other	5213	3597.9	5,814	3460.60	6200	3997	6250	4048	26,000	13315
Spices (2)	4279	12377.55	2,820	10310.71	3875	12645	3600	12764.2	8,500	4639.5
Curry Powder										
Mint Oil										
Spice Oils and Oleoresins	2752	30086.6	3,368	32330.58	3625	36405	4400	38648	4,250	36228.75
Total	240862	179609.77	236142.00	202508.63	230000.00	161206.65	245000.00	162535.00	250,950	179000.39
Value in Milln. US\$		428.77		468.12		352.13		341.6		370.1

(1) Include Bishops Weed (Ajwanseed), Dill Seed, Poppy Seed, Aniseed, Mustard etc

(2) Include Tamarind, Asafoetida, Cinnamon, Cassia, Vanilla, Safron etc.

Source: Spices Board.

Appendix 16.9
Export of Coir and Coir Products from India, 1998-99 to 2002-03

Product Name	1998-99		1999-2000		2000-01		2001-02		2002-03	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Coir Fibre	645.76	91.46	809.88	117.15	1053.98	148.17	1010.3	122.15	1036.87	103.81
Coir Yarn	16538.78	4827.41	13052.58	3738.40	14607.3	4187.5	13206.9	3728.59	11482.47	2996.76
Coir Mats	21943.25	14878.52	17181.63	29159.04	33963.91	21580.41	40442.63	24732.02		
Coir Mattings	6571.28	4729.86	6769.93	4733.60	6734.08	4591.9	4697.31	3147.14	4955.8	3303.23
Coir Rugs & Carpets	2934.37	2300.56	2889.64	2259.62	2720.44	1958.64	1329.97	1039.76	1327.08	932.42
Coir Rope	211.2	59.25	286.63	73.41	482.12	145.21	348.64	108.04	332.4	102.05
Rubberised Coir	573.15	427.01	522.88	387.52	385.06	267.24	454.64	350.38	535.22	403.43
Curled Coir	445.13	76.38	657.28	114.57	533.57	80.33	572.53	80.63	492.37	80.05
Coir Geo Textiles	1207.55	546.91	1711.25	808.41	1402.29	625.38	1752.05	780.13	2140.69	985.23
Coir Other Sorts	2204.15	1030.26	925.99	328.29	488.23	164.48	272.91	106.82	372.85	138.56
Coir Pith	2215.39	251.26	6501.59	562.77	9926.97	752.79	13725.65	1014.3	21064.2	1493.01
Total	55490.01	29218.88	34127.65	30305.37	67493.08	31366.23	71334.81	32058.35	84182.58	35270.57

Source : Coir Board

Appendix 16.10

Leading Export Markets of Coir Products, 2002-03

<i>Sl.No.</i>	<i>Countries</i>	<i>Quantity (M.Tonnes)</i>	<i>Value (Rs.Lakhs)</i>
1	U.S.A.	22648.20	13048.02
2	United Kingdom	8723.08	4254.07
3	Germany	5786.51	2862.90
4	Italy	4815.07	1818.13
5	Netherlands	14383.81	2563.70
6	France	2459.67	1131.64
7	Australia	4165.94	1233.93
8	Belgium	2785.33	1241.74
9	Portugal	737.41	265.93
10	Canada	1421.94	724.3
11	Greece	671.36	412.58
12	South Africa	688.11	335.26
13	Spain	3264.92	1131.38
14	Denmark	434.10	209.98
15	UAE	1303.67	322.45
16	Japan	1123.11	628.67
17	Sweden	739.01	405.92
18	Turkey	348.94	189.81
19	Saudi Arabia	513.07	168.01
20	New Zealand	337.52	182.43
21	Other Countries	6831.79	2139.76
Total		84182.56	35270.61

Source : Coir Board

Appendix 17.1

State wise Financial Assistance Disbursed by NABARD and NCDC during 2002-2003
(Rs.Crore)

Sl.no	States	NABARD	%ToTotal	NCDC	%ToTotal	Grand Total	%ToTotal
1	2	3	4	5	6	7	8
1.	Andhra Pradesh	761.34	10.26	27.35	5.32	788.69	9.94
2.	Assam	69.37	0.94	0	0.00	69.37	0.87
3.	Bihar	82.10	1.11	0	0.00	82.10	1.03
4.	Gujarat	362.56	4.89	3.25	0.63	365.81	4.61
5.	Haryana	478.12	6.44	3.78	0.73	481.9	6.07
6.	Karnataka	452.85	6.10	54.05	10.51	506.9	6.39
7.	Kerala	307.70	4.15	50.18	9.75	357.88	4.51
8.	Madhya Pradesh	409.64	5.52	9.41	1.83	419.05	5.28
9.	Maharashtra	589.59	7.95	67.73	13.17	657.32	8.29
10.	Orissa	269.74	3.64	1.67	0.32	271.41	3.42
11.	Punjab	573.31	7.73	0	0.00	573.31	7.23
12.	Rajasthan	330.36	4.45	3.80	0.74	334.16	4.21
13.	Tamil Nadu	682.86	9.20	7.55	1.47	690.41	8.70
14.	Uttar Pradesh	1175.64	15.85	7.13	1.39	1182.77	14.91
15.	West Bengal	414.94	5.59	33.06	6.43	448.00	5.65
	Total	6960.12	93.82	268.96	52.28	7229.08	91.12
	All India Total	7418.77	100.00	514.46	100.00	7933.23	100.00

Source: NABARD Annual Report 2002-03 & NCDC Annual Report 2002-03

Appendix 17.2

State-wise Financial Assistance Disbursed by NABARD and NCDC as at the end of March 2003.

Sl.no	States	NABARD	%ToTotal	NCDC	%ToTotal	Grand Total	%ToTotal
1	2	3	4	5	6	7	8
1.	Andhra Pradesh	6709.57	10.33	353.60	4.98	7063.17	9.80
2.	Assam	855.87	1.32	85.95	1.21	941.82	1.31
3.	Bihar	2269.72	3.49	139.60	1.97	2409.32	3.34
4.	Gujarat	3475.72	5.35	204.39	2.88	3680.11	5.11
5.	Haryana	3785.35	5.83	109.23	1.54	3894.58	5.40
6.	Karnataka	4580.11	7.05	554.16	7.81	5134.27	7.12
7.	Kerala	2785.54	4.29	544.48	7.67	3330.02	4.62
8.	Madhya Pradesh	3611.00	5.56	509.75	7.18	4120.75	5.72
9.	Maharashtra	6476.76	9.97	1699.48	23.95	8176.24	11.34
10.	Orissa	2248.33	3.46	122.23	1.72	2370.56	3.29
11.	Punjab	4764.29	7.33	291.42	4.11	5055.71	7.01
12.	Rajasthan	3783.97	5.82	316.51	4.46	4100.48	5.69
13.	Tamil Nadu	4968.19	7.65	492.72	6.94	5460.91	7.58
14.	Uttar Pradesh	9965.12	15.33	594.57	8.38	10559.69	14.65
15.	West Bengal	2615.79	4.03	331.31	4.67	2947.10	4.09
	Total	62895.33	96.79	6349.40	89.47	69244.73	96.07
	All India Total	64983.71	100.00	7096.65	100.00	72080.36	100.00

Source: NABARD Annual Report 2002-03 & NCDC Annual Report 2002-03

Appendix 17.3
State-wise Financial Assistance Disbursed by All India Financial Institutions During 2001-2002.

Sl.no	States	(Rs.Crore)																	
		IDBI	ICICI	UTI	GIC	LIC	NABARD	NCDC	Grand	%To	%To	%To	%To	%To	%To	%To	%To	%To	%To
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1.	Andhra Pradesh	701.0	6.6	134	12.5	1734.3	6.7	12.0	0.9	122.4	1.4	602.1	9.0	34.0	4.7	3340.1	6.0		
2.	Assam	33.7	0.3																
3.	Bihar	6.2	0.1			32.0	0.1												
4.	Gujarat	902.1	8.5	158	14.7	1162.5	4.5			20.8	15.6	202.3	2.3	314.4	4.7	15.1	2.1	2775.1	5.0
5.	Haryana	240.2	2.3	0.6	0.1	1105.8	4.3												
6.	Karnataka	552.2	5.2	63.4	5.9	1455.4	5.63			23.0	17.3	1250	14.0	343.3	5.1	67.6	9.4	3755.2	6.8
7.	Kerala	104.9	1.0			118.8	0.5												
8.	Madhya Pradesh	312.5	2.9	10.5	1.0	127.9	0.5			1.9	0.021								
9.	Maharashtra	4277	40.3	118	11.0	5792.1	22.4	143.6	11.3	65.2	48.9	2273	25.5	741.4	11.1	306.8	42.6	13717.9	24.8
10.	Orissa	49.1	0.5	7.2	0.7	341.3	1.3												
11.	Punjab	608.2	5.7	21.4	2.0	120.5	0.5			11.1	8.3	66.1	0.7	437.4	6.5	0	0.0	1264.7	2.3
12.	Rajasthan	295.4	2.8			325.9	1.3												
13.	Tamil Nadu	556.4	5.2	8.3	0.8	1025.7	4.0			7.2	5.4	199.3	2.2	539.0	8.1	94.6	13.1	2430.5	4.4
14.	Uttar Pradesh	211.3	2.0	26.9	2.5	720.9	2.8	10.0	0.8	6.0	4.5	61.6	0.7	1027.4	15.4	6.7	0.9	2070.8	3.7
15.	West Bengal	370.4	3.5	99.2	9.2	734.0	2.8	41.0	3.2										
Total		9220.8	86.9	648	60.3	14797.1	57.3	208.6	16.3	133.3	100.0	4697.5	52.7	6322.0	94.6	678.0	94.3	36704.4	66.4
All India Total		10613.4	100.0	1076	100.0	25831.0	100.0	1269.6	100.0	133.3	100.0	8914.2	100.0	6682.9	100.0	720.0	100.0	55239.9	100.0

Source: Report on Development Banking, 2001-02

Appendix 17.4
State wise Financial Assistance Disbursed by All India Financial Institutions as at the end of March -2002.

Sl.no.	States	(Rs.Crores)															
		3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
		IDBI	%To	IFCI	%To	ICICI	%To	UTI	%To	LIC	%To	NABARD	%To	NCDC	%To	Grand	%To
1	2	total	total	total	total	total	total	total	total	total	total	total	total	total	total	Total	total
1.	Andhra Pradesh	14033.7	8.8	3578.3	8.5	9452.7	5.5	531.5	1.2	1314.1	3.1	5948.2	10.3	326.3	5.0	35184.8	6.7
2.	Assam	648.7	0.4	305.2	0.7	540.7	0.3	50.2	0.1	32.8	0.1	786.5	1.4	86.0	1.3	2450.1	0.5
3.	Bihar	1023.2	0.6	103.7	0.2	459.9	0.3	189.5	0.4	355.7	0.8	2187.6	3.8	139.6	2.1	4459.2	0.9
4.	Gujarat	21806.1	13.7	6512.1	15.4	23141.0	13.5	2711.1	5.9	3180.7	7.6	3113.2	5.4	201.1	3.1	60665.3	11.6
5.	Haryana	4419.9	2.8	1120.4	2.7	4536.3	2.6	79.4	0.2	92.4	0.2	3307.2	5.7	105.4	1.6	13661.0	2.6
6.	Karnataka	11102.7	7.0	2566.8	6.1	11308.6	6.6	999.1	2.2	2242.0	5.3	4127.3	7.2	500.1	7.6	32846.6	6.3
7.	Kerala	2396.9	1.5	344.0	0.8	1175.0	0.7	56.3	0.1	469.8	1.1	2477.8	4.3	494.3	7.5	7414.1	1.4
8.	Madhya Pradesh	7044.3	4.4	2133.2	5.1	3827.8	2.2	364.3	0.8	377.1	0.9	3201.4	5.6	500.3	7.6	17448.4	3.3
9.	Maharashtra	32790.5	20.7	7389.7	17.5	48053.8	28.0	6675.5	14.6	17293.3	41.1	5887.2	10.2	1631.8	24.8	119721.8	22.8
10.	Orissa	2907.7	1.8	927.0	2.2	2317.2	1.3	188.7	0.4	339.3	0.8	1978.6	3.4	120.6	1.8	8779.1	1.7
11.	Punjab	5495.7	3.5	2053.0	4.9	2042.3	1.2	213.3	0.5	299.1	0.7	4191.0	7.3	291.4	4.4	14585.8	2.8
12.	Rajasthan	7532.8	4.7	1700.0	4.0	4324.8	2.5	298.6	0.7	626.0	1.5	3453.6	6.0	312.7	4.8	18248.5	3.5
13.	Tamil Nadu	14005.7	8.8	3245.9	7.7	12806.0	7.5	679.8	1.5	1476.8	3.5	4285.3	7.4	485.2	7.4	36984.7	7.1
14.	Uttar Pradesh	10735.1	6.8	4386.6	10.4	7374.6	4.3	866.8	1.9	654.7	1.6	8789.5	15.3	587.4	8.9	33394.7	6.4
15.	West Bengal	6877.0	4.3	1595.4	3.8	8617.4	5.0	530.5	1.2	1715.7	4.1	2200.9	3.8	298.3	4.5	21835.2	4.2
	Total	142820.0	90.1	37961.3	89.9	139978.1	81.5	14434.6	31.7	30469.5	72.4	55935.3	97.2	6080.5	92.4	427679.3	81.6
	All India Total	158597.2	100.0	42206.2	100.0	171698.3	100.0	45588.8	100.0	42057.9	100.0	57564.9	100.0	6582.2	100.0	524295.5	100.0

Source: Report on Development Banking in India, 2001-02.

Appendix 17.5
State-wise Per capita Assistance Disbursed by All India Financial Institutions During 1999-2000 to 2001-2002.

Sl.no.	States	(Amount.Rs)																																
		IDBI					IFCI					ICICI					LIC					UTI					GIC					TOTAL		
		99-00	00-01	01-02	99-00	00-01	01-02	99-00	00-01	01-02	99-00	00-01	01-02	99-00	00-01	01-02	99-00	00-01	01-02	99-00	00-01	01-02	99-00	00-01	01-02	99-00	00-01	01-02						
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	224.7	194.6	92.6	40.3	64.8	12.2	169.3	111.2	229.1	14.9	25.9	122.4	6.4	0.3	1.6	2.8	1.6	2.7	458.4	398.4	457.9												
2.	Assam	11.1	12.3	12.7	2.1	3.0	4.8	37.9	46.1	0.0	0.1	0.1			5.6					51.2	67.1	17.4												
3.	Bihar	30.6	3.5	0.7	0.3	0.6	0.1	49.4	7.0	3.9	0.5			2.4						83.2	11.1	4.7												
4.	Gujarat	530.6	166.8	178.3	90.0	36.8	35.2	794.5	459.4	229.7	109.7	83.7	202.3	130.6	34.4					33.4	6.9	2.7	1688.8	788.0	648.3									
5.	Haryana	205.6	2842.0	113.8	24.7	11.7	54.0	392.1	388.4	524.1		4.7			1.2					1.1	2.8	623.5	3250.8	691.9										
6.	Karnataka	187.2	293.0	104.8	34.7	27.2	19.9	426.7	373.5	276.2	11.9	56.2	1250.3	8.8	72.3					4.2	4.3	2.8	673.5	826.5	1653.9									
7.	Kerala	36.1	55.6	33.0	0.4	6.3	10.4	53.0	32.8	37.4	36.7	66.0		6.1								132.3	160.7	80.7										
8.	Madhya Pradesh	86.2	59.2	51.7	13.2	5.5	8.6	37.2	76.4	21.2	9.0	2.5	1.9	2.4								1.0	148.0	144.6	83.4									
9.	Maharashtra	396.5	436.0	441.9	122.9	29.8	45.6	714.3	929.9	598.4	302.4	405.1	2273.3	27.3	0.6	14.8	47.6	30.4	12.4	1611.0	1831.8	3386.4												
10.	Orissa	56.1	55.7	13.4		10.4	3.6	134.2	144.7	93.0	6.5	8.1	15.6	26.3						0.6	1.3	223.7	220.2	125.6										
11.	Punjab	250.7	330.6	250.3	44.7	11.5	103.0	118.5	262.2	49.6	13.0	37.3	66.1	44.8	1.1							1.8	471.7	642.7	470.8									
12.	Rajasthan	125.5	112.6	52.3	8.8	0.9	9.3	51.4	111.6	57.7	13.0	14.2	210.0	15.7	1.8							214.4	241.1	329.2										
13.	Tamil Nadu	196.3	183.4	89.6	25.5	15.2	14.4	311.0	343.8	165.2	30.3	62.3	199.3	22.8	2.4					3.7	3.6	2.0	569.6	620.7	470.5									
14.	Uttar Pradesh	49.1	37.2	12.7	28.2	4.9	0.8	58.4	89.4	43.4	0.8	2.3	61.6	0.3	0.5	0.6	0.4	0.4	2.5	137.3	134.7	121.6												
15.	West Bengal	87.4	105.9	46.2	12.6	23.0	5.8	224.1	254.3	91.5	39.3	33.1	294.7	6.5	5.1	12.2	0.7					382.1	417.0	443.3										
All India Total		165.0	162.8	103.3	32.2	20.7	1.0	283.0	311.2	251.5	57.1	69.0	66.8	51.6	44.7	12.4	7.8	4.2	16.6	576.7	612.6	471.7												

Source : Report on Development Banking in India (various issues)
 (Values of 2001-02 - Provisional)

Appendix 17.7
Deposits, Credits and Credit-Deposit Ratio of Public Sector Banks. (Rs. Crore)

States/Months	Jun-69			Jun-01			Mar-02			Jun-02			Mar-03			Jun-03		
	Deposit	Credit	C-D Ratio	Deposit	Credit	C-D Ratio	Deposit	Credit	C-D Ratio	Deposit	Credit	C-D Ratio	Deposit	Credit	C-D Ratio	Deposit	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	42999	27633	64.3	50080	32120	64.1	50699	31646	62.4	57384	37308	65.0	57108	37353	65.4
2. Assam	33	13	39.4	8627	2829	32.8	10042	3221	32.1	10022	2926	29.2	11204	3186	28.4	10909	3456	31.7
3. Bihar	169	53	31.4	22720	4794	21.1	25577	5468	21.4	24770	5379	21.7	26067	6100	23.4	26898	6334	23.5
4. Gujarat	401	195	48.6	51350	22356	43.5	56990	24614	43.2	57039	24050	42.2	63546	27153	42.7	64636	25570	39.6
5. Haryana	49	23	46.9	18135	6938	38.3	20241	9289	45.9	20729	8647	41.7	22628	10888	48.1	22795	10742	47.1
6. Karnataka	188	143	76.1	39775	23603	59.3	44128	28126	63.7	45538	27086	59.5	50493	33981	67.3	51703	34485	66.7
7. Kerala	117	77	65.8	30207	12581	41.6	34192	14418	42.2	34227	14300	41.8	38611	16883	43.7	38803	16933	43.6
8. Madhya Pradesh	107	63	58.9	25745	12268	47.7	28859	13766	47.7	29111	13614	46.8	32404	15668	48.4	32107	15159	47.2
9. Maharashtra	903	912	101	120111	101553	84.5	127260	117947	92.7	127105	120722	95.0	145950	129634	88.8	147227	122192	83.0
10. Orissa	29	15	51.7	12608	5144	40.8	15601	6510	41.7	15179	6506	42.9	16805	7713	45.9	16191	7673	47.4
11. Punjab	185	50	27	42749	17088	40.0	47099	20400	43.3	47712	19543	41.0	52357	22417	42.8	52409	21500	41.0
12. Rajasthan	74	38	51.4	22656	10734	47.4	24707	12650	51.2	24668	12523	50.8	27441	14851	54.1	27281	14736	54.0
13. Tamil Nadu	233	311	133.5	46706	36897	79.0	52661	40929	77.7	53639	40640	75.8	59971	48246	80.4	60249	48760	80.9
14. Uttar Pradesh	337	154	45.7	74814	21421	28.6	84258	25196	29.9	83359	24630	29.5	92065	28381	30.8	90671	27926	30.8
15. West Bengal	456	526	115.4	56304	23036	40.9	61965	29018	46.8	62986	29302	44.9	69379	33443	48.2	70150	31640	45.1
TOTAL	3402	2685	79.2	615506	328875	53.4	683660	383672	56.1	686783	380514	55.4	766305	435852	56.9	769137	424459	55.2
All India Total	3897	3035	77.9	758202	423669	55.9	846760	495429	58.5	852643	470359	55.2	954330	538031	56.4	960057	521880	54.3

Source: Banking Statistics :Quarterly Handout (various issues)

Appendix 17.8
Banking Statistics of Kerala – 1990-2003. (Rs. Crore)

Ending March	State Bank Group												
	State Bank Group			Other Nationalised Banks						Gramin Bank			
	Total Deposit	Of which NRE Deposits	CD Ratio	Total Advance	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	10498.17	5299.59	4670	44.48	10141.59	4491.7	4082.02	40.25	510.72	Nil	613.52	120.13	
2000	12617.34	6755.85	5580.48	44.23	13536.21	6708.45	5192.63	38.36	649.00	Nil	755.89	116.47	
2001	14663.45	7588.28	6508.93	44.39	15175.61	7786.79	5868.13	38.67	796.85	21.53	967.16	121.37	
2002	16894.74	8874.44	7660.15	45.34	17080.96	8032.07	6973.01	40.82	1000.14	70.36	1086.68	108.65	
2003	19510.64	10124.41	9040.24	46.33	19944.88	9506.81	8744.2	43.84	1271.06	165.45	1202.23	94.58	
Sept2003	20081	10438.97	9249.43	46.06	20517.23	9317.67	9294.26	45.30	1366.74	224.94	1306.60	95.60	

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
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	47.8
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
Sep-03	376.06	224.94	173.62	46.17	61118.87	28997.84	28535.46	46.69

Source: Banking Statistics of Kerala, Reported by State Level Bankers' Committee.

Appendix 17.9

Districtwise distribution of number of branches , aggregate deposits , gross bank credit and CD ratio of Scheduled Commercial banks-Kerala June 2003 (Rs. Crore)

District	Public sector banks				Regional Rural Banks				All Scheduled Commercial Banks				
	Offices	Deposits	Credit	C-D Ratio	Offices	Deposits	Credit	C-D Ratio	Offices	Deposits	Credit	C-D Ratio	
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.Alappuzha	132	284041	104284	36.7						215	426482	143663	33.7
2.Kannur	107	253956	68408	26.9		75	29114	22949	78.8	216	326100	115293	35.4
3.Ernakulam	291	578728	402698	69.6		12	3486	624	17.9	497	1008024	645199	64.0
4.Idukki	66	41908	36658	87.5						98	60620	54768	90.3
5.Kasaragod	60	83536	26553	31.8		48	15659	15319	97.8	125	109434	50473	46.1
6.Kollam	128	253443	124248	49.0						189	367536	171312	46.6
7.Kottayam	161	296600	135162	45.6		8	2646	631	23.8	273	469979	184267	39.2
8.Kozhikode	118	214571	92512	43.1		69	27856	27963	100.4	259	313931	169940	54.1
9.Malappuram	81	202350	42530	21.0		80	33832	31224	92.3	218	296037	94958	32.1
10.Palakkad	132	208260	90818	43.6		14	3115	2922	93.8	255	277305	128404	46.3
11.Pathanamthitta	135	433897	71739	16.5						232	651528	107965	16.6
12.Thiruvananthapuram	257	613375	359701	58.6						347	873519	443727	50.8
13.Thrissur	152	398552	110623	27.8		21	7970	4225	53.0	379	763271	211529	27.7
14.Wayanad	35	17126	27366	159.8		28	5139	15101	293.9	73	26948	48332	179.4

Source: Banking Statistics , Quarterly Handout June 2003.

Appendix 17.10
DISTRICT WISE FLOW OF CREDIT
(2000-01 to 2002-03)

(Rs. in lakhs)

DISTRICT	Agriculture Advances			Total Advances to Priority Sector		
	2000-01	2001-02	2002-03	2000-01	2001-02	2002-03
1	2	3	4	5	6	7
Thiruvananthapuram	19937	23144	28566	64331	69066	82685
Kollam	20410	20524	26125	93819	120217	159642
Pathanamthitta	13681	11632	14445	29088	28245	35814
Alappuzha	13906	13312	20093	36818	47506	69055
Kottayam	32177	29177	30099	67534	69720	76590
Idukki	12283	14217	18962	24973	30903	46534
Ernakulam	20416	19344	20517	75888	103615	136672
Thrissur	19156	18712	26839	56672	72390	95168
Palakkad	25536	26302	27905	50856	54159	63057
Malappuram	21977	25712	32638	42798	50143	61764
Kozhikode	23774	27728	30503	42723	48842	64098
Wayanad	24459	24516	31201	30384	31902	40666
Kannur	25937	16077	25029	79752	70199	92582
Kasaragod	17017	15707	18495	28975	27174	31990
STATE TOTAL	290665	286104	351417	724609	824081	1056317

Source: SLBC

Appendix 17.11
Operations of the Kerala State Co-operative Bank Limited (1991-92 to 2002-03)

Sl.No	Particulars	(Rs. in Lakhs)									
		1991-92	1995-96	1996-97	1997-98	1998-99	1999-2000	2000-01	2001-02	2002-03	
1	2	3	4	5	6	7	8	9	10	11	
1	Share Capital	1209.50	1801.46	1851.46	2073.53	2073.53	2127.85	2195	2268	2269	
2	Reserves	1881.20	2500.00	2656.07	2846.91	3081.50	3633.25	4174	5131	5217	
3	Deposits	27098.19	47461.64	57915.93	77522.27	123616.97	153972.09	168724	191501	231830	
4	Borrowings	15203.45	19973.73	22960.66	19984.82	9351.17	8440.35	14598	20973	8166	
5	Working Capital	44966.62	71249.39	84893.35	101957.59	137566.39	180810.00	189174	216173	262000	
6	Loans & Advances	27970.68	53566.00	52219.64	51809.69	46811.19	101905.94	117931	122643	123829	
7	Investments	7461.00	18832.96	19093.64	23549.84	41738.70	45581.24	52004	54691	77935	
8	Net Profits	69.51	136.90	69.55	81.38	126.13	25.06	50	71	824	
9	Total Assets	-	-	-	-	-	-	204894	235400	262913	
10	Own fund	-	-	-	-	-	-	6369	7400	7486	
11	Interest spread	-	-	-	-	-	-	0.98%	1.22%	1.46%	
12	Operational expenses	-	-	-	-	-	-	1156	1222	1341	

Source: Kerala State Co - operative Bank Ltd.

Appendix 17.12
Purpose - wise Outstanding Loans in the Kerala State
Co-operative Bank Limited (1995-96 to 2002-03)

Sl.No.	Purpose	(Rs.in Crores)									
		1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03		
1	2	3	4	5	6	7	8	9	10		
1	Agriculture	134.00	151.09	167.61	155.36	175.72	120.69	79.88	68.17		
2	Procurements/Marketing/ Distribution	126.63	109.70	102.69	98.59	103.71	176.47	84.89	116.23		
3	Cottage and Small Scale Industries	69.38	58.94	68.47	70.65	53.01	66.65	66.22	58.9		
4	Other Industries	24.38	42.67	22.68	15.67	11.49	30.11	33.95	26.51		
5	Consumer Activities	4.42	2.06	1.91	6.43	1.02	0.12	2.92	6.52		
6	Consumption Purpose	40.23	77.01	59.21	29.69	42.00	110.45	115.74	79.11		
7	Housing	44.69	43.59	50.04	55.83	23.58	113.99	128.82	139.15		
8	Other Purposes	91.93	37.14	45.49	35.89	608.52	560.83	714.00	730.72		
	Total	535.66	522.20	518.10	468.11	1019.05	1179.31	1226.42	1225.31		

Source: Kerala State Co - operative Bank Ltd.

Appendix 17.13

Operational indicators of District Co-operative Banks during 2002-03

(Rs. in lakhs)

District	1	2	3	4	5	6	7	8	9	10	11
		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
Thiruvananthapuram		1677.82	9942.16	78081.90	1830.53	93262.67	764.00	201.91	56216.14	9500.68	434.03
Kollam		614.50	3096.40	38394.05	8637.61	47895.81	85.00	87.85	30754.53	7348.04	202.72
Alappuzha		572.07	2064.32	33076.68	1168.52	39365.62	517.50	35.33	20166.35	5098.00	22.51
Pathanmthitta		310.88	1164.79	28271.57	163.44	32509.25	16189.62	31.59	13599.45	2457.93	47.10
Kottayam		671.55	1585.46	53506.97	1205.45	55785.61	485.00	121.66	26103.70	6394.83	377.48
Idukki		974.09	2355.10	22248.98	12017.11	36077.34	9895.00	286.64	21552.17	3636.00	223.01
Trichur		658.63	6473.08	71019.96	250.24	72425.94	3255.51	66.55	28138.46	10318.72	-782.18
Ernakulam		905.40	6221.84	87260.50	410.10	103502.45	5086.00	110.32	41061.40	7062.16	414.34
Palakkad		745.79	4847.69	31156.99	4209.29	43678.12	570.23	99.36	23179.39	5060.92	64.92
Malappuram		545.00	3288.71	32199.23	10767.09	43543.38	241.00	113.02	22756.10	2229.12	208.44
Kozhikod		396.41	1810.38	25684.33	5799.94	31956.39	6452.56	111.45	23142.65	8651.56	5.64
Kannur		1063.43	5401.11	38411.65	10525.22	56038.29	2061.50	347.44	42198.00	6768.30	408.57
Kasargod		533.22	1072.60	13118.83	1738.23	16366.86	40.00	158.38	10535.47	1008.47	51.10
Wayanad		472.78	849.55	9342.94	3013.99	13457.91	3371.29	86.68	10349.64	1064.93	19.40

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					Total
	Ordinary	Scheme	NFS*	Rural Housing	Total	Ordinary	Scheme	NFS	Rural Housing		
1	2	3	4	5	6	7	8	9	10	11	
1992-93	12.43	27.42	18.72	11.31	69.88	12.40	24.74	17.75	9.65	64.54	
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	98.56	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	

*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 (1992-93 to 2002-03)

Sl.No	PURPOSE	(Rs. in Lakhs)										
		1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
1	2	3	4	5	6	7	8	9	10	11	12	13
I Ordinary Loan												
1	Construction of Wells/Tanks	19.71	3.47	11.33	0.21	8.68	4.27	11.41	20.63	55.34	149.91	17.33
2	Renovation of Wells/Tanks	1.39	2.71	2.42	1.61	0.17	-	0.40	1.10	9.31	2.34	4.71
3	Pumpsets	5.42	3.17	1.83	0.37	2.84	2.86	2.44	1.98	9.71	8.79	2.10
4	Plantation & Horticulture	107.21	86.73	55.71	55.96	45.37	130.19	93.49	141.33	217.05	114.44	186.22
5	Agricultural Machinery	0.07	1.45	14.16	-	-	-	-	-	-	-	-
6	Animal Husbandary	12.77	5.67	14.06	4.19	121.97	214.29	109.90	46.12	74.92	48.09	80.93
7	Land Development	418.41	526.84	415.64	420.61	628.13	386.62	133.05	105.26	107.49	160.30	231.61
8	Construction of Godowns/Cattle	307.74	266.05	243.12	260.09	475.13	132.98	42.81	57.86	92.83	178.49	110.53
9	Barbed wire or stonewalling	205.95	177.21	219.16	231.74	355.34	75.62	12.95	18.28	36.51	42.36	61.84
10	Construction of drainage channels	0.84	-	-	0.43	2.47	3.96	1.50	0.15	3.62	3.83	-
11	Loans for Redemption of prior debts	1.00	0.59	-	-	-	-	-	-	-	-	-
12	Others	172.72	113.53	60.93	91.66	141.66	142.42	62.18	70.84	46.06	83.70	66.61
	Total	1253.23	1187.42	1038.36	1066.87	1781.76	1093.21	470.13	463.55	652.84	792.25	761.88
II Scheme Loan												
1	Minor Irrigation	517.66	630.70	883.83	1304.09	1224.94	1178.60	1496.15	1572.75	1899.84	2086.31	2094.05
2	Plantation & Horticulture	1092.17	1803.19	2237.07	2502.58	3294.19	3861.87	3613.84	4276.50	4637.57	5187.60	3186.15
3	Agricultural Machinery	215.78	362.98	464.04	831.73	875.39	582.01	676.34	890.04	1268.60	337.74	653.93
4	Dairy	147.71	121.94	264.02	714.38	109.58	12.46	24.65	23.14	24.70	12.55	15.40
5	Land Development	239.70	38.80	327.12	786.04	1291.96	1047.87	1688.53	1471.79	2308.23	2360.40	2204.50
6	Poultry	57.24	142.94	270.22	399.80	992.78	991.58	1477.73	1554.53	1585.21	1228.97	1042.31
7	Fisheries	32.67	58.32	85.56	80.06	162.84	97.32	202.82	200.32	229.85	375.44	176.15
8	Others	467.41	5.26	18.71	224.89	149.16	158.35	342.43	235.49	194.41	169.92	522.40
	Total	2770.34	3164.13	4550.57	6843.57	8100.84	7930.06	9522.49	10224.56	12148.41	11758.93	9894.89

Source: Kerala State Co-operative Agricultural & Rural Development Bank Ltd.

Appendix 17.16

Agency-wise Disbursement of Refinance Assistance by NABARD in Kerala (1994-95 to 2002-03)

(Rs. in Crores)

Sl. No.	Agency	1994-95		1995-96		1996-97		1997-98		1998-99		1999-2000		2000-01		2001-02		2002-03	
		Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
1	KSCARD Bank Ltd.	51.86	41.11	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
2	Commercial Banks	43.48	34.46	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
3	State Co-op. Banks	18.73	14.85	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
4	Regional Rural Banks	12.08	9.58	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
Total:		126.15	100.00	127.02	100.00	184.06	100.00	204.39	100.00	158.78	100.00	212.82	100.00	236.65	100.00	373.29	100.00	307.70	100.00

Source: NABARD (Statistical Statements)

Appendix 17.17
Purpose-wise Refinance by NABARD (1994-95 to 2002-03)

(Rs. in Crores)

Sl. No.	Purpose	1994-95		1995-96		1996-97		1997-98		1998-99		1999-2000		2000-2001		2001-2002		2002-03	
		Refinance	%	Refinance	%	Refinance	%	Refinance	%	Refinance	%	Refinance	%	Refinance	%	Refinance	%	Refinance	%
1	Minor Irrigation	16.12	12.80	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
2	Land Development	2.70	2.10	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
3	Farm Mechanisation	5.09	4.00	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
4	Plantation & Horticulture	22.95	18.20	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
5	Dairy Development	5.14	4.10	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
6	Fisheries	1.52	1.20	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
7	Poultry	2.41	1.90	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
8	Bio-gas	0.15	0.10	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
9	I.R.D.P	14.51	11.50	6.33	5.00	8.67	4.70	9.55	4.70	8.62	5.40	8.26	3.90	-	-	-	-	-	-
10	Non Farm Sector	50.50	40.00	51.87	40.80	72.33	39.30	78.84	38.60	59.13	37.20	88.28	41.50	110.25	46.80	210.57	56.40	187.76	61.00
11	SC & ST Action Plan	-	-	-	-	-	-	-	-	-	-	-	-	0.01	-	-	-	-	-
12	SGSY	-	-	-	-	-	-	-	-	-	-	-	-	5.64	2.40	7.40	2.00	2.67	0.90
13	Self Help groups	-	-	-	-	-	-	-	-	-	-	-	-	4.39	1.90	6.56	1.70	11.27	4.00
11	Agro Processing	5.04	4.00	0.84	0.70	0.46	0.20	0.53	0.20	1.09	0.70	0.06	0.00	-	-	-	-	-	-
12	Others	0.02	-	0.11	0.10	0.15	0.10	0.92	0.40	3.45	2.20	9.81	4.70	8.55	3.60	12.51	3.40	10.27	3.00
Total		126.15	100.00	127.02	100.00	184.06	100.00	204.39	100.00	158.78	100.00	212.82	100.00	236.65	100.00	373.29	100.00	307.70	100.00

Source: NABARD

Appendix 18.1
District-wise Sex Ratio of Elderly by Marital Status in Kerala: 1991 Census

Sl. No	District	Elderly			Married			Widowed		
		60+	70+	80+	60+	70+	80+	60+	70+	80+
1	2	3	4	5	6	7	8	9	10	11
	Kerala	1147	1207	1242	497	359	304	7628	5949	4303
1	Kasaragod	1039	1049	1059	391	259	159	9111	6809	5032
2	Kannur	1192	1248	1262	432	292	268	10393	7678	4568
3	Wayanad	985	995	931	505	374	294	5546	4551	3463
4	Kozhikode	1164	1217	1340	430	280	251	11821	9167	6743
5	Malappuram	1149	1227	1263	434	293	250	9991	7082	4846
6	Palakkad	1192	1249	1326	414	262	275	8588	6670	5189
7	Thrissur	1251	1335	1373	504	367	309	8069	6172	4689
8	Ernakulam	1163	1217	1291	559	426	379	6268	4987	3708
9	Idukki	953	983	929	569	500	362	4473	3486	2514
10	Kottayam	1073	1117	1104	608	476	363	4915	4191	3277
11	Alappuzha	1193	1249	1274	522	345	256	7434	5829	4138
12	Pathanamthitta	1072	1118	1103	593	453	320	5094	4278	3022
13	Kollam	1120	1195	1200	495	345	332	7338	6280	4729
14	Thiruvananthapuram	1150	1246	1363	506	375	318	7989	6365	5300

Source: CDS

Appendix 18.2

Enrolment of Girl students in Kerala at various stages (in 000's)

Year	L.P. Section		U.P. Section		H.S. Section		Pre 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

Source: - Department Level Reports

Appendix 18.4
Womens Autonomy Levels by State

Sl.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	Sikkim	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
	India	9.4	85.1	51.6	52.6	48.1	31.6	24.4	59.6

Source: National Family Health Survey-II, 1998-99

Appendix 18.5
Women's representation in LSGI's in Kerala - 2003

Sl.No	District	Grama Panchayat			Block Panchayat			District Panchayats			Municipalities	
		Total wards	Seats reserved for women presidents	Seats reserved for women	Total Wards	Seats reserved for women	No. of seats reserved for women presidents	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	
Total		13255	4800	331	1638	629	51	307	105	1597	550	

Note: Does not include wards and seats in Corporations.

Source:-State Election Commission

Appendix 18.6

Incidence & Rate of Crime Committed Against Women In States and Uts During 2001 - India

Sl. No.	State/UT	Incidence	Percentage Contribution to All India Total	Population @ (in Lakhs)	Rate of Total Cognizable Crimes	Rank*	Rank**
1	2	3	4	5	6	7	8
STATES							
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
TOTAL (STATES)		141172	98.2	10105.62	14		
UNION TERRITORIES							
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
TOTAL (UT's)		2623	1.8	164.53	15.9		
TOTAL (ALL-INDIA)		143795	100	10270.15	14		

Source: Central Crime Record Bureau.

Appendix 18.7

Crime Against Women Reported in Kerala State During 2002

Sl. No.	District	Rape	Molestation	Kidnapping	Eve Teasing	Dowry Death	Torture	Others	Total
1	2	3	4	5	6	7	8	9	10
1	TVPM	52	392	23	17	1	288	86	859
2	PTA	13	153	8	4	0	136	22	336
3	KLM	56	295	11	1	1	283	36	683
4	ALPY	13	149	6	2	2	159	4	335
5	IDK	25	125	9	10	2	104	5	280
6	KTM	27	152	8	19	0	135	0	341
7	EKM	29	170	8	5	1	177	282	672
8	TSR	26	193	7	12	4	180	308	730
9	PKD	48	126	5	4	0	193	48	424
10	MPM	70	96	3	12	3	388	270	842
11	KKD	50	141	5	11	0	322	277	806
12	WYD	29	46	1	0	1	59	154	290
13	KNR	20	90	8	7	0	199	216	540
14	KSD	25	62	4	5	0	82	125	303
TOTAL		483	2190	106	109	15	2705	1833	7441

Source: State Crime Record Beaurow.

Appendix 18.8

No. of Suicide cases by cause in Kerala for the period 2001 and 2002

Sl. No	Causes	2001			2002		
		M	F	T	M	F	T
1	2	3	4	5	6	7	8
1	Failure in examinations	34	52	86	39	50	89
2	Poverty	3 --		3	2 --		2
3	Love affairs	87	63	150	48	37	85
4	Insanity	615	339	954	694	319	1013
5	Family Problems	1216	572	1788	1610	690	2300
6	Dispute over property	35	15	50	35	7	42
7	Deadful diseases	1088	441	1529	1080	423	1503
8	Unemployment	165	27	192	89	10	99
9	Bankruptcy or sudden change in economic status	1184	267	1451	1000	135	1135
10	Death of dear person	49	34	83	51	42	93
11	Fall in social reputation	57	31	88	17	6	23
12	Dowry dispute	1	25	26 --		22	22
13	Illegitimate pregnancy	2	13	15 --		6	6
14	Causes not known	600	240	840	1156	405	1561
15	Other causes	1651	666	2317	1344	493	1837
Total		6787	2785	9572	7165	2645	9810

Source: State Crime Bureau

Appendix 18.9
STATUS REPORT OF NHGs AND THRIFT & CREDIT UNDER KUDUMBASHREE
As on 31.10.2003

Sl. No.	District	No. of Panchayaths	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.)+12
1	2	3	4	5	6	7	8	9
1	Thiruvananthapuram	78	12439	1090	253634	253766	245516360	266549775
2	Kollam	69	9568	1031	203619	203619	166405140	202355904
3	Pathanamthitta	54	5120	626	131282	131282	112020786	160247021
4	Alappuzha	73	9602	927	202573	201548	175481358	242403688
	Regional Total	274	36729	3674	791108	790215	699423644	871556388
5	Kottayam	74	8386	946	174887	173416	133375407	126754354
6	Idukki	51	7345	606	130372	129570	180307000	284515000
7	Ernakulam	88	7914	1090	144036	139694	137566946	171815704
8	Trissur	92	10181	1215	184391	180380	216913878	683545860
9	Palakkad	90	9377	1196	174574	174374	135295728	141731652
	Regional Total	395	43203	5053	808260	797434	803458959	1408362570
10	Malappuram	100	6985	1397	153895	153895	134375077	129104649
11	Kozhikkode	77	10712	1090	236509	216657	228410229	401220626
12	Wayanad	25	6036	354	93168	93168	112562737	236654831
13	Kannur	81	7638	1039	161207	155561	189867647	323855250
14	Kasargode	39	4713	528	104568	104599	113853539	308887645
	Regional Total	322	36084	4408	749347	723880	779069229	1399723001
	Total	991	116016	13135	2348715	2311529	2281951832	3679641959
	Urban (58 ULBs)		7947	631	272074	272074	213715805	222957187
	Tribal (5 Districts)		1772		24580	24580	23061956	22994833

Source: Kudumbasree

Appendix 18.10
COMPLAINTS RECEIVED BY KERALA WOMEN'S COMMISSION DURING 2003 - DISTRICT WISE
(January 2003 to September 30, 2003).

Sl.No.	Item	Tpm.	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	188	52	23	25	18	15	17	14	18	15	5	12	13	4	419
2	Dowry Harassment	26	46	21	20	5	10	15	6	10	10	4	6	4	5	188
3	Harassment by husband	150	56	24	18	24	9	27	8	9	9	8	22	12	13	389
4	Cheating	51	16	10	10	4	8	9	4	6	5	2	4	6	2	137
5	Divorced by husband	18	13	9	2	3	..	3	2	4	3	2	2	2	1	64
6	Suspicious death	14	10	6	5	9	5	8	6	13	5	3	5	3	3	95
7	Property related	91	14	9	22	7	17	29	10	9	3	8	3	5	2	229
8	Job related	29	1	..	..	1	1	..	6	5	5	2	4	3	3	60
9	Sexual harassment	27	6	4	10	5	8	12	10	9	8	6	3	4	2	114
10	Use of abusive language	23	21	15	23	15	24	29	6	8	7	3	11	9	7	201
11	Violence	92	5	3	17	19	10	20	15	17	10	12	13	10	7	250
12	Against Police	12	5	4	..	2	..	..	8	5	5	3	2	3	1	50
13	Nuisance of anti-social elements	6	16	10	16	8	5	8	2	9	4	1	9	4	1	99
14	To get divorce	3	6	2	2	3	..	1	6	5	4	2	1	3	1	39
15	Alimony	..	..	..	7	1	4	5	5	3	4	2	3	3	..	37
16	Economic help	3	..	..	1	4	2	4	2	3	1	1	..	..	..	21
17	Path Problems	..	2	2	9	7	19	13	3	8	3	2	3	4	7	82
18	Doctor's negligence	..	..	..	..	..	..	..	..	1	..	1	1	..	1	4
19	Child marriage	..	..	..	..	..	..	..	..	..	3	..	..	..	..	3
20	Miscellaneous	94	16	18	80	27	60	65	20	22	25	33	22	19	6	507
	Total	827	285	160	267	162	197	265	133	164	129	100	126	107	66	2988

Source: Kerala Varitha Commission

Appendix 19.1
District wise percentage of total workers, Main workers marginal workers and non workers to total population.

District	Total workers		Main workers		Marginal workers		Non workers	
	1991	2001	1991	2001	1991	2001	1991	2001
1 Kerala	31.4	32.3	28.5	25.9	2.9	6.4	68.6	67.7
2 Kaseragod	33.4	34.7	30.5	27.3	2.9	7.4	66.6	65.3
3 Kannur	28.9	31.8	26.2	26	2.7	5.8	71.1	65.2
4 Wayanad	38.8	39.3	33.9	28	4.9	11.3	61.2	60.7
5 Kozhikode	26.6	27.9	23.3	21.9	3.3	6	73.4	72.1
6 Malappuram	24.3	24.1	21.7	19.1	2.6	5	75.7	75.9
7 Palakkad	35.5	36.2	33	29.4	2.5	6.8	64.5	63.5
8 Thrissur	32	32.2	29.4	27.2	2.6	5	68	67.8
9 Krmakulam	33.5	36.1	31	29.5	2.5	6.6	66.5	63.9
10 Idukki	39.7	43.3	36.1	25.5	3.6	7.8	60.3	56.7
11 Kottayam	31.2	32.9	29.4	27.6	1.8	5.3	68.8	67.1
12 Alappuzha	34.1	34.4	30.1	26	4	8.4	65.9	65.6
13 Pathanamthitta	29.7	29.7	27	23.2	2.7	6.5	70.3	70.3
14 Kollam	32.1	32.1	27.9	25.3	4.2	6.8	67.9	67.9
15 Thiruvananthapuram	32.6	32.4	30.2	25.3	2.4	7.1	67.4	67.6

Source:- Census 2001

Appendix 19.2
Total Work Seekers in Kerala as on 31-8-2003

Year (at the end of December)	General Work Seekers	Professional/ Tech. 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(8/03)	3681478	174517	3855995

Source: Directorate of Employment and Training

Appendix 19.3
Distribution of Work Seekers in Kerala by Educational Level

Year (at the end of December)	Below SSLC	SSLC	PDC	Degree	P.G.	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(8/03)	726631	2295338	555788	245734	32504	3129364	81	3855995

Source : Directorate of Employment & Training

Appendix 19.4
Number of Professional and Technical Work Seekers

Year (at the end of December)	Medical Graduates	Engineering Graduates	Diploma holders in Engg.	ITI Certificate Holders	Agricultural Graduates	Veterinary Graduates	Total
1	2	3	4	5	6	7	8
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(8/03)	4072	9246	41628	132889	992	546	189373

Source : Directorate of Employment & Training

Appendix 19.5
District-wise Distribution of Work Seekers (as on 31-8-03)

Sl.No.	District	General work seekers	Professional/Teach nical Work seekers	Total Work Seekers		
				Men	Women	Total (5+6)
1	2	3	4	5	6	7
1	Thiruvananthapuram	549453	30868	239260	341061	580321
2	Kollam	383388	18172	162975	238585	401560
3	Pathanamthitta	143519	6871	60531	89859	150390
4	Alappuzha	338519	14719	150380	202858	353238
5	Kottayam	236740	12490	106141	143089	249230
6	Idukki	122394	4288	55671	71011	126682
7	Ernakulam	353984	23500	167826	209658	377484
8	Thrissur	333109	13205	132578	213736	346314
9	Palakkad	247650	21653	132448	136855	269303
10	Malappuram	228941	6940	116419	119462	235881
11	Kozhikode	350158	9733	158055	201836	359891
12	Wayanad	79208	1890	38469	42629	81098
13	Kannur	223615	7973	101343	130245	231588
14	Kasaragod	90800	2215	44779	48236	93015
Total		3681478	174517	1666875	2189120	3855995

Source : Directorate of Employment & Training

Appendix 19.6
Unemployment Assistance and Self Employment Scheme

Year (at the end of December)	Unemployment Assistance			Self Employment Scheme		
	Application received	No. of Beneficiaries	Amount Disbursed (Rs. Lakhs)	Application received	No. of Beneficiaries	Amount Disbursed (Rs. Lakhs)
1	2	3	4	5	6	7
1996	140003	297253	1464.84	144	438	2.42
1997	138277	294568	3206.69	1985	26	0.03
1998	147380	271959	1926.85	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(8/03)	172516	328871	1345.75			

Source : Directorate of Employment & Training

Appendix 19.7
Employment in the Public and Private Sectors in Kerala

Year at the end of December	Public Sector	Index	Private sector	Index	Total	Index
1	2	3	4	5	6	7
1995	624534	95.90	557260	104.50	1181794	99.80
1996	625966	96.10	549745	103.00	1175711	100.70
1997	621975	95.50	556241	104.30	1178216	99.50
1998	643784	98.90	575801	107.00	1219585	103
1999	643927	98.9	588337	110.3	1232264	104
2000	643576	98.9	597779	112.1	1241355	104.8
2001	645670	99	596788	111.9	1242458	105
2002	638385		575374		1213759	

Source : Directorate of Employment & Training

Appendix 19.8**Number of Placements through Employment Exchanges and Monthly Average No. of Employers using Employment Exchanges in Kerala**

Year	No of placements	Monthly average no.of Employers using unemployment 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(8/03)	3569	189

Source: Directorate of Employment & Training

Appendix 19.9
District-wise Employment both in Public
and Private Sectors in Kerala as on 31st March

Sl.No.	District	Number of Persons Employed					
		1998	1999	2000	2001	2002	2003
1	Thiruvananthapuram	172321	181247	174370	179327	182508	185157
2	Kollam	86777	93749	103957	103746	101780	100589
3	Pathanamthitta	38882	39205	38592	42031	40937	40061
4	Alappuzha	61983	61361	60627	60415	59013	59052
5	Kottayam	64758	64738	63515	62445	61604	62030
6	Idukki	86593	78826	90044	92263	96761	99796
7	Ernakulam	160121	164524	166170	160995	159010	169883
8	Thrissur	96252	99362	98788	110252	107677	103972
9	palakkad	83847	84636	83179	80150	79160	76397
10	Malappuram	62817	65851	69470	69600	67237	66022
11	Wayanad	29999	30120	31748	32250	18751	25916
12	Kozhikode	96552	99019	96405	95648	89755	88710
13	Kannur	90143	91024	93199	91331	89595	88679
14	Kasargod	54944	56152	55859	61241	60215	53366
State		1185989	1209814	1225923	1241694	1214003	1219630

Source: Directorate of Employment

Appendix 22.1

**Transfer of Resources to Grama Panchayats
Based on State Finance Commission Recommendations**

(Rs. Lakh)

Year	Collection from Assigned Taxes *	Amount Actually Passed on **	Devolution (Actual Transfers made) @	Grant-in-aid (Actual Transfers made) #	Others (Actual Transfers made) \$	Total (Actual Transfers made)
1	2	3	4	5	6	7
1994-95	5994.95	5214.67	1207.50	4608.05	581.79	11612.01
1995-96	5026.58	4304.20	1088.37	4768.61	292.00	10453.18
1996-97	6726.48	6868.90	2338.83	33255.09	292.00	42754.82
1997-98	8160.10	8053.22	4257.00	57539.71	3861.00	73710.93
1998-99	11270.49	10797.22	3942.00	70369.96	3837.00	88946.18
1999-00	10997.34	10290.86	6471.00	66673.36	4264.00	87699.22
2000-01	2122.77	1434.91	4336.00	66157.66	6532.00	78460.57
2001-02	8919.28	8259.13	5280.00	50837.85	3757.00	68133.98
2002-03	10501.66	9479.42	5384.00	75030.24	4951.00	94844.66
2003-04	10501.66	9479.42	10351.16	83283.57	5495.61	108609.75

* - **Collection from Assigned Taxes** ie., Basic Tax - Total Basic Tax collected minus 6% shared by the Village Panchayat, Block Panchayat and District Panchayat in the ratio of 4/8, 3/10 and 1/5 respectively upto 2003-04 on the basis of 1st SFC recommendation and share of surcharge on Stamp duty

** - **Amount actually passed on** ie., Basic Tax and Surcharge on Stamp Duty distributed

@ - **Devolution** ie., share of Motor Vehicle tax

- **Grant-in-aid** ie., Establishment grant and other grants, Rural Pool grant etc. and Plan assistance for local area plan programmes and grants for transferred schemes.

\$ **Others** ie., Centrally Sponsored Schemes

Note:- On the basis of the 2nd State Finance Commission Report Government have decided to devolve 9% of the State own tax revenue (ie., 5.5% as Maintenance Grant and 3.5% as General Purpose Grant) to the Local Bodies. The distribution among various tiers is based on the norms recommended by the 2nd SFC

Appendix 22.2

**Transfer of Resources to Block Panchayats
Based on State Finance Commission Recommendations**

(Rs. Lakh)

Year	Collection from Assigned Taxes *	Amount Actually Passed on **	Devolution (Actual Transfers made) @	Grant-in-aid (Actual Transfers made) #	Others (Actual Transfers made) \$	Total (Actual Transfers made)
1	2	3	4	5	6	7
1994-95	--	--	--	--	--	--
1995-96	--	--	--	2519.76	2547.56	5067.32
1996-97	--	--	--	3050.32	3974.59	7024.91
1997-98	--	--	--	23165.98	7105.63	30271.61
1998-99	--	--	--	20923.43	8424.79	29348.22
1999-00	633.29	209.63	--	17926.00	8076.29	26211.92
2000-01	643.12	230.59	--	14550.51	6611.09	21392.19
2001-02	626.55	230.59	--	18597.61	8353.60	27181.80
2002-03	840.92	230.59	--	16370.81	8385.30	24986.70
2003-04	840.92	230.59	--	18171.60	9307.68	27709.87

* - **Collection from Assigned Taxes** ie., Basic Tax - Total Basic Tax collected minus 6% shared by the Village Panchayat, Block Panchayat and District Panchayat in the ratio of 4/8, 3/10 and 1/5 respectively upto 2003-04 on the basis of 1st SFC recommendation

** - **Amount actually passed on** ie., Basic Tax distributed

@ - **Devolution** ie., share of Motor Vehicle Tax

- **Grant-in-aid** ie., Establishment grant, Plan assistance for local area plan programmes and grants for transferred schemes.

\$ **Others** ie., Centrally Sponsored Schemes

Note:- On the basis of the 2nd State Finance Commission Report Government have decided to devolve 9% of the State own tax revenue (ie., 5.5% as Maintenance Grant and 3.5% as General Purpose Grant) to the Local Bodies. The distribution among various tiers is based on the norms recommended by the 2nd SFC

Appendix 22.3

**Transfer of Resources to District Panchayats
Based on State Finance Commission Recommendations**

(Rs. Lakh)

Year	Collection from Assigned Taxes *	Amount Actually Passed on **	Devolution (Actual Transfers made) @	Grant-in-aid (Actual Transfers made) #	Others (Actual Transfers made) \$	Total (Actual Transfers made)
1	2	3	4	5	6	7
1994-95	--	--	--	--	--	--
1995-96	--	--	--	118.39		118.39
1996-97	--	--	--	10425.95		10425.95
1997-98	--	--	--	16654.38		16654.38
1998-99	--	--	--	23292.22		23292.22
1999-00	422.19	140.00	--	15808.82		15948.82
2000-01	428.75	154.00	--	16571.29		16725.29
2001-02	417.70	154.00	--	12917.74		13071.74
2002-03	560.62	154.00	--	19080.50		19234.50
2003-04	560.62	154.00	--	21179.36		21333.36

* - **Collection from Assigned Taxes** ie., Basic Tax - Total Basic Tax collected minus 6% shared by the Village Panchayat, Block Panchayat and District Panchayat in the ratio of 4/8, 3/10 and 1/5 respectively upto 2003-04 on the basis of 1st SFC recommendation

** - **Amount actually passed on** ie., Basic Tax distributed

- **Grant-in-aid** ie., Establishment grant, Plan assistance for local area plan programmes and grants for transferred schemes.

Note:- On the basis of the 2nd State Finance Commission Report Government have decided to devolve 9% of the State own tax revenue (ie., 5.5% as Maintenance Grant and 3.5% as General Purpose Grant) to the Local Bodies. The distribution among various tiers is based on the norms recommended by the 2nd SFC

Appendix 22.4

**Transfer of Resources to Municipalities
Based on State Finance Commission Recommendations**

(Rs. Lakh)

<i>Year</i>	<i>Collection from Assigned Taxes *</i>	<i>Amount Actually Passed on **</i>	<i>Devolution (Actual Transfers made) @</i>	<i>Grant-in-aid (Actual Transfers made) #</i>	<i>Others (Actual Transfers made) \$</i>	<i>Total (Actual Transfers made)</i>
<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>
1994-95	979.25	894.98	766.20	434.22	459.1	2554.5
1995-96	1065.73	899.46	875.00	438.12	778.16	2990.74
1996-97	1058.79	1367.76	639.79	5737.17	1026.93	8771.65
1997-98	856.68	1217.68	486.48	10871.18	2572.75	15148.09
1998-99	864.21	1496.66	736.09	11382.25	1901.48	15516.48
1999-00	1013.26	1347.87	803.84	10890.39	1993.3	15035.4
2000-01	1099.23	1099.23	732.00	8649.51	1041	11521.74
2001-02	1264.94	1264.93	742.00	7162.15	971.37	10140.45
2002-03	1519.53	1519.53	922.00	11579.00	2325.64	16346.17
2003-04	1669.54	1669.54	1638.29	12852.69	2581.46	18741.98

* - *Collection from Assigned Taxes* ie., Surcharge on Stamp Duty

** - *Amount actually passed on* ie., Surcharge on Stamp Duty distributed

@ - *Devolution* ie., share of Motor Vehicle Tax

- *Grant-in-aid* ie., Specific purpose and General purpose grant and Plan assistance for local

\$ *Others* ie., Centrally Sponsored Schemes

Note:- On the basis of the 2nd State Finance Commission Report Government have take a

Appendix 22.5

**Transfer of Resources to Corporations
Based on State Finance Commission Recommendations**

(Rs. Lakh)

Year	Collection from Assigned Taxes *	Amount Actually Passed on **	Devolution (Actual Transfers made) @	Grant-in-aid (Actual Transfers made) #	Others (Actual Transfers made) \$	Total (Actual Transfers made)
1	2	3	4	5	6	7
1994-95	950.15	581.38	500.00	230.88	367.58	1679.84
1995-96	882.43	1570.96	400.00	232.54	418.60	2622.10
1996-97	979.41	811.05	300.00	1715.93	683.08	3510.06
1997-98	873.85	862.08	263.00	4391.08	407.83	5923.99
1998-99	1112.43	1500.19	375.00	4801.64	506.67	7183.50
1999-00	1012.67	1209.91	378.00	4895.31	1316.16	7799.38
2000-01	1453.63	1451.63	405.00	3967.45	2566.18	8390.26
2001-02	2079.69	2070.69	423.00	5181.99	1229.18	8904.86
2002-03	2539.72	2539.72	513.00	11583.11	1449.72	16085.55
2003-04	2539.72	2539.72	513.00	12857.25	1609.19	17519.16

* - Collection from Assigned Taxes ie., Surcharge on Stamp Duty

** - Amount actually passed on ie., Surcharge on Stamp Duty distributed

@ - Devolution ie., share of Motor Vehicle Tax

- Grant-in-aid ie., Specific purpose and General purpose grant and Plan assistance for local area

\$ Others ie., Centrally Sponsored Schemes

Note:- On the basis of the 2nd State Finance Commission Report Government have decided to

Appendix 22.6
NINTH FIVE YEAR PLAN OF LOCAL GOVERNMENTS (1997-02)
Plan Grant Receipts

Sl. No	Local Government	Carry Over Amount			Plan Grant Received					Total Plan Grant				
		General	SCP	TSP	Total	General	SCP	TSP	Total	General	SCP	TSP	Total	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	
						1997-1998								
1	Grama Panchayats	NA	NA	NA	NA	301.66	103.30	8.71	413.67	301.66	103.30	8.71	413.67	
2	Block Panchayats	NA	NA	NA	NA	65.39	35.43	7.34	108.16	65.39	35.43	7.34	108.16	
3	District Panchayats	NA	NA	NA	NA	65.59	35.49	22.85	123.94	65.59	35.49	22.85	123.94	
4	Municipalities	NA	NA	NA	NA	46.43	11.53	0.63	58.58	46.43	11.53	0.63	58.58	
5	Corporations	NA	NA	NA	NA	34.44	7.16	0.25	41.84	34.44	7.16	0.25	41.84	
	Total					513.50	192.90	39.78	746.19	513.50	192.90	39.78	746.19	
						1998-1999								
1	Grama Panchayats	14.89	6.92	0.90	22.71	391.73	105.20	14.78	511.70	406.61	112.12	15.68	534.41	
2	Block Panchayats	4.22	2.95	0.71	7.88	88.33	35.84	5.73	129.90	95.55	38.79	6.44	137.78	
3	District Panchayats	5.46	1.86	1.45	8.77	89.98	35.87	15.21	141.06	95.44	37.74	16.66	149.83	
4	Municipalities	1.13	0.49	0.06	1.68	66.34	9.96	0.54	76.83	67.47	10.45	0.60	78.51	
5	Corporations	1.41	0.40	0.11	1.92	44.60	6.05	0.19	50.83	46.01	6.45	0.30	52.76	
	Total	27.11	12.63	3.23	42.97	680.97	192.92	36.44	910.33	708.07	205.55	39.67	953.29	
						1999-2000								
1	Grama Panchayats	146.26	49.49	7.51	203.26	379.17	83.09	14.57	476.84	525.43	132.58	22.08	680.10	
2	Block Panchayats	34.24	17.53	3.67	55.43	82.17	31.90	6.28	120.35	116.41	49.43	9.95	175.78	
3	District Panchayats	37.44	18.22	8.13	63.79	71.94	28.96	10.58	111.48	109.38	47.19	18.70	175.27	
4	Municipalities	21.68	3.92	0.37	25.96	64.20	9.32	0.24	73.76	85.87	13.23	0.61	99.72	
5	Corporations	13.08	2.75	0.14	15.96	44.21	5.53	0.00	49.74	57.29	8.28	0.14	65.71	
	Total	252.69	91.91	19.81	364.41	641.70	158.80	31.67	832.17	894.39	250.71	51.48	1196.58	
						2000-2001								
1	Grama Panchayats	100.24	34.14	6.26	140.63	327.41	79.97	13.88	421.27	427.65	114.11	20.14	561.90	
2	Block Panchayats	25.08	15.39	3.71	44.18	81.80	30.84	6.61	119.25	106.88	46.23	10.32	163.42	
3	District Panchayats	20.00	11.25	4.85	36.10	115.89	29.96	10.10	155.95	135.89	41.21	14.95	192.05	
4	Municipalities	16.06	3.62	0.22	19.90	55.18	7.82	0.20	63.20	71.24	11.44	0.41	83.09	
5	Corporations	10.47	3.17	0.03	13.67	42.38	6.50	0.00	48.88	52.85	9.67	0.03	62.55	
	Total	171.85	67.56	15.07	254.48	622.66	155.09	30.79	808.54	794.51	222.65	45.86	1063.02	
						2001-2002								
1	Grama Panchayats	95.67	45.68	7.61	148.97	282.38	62.57	0.00	344.95	378.05	108.25	7.61	493.91	
2	Block Panchayats	20.01	19.18	3.05	42.24	98.67	24.64	0.00	123.31	118.67	43.82	3.05	165.55	
3	District Panchayats	23.36	19.56	7.06	49.98	61.76	24.69	0.00	86.45	85.12	44.25	7.06	136.43	
4	Municipalities	14.58	5.20	0.28	20.06	48.55	7.86	0.00	56.41	63.13	13.06	0.28	76.47	
5	Corporations	8.33	5.10	0.02	13.46	39.89	6.24	0.00	46.14	48.23	11.35	0.02	59.59	
	Total	161.96	94.72	18.03	274.70	531.24	126.01	0.00	657.25	693.20	220.72	18.03	931.95	

(Rs Crore)

Appendix 22.7
NINTH FIVE YEAR PLAN OF LOCAL GOVERNMENTS (1997-02)
Plan Grant Expenditure

Sl. No	Local Government	Total Plan Grant			Expenditure of Plan Grant			Closing Balance of Plan Grant			(Rs Crore)		
		General	SCP	TSP	General	SCP	TSP	General	SCP	TSP		Total	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
						1997-1998							
1	Grama Panchayats	301.66	103.30	8.71	413.67	286.32	96.67	7.00	390.00	15.33	6.62	1.71	23.67
2	Block Panchayats	65.39	35.43	7.34	108.16	60.86	32.66	6.51	100.03	4.53	2.77	0.83	8.13
3	District Panchayats	65.59	35.49	22.85	123.94	60.14	33.63	21.40	115.17	5.46	1.86	1.45	8.77
4	Municipalities	46.43	11.53	0.63	58.58	45.32	11.08	0.53	56.93	1.11	0.45	0.09	1.65
5	Corporations	34.44	7.16	0.25	41.84	33.03	6.75	0.14	39.92	1.41	0.40	0.11	1.92
	Total	513.50	192.90	39.78	746.19	485.67	180.79	35.59	702.05	27.84	12.11	4.19	44.14
						1998-1999							
1	Grama Panchayats	406.61	112.12	15.68	534.41	259.03	63.11	8.04	330.17	147.59	49.01	7.64	204.24
2	Block Panchayats	92.55	38.79	6.44	137.78	58.05	21.30	3.71	83.07	34.50	17.49	2.72	54.71
3	District Panchayats	95.44	37.74	16.66	149.83	57.99	19.51	8.53	86.04	37.44	18.22	8.13	63.79
4	Municipalities	67.47	10.45	0.60	78.51	46.08	6.47	0.25	52.81	21.38	3.98	0.35	25.71
5	Corporations	46.01	6.45	0.30	52.76	32.93	3.70	0.16	36.79	13.08	2.75	0.14	15.96
	Total	708.07	205.55	39.67	953.29	454.08	114.10	20.70	588.88	253.99	91.45	18.97	364.41
						1999-2000							
1	Grama Panchayats	525.43	132.58	22.08	680.10	426.50	97.18	15.83	539.50	98.93	35.40	6.26	140.59
2	Block Panchayats	116.41	49.43	9.95	175.78	91.48	33.67	6.23	131.37	24.93	15.76	3.72	44.41
3	District Panchayats	109.38	47.19	18.70	175.27	89.44	35.94	13.85	139.23	19.95	11.25	4.85	36.05
4	Municipalities	85.87	13.23	0.61	99.72	69.90	9.61	0.39	79.90	15.98	3.62	0.22	19.82
5	Corporations	57.29	8.28	0.14	65.71	47.07	5.37	0.08	52.52	10.23	2.91	0.05	13.19
	Total	894.39	250.71	51.48	1196.58	724.37	181.76	36.38	942.52	170.02	68.94	15.10	254.06
						2000-2001							
1	Grama Panchayats	427.65	114.11	20.14	561.90	333.26	66.02	12.22	411.50	94.39	48.09	7.92	150.40
2	Block Panchayats	106.88	46.23	10.32	163.42	76.18	26.79	7.46	110.42	30.70	19.43	2.87	53.00
3	District Panchayats	135.89	41.21	14.95	192.05	68.48	22.04	7.97	98.49	67.41	19.17	6.98	93.57
4	Municipalities	71.24	11.44	0.41	83.09	59.43	6.47	0.13	66.02	11.82	4.97	0.28	17.07
5	Corporations	52.85	9.67	0.03	62.55	44.52	4.57	0.01	49.10	8.33	5.10	0.02	13.46
	Total	794.51	222.65	45.86	1063.02	581.85	125.89	27.79	735.53	212.65	96.76	18.07	327.49
						2001-2002							
1	Grama Panchayats	378.05	108.25	7.61	493.91	223.13	42.05	3.31	268.49	154.92	66.19	4.31	225.42
2	Block Panchayats	118.67	43.82	3.05	165.55	51.78	19.78	1.82	73.39	66.89	24.04	1.23	92.16
3	District Panchayats	85.12	44.25	7.06	136.43	45.97	17.08	3.66	66.72	39.14	27.17	3.40	69.71
4	Municipalities	63.13	13.06	0.28	76.47	42.95	4.40	0.07	47.42	20.18	8.66	0.21	29.04
5	Corporations	48.23	11.35	0.02	59.59	27.72	2.18	0.00	29.90	20.51	9.16	0.02	29.69
	Total	693.20	220.72	18.03	931.95	391.56	85.50	8.86	485.92	301.64	135.22	9.17	446.03

Appendix 22.8
NINTH FIVE YEAR PLAN OF LOCAL GOVERNMENTS (1997-02)
Receipts and Expenditure under State Sponsored Schemes

(Rs Crore)

Sl. No	Local Governments	1997-1998		1998-1999		1999-2000		2000-2001		2001-2002		Total (1997-2002)	
		Receipts (3)	Expenditure (4)	Receipts (5)	Expenditure (6)	Receipts (7)	Expenditure (8)	Receipts (9)	Expenditure (10)	Receipts (11)	Expenditure (12)	Receipts (13)	Expenditure (14)
1	Grama Panchayats	85.64	50.66	117.65	67.00	93.58	80.81	108.48	70.01	84.02	59.16	489.37	327.64
2	Block Panchayats	33.99	17.14	33.96	23.15	31.84	19.85	18.34	16.66	13.60	10.10	131.73	86.90
3	District Panchayats	57.76	52.06	50.94	30.50	44.85	40.68	40.91	40.17	36.52	29.81	230.98	193.22
4	Municipalities	17.26	8.36	11.15	7.48	11.51	7.15	11.80	6.02	11.91	6.35	63.63	35.36
5	Corporations	8.42	4.07	5.05	3.38	3.59	2.96	4.84	2.38	4.92	2.90	26.82	15.69
	Total	203.07	132.29	218.75	131.49	185.38	151.46	184.36	135.25	150.96	108.32	929.53	658.81
	Percentage of Expenditure	X	65.15	X	60.11	X	81.70	X	73.36	X	71.75	X	69.90

Appendix 22. 9
NINTH FIVE YEAR PLAN OF LOCAL GOVERNMENTS (1997-02)
Receipts and Expenditure under Centrally Sponsored Schemes

Sl. No	Local Governments	1997-1998		1998-1999		1999-2000		2000-2001		2001-2002		Total (1997-2002)	
		Receipts	Expenditure	Receipts	Expenditure	Receipts	Expenditure	Receipts	Expenditure	Receipts	Expenditure	Receipts	Expenditure
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	Grama Panchayats	38.10	23.23	37.01	27.15	48.70	33.06	53.17	37.55	58.89	35.37	235.87	156.36
2	Block Panchayats	100.67	67.49	116.56	97.52	112.16	100.73	98.61	85.08	100.50	70.00	528.50	420.82
3	District Panchayats	3.45	0.78	7.02	5.97	10.25	6.58	11.88	9.93	13.71	9.01	46.31	32.27
4	Municipalities	3.50	1.17	8.97	5.13	11.71	10.69	9.47	10.21	10.55	7.22	44.20	34.42
5	Corporations	0.72	0.39	3.16	1.17	6.52	3.95	4.09	4.43	7.21	6.37	21.70	16.31
	Total	146.44	93.05	172.72	136.94	189.33	155.00	177.21	147.20	190.86	127.97	876.58	660.18
	Percentage of Expenditure	X	63.51	X	79.28	X	81.87	X	83.07	X	67.05	X	75.31

(Rs Crore)

Appendix 22. 10
NINTH FIVE YEAR PLAN OF LOCAL GOVERNMENTS (1997-02)
Gross Plan Expenditure (Amount)

Sl. No	Local Governments	Grant-in-aid	Own fund	State Sponsored	1997 - 1998					Total	
					Centrally Sponsored	Co-operative Finance	Institutional Finance	Voluntary Contribution	Beneficiary Contribution		Others
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
					1997 - 1998						
1	Grama Panchayats	390.00	192.91	50.66	23.23	0.81	4.20	14.82	62.72	9.32	748.66
2	Block Panchayats	100.03	0.10	17.14	67.49	3.15	27.63	1.44	4.03	0.44	221.45
3	District Panchayats	115.17	0.00	52.06	0.78	0.00	0.00	0.80	1.05	0.03	169.89
4	Municipalities	56.93	8.54	8.36	1.17	0.06	0.64	2.86	2.60	0.06	81.23
5	Corporations	39.92	15.76	4.07	0.39	0	0.89	0.28	5.64	0.74	67.69
	Total (1997-98)	702.05	247.31	132.29	93.05	4.02	33.37	20.21	76.04	10.59	1288.92
					1998 - 1999						
1	Grama Panchayats	330.17	57.57	67.00	27.15	1.52	4.55	16.39	91.74	9.17	605.26
2	Block Panchayats	83.07	0.54	23.15	97.52	3.61	30.87	1.16	1.82	0.86	242.61
3	District Panchayats	86.04	0.00	30.50	5.97	0.00	0.03	0.78	0.77	0.34	124.42
4	Municipalities	52.81	10.10	7.48	5.13	0.06	1.61	1.01	2.78	0.62	81.60
5	Corporations	36.79	13.76	3.38	1.17	0.00	1.22	0.53	2.63	1.17	60.66
	Total (1998-99)	588.88	81.97	131.49	136.94	5.20	38.29	19.87	99.74	12.17	1114.54
					1999 - 2000						
1	Grama Panchayats	539.50	78.57	80.81	33.06	1.69	12.12	17.87	63.14	26.64	853.39
2	Block Panchayats	131.38	0.66	19.85	100.73	3.78	23.01	1.54	1.59	0.49	283.02
3	District Panchayats	139.23	0.02	40.68	6.58	90.40	1.11	1.38	1.57	20.00	300.96
4	Municipalities	79.90	11.80	7.15	10.69	0.95	1.99	1.18	4.19	1.16	119.01
5	Corporations	52.52	18.41	2.96	3.95	0.00	7.24	0.45	0.69	0.02	86.24
	Total (1999-00)	942.52	109.46	151.46	155.00	96.81	45.47	22.43	71.18	48.30	1642.62

Contd.....

SL No	Local Governments	Grant-in-aid	Own fund	State Sponsored	Centrally Sponsored	Co-operative Finance	Institutional Finance	Voluntary Contribution	Beneficiary Contribution	Others	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
2000 - 2001											
1	Grama Panchayats	411.50	80.13	70.01	37.55	1.28	6.13	10.25	38.13	16.38	671.35
2	Block Panchayats	110.42	0.13	16.66	85.08	4.23	39.76	0.83	2.35	6.03	265.49
3	District Panchayats	98.49	0.00	40.17	9.93	0.34	0.00	0.28	0.84	6.67	156.71
4	Municipalities	66.03	16.40	6.02	10.21	1.07	1.76	0.80	3.65	0.48	106.43
5	Corporations	49.10	18.58	2.38	4.43	0.00	2.83	0.03	2.81	2.52	82.68
	Total (2000-01)	735.53	115.24	135.25	147.20	6.92	50.48	12.18	47.77	32.08	1282.65
2001 - 2002											
1	Grama Panchayats	268.49	48.03	59.16	35.37	0.59	2.60	8.37	27.38	12.06	462.05
2	Block Panchayats	73.39	0.04	10.10	70.00	2.16	24.08	0.46	1.33	1.77	183.33
3	District Panchayats	66.72	0.08	29.81	9.01	0.17	0.07	0.18	0.72	4.61	111.37
4	Municipalities	47.42	12.94	6.35	7.22	0.06	1.81	0.37	2.40	1.42	79.99
5	Corporations	29.90	12.76	2.90	6.37	0.00	2.56	0.04	6.34	0.96	61.83
	Total (2001-02)	485.92	73.85	108.32	127.97	2.97	31.12	9.42	38.17	20.81	898.57
1997 - 2002											
1	Grama Panchayats	1939.66	457.21	327.64	156.36	5.89	29.60	67.70	283.11	73.57	3340.71
2	Block Panchayats	498.29	1.47	86.90	420.82	16.93	145.35	5.43	11.12	9.59	1195.90
3	District Panchayats	505.65	0.10	193.22	32.27	90.91	1.21	3.42	4.95	31.65	863.35
4	Municipalities	303.09	59.78	35.36	34.42	2.20	7.81	6.22	15.62	3.74	468.26
5	Corporations	208.23	79.27	15.69	16.31	0.00	14.74	1.33	18.11	5.41	359.10
	Total (1997 - 2002)	3454.92	597.83	658.81	660.18	115.93	198.71	84.10	332.91	123.96	6227.32

**Appendix 22.11
NINTH FIVE YEAR PLAN OF LOCAL GOVERNMENTS (1997-02)
Gross Plan Expenditure (Percentage)**

Sl. No	Local Governments	Grant-in-aid	Own fund	State Sponsored	Centrally Sponsored	Co-operative Finance	Institutional Finance	Voluntary Contribution	Beneficiary Contribution	Others	Total
1997 - 1998											
1	Grama Panchayats	55.55	88.77	38.29	24.96	20.15	12.59	73.37	82.48	88.01	58.08
2	Block Panchayats	14.25	0.05	12.96	72.52	78.36	82.82	7.13	5.30	4.15	17.18
3	District Panchayats	16.40	0.00	39.35	0.84	0.00	0.00	3.96	1.38	0.28	13.18
4	Municipalities	8.11	3.93	6.32	1.26	1.49	1.92	14.16	3.42	0.57	6.30
5	Corporations	5.69	7.25	3.08	0.42	0.00	2.67	1.39	7.42	6.99	5.25
	Total (1997-98)	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
1998 - 1999											
1	Grama Panchayats	56.07	70.23	50.95	19.83	29.29	11.89	82.49	91.98	75.41	54.31
2	Block Panchayats	14.11	0.66	17.60	71.21	69.56	80.64	5.84	1.82	7.07	21.77
3	District Panchayats	14.61	0.00	23.19	4.36	0.00	0.08	3.93	0.77	2.80	11.16
4	Municipalities	8.97	12.32	5.69	3.75	1.16	4.21	5.08	2.79	5.10	7.32
5	Corporations	6.25	16.79	2.57	0.85	0.00	3.19	2.67	2.64	9.62	5.44
	Total (1998-99)	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
1999 - 2000											
1	Grama Panchayats	57.24	71.78	53.36	21.33	1.75	26.65	79.71	88.70	55.14	51.95
2	Block Panchayats	13.94	0.60	13.11	64.98	3.90	50.60	6.87	2.23	1.01	17.23
3	District Panchayats	14.77	0.02	26.86	4.24	93.37	2.44	6.16	2.21	41.40	18.32
4	Municipalities	8.48	10.78	4.72	6.90	0.98	4.38	5.26	5.89	2.40	7.25
5	Corporations	5.57	16.82	1.95	2.55	0.00	15.92	2.01	0.97	0.04	5.25
	Total (1999-00)	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Contd.....

Appendix 22.12
Annual Plan 2002-03
Sector-wise Distribution of Plan Grant and Gross Plan Outlay

Sl. No.	Local Government	No. of Projects	Grant -In-aid			Gross Plan Outlay				Total
			Productive Sector	Service Sector	Infrastructure Sector	Total	Productive Sector	Service Sector	Infrastructure Sector	
1	2	3	4	5	6	7	8	9	10	11
1	Grama Panchayat	142109	270.67	444.24	239.64	954.55	521.16	745.05	469.41	1735.62
2	Block Panchayat	19728	55.99	109.21	51.00	216.20	126.08	235.67	125.36	487.11
3	Municipality	10306	19.62	64.76	55.07	139.45	35.69	123.35	101.32	260.36
4	Corporation	4037	15.67	50.50	38.26	104.43	19.98	69.46	67.18	156.62
5	District Panchayat	4684	64.37	89.10	55.06	208.53	106.48	136.04	85.04	327.56
	Total	180864	426.32	757.81	439.03	1623.16	809.39	1309.57	848.31	2967.27

(Rs. Crore)

Appendix 22. 13
Annual Plan 2002-03
Category-wise Distribution of Plan Grant and Gross Plan

(Rs. Crore)

Sl. No	Local Government	No. of Projects	Grant-in-aid				Gross Plan Outlay					
			General	SCP	TSP	EFC	Total	General	SCP	TSP	EFC	Total
1	2	3	4	5	6	7	8	9	10	11	12	13
1	Grama Panchayat	142109	739.82	189.55	5.59	19.59	954.55	1410.95	280.15	11.69	32.83	1735.62
2	Block Panchayat	19728	152.58	62.11	1.43	0.08	216.20	368.55	114.77	3.70	0.09	487.11
3	Municipality	10306	116.26	21.39	0.42	1.38	139.45	229.26	28.46	0.64	2.00	260.36
4	Corporation	4037	85.49	18.52	0.11	0.31	104.43	136.13	20.05	0.12	0.32	156.62
5	District Panchayat	4684	153.7	52.54	2.29	0	208.53	261.95	62.83	2.78	0	327.56
Total		180864	1247.85	344.11	9.84	21.36	1623.16	2406.84	506.26	18.93	35.24	2967.27

Appendix 22.14
Annual Plan 2002-03
Source-wise Distribution of Gross Plan

Sl.No.	Local Government		3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	Grant-in-aid	Own Fund															
1	2																
1	Grama Panchayat	954.55	141.68	59.50	146.62	9.88	42.4	24.15	58.98	48.85	162.29	21.2	31.77	4.42	29.33	1735.62	
2	Block Panchayat	216.20	3.60	14.42	144	10.5	42.87	3.36	4.88	9.13	10.23	3.47	3.25	12.19	9.01	487.11	
3	Municipality	139.45	41.57	12.58	22.57	3.33	17.00	2.04	3.62	6.98	8.54	0.31	0.17	0.55	1.65	260.36	
4	Corporation	104.43	33.42	1.00	1.39	0.07	6.34	0.75	0.83	4.52	3.21	0.21	0.01	0.04	0.40	156.62	
5	District Panchayat	208.53	3.07	24.72	39.86	1.29	2.48	0.65	1.76	9.28	11.54	7.77	5.33	9.80	1.48	327.56	
	Total	1623.16	223.34	112.22	354.44	25.07	111.09	30.95	70.07	78.76	195.81	32.96	40.53	27.00	41.87	2967.27	

Appendix 22.15
Annual Plan 2002-03
Sub Sector-wise Distribution of Plan Grant and Gross Plan

(RS. lakh)

Sl. No	ites	Number of Projects	Plan Grant)	%	Gross Plan	%
1	2	3	4	5	6	7
1.1	Paddy	4003	5030.95	3.10	11057.81	3.73
1.2	Other Crops	4136	4627.32	2.85	9821.45	3.31
1.3	Other Agricultural Programme	4357	4244.18	2.61	7081.47	2.39
1.4	Animal Husbandry	6383	5107.33	3.15	13418.64	4.52
1.5	Fisheries	1802	1554.64	0.96	4181.15	1.41
1.6	Afforestation	105	44.15	0.03	95.3	0.03
2.1	Soil and Water Conservation	4994	4404.07	2.71	7402.47	2.49
2.2	Minor Irrigation	8317	8193.59	5.05	11237.7	3.79
2.3	Flood Control	461	460.4	0.28	695.47	0.23
3.1	Small Scale Industries	4518	6935.74	4.27	11826.77	3.99
3.2	Handicrafts	120	84.79	0.05	119.26	0.04
3.3	Handloom	49	53.57	0.03	96.78	0.03
3.4	Coir	109	142.04	0.09	276.3	0.09
3.5	Khadi	107	181.46	0.11	245.34	0.08
3.6	Sericulture	79	84.94	0.05	314.5	0.11
3.7	Electronic and Electrical Industries	74	131.98	0.08	177.73	0.06
3.8	Other Industries	566	714.91	0.44	1939.66	0.65
3.9	Co-op. Societies in Industrial Sector	132	206.29	0.13	327.03	0.11
3.1	Production of Energy	20	47.06	0.03	94.96	0.03
13.1	Computerisation	460	376.52	0.23	529.8	0.18
	Productive Sector-Total	40792	42625.93	26.26	80939.59	27.29
4.1	Environment Protection	105	91.09	0.06	352.47	0.12
5.1	Pre-Primary Education	876	638.79	0.39	964.36	0.32
5.2	Primary Education	2910	1216.81	0.75	2709.74	0.91
5.3	High School Education	737	490.66	0.3	854.98	0.29
5.4	Education Infrastructure Development	3220	3358.18	2.07	5218.56	1.76
5.5	Higher Education	388	368.3	0.23	669.24	0.23
5.6	Technical Education	657	460.85	0.28	767.42	0.26
5.7	Youth Welfare	844	452.22	0.28	1022.86	0.34
5.8	Art and Culture	2877	1466.14	0.9	2097.97	0.71
6.1	Health	7103	4300.38	2.65	6636.95	2.24

(RS. lakh)

Sl. No	Items	Number of Projects	Plan Grant)	%	Gross Plan	%
1	2	3	4	5	6	7
6.2	Drinking Water	13581	9992.26	6.16	19475.56	6.56
6.3	Sanitation	4371	3803.08	2.34	9757.5	3.29
7.1	Housing Development	11161	25626.27	15.79	43316.08	14.6
7.2	Slum-Development	2768	5678.95	3.5	8686.75	2.93
7.3	Housing co-operative Societies	19	35.84	0.02	42.08	0.01
7.4	Electrification	1562	1085.18	0.67	1410.38	0.48
8.1	Women and children welfare	8063	5641.59	3.48	9173.97	3.09
8.2	Food and Nutrition Programmes	1775	6182.59	3.81	9120.57	3.07
8.3	Employment and Labour Welfare	2500	1908.13	1.18	4411.68	1.49
9.1	Tourism	120	201.79	0.12	490.15	0.17
9.2	Public Distribution	190	276.9	0.17	544.69	0.18
9.3	Burial Ground	374	322.83	0.2	465.91	0.16
9.4	Surveys and Studies	741	223.68	0.14	292.69	0.1
9.5	Plan Monitoring and Evaluation	1639	936.33	0.58	1096.55	0.37
14.1	Administrative Modifications	95	31.9	0.02	132.43	0.04
14.2	Women Welfare Programmes	141	91.56	0.06	138.45	0.05
14.3	Old Age Welfare Programmes	327	424.64	0.26	451.46	0.15
14.4	Special Children Welfare Programmes	122	85.63	0.05	93.3	0.03
14.5	Handicapped and Mentally Retarded Welfare	401	331.81	0.2	391.36	0.13
14.6	Complete Sanitation Programme	43	56.18	0.03	170.19	0.06
	Service Sector-Total	69,710	75780.56	46.69	130956.3	44.13
10.1	Electrification	4883	3311.41	2.04	4413.11	1.49
10.2	Non-Conventional Energy	113	81.63	0.05	141.64	0.05
10.3	Energy Conservation	110	53.32	0.03	112.16	0.04
10.4	Power Production	9	5.23	0	8.74	0
11.1	Transport and Infrastructure Facilities	59591	34119.1	21.02	65057.83	21.93
11.2	Waiting Sheds/Bus Stands	589	603.21	0.37	1897.96	0.64
11.3	Inland Transport	84	44.41	0.03	96.28	0.03
11.4	Other Modes of Transport	57	44.1	0.03	79.66	0.03
12.1	Public Buildings	4926	5640.6	3.48	13023.54	4.39
	Infrastructure Sector-Total	70,362	43903.01	27.05	84830.92	28.59
	Grand Total	180,864	162309.5	100	296726.81	100

Appendix 22. 16
Annual Plan (2002-03)
Receipts of Plan Grant to Local Governments

Sl.No	Local Governments	Carry Over Amount					Plan Grant Received					Total Plan Grant				
		General	EFC	SCP	TSP	Total	General	EFC	SCP	TSP	Total	General	EFC	SCP	TSP	Total
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	Grama Panchayat	178.17	0.00	65.01	4.15	247.33	400.03	47.22	104.66	0.00	551.91	578.19	47.22	169.66	4.15	799.22
2	Block Panchayat	26.67	0.00	21.57	1.80	50.04	92.33	0.28	30.35	0.00	122.96	119.00	0.28	51.92	1.80	173.00
3	District Panchayat	42.79	0.00	16.72	2.90	62.41	68.18	0.00	23.78	0.00	91.96	110.98	0.00	40.50	2.90	154.38
4	Municipality	14.71	0.00	7.22	0.24	22.17	60.90	5.52	13.84	0.00	80.26	75.60	5.52	21.06	0.24	102.42
5	Corporation	13.24	0.00	4.76	0.02	18.02	30.55	2.93	5.44	0.00	38.92	43.78	2.93	10.20	0.02	56.93
	Total	275.58	0.00	115.28	9.11	399.97	651.99	55.95	178.07	0.00	886.01	927.55	55.95	293.34	9.11	1285.95

Note: The figures are provisional as data from 59 local bodies are not available

Appendix 22.17
Annual Plan (2002-03)
Plan Expenditure of Local Governments

Sl.No	Local Governments	Total Plan Grant						Plan Grant Spent						Balance Amount					
		General	EFC	SCP	TSP	Total	General	EFC	SCP	TSP	Total	General	EFC	SCP	TSP	Total			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17			
1	Grama Panchayat	578.19	47.22	169.66	4.15	799.22	277.9	15.39	61.62	1.21	356.12	300.30	31.88	108.04	2.94	443.16			
2	Block Panchayat	119.00	0.28	51.92	1.80	173.00	64.07	0.06	18.67	0.60	83.40	54.93	0.22	33.24	1.19	89.58			
3	District Panchayat	110.98	0.00	40.50	2.90	154.38	44.29	0.00	13.29	0.88	58.46	66.69	0.00	27.21	2.02	95.92			
4	Municipality	75.60	5.52	21.06	0.24	102.42	41.13	1.99	4.94	0.06	48.12	34.47	3.52	16.12	0.17	54.28			
5	Corporation	43.78	2.93	10.20	0.02	56.93	18.77	0.81	2.30	0.00	21.88	25.01	2.12	7.90	0.02	35.05			
	Total	927.55	55.95	293.34	9.11	1286	446.16	18.25	100.8	2.75	567.98	481.4	37.74	192.5	6.34	717.99			

Note: The figures are provisional as data from 59 local bodies are not available

Appendix 22.18
ANNUAL PLAN OF LOCAL GOVERNMENTS (2002-03)
Physical Achievement (Provisional)

Sl.No	Item	Unit	Physical Achievement				Total	Anti Poverty Projects
			GE	EFC	SCP	TSP		
	1	2	3	4	5	6	7	8
1	Area brought under cultivation	Acre	39172.42	34.8	1494.46	137.75	40839.434	1651.04
2	Beneficiaries of vegetable cultivation	No	122286	3840	6472	323	132921	132921
3	Construction of bunds in Kole land	"	1157	2	2	--	1161	--
4	Construction of bunds in Padasekharams Below Sea Level	"	148	--	--	--	148	--
5	Distribution of tractors under agricultural development projects	"	32	3	1	--	36	36
6	Distribution of tillers under agricultural development projects	"	951	3	3	--	957	--
7	Removal of diseased coconut trees	"	113595	454	2785	82	116916	1518
8	Poultry - egg rearing units	"	5220	800	544	2	6566	544
9	Poultry - broiler units	"	386	--	28	--	414	353
10	Fresh water fish culture (Area)	Ha.	97.41	--	--	--	97.41	5.5
11	Construction of cattlesheds	No	9579	233	537	43	10392	985
12	Fodder production	Ton	416	--	48	--	464	113
13	Watershed development projects	No	1335	3	22	1	1361	101
14	Land brought under cultivation through watershed development projects	Ha.	6697.2	2	220.53	50	6969.73	109
15	Distribution of sewing machines	No	788	--	22	--	810	28
16	New industrial units	"	1767	2	66	1	1836	148
17	Rehabilitation of traditional industrial units	"	115	--	21	--	136	13
18	Enterpreneurial development training (persons trained)	No.	4689	345	884	239	6157	931
19	Skill development (persons trained)	"	31497	77	2892	368	34834	2952
20	Micro enterprises started	"	2937	69	276	49	3331	1114
21	Self employment units started	"	3868	196	784	23	4871	1361
22	Self employed persons	"	15865	7258	1248	240	24611	4816
23	Self employment units started by poor people	"	2566	132	488	22	3208	783

Sl.No	Item	Unit	Physical Achievement					Total	Anti Poverty Projects
			GE	EFC	SCP	TSP			
	1	2	3	4	5	6	7	8	
24	Self employment units for destitutes	"	433	--	6	1	440	304	
25	Employment training programme for destitutes	"	487	--	12	--	499	273	
26	Destitutes trained (persons)	"	2117	10	58	35	2220	1682	
27	Computer training (persons trained)	"	16050	216	2076	707	19049	430	
28	Distribution of land to landless (beneficiaries)	"	635	61	2424	104	3224	337	
29	Area of land distributed to landless	Ha.	1276.49	39	2482.11	161.03	3958.63	146.4	
30	Houses constructed	No.	24663	282	9016	1051	35012	6446	
31	Distribution of house plots	"	621	27	1480.04	20	2148.04	409	
32	Renovation of houses	"	8466	265	6718	594	16043	3628	
33	Shelter upgradation	"	2669	3	1234	60	3966	907	
34	Renovation of SC/ST houses	"	--	--	10551	203	10754	6134	
35	Integrated development SC habitates	"	--	--	324	--	324	53	
36	Construction of sanitation units	"	56468	9335	8946	1690	76439	9772	
37	Electric wiring of houses	"	10806	6215	6753	375	24149	973	
38	Drinking water projects	"	1430	7680	623	65	9798	118	
39	Beneficiaries of drinking water projects	"	128899	17226	25750	9951	181826	11350	
40	Drinking water projects implemented with beneficiary contribution	"	842	3866	104	4	4816	0	
41	New wells	"	7170	587	2044	93	9894	651	
42	New public water tap connections installed	"	4752	3814	1088	110	9764	72	
43	New water tap connections to households	"	451	7652	28	2	8133	--	
44	Renovation of ponds	"	853	100	45	1	999	10	
45	Pump sets	"	2766	28	174	33	3001	92	
46	Ordinary roads								
	(a) Number	No.	2411	24	427	11	2873	--	
	(b) Length	Km.	13486.34	47.87	7510.53	515.39	21560.13	--	
47	Other District Roads								
	(a) Number	No.	24	--	3	--	27	--	
	(b) Length	Km.	777.58	3	29	1.38	810.96	--	
48	Roads above 8M width								
	(a) Number	No.	176	1	33	1	211	--	
	(b) Length	Km.	4715.09	3.5	39.27	--	4757.86	--	

Sl.No	Item	Unit	Physical Achievement				Total	Anti Poverty Projects
			GE	EFC	SCP	TSP		
	1	2	3	4	5	6	7	8
49	Roads between 6 and 8 M width							
	(a) Number	No.	2162	36	517	15	2730	--
	(b) Length	Km.	4639.88	44.17	1501.39	8.97	6194.41	--
50	Roads below 6 M width							
	(a) Number	No.	3429	148	432	24	4033	--
	(b) Length	Km.	4960.39	966.79	1390.05	894.2	8211.43	--
51	Other Roads							
	(a) Number	No.	2073	7	800	79	2959	--
	(b) Length	Km.	1427.89	110	427.11	10.16	1975.16	--
52	New culverts	No.	753	29	52	6	840	--
53	New bridges	"	184	6	9	2	201	--
54	New school buildings	Sq.M.	8228.52	142	66		8436.52	--
55	Anganwadi buildings	No.	1082	10	27	8	1127	--
56	Baby friendly toilets	"	273	7	--	1	281	--
57	Hospital buildings (extension)	Sq.M.	7180.8	4	35	--	7219.8	--
58	Office buildings (extension)	"	6799.43	7	1	--	6807.43	--
59	Marketing complexes	"	1744.71	1	--	--	1745.71	--
60	Markets renovated	"	145	7	2	--	154	--
61	Renovation of school buildings	"	2591.71	319	--	--	2910.71	--
62	Renovation of hospital buildings	"	1151	119	--	--	1270	--
63	Renovation of drinking water projects	"	332	16	51	3	402	12
64	Renovation of other institutions	"	267	26	4	10	307	--
65	Land acquired (Area)	Acre	463.34	0	33.55	1.69	498.58	--
66	IT@School Programme implemented (No. of schools)	No.	64	10	--	--	74	--
67	Computer installed under IT@School Programme	"	311	7	--	--	318	--
68	Town planning projects	"	97	4	--	--	101	--
69	Solid waste disposal projects	"	141	6	--	--	147	--
70	Solid waste disposed (quantity)	Ton	620.25	601	--	--	1221.25	--
71	Rehabilitation of puramboke dwellers (projects)	No.	79	--	17	5	101	2
72	Beneficiaries of rehabilitation of puramboke dwellers	"	178	4	77	5	264	14
73	Slum development projects	"	388	12	80	2	482	2
74	Distribution of equipment to physically and mentally challenged persons	"	1058	2	25	--	1085	66

Note: Physical achievements under Anti-Poverty Projects are inclusive achievement under all categories