

# **DRAFT FIVE YEAR PLAN**

**1978-83**

**VOLUME-I**

**STATE PLANNING BOARD  
TRIVANDRUM  
NOVEMBER—1978**

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Sub. National Systems Unit,  
National Institute of Educational  
Planning and Administration  
17-B, SriAurobindo Marg, New Delhi-110016  
DOC. No.....303.....  
Date.....14/7/82.....



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## CHAPTER I

### PLANNING IN RETROSPECT

The prospects of Kerala's future economic growth are closely linked with the structure and content of the planning process of past years and the special features of the State's economy as well as its resource endowments. Though the economy of the State has registered marked progress in different directions as a result of the implementation of the past five year plans, no significant dent could yet be made into our twin problems of poverty and growing unemployment. Also in regard to matters like food deficit and regional disparities, removal of which were assigned a high priority in the past plans, it has not been possible to create any favourable and worthwhile impact so far. This situation becomes a little disturbing when one takes into account the fact that in financial terms, there has been a progressive improvement in achievement from plan to plan as compared with the targets. The plan expenditure as a ratio of the targets increased from 86 per cent in the First Plan to 109 in the Fifth Plan (See Tables 1.1 & 1.2). Within this overall position, for the agricultural sector the actual expenditure has been consistently falling short of the targeted outlays. On the contrary, under 'Transport and Communications' and 'Social Services' sectors plan expenditures always exceeded original plan targets. Such excess expenditures could be due to a combination of factors such as under-budgeting of expenditures at the time of plan formulation due to faulty estimates of costs, escalation in project costs and inclusion of items that were not originally contemplated in the plan, the last mentioned being a specially important factor.

1.2 An assessment of the past performance of the economy has to be made in relation to the objectives set forth in the Plans. Broadly, the Plan objectives were:

- (i) to reduce the gap between the per capita income of Kerala and the per capita national income so as to catch up with the all India average within a short period,
- (ii) to attain self reliance in food by increasing rice production through intensive cultivation and institutional changes,
- (iii) to terminate the tenancy system and bestow full ownership right on the real tillers of the soil,
- (iv) to create employment opportunities with the perspective of solving the massive unemployment problem within a short period,
- (v) to reduce regional disparity in economic development within the State, and
- (vi) to ensure that the vulnerable sections of society particularly scheduled castes and tribes get an increasing share in the fruits of planned development consistent with social justice.

1.3 As far as the first objective of reducing the gap between the per capita state income and national income

is concerned, the past trends do not indicate any definite improvement. The long-term annual average growth rate of the economy as measured by State income in real terms was however only 3 per cent during the period 1950-51 through 1975-76 in Kerala, as against 3.6 per cent in the national economy. This indicates that the overall growth rate of the State's economy was lagging behind that of the national economy. Structurally also, the growth pattern of Kerala has been at variance with that of the country as a whole. This has been so because of differences in the sectoral growth rates between the State's economy and the national economy. In Kerala the growth rate of the commodity producing sectors was lower and that of the services sector higher as compared with the country as a whole.

1.4 Kerala's per capita income which was Rs.249 in 1950-51 rose to Rs.297 in 1975-76 at 1960-61 prices, the increase being 19.3 per cent over a period of 25 years. During the same period, the all-India per capita real income rose more sharply from Rs.253 to Rs.366, recording an increase of 44.7 per cent. These facts suggest that the absolute level and the relative pace of development as measured in the per capita real income was lower in Kerala compared to India as a whole. In consequence, the difference in per capita real income between Kerala and all India which was only Rs. 4 in 1950-51 increased to Rs.69 in 1975-76.

1.5 The second main objective of the plan was attainment of self-reliance in food requirements of the State. At the rate of a per-capita daily consumption of 12 oz. of cereals the annual requirement at the end of Fifth Plan would be of the order of 30 lakh tonnes. The actual production of rice in the State during 1977-78 was only about 13.5 lakh tonnes as against the Fifth Plan target of 16.6 lakh tonnes. Many factors contributed to the shortfall in rice production in the State. Firstly, there has been undue delay in the completion of irrigation projects with the result that the benefits of these projects did not reach the farmer in time. Secondly, the consumption of fertilizers did not increase at a rate necessary for ensuring a higher level of productivity. Thirdly, there has been a considerable shortfall in the coverage of high yielding varieties of seeds. Only by 1968-69 the HYV of paddy got established in the State in a substantial way. Still the present coverage of HYV does not exceed one third of the total area under paddy.

1.6 Speedy implementation of land reforms and other institutional changes which will provide incentive to the tillers of the soil was another objective of the plan. Much headway could not be made in this field till the middle of the sixties as the process of implementation of the measures adopted on different occasions got delayed due to various reasons. However, as a result of the intensive effort made in recent years to expedite implementation of the Land Reforms Act, the situation has improved remarkably. Till the end of 1977 ownership rights were conferred on 22.41 lakhs of tenants.

1.7 Another major plan objective was the stabilisation and expansion of employment opportunities. As at the national level, at the State level also, no dent could be made into the problem of unemployment which has now assumed serious proportions. The two causative factors in the aggravation of unemployment, viz., increase in labour force and the slow growth in productive activities, are more acute in Kerala than in many other States. Hence the unemployment situation tended to worsen over the plan periods. According to Employment Exchange figures, unemployment in the State shows an increasing trend over the years. The total number of work seekers registered with the Employment Exchanges which numbered about 2 lakhs on the eve of the Fourth Plan shot up to 8.5 lakhs by the end of 1977, registering a four-fold increase. Out of the 8.5 lakhs of work seekers 4.5 lakhs are having educational qualifications of S.S.L.C. and above. The estimates of unemployment made by Planning Commission indicate that Kerala which accounted for 3.36 per cent of the all India labour force had 10.11 per cent of the total unemployed in India. Unemployment rate in the State measured as a ratio of the unemployed to the total labour force was the highest in India. In 1972-73 it was 25.23 per cent for Kerala as against 8.34 per cent for India as a whole.

1.8 Reduction of regional disparities constituted yet another important objective of the plan. For historical reasons, the constituent regions of Kerala revealed marked variations in the degree of economic development even at the time of the formation of the State. For reducing such disparities in development, measures designed to promote investment and growth in the backward regions were taken from the inception of the plan era. Despite these efforts the disparities still remain to a certain extent. The decentralisation of planning envisaged in the current five year plan will go a long way in solving the problem of regional disparities within the State.

1.9 The plans had also kept before them the objective of ensuring that the poorer sections of the community got a fair deal in sharing the fruits of planned development consistent with social justice. This problem assumed an added dimension during the previous plan periods on account of the severe inflationary pressures manifest in the economy. The sharp increase in the prices of essential consumables had an adverse effect on the vulnerable sections of society. To mitigate this, the public distribution system was strengthened and this proved effective in ensuring the supply of food-grains, though not always in sufficient quantity, at reasonable prices, which in turn had a sobering effect on the general price line.

1.10 Within the overall constraints of investible resources, fairly sizable provision has been made in the plans for the uplift of the backward classes and other vulnerable sections of society. The basic objective has been to make it possible for these sections to undertake productive operations both in agriculture and industry through an integrated programme of land assignment, financial assistance and technical training programmes. Separate schemes for housing were also included in the plans with a view to solve the severe housing problem of these sections of society.

## Sectoral Trends

### *Agriculture*

1.11 After twenty seven years of planned development in the State, agriculture still holds the key to the overall economic development of the State. Plan expenditure in this sector during this period was of the order of Rs.233 crores, which represents about 19 per cent of the aggregate plan expenditure. In terms of real income generated, the overall growth of this sector during the twenty year period beginning 1955-56 registered an annual average increase of 2.35 per cent against which the national average was higher at 3 per cent. Although at current prices the share of the sector in the State income does not seem to have undergone any change between 1955-56 and 1975-76, in real terms the share has declined from 55 to 47 per cent, which indicates that agriculture sector was not keeping pace with the rest of the economy. Fertilizer consumption increased from 1.6 kg per hectare of cropped area in 1956-57 to 20.6 kg. in 1975-76. There has been a phenomenal increase in the quantum of primary co-operative credit advanced for agricultural activities. It increased by 19 times between 1958-59 and 1975-76.

1.12 Within the agriculture sector crop production continues to dominate over the other sub sectors viz., animal husbandry, forestry and fisheries. From the point of view of income generation, the intra-sectoral distribution underwent a marginal change over these years. While the share of the crop production subsector declined from 93.7 per cent in the early Sixties to 92 per cent in 1973-74, that of forestry and fishery went up from 1.99 and 1.65 to 2.9 and 2.5 per cent respectively during the period, indicating relatively better performance in these sub-sectors.

1.13 Between the years 1955-56 and 1975-76, gross irrigated area increased by 87 per cent and irrigated area under paddy rose by 124 per cent. The percentage of gross cropped area which was irrigated rose from 16 per cent to 21.5 per cent during the same period. In the case of paddy 61 per cent of the gross area was irrigated in 1975-76, compared with only 32 per cent in 1955-56. As a result of the additional irrigation potential created and the introduction of inter-cropping, the cropping intensity rose from 1.2 to 1.4 between 1952-53 and 1975-76.

1.14 So far as the sub-sector of animal husbandry is concerned the plan objective was to develop it as an area offering sufficient scope for employment and for augmenting the income of the rural masses. The schemes included in the plans till 1977-78 claimed a total expenditure of Rs. 14.54 crores. The plan programmes aimed at raising the per capita availability of live stock products by upgrading the indigenous stock, in which the success achieved so far has been creditable. As a result of the efforts put in during the plan periods the basic infrastructure for further development of the Sector has been built up though there has been some shortfall in the achievement of the major production target set. Production of eggs increased from 168 million in 1956-57 to 1040 million in 1976-77.

1.15 The fisheries sector assumes particular importance in Kerala not only because of its employment and export-earning potential, but also because of

its crucial linkage with the nutrition programme in the State. The sizeable investment which had gone into this sector in the successive five year plans had increased the fish production from 2 lakh tonnes in 1950 to 4.2 lakh tonnes in 1975. The export earnings of this sector rose from Rs. 0.8 crores in 1954-55 to Rs. 90.1 crores in 1976-77. The rate of growth of in real terms registered by this sector between 1960-61 and 1975-76 was 4.4 per cent. The past approach to development of this sector, being export-oriented, the investment in the successive plans had gone largely to the development of offshore and deep sea fishing sectors, to the detriment of the traditional fishing sector which employs about 90 per cent of the total sea-going fishermen in the State. The larger number of fishermen co-operatives organised in the State have not yet proved effective in freeing the fishermen from the exploitation of middle men. These factors point to the imperative need for a more balanced approach to the development of fisheries in Kerala by devising suitable programmes for improving the economy of the traditional fishermen on the one hand and by intensifying deep-sea fishing operations on the other.

1.16 The forestry sector registered an impressive growth rate of 6.5 per cent per annum in terms of real net value added between the years 1960-61 and 1975-76. The sale proceeds of forest products increased very sharply from Rs. 1.1 crores in 1956-57 to Rs. 25.1 crores in 1976-77. However, the State has not succeeded in fully utilising the timber resources by developing a dynamic wood-based industries sector. Foreign exports of timber which was valued at Rs. 1.8 crores in 1960-61 increased to Rs. 5.2 crores in 1974-75. The Government have set up the Forest Research Institute at Peechi to lend research support to forestry development in the State. The Forest Development Corporation was set up as an autonomous body, with the objective of introducing modern methods of management in the development and exploitation of forest resources. However, an integrated approach to the development of this sector combining development, exploitation and utilisation of forest produce is yet to be evolved.

#### *Power*

1.17 As an important item of infrastructure for development, power generation was given high priority in the allocation of plan resources. During the period ending 1977-78 a total amount of Rs. 350 crores was invested in power development. The installed power generation capacity rose from 28.5 M. W. in 1950-51 to 1011.5 M.W. in 1976-77. Power generation sharply increased from 363.54 million Kwh in 1956-57 to 4470.6 million Kwh. in 1977-79. However, the rate of capacity utilization is still low at 67 per cent. In the past adequate resources could not be diverted to development of transmission and distribution systems in the State. This has resulted in inadequate line capacity, frequent interruptions, very low voltage, and a considerable back log of pending connections. The State continues to depend entirely on hydro system for power generation.

1.18 The estimate of future demand for power based on past trends indicates that there will be shortage by the end of next five years. This shortage in the context of the added emphasis on the increased power

use in the development of agriculture and industry envisaged in the plan is bound to make it all the more acute.

#### *Industry and Mining*

1.19 The net value added by the industry and mining sector in the State registered a growth rate of 4.7 per cent per annum during the period 1960-61 through 1975-76. The manufacturing sector alone recorded an annual growth rate of 4.8 per cent during the same period. The number of registered working factories in the State increased from 2474 in 1961 to 6921 in 1976 and the volume of employment from 1.7 lakhs to 2.8 lakhs. The share of the manufacturing sector in the net domestic product increased from 12.4 per cent to 15.5 per cent. However the unorganised segment of the manufacturing sector composed mainly of the village and household industries which has high employment absorption capacity remained stagnant as it recorded only a negligible growth rate of 0.6 per cent per annum. Consequently its share in manufacturing sharply decreased from 50.3 per cent to 37.4 per cent.

1.20 The traditional industries such as cashew, coir, handloom, and handicrafts which provide the major share of the industrial employment in the State have been facing rough weather owing to raw material shortages, contraction of markets and loss of competitiveness. All past efforts at resuscitation of these industries have not had the desired impact. In spite of the promotional efforts of the industrial financing and development agencies like the KSIDC, KFC and the Kerala Small Industries Development and Employment Corporation, the pace of industrialisation in Kerala has not yet picked up. The mini-industrial estate programme launched in 1975, with the declared objective of starting 1000 mini-industrial estates each with 10 industrial units, could establish only 106 estates comprising only about 300 and odd units. In spite of the growth of public and private sector industrial units, the industrial progress in the State leaves much to be desired.

#### *Transport and Communications*

1.21 The transport and communications sector registered an annual rate of growth of 6.1 per cent, due to the significant progress achieved by the State in the provision of transport and communication facilities by the combined efforts of the State, Central and Private sectors. The State's transport system consists of road, rail, inland water, sea and air transport. The development of the rail and air transport is exclusively in the Central Sector. Development of major ports and shipping is the responsibility of the Centre while minor ports come under the State sector. Further, with the formation of the Kerala Shipping Corporation, the State has made a modest entry into the shipping field also. Even though the total length of roads in the State has reached a high level of 85,165 km. in 1977-78, the length of surfaced roads is only 21,822 km. The number of registered vehicles on road increased from 13457 in 1956-57 to 129193 in 1976-77. The number of goods vehicles increased from 3697 in 1957-58 to 17165 in 1976-77 and stage carriages from 2298 to 8651. The vehicles operated by the Kerala State Road Transport Corporation during this period increased from 901 to 2408. The State has a total

length of 1905 km. of navigable inland waterways. However, development of the waterways for inland transport during the plan periods has not received adequate attention. Inland water transport, being the cheapest mode of transport, calls for greater emphasis in the coming plans to handle the growing goods and passenger traffic requirements. The total route length of the railway system in the State at present is about 890 km. Conversion of the Ernakulam-Trivandrum metre-gauge into broad gauge was the most significant achievement in recent years. However, a co-ordinated approach towards the development of an integrated transport net work in the State has been lacking in the past.

### *Social Services*

1.22 The services sector registered a substantial growth during the past twenty seven years of planned economic development. Between 1960-61 and 1975-76 this sector had registered an annual rate of growth of 4.2 per cent per annum which was higher than the growth rate achieved in the combined commodity producing sectors.

1.23 Considerable stress was laid in the previous plans in developing the social infrastructure by stepping up the outlays in respect of education, health services, nutrition, drinking water etc. Altogether an amount of Rs. 277 crores was spent till the end of 1977-78 accounting for 21 per cent of the aggregate plan expenditure.

1.24 Kerala is far ahead of other States in respect of literacy and enrolment at primary and secondary school stages and at university level. The literacy rate went up from 41 per cent in 1951 to 60 percent in 1971. Between 1960-61 and 1977-78 the number of general educational institutions increased from 9523 to 11418 and that of Arts and Science Colleges from 53 to 167. During the same interval, enrolment at the primary level increased from 29.4 lakhs to 44.1 lakhs and that at the secondary stage from 3.3 lakhs to 10.9 lakhs. The number of students in Arts and Science Colleges increased from 0.4 lakh in 1960-61 to 1.8 lakhs in 1976-77. As a result of the progressive rate of development of educational facilities, per capita government expenditure on education steadily increased from Rs. 10.72 in 1961-62 to Rs. 62.30 in 1977-78.

1.25 Kerala ranks first among the states in India in respect of health facilities. As a result of the expansion of health facilities death rate of the State was reduced drastically from 16.1 per 1000 population during 1951-60 to 8.4 in 1975. Expectation of life went up from 48 years during 1951-60 to 61 years in 1974. The intensive family planning drive brought down the birth rate from 39 per 1000 population during 1951-60 to 28 in 1975.

1.26 There has been considerable increase in the number of medical institutions under all systems of medicine. The number of Government medical institutions increased from 510 in 1957-58 to 1467 in 1976-77 and the bed strength from 12242 to 29244. Consequently, the bed strength per lakh of population increased from 78 in 1957-58 to 122 in 1976-77. For modern medicine alone the bed-population ratio rose

from 77 in 1957-58 to 113 in 1976-77. However, the above bed-population ratio does not represent the real level as it excludes private hospital bed strength which increased substantially during the plan era. The doctor population ratio based on the number of registered medical practitioners of all systems gives a realistic indicator of the level of health service facilities in the State. The doctor population ratio for modern medicine alone improved from 1:13680 in 1957-58 to 1:2855 in 1976-77.

1.27 The State could make good progress in the provision of protected drinking water to the urban areas. In 1950-51, the State had only one urban water supply scheme. By 1976-77, 25 towns were having protected water supply through urban water supply schemes. The rural water supply schemes were taken up only with the launching of the five year plans and 15 per cent of the rural population of the State has been provided with protected water through the operation of 609 rural water supply schemes.

1.28 Shortage of housing is a serious problem facing the State. In 1971 the shortage was estimated at 1.25 lakh houses. Nearly 1.5 lakh houses are estimated to be required additionally every year. Besides, it is estimated that 20 to 25 per cent of the existing houses are not fit for human dwelling. Taking note of this problem a sum of Rs. 20.88 crores was spent on housing in the successive plans upto 1976-77. Besides the housing schemes for Government servants, the major schemes taken up during the period are the low and middle income group housing schemes, village housing project, one-lakh housing scheme and the housing schemes sponsored by the Kerala State Housing Board. Under the low and middle income group housing schemes and the village housing project, construction of 14,342 houses was completed at the end of 1976-77. Under the One Lakh Housing Scheme 57,000 houses were constructed. In addition to taking up public housing schemes and rental housing schemes at different centres of the State, the Kerala State Housing Board extends financial assistance for the construction of 10,000 houses every year to the economically weaker sections of the society. Another scheme sponsored by the Board is the development of satellite towns near the rapidly growing urban centres by constructing low-cost houses. The Board has also started a factory at Beypore for the production of roofing sheets from coir wastes at a cheaper cost for bringing down the cost of construction. In view of the serious shortages in housing and the soaring cost of construction, Government and private agencies will have to make a more concerted effort in the coming decade to solve the problem.

1.29 The plan outlays in the State for all the sectors together are found to increase progressively over the plan periods. Table 1.3 provides the figures relating to the yearly plan expenditure at current and constant prices. The plan expenditure in real terms increased at an average annual rate of 4 per cent during the period 1960-61 to 1975-76. At the same time the State income in real terms, however, increased only at the rate of 3.3 per cent during the same period.

1.30 The brief review of planned economic progress in Kerala made in the foregoing paragraphs brings out the achievements of the State in certain



areas of development and also the gaps and shortfalls in certain others. In the plan for 1978-83, the State should strive to devote special attention to rural development and employment promotion. Due attention will have to be given to development of the productive sectors like agriculture and industry which alone will enable the State to make an appreciable dent into the problems of unemployment and poverty. The State has already built up a fairly sound base of infrastructure and social overheads. Full advantage of these facilities

will have to be taken in the coming years. It will be necessary to launch comprehensive measures to tackle the socio-economic problems like poverty, unemployment, housing shortage, malnutrition and scarcity of drinking water. These problems are engaging the serious attention of the Government of India and hence it is hoped that measures taken in this regard by the State will have full support and encouragement of the Centre.

TABLE 1.1  
Targeted Outlay, and Expenditure during the Plan Periods

(Rs. in lakhs)

Sector	First Plan			Second Plan			Third Plan			Annual Plans		
	Outlay target	Expenditure	Expenditure as % of outlay	Outlay target	Expenditure	Expenditure as % of outlay	Outlay target	Expenditure	Expenditure as % of outlay	Outlay target	Expenditure	Expenditure as % of outlay
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1. Agriculture & Allied Sectors	570.00	248.51	43.0	1578.82	1335.01	84.0	4294.86	3683.62	85.8	3600.12	3890.22	108.1
2. Irrigation & Power	1763.00	1570.62	89.0	3393.96	3273.67	96.0	5919.00	7934.58	129.0	5954.20	5441.91	91.4
3. Industry & Mining	112.00	50.43	45.0	683.98	603.98	88.0	1719.50	1437.02	84.0	1014.08	1334.99	131.6
4. Transport & Communications	258.00	335.89	126.0	557.28	718.31	129.0	1088.00	1195.78	110.0	915.52	1066.79	116.5
5. Social Services	300.00	383.83	128.0	2381.18	2019.42	85.0	3826.44	4170.29	109.0	2542.93	2660.74	104.6
6. Miscellaneous	..	..	..	105.49	71.39	68.0	152.20	109.72	72.0	56.05	42.72	76.2
TOTAL	3003.00	2589.28	86.0	8700.71	8021.78	92.0	17000.00	18231.01	107.0	14082.90	14437.37	102.5

TABLE 1.1 (Contd.)  
Targeted Outlay and Expenditure during the Plan Periods

(Rs. in lakhs)

Sector	Fourth Plan			Fifth Plan 1974-78			Grand Total		
	Outlay target	Expenditure	Expenditure as % of outlay	Outlay target	Expenditure	Expenditure as % of outlay	(1951-52 to 1977-78)		
(1)	(14)	(15)	(16)	(17)	(18)	(19)	Outlay target	Expenditure	Expenditure as % of outlay
(1)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)
1. Agriculture and Allied sectors	5773.00	5619.01	97.5	8587.77	8330.62	97.0	24404.57	23106.94	94.7
2. Irrigation and Power	10953.00	15469.05	141.2	16628.26	18804.59	113.1	44611.42	52194.37	117.0
3. Industry and Mining	2213.00	2602.11	117.6	4605.52	4757.44	103.3	10348.08	10765.97	104.0
4. Transport and Communications	1965.00	3075.28	186.5	3070.68	3273.62	107.3	7854.48	9685.67	123.3
5. Social Services	4885.75	7765.48	159.0	9090.71	10670.62	117.4	23027.01	27670.38	120.2
6. Miscellaneous	50.25	44.07	87.7	575.27	724.27	125.9	939.26	992.14	105.6
TOTAL	25840.00	34575.00	133.8	42558.21	46561.16	109.4	111184.82	124415.50	111.9

TABLE 1.2

## Percentage Distribution of Targeted Outlays and Actual Expenditure

Sector	First Plan		Second Plan		Third Plan		Annual Plans		Fourth Plan		Fifth Plan		Total All plans	
	Outlay target	Expen- diture	Outlay target	Expen- diture	Outlay target	Expen- diture	Outlay target	Expen- diture	Outlay target	Expen- diture	Outlay target	Expen- diture	Outlay target	Expen- diture
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
1. Agriculture and Allied Sectors	19.0	9.6	18.2	15.6	25.3	20.2	25.5	27.0	22.3	16.3	20.2	17.9	22.0	16.6
2. Irrigation & Power	58.7	60.8	39.0	40.8	34.8	41.9	42.3	37.7	42.4	44.7	39.1	40.4	40.1	41.9
3. Industry and Mining	3.7	2.0	7.9	7.5	10.1	7.9	7.2	9.2	8.5	7.5	10.8	10.2	9.3	8.7
4. Transport and Commu- nications	8.6	12.7	6.4	9.0	6.4	6.5	6.5	7.4	7.6	8.9	7.2	7.1	7.1	7.8
5. Social Services	10.0	14.9	27.3	25.2	22.5	22.9	18.1	18.4	19.0	22.5	21.4	22.9	20.7	22.2
6. Miscellaneous	..	1.2	1.2	0.9	0.9	0.6	0.4	0.3	0.2	0.1	1.3	1.5	0.8	0.8
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

TABLE 1.3

Annual Phasing of Plan Expenditure  
1960-61 to 1977-78

Year	At current prices (Rs. lakhs)	At 1970-71 prices (Rs. lakhs)	Index 1965-66=100	
			At current prices	At 1970-71 prices
(1)	(2)	(3)	(4)	(5)
1960-61	2224.95	4038.02	43.54	57.44
1961-62	2625.50	4756.34	51.38	67.66
1962-63	2967.41	5178.72	58.07	73.67
1963-64	3524.54	5787.42	68.96	82.33
1964-65	4003.20	5930.66	78.34	84.37
1965-66	5110.36	7029.38	100.00	100.00
1966-67	4493.46	5426.88	87.93	70.20
1967-68	4857.06	5256.55	95.05	74.78
1968-69	5086.69	5571.40	99.54	79.26
1969-70	4479.56	4725.27	87.66	67.22
1970-71	5693.04	5693.04	111.40	80.99
1971-72	7344.79	6955.29	143.73	98.95
1972-73	8343.50	7180.29	163.27	102.15
1973-74	8714.11	6237.73	170.52	88.74
1974-75	8148.25	4658.80	159.45	66.28
1975-76	10351.75	5983.67	202.57	85.12
1976-77	12660.17	7168.83	247.74	101.98
1977-78	15400.99	8315.86	301.37	118.30

## PLAN OBJECTIVES AND STRATEGY

The goal of Indian planning has been achievement of rapid growth of the economy consistent with the other primary objectives of self reliance and equity. Considerable modernisation and diversification of the economy has indeed taken place during the last few years as a result of the substantial plan investments made in the various sectors. However, the fact remains that growth in national income has been rather slow and the objective of equity in development with its emphasis on the removal of poverty has remained as distant as ever before.

2.2 The disconcerting feature of the structural transformation in the national economy in favour of modern sectors, as manifested in the achievements through the application of science and technology in areas like health, industry, transport and communication and energy, is that the occupational structure instead of changing has ossified. Since occupational structure has not moved in consonance with the structural change, significant reduction in the level of poverty through generation of employment could not be effected. The growing gap between objectives and achievements and between objectives and the development strategy has been a matter for concern. As the major constraints that stood in the path of development in the past are no longer present and as the constraints and potentialities of development have vastly changed over time, it is time to take stock of achievements and shortcomings before charting out the course of development over the next ten years. It is against this background and the prevailing socio-economic realities that a reformulation of basic development objectives and a redesigning of the development strategy and policies have been proposed by the Planning Commission on the following lines:

- (i) removal of unemployment and significant under employment;
- (ii) an appropriate rise in the standard of living of the poorer sections of the population; and
- (iii) provision, by the State, of some of the basic needs of the people in the lowest income groups like clean drinking water, rural roads, rural housing for the landless and minimum services for the urban slums.

2.3 While emphasising the above aspects, the Planning Commission has also underlined the importance of the following factors:

- (i) achieving a higher rate of growth of the economy than in the past;
- (ii) moving towards a significant reduction in the present disparities of income and wealth; and
- (iii) ensuring the country's continued progress towards self-reliance.

2.4 While conforming broadly to the national development objectives of planning and the redesigned

development strategy in favour of employment generation for different sectors, the State level plans have to be drawn up keeping in view, the special features of the State economies in respect of resource endowments, constraints and potentialities as well as the pressing needs and aspirations of the people. To that extent, the sectoral priorities and growth rates of each State will be different from their national counterparts. Before we set the basic objectives and development strategy and policies of Kerala's Five Year Plan for 1978-83 it is necessary to state the distinctive features of the State's economy as they are at present.

2.5 While the national per capita income (net domestic product at current factor cost) rose from Rs. 306 in 1960-61 to Rs. 1008 in 1975-76, the per capita income of Kerala increased from Rs. 259 to Rs. 909 during the same period. To the extent the State's economy is still behind the national economy in the level of development, the overall rate of growth of the State's economy has to be higher than that at the national level in the 1978-83 Plan if the disparity in per capita income is to be reduced.

2.6 Underlying the disparity in the level of development is the difference in the economic structures between the State and the country as a whole. While the share of primary activities in the net domestic product of the nation decreased from 52 per cent in 1960-61 to 43 per cent in 1975-76, in the case of Kerala it came down from 56 per cent to 47 per cent during the same period. The contribution of the Secondary sector which is considered as an index of economic progress has all along been lower in Kerala than that at the all India level. The figures for Kerala and all India in 1975-76 were 19 and 23 respectively. The development strategy of the State should therefore be to bring about the much needed structural change through rapid industrialisation.

2.7 Although the data base for assessing the difference between Kerala and all India in respect of occupational structure is rather weak, there are ample indications to lend support to the inference that the occupational structure of Kerala has hardened more as compared with the rest of the country. The estimates of unemployment equivalent in person-years for the States and the country as a whole made by the Planning Commission tend to strengthen the belief that the occupational structure has taken an adverse turn in Kerala compared to the rest of India. While the magnitude of unemployment for India as a whole was estimated to be of the order of 20.56 million person-years in 1978, the corresponding estimate for Kerala is 1.8 million person-years. The unemployment rate of 25.23 per cent estimated by the Planning Commission for Kerala in 1972-73 was the highest among the States, the all India average rate being 8.34 per cent. This alarming increase in the unemployment rate in Kerala is a serious

threat to socio-economic stability and poses a challenge to development planning.

2.8 The highest unemployment rate in Kerala is clearly manifested in the size of the population living below the poverty line drawn on the minimum recommended per capita per day calorie intake of 2400. On the basis of this yardstick, about 62 per cent of the population in Kerala as against 45 per cent in India were living below the poverty line at the beginning of the Seventies. The rural-urban composition of the population below the poverty line indicates that in Kerala it is 60.4 per cent in rural areas and 66.4 per cent in urban areas, as against 44.6 per cent and 51.3 per cent respectively in the country as a whole. The development strategy has to be redesigned as to generate productive employment and adequate purchasing power to those segments of the population which are below the poverty line such as landless agricultural labourers, rural artisans and small and marginal farmers.

2.9 The menacing unemployment rate found in Kerala calls for a firm approach in favour of an employment-intensive development strategy for the State's economy along the lines of the national strategy. Therefore, the main instrument of overall investment allocation across the sectors and regions within the State during the 1978-83 Plan should aim at employment-oriented development by:

- (i) adopting an employment-intensive approach to sectoral and regional development;
- (ii) directing and regulating technological change in favour of rapid employment generation through financial and physical policy instruments; and
- (iii) drawing up area specific development plans and beneficiary based programmes for fuller employment.

2.10 The regional development strategy through industrialisation as well as problem oriented special programmes implemented in the past have not produced the desired effect. Therefore, the Plan should aim at resource based and region-specific development strategy for agriculture and allied activities, subsidiary occupations and related services, and beneficiary specific programmes like revised minimum needs programme regionally allocated in proportion to the number of beneficiaries.

2.11 This would call for organizing the beneficiaries so as to make them conscious of the programmes designed for their benefit, thereby ensuring the spontaneous participation of the people in development plans. The essential commodities which enter into the consumption basket of the weaker sections have to be distributed through the net work of an efficient public distribution system. Also, the essential production inputs such as seeds, seedlings and improved livestock, inorganic fertilizers, pesticides, implements, credit, extension services and industrial rawmaterials have to be made available to the small and marginal farmers and rural artisans through a public delivery system. In addition, an extensive marketing system needs to be organized to ensure quality to consumers and remunerative prices to producers. The package is rather formidable and would call for a more articulated approach at the national, State and regional levels.

2.12 Broadly conforming to the basic objectives, strategy and policy framework as envisaged in the National Plan and keeping in view the special features of the State's economy and a realistic assessment of the resource constraints, development potentialities and felt needs and aspirations of the people of the State the following objectives may be laid down for the 1978-83 Plan for Kerala:

- (i) achieving an overall growth rate of 5.1 per cent per annum;
- (ii) effecting a marked structural change in the State's economy in favour of manufacturing sector through an appropriate investment policy;
- (iii) achieving a significant reduction in unemployment through employment-oriented sectoral and area planning;
- (iv) achieving a marked reduction in the existing regional imbalances in development within the State through appropriate regional development plans;
- (v) ensuring distributive justice to the weaker sections through:
  - (a) a revised Minimum Needs Programme with greater weightage for nutrition;
  - (b) supply of essential production inputs to small and marginal farmers and rural artisans through public sector delivery system; and
  - (c) supply of essential commodities which enter into the consumption basket of the weaker sections through the public distribution network; and
- (vi) ensuring the State's continued progress in the fields of science and technology, research and development, and qualitative improvements in education, health and welfare.

2.13 In determining the overall growth rate for the Plan period 1978-83 a more realistic assessment is made of the constraints and potentialities in the different sectors. During the period 1960-61 to 1975-76 the net domestic product of the State (at constant prices) registered an average growth rate of only 3.26 per cent per annum and in the latter half of this period, the growth rate lost its momentum when it registered only 2.82 per cent per annum on an average as can be seen from Table 2.1. The benefits of even these low growth rates have been largely nullified by the high demographic pressure.

2.14 Kerala's Plan for 1978-83 aims at reducing the gap between the per capita State income and the per capita national income. The national plan 1978-83 envisages a growth rate of 4.7 per cent per annum. Hence the State should plan for a higher growth rate during this period. While there is the need for State level planning to conform to national approach in its generality the detailed inter-sectoral relationship should be conceived in terms of the special problems, needs and potentialities of each State. Taking the special features of Kerala's economy into consideration an iterative exercise was carried out to arrive at an

overall growth rate above the average national growth rate, ensuring inter-sectoral balances based on past performance and future growth potential. Such an exercise indicates that the State can aim at a 5.1 per cent overall annual growth rate during the period 1978-83. The sectoral growth rates implied in this exercise are:

<i>Sector</i>	<i>Per cent</i>
(i) Agriculture and Allied Sectors	3.2
(ii) Mining and Manufacturing	7.0
(iii) Power	11.0
(iv) Transport and Communications	5.5
(v) Other Services	6.5
<b>All Sectors</b>	<b>5.1</b>

2.15 If more or less the same development strategy advocated in the national plan for each sector is adopted the sectoral incremental capital-output ratios worked out for the country can be assumed to hold good for the State also. The technical note to the current national plan document is yet to be published. However, an attempt has been made to derive the implied incremental capital-output ratios from the national plan document and these have been used for the present exercise. The result shows that to achieve the sectoral growth rates postulated above and the overall growth rate of 5.1 per cent per annum, the State Plan should aim at an investment outlay of about Rs. 4,000 crores during the period 1978-83. The sectoral distribution of the investment outlay worked out on the basis of sectoral incremental capital-output ratios is as follows:

<i>Sector</i>	<i>Rs. crores</i>
(i) Agriculture and Allied Sectors	1,000
(ii) Mining and Manufacturing	1,100
(iii) Power	400
(iv) Transport & Communications	800
(v) Other Services	700
<b>All Sectors</b>	<b>4,000</b>

2.16 A detailed analysis of the resource position of the State and its capacity to mobilise additional resources for the Plan is presented in Chapter 3. Assuming a favourable Finance Commission award, more equitable distribution of Central assistance for Plan on the basis of a revised Gadgil formula for Central assistance, and a vigorous drive for raising the State's own resources, the upper limit of the State sector outlay can be fixed at Rs. 2,000 crores. Past experience has shown that the private sector investment in Kerala has all along been much less than the national average of 35 to 40 per cent. However, as the flow of foreign remittances to this State is substantial in recent years there is scope for a hike in private investment in the coming years. Therefore, the private investment during the current plan period can be of the order Rs. 1,000 crores. The share of Central sector investment in Kerala in the past has been very low. In order to compensate the shortfalls in the past and also to facilitate the implementation of important

projects most of which require substantial investments the Centre should step in a big way in the coming years. Hence the Central sector investment for the 1978-83 plan should be of the order of Rs. 1,000 crores.

2.17 The proposed structural change in the State's economy in favour of manufacturing sector is prompted by a number of empirical compulsions. Firstly, the low land-man ratio and the predominance of the perennial crops are two major constraints to substantial increase in productive employment in the agriculture sector. Secondly, the educated and skilled manpower resources of the State can be productively absorbed only in the modern sectors. Thirdly, since the services sector has grown sufficiently ahead of the commodity producing sectors for historical reasons the only outlet for the growing manpower resources is the manufacturing sector. The State has not so far succeeded in developing its full potential for mineral-based and agro-based industries. There is therefore ample scope for rapid industrialisation based on minerals and agricultural raw materials of the State. It is on the basis of the above rationale, that the structural change and sectoral growth rates envisaged in the Plan have to be viewed. The details of objectives and strategy envisaged for the different development sectors have been spelt out in the respective sectoral chapters. The main elements of strategy are briefly outlined in the following paragraphs in respect of the major development sectors.

#### *Agriculture and Allied Sectors*

2.18 In the crop husbandry sector, on account of the special characteristics such as low per capita availability of land, high cropping intensity and the predominance of perennial crops and also taking into account the low average growth rate of 1.5 per cent during recent years (1969-70 to 1975-76), the feasible growth rate for the plan period cannot be very high. In addition to the maximisation of the growth rate, the two other objectives should be to generate maximum employment opportunities and to achieve distributive justice by improving the economic conditions of the small and marginal farmers and agricultural labourers. These objectives could be achieved through increasing (i) the area under irrigation, (ii) the gross cropped area (iii) cropping intensity, (iv) productivity per hectare, and (v) intensive application of agricultural inputs and extension services. These have to be backed up by improved agronomic practices.

2.19 In the field of animal husbandry and dairying, the objective should be not only to augment production of milk and milk products, but also to raise the nutrition levels of population in low income brackets through a deliberate development strategy aimed at increasing employment and incomes. These objectives could be largely achieved through vigorously pursuing the existing programme of improving the genetic quality of cattle breed, popularising goat rearing on a State-wide scale and promoting fodder development schemes. The development programmes in this sector should also be supported by efficient marketing services.

2.20 In the field of forestry, the objective should be to maintain the existing forest area and to maximise

productivity in the long run. The continuing programmes for effecting a switch-over from conservation-oriented forestry has to be strengthened. The accelerated development of production, social and farm forestry should be achieved by maintaining the ecological balances and protecting the environment as well as providing employment to the poorer segments of society, and linking forestry development with the economy of the people especially the tribals living in and around the forest area. The entire forest development and exploitation programme has also to be linked with an integrated programme for forest-based industries and an overall domestic firewood and fodder development programme.

2.21 In regard to fisheries, the development effort in past plans has been largely confined to export-oriented and capital intensive mechanised fishing. Taking into account the prevailing socio-economic relations, the basic approach to fisheries development in future should have to be guided by two main considerations, namely, to increase substantially fish production for achieving a judicious balance between exports and domestic consumption, and to adopt an investment strategy and technology which would increase employment and income of the fishing community. To achieve these objectives, a comprehensive programme consisting of modernising the traditional fishing sector, expansion of mechanised boats and deep sea fishing vessels, development of major and minor fishing harbours and acquisition of other supporting facilities for storage, processing, transportation and marketing has to be drawn up.

#### *Irrigation*

2.22 In order to derive optimum benefits from the technological advances in the field of agriculture, assured water supply is a *sine qua non*. The concept of irrigation should not be confined to paddy alone. Other crops like the garden crops should also be covered by suitable irrigation programmes. Highest emphasis has to be given to the speedy completion of all the ongoing major irrigation projects. The construction of field channels has to be given maximum importance. Attempts will have to be made to strike a balance between availability of irrigation water and the requirements of different crops in different seasons. Stress should also be laid on efficient water management with a view to maximising production per unit of water and area under irrigation.

2.23 Minor irrigation schemes should also be given due emphasis not only because of its role in augmenting agricultural productivity but also because of its labour-intensive character. The strategy should essentially consist of exploitation of ground water resources and promotion of community irrigation schemes through tube wells. High priority should also be accorded to lift irrigation projects with field channels for efficient use of water.

#### *Power*

2.24 The objective of power development in future should be to ensure adequacy and built-in-stability in the supply of electricity to priority sectors throughout the year in order to achieve a breakthrough in industrial and agricultural production and employment especially in the rural sector. Transmission and distribution sectors should be developed

faster to keep pace with the increase in power generation. Efforts have also to be made to bring about optimum utilisation of the capacity already created by identifying the causes of underutilisation and speedy adoption of remedial measures. To overcome instability in power supply due to exclusive dependence on hydro-power installation of stand-by mini thermal generation units in major bulk consumption locations will have to be planned.

#### *Industry*

2.25 The objectives of industrial development in future should be to achieve as high a growth rate as possible and to generate maximum employment opportunities keeping in view also the need to rectify regional imbalances. The broad strategy for the different segments of the industrial sector should be on the following lines:

- (i) identification of the causes of underutilisation of capacity already available and appropriate measures for achieving higher rate of utilisation;
- (ii) promotion of new industrial units based on technology and material resource endowments and selection of technologies which are appropriate to different segments without prejudice to employment creation;
- (iii) stabilisation of labour-intensive industries like cashew processing by long-term policies and measures to prevent the shifting of industrial units from the State;
- (iv) setting up of new industrial units in the less developed areas, particularly village and small industries, without undue prejudice to economic factors;
- (v) reorganisation of public sector units with a view to making them economically viable;
- (vi) evolving a more rational framework for promoting private investment in the State;
- (vii) revitalisation and development of the existing village and small industries and promotion of new viable small units;
- (viii) provision of guaranteed credit and ensuring supply of raw materials through an appropriate organisational agency;
- (ix) raising the level of earnings of rural artisans, handloom weavers, craftsmen and others employed in village and small industries; and
- (x) promotion of village and small industries in rural and semi-urban areas.

#### *Transport and Communications*

2.26 The objectives of development of this sector in the coming years should be the optimisation of investment in the system tempered by the need for regional development and social justice. The emphasis on employment generation in the countryside and the provision of basic minimum needs to the masses presupposes the development of a good transport network backed up by a well organised communication system.

The strategy in the Plan should be to develop an integrated transport network so as to optimise investment in each of the different modes of transport in the State. A study to determine the optimum model mix for Kerala is under way and it is hoped that major decisions on transport policy and co-ordination in the State would be evolved soon. Notwithstanding the results of the study, investment programme for the development of an integrated transport network and a good communication system in the State should consider the following:

- (i) improvement of the quality of the existing roads especially the National Highways, State Highways, Major District Roads and the inter-State and hill roads of economic and strategic importance;
- (ii) development of the existing rural roads by grading the surfacing to motorable standards and opening up new link roads to connect villages to major roads;
- (iii) bringing about better co-ordination between the public sector and private sector passenger transport operations, improving the working results of the public transport system, and extending its area of operation by selective nationalisation primarily to avoid wasteful competition between private and public sector operators;
- (iv) development of inland water transport as a cheap means of transport and linking it up with tourism development, coastal and foreign shipping and port development;
- (v) revitalisation of coastal and foreign trade through the minor and intermediate ports by appropriate developmental measures so as to sustain and improve the employment capability in the field;
- (vi) development of more rail links in the State to accelerate the pace of industrialisation and trade so as to connect important centres in Kerala with the rest of India;
- (vii) provision of more domestic and international air travel amenities in Kerala; and
- (viii) development of a good communication system (postal and tele-communications) to meet the increasing needs of both the rural and urban population and extension of these facilities to developing towns and villages to speed up economic development.

#### *Education*

2.27 The system of education is proposed to be developed along the following lines during the current plan period:

- (i) better management and selective expansion of education at primary and secondary levels with a view to correct regional and social imbalances in education;
- (ii) improving the quality of education through inservice training and development of teachers and provision of adequate educational infrastructure at all levels;

- (iii) minimising the drop-outs at primary and secondary stages by extension efforts, provision of incentives such as clothes, books, mid-day meal etc., and special attention and intensive coaching for weak students;
- (iv) organising voluntary services of retired teachers, Government servants and the beneficiaries of unemployment allowance for eradicating adult illiteracy;
- (v) special training and development of teachers for imparting education for developing physically handicapped and mentally retarded persons with the aid of modern equipments and
- (vi) planned expansion of fundamental and applied research in all major fields of knowledge.

#### *Health*

2.28 The approach to health services in the 1978-83 Plan will be:

- (i) to create the necessary health infrastructure in the rural areas of the State especially in the backward regions with a view to correcting regional imbalances;
- (ii) to ensure effective prevention and control of communicable diseases;
- (iii) to step up the quality of medical services by strengthening the specialised medical and para-medical personnel and providing sufficient quantity of medicines and essential medical equipments; and
- (iv) to ensure optimum use of the health facilities already created by avoidance of wastage and under-utilisation by strengthening management and supervision.

#### *Housing*

2.29 The strategy for housing development will be:

- (i) promotion of self help-housing especially for the weaker sections;
- (ii) provision of house sites and housing assistance to rural poor;
- (iii) formulation of self-help housing schemes in favour of economically weaker sections of the urban community having regard to their paying capacity;
- (iv) adoption of local resource based technology for housing and development of construction materials to minimise unit cost; and
- (v) promotion of co-operative housing societies in urban areas for middle income groups.

2.30 Apart from the sectoral strategy enunciated above for the 1978-83 Plan, decentralisation of the planning process will be given high priority. The experience

of planning in the past shows that in the existing highly centralised planning set up sufficient attention could not probably be given to the identification and development of the local resource endowments which has resulted in aggravating regional imbalances. To remedy this situation steps will be taken to introduce planning from the grass root level during the Plan period 1978-83. By decentralised planning and development public participation is ensured not only at the formulation stage, but also at the implementation stage.

2.31 The State sector outlay proposed for the 1978-83 Plan is of the order of Rs. 2000 crores. The sectoral allocation of the outlay is presented in Table 2.2. If the anticipated total investment of Rs. 4000 crores comprising Rs. 2,000 crores in the State sector and another Rs. 2,000 crores in the Central and private sectors together materialises it will result in a change in the structural composition of the State's economy. The agricultural sector, which accounted for as high as 51 per cent of the State income in the base year of the Plan, will contribute only a share of 47 per cent in 1982-83 (vide Table 2.3). The relative shares of industries and services sectors will go up by 2 per cent each.

TABLE 2.1  
Growth Rates in Net Domestic Product of Kerala  
(at 1960-61 prices)

(Per cent per annum)

Sl.No.	Sector	1960-61 to 1975-76
(1)	(2)	(3)
1	Agriculture	1.9
2	Forestry and logging	6.5
3	Fishing	4.4
4	Mining and quarrying	3.1
	<b>SUB TOTAL: PRIMARY</b>	<b>2.1</b>
5	Manufacturing	4.8
	5.1 Registered	7.5
	5.2 Unregistered	0.6
6	Construction	2.1
7	Electricity, gas and water supply	9.0
	<b>SUB TOTAL: SECONDARY</b>	<b>4.6</b>
8	Transport, storage & communications	6.1
9	Trade, hotels, and restaurants	3.8
10	Banking and insurance	7.8
11	Real estate, ownership of dwelling and business services	3.1
12	Public administration and defence	9.2
13	Other services	2.4
	<b>SUB TOTAL: TERTIARY</b>	<b>4.5</b>
	<b>Total NDP</b>	<b>3.3</b>
	Per capita income	0.9

TABLE 2.2  
State Sector Outlay

(Rs. Crores)

Head of Development	1978-83 Plan Outlay	
	Amount Rs. crores	Per- centage
(1)	(2)	(3)
<i>I. Agriculture and Allied Services—Agriculture</i>		
1 Research and Education	21.76	1.09
2 Crop Husbandry	52.07	2.60
3 (i) Marketing	9.24	0.46
(ii) Storage and Ware Housing	2.21	0.11
4 Special Programme for Rural Development	5.00	0.25
Total (1+2+3+4)	90.28	4.51
5 Land Reforms	38.73	1.94
6 Minor Irrigation	30.00	1.50
7 Soil and Water Conservation	22.71	1.13
8 Command Area Development	10.00	0.50
9 Animal Husbandry	15.00	0.75
10 Dairy Development	22.39	1.12
11 Fisheries	55.74	2.79
12 Forests	40.00	2.00
13 Investments in Agricultural Financial Institutions	24.00	1.20
14 Community Development and Panchayats	22.00	1.10
Sub Total I	370.85	18.54
<i>II. Co-operation</i>	19.01	0.95
<i>III. Water and Power Development</i>		
1 Major and Medium Irrigation Projects	235.00	11.75
2 Flood Control and Anti-sea erosion	25.00	1.25
<i>3 Power Development</i>		
(i) Survey and Investigation	4.60	0.23
(ii) Power Projects	123.40	6.17
(iii) Transmission and Distribution	198.50	9.93
(iv) General	13.50	0.67
Total Power Development	340.00	17.00
Sub Total III	600.00	30.00
<i>IV. Industry and Minerals</i>		
1 Industries	171.95	8.60
2 Village and Small Industries	67.96	3.40
3 Mineral Development	3.49	0.17
Sub Total IV	243.40	12.17



	(1)	(2)	(3)
<i>V. Transport &amp; Communications</i>			
1 Ports and Harbours	18.57	0.93	
2 Roads and Bridges	90.00	4.50	
3 Road Transport	57.10	2.86	
4 Water Transport	15.44	0.77	
5 Tourism	20.00	1.00	
Sub Total V	201.11	10.06	
<i>VI. Social &amp; Community Services</i>			
1 School Education including Cultural Programme	67.62	3.40	
2 Adult Education	5.08	0.25	
3 Higher Education	22.26	1.12	
4 Technical Education	12.21	0.61	
5 Scientific Service and Research	51.35	2.56	
6 Employees State Insurance	0.40	0.02	
7 Public Health and Sanitation including Medical Education	68.61	3.43	
8 Sewerage & Water Supply	100.00	5.00	
9 Housing (Excluding Police & Excise Housing)	83.21	4.16	
10 Police & Excise Housing	6.00	0.30	
11 Urban Development	26.91	1.35	
12 Information and Publicity	1.22	0.06	
13 Labour and Labour Welfare including rehabilitation of Sri Lanka Repatriates	10.01	0.50	
14 Welfare of Scheduled Castes, Scheduled Tribes and other Backward classes	38.00	1.90	
15 Social Welfare	14.95	0.74	
16 Nutrition	12.70	0.63	
Sub Total VI	520.53	26.03	

	(1)	(2)	(3)
<i>VII. Economic Services</i>			
1 Secretariat Economic Services			
(i) Planning Machinery	3.15	0.15	
(ii) Evaluation Machinery	0.37	0.02	
(iii) Secretariat	3.15	0.16	
2 Economic Advice & Statistics	1.26	0.06	
Sub Total VII	7.93	0.39	
<i>VIII. General Services</i>			
1 Stationery and Printing	13.75	0.69	
2 Public Building Construction Programme	23.42	1.17	
Sub Total VIII	37.17	1.86	
GRAND TOTAL (I to VIII)	2000.00	100.00	

TABLE 2.3

## Sectoral Change during the 1978-83 Plan

Sector	Structural Composition	
	1977-78 (Estimated)	1982-83 (Projected)
	(1)	(2)
1 Agriculture and Allied Sectors		51
2 Mining and Manufacturing including Construction		15
3 Services		34
TOTAL		100

## CHAPTER 3

### FINANCING THE PLAN

A stupendous development effort has been envisaged during the Five Year Plan period 1978-83. The total investment in the national economy is estimated to increase from a level of Rs. 15,370 crores in 1977-78 to Rs. 25,542 crores in 1982-83. This is indeed a significant step-up and has to be matched by a parallel effort at augmenting domestic savings in an adequate measure so as to sustain the projected investment magnitudes in the Plan. Taking into account certain positive and favourable factors such as the major break-through achieved in the foodgrains production front and the substantial buffer-stock of wheat and rice, the existence of large unutilised industrial capacity, the sustained pick-up on the export front, the comfortable foreign exchange situation and the encouraging prospects of new oil finds, the task visualised in the Plan is capable of fulfilment, provided bold and effective policy instruments are devised and deployed efficiently.

3.2 In the Draft Five Year Plan (1978-83) formulated by the Planning Commission, the total resources required to finance the public sector Plan outlays in the Plan are estimated to be Rs. 69,380 crores. According to the Planning Commission, "if a Plan of this size is to be financed, a massive resource mobilisation effort would be necessary. Independent studies of the aggregate investment resource available in the whole economy, assuming realistic household, Corporate and Government saving rates, show that resources of this order are indeed available in the economy. The household saving rate has already risen to 14 per cent of disposable income. There is considerable utilisable liquidity in the banking system because of a high rate of growth of deposits, particularly time deposits. Considerable foreign exchange reserves are also available for utilisation in the next few years. And finally, there is scope for a substantial escalation of public sector saving particularly in view of the recent buoyancy of revenues, additional resource mobilisation already achieved during the last five years and improvement in the surplus earning capacity of Central Public Sector Undertakings".

3.3 The main task, therefore, as pointed out by the Planning Commission, is to actualise potential public saving into resources for public sector investment. Of the estimated aggregate resources of nearly Rs. 70,000 crores for the public sector development programmes, nearly Rs. 54,000 crores are estimated to be available from balances of current revenues of State and Central Governments (after meeting non-Plan expenditure) at current rates of taxation, from surplus of Government, industrial and commercial enterprises, provident funds and other savings, term lending institutions, market borrowings and external assistance. To cover the gap of Rs. 16,000 crores or so, the Planning Commission has recommended Rs. 13,000 crores of additional resource mobilisation of which States' share has been reckoned at Rs. 4,000 crores. On the areas of tapping more resources, the Planning Commission has observed as follows:— "A major source of resources for the next

Plan could be progressive reductions in subsidies at present paid by the Central Government. The return from investments in Central and State Enterprises is at present below the fair returns allowed when fixing prices for the private sector, and should, therefore, be raised by economies and price adjustments to a post-tax level of about 10 per cent. Water and power rates will need upward revision in order to provide a reasonable return on the rising investments in these sectors. In view of the massive investments proposed to be made in agriculture and rural work of various kinds, earnest efforts must now be made to recover a part of the increased rural income for re investment in the public sector. In view of the evidence of unequal distribution of rural assets (especially land) the equitable way of doing this would be through appropriately structured taxes on agricultural income or progressive surcharges on land revenue. Various forms of increased savings may be considered, such as increased contribution to provident funds, group in-service schemes and rural debentures. As regards taxation, besides examining the somewhat limited scope of enhancing the taxes on income and wealth and rates of commodity taxation, a part of the capital gains on developing urban land and property may be appropriated to the State treasuries. Part of the gap remaining after resource mobilisation may be set off against the planned import surplus".

3.4 It is a cruel irony of the development process that the most pressing requirements of resources arise in the early stages of development when the resource raising capacity of a country is severely limited. In all developing countries of today, an expanded tax-financed public sector is as necessary for a higher rate of capital formation as is the latter for economic growth. The optimum revenue goal of such countries is exceedingly large relative to any realistic appraisal of the amount of revenue that can in fact be raised. They must, therefore, seek to tap practically every available revenue source.

3.5 The Constitution has envisaged a federal polity for India, and economic planning is a concurrent subject. This enjoins joint responsibility on the Union as well as the States in the task of promoting and furthering the country's economic development. It is true that as far as the federal aspects of the country's fiscal framework are concerned, they would require certain drastic modifications and readjustments so as to bring about a substantial increase in the free resources of the States. However, this fact should not deter States from putting in their maximum effort towards mobilisation of resources from the avenues available to them under the existing Constitutional provisions.

3.6 There are essentially three basic financial components for a State's development programme, namely (i) the State's own budgetary resources including market borrowings and additional taxation, (ii) Central assistance by way of grants and loans and (iii) funding by institutional agencies. Of these, the

first two are directly linked to the plan sector, while the third one is accounted for in the private sector investment outlay forming part of the aggregate development plan. Each of these components has varied elements. We may start with a discussion of the States own budgetary resources.

### States' Own Budgetary Resources

3.7 The important elements of State's own budgetary resources are: (i) balance from current revenues at current rates of taxation, (ii) contribution of public sector undertakings towards financing of the plan at prevailing rates of prices and fares, (iii) market borrowings by the State Government and autonomous bodies; (iv) State's share of small saving collections; (v) net accretions to State Provident Funds; (vi) balance of miscellaneous capital receipts over non-plan disbursements; (vii) direct participation of financial institutions like Reserve Bank of India and LIC in State's development programmes; and (viii) additional resource mobilisation. Each of these items may be discussed separately.

#### *Balance from Current Revenues*

3.8 Kerala has all along been a deficit State receiving grant-in-aid under Article 275 of the Constitution to meet the non-plan revenue gap. The overall non-plan revenue gap during the five year period 1978-83 has been estimated to be of the order of Rs. 1,500 crores. The State Government has argued before the Finance Commission that the financially weaker States should not only be given an award to just cover their anticipated budgetary gap, but they should be given something more by way of building up a sound financial base for launching development programmes. The principles of sharing of Union Excise Duties as well as of determining grants-in-aid under Article 275 of the Constitution, as suggested by the State Government in their Memorandum, would enable to attain this objective. While it would be difficult at this stage to quantify the surplus on current account, one could assume a figure of Rs. 200 crores over the five year period. The deficit situation has, therefore, not undergone any change.

#### *Contribution of Public Enterprises*

3.9 As far as State Governments are concerned, there are two types of public enterprises—those that are run departmentally and those managed by autonomous Corporations. The Kerala State Industrial Enterprises, an autonomous organisation, has come into existence to take care of departmentally run industrial undertakings. The other departmentally run undertakings that exist now are mainly the major and medium irrigation projects. So far, as much as Rs. 144 crores have been invested on irrigation projects in the State. These have not proved financially productive and continuous losses are being incurred in their working. While this may be true of a majority of States in India, serious efforts would be necessary to ensure that not only losses are avoided, but some profits are also made.

3.10 As far as autonomous enterprises are concerned, barring a few exceptions, many enterprises have been working at a loss. The State Government

has so far invested a sum of about Rs. 300 crores on the fifty-four non-departmental enterprises in the State. Of this, over Rs. 200 crores have been invested in the Kerala State Electricity Board and another Rs. 15 crores on the State Road Transport Corporation. The total capital base of these two Corporations stands at Rs. 317 crores and Rs. 28 crores respectively. During the last five years alone, i.e., from 1972-73 to 1976-77, the Electricity Board incurred a total net financial loss of over Rs. 50 crores, while the Road Transport Corporation's loss amounted as much as Rs. 12 crores. Some of the other major industrial enterprises such as the Travancore-Cochin Chemicals have also been incurring continuous losses in recent years.

3.11 It may be emphasised in this context that with an increasing expansion of public sector in the dominant areas of the economy, we should legitimately expect these undertakings to contribute their mite to the mobilisation of developmental surpluses in the economy. If the present trends continue, then with every extension of public sector relatively to the private sector, there would result a reduction in the economy's propensity to save. It is, therefore, extremely important to recognise the need to adopt principles of commercial operation in regard to the working of Kerala's State enterprises. A clear recognition of the commercial basis of working and non-equivalence with ordinary governmental practices are necessary for their effective functioning. It is also necessary to appreciate the fact that extension of public sector takes place ostensibly for the purpose of adding to resources, as an alternative to higher taxation. Viewed in this perspective, a policy of economic pricing of public sector products and services so as to secure an adequate return on the capital invested is not only unobjectionable, but indeed, highly desirable. It is only then public enterprises can play their appropriate role in financing development. It may be relevant to mention in this context that the outstanding debt liabilities of the State Government now stand at a level of Rs. 733 crores and the annual interest charges are of the order of Rs. 42 crores. This is a substantial budgetary burden on the State Government. The average capital cost works out to about 6 per cent and unless the same order of net return is obtained from assets created out of these loan funds, serious distortions would develop in the fiscal system of the State.

3.12 As a first step towards improving the situation, it would be necessary to ensure that within the next three years, losses are totally avoided and all the public enterprises break even. This may require both revisions to tariff and prices on the one hand and reductions in working expenses on the other. The next step should consist of ensuring a positive rate of return on the capital invested so that by the end of the Plan period, the public sector enterprises are in a position to make a worthwhile contribution towards the development programmes. Including the internal revenues of Electricity Board, we may assume that an aggregate amount of Rs. 70 crores during the five years 1978-83 would become available for financing the Plan.

#### *Market Borrowings*

3.13 Heavy reliance has been placed on market borrowings as a fiscal instrument for financing the development programmes during the Plan period 1978-83.

This is not surprising, since the liquidity of the institutional funds has shown phenomenal increase in recent years. The Plan has taken credit for Rs. 15,986 crores (i.e. nearly Rs. 16,000 crores) by way of market borrowings. The average annual borrowing of Rs. 3,200 crores assumed by the Planning Commission is about double the existing annual rate of borrowings. The State Government would urge upon the Planning Commission to ensure a more rational and equitable sharing of these substantial savings of the community between the Centre and States on the one hand and amongst the different States on the other. The State of Kerala has, in the past, been getting an unfavourable share of the market borrowings, keeping in view its economic backwardness and developmental requirements. During the years 1971-72 to 1976-77 out of a total net borrowings of Rs. 1,000 crores allowed for the States, Kerala's share amounted to only Rs. 35 crores.

3.14 The State Government would urge upon the Planning Commission to formulate rational guidelines for the sharing of the market borrowings. In this connection, it may be pointed out that since the Centre can always resort to deficit financing in times of financial stress—a facility not available to the States—the share of market borrowings accruing to the States should be kept at a maximum possible level consistent with the requirements and needs of the Central Government also. Since in future, the developmental burden on the States is going to be on the increase it is only fair that resources raised by way of borrowings are shared in a larger measure with the States. At present, only about one-third of the total borrowings goes to the States. The State Government would suggest that a minimum of 50 per cent of market borrowings are allocated to the States which would give to States resources of nearly Rs. 1,600 crores per annum, or Rs. 8,000 crores over the five year period. The distribution of this amount to the States should be on the basis of well chosen criteria. In any case, for a State like Kerala, the share should be certainly higher than the population ratio of 4 per cent. The State Government would like to stress in this context that adoption of criteria for distribution of Central Government's funds to States for meeting non-plan and plan requirements, however rational they might be, would lose all its purpose if such criteria are not extended to funds flowing to the States through instruments like market borrowings. What really matters is the total size of the resource pool accruing to each State, whether it is by way of Finance Commission's award, or the Plan assistance based on a rational formula or share of market borrowings. For the present, we may proceed on the assumption that a minimum of 50 per cent of the market borrowings during the Plan period would be allocated to the States. Kerala's share of these borrowings may reasonably be reckoned at 5 per cent. A five year aggregate figure of Rs. 420 crores may be assumed for the present as the State's share of market borrowings.

#### *Small Savings*

3.15 In the field of small savings, past performance has not been very encouraging. The average annual collections have been of the order of Rs. 9 crores of which the State's share would amount to Rs. 6 crores on the basis of the existing sharing formula between the Centre and States. With such favourable factors as increasing foreign remittances from abroad and a

highly commercialised agriculture, the State should be able to perform much better in the area of small savings. If the average national per capita small savings (which is about Rs. 8) is applied to Kerala, small savings collections should have touched a minimum level of Rs. 16 crores or so per annum and consequently the State's share should have amounted to over Rs. 10 crores per year. At present, total annual collections are only in the range of Rs. 10 crores per annum. One of the reasons for the unsatisfactory performance in respect of small savings is perhaps the prevalence of a large number of chitties in the State attracting a considerable amount of the savings of the community. Notwithstanding this, it should be possible for Kerala to collect at least Rs. 15 crores of small savings every year. This would benefit the State's resource position by enabling it to derive a larger share than what is accruing at present. We may, therefore, assume that over the next five years, State's share of small savings collections would fetch a minimum amount of Rs. 50 crores, that is to say, an average annual share of Rs. 10 crores.

#### *State Provident Funds*

3.16 On the basis of recent trends in net accretions to State Provident Funds it should be possible to maintain an annual average collection of Rs. 10 crores under this item. The State Government may also consider raising the present statutory minimum rate of contribution from 6 per cent to 8½ per cent which would result in an additional revenue of approximately Rs. 2 crores per year. The average annual accretions to Provident Funds may be reckoned at Rs. 14 crores in future years. This would amount to Rs. 70 crores over a five year period.

#### *Balance of Miscellaneous Capital Receipts.*

3.17 According to the present estimates of non-plan receipts and disbursements for the five year period 1978-83, there is expected to be an overall deficit of Rs. 140 crores or so on non-plan capital account including liabilities on account of fresh plan borrowings. Repayment of Central loans is the major item of non-plan capital expenditure. It is the expectation of the State Government that the Seventh Finance Commission would take note of this non-plan capital deficit while framing their proposals for covering the non-plan capital gaps of States. We may, therefore, proceed on the assumption that the non-plan capital account will just be in balance so that no contribution is available for the plan on this account during the plan period 1978-83.

#### *Term Loans of Financial Institutions.*

3.18 The Planning Commission has taken credit for a gross sum of nearly Rs. 1,800 crores by way of term lendings by the financial institutions such as the RBI and LIC. Such funds are available for financing power projects, housing and water supply, rural electrification, strengthening of the share capital of co-operatives, etc. Since in these areas, there is considerable future development potential in the State, we should expect to get a minimum share of 5 per cent of the aggregate lendings that are allocable to the States. Assuming this at a level of around Rs. 1,400 crores or

so for all the States, the State Government should be able to mobilise Rs. 80 crores or so on this account during the Plan period.

#### *Additional Resource Mobilisation.*

3.19 In financing the contemplated outlay of Rs. 69,380 crores in the public sector, the Planning Commission has visualised additional resource mobilisation to the tune of Rs. 13,000 crores (Rs. 9,000 crores by the Centre and Rs. 4,000 crores by the States) over the Plan period. Mobilisation of this order of additional resources from an economy which is already subjected to a fairly stiff dose of taxation, both by way of direct and indirect taxes, would imply a very massive effort involving sacrifices from all sections of the community.

3.20 Kerala, State has generally been performing well in the matter of raising resources through additional taxation. Except during the Fourth Plan period, the performance of the State has always exceeded the targets fixed by the Planning Commission. In the Fifth Plan period, the performance has been particularly noteworthy. As against the original target of Rs. 100 crores fixed by the Planning Commission for a five year period covering 1974 to 1979, the State will be able to raise as much as Rs. 178 crores. For a State like Kerala, which, in terms of per capita income, is below the national average and which has a low land-man ratio, no substantial industrialisation and a high level of unemployment, to have raised this much of the additional resources, is indeed a commendable achievement. The State's tax effort on the whole has been of a high order. Both in terms of per capita tax burden as well as in terms of the ratio of State taxes to State income, the State occupies a high rank vis-a-vis that of other States as can be seen from Tables 3.1 and 3.2.

3.21 Notwithstanding the superior performance of the State in the past in the matter of additional resource mobilisation, the need to undertake substantial resource raising effort in the coming years cannot be over-emphasised. A basic fiscal requirement in today's situation is to devise effective methods of raising development finance consonant with an accelerated tempo of economic growth. One part of this requirement concerns the appropriateness of the balance in taxation between agriculture and other economic sectors. These problems must be solved in an environment in which the people have become more conscious than ever before of the goal of equity and justice in the fiscal operations of Government. At the same time, there is constant pressure to find new taxes to finance development and maintain economic stability, which also means that no revenue source that has proved productive can easily be relinquished unless the revenue loss can be made up elsewhere.

3.22 The areas of resource mobilisation in the State may be said to consist of (i) the land sector, (ii) the commodity sector, (iii) the trade and transactions sector, and (iv) the services sector including social services. It may be useful to discuss broadly the scope under each of these areas. Before doing so, it may be in order to point out that a reasonable target of taxation has also to be fixed for the Plan period 1978-83 keeping in view the overall target for the States as fixed by the Planning Commission. This target, as already

mentioned, is Rs. 4,000 crores. If the per capita principle is applied, then Kerala's share of this additional resource mobilisation would work out to Rs. 160 crores. Considering the fact that this is over and above the effort already put in during recent years, the task involved is quite substantial. However, with determined effort and the co-operation from all sections of society, it should not prove difficult to fulfil this target. A good beginning in this direction has already been made in 1978-79.

3.23 In this connection, it may be pointed out that the measures undertaken in the first year (1978-79) in respect of sales taxation are estimated to fetch an annual revenue of Rs. 10 crores. Though this measure is intended to last only during the current year (1978-79), it is hoped that Government would be able to sustain this levy in the coming years also by way of a systematic implementation of the recommendations of the Committee on Commodity Taxation. If it is assumed that the measures in the current year (1978-79) would continue through the plan period, they would fetch an additional revenue of Rs. 60 crores over the Sixth Plan period 1978-83. This would mean that for the remaining four years, the State Government need raise an extra amount of Rs. 100 crores which would be possible only if a fairly heavy dose of taxation of the magnitude of Rs. 25 crores is put through during the next year (1979-80). We may examine the scope of raising additional resources in the perspective of these financial magnitudes. The sectors that the State might concentrate are discussed briefly below:

#### *Land Taxes*

3.24 Taxation of land owes its origin to a convenient alliance of strategic economic and social considerations on the one hand and outright fiscal expediency on the other. The very size of the agricultural sector in many developing countries creates a strong presumption that a substantial portion of the required revenue should be raised in that sector. Exactly how large that portion should be depends *inter alia* on the level and distribution of agricultural income and upon agriculture's place in the overall development plan. It may be relevant here to refer to the observations of the Planning Commission: "Agricultural production and income have risen considerably due to large public sector investment in agricultural research, extension, irrigation, credit, fertilisers, etc., under successive plans. The level of agricultural taxation, however, continues to be relatively low. Direct-tax receipts from agriculture, chiefly land revenue and agricultural income-tax, constitute only about one per cent of the net domestic product from agriculture. The burden of commodity taxation also falls less heavily on agriculturists than on people in the urban areas. According to the agricultural census, 15 per cent of cultivators accounted for 60 per cent of the total operational net cultivated area in 1970-71. A major share of higher agricultural incomes, therefore, must have accrued to a small proportion of cultivators constituting the upper strata of rural society. But these incomes remain untaxed while similar urban incomes are subject to substantial taxation. Profession taxation of these incomes at rates comparable to those payable by non-farm earners is now essential in order to secure horizontal equity as between the taxation of agriculturists and non-agriculturists and to reduce the disparity between the less affluent and more affluent sections of the rural community itself.

3.25 With greater emphasis on agricultural development in the Plan and guaranteed support prices for all major crops, income accrual in rural areas must increase further. There is, therefore, a strong case for calling upon the agriculturists to make a larger contribution towards the financing of the large public sector development outlays of the Plan. The State Governments should once again consider the imposition of a progressive agricultural holdings tax in the form recommended by the Raj Committee. But if this is not considered feasible, surcharge at graduated rates must be added to land revenue in all States in order to introduce progression in the system of agricultural taxation. Cesses/surcharges on land revenue paid for the area in commercial crops should also be levied or increased where they exist."

3.26 There are several fiscal tools available for taxing the agricultural sector such as various types of land and produce taxes, separate tax on agricultural income or a global income-tax, export taxes, property-transfer taxes, procurement of agricultural produce at low fixed prices, fiscal monopolies including Government marketing boards, betterment levies etc. A prudent fiscal policy requires selection of the best possible combination of revenue measures rather than relying on any one measure alone. In its basic design the combination should probably provide for (a) a means of mass taxation which would raise large amounts from a broad segment of the agricultural population without imposing excessive burdens on particular groups, (b) a more exclusive tax applying to the wealthier agriculturists. Satisfactory solutions for (i) rationalisation of the tax base, (ii) adaptation to changes in prices and production, and (iii) allowances for the personal and economic status of the individual tax payer have been found difficult due to the limits set by administrative and institutional factors.

3.27 The land tax system in Kerala consists of the basic land revenue, a plantation tax, an agricultural income-tax and a local land cess. The basic land revenue is based on a uniform rate per unit of land irrespective of its productivity. This rate is Rs. 4.94 per hectare. Plantation tax, which is a part of land revenue, is applicable to areas growing coconut, arecanut, rubber, coffee, pepper, tea and cardamom. The extent of plantation for the purpose of assessment is not determined on the basis of its physical extent, but on the basis of the number of yielding trees. Under the amended provisions of the Plantation Tax Act areas below two hectares are exempt from payment of this tax. If the area exceeds two hectares, on the first one hectare there is no tax and on the remaining extent, the tax is leviable at the rate of Rs. 50 per hectare. The Agricultural-income-tax is a progressive levy with the maximum rate going up to 85 per cent on excess of income above Rs. 1 lakh.

3.28 According to the budget estimates for 1978-79, the expected level of yield from basic land revenue and plantation tax together is Rs. 3.5 crores, while agricultural income-tax has been estimated to yield Rs. 6.5 crores. Then the total revenue under these major land taxes would amount to Rs. 10 crores. As a proportion of the State income originating from the agricultural sector, this would amount to only about one per cent. While there may not be any substantial scope for revising the existing rates of the different land

taxes, some revisions by way of enhancement and rationalisation might prove productive.

3.29 As far as the basic land revenue is concerned, it is a regressive tax on account of its uniformity in rates. It may be true that from the administrative angle, the basic tax system with a uniform rate cuts through a labyrinth of difficulties engendered by the several types of land distinctions. The fact that we have an agricultural income-tax to take care of higher agricultural incomes does not detract the inequity of the present land revenue system in the State.

3.30 In land revenue policy, habit and precedent have accounted for more than wisdom. In addition to short-sighted expediency and administrative inertia, certain conceptual fallacies have militated against the application of modern principles to land taxes. It is time that such fallacies are removed about land revenue. Although it may be true many of the trappings of modern income taxation cannot be generally applied in taxing incomes accruing from land, certain basic principles of progressive taxation could still be adhered to.

#### *Commodity Taxes.*

3.31 The term commodity taxes may be said to broadly include all kinds of indirect tax levies such as the sales taxes, State excise duties, taxes on motor vehicles, etc. As far as the State is concerned, the most important item of commodity taxation is the sales tax. An Expert Committee (the Committee on Commodity Taxation) has recently made an in-depth study of the various aspects of sales taxation in the State and has submitted a detailed report to the State Government containing a package of sixty-five recommendations.

3.32 The recommendations of the Committee may be classified into administrative, organizational, legal and structural categories. Naturally, they have a long term and short term aspect. The main objectives which the Committee had in mind while making their recommendations have been to augment the revenues from sales taxes through improvement in the quality of assessment as well as through a rationalised structure of the tax rates on different commodities, depending on the nature and use of each commodity and the other taxes that are already being imposed by Central Government.

3.33 Among the organisational changes suggested, is the creation of regulated markets for the major primary commodities produced in the State. On the structural side, many reforms have been recommended by the Committee such as reviewing the present list of exemptions, conversion of many of the multi-point levies into suitably graded single-point levies, progressive system of surcharges, etc.

3.34 It will be clear that the very nature of many of the recommendations is such that it is not possible to translate their impact in terms of precise additional quantum of revenue. There is, however, no doubt that effective implementation of all the major recommendations of the Committee would impart considerable buoyancy to the sales tax revenues of the State.

### Taxes on Trade and Transactions

3.35 Trade taxes consist mainly of sales tax on inter-State trade which is being levied under a Central enactment. The tax rate is already 4 per cent which is a fairly high rate. Taxation of trade can be made more effective if regulated markets are organised in the State for the major commodities. In fact, States like Punjab, Haryana, Karnataka and a few other States as pointed out by the Planning Commission, are raising substantial revenues by way of cesses on market arrivals on farm produce in regulated markets. In Kerala which produces important commercial crops such as rubber, cardamom, pepper, tea and coffee, market cesses can prove a very productive source of revenue.

### Taxation of Services.

3.36 To make the consumption base of indirect taxation broader with a view to making it not only more productive, but also more progressive and equitable, the question of enlarging the taxable base has to be considered seriously. Services which are suitable for taxation may be classified into two broad categories—services rendered by individual or professional men and services rendered by business establishments. As far as the first is concerned, though there is a profession tax which many states are levying, in view of the constitutional ceiling imposed on such a tax the revenue significance is largely lost. If this tax could be replaced by a general service tax based on gross earnings, the revenue yield is expected to be considerably more. However, implementation of this measure would necessitate Constitutional amendment. In many countries abroad; the service sector is being subjected to varying rates of taxation. It would however be difficult to precisely estimate the potential of such a tax especially the State level.

3.37 In the light of the discussion so far, the State's own resource position, as visualised at this stage, for the five year period (1978-83) may be summarised as below:

#### Estimates of State's Own Resources during the Sixth Plan (1978-83)

	(Rs. Crores)
1. Balance from current revenues	200
2. Contribution of public enterprises	70
3. Open market borrowings	420
4. Small savings	50
5. State provident funds	70
6. Balance of miscellaneous capital receipts	..
7. Term loans from financial institutions (gross)	80
Total (1 to 7)	890
8. Additional resource mobilisation	160
9. Aggregate of State's own resources	1050

### Central Assistance

3.38 Central assistance is an important component of State plan financing. An analysis of the ratio of

State Plan expenditures to Central assistance over the past plan period reveals a declining trend, thereby implying that the relative quantum of Central assistance to States has been becoming smaller with the successive five year plans. During the First and Second Plan periods, this ratio was 60 per cent and in the Third Plan period it was around 59 per cent. But during the Fourth Plan period there was a serious decline in the ratio which came down to 51 per cent, which, during the Fifth Plan came down still further to 33 per cent. Thus, only one-third of the State plan expenditure the Fifth Plan was financed by Central Assistance as against 60 per cent in the first three plans. In absolute terms, the figure of Central assistance in the Fifth Plan has been Rs. 6,000 crores as against an estimated total States plan outlay of Rs. 18,265 crores.

3.39 For the five year plan, 1978-83, according to a resource study done by the Planning Commission, there would be a gap of nearly Rs. 12,000 crores in financing a total State sector Plan outlay of the order of Rs. 30,000 crores. This is only a very tentative assumption. If one assumes that the whole of the gap would be met by Central assistance, then, the ratio would work out to 40 per cent.

3.40 If the present system of Central assistance allocation is continued in the Plan for 1978-83, Kerala's share of the allocable pool of Central assistance under the Gadgil Formula is 5.4 per cent. If this formula were to hold good in the 1978-83 Plan, and assuming that Rs. 12,000 crores would be the allocable pool of Central assistance after meeting special requirements of certain States such as Assam, Nagaland, and Jammu and Kashmir, Kerala should be able to get a minimum central assistance of Rs. 650 crores during the five year plan period 1978-83. This would imply that together with State's own resources earlier estimated at Rs. 1,050 crores, the State's aggregate resources would add up to Rs. 1,700 crores over the five year period, 1978-83, provided the assumptions underlying all these estimates fully materialise. There will thus be an uncovered gap of Rs. 300 crores in implementing a state sector plan outlay of Rs. 2,000 crores for Kerala.

### Institutional Funds

3.41 A new feature of financing development projects is the growth of institutional financing agencies particularly during the last two decades. Since such institutions have direct access to the same savings market in which the Governments also operate. The role of these institutions in mobilising the household savings has become quite significant. It may be quite relevant here to briefly advert to the growth of institutional finance in recent years and the relative roles of the Government sector and the institutional sector in mobilising the savings of the community.

3.42 The major institutions which generally operate in the savings market are the commercial banks and the Life Insurance Corporation. Then there are other development finance institutions floated by the Government of India, most important of them being the Industrial Development Bank of India (IDBI), the Industrial Credit and Investment Corporation of India (ICICI), the Industrial Finance Corporation of India (IFCI) and the Agricultural Refinance Development Corporation (ARDC). These institutions

do not directly operate in the savings market, but channelise funds provided by the Government of India and the banking system both in terms of domestic currency as well as in foreign exchange, for joint financing of projects in the public and private sectors.

3.43 On the eve of the Plan era (1950-51), there were about 600 banking establishments in the country which together operated a fund of Rs. 800 crores. Most of the funds were controlled by private interests and the Government did not have any direct control over these funds nor did they draw upon these funds either for itself or for any autonomous bodies sponsored by it. The role of institutional finance during the early phase of planned development was very minimal. In fact, during the first plan period, while the claims of the household sector on Government amounted to Rs. 250 crores, the banks could also mobilise only a total deposit of the same magnitude during the corresponding period. It is also significant to note that in 1950-51, the combined budgets of the Central and State Governments amounted to only Rs. 900 crores of which 25 per cent was met out of savings and borrowings.

3.44 The position today has undergone a great change. The number of banking establishments has increased to about 24,000 and their annual savings mobilisation is now of the order of nearly Rs. 3,000 crores. As against this, the savings mobilised by the Government Sector from the same savings market as the banking system operates, has been only of the order of Rs. 450 crores. It is also significant to note that the size of the Governmental-budgetary operations today is of the magnitude of Rs. 24,000 crores. The share of savings and borrowings which was 25 per cent in 1950-51 has now dwindled to 10 per cent. This would indicate that the institutional agencies are able to mobilise much larger savings and they have apparently become more innovative and aggressive in mobilising household savings.

3.45 The banking system and the Life Insurance Corporation together have a command over Rs. 25,000 crores of funds today. If one takes into account a minimum of 10 per cent annual returns on these funds together with the new deposit mobilisation estimated to be in the range of Rs. 3500 crores, these institutions have the capacity of spending Rs. 7,000 crores every year. It is also significant to point out that the Government of India has full control over these immense funds, and it is quite within their competence to lay down appropriate norms and guidelines for the development of these funds keeping in view the larger development interests of the country.

3.46 Similarly, in the case of the other development financial institutions like the IDBI also the Government of India has control over the deployment of such funds. These institutions are annually operating funds totalling over Rs. 800 crores. However, when one looks at the directions of the flow of such large funds, it would appear that no conscious or deliberate allocative policy or credit planning does exist at present. One of the avowed objectives of the Government in nationalising the banking industry and the Life Insurance and in floating development finance institutions such as the IDBI, the ICICI, the IFCI and the ARDC has been to channelise the national savings

into priority sectors of industry and agriculture as well as to develop the backward regions of the country. Both these objectives have not been successfully pursued so far, more particularly, the second-mentioned objective of fostering faster economic development in the backward regions (States) of the country. Certain features of the credit dispensation by some of the major financial institutions may be worth pointing out here:

(i) As far as the scheduled commercial banks are concerned, of the total credit advanced so far, the public sector, the joint sector, and the co-operative sector together accounted for only about 20 per cent while the balance of 80 per cent went into the private sector.

(ii) According to statistics, only 1356 borrowers located in 23 larger urban centres, claimed as much as 51 per cent of the total industrial credit extended by the banks. This brings out the strong metropolitan bias in the working of the banking system and the concentration of banking credit in selected regions.

(iii) Sixty per cent of bank advances went to the four industrially advanced states, with the share of one State alone being as high as 27 per cent.

(iv) Even in the matter of providing funds for small scale industries, the lion's share of banking funds (55 per cent) went to the four industrially advanced States.

(v) Both the IDBI and IFCI have been concentrating their assistance to selected industries like sugar, textiles and paper and to some extent basic chemicals, also. Since these industries are largely concentrated in the already industrially advanced States, such States have been the main beneficiaries.

(vi) Just as in the case of the banking system the development finance institutions have also been channelising a high proportion of their resources—as much as 74 per cent—to private sector industrial units.

(vii) In the case of the LIC the picture is somewhat better since it has been having a diversified investment portfolio.

(viii) In the case of ARDC's funding of agricultural projects, it is disappointing that States like Kerala with good agricultural development potential have not been able to benefit to any appreciable extent. It is worth noting that out of Rs. 600 crores disbursed so far by the ARDC, of which as much as 75 per cent has gone to finance minor irrigation schemes, States like Kerala could not get any benefit even with State level institutions like the Land Mortgage Bank which has been the main refinancing institution of ARDC. As much as 76 per cent of ARDC funds are canalised through State Land Development Banks.

3.47 The above-mentioned factors would bring out the degree of concentration of institutional credit in selected regions of the country. To the extent such concentration has taken place, the concerned State Governments have been in a position to finance most of their development projects from outside their budgetary resources. In fact, the main objective of institutional funding of projects has been to reduce development burden on State Government's budgets. However, due to the uneven spread of institutional credit in the country, only a limited number of States



could derive the intended benefits. Such States have again been the major beneficiaries of funds transferred from the Central Government sector and also in the sharing of open market borrowings.

3.48 A major reason for the above situation could be the higher resource—absorptive capacity of the advanced States/regions resulting from their already well-established industrial and institutional infrastructure. The urban bias of many of these States which also generally have the benefit of superior technical expertise and talents may also be cited as an important factor which has enabled them to attract larger funds from financial institutions. These factors indicate that the process of economic development in India, inspite of all planned efforts, has tended to be more cumulative rather than equilibrating in character.

3.49 The ostensible objective of nationalisation of banking and insurance and of floating development finance institutions in the public sector has been to curb such a cumulative growth tendency not only by diversification of both the structure and flow of institutional credit but also by promotional activities such as conceiving development projects and identifying entrepreneurs in backward regions. On the side of credit institutions, there is the apparent need to bring about adjustments in their procedures and lending policies

in such a manner as to enable less developed States to avail more of institutional finance for implementing projects which have regional scope and importance. There is need to evolve a more rational and deliberate credit allocative policy by the financial institutions to meet the diversified requirements of different regions in the country. The financial institutions should play a more positive role and should function as catalytic agents in promoting faster economic development of the backward regions.

3.50 At the same time, it is equally important to ensure that when institutional finance is made available, it is promptly and efficiently tapped, utilised and absorbed by the less developed States in productive and worthwhile projects. This would call for a better concert between the administrator, the development agencies and financial institutions. If the more advanced States have been able to derive maximum advantages of institutional finance, the reason, *inter alia*, lies in the fact that they have a very efficient administrative outfit. Unless, therefore, the administrative and implementing machinery of the less developed States is fully geared up to face the imperatives of the changing economic scene, it would be hard to attract the necessary wherewithal for development and much less to effectively implement the development projects.

TABLE 3.1  
Per Capita Tax Revenue

Sl.No.	State	(In Rupees)					
		1960-61 (Accts)	1970-71 (Accts)	1971-72 (Accts)	1974-75 (Accts)	1975-76 (R.E.)	1976-77 (R.E.)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Andhra Pradesh	11.69	31.66	31.35	58.40	60.33	74.65
2	Assam	10.00	19.04	21.48	26.27	25.95	26.26
3	Bihar	6.67	14.22	15.34	23.71	29.71	33.03
4	Gujarat	11.20	40.97	46.28	67.95	75.93	91.44
5	Haryana	..	44.66	50.69	90.10	100.06	107.50
6	Jammu & Kashmir	4.75	15.57	16.92	26.63	31.89	46.60
7	Kerala	11.86	32.27	34.56	52.62	68.10	79.61
8	Madhya Pradesh	8.35	21.04	22.50	37.48	46.28	51.61
9	Maharashtra	15.63	51.33	54.33	90.14	100.16	108.15
10	Karnataka	10.23	35.15	38.29	62.33	72.87	83.25
11	Nagaland	..	6.47	9.75	26.72	45.00	47.32
12	Orissa	4.86	15.35	15.62	21.08	27.62	33.46
13	Punjab	12.44	64.27	67.24	103.27	121.41	131.66
14	Rajasthan	8.91	23.75	25.17	37.37	44.98	49.37
15	Tamil Nadu	12.35	36.58	45.92	68.41	70.66	75.64
16	Uttar Pradesh	7.66	17.51	17.41	29.13	37.30	38.78
17	West Bengal	13.93	29.46	32.31	46.05	55.13	61.02
18	Himachal Pradesh	..	..	..	37.93	42.26	46.49
19	Manipur	..	..	..	9.91	15.41	17.87
20	Meghalaya	..	..	..	17.73	16.16	17.11
21	Sikkim	..	..	..	..	40.87	41.25
22	Tripura	..	..	..	6.47	7.28	9.88
	ALL STATES (AVERAGE)	10.04	29.36	32.06	48.76	56.83	71.83

TABLE 3.2

## State Taxes—Tax Income Ratio

(In Percentages)

Sl.No.	State	1960-61	1964-65	1965-66	1969-70	1970-71	1971-72	1972-73	1975-76
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	Andhra Pradesh	3.88	N.A.	4.48	4.99	5.56	5.20	4.68	6.56
2	Assam	3.38	3.84	3.84	3.82	3.60	4.01	3.32	3.05
3	Bihar	3.43	3.62	3.33	3.35	3.33	3.48	3.72	..
4	Gujarat	2.99	4.96	5.34	5.36	5.06	5.40	7.09	..
5	Jammu & Kashmir	..	..	..	..	..	..	..	3.61
6	Kerala	4.36	5.22	5.03	5.41	5.50	6.04	5.85	6.76
7	Madhya Pradesh	2.93	3.31	3.93	3.76	4.29	4.26	4.49	5.84
8	Maharashtra	4.19	3.05	1.89	5.83	6.64	6.70	4.68	7.53
9	Karnataka	3.64	4.34	4.59	5.97	6.62	7.09	7.31	9.28
10	Orissa	1.94	N.A.	N.A.	2.86	3.09	3.05	2.96	3.52
11	Punjab	3.29	3.97	7.16	3.06	6.45	6.37	6.28	7.68
12	Rajasthan	2.84	3.81	4.21	4.20	3.93	4.41	4.81	..
13	Tamil Nadu	3.52	4.78	5.20	5.52	5.88	6.67	7.36	8.30
14	Uttar Pradesh	3.19	2.76	3.21	3.10	3.34	2.90	3.01	4.78
15	West Bengal	4.47	5.62	5.99	5.58	5.34	5.52	6.54	5.27
16	Haryana	..	..	..	..	..	..	5.87	..
	ALL STATES (AVERAGE)	3.43	4.27	4.48	4.48	4.90	5.08	5.33	5.65

## REGIONAL PLANNING

Integrated rural development has been assigned an important place in the all India Draft Five Year Plan (1978-83) as the main strategy for the realisation of the declared objective of eradicating unemployment and poverty. The Planning Commission is of the view that a mere project approach or a sectoral approach is not adequate to lead to an overall development of the area and an equitable distribution of the benefits of growth. The present plan, therefore, proposes the integration of various programmes and the establishment of appropriate linkages for the optimal utilisation of local endowments consistent with the plan objectives, local needs and environmental balance. The full employment aimed at is on a fair remuneration for the work done and the effort made, so that a fully employed person will be above the poverty line.

4.2 The Planning Commission proposes to integrate the following programmes initially:

- (i) Agricultural development including efficient utilisation of land and water resources with scientific technology;
- (ii) Animal husbandry as a subsidiary occupation mainly to the weaker sections and at the same time aiming at commercial production of animal husbandry products;
- (iii) Programmes of inland water and brackish water fisheries to maximise output of fish per unit of water and as an important occupation for the fishermen classes and such other backward classes;
- (iv) Exploitation of marine fishery resources through trawlers, mechanised boats and country boats keeping in view the need to maximise employment of the poorer fishermen and avoiding unhealthy competition between the three sectors;
- (v) Programmes of social forestry to provide a base for fuel and fodder in the economy with special earmarking of usufruct for the poorer sections of the community;
- (vi) Farm forestry through the small peasant households as a subsidiary source of income and also for maximising the use of land;
- (vii) Village and cottage industries including handlooms, sericulture, bee-rearing etc., as a full or part-time occupation to the artisan classes of the rural population;
- (viii) Service sectors of the rural economy as self-employment sectors for the poorer families both as a means of providing for a felt want in the economy and as a means of better livelihood to the poorer sections and

- (ix) Labour programmes of skill formation and labour mobility to meet the needs of organised labour for development works and of the nature of employment guarantee programmes where necessary.

4.3 The proposal is to formulate plans at the block level, taking note of the local resources, manpower, institutional strength and public participation for evolving a suitable programme of overall productivity with special emphasis on providing full employment to the rural population. A base level socio-economic survey, scientific resource inventories, and manpower budgetting would form the basis for planning at the block level. Guidelines for this purpose are proposed to be issued by the Planning Commission. The district plan will be both a resource development as well as an infrastructure plan for supporting the production-cum-employment thrust of the block level plan. The infrastructure required for the various block level plans, the magnitude of the same and the locations of the institutional centres will be worked out for optimum support to the block level plans. The district plan will also take into consideration the institutional support available, input services and the marketing facilities that have to be developed.

4.4 Out of a total of nearly 5100 blocks in the country, over 2950 blocks are covered by one or more of the three special programmes via., SFDA, DPAP and CAD. Out of these, 2000 blocks will be distributed to the States on acceptable priorities to intensify the work in these blocks and to increase employment and productivity. During each year of the plan, another 300 blocks will be selected on certain criteria of priority so that by the end of the Plan full employment would have been substantially reached in 2000 blocks and the work would be in various stages of progress in 1500 blocks. This will leave 1600 blocks for the next five year period starting from April 1983 and full employment to be reached in 3100 blocks by 1988. As a first priority, blocks in which the scheduled caste population is over 20 per cent will be brought into the programme during the plan period. The plan also proposes to provide adequate financial support to the States for setting up planning evaluation and monitoring cells at the district and block levels. These cells are to be manned by specialists of professional competence.

4.5 The keynote of the Planning Commission's approach to integrated rural development and block-level and district level planning is that certain activities which are relevant to the spatial units chosen should only be handled there and that in formulating plans, the resources endowments, man-power resources and public participation, should be particularly taken note of. The broad approach of the Planning Commission is relevant in the context of Kerala too. However, formulating a plan along the above lines by itself

cannot help in the realisation of the declared goal of full employment.

4.6 The experience of planning in this country during the past twenty-seven years and more shows that in the existing highly centralised planning set up, sufficient attention could not probably be given to the identification and development of the local resource endowments. As a result, disparities have grown between regions and between different sections of society. The state Government have been for some time past, actively considering the question of evolving an appropriate frame work for initiating plan formulation from the grass root level, giving due importance to the identification and development of local resources, with the active participation of the people. It is felt that in the context of Kerala, the element of people's participation is of paramount importance more than any where else in the country because of the following factors:

- (i) The predominance of tiny and scattered agricultural holdings precludes the possibility of adoption of modern scientific cultural practices.
- (ii) A relatively recent trend in the field of development finance is the large scale channelling of finance through public sector financing institutions. The inherent limitations of the resource base of the small farmers and entrepreneurs in undertaking the activities visualised under the financing scheme of these institutions has resulted, in practice, in the denial of such financial assistance to these classes.
- (iii) Mobilisation of cash contribution and voluntary effort for developmental programmes is at present an accepted practice. Our financial resources being very limited, it is necessary to undertake more vigorous action to step up the community's effort to maximise the investment in an area by mobilising people's contribution either in cash or in the form of voluntary labour for development works of local importance.
- (iv) A major weakness of Indian Planning has been our inability to bring about necessary changes in the outlook and attitude of the people towards planning. It is time that a system in which the people are provided with an opportunity to associate themselves actively with the formulation and implementation of plans, be evolved. This process also can succeed in generating popular enthusiasm and involvement in development.

4.7 The above four points bring into sharp focus the need for initiating plan formulation from the grass root level. A plan can receive the support of the people only if it reflects adequately, the needs, hopes and aspirations of the people. Active participation of the people will be forthcoming only for programmes which have local significance. The institutional framework contemplated for district level planning should recognise the above facts.

4.8 It is important to note in this context that a district plan should have a development strategy of its own consistent with the overall national and state level strategy and priorities. It is also necessary to ensure balanced development of the different sectors of the economy and the regions within a district. Special attention will have to be devoted to the development of the backward pockets. There is a strong view that one of the main reasons for the shortfalls in plan achievement was the inclusion in the plan of unsound or un-economic projects. It is to overcome this defect that the procedures that are to be adopted for district planning should lay emphasis on the identification, formulation and technical as well as economic appraisal of projects along scientific lines. For the formulation of a plan along these lines, it is imperative that a competent inter-disciplinary team is developed and organised at the district level. The structure of the District Planning Machinery should be conceived of keeping the above points in mind.

4.9 The smooth performance of block level and district level planning requires the following pre-conditions:

- (i) The setting up of a suitable machinery for planning at the district and block levels;
- (ii) The demarcation of the sectors, subjects and activities which should come under the coverage of district and block planning;
- (iii) Suitable delegation of administrative and financial powers to the district and block level authorities for implementing the plans;
- (iv) Evolution of criteria and an appropriate formula for the allocation of the total district plan outlay among the districts and among the blocks within the districts giving due weightage to development potential, backwardness, local needs, etc. and
- (v) Evolution of an appropriate organisation and method for ensuring people's participation in the formulation and implementation of regional plans.

4.10 The Dantwala Working Group set up by the Planning Commission to study different aspects of Block-level Planning have recommended that the planning authority at the district level should consist of a group with a Chief Planner, Economist or Statistician, Cartographer, Agronomist, Engineer, Industry Officer and a Credit Planning Officer. Other specialists may also be engaged according to the needs of the area or the programme. The Chief Planning Officer should have a high status in the hierarchy.

4.11 In order to evolve operationally meaningful district plans, it is necessary to indicate more specific criteria and demarcate the area of operation of the district plan in terms of sectors, sub-sectors or even programmes.

A decision in this regard has to be guided by the fact that items suitable for district planning are those in which local factors are important and local variations

in programmes help to achieve better results. State-wide programmes, evolved in accordance with the state level strategy and policy and involving no special problems of choice of location could easily be handled at the district level. It would appear that the bulk of the activities under agriculture, minor irrigation, soil and water conservation, animal husbandry and dairying, fisheries, social forestry, housing, co-operation, rural electrification, village and household industries, district and village roads, school education, primary health facilities, rural water supply and welfare of scheduled castes and scheduled tribes could be brought under the purview of district planning, subject of course to the state level strategy and priorities.

4.12 The proposed Kerala District Administration Bill contemplates the delegation of substantial powers to the District Councils regarding the activities to be dealt with and the control over the activities of the panchayats. Schedule VII of the District Administration Bill lists the items of work to be attended to by the District Council and these items conform to the activities in the different sectors mentioned above.

4.13 The concept of district plan implies wide-ranging delegation of powers, both administrative and financial, to the implementing agencies. The Departments at the State level, with their time honoured notions of hierarchy, have to be reoriented for the successful functioning of this decentralisation of planning.

4.14 The Kerala District Administration Bill referred to earlier visualises delegation of a variety of administrative and financial powers to the district councils. In the context of the new set up of planning at block level, these delegations of powers may require re-examination and revision. It should be remembered that decision making powers at the district level are essential for the smooth and efficient implementation of projects and programmes. Further, one of the important objectives of district planning is to ensure the active involvement and participation of the people in plan formulation and implementation.

Subject to limitations in the availability of financial resources, it is necessary to ensure that only schemes, projects and programmes originating from the people and included in the plans for the blocks and districts after a critical examination of the technical and economic aspects by the concerned technical officers, should actually be taken up for implementation. Otherwise, the interest and enthusiasm of the people will automatically die out and the people will be gradually alienated from the planning process.

4.15 From the point of view of efficiency as well as equity it is necessary to allocate the financial resources at the command of the State, earmarked for District Plans, in a scientific manner taking into account, the production potential and backwardness of the area in the case of productive sectors and the needs of the area in the case of service sectors. Suitable indicators of development potential, backwardness or needs of the area, as the case may be, have to be built up and an appropriate formula has to be developed.

4.16 It is seen that some states, notably Maharashtra, have adopted a formula which is an extension of the Gadgil Formula employed by the National Planning Commission for the devolution of Central Assistance to the States. But such an approach does not appear to be adequate in view of the fact that the relationship between a State Plan and District Plan is fundamentally different from that between the National Plan and the State Plan. The Centre and the States operate in clearly demarcated sectors of the economy, in accordance with constitutional provisions, without any overlapping. There is also no need for the Centre to interfere, beyond a certain limit, in the State's Plan. But within the State, the State and the District will be operating in many of the development sectors, even though the detailed activities are demarcated. The districts are not free to allocate the total financial outlay, earmarked for them in any manner they think fit. The sectoral allocation of the District Plan, necessarily has to conform to the overall sectoral balance aimed at in the State Plan.

## CHAPTER 5

### EMPLOYMENT AND MANPOWER

One of the principal objectives of planning as outlined by the Planning Commission in the all India Draft Five Year Plan 1978-83 is the removal of unemployment and under employment in India within a period of ten years. Since past attempts at making a dent into this problem, through this development of large and medium industries has not paid any appreciable dividends, the new employment strategy visualised to achieve the declared plan objective of full employment has three new elements, viz., adoption of an employment intensive sectoral planning, regulation of technological changes to protect and enhance employment and promotion of area planning for achieving full employment.

5.2 The pattern of growth and, therefore, the inter-sectoral allocations of investment and the determination of the output targets have been based explicitly on the need to increase employment generation rapidly. Besides the employment augmenting capacity of irrigated agriculture and the largely expanded allied sector of dairying, forestry and fisheries, the plan will generate employment through:

- (a) the expansion of infrastructure and social services, eg. road construction, electrification, water supply, rural schools and community health services;
- (b) a substantial increase in the consumption of the poor (such consumption will create additional demand for wage goods which can be produced by labour intensive methods).

5.3 The Planning Commission has built into the recommended investment pattern the following features to accelerate the growth of employment.

- (i) A programme of accelerated implementation of land reforms differential input supply policy favouring small farmers, a minimum needs programme and a comprehensive public distribution system.
- (ii) Substantial escalation in public investment in rural infrastructure and social services so as to increase construction employment as well as indirect permanent employment.
- (iii) An optimum allocation of new capacity between different techniques in selected mass employment consumer goods sectors so as to ensure that the growth of employment in each of these sectors is satisfactory.

5.4 As a result of the policies and programmes contemplated, the employment gap in the country, viz., the difference between labour force and actual employment, is expected to be reduced from the present 40.7 million standard person years to 15.5 million standard person years.

5.5 The policies recommended for tackling the problem of educated unemployment are also relevant. According to the Planning Commission, even after credit is taken for all the additional employment that the plan programmes may generate, it is unlikely that the gap in the educated employment market can be closed without a determined effort to decelerate the outturn of Arts, Science and Commerce graduates from the educational system and to divert the matriculate population increasingly to nonclerical occupations. Major shifts in educational and recruitment policies are contemplated with a view to containing the pressure of the educated in the employment market. It is against the background of the above national approach that the employment tasks of the 1978-83 Plan of Kerala should be determined.

5.6 The National Plan refrained from presenting estimates of employment and unemployment in the Fourth and Fifth Plans. But such estimates were being provided in the corresponding Five Year Plans of Kerala, in the hope that they will provide at least a rough indication of the magnitude of the employment task before the commencement of the Plan. The comments of the Expert Committee on Unemployment notwithstanding, such estimates do throw light on the different aspects of the problem and help in evolving a suitable employment perspective.

5.7 A steady rise in the rate of growth of population, continuous decline in the size of the agricultural holdings, slow, if not, arrested growth of industries, lack of alternative employment opportunities, inadequacy of industrial investments etc. have all combined to worsen the employment situation in Kerala in recent years. The State has experienced a greater demographic pressure than the country as a whole especially since the last four decades. Population pressure has worsened the land-labour ratio. According to the 1971 Census there were 62.2 lakh workers in Kerala as against 43.6 lakhs in 1951. Table 5.1 gives the distribution of workers in 1951 and 1971 according to the main industrial divisions.

TABLE 5.1

**Distribution of Workers According to Industry**

Industry	1951 Census		1971 Census	
	No. in lakhs	Percentage	No. in lakhs	Percentage
1. Cultivators	10.12	23.22	11.07	17.81
2. Agricultural Labourers.	11.15	25.57	19.08	30.69
3. Livestock, Forestry	2.64	6.06	3.35	7.00
4. Mining, Manufacturing etc.	8.81	20.20	10.08	16.22
5. Construction	0.58	1.33	1.07	1.72
6. Trade and Commerce	2.89	6.63	5.65	9.09
7. Transport, Storage and Communications	1.39	3.19	2.42	3.89
8. Other Services	6.02	13.80	8.44	13.58
<b>Total</b>	<b>43.60</b>	<b>100.00</b>	<b>62.16</b>	<b>100.00</b>

During the twenty year period 1951-71 the number of workers increased by about 19 lakhs and out of this increase more than 10 lakh workers were absorbed in the agriculture sector itself. While the number of cultivators had registered a marginal increase of one lakh during this period, there had been a near doubling in the category of agricultural workers. It can be seen that agricultural sector still continues to accommodate around 55 per cent of the total workforce in the State. At the same time the employment in the industrial sector which was about 20 per cent of the total workforce in 1951 had declined to around 16 per cent in 1971. An entirely different pattern of sectoral employment is observed at the all India level. For the country as a whole nearly 74 per cent of the workforce are engaged in agriculture and allied activities, 10 per cent in mining and manufacturing and the remaining 16 per cent in services sector. This may give the impression that the agriculture sector in India as a whole is more labour absorbing than its counterpart in Kerala. But when the total number of agricultural workers related to the net area cultivated it is seen that while there are 1.2 agricultural workers per hectare of cultivated area at the all India level, 1.4 workers depend on agriculture in Kerala. As a result of this phenomenon of too many workers in the agricultural sector the problem of under employment in this sector has become acute in recent years.

5.8 An unemployment survey conducted in the State by the Bureau of Economics and Statistics revealed that there were about 11.7 lakh chronically unemployed persons in 1977-78. The number of such persons was estimated to be 112 lakhs in 1978 for India as a whole. In analysing the unemployment situation it is not enough to take into account the chronically unemployed alone. The severity of the under employment in the economy should also be considered. As mentioned in the National Plan Document, "the unemployed days" rather than "unemployed persons" should be counted. Such a concept of unemployment was adopted in the data collected through the 27th round (1972-73) of the National Sample Survey.

5.9 Data obtained from the National Sample Survey, relating to the year 1972-73 provide estimates of the number of person years (i) working, (ii) seeking work, (iii) not seeking but available for work and (iv) not available for work. Categories (ii) and (iii) from the unemployed person years, which is in fact the total of unemployment and underemployment. These data show what part of the available labour time of the population is idle due to lack of work. This is a meaningful indicator of the employment and unemployment situation in the country and the present data meets some of the objections raised by the Committee of Experts on Unemployment. The figures worked out for 1978 on the basis of the results of the above survey, are given in Table 5.2.

5.10 This shows that out of the available labour time equivalent of 82.78 lakh man-years or standard person years 17.46 lakhs were remaining idle. In percentage terms it works out to 21.09 percent. These 17.46 lakh man-years is the sum total of unemployment and underemployment. Such estimates alone would not be sufficient to show the severity of unemployment. For example, the educated unemployment forms a distinct category, for whom a different type of employment opportunity will have to be generated. Estimates

of educated unemployment are, however, not readily available. The only source is the live-register of the Employment Exchanges. The number of work seekers on the live-register with educational qualifications S.S.L.C. and above was 4.84 lakhs as on 31st May 1978. But it is known that part of them are employed and have registered for better jobs. Another part might have discontinued registration for some reason or other. Many of them may still be unemployed. There is yet another group of unemployed which has not registered at all.

TABLE 5.2  
Employment and unemployment in Kerala 1978

Activity	Man-year equivalent (lakhs)		
	Rural	Urban	State
1. Fully employed	54.28	11.04	65.32
2. Unemployed plus under employed	14.84	2.62	17.46
3. Not available for work	133.88	28.34	162.22

*Note.*—Estimates were worked using the estimated population of 245 lakhs for Kerala in 1978 and the percentages of person weeks obtained from the NSS Survey of 1972-73.

5.11 The live-register figures were adjusted for the above factors using the results of sample surveys conducted by the Director General of Employment and Training and the Centre for Development Studies, Trivandrum. According to the adjusted figures unemployed persons on the live-register of the exchanges with educational qualifications 'matriculation and above came to 3.91 lakhs at the end of May, 1978. Detailed data for a number of years are given in Appendix 5.2. It is seen that the number of educated unemployed on the live-register has been increasing at the rate of approximately 40,000 every year for the past five or six years. The out-turn of S.S.L.C. holders less the intake capacity in higher education and technical institutions in the State, worked out to nearly 51,000 in 1975-76 and 85,000 in 1976-77. Considering the fact that "parallel" colleges in the State would absorb a large number of the S.S.L.C. holders and that a sizable fraction of the educated women, particularly of S.S.L.C level, will not be available or gainful employment, it may not be wide off the mark if the number of educated unemployed in May 1978 is placed at the adjusted live-register figure of 3.91 lakhs.

5.12 Besides the 17.46 lakhs man-year equivalent of unemployment and underemployment, the Five Year Plan (1978-83) of Kerala has also to tackle the unemployment problem of the likely additions to the labour force during the five year period. Assuming that the present labour force participation rates will continue to be valid in the year 1982-83, it is estimated that the additions to labour force will be of the order of 8 lakh persons. Using past trends it can be estimated that about 2 lakhs of these additions to the labour force will be educated. Thus, the Five Year Plan of Kerala (1978-83) has to address itself to the task of providing employment opportunities equivalent to 25.46 lakhs standard man-years. Of this, 5.91 lakhs will be unemployed persons with educational qualifications S.S.L.C. and above.

5.13 The next step is to estimate the quantum of additional employment likely to be generated by the 1978-83 Plan. It should be remembered that besides the outlay of Rs.2,000 crores contemplated in the State sector, other investments will be taking place in the state during the plan period in the Central and private sectors. The total outlay contemplated in the Central sector in India during the 1978-83 Plan is about Rs. 39,000 crores. The Planning Commission has not given any clear indication about the total quantum of central investments which the Government of India will make in Kerala. The only indication is that under industries an investment of the order of Rs.150 crores will be made in the three central sector projects viz. Cochin Shipyard FACT and Kerala Newspaper Factory. In the private sector, the Planning Commission has estimated that investment of the order of Rs.46,000 crores will take place in the country. Past experience shows that both in the Central and private sectors, Kerala did not receive a share of investment in proportion to its population size. Upto March, 1976, Kerala received only 2.7 per cent of the total Central Industrial investments. The details in respect of sectoral investments that may materialise during 1978-83 plan period are given in Table 5.3

TABLE 5.3  
Anticipated Sectoral Outlay (1978-83)

Sector	Total outlay including central and private sector (Rs. crores)
1. Agriculture and allied activities including irrigation and flood control	1000
2. Industry and minerals	1100
3. Services (including power, transport and communications)	1900
<b>Total</b>	<b>4000</b>

TABLE 5.4  
Labour-force and Employment in Standard Person-Years-1977-78 and 1982-83

Item	1977-78	1982-83
1. Labour-force (Lakhs)	82.78	90.78
2. Expected employment (Lakh standard person years)	65.32	81.68
3. Employment gap (lakh standard person years)	17.46	9.10

5.14 As a result of the above investments it is estimated that additional employment of the order of 16.36 lakhs standard person years will be generated by the year 1983. Table 5.4 gives the position in 1978 and 1983.

The above calculation takes into account continuing and construction phase employment as well as direct and indirect employment. The estimates are presented in standard person years (273 days of 8 hours work per year) because the bulk of the additional employment opportunities created will go to relieve under employment in the unorganised sector, especially in the rural areas. When the labour force is compared with employment

in standard person years it is seen that the employment gap should fall from about 17.46 lakhs to 9.10 lakhs standard person years. Table 5.5 provides the sector-wise projected employment as well as the indirect employment that could be generated during the plan period 1978-83.

TABLE 5.5  
Employment Potential of the Plan (1978-83)

Sector	Additional Employment in lakhs person-years
1. Agriculture and allied sectors	4.67
2. Industry and minerals	5.34
3. Services	3.45
4. Indirect employment	2.90
<b>Total</b>	<b>16.36</b>

5.15 The above estimates of additional employment potential of the plan is based on two premises. The first is that central and private sector investments of the order mentioned above will actually materialise in Kerala during the plan period. The second and more important assumption is that in the unorganised sectors of production, particularly in agriculture dairying and animal husbandry, fisheries, coir, handloom and other traditional and village industries, necessary organisational arrangements and advance planning will be made effectively and in time. It should be remembered that in these sectors, organisation and not capital shortage has been the major constraint in the past.

5.16 The possibility of creating opportunities for fresh full time jobs in the agricultural production sector is meagre because increase in production is sought to be achieved by raising productivity. However, as a result of the programme of development contemplated in this sector, overall agricultural production may be raised by 12 to 13 per cent. Naturally, this will result in increased income for a large number of cultivators. In the case of cultivators who are self-employed, disguised unemployment is the real problem and it is to be measured not in terms of the length of working time, but in terms of earnings. Using this criterion, the underemployment of over 10 lakhs of cultivators will be relieved to the extent their income go up. It is estimated that the increase in employment content, in this sense, will be of the order of one lakh person-years.

5.17 In the field of animal husbandry and dairying a significant development is the remarkable success of the programme of upgrading the stock of cattle, as a result of which nearly 47,000 female cross-bred calves are being born in the State every year. In order to sustain the momentum of this programme, it is necessary to ensure efficient and scientific management of dairy cattle. This is largely a question of planning at grass root level and organisation of collective effort under a dedicated and motivated leadership. Only if these preconditions are assured, can dairy development play the role visualised for it in the plans. And if these are done, it is estimated that underemployment of the rural people can be relieved to the extent of nearly 1.25 lakh person years.



5.18 Among the traditional industries coir employs about 4.5 lakhs of workers. In spite of the various promotional and regulatory measures, which Government have undertaken from time to time, the basic problems of the industry remain as before. The real problem is shortage of raw husks. Progress in this sector is possible only if the supply of raw husks is stepped up. The present collection of husks is mainly from the coastal belt. Collection from the midland and highland regions is difficult because the producer cannot be paid a reasonable price for husk in view of the heavy transport costs and trade margins. Two alternatives to step up the supply of husks and fibre deserve consideration: (i) the feasibility of introducing artificial retting in the midland regions (if it is feasible, the savings in transport costs may help to pay the farmer a higher price for the husks) and (ii) augmenting the supply of husks from other producing centres and creation of a better collection mechanism within the State. If the supply of husks can be increased by another 100 crores, compared to the 160 crores being processed at present, underemployment of workers in this sector can possibly be relieved to the extent of 1.5 lakh person years.

5.19 Underemployment in the handloom sector in India as a whole is estimated to be of the order of 40 per cent. The national plan envisages that the output of cloth per loom will be raised to 4 to 4 1/2 metres of cloth per day in comparison with 2 to 2 1/2 metres at present. If the same order of increase in production can be assumed for Kerala, under-employment in this sector, which is equivalent to 1.13 lakh person years, can be wiped out. The success in the handloom sector depends on our ability to improve the design and quality of the products not only for exports but also for the markets in other parts of India.

5.20 The national plan puts forth a very ambitious programme for the development of Khadi and Village Industries. An outlay of Rs. 390 crores has been provided in the Plan. There are about a lakh of persons engaged in Khadi and Village Industries in Kerala. If effective advance action is taken to evolve suitable programmes for the development of these industries, employment opportunities to the tune of 50,000 person years at least can be generated in this sector. The Khadi and Village Industries Commission, the State Boards and Voluntary organisations like the Gandhi Smarak Nidhi may be brought together in advance to draw up a comprehensive programme for development of this sector.

5.21 As regards small scale industries, the mini-industries programme has to be pushed through vigorously. These small units face substantial handicaps because of their inability to market the products. They do not have the capacity to incur substantial expenditure for market studies and advertisement. Moreover, in order to win over the markets, some assurance regarding the quality of the product is also essential. The State should ensure that the product conforms to standard quality specifications. It is also necessary to organise common marketing and publicity arrangements under the auspices of the State.

5.22 The construction component of the Plan is significant. It is estimated that the state sector outlay alone can provide construction phase employment of the order of 1.28 lakh standard person years. Additionally

by the year 1983. It is necessary to plan and programme the construction activities in an area in advance and to phase them appropriately so that the largest number of workers may be given regular full time employment throughout the year. The aim must be to convert as much as possible of the construction employment into regular full time employment throughout the year so that it may be regarded as secure and dependable. This will need an organisation to be built up from the block level upwards. A list of works must be kept ready with surveys, plans, estimates and necessary land acquisitions. Delays for technical reasons and delays in administrative and financial sanctions should be avoided.

5.23 The organised industries and the services sectors including the Government may not be able to provide more than 2.5 lakhs of job opportunities for the educated unemployed in Kerala during the plan period. The plan will end up with a backlog of approximately 2.41 lakhs of educated unemployment. The national plan takes the stand that the gap in educated employment can be closed only with a determined effort to decelerate the outturn of Arts, Science and Commerce graduates. The feasibility of this proportion, especially in the context of Kerala is open to question. Other measures will have to be thought of.

5.24 It may be emphasised in conclusion that any shortfall in the stipulated investments in the State, Central and private sectors will worsen the employment situation in the State. The present assumption that a sum of Rs. 2,000 crores will be invested in the Central and private sectors together may not be realised unless the institutional and organisational arrangements are so designed and developed as to provide the necessary investment climate in the State including industrial peace. Any failure on this front can prove a social disaster by way of mounting unemployment and social unrest.

#### APPENDIX 5.1

##### Distribution of Person Weeks According to Activity (1972-73)

Activity	Percentages		
	Rural	Urban	Kerala
(1)	(2)	(3)	(4)
<b>A</b>			
1. Person weeks working of which	33.52	30.44	
(a) Person days working	26.74	26.29	
(b) Person days seeking work	3.76	2.24	
(c) Person days not seeking but available for work	1.17	0.70	
(d) Person days not available for work	1.85	1.21	
2. Person weeks seeking work	1.87	2.93	
3. Person weeks not seeking but available for work	0.51	0.37	
4. Person weeks not available for work	64.10	66.26	
Total (1+2+3+4)	100.00	100.00	

	(1)	(2)	(3)	(4)		(1)	(2)	(3)	(4)
B1. Fully employed		26.74	26.29						
2. Unemployed plus under employed (c)+2+3		7.31	6.24		4. Fully employed	54.28	11.04	65.32	
3. Net available for work		65.95	67.47		5. Unemployed plus under-employed	14.84	2.62	17.46	
					6. Not available for work	133.88	28.34	162.22	

Note: Estimates provided under Care worked out using projected population of 1978 on the percentage given under A.

## APPENDIX 5.2

## Distribution of Work Seekers

As at the end of the year	Total work seekers	Below S.S.I.C.	Percentage to total	S.S.L.C.	Pre-Degree	Graduates	Post Graduates	S.S.I.C. and above	Percentage to total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1966	157156	70946	45.14	79261	2923	3581	445	86210	54.86
1967	179479	86852	48.39	83615	3558	4822	631	92627	51.61
1968	201876	92949	45.60	89487	3893	6615	832	109827	54.50
1969	239586	96153	40.13	124469	6275	11002	1687	143433	59.87
1970	293754	115504	39.25	151279	7469	17703	1994	178450	60.75
1971	367381	166305	45.27	167814	10168	20841	2223	201076	54.73
1972	453914	194848	42.93	218880	16457	20396	3333	259066	57.07
1973	523882	239921	45.80	226783	18965	34327	4156	283961	54.20
1974	587935	274620	46.80	252423	20075	36947	3870	313315	53.20
1975	691242	331628	47.98	281989	28329	44456	4840	359614	52.02
1976	753579	344461	45.71	31552	38176	49749	5641	409118	54.29
1977	849378	391954	46.15	351211	46830	53037	6346	457424	53.85
31-5-1978	907024	422650	46.60	..	..	..	..	484374	53.40

## APPENDIX 5.3

## Estimates of Unemployed (Lakhs)

Year	Unemployed: below S.S.L.C.			Unemployed: S.S.L.C. and above			Total for state
	Live Register	Dead Register	Total	Live Register	Dead Register	Total	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
December 1966	0.55	0.18	0.73	0.48	0.22	0.70	1.43
1967	0.67	0.23	0.90	0.51	0.24	0.75	1.65
1968	0.72	0.24	0.96	0.61	0.28	0.89	1.85
1969	0.74	0.25	0.99	0.79	0.37	1.16	2.15
1970	0.89	0.30	1.19	0.98	0.46	1.44	2.63
1971	1.29	0.42	1.71	1.11	0.51	1.62	3.33
1972	1.51	0.50	2.01	1.43	0.66	2.09	4.10
1973	1.86	0.61	2.47	1.56	0.73	2.29	4.76
1974	2.13	0.70	2.83	1.73	0.80	2.53	5.36
1975	2.57	0.85	3.42	1.98	0.93	2.91	6.33
1976	2.67	0.88	3.55	2.25	1.06	3.31	6.86
1977	3.03	1.01	4.04	2.52	1.18	3.70	7.74
May 1978	3.27	1.09	4.36	-2.67	1.24	3.91	8.27

## Note to Appendix 5.3

(i) According to a survey conducted by the Director General of Employment and Training in 1973, only 65.3 per cent of the registrants in the live register were really unemployed. Among the technical and professional personnel on the live register this ratio was 62.9 per cent.

(ii) A survey of the educated unemployed, based on a sample from the live register, undertaken by the Centre for Development Studies, in Trivandrum and Calicut showed that among the educated persons (S. S. L. C. and above) excluding post-graduates and technically qualified persons, unemployed actually formed only 54.6 per cent.

(iii) The above survey also showed that the dead register, consisting of persons once registered with the exchange but discontinued registration because of one reason or other, contained a number of unemployed persons, which worked out to 25.7 per cent of the educated in the live register.

(iv) Using (i) and (ii) above, the following figures have been worked for effecting corrections in the live register figures:

Percentage of actually unemployed among those registered on the live register according to education (1973)

(1) Below S. S. L. C.	77.38
(2) S.S.L.C. and above	55.10
(3) All	65.30

## APPENDIX 5.4

**Outturn of Different Categories of Manpower during the period 1978-79 and 1979-84**

Category	1978-79 (1 Year)	1979-84 (5 years)
(1)	(2)	(3)
<b>I. Medical Personnel</b>		
(a) <i>Allopathy</i>		
1. M. B. B. S.	421	2107
2. B.D.S.	30	150
3. B. Pharm	25	75
4. B.Sc. (Nursing)	25	75

(1)	(2)	(3)
5. General Nurses	347	1735
6. A. N. M.	107	535
7. Laboratory Technicians	64	320
8. Pharmacists	180	900
9. Health Inspectors	210	1050
(b) <i>Ayurveda</i>		
1. B.A.M.	38	190
(c) <i>Homoepathy</i>		
1. (DHMS) B.D.M.S.	220	1100
<b>II. Agricultural and Veterinary personnel.</b>		
B.Sc. Agriculture	58	289
M.Sc. Agriculture	24	121
B.V.Sc.	46	232
M.V.Sc.	6	20
<b>III. Engineering Personnel</b>		
(a) Degree in Civil Engineering	146	131
Degree in Mechanical Engineering	305	1524
Degree in Electrical Engineering	253	1264
Degree in Architecture	17	85
Degree in Telecommunication Engineering	42	209
Degree in Chemical Engineering	26	130
Total	789	3943
(b) Diploma in Civil Engineering	251	1256
Diploma in Mechanical Engineering	401	2005
Diploma in Electrical Engineering	292	1458
Diploma in Telecommunication Engineering	22	112
Diploma in Chemical Technology	13	64
Diploma in Chemical Engineering	15	77
Diploma in Automobile Engineering	24	122
Diploma in Textile Technology	27	136
Total	1045	5230
(c) <i>I.T.I. Trainees</i>	8682	43986
IV. B.Ed.	2000	9998
V. I.L.D.C.	600	3000

Note: Estimates prepared in the State Planning Board are based on the present rates of intake and outturn of the different categories of manpower.

CHAPTER 6

REVISED MINIMUM NEEDS PROGRAMME

Although the implementation of the earlier Plans had led to substantial growth in all the sectors the disparity in income between the lowest and highest income groups could not be narrowed down. According to the Planning Commission, as much as 40 per cent of the population of the country is still below the poverty line. These facts led to the revelation that growth of national income cannot by itself eradicate poverty among the masses and that benefits of planning had not permeated down to the poorer sections to the extent necessary. The acute problem of poverty persisting despite more than two decades of planning prompted Government of India and the Planning Commission to accept eradication of poverty as the major national policy.

6.2 The national minimum needs programme was enunciated as a first step towards bettering the living conditions of the poorest strata of the society. The objective of this programme was to provide the minimum requirements in respect of items of social consumption such as elementary education, drinking water, medical care, nutrition, house sites for the landless labour, rural roads, rural electrification and slum improvement. The strategy adopted was to give over-riding priority to the provision of these facilities in the respective sectors of development. Accordingly priority was given in the allocation of available Plan funds both at national and State levels for the development of the above mentioned minimum needs.

6.3 The recent change in the approach to planning has resulted in greater emphasis being given to the national minimum needs programme. The all-India plan for 1978-83 contains a minimum needs programme which is much more ambitious than that included in

the Fifth Plan, though items covered are virtually the same in both cases.

6.4 The programme, based on upgraded norms is designated the 'Revised Minimum Needs Programme' (RMNP). The RMNP has a stronger rural bias also compared to the MNP of the Fifth Five Year Plan. In the proposed RMNP elementary education, adult education and nutrition programmes relate to urban as well as rural areas while improvement of slums relates only to urban areas. All other programmes benefit exclusively the rural population. Urban needs in these areas of development are proposed to be met through the general sectoral plans. The RMNP with its large construction component will, incidentally, create substantial employment opportunities for the rural labour class.

6.5 The revised targets of the programme at national level are to be achieved over a ten year period ending 1988, except in the rural water supply sector where all the leftover problem villages identified in the past are to be covered within the next five years. The phasing proposed in other cases is to achieve approximately 40 per cent of the total targets by 1982-83. The revised targets are as indicated in Table 6.1.

6.6 The aggregate outlay required for all the nine items of the Revised Minimum Needs Programme over the five years ending 1982-83 would be Rs. 4179.50 crores. The outlay in the last year of the Plan period (1982-83) will be Rs. 1037 crores of which the fixed investment component would be Rs. 652 crores (1976-77 prices) and construction wage component would be Rs. 140 crores.

TABLE 6.1

Revised Minimum Needs Programme—All India

Sl.No.	Programme	Targets for 1978-83		
		Unit	Physical Quantity/Nos.	Financial (Rs. crores)
(1)	(2)	(3)	(4)	(5)
1	Elementary Education	No. of teachers (lakhs)	1.59	900.00
2	Adult Education	No. (lakhs)	250	200.00
3	Rural Health:			
	(a) Additional P.H.C.	No.	30	} 490.00
	(b) Additional Sub-centres	"	5000	
	(c) Upgradation of P.H.C.s	"	400	
	(d) Community Health Workers	"	..	
4	Rural Water Supply	No. of villages (lakhs)	1.03	675.00
5	Rural Roads	Length of road (km.)	80,000	800.00
6	Rural Electrification	No. of villages	1,02,698	250.00
7	Housing for Landless Labour Households	No. (lakhs)	65	500.00
8	Environmental Improvement of Urban Slums	No. (lakhs)	130	190.00
9	Nutrition	No. of children and mothers (lakhs)	10	174.50
TOTAL			..	4179.50

6.7 Kerala's position is more or less unique in respect of progress already made in providing the items included in the minimum needs programme. This special position makes it necessary to deviate from the all-India pattern in so far as the priorities and emphasis to be given to the various items under the programme. On the whole, the situation in Kerala does not call for a large part of the plan outlay being set apart for the Revised Minimum Needs Programme as it is termed in 1978-83 all-India Plan Draft. The item-wise discussion below will show the revisions and re-adjustments required in this regard:

(i) *Elementary Education*

6.8 Kerala has almost fully achieved the national target of providing free education to all the children in the age group 6-14 years. There may be isolated areas like the tribal settlements within the forests which are yet to achieve this target. This does not mean that all is well with our elementary education system. There is immense scope for improvement in this area, as far as the quality of education, provision of furniture and equipment as also satisfactory accommodation facilities in schools are concerned. In a State like Kerala where there is heavy rainfall for more than six months of the year, running of schools in insecure temporary structures is highly risky. A comprehensive programme for construction of school buildings and acquisition of equipment has been drawn up. The provision made under this item will be sufficient only to meet part of the requirements.

(ii) *Adult Education*

6.9 It is well known that Kerala is far ahead of other States in India in the matter of literacy. The percentage of literacy in Kerala is about 60 while at the all India level it is only about 30. It is estimated that the number of illiterate adults in Kerala is of the order of 50 lakhs. This figure includes old people who need not be covered by the programme of adult education. Thus the actual number of adults, in need of education should be much less than 50 lakhs. Another aspect relevant in this context is that because of the universalisation of primary education almost all the households will be having at least one educated member.

6.10 The emphasis laid on bringing in functional bias into adult education and upgradation of neo-literates are commendable features of the RMNP which are quite relevant to Kerala also. Any adult literacy drive launched in Kerala should have in view the functional side of education. This would naturally call for proper follow up to help the neoliterates to acquire better skills in their respective areas of production. In short it is not the size of the programme, but the orientation that needs greater stress in the Kerala context. As is suggested in the all India programme this item may be left to the voluntary agencies and service organisations and the State Governments' role may be limited to co-ordination of the programme and provision of financial assistance in deserving cases.

(iii) *Rural Health*

6.11 Kerala is much advanced in the provision of health services to the rural population as well as to the urban population. Actually the urban-rural

difference in this respect is much less in Kerala than in other parts of India. The only exceptions to this are a few remote villages or settlements in the high ranges and the waterlogged areas. Kerala is perhaps the only State in India which is provided with a Government Medical Institution in every Panchayat. Apart from the network of Government institutions under the different systems viz., Allopathy, Ayurveda and Homoeopathy, there are a large number of well run private institutions under all the three systems referred to above.

6.12 Kerala has already achieved the national target of one hospital bed for every thousand population in spite of the high density and rate of growth of population. The State has the lowest death rate in the country and leads the other states in the expectation of life at birth.

6.13 There is, however, considerable inter-regional disparity in the provision of health services within the State itself. The district-wise break up of the data on medical facilities is ample proof for this. It is therefore the reduction of such inter-regional disparities that deserves highest priority in the health sector. Such a policy will naturally take care of the lack of medical facilities in remote areas mentioned earlier. It will not be feasible to implement in Kerala the rural health programme announced by the Centre and included in the Draft National Plan without any change. The services of qualified doctors are available within reach to the vast majority of the rural population, thanks to the development of communication facilities coupled with that of medical facilities. They will, therefore, be reluctant to make use of the medical advice and services provided by paramedical personnel with a short period training in medical science. As there is unemployment among qualified doctors under all the three major systems of medicine, it would be desirable to modify the programme so as to make use of their services for provision of rural health services.

6.14 The development of Primary Health Centres and Sub-Centres also forms an important part of the national rural health programme. Present norms of one PHC for every lakh of population and one sub-centre to every 10,000 population are to be revised to one PHC for every 50,000 population and one Sub-Centre for every 5,000 population. The new norms are to be achieved by 1988. Any programme for strengthening the PHC-S.C. system will, no doubt, have to be implemented fully in the State also.

(iv) *Rural Water Supply*

6.15 Rural Water Supply is not merely a question of availability of water. The programme implies supply of pure and safe drinking water to the rural people. The villagers of Kerala generally depend on well water for drinking purposes. As the State gets plenty of rainfall, the wells, as a rule, provide perennial supply of drinking water. However, in the case of high hilly areas and the coastal regions there are difficulties in using well water for drinking purposes. So far as hilly areas are concerned the wells are very deep and would fail during the summer months. In the coastal regions the problem is salinity of water. The provision of pure pipe water in both these regions is an urgent need. The State Government could, so far, do only very little towards solving this problem.

6.16 Priority was given in the past plans to provide protected water to the urban population. As a result of this, almost all the cities and towns in Kerala have water supply systems. A number of rural water supply schemes also have been taken up and implemented in the later years of planning. But a large ground remains to be covered in this field. In the five year period 1978-83, a determined effort has to be made to cover all the above mentioned problem areas by pipe water supply system.

6.17 As the distinction between the rural and urban areas is not so marked in Kerala as in other parts of the country, many of the so called rural areas share urban characteristics and are in need of protected water supply. The present policy of the Government is to implement rural water supply schemes as remunerative schemes with the loan assistance of L.I.C. of India. This process could continue in accordance with the availability of funds from Government and financial institutions. It would not be out of place, however, to give a note of warning against taking up non-remunerative schemes with loan assistance from financial institutions like the Life Insurance Corporation.

#### (V) Rural Roads

6.18 Kerala ranks high among the States in the length per unit area of rural roads. The peculiar lay-out of villages in Kerala makes it impossible to apply the MNP norms formulated by the Planning Commission to Kerala. Most of the villages in Kerala have road links with District or State roads but these links are roads only in name. Out of 63,618 Kms., of rural roads only 2,674 Kms. are maintained by the Public Works Department of the State. Owing to the extreme pressure of population Kerala's villages have nearly 14000 persons on an average. (The Government of India has stipulated that for villages having a population of 1500 or over there should be at least one metalled road within a radius of 4 Km.) Therefore more good quality roads are necessary in the State for every village. The State intends to improve and develop at least 9,000 Kms. of rural roads (out of about 64,000 Kms.) at a cost of Rs. 100 crores during the next plan decade. In the Plan for 1978-83 it is proposed to develop 3818 Kms. of rural roads at a cost of Rs. 40.38 crores. There are certain regions which lag considerably behind the rest of the State in the matter of communication. Such areas occur mainly in tribal pockets or other settlements in the high ranges. Provision of all-weather roads is a prerequisite to the development of these villages and hence high priority will be assigned to the development of roads in the tribal areas/settlements.

#### (vi) Rural Electrification

6.19 According to the State Electricity Board all the villages in the state will be electrified by the end of 1978-79. The concept of village in this context is the revenue village whose average area is 30.7 sq. km. and average population is 14,102 as against the all India averages of 5.7 sq. km. and 762 persons. Hence the revenue village in Kerala is not strictly comparable with its counterpart in the rest of the country. In fact the comparison with all India will be more meaningful if the census villages of Kerala (which are known as 'Karas' or 'Desoms') are considered for this purpose.

The average area of a census village in Kerala is 6.5 sq. km. and average population is 2994. Even the census village of Kerala as a unit is therefore bigger in terms of both area and population than that of the all-India average village. A recent study conducted by the Kerala State Planning Board shows that more than 800 census villages in the State are yet to be electrified in the sense that at least one electric line touches the village. Hence a massive programme has to be drawn up for rural electrification in the State if all these villages numbering over 800 are to be electrified during the Plan period 1978-83 itself.

6.20 A provision of Rs. 4.5 crores is allocated for rural electrification under the Minimum Needs Programme. This together with the expected assistance from the Rural Electrification Corporation should help to electrify all the remaining villages in the State.

6.21 Even in the so called 'electrified' villages many rural areas and rural households are not served by electrification. The funds set apart and works implemented in the field of transmission of electricity were not commensurate with the progress achieved in generation of electricity. As a result of the realisation of this discrepancy adequate attention is being given to transmission of power. Besides the electrification of all the villages what is needed in the field of rural electrification is extension of transmission lines to all parts of the villages so that all the households could get the benefit of electrification.

#### (vii) Housing for Landless Labour Households

6.22 Here again the Kerala situation is not strictly comparable with the other parts of the country. The commendable progress achieved by the State in enacting and implementing radical land reform measures has resulted in a large number of agricultural labour households acquiring ownership of land to serve as house sites. The provision in the Land Reforms Act which entitles the Kudikidappukar (those who live in hutments put up on land owned by another person) to acquire ownership of a minimum of ten cents of land around their hutments at nominal cost, has benefited about four lakhs of households, mostly belonging to agricultural labour class. The hutments in which they dwell are too small and insecure to be called houses. Being casual labourers with only partial employment they are not able to construct houses by themselves. Any housing programme intended for the landless labour class will have to be fully financed by the State with a substantial component of subsidy. An ambitious housing programme for this class is under consideration of the State Government. The Programme can be implemented within a reasonable period only if financial assistance from the Central Government and financing institutions is made available.

#### (viii) Environmental Improvement of Urban Slums

6.23 Kerala shares the problem of urban slums more or less in proportion with the size of its urban population. Past efforts at rehabilitation of the slum dwellers by transplanting them from their original habitat could not succeed because of their reluctance to move to a new locality which would usually be away from the heart of the city or town. It is as an alternative that the improvement of slums has been accepted

as a national policy. The components of the environmental improvement programme are water supply, sewerage, the paving of streets and provision of community latrines.

6.24 This Programme will at least serve as a temporary solution to the problem. Apart from these limitations, the programme is not capable of being implemented in all the slums. There are, in Kerala, as much as in other parts of India, slums which are not amenable to any improvement programme. Therefore there is likelihood of some of the worst slums remaining untouched. It would appear more appropriate to combine the programme of demolition and reconstruction of some of the worst slums which are not amenable to improvement measures, with the proposed programme of environmental improvement of urban slums. It is worth mentioning in this context that the proposed urban development programme of the State for 1978-83 includes some programmes for replacing urban slums with multi-storeyed buildings which can accommodate the entire slum dwellers of the area by flat system.

(ix) Nutrition

6.25 Kerala being one of the States with a large food deficit, nutrition level of the population is very unsatisfactory. There are no reliable statistics regarding the extent of malnutrition, but it is generally accepted that the problem is not as acute as the food deficit

would indicate. The availability of starchy tubers like tapioca and fruits and vegetables like jack fruit and bananas and the comparatively better availability of fish are some of the factors which explain the queer situation. This does not, however, preclude the existence of large sections of poor people who are severely undernourished. Malnutrition among children, pregnant women and nursing mothers deserve special attention. The policy has been to provide supplementary diet to these sections. This policy has to continue as provision of balanced food to all people cannot be achieved in the near future.

6.26 The most important nutrition programme under operation in the State is the CARE feeding programme for the primary school children. Besides this there are certain other schemes like supply of food for pre-school children. Expectant and nursing mothers also receive free food materials from the CARE. In the Plan for 1978-83 the programme will be extended to cover about 50 per cent of the Blocks with concentration of Scheduled Castes and Scheduled Tribes so that all such Blocks could be covered within the five year period from 1978-83. The Special Nutrition Programme will be extended to cover a larger number of children and mothers during 1978-83 subject to availability of food materials and funds by way of foreign aid and central allotments.

Table 6.2 provides the targets and outlays under the revised minimum needs programme for the State.

TABLE 6.2

Revised Minimum Needs Programme—Kerala

Sl. No.	Programme	Target for 1978-83			
		Physical target		Financial outlay	
		Unit	Quantity	(Rs. Lakhs)	
(1)	(2)	(3)	(4)	(5)	
1	Elementary Education	(a) No. of Schools	9,350	2051.00	
		(b) No. of Teachers	4,100		
2	Adult Education	No. of centres	5,000	180.00	
3	Rural Health	(a) New P.H.Cs. (Nos)	50	1180.00	
		(b) Staff Quarters	150		
		(c) Additional Beds (Nos)	3,320		
		(d) Rural Dispensaries (Nos)	251		
		(e) Ayurveda Dispensaries (Nos)	110		
4	Rural Water Supply	(a) No. of schemes	560	3825.00	
		(b) No. of wells	4,000		
5	Rural Roads (Improvements of existing roads)	Km.	3,818	4038.00	
		No. of villages (Karas/Desoms)	819	450.00	
7	Housing for Landless Labour Households	No. of House holds (Lakhs)	3.00	2750.00	
8	Environmental Improvement of Slums	No. of tenements	10,000	600.00	
		No. of schemes	4		
9	Nutrition	No. of children and pregnant and nursing mothers (Lakhs)	30.00	1270.00	
TOTAL					16344.00

## CHAPTER 7

### DEVELOPMENT OF SCIENCE AND TECHNOLOGY

Development of modern science and technology has enhanced the ability of advanced nations, both capitalist and socialist, to utilise the forces of nature and thus achieve a much higher material standard of life for their people. A major part of the world including India, however, still remains under-developed by these standards. In more senses than one, what the developed countries have and the under-developed and developing countries lack is an economy based on modern technology and a society with a scientific outlook. The problem of developing these countries is, therefore, one of establishing a culture of science in them in the place of a semi-feudal system of production and distribution and out-moded sociological values and habits of thought engendered by them. Our own experience in the last few decades is that it is not possible to modernise our economy without the aid of advanced science and technology. Science was given pride of place in the national life only since Independence even though there existed sizable scientific activity in Indian Universities and certain scientific departments of Government. Science teaching and research in schools, colleges, universities and other higher institutions of learning must be strengthened and expanded in the coming years. Recently, the Government of India have initiated several progressive measures in furtherance of science and technology. The National Committee on Science and Technology has prepared a perspective plan for the development of science and technology and a policy statement on Science and Technology has been released which has been well received by the scientific community in the country.

7.2 It is well recognised that sustained pursuit of scientific enquiry and the systematic application of the fruits thereof to the task of bettering the human condition have been factors which through the centuries, have led to a radical transformation of man's material and cultural environment. Consequently, the conscious promotion of science and technology for enriching the cultural and material foundations of society has to be one of the principal objectives of any progressive Government. The people and the Government of Kerala have since long been committed to this objective and they have some achievements to their credit, particularly in providing educational support. However, in the present context, efforts and investments in this direction have to be far greater and more diversified than before.

7.3 Through a National Plan for Science and Technology, the Central Government has attempted to frame policies and guidelines so as to ensure (a) that we build our scientific and technological capabilities in areas related to our needs and in the interests of national welfare and (b) that we avoid the risk of fragmented efforts of different agencies and wasteful duplication of efforts. The national objectives of providing, on a priority basis, the basic minimum needs of the common man such as food, clothing, housing, health, education, water supply, communications and adequate employment opportunities,

the development of self-reliance, the reduction of imported technology, maximisation of returns from the existing investments in science and technology, full development of the natural endowments of each region over a period of time, and safeguarding the quality of environment, are among the important parameters within which the policy for science and technology has to be formulated and implemented. These considerations also should guide the Kerala Government in its approach to planning for the promotion of science and technology within the State.

7.4 It is admitted that planning science and technology for economic and social development in this manner is a relatively new concept, and as such the initial efforts may have inadequacies. It has to be recognised that scientists and technologists should be fully involved in this planning process along with others, that appropriate institutional arrangements have to be made for the purpose, and that we continuously review our plans, policies, and targets in this area of science and technology in order to ensure that our planning process improves with experience and that our plans are adapted to changing situations.

7.5 Government control of science so far has been largely viewed only from the administrative context and that too without reference to its role in development. In the historical process of evolution of scientific departments in the country these had functioned as field or executive agencies which have played only a subordinate or even a minor role in shaping Government policies. It is recognised that this system should be replaced by a new outlook in the handling of science and technology at Government level, by the association of scientists and technologists with the Governmental machinery and policy making and by the development of research and educational institutions which will maintain a high standard of activity and intellectual integrity and will pay the highest consideration to pursuit of knowledge and its application to human welfare as a worthwhile endeavour in itself.

7.6 As science and technology are relevant to almost all sectors of the developmental effort they have to be promoted with reference to each sector in the light of the level of science and technology currently available to that sector. These sectors include, economic activities such as agriculture, industry, mining, transportation and communication, and welfare activities like health, nutrition, population control, and education. In regard to each such sector, there is a network of activities covered by the term "Science and Technology" which, though complex, may be classified into four areas for purposes of analysis and policy formulation. These are:

- (i) creation and diffusion of scientific and technical skills;
- (ii) provision of scientific and technological services;
- (iii) research and development; and
- (iv) application of science and technology.



7.7 An appropriate package of policies, strategies and investments are required to be formulated and these in turn, will have to be related to each of the four areas of scientific and technological activity referred to above. To illustrate this, for agriculture we have to create relevant policies, and appropriate institutions concerned with research and development, provision of scientific and technological services, and creation and diffusion of scientific and technological skills. We have also to create conditions for the extensive application of agricultural science and technology. A major part of the policy frame-work will differ from sector to sector. Also separate, though similar, institutions or wings would have to be created for each sector. However, for the co-ordinated development of science and technology as a whole appropriate policies and investments have also to be formulated and implemented.

7.8 With regard to plans and policies in the area of science and technology, Kerala Government recognises that there are many programmes and policies in which the responsibility for implementation has devolved on the State Government. In the formulation and review of national plans and policies the nation as a whole has to participate and consequently each State Government has its own legitimate role to play in the common task of examining national problems and suggesting solutions. Further, within the general framework of national plans and policies and science and technology each State has responsibility of outlining supplementary programmes and policies with special reference to the natural endowments and unique socio-economic situation of the State. For the effective performance of these tasks, the Government should invite the scientific community in the State, particularly those in the Universities, other educational institutions, and research establishments, to consider the problems and tasks in their respective areas of interest, and to participate with Government and the public in the discharge of these tasks. Every department should identify the science and technology component of its sectoral plans and ensure its effective implementation.

7.9 The tasks referred to above form a massive and complex responsibility. In order to help the Government in the discharge of these tasks, the Government of Kerala has constituted a State Committee on Science and Technology representing various disciplines and institutions of importance in the region. It is charged with the task of "constant review of scientific and technological policies in relation to the objectives of the successive Five Year Plans".

7.10 The institutions which have been recently created or expanded by the State Government and which are concerned with one or more of the four areas of science and technology are:

- (i) Agricultural University, and its field stations,
- (ii) Kerala Forest Research Institute,
- (iii) Ground Water Board,
- (iv) Sree Chitra Tirunal Medical Centre,
- (v) Re-organised Department of Mining & Geology,
- (vi) Centre for Development Studies,

- (vii) Electronic Research and Development Centre,
- (viii) Centre for Water Resources Development and Management, and
- (ix) Centre for Earth Sciences.

7.11 New institutions to be developed during the five year plan period 1978-83 are the following:

1. Institute for Adaptive Technology and Development Administration.
2. All India Institute of Health Sciences.
3. Centre for Energy Study.
4. Science and Technology Museum.
5. Kerala Botanical Gardens.
6. Science Centre.

7.12 Apart from these, at the request of and with a liberal grant from the State Government, the Council of Scientific and Industrial Research of the Government of India has established a Regional Research Complex, partly located in Trivandrum and partly in Cochin, concerned with the utilisation of regional resources and technical problems of industries in the State.

7.13 With regard to water management, a Centre for Water Resources Development and Management has been constituted. The Government has now taken steps to bring about further co-ordination and adequate research and development by the establishment of necessary sub-centres.

7.14 In regard to the assessment and utilisation of minerals, the re-organised Department of Mining and Geology has made progress in the survey of certain resources like clay and limestone. It works in close collaboration with the Geological Survey of India. It has planned a major programme of collaboration with the C. S. I. R. Regional Complex, in the preparation of comprehensive data on the availability of clays in terms of quantity and quality. A proposal has been submitted to the UNIDO through the Government of India for technical and financial assistance in establishing the facilities for undertaking detailed geophysical and geochemical survey of the mineral resources of the State in certain selected areas. This survey is in progress.

7.15 The above steps indicate the priorities set by the State Government in regard to the sectors where the development of science and technology has to be specially promoted in the State in the current context.

7.16 It is the policy of the State Government to ensure maximum collaboration between Central and State institutions working in the same field and between Universities and Research Institutions.

7.17 The Government has already declared, that the State Committee for Science and Technology shall be "responsible for the promotion or administrative autonomy for research laboratories and research institutions, so that research effort is directed only by those who understand its importance and significance and are free from cumbersome administrative procedures".

7.18 Promotion of science and technology requires in fact an institutional framework which can attract the best available talent in the country and is free from interference and restrictions of the kind that would be inevitable within the usual Government set-up. This is best provided by research centres that have the freedom to develop their work along independent lines. Both in the conceptualization of the tasks to be undertaken, and in their execution, it is essential that the responsibility is entrusted to persons who have made important contributions in the areas concerned and who will ensure that the standards of achievement aimed at will compare favourably with those established internationally in the respective disciplines.

7.19 In view of the scarcity of personnel with the capacity for giving intellectual leadership of the kind necessary it is vital that an enlightened open-door policy is followed in regard to the selection of staff and students in these centres of research and training. The aim should be to secure the best talents available in the country, not influenced by regional or other such considerations.

7.20 Great care will also need to be taken to ensure that the financial resources available for the purpose are put to effective use and not frittered away. For this it is essential that the area selected for deploying these resources have obvious relevance to the problems of the nation, and that the effort is not spread too widely and thinly, so that significant results can be achieved within a reasonable period of time.

7.21 Autonomous research institutions staffed by personnel of high quality will be able to attract funds from sources other than the State Government. In fact this is among the important advantages of setting up such institutions. It is therefore essential that these institutions should not only be free to receive funds from other sources but even encouraged to do so provided these funds do not deflect the institutions from the objectives for which they have been set up.

7.22 Autonomy should not of course imply non-accountability. The question to consider is only how best such accountability is to be ensured without detriment to the kind of freedom and initiative which would be necessary for the effective functioning of these institutions. There are many important ways in which this can be done. Each institution should be required to prepare a perspective plan of its work, covering a period of about five years, and evaluate its work at periodic intervals. It could also be evaluated independently, at longer intervals, by persons of recognised eminence from outside. Adequate provisions for publication of research work and for the association of scholars from other institutions within the country and abroad are other means for ensuring that there is continuous evaluation by persons who have the necessary competence.

7.23 The general policy would be to provide block grants to the institutions concerned on the basis of their five year perspective plans and treat such block grants as commitments for the period. The continuance

of similar block grants beyond each such period might be made conditional on professional evaluation of the work completed and further work proposed. It is important to ensure that such evaluation does not degenerate into audit in the usual sense of the term. While audit of funds is essential, it should be based on an enlightened view of the special problems and requirements of research and not be reduced to procedures which have an inhibiting effect on the work of these institutions.

7.24 The Government is committed to providing the requisite support for the creation and diffusion of scientific and technical knowledge and skills. It is recognised that our efforts have to cover science education at primary and secondary school levels, science education at the University, under-graduate and post-graduate levels, technical education at the polytechnic and University levels, Industrial Training Institutions for training of craftsmen, provision of facilities for training and apprenticeship in industry and manpower planning for science and technology. Although Government have taken some steps in these directions, much more remains to be done. In particular, Government should support the development of research activities at the University and College level and shall provide funds for supporting this activity. Steps have to be taken for establishing closer liaison between engineering colleges and the industry and for the successful implementation of the Apprenticeship (Amendment) Act 1973. Steps are also to be taken to start technological and advanced scientific education in areas like ship-building, geology, fisheries and forestry, which are of particular importance to the State.

7.25 The role of science and technology in the social transformation of developing societies is a crucial one; it is an imperative for any process of modernisation. Science and technology offer the best means to enlarge options and maximise freedom as we enter the age of massive population and exhausted resources. Social transitions are by their very nature slow but their inner dynamics imply the abandonment of feudal and hierarchical systems of Government, checked and balanced to equilibria. With the old safeguards weakened or destroyed, the new safeguards must be participating and informed while at the same time pursuing the required social discipline. A minimum knowledge of modern science and technological processes should form the inner spirit of administration and politics. It is time that we bring enlightenment to those of ill-informed conservatists so that they are made to see the need for centralised power for speedy decision-making through appropriate use of science and technology. This is inevitable if we are to preserve stability against complex destabilising pressures. Conservative ideas, traditions and precedents from the old order are close to bankruptcy. Neither administration nor the social leadership has the required social theory to cope with the new circumstances. The present day administration has become lethargic, reaffirming old ideas, which are contradictory to the fast growing science and technology. In this modern world, everything relates to everything else and therefore, the process of modernisation has to be achieved through the development of appropriate levels of science and technology.

## PROBLEMS OF ADMINISTRATIVE ORGANISATION AND MANAGEMENT

Subsistence agriculture and a few simple crafts constituted the main feature of the economy of the Indian village in the past. The economy of the modern Indian village however has become part of an organised internal and international market. Foreign trade as well as trade between newly grown cities and the village have developed. Railways and metalled roads have annihilated distance. In consequence a highly differentiated, interdependent and acquisitive society is developing fast. In this context the role of planning and administration assumes added significance in that it is the duty of the planning apparatus to recognise the traditional blocks to change and deal with them accordingly.

8.2 In planning a new socialist order in India, the planning machinery and other executive organs of the Government have to make a scientific appraisal and a proper approach in relation to the different fields of social and economic activity. Problems relating to distribution, control and responsibility in State-managed industries, incentives in the new industrial order and the role of trade unions in industry need close study. The needs of the poor among the agriculturists and agricultural labourers have to be identified and special attention paid to meet these needs. The supervision and direction of welfare has to be organised with built-in provisions for hearing public complaints and helping the people to obtain quick remedies and for special work among the scheduled castes with a comprehensive programme of action for raising their social and economic status.

The social purpose of education has to be clearly defined in relation to the needs of economic plans. Secondary education and industrialisation have to go hand in hand. University education has to be clearly oriented to development of scientific research and scientific talents. Problems of contemporary life should form the basis of curriculum making in educational institutions. The organisation of the youth of the country and their training also assume great importance. Leadership in group-work and the professional training of rural leaders will have within its fold problems of age-group conflict consequent on a changing culture. The need for community centres for youth in community project areas has to be recognised.

8.3 Reform of the Administrative machinery even within the confines of the existing framework is possible. It is necessary to take into consideration the following suggestions in this context:

(i) The simplification of procedures at the "cutting edge" level in respect of each department is called for. This should be a continuous process where suggestions should be invited from the public as well as personnel working in the departments concerned.

(ii) Implementation of policies should be the responsibility of the Head of Department for which he should be given sufficient authority. The introduction of a "single file system" between offices of Heads of

Department and the Secretariat, where the entire file of the Head of Department is forwarded to the Secretariat and the file with the orders passed is returned to the Head of the Department should be contemplated. Also the system of "jumping of levels" may be introduced. A Service Tribunal which will relieve the Ministers and Secretaries to Government much of the burden they are now facing in dealing with service matters should be set up.

(iii) Accounting is an essential tool of management and should be done by the authority incurring the expenditure, while auditing, which is an independent check on management should vest with an outside agency. This separation of accounts from audit will enable the individual departments to have up-to-date figures of expenditure with them which will make it possible to plan all the activities more speedily and realistically.

(iv) There is also need for radical reform in personnel management. Inter-change of personnel between Administrative Secretariat and Finance Secretariat on a reciprocal basis is advocated. Also the need for imparting institutional and on-the-job training has been emphasised. In view of the rapid increase in the direct involvement of the State in development work, officers in Development Departments like Agriculture, Animal Husbandry, Forestry, Industry, etc. should obtain sound grounding in project formulation, evaluation and financial management.

(v) The role of the District Collectors has to be re-defined in the context of the shift in emphasis in district administration from law and order to development work. The Collector should be responsible for district level planning for which a technocratic infrastructure has to be built around him. Since Block level planning is assuming increasing importance, there is scope for reorganising the jurisdiction, work and functions of the present R.D.Os, and B.D.Os so that these functional units could be given a more development orientation. The new officer in charge of this reorganised Block/Taluk will be the co-ordinator on plan formulation and implementation. He will be assisted by a team of technical officers on agriculture, animal husbandry, industry, fishery, etc. All these reform measures, though limited in scope and content, could produce quick results by way of speed and consequent economy. But the essential requisite for the efficient functioning of the reformed set up is delegation of vast financial and administrative powers to lower levels. To day the fact is that even the existing delegation of powers is not utilised. It is necessary for the higher officers of the Government to develop a proper attitude towards delegation of powers. On this basis action should be taken initially at the lower level which is competent to do so and subordinate officers should be left to exercise their powers without hindrance.

8.4 While planning for a new social order, because it to emerge from the old order, the old values such as has

the "economic man", the "market economy", the "invisible hand" and "individualism" are found to persist. They are inherited and in the process of growth and development new values come up and we should be guarded against mixing these two sets of values. Since planning is a problem of growth which has developed out of history, it cannot be partial. It has to be integral. This explains why problems of planning are problems of transformation and social revolution as against slow and disorganised evolution.

8.5 A new conception of bureaucracy has to be evolved carefully with a view to continuing the two principles of efficient administration and competition. Special bodies are to be set up to represent authority and to apply sanctions at all strategic points of our social and economic life. The bureaucrat of the new type should be different from his counterpart today who does not make decisions. The latter executes orders and is only an agent. He does not belong to the power group either. This anomalous position has to be rectified. The new bureaucrat has to be immediately connected with decision-making. The process of decision-making must be the result of the cross fertilisation of different levels of administrative and political intelligentia. Bold criticism and group leadership should inform this process which alone can eliminate waste, speed up work and produce innovations. The bureaucracy which necessarily should form the backbone of the growing administrative system will have

to overcome enormous difficulties connected with the necessity of simultaneously solving the problems of creating a heavy industrial base, of developing light industries, of reconstructing agriculture and of improving the material conditions of the masses of people in the towns and country-side. The bureaucrat cannot perform this task unless he enjoys great prestige among the people. But today it is alleged that the effectiveness of the bureaucrat has been materially reduced because he does not any longer enjoy a position of prestige and respect as before. A whole series of sociological, political and economic factors has combined to produce a steady deterioration in the quality of administration. The result is the slowing down of administrative machinery and a total loss of all sense of urgency. Such a situation definitely is not conducive to learning and doing, nor for integrity and thoroughness. The willingness to assume responsibility which is the most crucial single qualification of a good administrator is the first casualty in the present system. Sociologically this courage to face facts oneself, to find solutions for problems and to breed self-confidence has to be attributed, among other things, to a deep and informed involvement of the individual to the social and psychological context in which he operates. Hence it will not be far wrong to say that the success of the administrative machinery will largely depend on the correctness of the organisational pattern and ideology directing our path towards a democratic and socialistic society.

## **SECTORAL PLANS**

## AGRICULTURE AND RURAL DEVELOPMENT

**Development over the Plan Periods**

Substantial investments have taken place in the agricultural sector in the past plan periods. During the period 1951-78, nearly Rs. 239 crores, accounting for 17.4 per cent of the aggregate plan allocation, have been invested directly in agriculture and related sectors. If irrigation is also included, the investment would amount to Rs. 410 crores, accounting for nearly 30 per cent of the plan outlay. A review of the past development effort over the years from 1960-61 to 1976-77 will provide an appropriate setting for assessing the current status of agriculture in the State. The analysis is attempted with reference to the following points:

- (i) Relative changes in the agriculture sector *vis a vis* the economy of the State as a whole.
- (ii) The structural changes within the agriculture sector among the sub-sectors of crop production, livestock production, forestry and fisheries.
- (iii) The performance of the crop production sub-sector in terms of increasing farm income production and productivity, its impact on the food basket, and the change in land use pattern.

9.2 During the period from 1960-61 to 1975-76 agriculture sector registered a relatively lower growth rate as compared with the rest of the economy, thereby reducing the share of the agriculture sector in the net domestic product. At constant prices, the contribution of the agriculture sector to the regional income of the State rose from Rs. 240 crores to Rs. 325 crores, registering an increase of 35.4 per cent over the base period. During the corresponding period, the regional income of the State increased by 61.3 per cent. Consequently, the share of the agriculture sector to the regional income of the State declined from 55.6 per cent to 46.6 per cent, indicating that the progress registered in the agriculture sector has been lower than that in the other sectors.

9.3 Within the agriculture sector, the predominance of the crop production sub sector continued. During the early sixties (the triennium ending 1962-63) the average share of the crop production sub sector was 93.7 per cent. The corresponding figures for livestock, forestry and fisheries were 2.7, 2.0 and 1.7 per cent respectively. Practically the intra sectoral distribution continued without any significant change during the period ending 1973-74 though the share of crop production sub sector declined to 92.0 per cent and the share of forestry and logging increased to 2.9 per cent and that of fisheries to 2.5 per cent. However, in value terms the increase in crop production has been 32 per cent and that of livestock 29 per cent, while in forestry and fisheries the increases registered have been 99 per cent and 101 per cent respectively.

9.4 The index number of crop production in the State moved up from 100.7 to 153.7 registering an increase of 53 per cent over a period of 15 years from 1960-61 to 1975-76. During the same period, the index number of crop production for the nation moved up from 102.7 to 117.2 only, the increase achieved being just 14 per cent. In comparison with the national level, the performance at the State level has been considerably better (See Table 9.1).

9.5 Within the crop production sector, plantation crops registered the largest increase of 191.4 per cent while oil seeds recorded the lowest increase of 8.5 per cent. At the national level, however the trends were not so wide apart with the increase of 64.2 per cent in plantation crops and 41.3 per cent in oil seeds. The foodgrains production in the State registered an increase of 24 per cent. For the rest of the crop sector covering the entire spectrum of non foodgrains, growth in the State has been more than that at the national level i.e. 96.1 per cent and 38.5 per cent respectively.

9.6 The aggregate productivity of crops registered an increase of over 8.6 per cent in Kerala as against 26.3 per cent for the nation as a whole. Among the crop groups in the State, the productivity of plantation crops registered the highest increase of around 81 per cent followed by non foodgrains with 43 per cent. Corresponding figures for the nation have been lower for both groups, 37.7 per cent and 16.0 per cent respectively. The productivity of foodgrain crops in the State increased by only 12.1 per cent while for the nation the increase was 28.7 per cent. The productivity of oil seeds in the State declined by 21.7 per cent during the period while for the nation this group registered an increase of over 24.7 per cent.

9.7 The contribution of area to agricultural production in the State continues to be a dominant factor as the area expansion has been nearly 41 per cent during the reference period while for the nation it has been only 12 per cent. This fact is more pronounced in the plantation crops sector where the increase in area has been 61 per cent against the national figure of 37 per cent.

9.8 Among the crops, rubber registered the largest increase in production, the increase being as high as 444 per cent, followed by tapioca, coffee and ginger. Production of rice registered an increase of nearly 26 per cent while that of coconut around 7.7 per cent. Other plantation crops, tea and cardamom also registered increases in production by more than 50 per cent. Production of pulses during this period declined by 17.5 per cent.

9.9 Rates of growth in productivity have not been of the same order as those of growth in production. The largest increase in productivity has been registered in rubber with nearly 233.8 per cent followed by

ginger, tapioca, groundnut and sugarcane. (See Table 9.2). However, the decline in the productivity of coconut by 21.6 per cent and in cashew-nut by 25.5 per cent has to be looked upon as a disquieting feature of our agriculture. Though there has been a decline in the productivity of coffee, that of tea registered an increase by 15.9 per cent. The annual rate of productivity increase in rubber has been 14.9 per cent closely followed by ginger with 14.4 per cent. The decline in the productivity of coconut has been of the order of 1.4 per cent per annum.

9.10 The largest increase in area during the period has been registered under coffee (127 per cent) followed by cashew (102 per cent), cardamom (77 per cent), arecanut (45 per cent), coconut (43 per cent) and groundnut (35 per cent). The area under rice has also increased, but relatively by a small measure of 14 per cent. There has been a decline in the area under turmeric by nearly 36 per cent. Other crops whose area declined during this period include pulses, coffee, sugarcane and tea.

TABLE 9.1  
Comparative Changes in Area, Production and Productivity of Principal Crops (Index Numbers)

(Triennium ending 1961-62=100)

Crop Group	Area		Production		Productivity	
	Kerala	India	Kerala	India	Kerala	India
1960-61						
All crops	101.1	99.2	100.7	102.7	99.6	103.3
Foodgrains	101.5	99.4	102.9	102.1	101.4	102.8
Non-food grains	102.0	98.4	101.1	103.8	99.1	104.2
Oil seeds	100.1	98.2	98.3	102.7	98.2	104.8
Plantation crops	98.5	99.7	99.7	96.7	101.2	96.2
1975-76						
All crops	142.0	111.2	153.7	117.1	108.2	129.6
Foodgrains	112.4	110.2	127.6	147.9	113.5	131.5
Non-foodgrains	139.6	109.5	198.3	143.8	142.0	120.5
Oil seeds	139.4	107.7	106.7	145.1	76.5	129.5
Plantation crops	159.6	136.9	290.5	158.8	182.0	133.9
<i>Percentage Change from 1960-61 to 1975-76</i>						
All crops	40.5	12.0	53.0	14.0	8.6	25.4
Food grains	10.7	10.8	24.0	44.8	11.9	27.9
Non-foodgrains	36.8	11.3	96.1	38.5	43.3	15.3
Oilseeds	39.3	9.7	8.4	41.3	-22.1	23.6
Plantation crops	62.0	37.2	191.3	64.2	79.8	39.2

TABLE 9.2

## Changes in Area, Production and Productivity of Principal Crops in Kerala

Sl.No.	Crops	Area (000. hectares)			Production (000 tonnes)			Productivity (Kg/ha.)		
		Average of the Triennium ending 1961-62	1976-77	Change in percent	Average of the Triennium ending 1961-62	1976-77	Change in percent	Average of the Triennium ending 1961-62	1976-77	Change in percent
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	Rice	766.85	870.62	21.86	1036.50	1305.87	25.98	1352	1499	10.87
2	Pulses	43.91	35.47	-19.22	17.41	14.37	-17.47	396	365	-7.83
3	Sugarcane (gur)	9.42	8.27	-12.20	37.38	45.40	21.45	4111	5561	35.27
4	Pepper	97.02	111.77	15.20	26.43	25.76	-2.54	272	247	-9.20
5	Ginger	10.87	11.41	4.97	10.87	26.77	146.27	728	2303	216.35
6	Turmeric	4.71	3.03	-35.67	4.23	3.16	-25.30	896	1019	13.73
7	Cardamom	28.60	50.77	77.52	1.28	1.84]	43.75	45	36	-20.00
8	Areca nut	54.72	79.33	44.97	76.79	121.55	58.29	140263	148200	5.65
9	Banana & Plantains	44.59	50.37	12.96	325.00	382.35	17.65	7390	7560	2.30
10	Cashewnut	53.92	109.09	102.32	84.03	108.27	28.85	1558	1114	28.50
11	Tapioca	239.88	322.65	34.51	1666.85	5412.66	224.73	6940	16707	140.74
12	Groundnut	14.98	20.27	35.31	13.48	21.20	57.27	907	1322	45.76
13	Sesamum	13.88	14.84	6.92	3.81	3.99	4.72	227	266	17.18
14	Coconut	499.37	712.03	42.59	32.77	35.28*	7.66	6330	4963	21.60
15	Tea	37.35	37.14	-1.10	39.57	45.44*	14.83	1054	1222	15.94
16	Coffee	17.46	39.62	126.92	7.70	16.11	109.22	442	401	-9.28
17	Rubber	124.23	206.24	66.01	23.54	128.06	444.01	193	625	223.84

\* in lakh numbers

// in numbers

9.11 The gross income from agriculture including livestock increased by a little over 32 per cent from Rs. 231 crores in 1960-61 to Rs. 305 crores in 1975-76. The gross income from net cropped area increased by 16 per cent from Rs. 1201 in 1960-61 to Rs. 1393 per hectare in 1976-77 while that from gross cropped area registered only a marginal increase of 4 per cent from Rs. 983 to Rs. 1023.

9.12 Production of rice in the State during the period of 15 years (average of triennium ending 1961-62 and 1976-77) increased by 10.9 per cent from 10.37 to 13.05 lakh tonnes registering an annual rate of increase of 1.7 per cent. However, the per capita production of rice declined by 6 kg. from 61 to 55 kg. Though there has been an increase in the production of rice, the gains have actually been eroded by the increase in population. However, during this period the production of tapioca registered an increase of 127 per cent. The per capita production increased from 99 kg. to 225 kg. If tapioca is also taken as part of the food basket, production of food in the State in terms of rice equivalent may be said to have increased by 47 per cent.

9.13 Already Kerala has been practising intensive land use having brought under cultivation nearly 50 per cent of the geographical area against the national average of 44 per cent in 1960-61. By 1976-77,

nearly 57 per cent of the geographical area had been brought under cultivation. The intensity of cropping increased from 1.22 in 1960-61 to 1.33 in 1976-77 (See Table 9.3). The degree of intensity of land use could be better gauged by using the measure of the proportion of net area sown to geographical area excluding forests. This proportion rose from 0.69 to 0.79 in the State during the period 1960-61 to 1976-77.

9.14 Over the period from 1960-61 to 1976-77 land use in Kerala has further intensified. There has been an increase of over 14 per cent in the net area sown. Quantitatively, the increase has been 2.77 lakh hectares from 19.24 to 22.01 lakh hectares during this period. Due to the increasing intensity of land use, the annual rate of increase in gross cropped area has been nearly double that of the net area sown. The bulk of the newly cultivated land has come mainly from four land categories viz. cultivable wastes, land under miscellaneous tree crops, pastures and grazing land and fallow land, amounting to 3.00 lakh hectares. There is an apparent increase of about one lakh hectare of land under forests. This increase is only notional as it has arisen largely due to the revision of land records and re-survey of forest lands. On account of the increasing demands put on forest lands for other purposes, the effective forest area is likely to have gone down and is possibly less than what is reported.



TABLE 9.3

## Summary Analysis of the Change in Land Use Pattern of Kerala 1960-61 to 1976-77

Mode of Utilisation	1960-61		1976-77		Change from 1960-61 to 1976-77	
	Actual (000 ha)	Proportion to geographical area in percent	Actual (000 ha)	Proportion to geographical area in percent	Actual (000 ha)	Percent
1 Total geographic area according to village papers	3858	100.0	3885	100.0	27	
2 Forests	1056	27.4	1082	27.8	26	2.5
3 Land put to non-agricultural uses	205	5.3	260	6.7	55	26.8
4 Barren & uncultivable land	151	3.9	79	2.0	-72	-47.7
5 Permanent pastures & other grazing lands	45	1.2	16	0.4	29	-64.4
6 Land, under miscellaneous tree crops	204	5.3	73	1.9	-131	-64.2
7 Cultivable waste	144	3.7	116	3.0	-28	-19.4
8 Permanent fallow	62	1.6	22	0.6	-40	-64.5
9 Current fallow	67	1.7	37	1.0	-30	-44.8
10 Net area sown	1924	49.9	2201	56.6	277	14.4
11 Area sown more than once	425	11.0	733	18.9	308	72.5
12 Total Cropped area	2349	60.9	2933	75.4	584	24.9
13 Seasonal Crops	847	21.9	948	24.4	101	11.9
14 Annual crops	318	8.2	403	10.4	84	26.5
15 Perennial Crops	912	23.6	1346	34.6	433	47.5
16 Total geographical area less forest area	2802	72.6	2803	72.2	..	..
17 Proportion of Net area sown to total geographical area in percent	49.87	..	56.65	-	..	6.78
18 Proportion of Net area sown to total geographical area excluding forest in percent	68.66	..	78.52	..	..	9.86
19 Intensity of cropping	1.22	..	1.33	..	..	0.11

9.15 Apart from the increasing intensity of land use, a major shift in the pattern of land use in terms of the periodicity of the crops grown has taken place in the State. During the period from 1960-61 to 1976-77, when the gross cropped area in the State increased by a little over 25 per cent from 23.49 to 29.33 lakh hectares, area under seasonal crops increased only by 12 per cent, that under annual crops by 27 per cent and perennial crops by over 48 per cent.

9.16 Agricultural development in the State over the years have had some impact on the distribution of the various categories of work force in the agriculture

sector. Agricultural labour had been a significant segment of the work force in the State constituting over 17 per cent against the national average of 15 per cent in 1961. The contrast is more sharp as cultivators formed only 21 per cent of the work force in the State while the national average was 53 per cent in 1961 (See Table 9.4). By 1971 the proportion of the agriculture labour to the total work force rose to 31 per cent and their number nearly doubled to 19.1 lakhs in the State. At the same time, the proportion of cultivators to total work force declined from 21 to 17 per cent though their number remained at the 1961 level of 11.7 lakhs.

TABLE 9.4

## Distribution of Working Force by Industrial Category

(in lakhs)

Category	Kerala			India		
	1961 census	1971 census	Change in percent	1961 census	1971 census	Change in percent
1 Cultivators	11.8 (21)	11.7 (17)	-6.06	932.0 (53)	782.0 (43)	-16.08
2 Agricultural Labourers	9.8 (17)	19.1 (31)	+95.02	271.0 (15)	475.0 (26)	+75.28
Total	56.3 (100)	62.2 (100)	10.41	1751.0 (100)	1804.0 (100)	3.03

(Figures in brackets show percentages).

9.17 Significant changes have been registered in the size of operational holdings of land in the State. There has been a general scaling down in number and area covered by larger size groups of operational holdings. The proportion of all size groups except the lowest (below 0.20 hectare) declined during the decade between 1960-61 and 1970-71. Holdings above ten hectares constituted 0.80 per cent of the holdings

in 1960-61, accounting for 25.50 per cent of the area, but by 1970-71 this group accounted for only 0.08 per cent of the holdings and 60 per cent of the operated area. On the other hand, though the holdings of the middle size groups between 0.4 to 3.0 hectares which accounted for 30.84 per cent of the holdings, declined to 27.57 per cent, the area held by this group increased from 39.66 to 58.97 per cent. (See Table 9.5)

TABLE 9.5

## Percentage Distribution of Operational Holdings and Area Operated in Kerala According to Size

Size class of operational holding (hect.)	% of operational holdings		% of area operated	
	1960-61	1970-71	1960-61	1970-71
Upto 0.20	47.94	54.75	5.72	8.70
0.21—0.40	16.43	15.42	5.72	9.42
0.41—1.00	18.53	16.79	14.20	22.04
1.01—2.00	9.21	8.37	16.06	24.77
2.01—3.03	3.10	2.41	9.40	12.16
3.04—4.04	1.60	1.16	7.50	8.33
4.04—5.05	0.95	0.42	5.40	3.95
5.06—6.07	0.50	0.32	3.40	3.69
6.08—8.09	0.60	0.25	5.30	3.71
8.10—10.12	0.35	0.03	3.80	0.60
10.13—12.14	0.17	0.04	2.50	0.92
12.15—20.24	0.45	0.02	8.00	0.64
20.25 and above	0.17	0.02	13.00	1.07
All	100.00	100.00	100.00	100.00

9.18 There has been substantial expansion in the land under irrigation by nearly 85 per cent through the past plan period. The proportion of gross irrigated area to gross cropped area increased from 16.0 to 21.2 per cent. Yet in this sphere of development, the State could not keep pace with the national level. During the period between 1955 and 1971, the proportion of area under irrigation to net sown area increased from 17 to 23 per cent. The corresponding figures for the State are 13.5 and 21.74. Among the crops, paddy continued to be the major user of irrigation facility. At the end of the First Plan only 69 per cent of the gross irrigated area was accounted for by paddy while its share increased to over 82 per cent by the end of 1973-74. The share of all other crops declined. This is an indication that paddy continues to be the largest beneficiary of irrigation support developed in the State. The policy pursued in the State of making irrigation water available primarily for the cultivation of paddy is also partly responsible for the distortion in the pattern of irrigation water use.

9.19 Among the yield increasing inputs, fertilizer is the most important. During the period 1956-57 to 1975-76, the State remained ahead of the nation in

respect of consumption of fertilizer per unit of cultivated land. What is, however, disturbing is that though Kerala had started off better initially and was ahead of other states, in recent years, the State has been lagging behind. Now Kerala has only the fifth place among the states in respect of the consumption of fertilizer per unit of cultivated land. However, the positive feature of the consumption pattern of fertilizer in the State is a healthy balance in the use of the various plant nutrients viz. nitrogen, phosphorous and potash.

9.20 Only by 1968-69 the High Yielding Varieties of paddy (HYV) got established in the State in a substantial way. The area under HYVs of paddy in the State nearly doubled from 1.23 to 2.30 lakh hectares during a period of seven years from 1968-69 to 1975-76. Season-wise analysis reveals erratic behaviour for some seasons. During the Virippu (Kharif) season, the expansion of HYVs of paddy is relatively steady though coverage has been low with 10 per cent in the earlier years, but gradually extending to one third of the area under Virippu paddy. The area under HYV during Punja (Summer) season has been high with a coverage of 50 per cent initially which later increased to two-third. On the other hand, the area under HYV during Mundakan season remained relatively stagnant around one seventh of the total Mundakan (rabi) rice

area. Another significant feature has been that the area under HYV during Punja season appears to be tapering off around two thirds of the rice area, though it is this season which offers relatively better agronomic conditions for the full expansion of the production potentials of the HYVs on account of relatively longer periods of sun light availability and better water control. Owing to the low coverage of HYV Mundakan season offers enormous scope for expansion under HYVs. The reasons for the low coverage of HYV during mundakan would merit analysis in greater depth.

9.21 Co-operative credit has shown considerable expansion both in quantity and in quality in the State

during the past plan periods. Membership of the co-operative credit societies in the State during the period between 1958-59 and 1975-76 increased by four times, paid up share capital by 13 times, deposit by 53 times, loans advanced and loans outstanding by 20 times (See Table 9.6.). At the same time, certain disturbing trends are also seen. For example, the overdue loans increased from 25 per cent to 34 per cent. However in its totality the co-operative credit structure has acquired considerable strength and is poised for significant contributions to the agricultural development of the State.

TABLE 9.6

**Selected Indicators of the Performance of Primary Agricultural Credit Societies in India and Kerala  
(As on June 30)**

Sl.No.	Indicators	1958-59		1963-64		1973-74		1975-76*
		India	Kerala	India	Kerala	India	Kerala	Kerala
1	Average Membership of Society	65	250	113	485	226	1096	1331
2	Average Share Capital of Society (Rs.)	2033	5271	4402	14227	17509	77112	91348
3	Average Deposit of Society (Rs.)	540	2942	1243	12239	5766	94963	209518
4	Average Deposit of Member (Rs.)	8	11	11	25	26	87	157
5	Average Working Capital of Society (Rs.)	9345	19895	21009	66310	102080	550251	578468
6	Average loan of Member (Rs.)	105	50	125	85	217	227	239
7	Percentage of borrowing members to total members	..	..	46	44	37	48	55
8	Average loan advanced per advancing society (Rs.)	..	..	17948	52641	65439	296013	318580
9	Average loan advanced per borrowing member (Rs.)	..	..	272	195	581	470	436
10	Percentage of overdue to outstanding	19.92	24.47	22.54	18.78	42.01	35.66	34.00

\* Figures are provisional.

### Overview of Agricultural Development

9.22 During the fifteen year period from 1960-61 to 1975-76, Kerala's agriculture sector registered an annual growth rate of 2.36 per cent which was lower than the national growth rate of 2.53 per cent. The intensity of cropping has gone up from 1.22 to 1.33. The net sown area increased by 14 per cent and the gross cropped area by 25 per cent. The gross income per hectare of land increased by 16 per cent.

9.23 Rice production in the State increased by 26 per cent. But the annual rate of growth of 1.6 per cent has been less than the population growth with the result that the per capita annual production of rice declined from 61 kg. to 55 kg. and the gap between per capita annual requirement and production within the State further widened. However, with the more than tripling of tapioca production the availability of total food increased by nearly 50 per cent from 105 kg. to 156 kg. per capita per annum. The production of rubber rose by 5 times and that of coffee by over 2 times. During the same period production of coconut increased by 8 per cent and that of arecanut and cashewnut by 58 per cent and 29 per cent respectively.

9.24 Basic infrastructure required for an accelerated development of agriculture has also been built up. Land under irrigation increased by nearly 45 per cent. The proportion of gross irrigated area to gross cropped area increased from 19.4 to 21.5 per cent. During the period under review the level of fertiliser consumption continued to be higher than the national average (21 kg. and 17 kg. per hectare respectively). Nearly a quarter of the total rice area has been brought under high yielding varieties (2.30 lakh hectares).

9.25 Some disturbing trends which are portentous for the future development of agriculture in the State are also observed. The increase in agriculture production during this period has arisen largely from spatial expansion rather than by way of improvements in productivity. And that too, through enhancing the density of plant population per unit area and not through intensive management practices. The land use for agriculture and forests has moved up from 77 per cent to 85 per cent of the geographical area thereby even outreaching the marginal lands. Though the aggregate crop production in the State registered an increase of 53 per cent, aggregate productivity increased by 9 per cent only, while the expansion in area

has been 41 per cent. The continued reliance on this strategy for increasing agricultural production is likely to decelerate the productive capacity of agriculture in the State as land is a depleting resource. This is partly reflected in relatively slower increase in income per hectare of gross cropped area and net cropped area by 4 per cent and 16 per cent respectively. Further, the productivity of many important crops is either stagnant or declining (coconut by 22 per cent, pepper by 9 per cent, cashewnut by 29 per cent) though the aggregate productivity in crop production has increased. Hence higher rate of investment for conservation of soil, intensive land use and research support would be necessary to maintain production and more especially productivity at higher levels.

9.26 The shift in crop pattern is in favour of perennial crops which are relatively less labour intensive. When the area under all crops increased by 25 per cent, that of perennial crops increased by 48 per cent but the area under seasonal crops which are more labour intensive increased only by 12 per cent and that of annual crops by 27 per cent. This increasing preference for less labour intensive crops is a reflection of the low family labour participation in Kerala's agriculture and higher proportion of hired labour which is becoming increasingly costly. Though the size of operational holdings is only a third of the national average the net sown area per cultivator is slightly higher than the national average. It must be remembered that the income generating capacity of land in Kerala is twice the average for the nation. On account of the implementation of land reforms, it is true that the number and area held by holdings of relatively large sizes (10 hectares and above) have come down while that of smaller sizes (less than 0.40 hectare) increased; but the middle size groups still continue to hold substantial areas of land. Combined with the low family labour participation in farm work, this distortion in the ownership pattern will remain the major constraint in exploiting the full production potentials of the land resource. It will also operate as a major constraint in reducing the cost of production. (Incidentally, the cost of production of a number of crops in Kerala is much higher than the national average despite the favourable natural resource endowments for crop production).

9.27 In spite of the modest increases in rice production, the gap between requirement and production still continue to be as wide as ever. After the initial start in the rate of increase in production, rice production in the State is now nearly stagnant, around 13.5 lakh tonnes. In spite of a higher proportion of rice area (60 per cent) receiving irrigation support from one source or other, the rate of increase in fertilizer consumption and short term credit absorption is slowing down. Unless the uncertainty arising from the deficit in rice production is mitigated, other sectors of agriculture would not receive the necessary attention and resource support to exploit the full production potentials.

9.28 The agriculture sector is overdominated by activities relating to crop production which accounted for 93.7 per cent of the income generated in the sector in 1960-61. In spite of all the development effort put in, crop production still accounted for 92 per cent of the

income while the relative contribution of other sub-sectors viz. live-stock, forestry and fisheries remained practically unchanged (2.6 per cent, 2.9 per cent, 2.5 per cent respectively). Animal production still continues to be a supplementary activity to crop production. Forestry and fishing activities take place independently of crop production. Utilisation of land resources for various kinds of land uses viz. crops, livestock, forest and fisheries is not well integrated. Consequently, land resources continue to be utilised below optimal levels, leading to decline in their inherent productivity.

9.29 Within the crop production sector between crops there are distortions in the land use, resulting in less than optimum utilisation and high costs of production. There should be a balanced system of incentives especially price policy and a deliberate policy of public investment in favour of optimum allocation of land resources between crops.

9.30 The predominance of a substantial proportion of the area under perennial crops which dominate the cropping pattern in the State requires replanting and rehabilitation. Capital investment of a much larger magnitude would be required for the purpose so that sustained high income levels in crop production can be ensured.

9.31 Vital areas in crop production sector such as marketing and warehousing have received only low priority in the past. On account of high rainfall and dominance of perennial crops agricultural production is stable and the year to year fluctuations are of a smaller magnitude in the State. However, year to year fluctuations in agricultural income are of a higher magnitude on account of considerable variations in the price of agricultural commodities. This is partly reflected in the trends in the agriculture income which is relatively stable at constant prices while highly fluctuating at current prices. This phenomenon, could largely be attributed to the dependence on export and industrial raw material markets. The instability and year to year fluctuations in agricultural income are affecting adversely the productivity of many crops especially the perennial ones. In order to bring about stability in agricultural income and thereby higher productivity in agriculture, support for the marketing of agricultural commodities should receive greater priority both for capital investment in physical facilities and for institution building. Greater social control in the marketing system alone can help to bring about stability in income and reorder the distribution of income generated in the agriculture sector in favour of producers.

9.32 Considering the dominance of the agriculture sector in the economy of the State and also its potential for generating income and employment, the sustenance of the overall rate of growth of the economy depends upon the rate of growth of the agriculture sector. During the plan period 1978-83 a growth rate of 4 per cent per annum is aimed at.

9.33 The objectives of growth under agriculture are sought to be achieved in the State plan through:

- (i) Completing the implementation of land reform measures and consolidating the gains

- (ii) designing special programmes suited to the capabilities of the weaker sections,
- (iii) attempting to minimise, if not eliminating the exploitation by middlemen through regulating and bringing in social control in the marketing of farm commodities,
- (iv) maximising employment through the optimisation of land resource use through the integration of crop, livestock, forestry and fisheries activities,
- (v) remedying the maladjustments in the resource use between the sub sectors in agriculture through relatively greater investment support in livestock, forestry and fisheries enterprises in comparison with crop production,
- (vi) bestowing greater emphasis in replanting and rehabilitation of perennial crops so that the high levels of productivity and sustained income and employment generation capacity are maintained,
- (vii) rendering greater investment in hitherto neglected areas in the agriculture sector such as agricultural marketing and soil conservation so that stability in production and income from agriculture is maintained,
- (viii) assigning priority to research effort and parallel extension work so that newer and newer knowledge is made available to sustain productivity and ensure better use of resources.
- (ix) supporting through enhanced investment of these sub sectors which have hitherto received low priority and hence could not build up the required organisational capability to take upon challenges posed in these areas, and
- (x) extending special investment support to those regions in the State with unique physiographic features and which remained weak since an integrated approach could not be designed to tackle the problems in those areas.

#### Crop Production

9.34 Sustained expansion of agricultural production holds the key to the rapid growth of the State's economy. Increasing crop production has significance to Kerala not only because of its poverty-alleviating role through enhancement of employment and income but also because of predominance of commercial crops many of which have high export potential. In planning the strategy of enhancing crop production, maximisation of factor utilisation is particularly important in the State where the factor supply is inelastic in the case of land. It is also true that on account of the extreme heterogeneity in the land resource arising from variation in topography and moisture regimes, alternative production possibilities to which the limited land resource can be put are numerous in the State. From paddy in the wetlands to rubber and cashew in the drylands, Kerala farmers grow eight to ten crops even within a small homestead.

9.35 It has however been an observed phenomenon that as less fertile land came under the plough and intensive utilisation started recently, the capital output ratio in agriculture is shifting steadily in an unfavourable direction. This shows that in spite of our persistent preoccupation with agriculture, intensive cultivation of our land has not yet sufficiently progressed. Past experience suggests that output mix requires considerable change in the input composition if we have to put the land to maximum use. Agriculture output has to increase by a greater proportion than the aggregate resource inputs. Inputs like fertilisers, insecticides, treated seeds and irrigation facilities must be increasingly available at diminishing costs to plan crop production in such a way as to gain from economics of scale and inter-dependent growth.

9.36 One drawback of the strategy of agricultural development pursued in the past plan periods has been a selective crop-oriented approach which has been proving inadequate to meet the challenges of the situation. The resources of an area are to be seen in their totality and the development plan should embrace the total resources of the area or the farm. This would call for an area development as well as whole farm development approach.

9.37 Keeping in view a minimum overall rate of growth of 4 per cent for the agricultural sector, the following production increases have been fixed for the major crop production sectors by the end of the plan period.

Crops	Unit	Targeted production increases
Rice	('000 tonnes)	475
Pulses	"	50
Cashew	"	50
Coconut	(million nuts)	500

9.38 To achieve the planned increase in the production of rice, the productivity of rice lands has to increase from 1500 to 1850 kg. per hectare. Additional land of the order of 1 lakh hectares is expected to be made available. Irrigation support has to be extended to an area of 170 thousand hectares, while high yielding varieties of seeds would have to cover 3.5 lakh hectares additionally. Consumption of insecticides and pesticides has been planned to increase by fifty per cent.

9.39 On the investment side, if the projected growth rate and planned production increases are to materialise, nearly Rs. 80 crores would have to be provided in the State Sector. The resources that have to be channelised from other sources have been estimated as follows:—

Sources of Finance	Amount (Rs. Crores)
State sector outlay	85.28
Centrally sponsored sector	25.25
Institutional finance:	
Short term	71.32
Medium term	50.97
Long term	67.70
<b>Total</b>	<b>300.52</b>

9.40 Thus the programmes of agricultural development envisaged in the five year plan 1978-83 would entail an aggregate investment outlay of about Rs. 300 crores over the five year period. As the above financial estimates would indicate, the success of the whole programme is dependent on the availability of a sizeable order of institutional funds, which would call for major organisational changes in the present administrative arrangements.

9.41 The following schemes are proposed under crop production for the 1978-83 plan:

1. *Direction and Administration (Outlay Rs. 477.75 lakhs)*

9.42 The selective crop-oriented approach of the Agriculture Department in the past has deprived several areas of the benefits of extension services. Re-organisation of the extension machinery has therefore become necessary along with changes in the strategy which should be capable of taking care of the overall development of agricultural resources in a given area. It is also important that allocation of resources to agriculture in the State Plan sector function as a catalyst in as much as they can attract larger volume of resources through institutional agencies. The extension system should primarily be geared to take up this responsibility. With the support of the Government of India, it is proposed to introduce 'training and visit system of extension, which has been found successful in many parts of the country. Intensive coverage of a smaller area is envisaged with the objectives of minimising the gap between the technology generated in the research stations on the one hand and the farmer on the other. Under this system, a hierarchy of extension personnel is proposed starting with the demonstrator at the grass root level, an agricultural graduate at panchayat level, subject matter specialist at the sub divisional and district levels and crop and discipline wise specialists at the State level. A phased programme is suggested. When the system is extended, the personnel from the crop oriented projects will be withdrawn and reallocated. The attainment of the development objectives through the investment in the development of extension personnel is possible only if resources from institutional financing agencies are mobilised and utilised on a significant scale. In the past, it has been observed that the mobilisation of this source of investment is treated as incidental. Consequently desired results have not been achieved. The package programmes of coconut, paddy, pepper etc. are cases in point. Only under the KADP conscious and deliberate attempts have been made to mobilise institutional finance.

2. *Multiplication and Distribution of Seed (Outlay Rs. 63.68 lakhs)*

9.43 Expansion of high yielding varieties is a major strategy for increasing rice production. The target is to increase the coverage under high yielding varieties from 3.0 to 6.5 lakh hectares. The accomplishment of this target depends upon the ability in making available the required quantity of seeds of sufficient quality. Apart from meeting the demands for normal cultivation, it is also necessary to have sufficient stock of seeds to tide over contingent situations like floods and droughts. The research stations are to produce the nucleus seeds and the State Seed Farms the foundation seeds. It may not be

possible for the State Seed Farms to meet the actual seed requirements of the farmer. Selected farmers would have to be entrusted with growing quality seeds. Increasingly, the seed production and multiplication has to be made a commercial activity. The quality of the seeds is also to be ensured.

*Procurement and Distribution*

(i) *Support for registered seed growers (Outlay Rs. 14.11 lakhs)*

9.44 The entire effective demand for quality seeds cannot be met from seeds produced in the seed farms. Substantial portion could be met by multiplying the foundation seeds produced in the seed farms by selected registered seed growers. In order to meet part of the additional production expenses, the registered seed growers will be given Rs. 100 per tonne of seed produced.

(ii) *Seed Distribution through Agro-Industries Corporation (Outlay Rs. 31.28 lakhs)*

9.45 Apart from the involvement of a network of registered seed growers it is also proposed to entrust the procurement and distribution of quality seeds with the State Agro-Industries Corporation. It is proposed to compensate the Corporation for any loss it may incur on account of the surplus seeds left after distribution.

(iii) *Integrated Seed Development Farm, Eruthampathy (Outlay Rs. 2 lakhs)*

9.46 Provision is for meeting the cultivation expenses and for providing additional facilities to the seed production farm at Eruthampathy.

(iv) *Seed Multiplication in Kayal Lands (Outlay Rs. 1 lakh)*

9.47 Seed multiplication programmes in the Kayamkulam and Paravoor kayals are to be continued. The provision is to meet the cultivation expenses and the cost of minor works to be undertaken.

(v) *Improvement of Existing Seed Farms (Outlay Rs. 6.5 lakhs)*

9.48 The outlay provided is for giving additional facilities like minor irrigation, land levelling etc. in the existing seed farms.

(vi) *Establishment of new Seed Farms and Stores (Outlay Rs. 6.29 lakhs)*

9.49 In order to augment the foundation seed production facilities two new farms are being established. The cost of land, buildings etc. are to be met from this provision.

3. *Agricultural Farms (Outlay Rs. 180 lakhs)*

(i) *District Agricultural Farms (Outlay Rs. 150.50 lakhs)*

9.50 Major programmes for rehabilitating and replanting of many perennial crops are envisaged. The success of these programmes largely depends upon making available quality planting materials. In order to ensure quality planting materials substantial quantities of these materials will have to be produced in the farms managed by the State. Largely, quality planting materials are being made available from the District Agricultural Farms set up for the purpose. In order

to meet the increasing demands of quality planting materials it is necessary to augment the facilities in the existing established District Farms, complete the development works undertaken in the two District Farms of Chankathara and Anchal and establish a new farm in Idukki district. The provision of Rs. 150.50 lakhs proposed is for implementing the above programme.

(ii) *Collective Farms (Outlay Rs. 3 lakhs)*

9.51 During the Fifth Five Year Plan two collective farms were established in the State. In order to make the collective farms self-reliant through improving the production potential of land, irrigation facilities were augmented and development works were undertaken. Some of these activities have spilled over and the provision is to meet these commitments.

(iii) *State Farm with Russian Assistance (Outlay Rs. 1.50 lakhs)*

9.52 Among the several Central State Farms set up in the country one Farm has been established in Kerala at Aralum in Cannanore district. The Government of Kerala have agreed to make available the required land of about 4000 hectares. An area of 1488 hectares is yet to be acquired of which a major portion is private forest land now vested with the Government. The outlay is for meeting the acquisition charges of the remaining area excluding private forest areas.

(iv) *Share Capital Contribution to Oil Palm Plantation (Outlay Rs. 25 lakhs)*

9.53 Provision is meant for share capital participation in the Oil Palm Corporation to be established under the Plantation Corporation of Kerala.

4. *Manures and Fertilisers (Outlay Rs. 89.91 lakhs)*

9.54 In the past, production increases have been accomplished in the State through the exploitation of the inherent productive capacity of lands by expanding cultivation to marginal lands and by increasing density of plant population. The success of these programmes largely depends upon making available quality planting materials. Increased use of plant nutrients is critical to the maintenance of soil fertility to sustain the productive capacity of agriculture in the State. Given the high rainfall conditions and undulating topography, there is considerable loss of soil nutrients from the soil. Fertilizer efficiency is also low. The fertilizer consumption in the State has not made any significant increase during the Fifth Plan period although consumption of fertilizer per unit of land in Kerala is significantly higher than the national average. Increased use of plant nutrients can be fostered only by optimising the economy in fertilizer use. A network of facilities for soil testing has to be set up to determine economic levels of fertilizer use.

(1) *Production of Green Manure Seeds (Outlay Rs. 1.66 lakhs)*

9.55 A subsidy of 33½ per cent of the cost of green manure seeds distributed will be granted to

cultivators in order to popularise green manure cultivation. The provision proposed is for this purpose.

(ii) *Development of Local Manurial Resources (Outlay Rs. 2 lakhs)*

9.56 Incentives will be provided to farmers and organisations for production of compost and other organic manures under this scheme. An outlay of Rs. 2 lakhs is proposed for this scheme.

(iii) *Fertilizer Promotion Programme (Outlay Rs. 0.84 lakh)*

9.57 As part of the efforts to increase the consumption of chemical fertilizers a fertilizer promotion programme through laying out 400 demonstration farms is proposed to be organised in association with the various fertilizer firms. One third of the total expenditure is to be met by the Government, for which an outlay of Rs. 0.84 lakh is proposed.

*Soil Testing and Quality Control*

(iv) *Strengthening of Existing Laboratories (Outlay Rs. 11.03 lakhs)*

9.58 In order to undertake analysis of a large number of soil samples, facilities in the existing 7 district laboratories will have to be augmented. The expenses in connection with the maintenance of the stationary and mobile laboratories will also have to be met. The outlay proposed is for meeting the expenditure towards these items.

(v) *Establishment of New Laboratories (Outlay Rs. 31.14 lakhs)*

9.59 The districts of Kozhikode, Ernakulam, Kottayam and Idukki do not have soil testing laboratories. One laboratory in each of these districts will be established during the plan period and for this purpose an amount of Rs. 31.14 lakhs is allocated in the State sector Plan.

(vi) *Central Soil Testing Laboratory (Outlay Rs. 9.63 lakhs)*

9.60 A Central Soil Testing Laboratory will be established at Trivandrum in order to undertake sophisticated analytical techniques such as micro-nutrients analysis. An amount of Rs. 9.63 lakhs is provided for this scheme.

(vii) *Construction of buildings for Soil Testing Laboratory (Outlay Rs. 18.25 lakhs)*

9.61 The existing laboratories in the districts of Quilon, Malappuram and Trichur do not have necessary buildings and proper water supply facilities. The provision is meant for providing these facilities.

(viii) *Conduct of ABC Trials (Outlay Rs. 9.09 lakhs)*

9.62 Meaningful interpretation of soil test data is possible only by making available basic data on soil test crop responses through trails of soil test results. In order to generate such data it is proposed to undertake ABC trials in the various soil types and agro-climatic regions in the State. This would also serve as demonstrations to convince the advantages of applying plant nutrients on the basis of soil test results.

(ix) *Deputation of Staff for Higher Studies (Outlay Rs. 6.27 lakhs)*

9.63 Soil analysis requires specialised training. At present adequate trained personnel are not available in the Department to man the soil testing laboratories. It is proposed to sponsor personnel from the Department for higher studies to acquire necessary experience and skills in soil analytical techniques so that these laboratories can be manned by adequately qualified personnel.

5. *Plant Protection (Outlay Rs. 195.85 lakhs)*

9.64 High rainfall conditions and dominance of perennial crops have helped to impart stability to crop production in the State. However, the hot humid conditions in the State provide congenial environment for the growth of pathogens causing disease and pest incidence. Coconut, pepper, cashewnut etc., are the major crops in the State which suffer from chronic infestation of pests and diseases. The need for a strong plant protection cover is therefore imperative in supporting the crop production in the State. The main elements of an efficient plant protection strategy are (1) an efficient surveillance network so that incidence of pests and diseases can be anticipated, (2) an integrated pest control system which will reduce the cost of production, and (3) an efficient system of plant protection delivery so that timely action can be taken to help confine the focus of infection and limit the extent of damage. Plant protection activities also provide increasing employment opportunities to the landless agricultural labourers.

(i) *Spraying for the Control of Coconut Leaf Diseases (Outlay Rs. 30 lakhs)*

9.65 A comprehensive spraying programme to control coconut leaf diseases has been operating in the disease-affected areas of the State for quite some time. In addition, similar spraying of trees has also been undertaken in border areas demarcating disease affected and healthy areas. Under this programme, spraying is organised under the initiative of the Department charging the beneficiaries part of the cost of spraying while the rest including the cost of chemicals, plant protection equipments and spraying charges for workers are borne by the Government.

(ii) *Biological Control of Crop Pests and Weeds (Outlay Rs. 11.28 lakhs)*

9.66 Effective control of certain pests is possible only through biological measures. A number of parasite breeding stations have been set up in the State for releasing predators. The programme will have to be continued in the existing 9 parasite breeding stations and strengthened by providing additional facilities to the laboratories. The release of parasites will also have to be intensified. An outlay of Rs. 11.28 lakhs is provided for this scheme.

(iii) *Control of Brown Hopper in Endemic Areas (Outlay Rs. 22.50 lakhs)*

9.67 Brown hopper is found as an endemic pest in certain paddy growing regions of the State especially in Kuttanad. As much as one third of the crop is

lost through the infestation of this parasite. Hence farmers need assistance to keep this pest under control in order to raise a successful crop. The Government of India have already sponsored a scheme for the distribution of pesticides at subsidised rates. The provision is to meet the commitments on the part of the State on this programme.

(iv) *Control of Coconut Caterpillar in Endemic Areas (Outlay Rs. 2.55 lakhs)*

9.68 Coconut caterpillar has become a serious threat to coconut trees in the coastal areas of the State. A scheme similar to the scheme for the control of brown hopper is proposed for control of coconut caterpillar.

(v) *Adaptive Trial for the Control of Rhinoceros Beetle (Outlay Rs. 2.06 lakhs)*

9.69 Rhinoceros beetle is a pest which affects coconut gardens in the State. The Control of this pest can be effective only if measures are taken on an area basis. The provision is meant for implementing these measures.

(vi) *Rodent Control (Outlay Rs. 3.75 lakhs).*

9.70 Considerable damage is caused to crops especially tapioca and paddy by rats. Community participation is necessary to bring about effective control of rat menace. The provision is meant for subsidising the cost of rodenticides and other expenses in connection with the conduct of rodent control campaigns.

(vii) *Eradication of Salvinia (Outlay Rs. 2.50 lakhs)*

9.71 The luxuriant growth of African payal (*Salvinia Auriculata*), a water weed, is threatening the paddy crop and fish production in the State, especially in the Kuttanad region. The weed is also blocking the inland water ways. The only effective way now available to control this weed is to remove them physically. The provision is for organising community action programmes for the eradication of salvinia in highly infested areas in the State through manual labour with the co-operation of Panchayats.

(viii) *Plant Protection Equipment Service (Outlay Rs. 84.50 lakhs)*

9.72 Timely control of the incidence of pests and diseases can be effected only if there is an adequate deployment of plant protection equipments. This is proposed to be accomplished through (1) distribution of plant protection equipments at a subsidised rate of 25 per cent to the farmers (Rs. 42.50 lakhs) (2) maintenance of a pool of plant protection equipments in the field offices (Rs. 21 lakhs) and (3) maintenance of mobile plant protection units in all the districts (Rs. 21 lakhs).

(ix) *Surveillance of Pests and Diseases (Outlay Rs. 22 lakhs)*

9.73 A network for the surveillance of pests and diseases of paddy has been organised in the State already. This network has to be suitably strengthened so that the service can be extended to other important crops also.



(x) *Agricultural Meteorological Surveys (Outlay Rs. 9.04 lakhs)*

9.74 A well organised meteorological support including data collection as well as interpretation is a necessary adjunct to an efficient surveillance programme. At present, the surveillance network built up in the State does not have such a support. Hence an outlay of Rs. 9.04 lakhs is given in the plan for conducting agricultural meteorological surveys.

11. *Quality Control of Pesticides (Outlay Rs. 5.67 lakhs)*

9.75 Consumption of pesticides and fungicides has been increasing in the State over the past few years. A distribution network involving a large number of agencies has also come into being replacing the departmental distribution system. The quality of pesticides and fungicides made available in the market has to be ensured. Excessive use of pesticides and fungicides would create toxic problems due to residual effect. Analytic laboratory facilities to undertake chemical analysis have to be set up to ensure quality and estimate toxicity due to pesticide residues.

6. *Commercial Crops*

(i) *Pulses (Outlay Rs. 47.36 lakhs)*

9.76 Pulses constitute another food crop in which the state is deficit. In fact the deficiency in pulse production is far more larger than that of rice. Internal production of all varieties of pulses together can hardly meet one twelfth of the requirements of the State. Pulses are grown in all the three seasons in the State autumn and winter seasons in dry lands and summer season in wet lands under rainfall conditions. The expansion of rice cultivation, especially to single crop lands, has reduced considerably the area under pulses which the farmers have been growing traditionally. Two major potential areas which have not been fully exploited so far are intercropping of pulses in garden lands during virippu season and extension of pulse cultivation to rice fallows during summer. Pulse production will be stepped up from fifteen thousand tonnes in 1977-78 to fifty two thousand tonnes in 1982-83. It is proposed to achieve this level of production by (1) expanding cultivation to fifty thousand hectares additionally, and (2) adoption of intensive management practices in ten thousand hectare area.

*Area Expansion (Outlay Rs. 9.80 lakhs)*

9.77 Expansion of area under pulses is sought to be achieved by making available the required quality seeds to the cultivators. As an incentive to the cultivators 25 per cent subsidy will be allowed on seeds distributed under the scheme.

*Intensive Production through Fertilizer Distribution (Outlay Rs. 37.50 lakhs)*

9.78 As an incentive for increasing production of pulses by bringing more area or enhancing the production through the existing area it is proposed to give an incentive by way of making available phosphatic fertilizers to the cultivators at subsidised rates.

*Micro-biological Laboratory (Outlay Rs. 0.05 lakhs)*

9.79 The outlay is meant for establishing micro-biological laboratories in the State for the production and distribution of rezhobines culture which is a powerful tool for increasing production of pulses. In order to popularise the use of this culture it is proposed to distribute bacterial culture at subsidised rates. The laboratory to produce culture is to be adequately equipped and for this an outlay of Rs. 0.05 lakhs is provided in the Plan.

(ii) *Tuber Crops*

(a) *Tapioca*

9.80 Tapioca is next only to rice as a source of staple food for the population in the State. There has been a significant increase in tapioca production over the years. During the last two decades the production of tapioca had tripled. The cultivation of tapioca has been extended even to sub-marginal lands especially in hill slopes causing considerable soil erosion. Being a near substitute for rice, the price of tapioca is highly dependent on the availability of rice. The comfortable supply position of rice during the past one year has brought down the price of tapioca to more than half. This has adversely affected the farmers depending upon this crop. In order to sustain tapioca cultivation, which is necessary to make available a relatively cheap source of food particularly to the poorer sections of the society, new outlets of use have to be found. Manufacture of starch is the traditional industrial use of tapioca. The other major potential use of tapioca is utilising it as a cattle feed. However, the exploitation of these potential uses depends upon the price at which raw tapioca can be made available. The problem therefore is essentially to reduce the price per unit of production by inducing farmers to grow more tapioca through increases in productivity. It is proposed to increase the production of tapioca during the plan period from 54.12 to 60.05 lakh tonnes. This increase is planned to be achieved through increase in the yield per hectare from 18.2 to 21.6 tonnes by the adoption of high yielding varieties.

*Tapioca Package Programme (Outlay Rs. 6.72 lakhs).*

9.81 In order to popularise the new hybrid varieties and intensive cultivation practices package units under tapioca have been established. The provision is to meet the expenditure on laying out 1800 demonstration plots.

*Intensive Development (Outlay Rs. 31.67 lakhs)*

9.82 Intensive production effort is to be carried out through (i) demonstration of improved practices (2) demonstration of intercropping techniques (3) seed multiplication in district farms and seed farms and (4) seed multiplication in selected growers' fields. For the successful implementation of these programmes, a staff support costing Rs. 8.32 lakhs is to be provided.

*Support to the District Tapioca Marketing Societies (Outlay Rs. 36.85 lakhs)*

9.83 On account of the decline in the price of tapioca growers are facing the serious problem of marketing

In order to stabilise the price of tapioca and to increase the earnings of farmers by eliminating the profits of middlemen, it is proposed to strengthen 11 co-operative societies one in each district engaged in the marketing of tapioca. This is sought to be achieved through (1) share capital participation (2) assistance for constructing godowns and (3) purchase of tractors. A total outlay of Rs. 36.85 lakhs is provided for these items in the Plan.

(b) *Sweet Potato*

9.84 Sweet potato is another tuber crop which has potential for development in the State. Generally it is grown as a dry land crop during the virippu season. The wet land rice fallows during the summer season are also utilised for the production of this crop. It is proposed to increase the production of sweet potato from 27.0 to 31.5 thousand tonnes by increasing the area from 6.2 to 7.0 thousand hectares.

*Multiplication of Planting Materials (Outlay Rs. 0.64 lakhs)*

9.85 Shortage of good planting materials has been a constraint in improving the production of sweet potato. It is proposed to multiply good planting materials in the district agricultural farms of the State.

*Sweet Potato Demonstrations (Outlay Rs. 1.20 lakhs)*

9.86 Improved practices of sweet potato cultivations are to be demonstrated in the major sweet potato growing areas in the State.

(c) *Minor Tubers*

9.87 There is also potential for development of minor tubers which are largely used as vegetables. Cultivation of these crops is to be fostered primarily through making available planting materials to cultivators in sufficient quantities.

(i) *Seed Multiplication in State Farms (Outlay Rs. 3.50 lakhs)*

9.88 A major constraint in increasing the production of minor tubers is the lack of adequate planting materials. It is proposed to make available planting materials by raising them in the district agricultural farms of the State.

(iii) *Sugarcane*

9.89 Production of sugarcane is concentrated traditionally in the river bank alluvium areas in the districts of Alleppey and Kottayam and irrigated areas of Palghat. Under the aegis of the State Farming corporation sugarcane is grown in the forest areas of Quilon district. Its cultivation is expanding in recent years in the High Ranges of Idukki district. The attempt in the past has been to foster sugarcane cultivation around the three sugar factories set up in the State. For want of cane, these factories have been running much below the capacity. The immediate objective is to increase production of sugarcane so as to meet the requirements of the sugar factories in the State.

9.90 Potential areas for growing sugarcane have also been identified in the vested forest areas especially in the Nilambur Valley. It will also be possible to

cultivate sugarcane in the command areas of Malam-puzha in Palghat district. Since the agronomic conditions for the cultivation of sugarcane and paddy are comparable, certain amount of substitutability in land resources exists. The price appears to be the determining factor in area allocation wherever such possibilities of substitution exist. On account of the decline in the price of paddy in the State, there is a tendency for farmers to switchover from rice to sugar cane cultivation. Sugarcane production in the State is proposed to be increased from 4.32 lakh tonnes to 6.48 lakh tonnes, by expanding area from 8.0 to 10.8 thousand hectares and increasing productivity from 54 to 60 tonnes per hectare.

*Extension of Sugarcane Farms (Outlay Rs. 0.50 lakhs)*

9.91 Expansion of area under sugarcane is sought to be achieved through making available good planting materials to the growers. Irrigation facilities, including digging of wells are proposed to be provided in the sugarcane seed production farm at Pandalam.

*Construction of Link Roads (Outlay Rs. 3.35 lakhs)*

9.92 Quick transportation and timely delivery of cane to the sugarcane factories would help to improve the production of sugar. Construction of link road is an important infrastructure investment in the sugar factory areas. It is proposed to improve the transportation facilities in the factory areas of the State. The Provision is to meet the State contribution towards a Centrally sponsored scheme for constructing link roads in sugar factory areas.

(iv) *Oil Seeds*

(a) *Groundnut (Outlay Rs. 8.90 lakhs)*

9.93 Groundnut is cultivated in 26.7 thousand hectares of land and its production is 35.3 thousand tonnes. Production of groundnut in the State is almost stagnant as its cultivation is traditionally concentrated in the dry areas of Palghat district. Cultivation of groundnut as an intercrop with tapioca has been found to be successful. This opens up new potentialities for the expansion of the area under groundnut. It is proposed to raise the production of groundnut by 20 thousand tonnes by extending the area to 10 thousand hectares in the districts of Trivandrum, Quilon, Palghat and Malappuram. The area expansion effort is to be supported by making available improved varieties of seeds to the cultivators and demonstrating new methods of cultivation including inter-cropping.

*Bringing Additional Area under Groundnut (Outlay Rs. 5.20 lakhs).*

9.94 Additional area under groundnut cultivation is proposed to be achieved through making available high yielding varieties of groundnut seeds and organising demonstrations of improved cultural practices including intercropping with major crops such as tapioca and coconut.

*Adoption of full Package of Practices (Outlay Rs. 1.20 lakhs)*

9.95 In the areas traditionally cultivated with groundnut, intensification of production is sought to be achieved through adoption of full package of practices.

This is proposed to be achieved through demonstrating improved methods of cultivation and other extension efforts.

*Multiplication of Improved Varieties (Outlay Rs. 2.50 lakhs)*

9.96 Planting material is a limiting factor in increasing the production of groundnut in the State. Improved varieties of seeds are proposed to be made available to the farmers by multiplying them in the State seed farms and district farms.

(b) *Sesamum (Outlay Rs. 1.80 lakhs)*

9.97 Sesamum is cultivated in the State in the dry uplands during the virippu season and in the summer rice fallows of the sandy areas especially of the Onattukara region. The current production is estimated at 4.27 thousand tonnes from an area of 16.7 thousand hectares. It is proposed to increase the production to 5.15 thousand tonnes by expanding cultivation to 2.5 thousand hectares largely in the traditional Onattukara region of Alleppey and Quilon districts.

*Multiplication of Improved Varieties of Seeds (Outlay Rs. 1.20 lakhs)*

9.98 Adequate quantity of sesamum seeds of superior varieties will be made available to cultivators by multiplying them in the departmental farms. An amount of Rs. 1.20 lakhs is proposed for the scheme.

*Adoption of Full Package of Practices (Outlay Rs. 0.60 lakhs)*

9.99 Production of sesamum is proposed to be increased through the adoption of package of practices in selected demonstration plots.

(c) *Oil Palm (Outlay Rs. 0.01 lakhs)*

9.100 A seed production centre has been set up in the Oil Palm Station, Thodupuzha, to make available good quality seeds of oil palm which are at present being imported. The provision is made for meeting the development needs of this Station which is proposed to be transferred to the State Oil Palm Corporation.

(d) *Coconut*

9.101 Coconut is the most important crop grown in the State accounting for nearly a third of the gross cropped area and agricultural income in the State. It is cultivated in 6.95 lakh hectares of and the total annual production of coconut is estimated 3734 million nuts. Kerala accounts for 70 per cent of the area and 60 per cent of the production of coconut in the country. The estimated demand of coconut by the end of the plan period 1978-83 for the country is placed at 7320 million nuts. In order to meet this demand 820 million nuts will have to be produced additionally in India. In order to maintain Kerala's present share in the total production of coconut in the country 500 million nuts should be produced additionally in the State. During the past fifteen years coconut production has improved only marginally (7.5 per cent) but productivity has declined significantly (22.6 per cent). This is due to (a) the rapid expansion in area under the crop (35.3 per cent); a significant proportion of which is agronomically marginal to coconut cultivation and is yet to reach

production stage, (b) prevalence of the debilitating root (wilt) disease in a large area under the crop and (c) senility and unproductive nature of a significant proportion of old coconut trees.

9.102 The major thrust in the development effort during the Fifth Plan has been the establishment of 187 coconut package units covering one eighth of the area under coconut during the plan period. Making available improved technology and extension support through demonstrations has been the major component of this programme. Control of disease under the comprehensive programme, rejuvenation of diseased and old gardens, production and distribution of quality coconut seedlings and provision of irrigation facilities in coconut gardens were the other major programmes implemented during the Fifth Five Year Plan period.

9.103 Under the Kerala Agricultural Development Project, assisted by the World Bank, support is rendered in rehabilitating 30,000 hectares of coconut gardens, bringing 8,500 hectares under irrigation and planting 5000 hectares additionally. The programme is expected to be completed only by 1982-83. The additional production of 500 million nuts is sought to be achieved through (i) bringing additional area under package programme (288 million nuts), (ii) plantings which become bearing during Fifth Plan (156 million nuts) (iii) expanding irrigation facilities in coconut gardens (58.50 million), (iv) distribution of hybrid seedlings, and (v) programmes supported by other agencies (48.21 million nuts)

9.104 The major thrust in the improvement of productivity under coconut would be a package approach which includes the continuation of the existing package units and the establishment of 103 new units. Each package unit will have to be given adequate extension support. Inputs will be made available and credit will be provided through the institutional financing agencies to the cultivators.

9.105 Significant effort will be mounted to promote irrigation facilities in coconut gardens. It is proposed to set up 10,000 filter point tube wells and build or renovate 20,000 wells and ponds. Under the general programme of distribution of pumpsets to farmers the wells and ponds will be provided with pumpsets.

9.106 Rehabilitation of the existing coconut gardens is another major programme envisaged for improving their productivity. It is proposed to replant all senile and uneconomic coconut trees in the disease affected areas. This programme is expected to cover 75,000 hectares during the plan period which would require 13 lakh hybrid seedlings. Assistance will also be given to cultivators to undertake plant protection measures against coconut diseases. In addition to the outlay suggested under state sector an investment to the extent of Rs. 857.94 lakhs is expected under centrally sponsored programme to implement the various proposals suggested for achieving the targets.

*Production and Distribution of Quality Seedlings (Outlay Rs. 511.48 lakhs)*

9.107 In the case of coconut gardens some area would always need replanting as trees become uneconomic due to old age or infestation of disease.

Possibility of expansion to new areas is limited in the State. Making available quality seedlings is the crux of the problem. It is proposed to produce and distribute over 61 lakh seedlings during the plan period (of which 24 lakh seedlings would be hybrids) through the net work already created for the production of coconut seedlings.

*Coconut Nurseries (Outlay Rs. 1.01 lakhs)*

9.108 As a support to the production of quality seedlings, facilities in the coconut nurseries have to be improved. Additional area for existing coconut nurseries is to be acquired. Irrigation facilities also will have to be provided. The provision proposed in the Plan is for these purposes.

*Improvement of Irrigation Facilities (Outlay Rs. 2.40 lakhs)*

9.109 It is proposed to provide filter-point tube wells to irrigate coconut gardens by tapping ground water resources in the sandy coastal tracts of the State. The actual cost of installation will be met by the beneficiaries while the drilling expenses will be borne by the Government. The outlay proposed for the scheme is Rs. 2.40 lakhs.

(v) *Spices*

(a) *Pepper*

9.110 Pepper which earns about Rs. 36.5 crores annually as foreign exchange is one of the major foreign exchange earning commercial crops in the State. It is generally grown as an inter-crop. Productivity of pepper declined by 10 per cent during the past 15 years. The production of pepper is estimated at 30.78 tonnes in 1977-78. An area of 110 thousand hectares is under pepper. It is proposed to increase the production of pepper to 45 thousand tonnes by bringing an additional area of 10 thousand hectares under cultivation and by increasing the productivity. There is very little scope for developing pepper as a pure crop in the State. On the other hand, there is considerable scope for expanding the production of pepper as an inter-crop. Establishment of package units for rendering extension support and making available superior planting material were the two major strategies adopted in the earlier plan periods. Thirty package units were established and progeny orchards covering 33 hectares were set up during the Fifth Plan period. During the Plan for 1978-83 it is proposed to continue the existing 30 package units and establish 50 new units. Extension support and assistance for plant protection are proposed under this programme. Replanting of existing vines which have become uneconomic should constitute an important thrust in the future development programme for pepper. It is therefore proposed to replace old and uneconomic vines with high yielding Panniyoor—1 vines. About 125 lakh pepper cuttings will be produced and distributed to the farmers during the plan period, progeny orchards for making available hybrid planting material in 35 hectares will also be established. Under the KADP, 10,000 hectares of pepper gardens would be rehabilitated. Support under the centrally sponsored projects to the tune of Rs. 171.21 lakhs is anticipated for accomplishing the schemes under pepper production proposed in the plan.

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*Pepper Nurseries (Outlay Rs. 31.16 lakhs)*

9.111 Production of quality pepper cuttings is to be undertaken on massive scale from the existing progeny gardens and pepper nurseries in the State. Rooted cuttings of Panniyoor—1 and local varieties will be produced and distributed to the farmers under the scheme for which an outlay of Rs. 31.16 lakhs is proposed in the plan.

*Replacing old and uneconomic varieties (Outlay Rs. 7.80 lakhs)*

9.112 Old and uneconomic pepper vines in the pepper gardens in the State are proposed to be replaced by superior vines, planting materials will be given free of cost to the farmers under this scheme.

(b) *Clove and Nutmeg (Outlay Rs. 28.45 lakhs)*

9.113 Clove and nutmeg are two tree spices which are found suitable for cultivation under the conditions obtaining in the State. The strategy is to plant them as intercrops in the coconut and arecanut gardens. This would add substantially to the income of the farmers. It is proposed to produce and distribute quality planting materials (10 lakhs of clove seedlings and one lakh of nutmeg seedlings during the plan period)

(c) *Vanilla (Outlay Rs. 0.88 lakh)*

9.114 Wynad region of the State offers scope of introducing Vanilla cultivation. A plantation of 5.20 hectares has been developed at Chingeri Tribal Development Colony. The investment required to complete the siplover works, such as augmenting irrigation facilities, is Rs. 0.88 lakh.

(d) *Ginger and Turmeric (Outlay Rs. 0.14 lakh)*

9.115 In order to popularise the production potential of superior varieties of ginger and turmeric, it is proposed to lay out demonstration-cum-multiplication plots in important ginger and turmeric growing areas of the State.

(vi) *Cashew*

9.116 The significance of increasing production of cashew in the State needs no emphasis. The capacity built up for processing is almost three times the internal production. On account of the rapidly depleting sources of import, the need for increasing production of cashew in the State is critical for sustaining the cashew industry which employs 1.35 lakh workers. Cashew is another crop whose productivity has declined over a period of time. It is proposed to increase the production of cashew from 140 to 190 thousand tonnes during the Plan period through increasing the area from nearly 125 to 175 thousand hectares.

*Expansion of Area under Cashew (Outlay Rs. 262.61 lakhs)*

9.117 There is considerable potential for expanding area under cashew especially in the northern districts of the State. During the Fifth Plan period a scheme for bringing 16,000 hectares under cashew cultivation in private holdings was implemented. In 1976-77 a centrally sponsored scheme for bringing 25 thousand hectares of cashew was taken up. Under this scheme,

private holders were given planting materials and inputs like fertilisers and pesticides free of cost required for the first two years limiting the total assistance to Rs. 300 per hectare. It is proposed to increase the area under cashew by 50 thousand hectares additionally by implementing a scheme on this pattern during the Plan period. The provision of Rs. 261.21 lakhs under the State sector is to meet the administrative cost of implementing the scheme and to extend the subsidy to the third year also.

*Adoption of Plant Protection Measures (Outlay Rs. 3.40 lakhs)*

9.118 A scheme for adoption of plant protection measures in 5000 hectares under cashew in private holdings is under operation. This scheme will be continued to cover 2000 hectares during 1978-79. The provision is to meet the cost of chemicals and operational charges.

*Rehabilitation of Existing Cashew Gardens (Outlay Rs. 3.95 lakhs)*

9.119 A programme for rehabilitation of existing cashew gardens is proposed with the assistance of the World Bank. Under this programme, under-planting in the old and unproductive gardens will be undertaken. Necessary planting materials would be made available free of cost to the cultivators. The programme of supporting the development of cashew is estimated to cost Rs. 3.95 lakhs in the State sector and Rs. 526.82 lakhs in the Central Sector.

(vii) *Cocoa*

9.120 Cocoa is a relatively new crop in Kerala. Favourable agronomic conditions for growing this crop, especially as an intercrop in arecanut and coconut gardens, exist in the State. Practically the entire internal demand for cocoa is met from imports. It is estimated that by the end of the plan period the country would be requiring 5 to 6 thousand tonnes of cocoa to meet the processing capabilities already built up. As a means of intensifying land use and maximising income also cocoa offers considerable potential. Considering its potential as an intercrop, the cost of production could be considerably reduced. It should be possible for the State to effectively compete in the international market.

*Bringing Twenty Five Thousand Hectares Additionally under Cocoa (Outlay Rs. 45.45 lakhs)*

9.121 It is proposed to bring 25,000 hectares of land in the State under cocoa as an intercrop during the plan period. It would create a potential for producing 10,000 tonnes of cocoa beans every year. The suggested measures are ;

(i) production and distribution of 125 lakhs of quality seedlings estimated to cost Rs. 38.45 lakhs,

(ii) rendering necessary extension support costing Rs. 5.80 lakhs, and]

(iii) instituting a massive training programme on cocoa cultivation and management of cocoa gardens which would involve a cost of Rs. 1.20 lakhs.

(viii) *Tobacco*

9.122 Tobacco cultivation in the State is confined to a small area in the sandy coast of the Cannanore district. The area and production of this crop have been more or less stagnant around 800 hectares and 1600 tonnes respectively. Being a highly labour intensive crop, it has considerable employment potential. It is proposed to expand the area under this crop by 200 hectares and to increase production by 400 tonnes.

*Extension support (Outlay Rs. 2.20 lakhs)*

9.123 Improved practices of tobacco cultivation are proposed to be popularised in the tobacco growing areas by laying out demonstrations and other extension activities. Extension support is to be rendered by making available the services of an agricultural expert in the area exclusively for tobacco.

*Marketing Co-operative Societies (Outlay Rs. 13.50 lakhs)*

9.124 Tobacco growers who are mostly landless agricultural labourers face many problems in marketing their produce and are subjected to exploitation by middlemen. The bargaining power of the tobacco growers is to be strengthened by assisting them in organising marketing co-operatives. The marketing societies are to be supported in the construction of warehouses and by rendering managerial assistance.

*Construction of Link Roads (Outlay Rs. 10 lakhs)*

9.125 The tobacco production centres are proposed to be linked to the main roads through link roads for which a provision of Rs. 10 lakhs is provided.

(ix) *Medicinal Plants*

*Expansion of Area under Lemon Grass (Outlay Rs. 24 lakhs)*

9.126 It is proposed to bring 20 thousand hectares under lemon grass through distribution of quality seeds. The programme will also be supported by setting up 4000 distillation plants for which credit support will be made available. An amount of Rs. 24 lakhs in the State sector is provided for this programme.

7. *Drought Prone Area Programme (Outlay Rs. 48.60 lakhs)*

9.127 Most of the area in the State falling under the rain shadow region of the Western Ghats and sloping towards the east suffer from drought conditions. Moisture stress is the key limiting factor affecting crop production in these areas. Surface water resources are limited in these areas. However given the undulating topographic conditions in these regions, moisture conservation measures and adoption of new agronomic practices to counter the poor rainfall conditions would have to be fostered. It is also necessary to change the cropping patterns especially in the uplands from annual and seasonal crops to perennial crops. The outlay provided in the Plan for the drought prone area programme is Rs. 48.60 lakhs.

8. *Extension and Farmer's Training*

9.128 The development programmes envisaged under crop production focus on productivity and the optimum utilisation of the resources. This involves a

massive education effort at all levels. For the technical and professional calibre of the entire extension personnel in the Department will have to be significantly improved. The managerial capabilities of the middle level leadership will also have to be strengthened. The strategy proposed in the Plan is to have periodic on the job and inservice training for the field personnel at various levels. This needs strengthening of facilities at the Kerala Agricultural University and other training institutions in the State.

(a) *Extension*

*Establishing Demonstration Centres for Mixed Farming*  
(Outlay Rs. 5 lakhs)

9.129 To realise full production potential of the land resources in the State a multi-disciplinary approach to resource development is called for. The production possibilities inherent in the resources obtaining under various agro-climatic conditions are to be identified and demonstrated. It is proposed to evolve appropriate models and demonstrate them for wider adoptions by cultivators.

(b) *Inservice Training*

*Development of Extension Training Centres* (Outlay Rs. 10 lakhs)

9.130 There are at present three extension training centres functioning in the State. These centres are primarily meant for training field level workers such as the village level extension officers. Agricultural demonstrators who are newly recruited are to be given rigorous professional training. It is therefore proposed to strengthen the extension training centres so that the facilities available could be fully utilised in training the agricultural demonstrators.

*Short term Training Courses for Agricultural Demonstrators*  
(Outlay Rs. 0.30 lakhs)

9.131. It is proposed to organise training courses to the agricultural demonstrators in specific areas where new programmes are to be launched during the plan period.

*Inservice Training to Agricultural Demonstrators* (Outlay Rs. 7.50 lakhs)

9.132 As part of the effort to educate the agricultural demonstrators about the latest developments in technology it is proposed to give them training at regular intervals. For this purpose an amount of Rs. 7.5 lakhs is proposed in the Plan.

*Inservice Training to Mechanics* (Outlay Rs. 2.50 lakhs)

9.133 The need for trained mechanics in various spheres including plant protection works is increasingly felt. It is proposed to organise training programmes for improving the skills of mechanics.

*Orientation and Job Training to Junior Agricultural Officers* (Outlay Rs. 2 lakhs)

9.134 Junior Agricultural Officers who are newly recruited are proposed to be given necessary orientation and on the job training. A provision of Rs. 2 lakhs is provided for the scheme.

*Short Course Training to Junior Agricultural Officers*  
(Outlay Rs. 0.85 lakhs)

9.135 Before launching new agricultural programmes it is necessary to give adequate training to the personnel involved. It is proposed to organise short training courses for the Junior Agricultural Officers of the Department.

*Refresher courses to Junior Agricultural Officers* (Outlay Rs. 6 lakhs)

9.136 New scientific discoveries and innovations are evolved and developed at very fast pace in the field of agricultural technology. Opportunities available to the field personnel such as the Junior Agricultural Officers to get exposed to the new developments in technology are limited. It is proposed to update their knowledge and skills through periodical refresher training courses.

*Training to Subject Matter Specialists and Other Middle Level Personnel* (Outlay Rs. 1.60 lakhs)

9.137 Several new areas of specialisation are being developed and identified in the field of agriculture due to the emergence of problems which are of complex nature. Programmes for solving these problems require specially trained personnel. It is necessary therefore to provide adequate training to the subject matter specialists and other middle level personnel in the Department.

*Training in Project Planning for Senior Officers* (Outlay Rs. 1.50 lakhs)

9.138. Finance for the development of agriculture is to be mobilised from institutional financing agencies as the ability for the state to finance agriculture from budgetary sources is limited. This necessitates a project approach to the development of agriculture. Project formulation is a specialised area. It is proposed to give training to senior officers on project planning during the plan period.

*Specialised Training Leading to Post-graduate Diploma*  
(Outlay Rs. 2 lakhs)

9.139 There are a number of activities such as soil analysis which require theoretical knowledge and specialised skills. Imparting short term courses would not be adequate. At the same time they would not require a full length post-graduate degree programme on account of their wide practical experience. It is therefore suggested to sponsor personnel of the Department for post-graduate diploma level courses in these specialised areas.

*Training to the Personnel of Farmers Training Centres and Extension Training Centres* (Outlay Rs. 0.40 lakhs)

9.140 There is need for a regular programme to get the trainers trained especially those employed in farmers' training centres and extension training centres. For this purpose an amount of Rs. 0.40 lakh is proposed in the Plan.

*Training Courses in Laboratory Techniques* (Outlay Rs. 0.08 lakhs)

9.141 As support to the general extension activities a number of laboratories are being set up. In order to man these laboratories there is need for personnel trained in laboratory techniques.

*Workshop on Communication and Training to Senior Officers*  
(Outlay Rs. 2 lakhs)

9.142. The massive training and visit programme of extension system envisaged involves development of adequate communication skills for the senior personnel manning these programmes. It is proposed to organise periodical workshops on communication and training to senior personnel.

*Organising Study Tours, Workshops and Seminars* (Outlay Rs. 10 lakhs)

9.143 As part of the general extension effort study tours of institutions workshops and seminars on relevant topics would have to be organised.

*Administrative and Managerial Support to Training Programme* (Outlay Rs. 16.50 lakhs)

9.144 The new reorganised extension system proposed for the Department calls for superior administrative and managerial support. The management of a large number of training programmes would involve substantial organisational and planning effort. A separate set up to manage these programmes is suggested in the Plan.

*Training in Area Planning* (Outlay Rs. 2.50 lakhs)

9.145 Area planning is assuming greater significance in the development of the agriculture sector in the State. The general orientation during academic training given to the field personnel such as Agricultural Demonstrators and Junior Agricultural Officers is largely to crops and to disciplines of agricultural technology and seldom towards a total view. It is necessary to re-order and re-orient their understanding of the problems of agricultural development to the requirements of area development. It is proposed to organise appropriate training programmes in area development planning for the Junior Agricultural officers and Agricultural Demonstrators.

(c) *Farmers' Training* (Outlay Rs. 54 lakhs)

9.146 The introduction of new crops and innovations from a sizable development effort are envisaged during the Sixth Plan period. The training of the farmers has great significance in the years to come. The existing facilities for training of farmers in two districts have to be strengthened and new facilities are to be created in seven more districts. An investment of Rs. 173.37 lakhs is proposed under the central sector for this scheme. It is also proposed to devise new areas of training to increase the capabilities of landless agricultural labour so that new opportunities of employment could be created. The training programmes proposed involve an investment of Rs. 54 lakhs in the State sector.

## 9. Agricultural Engineering

*Expansion of Agricultural Engineering Service* (Outlay Rs. 48.53 lakhs)

9.147 The small size of holdings together with the undulating topographic conditions of the State demands a different approach to agricultural engineering problems in the State. Agricultural engineering problems have not received adequate attention in the past. It is

proposed to strengthen, diversify and extend the existing services to the districts. An outlay of Rs. 48.53 lakhs is proposed for this scheme.

*Agro-Industries Corporation* (Outlay Rs. 50 lakhs)

9.148. The Agro-Industries Corporation set up in the State is taking up new ventures especially the agro-processing industrial units. As support to its activities share capital participation of Rs. 50 lakhs by the State is envisaged during the plan period.

## 10. Agricultural Research

9.149 The imperative need for accelerated production in agriculture has to be accomplished through productivity increase. In the past we have been able to maintain production levels largely through spatial exploitation of our land resources, by extending cultivation to marginal lands and increasing the density of plant population. When agricultural production increased by 106 per cent during the last quarter century, area expanded by 50 per cent while productivity by only 35 per cent. A major thrust in the area of increasing the productivity of agriculture can be achieved only through agricultural research. The crops and cropping patterns evolved in Kerala are quite different from the rest of the country. Spin offs from research investments made in other parts of the country have therefore only very little relevance to the Kerala context. The technologies suited to the Kerala conditions have to be developed by the State's own efforts.

9.150 Research work in the Kerala Agricultural University is being carried out by the teachers and post-graduate students in the three campuses, viz., Main Campus, Vellanikkara, Agricultural College Campus, Vellayani and the Veterinary College Campus, Mannuthy; and the twenty four research institutions under the University located in different parts of the State. Research in the three campuses mentioned above is mainly discipline-oriented and is an integral part of the educational programmes. The research work undertaken in the research stations is primarily problem-oriented and is related to crops, domestic animals and birds.

*Reorganisation of Directorate of Faculty Research Committee*  
(Outlay Rs. 12.60 lakhs)

9.151 Apart from the research activities carried on by the various faculties and institutions of the Kerala Agricultural University, specific co-ordinated projects of the Indian Council of Agricultural Research and other national and international agencies are also being carried out in these institutions. The Director of Research is the principal organisator, co-ordinator and liaison officer for these activities. The present research net work in the University includes the Deans, Professors, Station Heads and other teachers of the University. Considering the substantial increase in research programmes envisaged, the present machinery for co-ordination and supervision is found to be insufficient. Therefore a complete reorganisation of the Research Administration is proposed for planning, co-ordinating and evaluating the progress of various research programmes efficiently and effectively. The proposals would cost Rs. 12.60 lakhs during the plan period.

*Research in Agriculture /Horticulture (Outlay Rs. 250 lakhs)*

9.152 During the Sixth Plan period, it is proposed to strengthen a few of the 24 research stations as main centres, concentrating in research on major crops. The stations proposed to be strengthened are mentioned below:

- (a) Coconut Research Station, Nileshwar, for research on coconut and tuber crops as an inter crop.
- (b) Horticultural Reserach Station, Ambalavayal, for research on tropical and sub-tropical horticultural crops.
- (c) Rice Research Station, Pattambi, for research ou rice.
- (d) Coconut Research Station, Kumarakom, for research on diseases of crops and integrated cropping system including animal husbandry and fish farming.
- (e) Rice Research Station, Kayamkulam, as a main centre for research on oil seeds, pulses, rice and rice land cropping system.
- (f) Rice Research Station, Moncompu, for research on rice cultivation in the special tract of Kuttanad with special reference to pests and diseases,
- (g) Livestock Farm, Thiruvazhamkunnu, as a major cattle breeding station and
- (h) Livestock Farm, Thumburmuzhi, as a progeny rearing station.

9.153 The other research stations representing different agro-climatic regions and important crops of the state such as, spices, cashew, banana, sugarcane, etc., are also proposed to be strengthened by providing additional staff and infrastructure facilities. New research centres on Cocoa, medicinal plants, tree spices, seasonal spices, cucurbits, vegetables, etc., are proposed to be established at the University Main Campus, Vellanikkara, to initiate intensive research on these crops. These research centres will also be of valuable use as practical training centres for the students of Agriculture and Horticulture. New research projects in milk and meat production are proposed. The programmes suggested for supporting research during the plan period would involve an outlay of Rs. 250 lakhs in the State sector.

*Research in Veterinary and Animal Sciences (Outlay Rs. 100 lakhs)*

9.154. The research programmes in Veterinary and Animal Sciences is proposed to be intensified during the plan period. The outlay proposed is Rs. 100 lakhs.

*Research in Fisheries (Outlay Rs. 50 lakhs)*

9.155 The fisheries research programmes of the Agricultural University are drawn up with stress on development of inland water fisheries. The programmes involve an investment of Rs. 50 lakhs during the plan period.

*Project Co-ordination (Outlay Rs. 23.38 lakhs)*

9.156. It is necessary to undertake research to suit every major agro-climatic regions in the state. Heterogeneity in agro-climatic conditions also enables the

cultivtion of a variety of crops and offers opportunities for alternative resource use. A multi-disciplinary approach to find solutions has to be fostered. It is proposed to organise a number of coordinated research projects to strengthen major areas of agricultural research.

*Centres of Excellence (Outlay Rs. 15 lakhs).*

9.157 The ICAR Review Committee has suggested that at least one "Centre of Excellence" should be set up in each Agricultural University. As far as the Kerala Agricultural University is concerned, there is a definite possibility to develop the College of Horticulture as an "International Centre for Humid Tropical Horticulture" with special reference to spices and plantation crops. This will be a major centre for carrying out research, education and extension activities on humid tropical horticultural crops. An outlay of Rs. 15 lakhs is provided.

*Setting up a Directorate of Monitoring and Planning (Outlay Rs. 15 lakhs)*

9.158 In order to have useful and effective coordination of various activities in the University, a planning and monitoring cell headed by a Director is proposed to be started during the plan period.

*Continuation of Existing Plan Schemes (Outlay Rs. 571.18 lakhs)*

9.159 A number of research schemes initiated during the Fifth Plan period have to be carried over to the plan period 1978-83 for their completion. The outlay required for this purpose is Rs. 571.18 lakhs.

*Land Acquisition Charges (Outlay Rs. 2. lakhs)*

9.160 Payment of compensation for the lands acquired for the Kerala Agricultural University's main campus at Vellanikkara is pending. In order to complete the payment an outlay of Rs. 2.00 lakhs is set apart in the Plan.

*11 Agricultural Education*

9.161 Investment in agricultural education has the objective of making available trained personnel for manning the research and development activities. The agricultural education system also require reorientation to meet the unique production needs. Many specialised areas of instruction will have to be evolved. All these require added investment during the Plan period.

*Faculty of Agriculture (Outlay Rs. 220 lakhs)*

9.162 The Kerala Agricultural University has at present three constituent colleges under it, viz. College of Agriculture, Vellayani, College of Veterinary & Animal Sciences, Mannuthy, and College of Horticulture, Vellanikkara, offering degrees in Agriculture, Animal Husbandry and Horticulture, respectively. The former two colleges were started as early as in 1955, but, the College of Horticulture was started only in 1972, after the formation of the Kerala Agricultural University. The instructional activities in all the three colleges have substantially increased in recent years in terms of number of students admitted, number of courses offered, number of disciplines in which Post Graduate Degree courses are



offered etc. But the pace of increase of the facilities in the Colleges was not sufficient enough to meet the ever increasing demands. It has become imperative to provide additional facilities in the colleges in terms of staff, laboratories, equipments, etc. to impart efficient training to the students. The proposals drawn up involve a cost of Rs. 220 lakhs.

*Faculty of Veterinary Sciences and Animal Husbandry (Outlay Rs. 90 lakhs)*

9.163 Under this Faculty, there is one College of Veterinary Sciences established at Mannuthy in the year 1955. Besides, there are three Veterinary hospitals, an Instructional Farm at Mannuthy (including of Livestock Farm, Poultry Farm and Pig Farm), one Livestock Farm at Thiruvazhamkunnur and Cattle Breeding Farm at Thumburmuzhi. The Plan proposals aim at developing the Faculty to meet the educational requirements in Veterinary Science during the Plan period. It has been found necessary to enhance the staff position in some departments in view of the introduction of post graduate courses and consequent increase in work load. In some departments, reorganisation or starting of new sections is felt necessary for improving the quality of teaching. Equipments and other laboratory fittings have to be provided additionally in the various departments. Proposals envisaged for the development of this faculty would cost Rs. 90 lakhs during the Plan period.

*Faculty of Basic Science and Humanities (Outlay Rs. 50 lakhs)*

9.164 A fundamental knowledge in basic science is quite essential for any student of applied sciences such as Agriculture, Veterinary Science and Fisheries. The main objective of the Agricultural University is to impart training in the above applied sciences. But, to make the instruction in these fields effective, teaching of basic sciences appropriate to each branch is quite essential. So a College of Basic Sciences and Humanities is proposed to be set up under the Agricultural University to organise research in science basic to Agriculture, Veterinary and Fisheries.

The College of Basic Sciences and Humanities proposed will be under a separate Faculty of Basic Sciences and Humanities, headed by a Dean. Four main Departments, viz., Department of Biological Sciences, Physical Sciences, Social Sciences and Languages, are proposed to be set up under the Faculty with necessary staff and other facilities. These Departments will offer under-graduate and post graduate courses, but the Faculty will not award any Bachelor's Degree in the courses so offered. However, the first three Departments will offer post graduate courses leading to Masters and Doctorate Degrees when the facilities in the college are adequate for these purposes. The Degrees will be awarded mainly based on the quality of research work done by the post graduate students. The Department of Languages will collaborate with the publication of journals, bulletins, newsletters etc.

A separate Faculty of Forestry is proposed to be set up under the University to conduct research and impart training in Forestry. A Department of Co-operation is proposed to be set up under the Faculty of Agriculture to impart training and to do research in Co-operation. The programmes for development of these faculties would require an outlay of Rs. 50 lakhs.

*Faculty for Post-Graduate Studies (Outlay Rs. 3.64 lakhs)*

9.165 At present post graduate courses leading to Masters and Doctorate Degrees are offered by the constituent colleges of the University. Each college is acting independently in the execution of these programmes. It is necessary to bring all the post-graduate programmes of the University under a common head for better co-ordination and efficiency. Therefore, it is proposed to form a new Faculty of Post-graduate Studies, under a Dean, who will organise and co-ordinate all the post-graduate programmes of the University. The Dean will be assisted by an Assistant Registrar (Academic) and other supporting staff, for meeting the cost of which Rs. 3.64 lakhs is allocated in the Plan.

*College of Horticulture (Outlay Rs. 4 lakhs)*

9.166 The College of Horticulture was started only in 1972 and is now in the formation stage. The laboratories in the various departments of the College are not yet well equipped. A provision of Rs. 4 lakhs is made for the development of the various laboratories during the Plan period.

*Central Facilities (Outlay Rs. 150 lakhs)*

9.167 For improving the quality of administration research and training in the University, it is proposed to provide certain central facilities, which will be useful to the whole University. An amount Rs. 150 is provided in the Plan for this Scheme.

*Construction of University Complex (Outlay Rs. 500 lakhs)*

9.168 The Main Campus of the Agricultural University at Vellanikkara is to be developed by laying out roads, construction of academic buildings, hostels, workshops, glass-houses, etc. Construction works are also to be taken up in the Vellayani Campus, Veterinary College Campus, the Research Station etc. Buildings are also required for the newly proposed College of Fisheries, Forestry College and College of Basic Sciences and Humanities. Laboratories are to be equipped with sophisticated instruments essential for undertaking detailed investigations. Student amenities such as recreation centres, facilities for sports and games and literary activities are also to be provided. Residential facilities are to be provided in the Campus as well as in other research stations. The Plan outlay for the various proposals involved is Rs. 500 lakhs.

*Extension Education (Outlay Rs. 80.46 lakhs)*

9.169 The Directorate of Extension Education is the connecting link between the research wing of the University and the State Development Departments. Publicity, exhibition, public relations, operational research programmes etc. are also handled by the Extension Education Wing of the University. The programmes proposed to be implemented by this Wing of the University during the Plan period would require an outlay of Rs. 80.46 lakhs.

*12. Support to ICAR Schemes (Outlay Rs. 51.14 lakhs)*

9.170 The State Contribution towards the ICAR Schemes is estimated to cost Rs. 51.14 lakhs during the Plan period.

### 13. *Agricultural Economics and Statistics*

#### *Farm Management and Planning Survey (Outlay Rs. 19.42 lakhs)*

9.171 The major strategy of the development effort in agriculture is to increase the share of the farmers in the additional income generated. A number of policies including measures to stabilise the prices are also being devised. All these require considerable amount of information on the farm practices, costs and returns etc. It is proposed to generate adequate information and also to render advice to farmers on farm management by organising a systematic farm management survey. An outlay of Rs. 19.42 lakhs is proposed in the Plan for this scheme.

#### *Strengthening the Agricultural Statistics Unit and Establishing a Data Bank (Outlay Rs. 2.94 lakhs)*

9.172 The existing data collection system in the agriculture sector is of limited coverage and leaves out several items of information required for planning purposes. Moreover, most of the data collected are on the basis of revenue administrative units. While agricultural planning demands generation, collection and collation of data on the basis of agro-climatic zones. It is therefore proposed to strengthen the existing organisation of data collection and add new facilities to generate adequate information by strengthening agricultural statistics unit of the Directorate of Agriculture.

### 3. *Identification of Agro-Climatic Regions and Cropping Patterns (Outlay Rs. 0.23 lakh)*

9.173 It is proposed to undertake a survey to delineate the State into various agro-climatic regions to identify the key constraints that inhibit the process of development and to suggest corrective measures including appropriate cropping patterns.

### 14. *Storage and Warehousing (Outlay Rs. 221 lakhs)*

9.174 The increased production envisaged in the plan necessitates the enhancement of the capacity of the storage facilities in the State. Storage and warehousing facilities are provided in the State by the State Warehousing Corporation. The activities of the State Warehousing Corporation require support by way of further share capital participation.

### 15. *Agricultural Marketing*

9.175 Most of the commodities produced in the farm sector are either exported or sold as raw materials for industries. The demand for these crop products therefore depends upon the dynamics in the export market or the fortunes of the particular industry which consumes the raw-material. The control on the markets for these commodities is exercised by relatively fewer number of individuals or organisations resulting in the prevalence of monopsonic conditions. Consequently the ability of the farming community to take effective action to control unhealthy developments in the markets is limited. Considerable fluctuations are experienced, on account of the vulnerability of the agriculture to external forces. Hence there are fluctuations which at times are very considerable in the farm income of the farmers. Under such conditions farmers have only very little incentive to improve productivity. Hence the farmers will have to be ensured fair prices for

the commodities produced by them. This can be achieved with relative success only if marketing of agricultural commodities is regulated and increasing social control exercised.

#### *Market Investigation (Outlay Rs. 30 lakhs)*

9.176 There is practically very little information available on the structure of the markets and the marketing channels of various farm commodities. The market intelligence available to design relevant and appropriate strategy for market intervention is also very inadequate. It is therefore proposed to undertake investigation of the marketing channels of principal agricultural commodities in the State.

#### *Establishment of Regulated Markets (Outlay Rs. 500 lakhs)*

9.177 The Government of Kerala have already taken a policy decision to introduce regulated markets in the State based on the recommendations of the Committee on Regulated Markets. Idukki district has already been selected for the introduction of the regulated markets. It is proposed to introduce regulated marketing system in all the 11 districts of the State covering certain major agricultural commodities. There is scope for mobilising institutional finance for developing the marketing facilities. The outlay suggested in the plan is for providing the initial support required for market development and for rendering necessary management and supervisory support to the regulated marketing system.

#### *Grading of Agricultural Commodities*

9.178 Grading of farm produce is important for the marketing of agricultural commodities. It would also bring better returns to the farmers. The following are the schemes proposed for grading agricultural commodities:

#### *Establishment of Grading Laboratories (Outlay Rs. 8.50 lakhs)*

9.179 State Agmark grading laboratories at Trivandrum, Quilon, Alleppey and Irinjalakuda and private Agmark laboratories at Cochin, Calicut and Trichur are at present functioning in the State. Grading under Agmark is undertaken in coconut oil, gingelly oil, spices, honey and ghee. The facilities are to be extended to other districts by setting up seven more laboratories, one in each district.

#### *Grading at producers' Level (Outlay Rs. 1.50 lakhs)*

9.180 It is expected that a number of regulated markets and sub-markets will be in operation in the State with the introduction of regulated markets during the plan period. It is proposed to set up grading units in regulated marketins and marketing co-operatives for which an outlay of Rs. 1.50 lakhs is proposed.

#### *Establishment of Private Grading Laboratories (Outlay Rs. 1 lakh)*

9.181 Grading facilities under the State auspices may not be adequate to meet the increasing demands on account of the increase in the number and volume of commodities handled. In order to persuade traders to undertake grading it is proposed to set up 10 more

laboratories in the private sector. Subsidy for setting up laboratories and grading equipments is proposed to be given to the private sector.

*Establishment of Training Centre for Grading (Outlay Rs. 2 lakhs)*

9.182 Grading of agricultural commodities at producers' level has not received wider acceptance. Producers are not aware of the system of grading and the grading practised currently is highly subjective. Establishment of regulated markets and cooperative marketing societies would demand a number of persons trained in grading techniques and method. It is proposed to impart training in grading to producers of agricultural commodities.

*Market Extension (Outlay Rs. 10 lakhs)*

9.183 A massive education programme has to be taken up to create the necessary climate for the establishment of regulated markets and other marketing programmes envisaged during the plan period. Marketing extension service will render necessary education to the producers and sellers on the various marketing services and other developments taking place in the field of marketing. Various extension methods such as training and other services will be provided under this programme. A monthly news bulletin will also be prepared largely for official use.

*Training of Marketing Personnel (Outlay Rs. 8 lakhs)*

9.184 The introduction of regulated markets, other market development programmes, market services etc. would demand training of personnel at various levels. Personnel at higher levels of the agricultural marketing services, market secretaries etc. will be trained under this scheme for which an outlay of Rs. 8 lakhs is provided.

*Re-organisation of the Agricultural Marketing Services. (Outlay Rs. 35 lakhs)*

9.185 The introduction of regulated markets, expansion of cooperative marketing activities and initiation of market research and service involve increased quantum of work. The present organisation of the agricultural marketing service is inadequate to meet the increased responsibilities. The marketing wing of the Department will be strengthened during the plan period. An outlay of Rs. 35 lakhs is proposed under this scheme.

*Re-organisation of Market Intelligence (Outlay Rs. 49 lakhs)*

9.186 The market intelligence system as it is organised today is inadequate to generate sufficient information. It is limited to a few markets and commodities only. Efficient marketing requires a wider net-work of market intelligence system. The present set up needs strengthening and expansion and for this purpose an outlay of Rs. 49 lakhs is provided in the Plan.

*Establishment of State Prices Commission (Outlay Rs. 19 lakhs).*

9.187 Agricultural income of the farmers is found to be highly unstable on account of the wide fluctuations in the prices of commodities both in the internal and export markets. The instability in prices operates as a

dis-incentive to increase production by the cultivators. Hence the creation of an Agricultural Prices Commission for the State is suggested in the Plan to lay down the principles of price support policies and regulations in a scientific manner.

*Organisation of Producers' Cooperative Marketing Societies (Outlay Rs. 15 lakhs)*

9.188 Cooperative marketing by the producers can substantially enhance the bargaining power of the farmers. It is therefore proposed to organise cooperative marketing societies particularly for commodities of a perishable nature.

*Agricultural Produce Export Corporation (Outlay Rs. 100 lakhs)*

9.189 A substantial proportion of the agricultural commodities produced in the State is either exported or sold outside the State. The dependence on the export market is a major reason for the high price fluctuations. The export market is largely controlled by small groups and strong monopsonic tendencies are often visible. Stability in the prices of export commodities can be ensured by a State agency. As a principal instrument to bring about stability in the agriculture sector the creation of an Agricultural Produce Export Corporation in the State sector is suggested in the Plan. An outlay of Rs. 100 lakhs is provided for this scheme.

*Coconut Development Corporation (Outlay Rs. 145 lakhs)*

9.190 In order to bring about stable conditions in the coconut market the Coconut Development Corporation was set up in the State during the Fifth Five Year Plan period. By entering into processing activity the Corporation aims at acquiring a commanding position in the market. Further State support by way of share capital participation to stabilise the activities of the Corporation is envisaged during the plan period. An outlay of Rs. 145 lakhs is provided in the Plan for this scheme.

*Horticultural Crops (Outlay Rs. 91.78 lakhs)*

9.191 Although a number of fruit trees including mango, jack fruit etc., are grown as inter crops in the State, banana and pineapple are the only fruits which are systematically cultivated as pure crops. There is considerable scope for introducing fruit crops as inter crops in every homestead. Considering the importance of fruits as a means of solving problems of malnutrition, fruits growing habit has to be inculcated, in the people. The general approach should be to make fruit development as part of popularising homestead development. Quality planting materials will have to be made available to the farmers.

(a) *Horticulture*

*Development of Horticulture (Outlay Rs. 5 lakhs)*

9.192 An expert team consisting of the representatives of the Indian Institute of Horticulture, Department of Agriculture and the Kerala Agricultural University has undertaken a survey for identifying horticultural potential in the State. It is proposed to implement a number of development projects for horticulture development in the State suggested by this expert team for which an outlay of Rs. 5 lakhs is provided in the Plan.

*Augmenting Production of Quality Planting Materials*  
(Outlay Rs. 27.15 lakhs)

9.193 Production of good quality planting materials is crucial to the accomplishment of the objectives in the development of horticulture in the State. Large quantities of planting materials are required for this purpose. For the production of quality planting materials facilities like glass house, mist-chambers etc. are required in the district farms. It is proposed to develop such facilities during the Plan period in the district farms.

*Central and Other Orchards* (Outlay Rs. 1.60 lakhs)

9.194 Facilities for the production of good planting materials of fruit plants in the Central Orchards is proposed under this scheme.

(b) *Banana*

*Demonstrations on Banana Cultivation* (Outlay Rs. 1 lakh)

9.195 Intensification of banana production is sought through the introduction of improved practices. Improved practices are proposed to be propagated by laying out demonstrations in the major banana growing areas of the State.

*Supply of Disease Free Banana Suckers*  
(Outlay Rs. 4.58 lakhs)

9.196 A major constraint to the development of banana in the southern districts is the incidence of bunchy-top disease. The incidence can be partly mitigated by making available disease-free banana suckers. The proposal in the plan is to distribute disease-free suckers at subsidised cost to the farmers.

*Banana Marketing Cooperatives* (Outlay Rs. 8 lakhs)

9.197 It is proposed to organise four marketing cooperative societies in the major banana growing areas in the districts of Ernakulam, Trichur, Malappuram and Cannanore. These societies are to be assisted through contribution towards share-capital, provision of godown facilities and managerial support.

(c) *Pineapple* (Outlay Rs. 0.59 lakh)

9.198 Pineapple is cultivated intensively around the pineapple processing plants in the State. There is considerable potential for growing pineapple in the State. But expansion of this crop to new areas should be accompanied by creating processing facilities in the State sector to ensure reasonable price to growers. Intensive production programme for pineapple is promoted by demonstration of improved practices and use of weedicides and growth regulators under a centrally sponsored programme. It is proposed to expand the nursery area attached to the district agricultural farms for the production of quality pineapple suckers. For this scheme an amount of Rs. 0.59 lakh is provided in the State sector.

(d) *Aid to Agri-horti Societies.* (Outlay Rs. 4.06 lakhs)

9.199 Voluntary agencies like the Agri-horti societies play a very significant role in encouraging the cultivation of fruits and vegetables. These agencies undertake extension activities and make available good

planting materials. It is proposed to assist the existing societies and organise new societies in all the districts and for this purpose an amount of Rs. 4.06 lakhs is provided in the Plan.

(c) *Vegetables*

9.200 Substantial portion of the vegetable requirement especially of the urban population is being met through imports from neighbouring States. Vegetable cultivation is also a major source of employment especially to marginal farmers and landless agricultural labourers. Vegetable production as a significant economic activity has been developed in selected areas of the State.

*Intensive Production* (Outlay Rs. 1.30 lakhs)

9.201 It is proposed to expand vegetable cultivation in the major urban centres and suburbs and also consolidate production in the traditional vegetable growing areas. Nearly an area of 2400 hectares will be brought under vegetable cultivation during the plan period. Programmes for supporting intensive vegetable production in the suburban areas of Trivandrum, Ernakulam, Trichur and Palghat are also envisaged. Cultivation of vegetables will be promoted in housing colonies and private holdings by subsidising the cost of inputs and equipments.

*Cultivation of Vegetables in Vandiperiyar and Alwaye*  
(Outlay Rs. 2.50 lakhs)

9.202 Vegetable production is carried out in the farms located at Vandiperiyar and Alwaye. These farms are primarily meant for producing good quality planting materials. The provision is to maintain vegetable seed production activities in these farms.

*Seed Multiplication in State Farms* (Outlay Rs. 12 lakhs)

9.203 Lack of adequate supply of planting material is one of the most limiting factors in the expansion of vegetable production in the State. An intensive production programme of planting materials is proposed to be undertaken in the seed farms and district agricultural farms in the State.

*Support to Vegetable Marketing Societies* (Outlay Rs. 24 lakhs)

9.204 Marketing is the major problem faced by vegetable growers in the traditional vegetable growing areas. It is proposed to mitigate the marketing problems by promoting vegetable marketing co-operative societies in these areas. Support is proposed to be rendered through share capital participation, building godown facilities and providing managerial support.

17. *Others*

(a) *High Yielding Varieties Programme*

9.205 Rice is the principal staple food for the people of the State. Nearly 30 per cent of the gross cropped area is under this crop. It has not been possible to achieve a breakthrough in rice production in the State. Since 1960-61 the growth rate was only 1.7 per cent per annum in rice production as against the annual rate of increase in population of 2.1 per cent. Though it

has been possible to evolve a technology to attain a breakthrough in production largely suited to high levels of management, its widespread adoption is being constrained by the inability to provide the conducive agronomic environments.

9.206 It is estimated that by 1982-83 the State will have a population of 269 lakhs which would require 29.86 lakh tonnes of rice for consumption. Given the physiographic condition of undulating topography, the ability to extend rice cultivation to new lands is extremely limited. For the past several years the net area under rice was more or less stationary at 4.75 lakh hectares which accounted for 22 per cent of the net sown area. The only potential for extending rice cultivation is the summer rice fallows which require irrigation support.

9.207 Three major shifts in the approach for increasing rice production in the State are proposed. They are (1) selective approach in the adoption of high yielding varieties, (2) exploitation of under utilised potential of the traditional varieties, and (3) improvements in the agronomic environment through better water control, especially drainage.

9.208 By the end of the Plan period, it is proposed, to increase the rice production capability by 4.75 lakh tonnes i.e. from 12.75 lakh tonnes in 1977-78 to 17.50 lakh tonnes in 1982-83. The strategy sought to achieve the targets is the extension of cropped area under rice to one lakh hectares of land through multiple cropping and increasing the productivity of existing areas.

#### *Intensive Paddy Development Programme*

9.209 The thrust of development programme for increasing production will be on concentration of efforts in selected areas where the agronomic conditions are congenial to rice production. Modest success has been registered in improving the production potential of the rice under the Intensive Paddy Development Programme. This programme envisages the adoption of intensive cultivation techniques in geographically contiguous areas largely falling in identifiable water sheds. Strong extension support, revitalisation of the credit institutions, and development of infrastructure facilities, particularly minor irrigation, are proposed under this programme.

#### *Strengthening of Existing IPD Units (Outlay Rs. 333.12 lakhs)*

9.210 Already 489 Units have been established under this programme. However, in order to exploit the full potential it is necessary to strengthen the existing Intensive Paddy Development units. A programme for strengthening the IPD units is envisaged which would cost Rs. 333.12 lakhs.

#### *Establishing New IPD Units (Outlay Rs. 120.66 lakhs)*

9.211 It is also proposed to increase the number of IPD Units under this programme to agronomically suitable areas. It has been identified that the programme could be extended to 111 more units during the plan period, which will bring nearly 30 per cent of the paddy area in the State under this programme. The scheme is estimated to cost Rs. 120.66 lakhs during the plan period.

#### *Award of Incentives to IPD Units (Outlay Rs. 10 lakhs)*

9.212 In order to encourage healthy competition for increased production among farmers, it is proposed to introduce crop competitions in the IPD areas in the State. The provision is for conduct of such competitions and award of incentives.

#### *Paddy Demonstrations (Outlay Rs. 36.43 lakhs)*

9.213 The improvement registered in rice production has been attributed to innovations in management practices of rice cultivation. Even for the full realisation of the production potential of the inputs such as high yielding varieties, fertilizers etc. a package of appropriate management practices has to be followed. There is considerable variation among the different agro-climatic regions wherein the management practices are to be adopted. It is proposed to propagate the management practices through well laid out demonstration plots for which farmers will be granted assistance in the form of input subsidy. It is proposed to lay out 1000 demonstration plots each year during the Plan period.

#### *Changing Cropping Patterns (Outlay Rs. 42 lakhs)*

9.214 It is proposed to raise additional crops of paddy by developing location specific plans for changing cropping pattern suitably in the paddy lands. The programme will be taken up on area basis and will provide the necessary infrastructure facilities to raise additional crops. As an incentive, it is proposed to grant Rs. 500 per hectare for meeting the additional expenses in developing the land.

#### *Development of Problem Areas under Rice (Outlay Rs. 284.58 lakhs)*

9.215 There are many paddy areas in the State where successful production of paddy is hampered largely by impeded draining and resultant problems of acidity, salinity and chemical toxicity. It is proposed to assist the farmers for undertaking remedial measures on such lands by granting 25 per cent subsidy subject to a maximum of Rs. 940 per hectare.

#### *Development of Paddy Lands in High Altitudes (Outlay Rs. 5 lakhs)*

9.216 Production in paddy lands in high altitudes of the State is relatively low. Only one crop of paddy is raised in most of these lands. Shortage of water is the major constraint to raising an additional crop in such lands. It is proposed to introduce a programme for augmenting moisture availability in the high altitude regions of the State.

#### *Strengthening of Headquarters (Outlay Rs. 3.24 lakhs)*

9.217 Intensive Paddy Development unit is one of the major programmes launched by the Agriculture Department. For the proper management and monitoring of this important programme, there is need for strengthening the management structure at the headquarters.

#### *(b) Pilot Project for Multiple Cropping (Outlay Rs. 1.19 lakhs)*

9.218 Three Multiple Cropping Projects were operating in the State during the Fifth Plan. These projects have been carried over to the first year of the present plan.

(c) *Water Management**Development of Ayacut Areas for Tapping the Full Irrigation Potential (Outlay Rs. 25 lakhs)*

9.219 A break-through in rice production in the State depends upon the full realisation of the yield potential of the new varieties which in turn depends on the creation of a congenial agronomic environment through an appropriate water control condition. In the context of high rainfall and undulating topography, controlled water conditions can be provided by building appropriate drainage systems. There are a number of unique water management problems in the State which are different from those of the rest of the country. Hence the necessary technology and practices would have to be evolved within the State. Heterogeneity in the agronomic conditions existing in different parts of the State, necessitates collection of location specific information on water management. Some relevant information has already been gathered with the completion of a soil and water management project in the State and additional information is expected to emerge from a second similar project which is already in progress.

9.220 It is proposed to introduce a new scheme for bringing better water control conditions for rice production and for the best utilisation of the available irrigation potential in the ayacut areas outside CADP through onfarm development activities. Provision is meant for assistance to farmers.

(d) *Farm Forestry (Outlay Rs. 20 lakhs)*

9.221 The need for firewood and timber for domestic uses is increasing at a fast pace. Traditionally most of the domestic needs of fire-wood and timber used to be met from the farm. There are limitations for the organised sector to meet these demands. Due to the continued exploitation, the stock of resource is being depleted and unless efforts are made to replenish them even the existing level of demand would not be met, let alone the enhanced future demands for these commodities. There is considerable scope for planting trees on the boundaries of homesteads which are separated by fences and walls. Some of the trees could also be put to multiple uses such as standards for pepper and fodder production. It is proposed to plant 8 million trees. By making the effort an integral part of the general extension activities, adequate planting materials would be made available. The cost involved is Rs. 20 lakhs.

(e) *Tribal Development*

9.222 The main thrust of tribal development in the State has been on social aspects. Relatively very little emphasis was given in the past to improve their economic conditions. A very significant proportion of the tribal communities depends upon agriculture. Sizeable proportion of them who have been dispossessed of their land would need immediate rehabilitation. Tribal lands require substantial land development works also. The main strategy involves setting up of tribal settlements on community basis and development of the land resources of individual tribal families. The programmes suggested would cost Rs. 77 lakhs.

*Tribal Area Sub-Plan (Outlay Rs. 5 lakhs)*

9.223 A number of projects for the development of tribal agriculture has been suggested as part of the tribal sub-plan. The allocation is meant for the implementation of these schemes.

*Assistance to Tribal Families for Agricultural Development (Outlay Rs. 8.75 lakhs)*

9.224 Individual tribal families would be assisted in developing the agricultural potential through the full utilisation of resources by making available planting materials and other necessary inputs.

*Revitalisation of Crop Production Programmes in the Existing Colonies (Outlay Rs. 15 lakhs)*

9.225 A number of tribal colonies have been set up in the past with the objective of improving the socio-economic conditions of the tribal communities through the development of land resources. When the colonies were set up, emphasis was largely on the development of social amenities like housing, health, education etc. These programmes have not helped the tribal communities to develop a self-supporting economy. If the required investments are made for developing the land resources, it would be possible to develop a self-sustaining economy in the settlements. It is proposed, therefore, to revitalise the crop production activities in these colonies by undertaking intensive use of land resources by planting of perennial crops, intercropping etc.

*Whole Farm Demonstration Organisation (Outlay Rs. 6.75 lakhs)*

9.226 For the economic development of the tribal communities, development of agriculture is sought as the principal means. The land resources available to them are limited. Apart from crop production, animal husbandry and other activities could be resorted to as supplementary occupations to augment their income. It is proposed to demonstrate these income generation possibilities by laying out demonstration farms in the tribal areas.

*Hamlet Adoption Programme for Crop Production (Outlay Rs. 18 lakhs)*

9.227 Several tribal communities in the State are gregarious in habit and in many cases the land resources are communally owned and used. Comprehensive area planning is necessary for the scientific utilisation of the land resources. It is proposed to prepare development plans for selected hamlets aimed at the optimum utilisation of the land resources. The provision made is for supporting these development projects.

*Re-settlement of Landless Tribals (Outlay Rs. 20 lakhs)*

9.228 Alienation of tribal lands is assuming serious proportions in the State. The process which has been taking place for the past two to three decades has reduced large number of tribal families to the position of landless labourers. Rehabilitation of these tribal families through a resettlement programme alone can bring about economic stability to these groups. It is proposed to undertake resettlement of such landless tribal communities through organised programmes like collective farms.

*Equipment Bank For Tribal Co-operative Societies (Outlay Rs. 1 lakh)*

9.229 Many tribal families do not possess the necessary equipments and implements for undertaking intensive agriculture. It is proposed to set up pools of implements and equipments in the tribal co-operative societies for hiring out to the member families.

*Training of Extension Workers (Outlay Rs. 2.50 lakhs)*

9.230 Socio-economic development of the tribal communities in the State is essentially an educative process. It involves making good the gap in development which has widened over generations. The magnitude of effort required is substantial. Extension workers to be engaged in tribal development require specialised training to appreciate the ways of life, value systems and attitudes of the tribal communities. The outlay provided is for training the extension workers.

*(f) Programmes for Other Weaker Sections*

*Homestead Development for Weaker Sections (Outlay Rs. 25 lakhs)*

9.231 The objective of growth with social justice has to be accomplished through designing special programmes for the development of weaker sections of the society. There is potential for increasing the productivity and income from even small holdings. The process of development, therefore, is to maximise production and employment from a small unit of land. Homestead development is proposed as a programme in support of the economic improvement of weaker sections. Necessary planting material and inputs will be made available at concessional rates. The investment required is Rs. 25 lakhs in the State sector supported by a matching contribution of Rs. 25 lakhs from the Central Sector.

*Special Schemes for Harijans and Girijans (Outlay Rs. 10 lakhs)*

9.232 The provision is for implementing schemes benefiting exclusively the scheduled castes and tribes population in the State. Financial assistance will be rendered for land development and planting of tree crops in tribal colonies on the basis of a development plan to be drawn up taking into consideration the local needs and resource potentials of each colony.

*Liberalised Subsidy for Harijans and Girijans (Outlay Rs. 5.37 lakhs)*

9.233 In order to develop the land resources available with the harijans and girijans, it is proposed to make available planting materials and inputs like fertilizers and pesticides at concessional rates. This would enable them to use the land resources more intensively and thereby increase the income from limited land holdings.

*Special Scheme for Land Reform Beneficiaries (Outlay Rs. 5 lakhs)*

9.234 The scheme envisages providing assistance to the land reform beneficiaries for the productive use of their holdings by supplying planting materials and other inputs subject to a maximum of Rs. 35 per individual.

*(g) Voluntary Organisations (Outlay Rs. 1.70 lakhs)*

9.235 The role of voluntary organisations in developing agriculture is well recognised. The State had considerable success in involving school children and youth in agricultural development programme. In order to evolve a new generation well-versed in modern agricultural practices specific programmes have been designed. The outlay provided is for initiating action in this direction.

*(h) Kerala Land Development Projects (Outlay Rs. 911 lakhs)*

9.236 The Kerala Land Development Corporation was set up towards the end of the Fourth Five Year Plan to take up projects for channelising institutional finance to enable raising of additional crops of rice through reclamation of land in the backwater region. Land for raising additional crop is proposed to be made available by putting up bunds for facilitating dewatering and ensuring protection from floods. Under the programme generally the cost of bunding is to be borne by the farmers for which long term credit will be available. The infrastructure facilities will be provided by the State.

*(i) Special Agricultural Development Projects (Outlay Rs. 533.94 lakhs)*

9.237 Special programmes for the development of crops with the assistance of institutional financing agencies from both within and outside the country are being formulated and implemented in the State. One such project namely the Kerala Agricultural Development Project has been approved for assistance by the World Bank during the last year of the Fifth Plan. The project extending over a period of 7 years envisages an investment of Rs. 63 crores of which Rs. 27 crores will be provided by the World Bank as credit.

9.238 The project is to benefit 75 thousand families in 6 out of the 11 districts in the State. The project is expected to increase output on 45,000 ha. of small holdings—5,000 ha. coconut new plantings, 30,000 ha. coconut rehabilitation and 10,000 ha. pepper. About 8500 ha. of the coconut areas would be irrigated from groundwater to facilitate intercropping with foddergrass and cocoa. At full production the incremental output would be about 200 million coconuts (18,000 tonnes coconut oil equivalent), 6000 tonnes of pepper, 15,000 tonnes of milk, 2000 tonnes of cashew, 6000 tonnes of cocoa and 37,000 tonnes of other crops. Rubber processing facilities would improve the quality of rubber production by upgrading 25,000 tonnes of low grade rubber produced by 50,000 small holders into higher value technically specified rubber.

9.239 The project comprises the following programmes: (i) New planting of high yielding coconut—5000 ha. in Cannanore, Kozhikode and Malappuram districts;

(ii) Rehabilitation of coconut, including replanting of senile and unproductive trees—30,000 ha. in areas free of root wilt disease in Cannanore, Kozhikode, Malappuram and Trivandrum districts.

(iii) Provision of minor irrigation facilities in project coconut areas—1000 ha. in new planting areas, and 7500 ha. in rehabilitation areas;

(iv) Intercropping in coconut areas—26,500 ha. in various garden crops without irrigation; about 300 ha. of cocoa, about 3000 ha. of fodder for dairy cattle and about 2500 ha. of other crops with irrigation;

(v) Rehabilitation, including replanting of pepper—10,000 ha. in Cannanore, Idukki and Kottayam districts;

(vi) Rehabilitation of a State-owned cashew plantation of 2280 ha. and new plantings of 1470 ha. in Cannanore district;

(vii) Establishment of about 435 ha. of seed gardens for coconut, cashew, cocoa and spices;

(viii) Establishment of ten crumb factories (nine new and one expansion), each of 10 ton/day capacity;

(ix) Strengthening of research by CPCRI, KAU and IRB and training and technical assistance; and

(x) Provision of improved extension services and investment credit facilities for project participants.

9.240 During the plan period the Kerala Agricultural Development Project would require an investment of Rs. 533 lakhs under State sector. In addition it would require the support of short term credit of Rs. 3400.24 lakhs and long term credit of Rs. 3174.99 lakhs.

#### *Plantation Crops Development (Outlay Rs. 5 lakhs)*

9.241 Plantation crops have great significance in the economy of the State. One fifth of the State income originating from agriculture is contributed by the four plantation crops Rubber, Coffee Tea and Cardamom though these crops occupy only one-seventh of the net cultivated area. Nearly 3 lakh workers are directly employed in the plantations.

9.242 Plantation crops are of perennial nature. Therefore the management of these crops is not amenable to adjustments to the fluctuations of the demand market. Primarily these crops are grown either for export or as industrial raw materials. Consequently the growers of these crops are highly vulnerable to external factors over which the farmers or the State Government have little control. There is therefore need for perspective planning in the development of these crops.

9.243 Plantation crops of Kerala are largely concentrated in the Western Ghat area for ecological reasons. The economic development of the State is inextricably linked with the development of the Western Ghat. The ghat region abounds in forest vegetation and most of it is either under forests or plantation crops. Growing of plantation crops fits in well with the forestry management practices. Most of the areas at present under plantation crops have come up by replacing the forest lands. Therefore, there is need for an integrated approach to the development of plantation crops.

9.244 All the four major plantation crops viz., rubber, coffee, tea and cardamom are grown in relatively close spatial proximity at specific altitudes. Often it is seen as a continuum of rubber—coffee—cardamom—tea sequence. At least in the transitional zones there is the possibility of competition between

two crops for land input. There is therefore need for an integrated approach to the development of the plantation crops. The development policies and programmes pursued by the individual Commodity Boards have therefore to be coordinated.

9.245 The demand projections for these plantation crops indicate that if Kerala is to maintain its position viz-a-vis other States, significant expansion in area under these crops would be necessary. Largely this has to come from the forest area. The forest, apart from meeting the timber needs for domestic and industrial purposes, also maintains the ecology and climate of the State. Considerable damage has already been done to the forest wealth of the State. It is therefore recommended that any expansion of area under plantation crops especially into the forest areas should only be under the aegis of public sector agencies.

9.246 The problems of plantation crops in the State are largely perceived as a problem of welfare and management of plantation labour. Though labour is a significant component of the plantation economy, development of plantation crops as a potential economic resource is very vital in the long term interests of the State. The integrated development of the Western Ghat region as well as the plantation crops can be ensured only by conscious involvement of the State. The constitution of a high power body as a policy making organ will be desirable to coordinate and monitor development programmes. This body should have the representation of all the interest groups involved in the development of plantation crops including the commodity boards and agencies and departments responsible for the development of forests, agriculture, water and power resource and Western Ghat development. This body should have a small but competent professional secretariat to keep liaison with the various commodity boards as well as to arm the high power body with necessary data for bringing about effective coordination and monitoring. To support these proposals an outlay of Rs. 5 lakhs is made.

#### (k) *Farm Information Service*

9.247 Farm Information Service is an essential support for the successful implementation and realisation of the objectives of the development programmes in the farm sector. Apart from being an instrument for carrying the knowledge and innovations from the research stations to the farms and informing the research Stations about the problems of the farmers, farm information service has a significant role in educating the people about the programmes and projects undertaken by the Government and other agencies on agricultural development in the State.

9.248 The unique characteristics of the State pose several problems in designing an appropriate strategy for farm information service. The traditional methods of disseminating farm information generally practised have only limited impact in the situations obtaining in the State. The relatively high percentage of literacy in Kerala opens up new vistas for communication of farm information. Farming, apart from being the principal means of livelihood of the majority of people in the State, is also a supplementary source of income to a substantial section of the people whose contribution to agricultural



production is significant. The alternative uses to which the limited farm resources could be put and the multiplicity of crops grown require communication support. Agriculture has to be taken in its totality encompassing the entire rural sector including crop husbandry, plantation crops, animal husbandry, dairying, inland fisheries, forestry and rural credit. To the objectives in the area of farm information service a multipronged approach for the communication strategy is necessary. This also calls for a unified agency for the transmission of information to the farm community in the State.

(i) *Print Media (Outlay Rs. 55 lakhs)*

9.249 The print media include mass information materials like newspapers, pamphlets, leaflets, wall newspapers and bulletins. Farmers as well as field extension workers have to be exposed to the latest developments in farm technology. In order to discharge the commitments to the farming community and extension personnel the infrastructure support of the Farm Information Bureau in terms of facilities for printing and material production has to be augmented and strengthened.

(ii) *Farm News Service to Newspapers (Outlay Rs. 9 lakhs)*

9.250 Kerala has the largest number of periodicals and the highest readership of newspapers per unit of population. There is considerable demand for farm news from the newspapers as well as the readers for more farm features. It is proposed to cover all the daily newspapers in the State with farm features. The farm feature service of the Farm Information Bureau has to be strengthened to enable it to render this service.

(iii) *Farm News Service over Radio (Outlay Rs. 13 lakhs)*

9.251 The farm news bulletins through the radio reaches a much wider audience. It is therefore proposed to expand and intensify the farm information service through radio in the State. An outlay of Rs. 13 lakhs is provided for this scheme in the Plan.

(iv) *Visual Aids (Outlay Rs. 40 lakhs)*

9.252 Visual aids are very effective in transmitting farm information especially to the illiterate farmers. Among the visual aids cine films have the most powerful impact. It is proposed to exploit this means of farm information communication by producing instructional films and organising film libraries.

(v) *Campaigns and Exhibitions (Outlay Rs. 60 lakhs)*

9.253 Exhibitions and special campaigns are also effective methods of farm information service. There is good scope for the conduct of campaigns and exhibitions especially during festival seasons, when the rural folk gather in large numbers. It is therefore proposed to set up a central exhibition production unit in the Farm Information Bureau and mobile exhibition units in all districts. For this scheme an outlay of Rs. 60 lakhs, is proposed in the Plan.

(vi) *Administration and Direction (Outlay Rs. 23 lakhs)*

9.254 The additional functions and responsibilities envisaged in the Plan for the Farm Information Bureau call for a restructuring and strengthening of the Bureau. An outlay of Rs. 23 lakhs is provided for this scheme in the Plan.

TABLE 9.7

**Farm Information Service**

(Rs. in lakhs)

Sl. No.	Scheme	Fifth Plan Outlay (1974-78)	1974-78 Expenditure	1978-79 Outlay Budgetted	1978-83 Outlay Proposed
(1)	(2)	(3)	(4)	(5)	(6)
<i>Farm Information Service</i>		<b>35.50</b>	<b>21.05</b>	<b>9.50</b>	<b>200.00</b>
(i)	<i>Print Medium</i>	(2.00)	(0.50)	(1.00)	(55.00)
1	Development of 'Kerala Karshakan' into a complete popular farm weekly	..	..	..	15.00
2	Periodical popular technical bulletins to the field level extension workers	..	..	..	1.00
3	Production of mass information materials—pamphlets, leaflets, folder flap books etc.	..	..	..	3.00
4	'Kerala Karshakan'—priced condensed book series	..	..	..	1.00
5	Production of popular priced farm bulletins	..	..	..	1.00
6	Production of non-projected visuals like posters and charts	..	..	..	5.00
7	Conversion of existing wall newspaper into a multicolour fortnightly	..	..	..	6.00
8	Expansion of the existing printing facilities	..	..	..	4.00
9	Establishment of a block making unit	..	..	..	2.00
10	Establishment of an information, library and documentation centre	..	..	..	8.00

(1)	(2)	(3)	(4)	(5)	(6)
11	Farm book corners in rural libraries	2.00	0.50	1.00	8.00
12	Popular farm book production	..	..	..	1.00
(ii)	<i>News Papers</i>	(15.00)	(11.60)	(3.50)	9.00
1	Farm feature service in daily newspapers	1.00	..	0.50	3.00
2	Sponsoring supplement to news papers & journals	..	..	..	3.00
3	Expanding daily farm news service to all news papers in the State	14.00	11.60	3.00	3.00
(iii)	<i>Radio</i>				(13.00)
1	Strengthening the farm news service over radio	..	..	..	7.00
2	Providing field level production support to rural radio programme, Karshika rangam, farm and home television	..	..	..	6.00
(iv)	<i>Visual Aids</i>	(7.50)	(2.00)	(2.50)	(40.00)
1	Production of slides and film strips and distribution of slide projectors with sound support	1.50	1.53	0.50	6.00
2	Strengthening the Photographic and Art Division of Farm Information Bureau	2.00	..	1.00	15.00
3	Organisation of a central film library and two regional film libraries	..	..	..	6.00
4	Production of instructional film and film strips	4.00	0.47	1.00	13.00
(v)	<i>Campaigns and Exhibitions</i>	(11.00)	(6.95)	(2.50)	(60.00)
1	Organising Kissan Melas	1.00	..	0.50	10.00
2	Organising Rural Exhibitions	10.00	6.95	2.00	9.00
3	Establishment of a Central Exhibition Production Unit	..	..	..	4.00
4	Establishment of 9 mobile exhibition Units	..	..	..	15.00
5	Establishment of one floating exhibition Unit	..	..	..	2.00
6	Participation of Farm Information Bureau in large scale exhibitions	..	..	..	12.00
7	Campaign for supporting the farm development programmes aimed for students, youth, women and agricultural labourers	..	..	..	2.00
8	Scheme for conducting cattle, poultry and horticultural shows	..	..	..	6.00
(vi)	<i>Administration and Direction</i>	..	..	..	(23.00)
1	Strengthening the administrative unit of Farm Information Bureau with regional units	..	..	..	15.00
2	Deputing officers for various information, communication and job oriented training	..	..	..	3.00
3	Conducting periodical workshops and improving the skill of personnel	..	..	..	2.00
4	Consultancy and production unit	..	..	..	1.00
5	Establishment of one Action Monitoring Unit	..	..	..	2.00

TABLE 9.8

## Agriculture Programmes—Scheme-wise Outlay

(Rs. in lakhs)

Sl.No.	Scheme	Fifth Plan Outlay (1974-79)	1974-78 Expenditure	1978-79 Outlay budgeted	1978-83 Outlay proposed
(1)	(2)	(3)	(4)	(5)	(6)
1.	<i>Direction and Administration</i>	260.00	75.81	95.00	477.75
	Reorganisation and strengthening of agricultural administration and introduction of training and visit system of extension	260.00	75.81	95.00	477.75
2.	<i>Multiplication and Distribution of seeds</i>	170.00	41.38	20.29	63.68
(i)	Procurement and distribution Support for registered seed growers	(40.00)	(3.72)	(2.00)	(45.39)
		..	..	2.00	14.11
(ii)	Seed distribution through Agro Industries Corporation Seed multiplication	40.00	3.72	..	31.28
(iii)	Integrated seed development farm-Eruthampathy	10.00	8.31	2.00	2.00
(iv)	Seed multiplication in Kayal lands	75.00	11.14	1.00	1.00
(v)	Improvement of existing seed farms	35.00	14.55	6.50	6.50
(vi)	Establishment of new seed farms & stores	4.50	1.51	6.29	6.29
(vii)	Inspection and Certification-Establishment of laboratories for seed testing	6.00	0.40	2.50	2.50
(viii)	Processing of paddy seeds	..	1.75	..	..
3.	<i>Agricultural Farms</i>	141.00	131.81	24.04	180.00
(i)	District Agricultural Farms	50.00	50.38	14.54	150.50
(ii)	Collective Farms	15.00	28.42	3.00	3.00
(iii)	State Farm with Russian assistance	5.00	1.24	1.50	1.50
(iv)	Share Capital contribution to Oil Palm Plantations	15.00	1.00	5.00	25.00
(v)	Cultivation of paddy lands left fallow in Kuttanad	50.50	50.47	..	..
(vi)	Cultivation of paddy in Kayamkulam kayal	..	0.30	..	..
(vii)	Cultivation of fallow land in Medical College Campus	5.50	..	..	..
4.	<i>Manures and Fertilizers</i>	42.00	26.24	10.30	89.91
	Manures and Fertilizers	(15.00)	(4.91)	(4.50)	(4.50)
(i)	Production of green manure seeds	5.00	1.38	1.66	1.66
(ii)	Development of local manurial resources	5.00	1.56	2.00	2.00
(iii)	Fertilizer promotion programme	4.00	1.52	0.84	0.84
(iv)	Block and district level competition for compost production	1.00	0.43	..	..
(v)	Settlement of claims due to subsidised sale of fertilizers	..	0.02	..	..
	<i>Soil Testing and Quality Control</i>	(27.00)	(21.33)	(5.80)	(85.41)
(i)	Strengthening of existing laboratories	..	..	..	11.03
(ii)	Establishment of new laboratories	..	..	..	31.14
(iii)	Strengthening of Central Soil Testing Laboratories	..	..	..	9.63
(iv)	Construction of buildings for soil testing laboratories	..	..	..	18.25
(v)	Conduct of ABC Trials	..	..	..	9.09
(vi)	Deputation of staff for higher Studies	..	..	..	6.27
5.	<i>Plant Protection</i>	202.25	162.32	57.51	195.85
(i)	Spraying for control of coconut leaf diseases	75.00	55.85	30.00	30.00
(ii)	Biological control of crop pests and weeds	2.00	1.20	0.92	11.28
(iii)	Control of brown hopper in endemic areas	..	..	..	22.50
(iv)	Control of coconut caterpillar in endemic areas	..	..	..	2.55
(v)	Adaptive trial for control of Rhinoceros beetle	..	..	..	2.06
(vi)	Rodent control	5.00	..	3.00	3.75
(vii)	Eradication of Salvinia	1.00	1.15	1.00	2.50
(viii)	Plant Protection Service	(110.00)	(77.42)	(17.40)	(84.50)
(a)	Distribution of Plant protection equipment at subsidised rates	..	..	7.40	42.50
(b)	Maintenance of plant protection equipment and purchase of new ones	..	..	5.00	21.00
(c)	Maintenance of Mobile Plant Protection Units	..	..	5.00	21.00
(ix)	Surveillance of pests and diseases	7.00	24.34	2.75	22.00
(x)	Agricultural meteorological services	0.75	0.92	2.53	9.04
(xi)	Quality control of pesticides and analysis of pesticides residue	1.50	1.34	0.01	5.67
(xii)	Herbicidal control of weeds	..	0.10	..	..

(1)	(2)	(3)	(4)	(5)	(6)
6 Commercial Crops		<u>374.93</u>	<u>284.33</u>	<u>86.70</u>	1080.93
(i) Pulses		(16.00)	(8.02)	(5.68)	(47.36)
(a) Area Expansion -Seed distribution subsidy		--	--	--	9.81
(b) Incentive for additional area free distribution of phosphatic fertilizers		15.00	7.23	5.63	37.50
(c) Equipping microbiological laboratory		1.00	0.69	0.05	0.05
(d) Cultivation of pulses under EFP Programme		..	0.02	..	..
(e) Purchase and distribution of pulses under GMF programme		..	0.08	--	--
(ii) Tuber Crops		<u>9.75</u>	<u>4.32</u>	<u>6.73</u>	<u>80.58</u>
Tapioca		(8.00)	(3.48)	(6.72)	(75.24)
(a) Tapioca Package Programme		8.00	3.48	6.72	6.72
(b) Intensive Development		..	..	..	31.67
Staff support		..	..	..	8.32
Pure Crop demonstration		..	..	..	6.30
Inter crop demonstration		..	..	..	3.85
(c) Seed multiplication in District and Seed Farms		..	..	..	9.00
(d) Seed multiplication in selected growers' field		..	..	..	4.20
(e) Support to District Tapioca Marketing Societies		..	..	..	(36.85)
Share capital		..	..	..	11.00
Godowns		..	..	..	13.75
Purchase of tractors		..	..	..	12.10
Sweet Potato		(1.75)	(0.84)	(0.01)	(1.84)
(f) Multiplication of planting materials in District Agricultural Farms		..	..	--	0.64
(g) Laying out demonstrations		1.75	0.84	0.01	1.20
Minor Tubers		..	..	..	(3.50)
(h) Seed multiplication in State Farms		..	..	..	3.50
(iii) Sugarcane		(0.80)	(0.67)	(0.50)	(3.85)
(a) Expansion of sugarcane farms		0.70	0.67	0.50	0.50
(b) Sugarcane development demonstrations		0.10	..	..	..
(c) Link roads		--	--	--	3.35
(iv) Oil seeds		<u>5.00</u>	<u>5.99</u>	<u>0.01</u>	<u>10.71</u>
(a) Groundnut		..	(0.02)	..	(8.90)
Bringing additional area		..	..	..	5.20
Adoption of full package of practices		..	..	..	1.20
Multiplication of improved varieties of seed in District Farms		..	..	..	2.50
Demonstration of groundnut cultivation		..	..	..	..
(b) Sesamum		..	0.02	..	(1.80)
Adoption of full package of practices		..	..	..	0.60
Multiplication of improved varieties of seeds in departmental farms		..	..	..	1.20
(c) Oil Palm		(5.00)	(5.97)	(0.01)	(0.01)
Trial and development of oil palm		5.00	5.97	0.01	0.01
(d) Coconut		(234.50)	(167.22)	(62.41)	(514.89)
Production and distribution of quality coconut seedlings		225.00	154.77	59.00	511.48
Coconut nursery-land acquisition		5.00	3.22	1.01	1.01
Improvement of irrigation facilities		4.50	8.85	2.40	2.40
Rejuvenation of unhealthy plantations		..	0.18	..	..
International symposium on coconut development		..	0.20	..	..
(v) Spices		<u>7.88</u>	<u>5.92</u>	<u>1.52</u>	<u>68.43</u>
(a) Pepper		(2.88)	(2.29)	(0.50)	(38.96)
Pepper nurseries-production of pepper cuttings		2.90	1.41	0.50	31.16
Replacing old and uneconomic varieties		..	..	..	7.80
Collection of data on pepper		0.88	0.88	..	..
(b) Clove		..	..	..	25.00
Production and distribution of clove seedlings		..	..	..	25.00
(c) Nutmeg		..	..	..	2.50
Production and distribution of nutmeg seedlings		..	..	..	2.50
Nursery staff support for seedling production for nutmeg and clove		..	..	..	0.95

(1)	(2)	(3)	(4)	(5)	(6)
(d) Vanilla		(4.50)	(3.03)	(0.88)	0.88
Cultivation of Vanilla					
(e) Ginger					
Demonstration cum multiplication of Ginger and Turmeric		(0.50)	(0.60)	(0.14)	(0.14)
(vi) Cashewnut		(102.00)	(93.94)	(10.40)	269.96
Expansion of Area					
Cashew cultivation in 16,000 ha. in private sector		75.00	78.83	..	..
Cashew cultivation in 50,000 ha. in private sector		..	..	7.00	262.61
Rehabilitation of existing gardens-cost of planting materials		..	..	..	3.95
Adoption of Plant Protection measures for cashew in non-departmental plantation		7.00	5.40	3.40	3.40
Special package programme for cashew in departmental plantations		20.00	9.71	..	..
(vii) Cocoa		(11.00)	(6.27)	(6.76)	(45.45)
Expansion of area under Cocoa					
Bringing 25,000 hectares additionally under Cocoa					
Distribution of quality seedlings		..	..	5.68	38.45
Extension Support		..	..	1.08	5.80
Training		..	..	..	1.20
(viii) Tobacco		..	..	..	(15.70)
Extension Support		..	..	..	2.20
Support to marketing societies					
Construction of boarded warehouses by Co-operative Societies		..	..	..	2.50
Managerial assistance to Marketing Co-operative Societies		..	..	..	1.00
Construction of village roads to tobacco growing centres		..	..	..	10.00
(ix) Medicinal Plants		..	..	..	(24.00)
Production & distribution of lemongrass seeds		..	..	..	24.00
(x) Cotton		..	(0.04)	..	..
Cotton development		..	0.01	..	..
Demonstration of cotton cultivation		..	0.03	..	..
7. Draught Prone Area Programme		..	..	1.00	48.60
Dryland farming in Palghat, Malappuram, Calicut and Cannanore Districts		..	..	1.00	48.60
8. Extension and Farmers' Training		10.88	6.03	6.19	124.73
(a) Extension		..	(0.02)	(1.00)	(5.00)
Evolving model and establishing demonstration centres for mixed farming		..	..	1.00	5.00
National demonstration		..	0.02	..	..
Implementation of Panchayat Plan		..	..	..	..
(b) Inservice Training		(10.88)	(6.01)	(5.19)	(65.73)
Development of extension training centres to train newly recruited Agricultural Demonstrators		..	..	..	10.00
Short term training Course to Agricultural Demonstrators		..	..	..	0.30
Inservice training to Agricultural Demonstrators		0.50	..	0.88	7.50
Inservice Training to Mechanics		..	..	0.50	2.50
Orientation and job training to Junior Agricultural Officers		..	..	..	2.00
Short Course training to JAOs		..	..	..	0.85
Refresher Course to JAOs		..	..	..	6.00
Training to Subject Matter Specialists and Assistant Directors in crop production and management		2.75	1.58	1.00	1.60
Training on Project planning for senior officers		1.50	..	0.30	1.50
Specialised training leading to P.G. Diploma		..	..	..	2.00
Training to the Staff of FTCs and E T Cs		..	..	..	0.40
Training Course in laboratory techniques		..	..	..	0.08
Workshop on communication and Training to Senior Officers		..	..	..	2.00
Study tours, other trainings, workshops, seminars etc.		0.13	0.41	0.01	10.00
Administrative and managerial support to training programme		..	..	..	16.50
Non-Degree inservice programme		..	0.63	..	..
Special Training for the implementation of the recommendations of the Chief Secretaries Conference		..	..	..	..
Training to JAOs and Agricultural Demonstrators on Area Planning		6.00	3.39	2.50	2.50
(c) Farmers Training		..	..	..	(54.00)
One day camp for farmers		..	..	..	..
Training to agricultural labourers		..	..	..	..
Training to Mechanics		..	..	..	..
Training in horticulture practices		..	..	..	2.00
9. Agricultural Engineering		40.00	25.00	10.00	98.53
Expansion of Agricultural Engineering Service in the districts		..	..	..	48.53
Agro Industries Corporation		40.00	25.00	10.00	50.00

(1)	(2)	(3)	(4)	(5)	(6)
10. <i>Agricultural Research—Kerala Agricultural University</i>		<b>323.00</b>	<b>272.87</b>	<b>82.00</b>	<b>102913</b>
Reorganisation of Directorate and Faculty Research Committee		..	..	..	12.60
Research in Agriculture/Horticulture		..	..	..	250.00
Research in Veterinary and Animal Sciences		..	..	..	100.00
Research in Fisheries		..	..	..	50.00
Project Co-ordination		..	..	..	23.38
Centres of Excellence		..	..	..	15.00
Directorate of Monitoring and Planning		..	..	..	5.02
Continuation of existing plan schemes		..	..	..	571.18
Agricultural Research & Extension Co-ordination Board		..	..	0.01	..
Agriculture University—Land Acquisition charges		..	10.40	2.00	2.00
11. <i>Agricultural Education</i>		..	..	..	1149.24
Faculty of Agriculture		..	..	..	220.00
Faculty of Veterinary and Animal Sciences		..	..	..	90.00
Starting a Faculty of Fisheries*		..	..	..	..
Establishing facilities of Basic Sciences		..	..	..	..
Forestry and Co-operation		..	..	..	50.00
New faculty of Post graduate studies		..	..	..	3.64
Improving lab facilities at College of Horticulture		..	..	..	4.00
Extension Education		..	..	..	80.46
Central facilities		..	..	..	150.00
Construction of University Complex		..	..	..	500.00
12. <i>Support to I. C. A. R. Schemes</i>		13.00	..	..	51.14
13. <i>Agricultural Economics &amp; Statistics</i>		(4.50)	(3.47)	(0.23)	(22.59)
Farm management and Planning Survey		..	..	..	19.42
Strengthening the agricultural statistics unit and establishing a data bank		..	..	..	2.94
Identification of Agro-climatic regions and evolving cropping patterns		1.00	1.50	0.23	0.23
Agricultural census		..	0.31	..	..
Farm management service		3.50	1.66	..	..
14. <i>Storage and Warehousing</i>		<b>(25.00)</b>	<b>(22.00)</b>	<b>(11.00)</b>	<b>(221.00)</b>
Augmenting storage and Warehousing facilities in the State (State Warehousing Corporation)		25.00	22.00	10.00	220.00
Improvement of Marketing & Warehousing in Kerala		..	..	1.00	1.00
15. <i>Agricultural Marketing</i>		<b>45.00</b>	<b>52.38</b>	<b>24.43</b>	<b>924.00</b>
Market Investigation		3.00	0.01	..	30.00
Establishment of Regulated Markets		7.50	0.33	..	500.00
Grading of agricultural commodities		(4.00)	(3.89)	(0.20)	(13.00)
Establishment of grading laboratories in 7 districts		..	..	..	8.50
Subsidy towards grading at producers' level		..	..	..	1.50

\*Provided under fisheries

(1)	(2)	(3)	(4)	(6)	(5)
	Subsidy for establishing private grading laboratories	..	..	..	1.00
	Establishment of Training Institute for grading	..	..	..	2.00
	Market extension	0.50	0.08	..	10.00
	Training of marketing personnel	..	..	..	8.00
	Reorganisation of marketing wing	..	..	..	35.00
	Reorganisation of market intelligence	..	..	..	49.00
	Establishment of State Prices Commission	..	..	..	19.00
	Organisation of Producers' Co-operative Marketing Society	..	..	..	15.00
	Establishment of Agricultural Produce Export Corporation	..	..	1.00	100.00
	Coconut Development Corporation	30.00	48.07	23.23	145.00
16.	<i>Horticultural Crops</i>	<b>51.60</b>	<b>43.82</b>	<b>15.63</b>	<b>91.78</b>
(a)	Horticulture	(10.00)	(8.07)	(6.60)	(33.75)
	Development of Horticulture	..	0.02	5.00	5.00
	Augmenting production of quality planting materials	..	..	..	27.15
	Central and other orchards	10.00	8.05	1.60	1.60
(b)	Banana	(18.00)	(19.02)	(4.58)	(13.58)
	Production Programme for banana	..	0.04	..	1.00
	Demonstrations on Banana Cultivation	..	..	..	..
	Supply of disease free banana suckers	18.00	18.98	4.58	4.58
	Banana Marketing Co-operatives	..	..	..	8.00
(c)	Pineapple	(8.00)	(2.21)	(0.59)	(0.59)
	Nursery (Area) expansion	8.00	2.21	0.59	0.59
(d)	Aid to Agri-horti-Societies	1.60	1.39	0.06	4.06
(e)	Vegetables	(14.00)	(10.92)	(3.80)	(39.80)
	Intensive Production	5.50	2.50	1.30	1.30
	Cultivation of vegetables in Vandiperiyar and Alwaye	8.50	8.42	2.50	2.50
	Seed multiplication in farms	..	..	..	12.00
	Support to Vegetable Co-op. Marketing Societies	..	..	..	24.00
17.	<i>Others</i>	..	..	..	2730.23
(a)	High Yielding Varieties Programme	(105.72)	(145.45)	(43.61)	(835.03)
	Intensive Paddy Development Programme	..	..	..	..
	Strengthening of existing IPD units	40.00	64.22	9.00	333.12
	Establishing new IPD units	..	..	..	120.66
	Award of incentives to IPD units	..	..	2.00	10.00
	Paddy Demonstrations (management practices)	8.72	6.93	2.36	36.43
	Changing Cropping Pattern	7.00	3.74	2.00	42.00
	Development of problem areas under rice	30.00	63.69	23.25	284.58
	Development of Paddy lands in high altitudes	20.00	5.00	5.00	5.00
	Payment of subsidy to Chathencode	..	0.42	..	..
	Beneficiary Committee for construction of funds at Chamaravattam	..	1.45	..	..
	Strengthening Head Quarters	..	..	..	3.24
(b)	Pilot Project for Multiple Cropping	9.12	14.76	1.19	1.19
(c)	Water Management	..	..	(5.00)	(25.00)
	Development of Ayacut areas for tapping the full irrigation potential	..	..	5.00	25.00

(1)	(2)	(3)	(4)	(5)	(6)
(d) Farm forestry		..	..	..	20.00
(e) Tribal Development		..	(5.00)	(5.00)	(77.00)
Tribal Area sub plan		..	5.00	5.00	5.00
Assistance to tribal families for agricultural development		..	..	..	8.75
Revitalisation of crop production programme in the existing colonies		..	..	..	15.00
Whole farm demonstration organisation		..	..	..	6.75
Hamlet adoption programme for crop production		..	..	..	18.00
Resettlement of landless tribals		..	..	..	20.00
Equipment bank for Tribal Co-operative Societies		..	..	..	1.00
Training for extension workers		..	..	..	2.50
(f) Programmes for other weaker sections		(42.00)	(7.78)	(20.37)	(120.37)
Homestead development of the weaker sections		..	..	..	100.00
Special scheme for Scheduled Castes & Scheduled Tribes		15.00	3.50	10.00	10.00
Liberalised subsidy for Scheduled Castes & Scheduled Tribes		..	..	5.37	5.37
Special scheme for land reform beneficiaries		10.00	0.24	5.00	5.00
Loans to poor holders for rubber cultivation		..	0.04	..	..
Special programme for small and marginal farmers in non S.F. D.A. Districts		17.00	4.00	..	..
(g) Voluntary Organisation		8.00	..	1.70	1.70
(h) Kerala Land Development Projects		210.00	128.02	70.00	911.00
(i) Special Agricultural Development Projects		5.00	37.61	101.00	533.94
(j) Plantation Crops Development		..	..	..	5.00
(k) Farm Information and Communication		35.50	21.05	9.50	200.00
	GRAND TOTAL	2118.00	1515.19	707.45	8528.00



TABLE 9.9

## Investment in Agriculture Programme—A summary (1978-83)

(Rs. in lakhs)

Sl.No.	Scheme	State	Centre	Institutional Finance		
				Short term	Medium term	Long term
(1)	(2)	(3)	(4)	(5)	(6)	(7)
A.	Direction & Administration	477.75	485.90	..	..	..
B.	Multiplication and Distribution of seeds	63.78	..	..	..	..
C.	Agricultural Farms	180.00	..	..	..	..
D.	Manures and Fertilizers	89.91	52.42	..	..	..
E.	Plant Protection	195.85	128.77	..	..	..
F.	Commercial Crops	(1080.93)	(1446.04)	( 1756.00)	(4977.31)	(675.00)
1.	Pulses	47.36	1118.80	45.00	..	..
2.	Tuber Crops	80.58	..	1050.00	..	..
3.	Sugarcane	3.85	34.88	216.00	..	..
4.	Oil Seeds	10.71	..	..	..	..
5.	Coconut	514.89	860.34	..	4831.31	475.00
6.	Spices	68.43	171.21	225.00	..	..
7.	Cocoa	45.45	..	..	106.00	..
8.	Cashewnut	269.96	260.81	..	..	200.00
9.	Tobacco	15.70	..	20.00	..	..
10.	Medicinal Plants	24.00	..	200.00	40.00	..
G.	Drought Prone Area Programme	48.60	..	..	..	..
H.	Extension & Farmers' Training	124.73	173.37	..	..	..
I.	Agricultural Engineering	98.53	..	..	..	..
J.	Agricultural Research	1029.18	..	..	..	..
K.	Agricultural Education	1149.24	..	..	..	..
L.	Agricultural Economics & Statistics	22.59	..	..	..	..
M.	Storage & Warehousing	221.00	..	..	..	..
N.	Agricultural Marketing	924.00	..	..	..	..
O.	Horticulture Crops	91.78	16.40	1240.00	120.00	..
P.	Others	(2730.23)	(221.80)	(4136.24)	..	(6094.99)
(a)	High Yielding Varieties	835.03	221.80	700.00	..	2860.00
(b)	Multiple Cropping	1.19	..	..	..	..
(c)	Water Management	25.00	..	..	..	..
(d)	Farm Forestry	20.00	..	..	..	..
(e)	Tribal Development	77.00	..	36.00	..	60.00
(f)	Other Weaker Sections	120.37	..	..	..	..
(g)	Voluntary Organisations	1.70	..	..	..	..
(h)	Farm Information & Communication	200.00	..	..	..	..
(i)	Kerala Land Development Project	911.00	..	..	..	..
(j)	Special Agricultural Development Programme	533.94	..	3400.24	..	3174.99
(k)	Plantation Crops Development	5.00	..	..	..	..
GRAND TOTAL		8528.00	2524.70	7132.24	5097.31	6769.00

**Special Programme for Rural Development***Integrated Rural Development*

9.255 Several regions in the State with unique physiographic and natural features have remained economically and socially backward. These regions endowed with unique resource characteristics received poor development support since they often cut across administrative boundaries. Disjointed and isolated attempts at development in the past have not helped to mitigate their problems. In-depth studies on these regions and their problems will have to be taken up in order to tackle the problems of these areas effectively. All these areas require a comprehensive approach integrating the various aspects of development.

9.256 The regions identified in the State requiring an area approach to development include Kasaragode, Wynad, Attappady, Kozhinjanpara, Marayoor, Trichur

Kolelands, Kuttanad, Onattukara and Western Ghats. Some of these areas have already received development support. It is proposed to launch integrated development programmes in these areas during the plan period. An allocation of Rs. 310 lakhs is set apart for this purpose.

*Small Farmer Development.*

9.257 Programmes for the development of small and marginal farmers were initiated during the Fourth plan period. Already four districts in the State are covered under this programme. It is proposed to cover the remaining districts in the State with small farmer development programme during the plan period. Necessary organisational arrangements will have to be built up to formulate and implement this programme. Mobilisation of institutional finance should also receive adequate attention for the successful implementation of this programme. An outlay of Rs. 190 lakhs is provided for this scheme in the Plan.

TABLE 9.10

## Special Programme for Rural Development-Scheme-wise outlay

Sl.No.	Scheme	Fifth Plan Outlay 1974-79	1974-78 Expenditure	1978-79 Outlay budgeted	1978-83 Outlay Proposed
(1)	(2)	(3)	(4)	(5)	(6)
1.	Integrated Rural Development	..	..	..	310.00
2.	Small Farmer Development	8.00	2.65	56.00	190.00
	Total	8.00	2.65	56.00	500.00

## Land Reforms

9.258 The Kerala Land Reforms Act (1963) as modified by a series of Amendment Acts in subsequent years, is the pivot of land legislations in Kerala. This Act came into force from 1-1-1970, vesting in Government all rights, title and interest of the land owners and intermediaries over the holdings held by the cultivating tenants. Simultaneously the tenants got full ownership of their tenanted lands. Till 31-3-1978, as many as 34.72 lakh cases were filed by tenants for ownership rights. Out of these, 34.03 lakh cases (98 per cent) have been disposed of. The allowed cases numbered 23.18 lakhs. Thus over 23 lakh cultivating tenants have become owner cultivators as a result of the tenancy reform.

9.259 Under the ceiling provisions of the KLR Act, 59,700 returns were filed till the end of 31-3-1978 of which 53,900 were disposed of. The surplus lands ordered to be surrendered stood at 54,000 ha. The land taken over is 27,160 ha. and that distributed is 15,920 ha. The total number of beneficiaries of surplus land were 62,600 persons. The Scheduled Castes and Tribes comprised 27,000 (43 per cent) and shared over 7,090 ha. (45 per cent) of the area assigned.

9.260 The KLR Act has allowed 'Kudikidappu' rights to over 2.56 lakh hutment dwellers till 31-3-1978. Besides the Kerala Land Reforms Act (1963), the enactment of a number of other land legislations too has helped to abolish intermediary tenures in areas not covered by the KLR Act. Till the end of 1977-78, about 1,30,000 ha. have been relieved of intermediary tenures through the implementation of the Edavaghai Rights Acquisition Act (1956), the Kandukrishni Land Assignment Rules (1958), the Jenmikaram Payment (Abolition) Act (1960), the Pattazhi Devaswom Land (V&E) Act (1961) and the Thiruppuvaram Payment (Abolition) Act (1969).

9.261 The Kannan Devan Hills (Resumption of Lands) Act, 1971 has enabled Government to take over 28,675 ha. of Government land held by the KDHP Company without payment of any compensation. All private forests have been nationalised without any compensation under the Kerala Private Forests (V&A) Act 1971. The cultivable lands in the two categories are being distributed to landless agricultural labourers including scheduled castes and tribes.

9.262 The total assignable Government 'Poramboke' land stood at 1.68 lakh ha. Out of this, 1.49 lakh ha. (89 per cent) have already been assigned. The beneficiaries numbered over 3.96 lakhs. The scheduled castes and tribes comprised 78,000 (20 per cent).

9.263 The Fifth Plan envisaged a total outlay of Rs. 27.88 crores for land reforms. Out of this, Rs. 10 crores were earmarked for resurvey of State and preparation of records of rights and the rest towards implementation of the KLR Act including payment of annuity and compensation.

9.264 The expenditure under resurvey of State and preparation of land records amounted to Rs. 855.32 lakhs (86 per cent) during 1974-78. The physical achievements comprised 5787 Km<sup>2</sup> (68 per cent) compared to the target of 8494 Km<sup>2</sup>. The plan expenditure on the implementation of the KLR Act alone stood at Rs. 1549.56 lakhs (87 per cent) by the end of 1977-78. Under land reforms, the major item of expenditure was payment of compensation for vesting of interest of landlords which accounted for Rs. 936.96 lakhs. Payments from the Agriculturists' Rehabilitation Fund and the Kudikidappukar's Benefit Fund for development programmes have been Rs. 100 lakhs and Rs. 200 lakhs respectively.

9.265 An investment of Rs. 30.34 lakhs was also made in the Centrally sponsored sector during 1974-78 towards development of agriculture in surplus lands distributed.

9.266 As far as the KLR Act is concerned, the tenancy and Kudikidappu cases have almost been disposed of. What now remains is disposal of nearly 6,000 ceiling returns involving an area of about 8,800 ha. Out of the area declared as surplus, an extent of 23,090 ha., is yet to be taken possession of. Of the area taken over, 15,160 ha. are involved in 2,811 stay orders.

9.267 The implementation of other legislations like Sreepadani Lands (Enfranchisement) Act 1969 and Kanam Tenancy (Abolition) Act 1976 has to be stepped up. The distribution of Government land (19,000 ha.), arable nationalised private forests, and land resumed from the KDHP has to be speeded up.

9.268 While many of the recipients of tenancy lands are financially well off, the beneficiaries of surplus lands, forest lands, Government lands and Kudikidappu

rights are really poor and need financial support for both developing their land and meeting their consumption expenditure until they are able to generate income from their new settlements. Inadequate credit facilities may result in the total neglect or even the alienation of the assigned land. Therefore, the Plan for 1978-83 will lay stress on the problem of rehabilitation and settlement of all these beneficiaries on their lands.

9.269 The problem of consolidation of holdings in Kerala is considered to be not as serious as in the rest of the country. According to the National Sample Survey 17th Round data, Kerala had the lowest number of parcels per holding in 1960-61. It was 2.01 as against 5.66 for India as a whole. The World Agricultural Census figures for 1971 show that parcelisation has declined to 1.6 per holding. The average size per parcel increased from 0.37 ha. to 0.41 ha. over the years.

9.270 The aims of the Plan on the land reform front are:

- (i) completing the process of implementing land reform measures in Kerala
- (ii) achieving considerable progress in the preparation of resurvey of State and preparation of land records and
- (iii) providing adequate of financial support for the land reform beneficiaries for land development, etc.

9.271 The strategy envisaged for completing the implementation of land reforms in Kerala comprises manifold steps. The administrative machinery for implementation of land reforms will be continued until the process is completed. Attempts will be made to have a Special Bench in the High Court for the disposal of cases filed under land reforms. Special legal assistance will also be sought for the proper defence of such cases on behalf of the Government. In order to step up the pace of progress in the preparation of land records, the number of survey parties will be increased from 9 to 12, besides providing additional staff for updating the land records in the village.

9.272 The total outlay envisaged for the implementation of land reform measures during the plan period amounts to Rs. 38.73 crores in the State sector. Of this, the provision proposed for resurvey of State and preparation of records of rights amounts to Rs.17 crores. An outlay of Rs. 1.50 crores is also anticipated in the centrally sponsored sector for rendering financial assistance to the beneficiaries of surplus land towards land development.

### Plan proposals for 1978-83

#### 1. Implementation of Land Reforms Act (Outlay Rs. 100 lakhs)

9.273 The outlay is for meeting the expenditure on staff for completing the implementation of the KLR Act and other Acts.

#### 2. Updating Revenue Records (Outlay Rs. 680 lakhs)

9.274 The implementation of Land Reforms has made it necessary to carry out changes in the Revenue Records. The work of transfer of registry has been in arrears. Nearly 40 lakh cases have to be disposed of. As the regular staff cannot clear the arrears of work within a reasonable period, Government have created 57 offices of the Additional Tahsildars. The provision is for meeting the expenses of the staff, printing of forms and registers, etc. for updating revenue records.

#### 3. Payment of Compensation for the Lands in Excess of the Ceiling under the KLR Act, 1963. (Outlay Rs. 20 lakhs)

9.275 The provision envisaged is for payment of interest on the total amount of compensation and also for payment of compensation to land owners for the excess land surrendered under the KLR Act.

#### 4. Payment from the Agriculturists' Rehabilitation Fund (Outlay Rs. 250 lakhs)

9.276 The Agriculturists' Rehabilitation Fund will be utilised for the payment of solatium to small holders and for rendering assistance by way of loan and grant to persons affected by the implementation of the KLR Act. There are about 60,000 such small holders eligible for solatium. At the rate of Rs. 250 per small holder, the total commitment towards solatium would amount to Rs. 150 lakhs. The rest of the provision is intended for providing financial assistance for house building to those allottees of surplus lands who have no house of their own and whose annual income does not exceed Rs. 4200.

#### 5. Payment from the Kudikidappu Benefit Fund (Outlay Rs. 380 lakhs)

9.277 The outlay is for meeting the Government share of compensation to be paid to the land owners in respect of the Kudikidappu cases, providing better facilities including housing to the Kudikidappukar and meeting the cost of acquisition for shifting of Kudikidappus.

#### 6. Payment of Compensation for Vesting of Interest of Landlords under the KLR Act (Outlay Rs. 665 lakhs)

9.278 The provision is for payment of compensation in cash under Section 72 of the KLR Act.

#### 7. Resurvey of State and Preparation of Record of Rights (Outlay Rs. 1700 lakhs)

9.279 Of the total extent of 32,510 km<sup>2</sup> for Resurvey-Supplemental Survey in the State, the level of achievement till 31-3-1978 was 10,365 km<sup>2</sup> under field work and 5889 km<sup>2</sup> under office processing. With the present number of 9 Resurvey Parties a further period of 11 years would be required to complete the pending field work of 22147 km<sup>2</sup>. The proposal for the 1978-83 Plan is to cover 12,900 km<sup>2</sup>. The outlay proposed is to cover the total cost of employing 12 Resurvey Parties including the co-ordinating staff and Unit Offices.

Since a number of cultivating tenants who got ownership of tenanted lands did not possess documentary evidence even, it is important to have record of rights prepared, whatever the commitment might be. This is not only essential to establish the legal ownership on the land but also for drawing credit from institutional agencies.

8. *Scheme for Financial Assistance to the Assignees of Surplus Lands (Outlay Rs. 70 lakhs)*

9.280 A scheme was being implemented in the Centrally sponsored sector for providing financial

assistance to the assignees of surplus lands in areas not covered by SFDA and MFAL. The scheme provided an outright grant of Rs. 100 per acre towards seeds, organic manure, chemical fertilisers, etc. for the first two crop seasons. It also gave investment support for farm development at the rate of Rs. 200 per acre for land levelling, etc. of which 50 per cent was grant and 50 per cent loan. The amount proposed is the State share of the expenditure. An outlay of Rs. 150 lakhs is also anticipated from the Centrally sponsored sector for rendering financial assistance to the assignees of surplus lands. This programme will be implemented through the Agriculture Department.

TABLE 9.11  
Land Reforms—Scheme-wise Outlay

		(Rs. in lakhs)			
Sl.No.	Scheme	Fifth Plan Outlay (1974-79)	1974-78 Expenditure	1978-79 Outlay budgeted	1978-83 Outlay proposed
(1)	(2)	(3)	(4)	(5)	(6)
<i>Land Reforms:</i>					
1.	Implementation of Land Reforms Act ..	1788.00*	31.50	20.00	100.00
2.	Lard Board and Land Tribunals under the KLR Act 1963— Updating of Revenue Records ..	..	184.38	60.00	680.00
3.	Payment of Compensation for the Lands in Excess of Ceilings under the KLR Act 1963 ..	..	17.48	6.00	20.00
4.	Payment from the Agriculturists' Rehabilitation Fund ..	..	100.00	50.00	250.00
5.	Payment from the Kudikidappukars' Benefit Fund ..	..	200.00	100.00	380.00
6.	Payment of Compensation for Vesting of Interests of Landlords under the KLR Act, 1963 ..	..	939.96	500.00	665.00
7.	Abditiion of Viruthi and Service Inams ..	..	..	..	5.00
8.	Expenditure on Expert Review Committee including Field Investigation on Land Reforms ..	..	..	..	3.00
9.	Resurvey of State-preparation of Land Records for the implementation of Land Reforms—Resurvey of areas where the Records are in Bad Conflition ..	1000.00	855.32	309.00	1700.00
10.	Financial Assistance to Assignees of Surplus Lands ..	..	..	..	70.00
11.	Land Occupation Survey ..	..	24.17	..	..
12.	Annuity to Religions, Charitable and Educational Institutions of a Public Nature under the K.L.R. Act, 1963 ..	..	52.07	..	..
Total ..		2788.00	2404.88	1045.00	3873.00

\*The provision covered the total outlay for implementation of land reform measures excluding the programme for resurvey of the State  
37/3774/MC.

### *Minor Irrigation*

9.281 In the development of irrigation facilities in the State, the role of minor irrigation schemes is quite significant. Certain types of minor irrigation schemes especially tanks and wells have several obvious advantages. They are quick yielding and require low capital investment and have great employment potential especially for unskilled and semi-skilled labour. The undulating topography in Kerala breaks the continuity of arable land. It would not, therefore, be possible for major projects to supply water to every pocket of arable lands. The only answer to this problem is provision of minor irrigation facilities. Roughly an area of 10.2 lakh hectares could be served by minor irrigation schemes.

9.282 The uneven distribution of rainfall and the non-reliability of north-east monsoon lead to serious water shortage in the summer months. Cropping pattern in the State is controlled by the precipitation received during the monsoons. Only one crop of paddy viz. Virippu crop, can be raised satisfactorily depending on rainfall alone and the second crop viz. Mundakan depends on the precipitation during the north-east monsoon period. During this period, irrigation is a necessary input at least for stabilisation of crop. Minor irrigation schemes become useful for the stabilisation of crops especially in the midland and highland regions. The third crop namely Puncha, depends almost entirely on irrigation. There is also a possibility of raising an additional summer crop of pulses and vegetables in the paddy fields, if irrigation facilities are made available.

9.283 Minor irrigation structures include diversion weirs across streams and regulators, tanks and reservoirs, irrigation and drainage channels salinity control structures and lift irrigation works. Minor irrigation works in the State are divided into four categories viz. (i) M.I. class I works (works costing Rs. 2 lakhs and above upto Rs. 25 lakhs), (ii) M.I. class II works (works costing less than Rs. 2 lakhs), (iii) lift irrigation works involving lifting of water with a command area of not less than 100 acres and (iv) Intensive paddy development Yelah works-these are minor irrigation works generally of a small nature in Intensive Paddy Development units of the agriculture Department. The present ceiling cost of M.I. works fixed by the State P.W.D. is Rs. 2000 per acre. Now all irrigation works costing upto Rs. 25 lakhs in the plains and Rs. 30 lakhs in the hilly areas are termed minor irrigation works in the State. But Government of India has laid down that all works with a culturable command area of less than 2000 ha. are to be treated as minor irrigation works.

#### *Progress in minor irrigation under the Previous Plans*

9.284 Minor irrigation schemes have played a crucial role in the agricultural development of the State. As in the case of major irrigation, concerted efforts in the development of minor irrigation were made only in the post Independence period. The need for minor irrigation schemes had been widely recognised only from the time of 'grow more food campaign.' Many of the schemes then taken up were lift irrigation schemes in the Pamba and Periyar river basins. Subsequently shortages of food grains occurred regularly at cyclic intervals, the intermediate period of plenty showing a slackening of effort on the agricultural front. Increased emphasis was laid on sustained effort to exploit the production potential of agriculture in the later years of planning.

9.285 The investment in M.I. works during the past plans were Rs. 1.05 crores in the First Five Year Plan, Rs. 2.60 crores in the Second Five Year Plan, Rs. 4.60 crores in the Third Five Year Plan, Rs. 3.90 crores during the three annual plans and Rs. 8.81 crores during the Fourth Five Year Plan. For the Fifth Five Year Plan period (1974-79) the provision for minor irrigation was Rs. 13.64 crores. The physical target was 49,000 ha. (net) or 75,000 ha. (gross). The actual physical and financial achievements during the period 1974-75 to 1977-78 were Rs. 8.77 crores and 28,312 ha. (net) or 33,017 ha. (gross) respectively. Thus the total amount spent on minor irrigation schemes upto the end of March 1978 was Rs. 29.71 crores, the physical achievements being 1,07,390 ha. (net) or 1,25,172 ha. (gross).

#### *Proposals for 1978-83 Plan*

9.286 It has been roughly assessed that 6 lakh ha. can be provided with minor irrigation facilities within the acceptable economic limit during the next 15 to 20 years. Of this, an area of 50,000 ha. has to be provided with ground water irrigation. The investment required for completely developing the minor irrigation potential within a period of 15 to 20 years is Rs. 325 crores. It is only very recently that the question of utilisation of ground water resources of the State for irrigation purposes on a sufficiently large scale has received active consideration. If ground water supplements the surface water minor irrigation schemes during the summer months, there is considerable scope for improved cultivation of cash crops.

#### *Policies, Objectives and Strategy.*

9.287 The objective of the present Plan is to bring an additional 73,750 hectares under minor irrigation for food crop and cash crop cultivation. Strategy is to give top most priority for restoration of damaged minor irrigation structures, and completion of on-going schemes within this plan period itself. To preclude the possibility of areas served by minor irrigation being brought under major irrigation in future, the strategy is to take up mostly lift irrigation schemes during this plan. In selecting schemes for the future programmes under minor irrigation, the policy is to give priority to those districts where the proportion of irrigated area is comparatively low and the potential for minor irrigation is high.

#### *Plan Outlay and Targets*

9.288 The outlay proposed for 1978-83 for minor irrigation schemes is Rs. 30 crores and the physical target is 61,700 ha. (net) or 73,750 ha. (gross). The number of works for restoration of damaged minor irrigation structures is 1845 and the cost is Rs. 2.5 crores. The spillover liability on M.I. works as on March 1978 is Rs. 8.4 crores. The provision for new schemes is nearly Rs. 19 crores. The district-wise break up of identified new schemes under M.I. class I and lift irrigation is given in Table 9.13. The details of the outlay proposed for the various categories of minor irrigation schemes and the corresponding physical targets are presented in Table 9.12.

TABLE 9.12

## Plan Outlay and Targets for Minor Irrigation

Type of Scheme	Financial outlay (Rs. in crores)	Physical target in ha.	
		Net	Gross
1. M.I. Class I	7.50	11,200	16,800
2. Lift Irrigation	8.60	12,900	19,350
3. M. I. Class II (P. W. D.)	0.35	1,600	1,600
4. M. I. Class II (Peoples' participation)	4.00	10,000	10,000
5. I. P. D. Yelah	4.00	8,000	8,000
6. Deepening of wells and tanks	0.05	..	..
7. Investigation and Development of Ground Water Schemes	2.00	..	..
8. Restoration of damaged minor irrigation works	2.50	18,000	18,000
9. Investigation	1.00	..	..
<b>Total</b>	<b>30.00</b>	<b>61,700</b>	<b>73,750</b>

TABLE 9.13

## Identified Minor Irrigation Schemes in Various Districts

Sl. No.	Name of District	Class I Minor Irrigation works			Lift Irrigation Works		
		No. of works	Estimated cost in lakhs	Aycaut in ha.	No. of works	Estimated cost in lakhs	Aycaut in ha.
(1)	(2)	(3)	(5)	(6)	(6)	(7)	(8)
1.	Trivandrum	26	166.50	3800.80	Nil	Nil	Nil
2.	Quilon	34	169.75	3922.00	16	51.345	1336.32
3.	Alleppey	49	181.66	4563.00	6	15.500	432.00
4.	Kottayam & Idukki	45	236.01	4722.00	10	20.002	403.00
5.	Ernakulam	10	153.50	5133.00	34	236.600	5425.00
6.	Trichur	21	139.92	4946.00	32	166.730	4381.00
7.	Falghat	8	26.00	568.00	20	85.640	2041.00
8.	Malappuram	19	141.00	3630.00	38	159.000	3970.00
9.	Calicut	9	37.12	765.00	7	33.000	660.00
10.	Cannanore	23	85.25	2434.00	10	39.310	1396.00
	<b>Total</b>	<b>244</b>	<b>1336.71</b>	<b>30683.00</b>	<b>173</b>	<b>807.127</b>	<b>22354.32</b>

TABLE 9.14

## Minor Irrigation Scheme-wise Outlay

(Rs. in lakhs)

Sl.No.	Scheme	Fifth Plan Outlay (1974-79)	1974-78 Expenditure	1978-79 Outlay budgeted	1978-83 Outlay Proposed
(1)	(2)	(3)	(4)	(5)	(6)
(i)	Investigation and Development of Ground Water resources ..	155.00	73.43*	31.00	200.00
(ii)	Construction and deepening of wells and Tanks ..	5.00	0.444	..	5.00
(iii)	Lift Irrigation schemes ..	355.00	258.173	87.45	860.00
(iv)	Other M.I. Works				
(a)	M I Class I ..	400.00	239.871	78.00	750.00
(b)	M I Class II (P. W. D.) ..	300.00	181.437	30.00	35.00
(c)	M I Class II (Peoples' participation) ..	13.00	..	60.00	400.00
(d)	I. P. D. (Yelah Development) ..	250.00	168.790	70.00	400.00
(e)	Irrigation facilities to drought prone areas ..	5.00	4.85*	4.00	..
(f)	Free supply of Pumpsets to Panchayats ..	70.00	49.51*	11.00	..
(g)	Punja De-watering ..	60.00	60.65*	40.00	..
(h)	Repairs to damages caused to M. I. structures ..	50.00	28.454	7.00	250.00
(v)	Machinery and Equipment Suspense ..	..	..	..	..
(iv)	Other Expenditure				
(a)	Investigation ..	4.00	0.003*	9.00	100.00
Total		1667.00	1065.612	427.45	3000.00

\*Provisional

*Soil and Water Conservation**Land Use*

9.289 The largest single use to which land in Kerala is currently put is for agriculture which accounts for nearly 56.6 per cent (2201 thousand hectares of net area sown) of the total geographical area of 3885 THa. Area under forests accounts for 27.8 per cent (1082 THa.) Land under grazing and permanent pastures accounts for 0.4 per cent (16 THa.) The potential land available for productive uses which include land under miscellaneous tree crops, cultivable wastes, fallow lands and current fallow constitute only 6.5 per cent (248 THa.) Land put to non-agricultural uses amounts to 6.7 per cent (260 THa). Barren and uncultivable land constitute 2.0 per cent (79 THa) of the geographical area.

9.290 Over a period of nearly 16 years from 1960-61 to 1976-77 practically very little structural change of a basic nature in land use has taken place. Agriculture continues to be the largest single use to which land is put in the State. The net sown area substantially increased from 49.9 to 56.6 per cent of the total geographical area during this period. Forestry continued to be the second largest use with 27.4 per cent in 1960-61 and 27.8 per cent in 1976-77. Other discernible changes in land use have been the decline of land under miscellaneous crops from 5.3

to 1.9 per cent, and of barren and uncultivable land from 3.9 to 2.0 per cent. Both must have added to the stock of land available for cultivation. Land put to non-agricultural uses also increased from 5.3 to 6.7 per cent. Land use in the State has reached very intense levels. Productive uses such as agriculture, forestry and grazing together with non-agricultural uses of land account for over 91 per cent of the geographical area.

9.291 Quantitatively net sown area in the State increased by 277 THa (14.4 per cent) during this period. There has also been an increase of 26 THa under forests (2.5 per cent). Loss of land to non-agricultural purposes has been faster (of the order of 55 THa or 26.8 per cent). The very significant addition to net sown area must have come largely through putting to better use the land under miscellaneous tree crops and cultivable wastes, the stock of which declined by 131 THa (64.2 per cent) and by 28 THa (19.4 per cent) respectively. Another source from which the increase in net sown area must have possibly come is fallow land, the stock of which declined by 40 THa (64.5 per cent).

9.292 Intensity of the land used for agriculture also increased. Area sown more than once as a proportion to net sown area increased from 23.1 per cent to 33.3 per cent. The increase of the net area sown more than once has been from 425 to 733 THa (72.5 per cent).

9.293 Nearly 90 per cent of the gross cropped area in the State is accounted for by 20 crops. The land used for crop production in Kerala could be identified into a pattern involving seasonal, annual and perennial crops. The distribution of these crops into seasonal, annual and perennial in 1960-61 was of the order of 36, 14 and 39 per cent respectively of the gross cropped area. In 1976-77 the proportion decisively altered in favour of perennial crops which constituted 46 per cent while that of seasonal crops declined to 32 per cent and that of annual crops remained around 14 per cent. Against an increase of 24 per cent in gross cropped area during this period the area under seasonal crops also increased but only by 12 per cent. The increase in area under perennial crops on the other hand has been of the order of 48 per cent and that of annual crops 27 per cent.

9.294 The shift from seasonal and annual crops to perennial crops is very significant in terms of land management and conservation of the production potential. This shift towards perennial crops apart from its sociological and economic implications involves agronomically a different system of land management. Hence it is necessary to conduct continuous land use studies and evolve suitable programmes for achieving optimum utilisation of land,

(a) *Land Use Survey (Outlay Rs. 174 lakhs)*

9.295 The importance of designing and implementing appropriate policies and programmes for the scientific management of the land so as to ensure optimum utilisation of these precious resources has been fully appreciated. In recognition of the need for an organisation to keep a continuous watch on the problems of use and conservation of land resources and to strengthen and streamline the existing arrangements for the assessment and management of the State's land resources, the State Land Use Board has been established. The Board has been engaged in identifying the problems related to land use and in assessing the potential of the land resource in the State using up-to-date techniques including remote sensing. Information developed by the Board is being used by different departments and agencies engaged in land resource development. The Board is to function as a repository of information of land and related resources.

9.296 It is proposed to undertake a land use survey to cover the entire State and to prepare village-wise land use maps during the plan period. The photo-interpretation laboratory has to be strengthened and a well equipped cartographic section has to be created. Land Use Board should collect and store relevant data on the land resources and land use in the State and make available all technical maps and reports related to land resources. Hence it is proposed to set up a data bank in the Land Use Board. The problems related to land resource use and techniques of land appraisal are areas which are not sufficiently developed. Association of experts and bodies through seminars and workshops to generate methodologies is also proposed. The activities proposed by the Land Use Board are estimated to cost Rs. 174 lakhs during the plan period.

(b) *Soil Conservation*

9.297 High rainfall together with undulating topography of the land has accentuated the problem of soil conservation in the State. The measures so far attempted have only been to prevent the erosion and thereby protect the land. But no organised efforts were made to develop the land by putting it to better uses. Further, activities are confined only to the slopes in the catchment and the problems of water management in the valleys remained untouched. An integrated view of the problems in the watershed, of both soil and water conservation and management has to be taken so as to ensure optimum agronomic conditions. Therefore there is need for new orientation in the technology of soil conservation measures by taking up integrated watershed management by expanding the activities to the valleys to include drainage problem and by incorporating investment on land development. Over a period of twenty years only 50 thousand hectares of land have been protected against 1.5 million hectares of land requiring protection. There is need for accelerated investment in this sector of development so that the capability of our land resources to sustain high levels of productivity in the long run is maintained. Further, it is also necessary to bring about better agronomic conditions in rice lands. A modest programme of protecting 61,000 hectares of land is suggested as part of the long term plan of protecting all lands in 25 years. The investment required is estimated at Rs. 2241 lakhs from the State resources and Rs. 3750 lakhs from institutional financing agencies. The schemes under soil conservation are listed below:

1. *Direction and administration (Outlay Rs. 130 lakhs)*

9.298 The soil conservation organisation in the State needs considerable strengthening in the areas of direction, planning and monitoring. An outlay of Rs. 130 lakhs is provided for this purpose.

2. *Research (Outlay Rs. 50 lakhs)*

9.299 The problems of soil conservation in the State including the nature and magnitude of soil erosion and the structures necessary to protect the soil are unique. The laterite soil, undulating topographic features and vegetative cover are singular to Kerala which influence tremendously the nature and magnitude of soil erosion problems in the State. The necessary research to generate the data to find solutions to the unique problems would have to be location specific. The possibility of utilising information generated from research conducted in other areas would be of limited value considering the location specific nature of the soil conservation problems in Kerala. A small research set up has been set up in the State but it is far from adequate. The scope of soil conservation research in the State has to be expanded considerably for which the present soil conservation research facility has to be strengthened and expanded. Greater involvement of the Kerala Agricultural University has also to be sought. An amount of Rs. 50 lakhs is provided for research schemes relating to soil conservation.



### 3. *Education and Training (Outlay Rs. 5 lakhs)*

9.300 The soil conservation activity is of a specialised nature and the personnel generally available are seldom exposed to the techniques and methods of soil conservation. It is necessary to have an intensive training programme so that soil conservation activities could be carried out by appropriately trained personnel.

### 4. *Soil and Water Conservation in Arable Lands (Outlay Rs. 335 lakhs)*

9.301 Investigation, preparation and execution of integrated soil conservation measures on water shed basis in priority areas spread in all the districts in the State under the provisions of the Kerala Land Development Act 17 of 1964 is to be supported by the provisions under this programme. The main objective is to protect the cultivated lands from the hazards of soil erosion and to help increase production on a sustained basis. Construction of contour stone/rubble pitched bunds across the hill slopes at vertical intervals depending upon the slope along with the works of gully plugging, construction of diversion water ways, check dams and adoption of agronomic/forestry practices is the main measure undertaken. Taking into account the magnitude of the problem and importance of adopting soil conservation measures in protecting the top soil from erosion, it is proposed to cover 7000 hectares during the plan period. An outlay of Rs. 335 lakhs is provided for this purpose.

### 5. *Soil Conservation and Integrated Land Development on Watershed Basis (Outlay Rs. 950 lakhs)*

9.302 Meagre budgetary sources made available for soil conservation efforts would not touch even the fringe of their gigantic problems. A major shift in the resource mobilisation from budgetary source for investing on soil conservation is proposed. Increasingly institutional financing agencies for funding the projects are to be relied upon. Direct charge on budget need be limited only to making available the technology and to meet a part (one third) of the capital investment. The rest of the investment required is sought to be met from institutional financing agencies. Gradually funding will be switched over from the present system of meeting entirely from budgetary sources to institutional finances. In order to accelerate the programme through attracting institutional resources necessary administrative changes are to be effected and supporting legal measures are to be adopted. Allocation has also been made not only to prevent the hazards of soil erosion but also to develop the land resources further by adopting the appropriate land use and cropping patterns. An outlay of Rs. 950 lakhs is provided for this scheme.

### 6. *Soil Conservation in Harijan and Girijan Lands (Outlay Rs. 250 lakhs)*

9.303 The lands belonging to harijans and girijans are of relatively inferior quality and highly vulnerable to soil erosion hazards. It is necessary to protect these lands urgently from the hazards of soil erosion so as to sustain the productivity of land. The poor economic base of the harijans and girijans does not permit them to make substantial capital investments. It is therefore, proposed, to take up soil conservation measures in 5,500 hectares of land belonging to harijans and girijans on a 100 per cent grant basis.

### 7. *Soil Conservation in Irrigated Lands (Outlay Rs. 25 lakhs)*

9.304 Conservation of soil and water is a necessary measure for the full utilisation of the irrigation potential created. It is proposed to cover 500 hectares under this programme.

### 8. *Reclamation of Water Logged Areas (Outlay Rs. 10 lakhs)*

9.305 Several areas in the State suffer from water logging. Such locations are to be identified after investigation and reclaimed and made productive by providing simple structures such as bunds, sluices etc. Schemes will be prepared and executed under the provisions of the KLD Act. It is proposed to cover 500 hectares under this programme.

### 9. *Pilot Scheme for River Training and Control of Stream Bank Erosion (Outlay Rs. 180 lakhs)*

9.306 The river bank erosion especially in the Bharathapuzha basin, has assumed threatening proportions. It has added a new dimension to the problem of soil erosion in the State. It is proposed to investigate the magnitude of the problem and to evolve appropriate measures. It is also proposed to implement the measures for controlling stream bank erosion in the State on a pilot basis so that the experience gained can be extended to other areas.

### 10. *Soil Conservation Survey (Outlay Rs. 10 lakhs)*

9.307 The problem of soil erosion especially in the foot-hills of the High Ranges and in the upper slopes of the midlands has assumed serious proportions and the lands in these areas are in imminent danger. Rehabilitating these lands with measures to prevent erosion, to conserve soil and moisture and to develop the land by adopting suitable agronomic measures and cropping pattern so as to optimise returns involve considerable capital investment. Though the urgency of the problem is recognised the precise magnitude and investment requirements are not known. In order to prepare a long range plan for the conservation of the land resources of the State it is necessary to undertake a survey of the problems of soil erosion and conservation in the State. For the conduct of soil conservation survey an amount of Rs. 10 lakhs is provided in the Plan.

### 11. *Soil Conservation in River Valley Projects (Outlay Rs. 10 lakhs)*

9.308 The most vulnerable area which is subjected to severe soil erosion is the catchment areas of the river valley projects. The reservoirs are in danger of being silted up due to erosion resulting from unscientific and unregulated management of lands. Already project for conserving the land resources in the Kundah river valley project is under implementation as a Centrally sponsored scheme. The scheme has to be continued during the plan period. In addition it is proposed to take up projects to protect catchment of the river valley projects of Malampuzha, Sabarigiri, Neeriamangalam, Idukki and Neyyar as a Centrally sponsored programme. The target is to protect 6750 hectares of land at a cost of Rs. 300 lakhs. An outlay of Rs. 10 lakhs is provided under the State sector for this scheme.

**(c) Soil survey**1. *Reconnaissance Soil Survey (Outlay Rs. 10 lakhs)*

9.309 Reconnaissance soil survey of the State is proposed to be completed during the plan period 1978-83.

2. *Detailed Soil Survey*

9.310 Detailed soil survey is to be accelerated so as to complete the work within a period of ten years.

*(i) Soil Survey in Command Areas (Outlay Rs. 60 lakhs)*

9.311 Extension of irrigation facilities had helped to enhance agricultural production. In order to appreciate soil and land management practices and to formulate suitable cropping patterns, detailed soil survey of the command areas are necessary. Priority in soil survey is assigned to the irrigation project command areas and problem areas in the State.

*(ii) Soil Survey in Government Lands and Forest Lands (outlay Rs. 15 lakhs)*

9.312 Substantial areas of cultivable land which are proposed to be assigned to the landless agricultural labourers are under the possession of the Government. Such areas also include the lands resumed from KDHP subject, however, to the suitability of these lands for agricultural purposes. Allotment of Government lands will only be done after conducting regular soil surveys so as to ascertain their suitability for agricultural purposes.

*(iii) Soil Survey of Soil Conservation Areas (Outlay Rs. 3.50 lakhs)*

9.313 Many areas which have been protected by soil conservation measures have not had the support of a proper soil survey. It is proposed to cover such lands with advance soil survey before conservation measures are undertaken.

3. *Soil Survey Follow-up Activities (Outlay Rs. 5 lakhs)*

9.314 Scientific soil survey has been attempted in many areas of the State. However, experience has shown that adequate use of such information is not made. The situation has resulted partly due to lack of appreciation on the part of the field extension workers of the utility of soil survey and partly due to near absence of any follow-up activities such as advising the farmers on the land use and cropping patterns identified in the survey. A series of follow-up activities is proposed during the plan period. It is also proposed to make the extension workers in the field aware of the advantages of soil survey and its recommendations.

4. *Identification and Bench Mark Study of Soils (Outlay Rs. 3.50 lakhs)*

9.315 A variety of soils is found in the State. For the assessment of the production potential it is necessary

to develop sufficient data on the current levels of fertility and other aspects of soils to serve as a bench mark information.

5. *Land use Demonstration (Outlay Rs. 5 lakhs)*

9.316 Soil survey enables to assess the potential of soil resources and to suggest the appropriate land use and cropping patterns. Scientific land use and cropping pattern developed as a result of the soil survey needs to be demonstrated on a larger area like a water shed. It is proposed to lay out ten land use demonstrations in the State during the plan period. In these demonstrations the participating farmers will be given necessary assistance to practice the recommendations emerging out of the soil survey conducted.

6. *Strengthening of Soil Survey Organisation (Outlay Rs. 10 lakhs)*

9.317 Government of India and the Planning Commission have repeatedly stressed the importance and urgency of completing soil survey in the State especially in priority areas including the command areas of irrigation projects and problem areas. The extent of command areas and problem areas including coastal areas comes to approximately 17 lakh hectares. Out of this nearly 1.5 lakh hectares have alone so far been covered under the soil survey programme. An area of 15.5 lakh hectares remains to be covered by the soil survey. Considering the magnitude of the activities that have to be undertaken, the soil survey organisation in the State requires considerable strengthening. Soil survey and interpretation is a highly specialised activity. Hence there is need for training adequate number of personnel to undertake these activities.

**(d) Other projects**1. *Thanneermukkom Project (Outlay Rs. 20 lakhs)*

9.318 As part of the Kuttanad Development Project the construction of a salt water barrier at Thanneermukkom in three stages each covering a third of the total length to prevent salt water intrusion by tidal action is in progress. The first and second stages have already been completed. The middle one third portion which is the third stage is to be taken up. The benefit from the project has already been derived after the temporary closing of the middle portion by earthen bund which will form part of the coffer dam for the third stage works. It has now been decided to take up the construction of the regulators in the middle portion.

2. *Kattampally Project (Outlay Rs. 10 lakhs)*

9.319 A multi-purpose scheme for irrigation, prevention of salt water intrusion, flood control, navigation and communication is under implementation in the Kattampally area of Cannanore district. The project is to be completed in two stages. The first stage is over. Provision in the Plan is to complete second stage of the project.

TABLE 9.15

## Land use and Soil conservation—Financial Outlay

(Rs. in lakhs)

Sl. No.	Scheme	State	Centre	Institutional Finance		
				Short term	Medium term	Long term
(1)	(2)	(3)	(4)	(5)	(6)	(7)
(a)	Land Use	..	174.00	..	..	..
(b)	Soil Conservation	..	1955.00	300.00	..	3830.00
(c)	Soil Survey	..	112.00	..	..	..
(d)	Others	..	30.00	..	..	..
	Total	..	2271.00	300.00	..	3830.00

TABLE 9.16

## Scheme-wise Outlay

(Rs. in lakhs)

Sl. No.	Scheme	Fifth Plan Outlay (1974-79)	1974-78 Expenditure	1978-79- Outlay budgetted	1978-83 Outlay proposed
(1)	(2)	(3)	(4)	(5)	(6)
Soil and Water Conservation		<b>345.00</b>	<b>276.33</b>	<b>101.00</b>	<b>2271.00</b>
(a)	Land Use	..	(25.00)	(14.41)	(10.00)
1.	Land use survey using remote sensing techniques	..	25.00	14.41	10.00
2.	Data Bank in the Land Use Board	..	..	..	29.00
3.	Symposium, workshops, etc.	..	..	..	5.00
(b)	Soil Conservation	(175.00)	(144.86)	(63.00)	(1955.00)
1.	Direction and administration	..	..	..	130.00
2.	Research	..	14.00	12.51	4.00
3.	Education and Training	..	..	..	5.00
4.	Soil and water conservation in arable lands	..	90.00	71.24	35.00
5.	Soil conservation and integrated development of land on watershed basis	..	..	..	950.00
6.	Soil conservation in land belonging to harijans and girijans	..	50.00	45.59	20.00
7.	Soil conservation in irrigated lands	..	5.00	2.74	0.50
8.	Reclamation of water logged areas	..	6.00	4.16	1.50
9.	Pilot schemes for river training and control of stream bank erosion	..	..	..	180.00
10.	Soil conservation survey	..	..	..	10.00
11.	Soil conservation in the catchment of river valley projects	..	10.00	8.51	2.00
12.	Evaluation of soil conservation	..	..	0.11	..
(c)	Soil Survey	(15.00)	(16.31)	(8.00)	(112.00)
1.	Reconnaissance soil survey	..	..	..	10.00
2.	Detailed soil survey	..	..	..	..
(i)	Soil survey in command areas and problem areas	..	..	10.43	2.85
(ii)	Soil survey in Government lands and forest lands	..	15.00	5.38	2.15
(iii)	Soil survey of soil conservation areas	..	..	..	3.50
3.	Soil survey follow up activities	..	..	..	5.00
4.	Identification and bench mark study of soils	..	..	..	3.50
5.	Land use demonstration	..	..	..	5.00
6.	Strengthening soil survey organisation	..	..	0.50	3.00
(d)	Others	(130.00)	(100.75)	(20.00)	(30.00)
1.	Thanneermukkom Project	..	120.00	95.91	15.00
2.	Kattampally project	..	10.00	4.84	5.00

*Command Area Development (Outlay Rs. 1000 lakhs)*

9.320 With the completion of 10 large and medium projects and 11 projects under various stages of completion in the State, nearly 1.3 lakh hectares of land have been brought under irrigation. Available irrigation facilities in the State have been largely used for rice production. Through the implementation of the irrigation projects, it has been possible to increase the area under rice cultivation and thereby rice production. The productivity of rice however has not shown any substantial improvement. The consumption of yield increasing inputs like fertiliser has also not gone up to any significant level. This is more true in those areas where irrigation support has been made available on a substantial measure over a long time. The full production potential of the land resources, where irrigation has already been made available can be achieved only by the proper development of the farms. This might include on-farm development activities such as laying out field channels, drainage improvements, levelling of the land etc. Among the problems experienced in many irrigated areas in the state, the

most important one is that of drainage. In the earlier plans the problems of drainage especially in paddy lands have not been fully appreciated and hence adequate provision was not given. The Public Works Department will take care of only blocks of land upto 10 hectares and above in the ayacut area. Beyond that the distribution of water to each field will have to be undertaken by the farmers themselves. Considering the small size of holdings and the large number of farmers involved in each ayacut sufficient attention has not been given to on-farm development works in the State. In addition to the constraints on investible resources, there is also lack of adequate organisational support for the implementation of these projects. Unlike irrigation on dry land areas, irrigation in wet land areas require community effort. The Expert Committee on Command Area Development has identified the important command areas which require development support. It is proposed to undertake on farm development activities in command areas through the mobilisation of institutional finance. An allocation of Rs. 1000 lakhs is set apart for implementing identified projects under command area development.

TABLE 9.17  
Command Area Development—Scheme-wise Outlay

		(Rs. in lakhs)			
Sl. No.	Scheme	Fifth Plan Outlay 1974-79	1974-78 Expendi- ture	1978-79 budgetted Outlay	1978-83 Outlay proposed
(1)	(2)	(3)	(4)	(5)	(6)
1.	Command Area Development	24.00	6.08	5.00	1000.00

### Animal Husbandry

9.321 The State had in 1961 a total livestock population of 46.07 lakhs. In 1972 it went up to 49.37 lakhs, registering an overall increase of 7.2 per cent. Between the years the cattle population increased from 26.86 lakhs to 28.56 lakhs, the increase over the years being 6.3 per cent. The stock of breedable cows in 1961 was 10.79 lakhs. In 1972 it moved up to 12.87 lakhs, the increase being 19.3 per cent.

9.322 Between 1956 and 1966, the population of buffaloes showed a declining trend. From 4.88 lakhs it came down to 4.71 lakhs, registering 3.5 per cent fall over the years. In 1972 it remained steady at 4.72 lakhs. However, the female breeding buffaloes increased from 1.25 lakhs in 1956 to 1.29 lakhs in 1966 and to 1.47 lakhs in 1972. The population of goats moved up from 12.52 lakhs to 14.68 lakhs during the years 1961-72, the percentage increase over the period being 17.3. The number of pigs on the other hand, declined during the period from 1.47 lakhs to 1.29 lakhs.

9.323 The total poultry population in 1961 was 91.06 lakhs. In 1972, it reached 122.07 lakhs, the increase over the years being 34.0 per cent. The total number of hens increased from 41.82 lakhs in 1961 to 61.55 lakhs in 1972. The number of ducks was 2.55 lakhs in 1972 compared to 2.81 lakhs in 1961.

9.324 In 1971 for every 100 people we had in the State 23 livestock, of which 6 comprised breedable cows, 7 goats and 1 breedable buffalo. The poultry population in terms of 100 people was 57. The hens constituted 29 per 100 people. In other words, for every household in Kerala, we have on an average one livestock and three birds. In terms of area, the availability of livestock was 200 animals per every 100 hectares. The breedable cows, buffaloes and goats were in the order of 52, 6 and 60 per 100 hectares.

9.325 The milk production in 1973-74 was estimated at 4.10 lakh tonnes. By 1977-78 it reached 5.40 lakh tonnes. The average per capita availability of milk over the years increased from about 50 grams per day to 60 grams per day. The production of eggs went up from 80 crores to 105 crores over these years.

9.326 Establishment of Key Village Blocks with artificial insemination centres was one of the major schemes taken up in the field of animal husbandry during the earlier plan periods. Fourteen Key Village Blocks were set up in the State. Subsequently the emphasis was shifted to Intensive Cattle Development Projects (ICDP) which have a larger coverage than the Key Village Blocks. The ICDP envisages cross-breeding of cattle with exotic breeds and is located in the milkshed areas of the dairy plants. These schemes aim at genetic improvement, health care and scientific management and proper feeding of cattle. A cross bred cow has the merit of higher milk yield, without proportionately increasing the feed inputs.

9.327 The pre-requisites for high level of animal productivity are good health, proper feeding and scientific management. The existing infrastructure for animal health care comprises 408 veterinary hospitals/dispensaries, each of which is under a qualified veterinary surgeon. Attached to these institutions there are 104 veterinary sub centres/first aid centres under the charge of para veterinary staff. In addition to these, there are 11 mobile veterinary dispensaries, one in each district. Alleppey district has one additional floating mobile dispensary to deal with areas accessible only by water. Nine veterinary clinical laboratories were established at the rate of one per district, excepting in Idukki and Malappuram districts to provide preventive veterinary work. For checking and controlling foot and mouth diseases, raniklet and other poultry diseases and TB and brucellosis of animals and poultry, 45 lakhs vaccinations and inoculations were conducted in the State during 1976-77. Some supporting programmes like a centre for production of biological products and two mobile diagnostic laboratories, one each at Idukki and Malappuram districts, were also started.

9.328 Poultry farming is done extensively as a backyard enterprise with rearing of low productive desi and high yielding improved strains of fowls in rural areas of the State. Almost 90 per cent of the poultry population is found in small backyard farms with 70 per cent of the total population being largely made up of breed mixes including a fairly large population of exotic breeds. The average production level in the traditional backyard farming system is 100 eggs per bird per year. The improved variety, however has production averages of over 200 eggs per bird per year. At present 11 district poultry farms are functioning, one in each district. For poultry breeding a Hatchery Complex has already been established at Chengannur. Mass preventive vaccination against common avian diseases has been conducted. In 1976-77 about 30 lakhs vaccinations were carried out in the State.

9.329 For the development of goats no real break through could be achieved in the past. In order to improve the milk production potential of goats, a scheme for cross breeding with a good indigenous milk breed was implemented. But the results were not encouraging. A goat farm mainly intended for taking up studies on selective breeding of indigenous goats and for evolving a good milk strain of Malabari goat has been set up.

9.330 Scientific pig farming was launched in the State in early sixties. Pig development programmes were started with the establishment of a pig breeding unit at Mannuthy in 1962 with 7 sub units in different districts. Another scheme for free supply of pigs for breeding purpose was started and about 350 pigs were distributed for breeding. For processing and marketing of pig meat a Bacon Factory was commissioned in 1968 at Koothattukulam and as a part of this scheme 1000 pigs were distributed to farmers for breeding. In 1975 an Intensive Pig Development Project was started which provided subsidies for rearing of pigs and weaners for fattening, etc. This programme had appreciable response from the public.

9.331 The pig breeding unit at Mannuthy is now functioning under the Kerala Agricultural University. This unit now stocks pigs mainly for research purposes.

The Bacon Factory functioning at Koothattukulam has the capacity to handle 50 pigs per day. The present capacity utilisation of the Bacon Factory is less than 10 per cent. The Intensive Pig Development Project continues its programme of distribution of piglets to selected farmers for breeding and also for fattening.

9.332 The targeted outlay for the Fifth Plan for animal husbandry development was Rs. 500 lakhs. The expenditure during the period 1974-78 was Rs. 269.97 lakhs. Veterinary services and animal health had a provision of Rs. 164 lakhs; but the amount spent was only Rs. 79.29 lakhs (48 per cent.). The shortfall in expenditure in this regard was caused mainly because schemes like manufacturing of biological products, expansion of disease investigation laboratory and modernisation of slaughter houses could not be taken up for implementation as scheduled, on account of certain procedural difficulties. The expenditure on poultry as well as piggery remained comparatively low at 37 per cent and 22 percent respectively of the outlays. In respect of feed and fodder development the financial achievement was 50 per cent of the provision. During 1974-78, 48 hospitals/dispensaries were set up as against the target of 170. The mobile veterinary dispensaries established during the period numbered two. In order to eradicate rinderpest of animals 16 check-posts and 5 vigilance units were set up.

9.333 Even though the existing veterinary hospitals/dispensaries have been doing good work despite certain major constraints, these institutions have not been able to satisfy the demand fully. Owing to the increasing economic value of animals, the need for extension of a system of domiciliary veterinary assistance is keenly felt.

9.334 The State's veterinary manpower exceeds the ratio of one veterinarian for 10,000 cattle units, recommended by the National Commission on Agriculture. However, it becomes obvious that given the local conditions, there should be a total reorganisation and better distribution of essential field staff, in order to ensure that the poor farmer even in the remote areas gets his due share of veterinary assistance as a matter of right. The National Commission on Agriculture in fact also has recommended that the ratio of one veterinarian to 10,000 cattle units should be narrowed down to 1:5000 in more intensive areas of production.

9.335 Though the State has one centre for manufacturing veterinary biologicals, its capacity and capability to produce and market the different products in the required quality and quantity, has hitherto been inadequate. Realising this, action has already been taken to set up a full-fledged laboratory which would become operational by the middle of 1979-80.

9.336 Hitherto all veterinary service was being given free of cost. Even though the number of veterinary hospitals/dispensaries, sub centres etc. had increased rather phenomenally, most, if not all, of them have been very badly equipped. The funds available for meeting even essential recurring costs like purchase and supply of drugs, chemicals, glasswares, etc. were also inadequate. With increasing investments and rise in the value of animals the demand for dependable and really efficient veterinary assistance has risen.

9.337 The objectives of the 1978-83 Plan are:

- (i) creation of an effective system for delivering health care to the livestock asset of the State.
- (ii) intensification of efforts for increasing the availability of livestock products such as milk, meat and egg in the State.
- (iii) extension of insurance cover to the entire crossbred cows in the respective areas of animal production in order that adequate security of investment of scarce economic resources of the poor farmers is guaranteed.
- (iv) improvement of the economic status of the rural poor and tribals by providing additional employment opportunities and income through poultry keeping, goat rearing, piggery development, etc. and
- (v) organisation of an efficient marketing system for livestock products like meat and eggs including establishment of regulated market for cattle.

9.338 The livestock development activities will be supported by a strong programme of health protection, especially to the crossbred animals as they are easily susceptible to diseases. The strategy envisaged to ensure veterinary aid to the crossbred cows and others is to make available facilities for domiciliary services in keeping with the felt need. While the present system of institutionalised veterinary services was free of any charge, in the new set up, services at the door will be made available round the clock, on payment of prescribed charges. Servicing the organised small farmers and other weaker sections will, however, continue to be largely subsidised.

9.339 Programmes covering development of Jersey breeding cum cross bred farm, genetic improvement of poultry breeds, promotion of poultry breeders' co-operatives, organisation of poultry clubs in schools, duck breeders' co-operatives, broiler production etc., will help to augment supply of livestock products in the States. The backyard system of poultry keeping will be encouraged with provision of improved strains.

9.340 The strategy to institute cattle insurance is to meet 50 per cent of the first year's premia by the State in respect of the marginal farmers, agricultural labourers and other weaker sections. The proposal is to cover one lakh farmers.

9.341 In order to improve the marketing efficiency of livestock and livestock products other than milk following measures are envisaged;

- (i) organisation of a marketing federation with breeders' co-operatives under it for marketing eggs for which working capital and managerial assistance will be provided by the State.
- (ii) establishment of a regulated market for cattle.
- (iii) setting up of an organisation for enforcing registration, inspection and proper marketing of livestock products.
- (iv) equipping major cities/towns with modern meat stalls.

9.342 The animal husbandry development programmes during the Plan period 1978-83 envisages a total outlay of Rs. 1500 lakhs. A short description of the various schemes proposed is given below:—

#### *I Direction and Administration*

##### *1. Administration and Co-ordination (Outlay Rs. 50 lakhs)*

9.343 The provision is for strengthening the organisational set up and administrative component of the Department to shoulder heavier responsibilities which may arise consequent on the implementation of the programmes envisaged in the Animal Husbandry sector during the Plan period 1978-83. The administrative machinery at the headquarters and at the district will be reorganised and strengthened.

##### *2. Training programme (Outlay Rs. 35 lakhs)*

9.344 The Plan proposal is to give training within the country and abroad in selected disciplines to departmental personnel and para veterinary personnel to man the new development programmes. Besides, small and marginal farmers belonging to the weaker sections of the community will be given training in modern livestock and poultry rearing practices. The proposal is to give training to 200 departmental officers, 250 para veterinary officers and 2000 farmers. The farmers will be trained at the Farmers' Training Centres run by the Agriculture Department.

#### *II Veterinary Services and Animal Health*

##### *1. Strengthening and Re-organisation of Veterinary Hospitals (Outlay Rs. 310 lakhs)*

9.345 The scheme aims at introducing in a phased manner an effective animal health care system in the State to ensure the timely availability of veterinary aid to those who need it at their premises. During the Plan period the programme is to cover 72 Blocks proposed under Operation Flood II scheme.

9.346 Veterinary services at the door will be made available round the clock on payment of prescribed charges. Servicing the small farmers and other weaker sections will, however continue to be largely subsidised. The services will include regular prophylactic vaccinations, periodical deworming campaigns, sale of concentrates and mineral supplements, examination of sterility/infertility cases, besides prompt veterinary services day and night. The field staff on itinerant duty will also be responsive to consultancy request through a farm advisory service unit.

9.347 The project envisages setting up of a three-tier delivery system viz.,

- (i) the primary rural based centre for veterinary health care which will be in direct contact with the farmers.
- (ii) the district unit with specialists in different disciplines who will work as a team will serve the primary centre and will be responsible to service the field formations within their jurisdiction. They will in addition extend technical support to the District Headquarters Hospitals which will be provided with all facilities required for hospitalised in door patients.
- (iii) the State level or Central Unit, will co-ordinate all the activities, besides providing specialist services.

9.348 The primary unit will cater to a population of about 20-30 thousand cattle units in contiguous areas, which may comprise one or more panchayats. The centre equipped with necessary telephone facilities, will be under the management of a chief veterinarian, to whom will be attached five other qualified veterinarians. The Centre will provide round the clock service on the basis of a duty roster. While two veterinarians will be on regular route visits two others will be available for emergency duties. The fifth veterinarian will be on reserve duty and will assist the chief veterinarian in all his clinical functions. The primary centre will be equipped with necessary facilities for basic diagnostic work for which the chief veterinarian will be directly responsible. The centre will be supplied with adequate quantities of drugs and chemicals for field use. For this a fixed service fee will be charged as per a schedule of charges.

9.349 The district level unit will be headed by a senior specialist who will be supported by specialists in other branches and to this unit will be attached the clinical laboratory at the district headquarters. This will be further strengthened by mobile veterinary laboratory. The specialists in different branches like medicine, surgery, diseases of the reproductive system, microbiology etc., will work as a team and will serve the primary centre.

9.350 The central unit at the State headquarters will co-ordinate and monitor the working of the lower tiers at the district and primary levels. It will have an epidemiological unit attached to it. The State level organisation will be responsible for all the matters connected with prevention, control and eradication of animal diseases on a systematic and scientific basis. This unit will be headed by a specialist. He will be assisted by a group of specialists in different disciplines. This unit will function in close liaison with the Kerala Agricultural University and other agencies concerned. The outlay proposed is only the additional expenditure required as a result of the reorganisation. The additional staff required will be about 180 technocrats and 380 other personnel.

## 2. Assistance to Improve Animal Health Care Facilities in the Non-Operation Flood Area (Outlay Rs. 125.70 lakhs)

9.351 The provision is to provide continued assistance to the existing animal health care institutions in areas outside Operation Flood II so as to improve the infrastructure facilities in these institutions. About 50 per cent of the Blocks will be under the Non-Operation Flood Area. The veterinary facilities available in the hospitals and dispensaries of this region need financial support to render effective services to the cattle breeders.

## 3. Expansion of Veterinary Biological Production Complex (Outlay Rs. 140 lakhs)

9.352 The scheme was started during the Fifth Plan period as a Centrally sponsored project and it is under implementation. The provision is for construction of buildings, providing water supply, electrification, construction of road etc. and for completing the project. The project envisages production of 59.75 lakh doses of essential veterinary biologicals required for the State and also to meet the emergency demand from the neighbouring States. Besides the production of biologicals, it is also proposed to carry out research

studies on the improvement of biologicals now manufactured. The project envisages to take up epidemiological studies on various livestock and poultry diseases.

## 4. Disease Free Zone (Outlay Rs. 20 lakhs)

9.353 The concept of the disease free zone has been advocated by F.A.O. and other international agencies to enable the countries which are not free from certain specific contagious/infectious animal diseases to export quality livestock and livestock products to other nations. It is proposed to establish a disease free zone in Kerala by controlling and eradicating the common contagious/infectious diseases of livestock by enacting necessary legislation for free and compulsory vaccinations and for restricting the movements of livestock

## 5. Rabies Control (Outlay Rs. 50 lakhs)

9.354 The proposal is to control and eradicate rabies step by step by conducting detailed survey on the occurrence of the disease, foci of infection, destruction of stray dogs, protecting the licensed dogs with vaccines having longer periods of immunity.

## 6. Mastitis Control Programme (Outlay Rs. 20 lakhs)

9.355 Mastitis is a disease mostly associated with high yielding animals and hence the loss due to this disease is colossal. The present practice is to treat the animals with whatever antibiotics available without any regard to the etiology or the sensitivity of the antibiotic to the organism responsible. The proposal here is to detect the organism responsible for the condition in the shortest possible time and to suggest suitable measure to control the disease.

## 7. Veterinary Public Health Services and Modernisation of Slaughter Houses (Outlay Rs. 100 lakhs)

9.356 All foods of animal origin necessarily have to be inspected and certified as regards to their wholesomeness and safety before being marketed for public consumption. To ensure supply of wholesome meat and other livestock products, it is envisaged to establish a veterinary public health service and modernise the existing slaughter houses with optimum facility for effective veterinary supervision, safe transport and marketing as well as optimum utilisation of all by-products of slaughtered animal.

## 8. Rinderpest Eradication, Surveillance and Containment (Outlay Rs. 30 lakhs)

9.357 The project envisages control and eradication of rinderpest disease. Vigilance units will be established, checkpost will be strengthened and containment vaccination will be carried out. This is a Centrally sponsored scheme and Central assistance will also be available for it.

## 9. Control and Foot and Mouth Disease (Outlay Rs. 25 lakhs)

9.358 The project envisages establishment of an epidemiological survey unit and a surveillance unit and conduct of protective vaccination against the disease at a subsidised rate.

#### 10. Control of Avian Diseases (outlay Rs. 20 lakhs)

9.359 Poultry diseases like ranikhet, selmenellosis, Marek's disease and helminthiasis cause huge loss to the poultry farmers. The project envisages control programmes of the diseases through vaccination.

#### 11. Cattle Insurance (Outlay Rs. 50 lakhs)

9.360 The aim of the project is to extend insurance cover to one lakh cross-bred cows owned by marginal farmers, agricultural labourers and other weaker sections in the respective intensive areas of animal production and 50 per cent of the first year's premium will be met by the State. All animals insured will be protected against infectious/contagious diseases on a special priority basis.

### III. Investigation and Statistics

#### 1. Livestock Census (Outlay Rs. 13 lakhs)

9.361 It is proposed to create a permanent livestock census unit in the Department of Animal Husbandry. This unit will be engaged in the planning of the livestock census programmes and follow-up and annual estimation of inter-quinquennial livestock population by conducting sample surveys.

#### 2. Integrated Sample Survey for Estimation of Milk and Eggs. (Outlay Rs. 15 lakhs)

9.362 The programme is intended to strengthen the Statistical Cell in the Animal Husbandry Department to take up studies on the development of Animal Husbandry sector in the State. Studies on breed preferences and the attitude of the public towards artificial insemination, incidence of diseases among cattle and poultry, etc., will also be taken up besides continuing the present integrated sample survey for estimating the production of major livestock and poultry products like milk, egg, and meat in the State.

#### 3. Planning and Monitoring Cell (Outlay Rs. 10 lakhs)

9.363 The proposal is to establish a full-fledged Planning and Monitoring Cell attached to the Directorate of Animal Husbandry and also to strengthen the existing unit. The Cell will formulate and monitor suitable schemes for the planned development of the Animal Husbandry sector and evaluate the schemes already implemented.

### IV. Cattle Development

#### 1. Jersey Breeding cum Cross-bred Farm (Outlay Rs. 40 lakhs)

9.364 The proposal is to complete the establishment of the Jersey-Breeding cum Cross-bred Farm at Vithura as well as to equip and strengthen the farm to take up the breeding programme. The herd strength will be raised to 400 and the entire arable land attached to the Farm will be brought under fodder cultivation.

#### 2. SFD Programme for Feed Subsidy to Calves and Assistance to Small Farmers for Poultry Piggery and Sheep-rearing. (Outlay Rs. 75 lakhs)

9.365 This is a centrally sponsored programme. The Department of Animal Husbandry has been implementing it since 1975-76 as a programme in the SFD districts of Trivandrum, Trichur and Cannanore

for providing feed subsidy to cross-bred calves as well as assistance to poultry, pigs and sheep on the national pattern. The present proposal envisages extension of the programme to five other districts during 1978-83. In each district 3000 cross-bred calves will be selected to give feed subsidy. The programme will benefit 15,000 farmers. The outlay provided is the State share of the expenditure.

### Poultry Development

#### 1. Introduction of Cross Breeding Poultry Farms (Outlay Rs. 20 lakhs)

9.366 The aim of the scheme is to make available a suitable superior cross-bred chick which can lay about 160-180 eggs per year so that it can economically be reared in the backyard by an average farmer, with kitchen waste and other locally available feed. This cross-bred bird will also be able to withstand most of the common poultry diseases. Such a bird will be evolved by suitable cross breeding between local and exotic strains. The cross breeding work is proposed to be done in two of the existing farms. It is expected to produce enough cross-bred chicks for distribution to the small and marginal farmers and agricultural labourers of the State.

#### 2. Egg Collection and Marketing through Poultry Farmers' Co-operatives (outlay Rs. 33 lakhs)

9.367 The increase in production of eggs expected during the Plan period may create problems of proper marketing. Moreover the poultry farmers are now unorganised and they have to be organised into market-oriented viable primary co-operative societies. These primary co-operatives will be required to form Regional Co-operatives which, in turn, will be under an Apex body at the State level. To organise this network, necessary inputs such as supplies and managerial assistance including finance will be provided by the State. The existing organisation for egg collection and marketing will be suitably strengthened and ultimately merged with the co-operative marketing organisation of the poultry breeders. Retail outlets for egg and other poultry products will be established at suitable points.

#### 3. Co-ordinated Project for Poultry Breeding (Outlay Rs. 10 lakhs)

9.368 The provision is for meeting the State's contribution to the Centrally sponsored scheme for the All India Co-ordinated Project aiming at production of high quality pure bred chicks suitable for the agro-climatic conditions of Kerala.

#### 4. Poultry Training Institute (Outlay Rs. 10 lakhs)

9.369 The plan proposal is to establish a training institute to impart inservice and refresher training to Departmental staff and training in modern poultry rearing practices to farmers. Departmental staff numbering 180 and farmers numbering 1800 will be trained during the Plan period.

#### 5. Establishment of Turkey Farm (Outlay Rs. 5 lakhs)

9.370 The scheme envisages the establishment of a turkey rearing unit in the State with a view to producing enough stock for distribution to farmers and popularisation of turkey production in backyards of houses.



6. *Establishment of Poultry Farms (Outlay Rs. 5 lakhs)*

9.371 The construction work for establishing two poultry farms one each at Idukki and Malappuram districts, started during the Fifth Plan period, is under way. The construction of the poultry houses, administrative blocks, incubator rooms etc., are being taken up. The provision is for completing the civil works, purchase of equipments and appointment of additional staff.

7. *Pilot Scheme for Integrated Poultry-Fishery-Piggery Project (Outlay Rs. 5 lakhs)*

9.372 It is proposed to establish a pilot project in the water-logged areas of the State to assist the weaker sections of the farmers. Financial assistance will be made available to the farmers to rear pigs, poultry and to grow fish. The fish will be fed with undigested feed matter of pigs and poultry. Pigs will be fed with dried hyacinth and fish wastes.

8. *Broiler Production (Outlay Rs. 15 lakhs)*

9.373 Broiler production is proposed to be popularised during the plan period. Contract farmers near the cities will be supplied with broiler chicks and marketing facilities will be organised for the meat produced, through Marketing Federations and the Breeders' Co-operatives. For supplying commercial strains of Broiler, a Broiler Multiplication Farm, also will be established under this scheme.

9. *Setting up of All India Chick Sexing School at Chengannur (Outlay Rs. 20 lakhs)*

9.374 For farmers rearing day old chicks, it will be a very heavy economic drain to rear male chicks. To enable the farmer identify the sex of the chicks a chick sexing school which will train sexers had been started at the Chengannur Central Hatchery. Recognising the importance of such training programme, the Government of India has now agreed to set up an All India Sexing School at Chengannur, for the benefit of the various State Animal Husbandry Departments as well as private hatchers. The period of training will be five months and 20 candidates will be trained at a time. The amount provided is to meet the State's share of expenditure.

10. *Organising Poultry Clubs in Schools (Outlay Rs. 12 lakhs)*

9.375 This programme envisages organisation of poultry clubs in schools to create an interest and awareness among the younger generation in poultry keeping.

11. *Expansion of Duck Farms and Custom Hatching (Outlay Rs. 18 lakhs)*

9.376 It is proposed to develop a commercial type of duck suitable for the agro-climatic condition of Kerala by crossing local ducks with exotic breed. The production of commercial breed will be undertaken at the Duck Farm, Niranam. The multiplication of these birds for distribution to duck farmers will be carried out at Thiruvalla. Necessary construction works are being undertaken at Niranam and Thiruvalla. Additional equipment and appliances are to be purchased.

12. *Ducks Farmers' Co-operatives (Outlay Rs. 8 lakhs)*

9.377 The duck farms in Kerala need assistance in respect of technical know-how, marketing facilities and

credit facilities. Since the people involved are of nomadic nature, banks are reluctant to advance credit to them. As such, most of them have to depend upon money lenders. Hence it is proposed to organise them into viable co-operatives and provide them with credit facilities, market facilities, technical know-how and health cover.

13. *Production of Poultry Feed Concentrates (Outlay Rs. 12 lakhs)*

9.378 The scheme envisages production of a concentrated poultry feed premix so that the farmer can reconstitute the same with the locally available and cheap feed ingredients. This will help the birds get proper nutrition to produce more eggs under the back yard system. The activities of the existing feed compounding units functioning in the Departmental farms will be suitably modified.

VI. *Piggery Development.*

1. *Establishment of Pig Breeding Farm (Outlay Rs. 15 lakhs)*

9.379 The proposal is to establish a Pig Breeding Farm in the State preferably at Palai or in the vicinity of the proposed cheese plant of the Kerala Livestock Development and Milk Marketing Board at Thodupuzha. Three recognised breeds of pigs viz. Canadian Dineo, large white Yorkshire and Landrace/Tamworth will be maintained for three way crossing. The requisite number of animals will be imported. It is anticipated that nearly 1350 high quality piglings could be produced in the farms for distribution to the beneficiaries under the Intensive Pig Development Project.

2. *Intensive Pig Development Programme (Outlay Rs. 5 lakhs)*

9.380 The object of the scheme is to increase the income of the ordinary farmer and also to make available protein-rich animal food at a reasonable price to the people. High quality piglings will be distributed to selected breeders for breeding purpose at subsidized rate and also to supply weaners to the farmers for fattening. The participants of this programme will be eligible for financial assistance in the form of grant for the construction of pig sties and subsidy for the maintenance of boar. Feed will be made available at subsidised rate for the piglings produced under the breeding programme. Medicines required for deworming will also be supplied free of cost.

3. *Grading up of Local Pigs (Outlay Rs. 5 lakhs)*

9.381 It is estimated that out of 1.4 lakhs of pig population in the State, 80 per cent are slow growing and less economic country pigs. This herd can be improved quite rapidly if exotic boars are distributed. Since artificial insemination in pig has its limitations, there is need for the distribution of a large number of boars. Good quality boars will be supplied to the breeders depending upon the actual necessity in a particular locality. A boar maintenance subsidy of Rs. 750 per boar per year will be given to the breeder who maintains the boar satisfactorily for three years.

4. *Utilisation of Agro-Industrial By-products (Outlay Rs. 5 lakhs)*

9.382 Pig production on scientific lines has not been an economic proposition due to the spiralling price of pig

feed. Those who had the means to raise pigs at a cheap cost alone could continue in this line. Therefore, it is proposed to undertake studies on the utilisation of agro-industrial by-products such as pineapple waste, frog meat and fish wastes, blood meal, spent grains from distillery, cocoa-waste and tapioca waste in the formulation of pig ration ensuring satisfactory production programme at lesser cost.

### VII Goat Development

#### 1. Expansion of Goat Farm (Outlay Rs. 15 lakhs)

9.383 The plan proposal is to expand the existing goat farm to take up further selective breeding and cross breeding with exotic breed to evolve a dual purpose goat suitable for Kerala conditions.

#### 2. Establishment of Goat Farm at Attappady (Outlay Rs. 10 lakhs)

9.384 The proposal is to establish a multiplication farm of the suitable dual purpose goat evolved at the goat farm, Komeri, mostly stressing on the meat type. The goats produced in the farm will be distributed to the farmers.

#### 3. Establishment of Goat Villages (Outlay Rs. 15 lakhs)

9.385 The proposal is to establish goat villages in selected compact areas having adequate browsing facilities or plenty of forage for goats. In each village, adequate number of farmers will be selected and supplied with kids and improved varieties of bucks for breeding. The programme will benefit largely the rural poor.

#### 4. Goat Farmers Co-operatives (Outlay Rs. 5 lakhs)

9.386 It is proposed to organise the goat farmers in the State, especially those in the goat villages, into the co-operative fold so as to assist them to secure remunerative market for their products. The proposal is to give share capital contribution and managerial assistance.

### VIII Other Livestock Development Programme

#### 1. Tribal Area Sub Plan (Outlay Rs. 20 lakhs)

9.387 The object of the scheme is to accelerate the progress of tribal development through developing animal husbandry practices. It is proposed to distribute cross bred calves, goats and poultry to the tribal people.

#### 2. Establishment of a Departmental Marketing Organisation (Outlay Rs. 40 lakhs)

9.388 There is need for setting up an organisation for enforcing registration, inspection and marketing of livestock products other than milk. The necessary organisational network for inspection of meat, meat products and slaughter houses will be provided. The marketing organisation will also develop necessary market intelligence with the help of the Statistical and Planning Cell of the Animal Husbandry Department.

#### 3. Establishment of Regulated Market for Cattle (Outlay Rs. 35 lakhs)

9.389 Establishment of regulated markets for cattle will be advantageous to both the buyers and the sellers of cattle. Fifteen livestock markets will be brought under the regulated market system during the Plan period.

#### 4. Equipping Meat Stalls for Hygienic Sale of Meat (Outlay Rs. 1.40 lakhs)

9.390 The proposal is to assist individuals, co-operatives and other consumer organisations to set up hygienic meat stalls. The assistance will be in the form of subsidy on interest payment to the extent of six per cent of the capital required for equipping the meat stalls.

#### 5. Assistance to Kerala Agricultural University (Outlay Rs. 15 lakhs)

9.391 The Kerala Agricultural University will be rendered financial assistance of the order of Rs. 15 lakhs for undertaking research on diseases of livestock, nutrition, generation of exotic varieties of cattle, etc.

#### Centrally sponsored schemes

#### 1. Expansion of Veterinary Biological Production Complex.

9.392 Fifty per cent of the total expenditure on the Veterinary Biological Production Complex is being met by Government of India. In 1978-79 an amount of Rs. 33 lakhs is proposed as Central assistance. During the Plan period 1978-83 an amount of Rs. 140 lakhs is expected as Central share of investment on the scheme.

#### 2. Disease Free Zone

9.393 All contingent expenditure for establishing the disease-free zone such as cost of vaccine, cost of vehicles etc. will be met by Government of India. The Central assistance expected for the scheme is Rs. 320 lakhs.

#### 3. Eradication, Surveillance and Containment of Rinderpest.

9.394 Government of India is providing assistance to meet 50 per cent of the establishment expenditure and 100 per cent contingent expenditure such as cost of vaccine and cost of equipment and vehicles for implementing the programme. A Central assistance of Rs. 50 lakhs is expected for the scheme.

#### 4. Control of Foot and Mouth Disease

9.395 One third of the cost of foot and mouth vaccine required for vaccinating animals is being met by Government of India. Besides, 75 per cent of the cost of establishment and other recurring charges for conducting epidermiological studies on foot and mouth diseases is being met by the I. C. A. R. An outlay of Rs. 25 lakhs is expected as Central assistance for the control of foot and mouth disease.

### 5. *Integrated Sample Survey*

9.396 Fifty per cent of the cost required for conducting the sample survey is being met by Government of India. A Central assistance of Rs. 18 lakhs is expected for this scheme during the Plan period 1978-83.

### 6. *All India Sexing School*

9.397 Fifty per cent of the total cost of this scheme is expected from Government of India for putting up an All India Chick Sexing School. The assistance expected is Rs. 30 lakhs for the period 1978-83.

#### *Central Sector Schemes. (Schemes in the Nature of Centrally Sponsored)*

#### 1. *SFDA Programme for Feed Subsidy to Calves and Assistance to Small Farmers for Poultry, Piggery and Sheep-rearing.*

9.398 This is an integrated livestock and poultry development programme implemented through the Small/Marginal Farmers and Agricultural Labourers by

providing them with feed subsidy to calves and assistance for poultry, piggery and goat rearing. Full cost for the feed subsidy to calves and 50 per cent of the cost required for giving assistance for poultry, piggery and goat rearing is being met by Government of India.

9.399 As a calf subsidy programme is envisaged under Dairy Development Department also, the implementation of the scheme may be done through the two Departments of Animal Husbandry and Dairy Development, on a mutually exclusive basis so as to avoid duplication of efforts in the same area. An amount of Rs. 500 lakhs is suggested as Central sector outlay for this Scheme.

#### 2. *Co-ordinated Project on Poultry Breeding*

9.400 The full expenditure required for this scheme will be met by Government of India. An amount of Rs. 20 lakhs is suggested as Central sector outlay for this scheme.

TABLE 9.18

#### Animal Husbandry—Scheme-wise Outlay

Sl. No.	Scheme	(Rs. in lakhs)			
		Fifth Plan Outlay (1974-79)	1974-78 Expenditure	1978-79 Outlay budgeted	1978-83 Outlay Proposed
(1)	(2)	(3)	(4)	(5)	(6)
J.	Direction and Administration	15.50	8.17	2.50	85.00
1	Administration and Co-ordination	9.00	4.47	1.00	50.00
2	Vaccination Programme	1.50	0.83	..	..
3	Training Programme	5.00	2.87	1.50	35.00
II.	Veterinary Service and Animal Health	164.00	79.29	68.35	891.60
1	Opening of Veterinary Dispensaries	30.00	28.63	13.00	..
2	Expansion of Biological Production Complex	50.00	5.00	23.00	140.00
3	Strengthening and Re-organisation of Veterinary Hospitals	26.00	22.29	24.00	310.00
4	Establishment of Mobile Dispensary Laboratories	20.00	4.91	1.00	..
5	Expansion of Disease Investigation Laboratories	10.00	3.44	1.00	..
6	Setting up of Clinical Laboratories	5.00	2.59	0.75	..
7	Control of Foot and Mouth Diseases	10.00	9.43	2.00	25.00
8	Control of Swine Fever etc.	1.00	..	..	..
9	Control of Ranikhet and Other Poultry Diseases	3.00	2.24	0.50	..
10	Control of Tuberculosis and Brucellosis	2.00	0.75	0.10	..
11	Rinderpest Eradication, Surveillance and Containment	..	..	..	30.00
12	Disease intelligence Survey	2.00	0.01	..	..
13	Veterinary Public Health Service and Modernisation of Slaughter Houses	5.00	..	..	100.00
14	Assistance to Veterinary Hospitals in Non-Operation Flood Area II	..	..	..	126.60
15	Disease Free Zone	..	..	..	20.00
16	Rabies Control	..	..	1.00	50.00

(1)	(2)	(3)	(4)	(5)	(6)
17	Control of Avian Disease	..	..	..	20.00
18	Cattle Insurance	..	..	..	50.00
19	Establishment of Mobile Farms Aid Unit	..	..	1.50	..
20	Organising Infertility Camp	..	..	0.50	..
21	Mastitis Control Programme	..	..	..	20.00
III.	Investigation and Statistics	5.50	17.17	8.50	38.00
1	Strengthening of Planning and Monitoring Cell	3.00	2.02	0.50	10.00
2	Sample Survey for Estimation of Milk & Eggs in Kerala	2.50	15.15	1.00	15.00
3	Livestock Census	..	..	7.00	13.00
IV.	Cattle Development	164.00	109.91	51.00	115.00
1	Establishment of Jersey Breeding-cum-Cross Breeding Farm	40.00	24.94	15.00	40.00
2	Establishment of Buffalo Breeding Farms	5.00	0.21	..	..
3	Extension of Frozen Semen—Facilities to Various Breeding Centres	5.00	..	..	..
4	International Dairy Congress	..	0.05	..	..
5	Indo-Swiss Project & Assistance to Kerala Livestock Development and Milk Marketing Board	114.00	57.10	30.00	..
6	SFDA Programmes for Food subsidy to Calves and Assistance to Small Farmers for Poultry, Piggery and Sheep Rearing (Special Animal Husbandry Programme)	..	27.61	6.00	75.00
V.	Poultry Development	99.00	36.60	12.35	173.00
1	Establishment of Two Poultry Farms	29.00	14.19	3.50	5.00
2	Expansion of Poultry Farms including Central Hatchery	30.00	13.85	2.00	..
3	Egg Collection and Marketing through Poultry Farmers Organisation (Co-operatives)	10.00	3.22	2.00	33.00
4	Kerala Poultry Corporation	10.00	1.46	..	..
5	Broiler Production	5.00	2.33	1.50	15.00
6	Production of Poultry Feed Concentrates	..	..	..	12.00
7	Duck Farmers Co-operatives	..	..	..	8.00
8	Expansion of Duck Farms and Custom Hatching	15.00	1.55	3.00	18.00
9	Organising Poultry Clubs in Schools	..	..	0.35	12.00
10	All India Sexing School	..	..	..	20.00
11	Pilot Scheme for Integrated Poultry-Fishery-Piggery Project	..	..	..	5.00
12	Establishment of Turkey Farm	..	..	..	5.00
13	Poultry Training Institute	..	..	..	10.00
14	Co-ordinated Project on Poultry Breeding	..	..	..	10.00
15	Introduction of Cross Breeding in Poultry Farms	..	..	..	20.00
VI.	Piggery Development	25.00	5.59	2.30	30.00
1	Establishment of Pig Breeding Farm	5.00	..	..	15.00
2	Intensive Pig Development Programme	15.00	2.51	0.80	5.00
3	Expansion of Pig Breeding Units	5.00	3.08	1.50	..
4	Grading up of Local Pigs	..	..	..	5.00
5	Utilisation of Agro-Industrial By-products	..	..	..	5.00
VII.	Goat Development	3.00	11.13	1.75	45.00
1	Expansion of Goat Farms	1.50	2.04	1.75	15.00
2	Distribution of Goats	1.50	..	..	..

(1)	(2)	(3)	(4)	(5)	(6)
3	Establishment of Goat Farm at Attappady	..	..	..	10.00
4	Establishment of Goat Villages	..	..	..	15.00
5	Goat Farmers' Co-operatives	..	..	..	5.00
VIII.	Fodder & Feed Development	24.00	..	2.00	..
1	Feed Mixing Plants	14.00	4.04	1.00	..
2	Fodder Development	10.00	5.04	1.00	..
3	Mixed Cropping on Tree Crop with World Bank Aid	..	0.01	..	..
IX.	Other Livestock Development Programmes	..	3.00	6.25	122.40
1	Tribal Area-Sub Plan	..	3.00	4.00	20.00
2	Economic uplift of Educated unemployed	..	..	0.50	5.00
3	Distribution of Poultry and Goats to Families of One Lakh Housing Scheme	..	..	1.25	5.00
4	Equipping Meat Stalls in Major Cities/Towns	..	..	..	1.40
5	Assistance to Kerala Agricultural University for Research on Goat & Poultry diseases/ Production diseases of Cattle and Artificial Insemination/studies on exotic inheritance of cattle	..	..	..	15.00
6	Regulated market for Cattle	..	..	..	35.00
7	Establishment of Departmental Marketing Organisation	..	..	..	40.00
8	Karshika Vigyan	..	..	0.50	1.00
	Grand Total	500.00	270.86	155.00	1500.00

### Dairy Development

9.401 In 1972, Kerala had a breedable stock of 12.87 lakh cows and 1.47 lakh she buffaloes. The milk yield is very low on account of poor breed, feed and management. The average milk yield estimates of indigenous breed in milk stood at 1.11 kg. per day per cow and 2.01 kg. per day per she-buffalo in 1964-65. For the genetic improvement of the desi cattle, cross breeding through artificial insemination has been attempted in the past through Key Village Blocks, Intensive Cattle Development Projects and the Indo-Swiss Project. As a result of these activities, genetic improvement of the local stock was made possible by producing cross bred cows with longer lactation period and higher productivity than the desi cows.

9.402 Since 1973 a massive cross breeding programme has been launched by the Dairy Development Department, engaging 952 Cattle Improvement Assistants on a self-employment basis. In 1975 the Kerala Live stock Development and Milk Marketing Board was set up in the Public sector with a view to upgrading the cattle breed and marketing of milk and milk products on commercial lines. The Kerala Live stock Development and Milk Marketing Board to which the Indo-Swiss Project was merged has been made the sole agency for implementing the cross breeding and dairy development programmes in the State. All the diary and chilling plants, the Indo-Swiss Project, Dhoni Bull Station and the L and P Feed Factory, Malampuzha, were brought under the Board in 1976. The Indo-Swiss Project extended their areas of activities by covering the whole State through a chain of liquid nitrogen plants and frozen semen banks. In 1977-78, about 8 lakh artificial inseminations were conducted through the various agencies.

9.403 The State has altogether 1475 artificial insemination units (663 units under the Animal Husbandry Department and 812 units under the Dairy Development Department). The cross breeding programme aims at producing a new indigenous breed with an exotic blood level between 50 per cent and 75 per cent. The demand for quality semen is currently met through the bull mother breeding farms at Maudpatti and Dhoni.

9.404 The estimated breedable cattle population in 1977-78 consisted of 14.70 lakh animals. Of these, the local breedable cows constituted 10.54 lakhs, cross bred cows 2.69 lakhs and buffaloes 1.47 lakhs. The herd average yield of milk of these animals was estimated at 0.70 litre/day, 2.27 litres/day and 1.13 litres/day respectively. The total milk production stood around 5.40 lakh tonnes.

9.405 The infrastructure facilities set up for milk processing and marketing comprise three dairy plants (Trivandrum, Alleppey and Ernakulam,) with a total capacity of 33,000 litres/day under the KLD and M.M. Board and three diary plants (Kottayam, Palghat Kozhikode) with a total capacity of 18,000 litres/day under the Dairy Cooperative Unions. In addition to these, a dairy plant at Cannanore with a capacity of 10,000 litres/day under the KLD & MM Board is being set up and is expected to be commissioned soon. As regards chilling plants, altogether there are 23 chilling plants in various parts of the State with an aggregate capacity of 46,000 litres/day. Of these 15 chilling plants with a capacity of 32,000 litres/day are under the KLD & MM Board and 6 chilling plants with a capacity of 12,000 litres/day are under the Dairy Co-operative Unions. The rest is managed by the Dairy Co-operative Societies.

9.406 The data available on milk production in Kerala are based on 1964-65 sample survey. The official estimate of milk production in 1973-74 stood at 4.10 lakh tonnes which worked out to an average per capita milk consumption level of 50 grams per day. By 1977-78, the level of production has gone up to 5.40 lakh tonnes, the per capita availability of milk being 60 grams per day. Between 1973-74 and 1977-78 while the total production is estimated to have gone up by 32 per cent, the increase in per capita supplies was 20 per cent. The annual growth rate in milk production during the years was 7.1 per cent.

9.407 Between 1964 and 1977, the milk yield per cow has increased significantly. The estimated average yield of cows in milk in 1964 was 1.11 litres per day and that for the buffaloes 2.01 litres per day. The available data based on a sample survey on milk production in the State in 1977 shows the yield of the cows in milk at 2.81 litres per day during rainy season and 2.93 litres per day during winter. For the buffaloes in milk, the productivity is 3.46 litres per day during rainy season and 2.98 litres per day during winter season. The increase in yield could be attributed to a number of factors like structural improvement of the breedable stock as a result of the cross-breeding activities in the past, better animal health care and improved feed and management practices.

9.408 The Fifth Plan envisaged a total financial outlay of Rs. 345 lakhs for dairy development. As against this, the expenditure during 1974-78 amounted to Rs. 246 lakhs (71.3 per cent). The expenditure under dairy development alone was Rs. 99.61 lakhs (39.2 per cent). The principal items comprised rural dairy extension service and strengthening and expansion of the bull station at Dhoni. The investment on Operation Flood Programme-I was Rs. 49.52 lakhs or 71 per cent of the targeted outlay. An amount of Rs. 33.98 lakhs was spent on the Cannanore Milk Plant. The assistance rendered to the K.L.D. & M.M. Board and Milk Unions was Rs. 67.76 lakhs.

9.409 The physical achievements during the period 1974-78 comprised setting up of two milk plants and one rural dairy centre against the targets of four milk plants and five rural dairy centres respectively. The milk handling capacity increased by 27,000 litres per day compared to 89,000 litres per day anticipated. Ten milk chilling centres were also established in different localities. Primary milk co-operatives numbering 324 were additionally organised during the four year period of the Fifth Plan, raising the total number of primary milk co-operatives to 768 at the end of 1977-78.

9.410 The high input costs for feeding the milch animals coupled with the scarcity of fodder and the competition for land for various uses other than fodder production pose a real threat to the future of dairy farming in Kerala. All-out efforts to put every bit of waste land for fodder tree/grass cultivation as well as raising fodder trees in the peripheries of forest areas are an inevitable necessity to bring down the cost of milk production and promote the demand for surplus milk anticipated as a result of the increase in the cross-bred cows and better management practices.

9.411 The seasonal surplus of milk occurring in some of the developed centres causes much hardship

for the farmers for want of assured market. The need for an organised machinery to collect surplus milk from the producers in the rural areas and to distribute the same in the urban and semi-urban consuming centres is of paramount importance for the successful development of dairy farming.

9.412 The programme for restructuring and strengthening the animal health care hospitals/dispensaries envisaged under the Animal Husbandry Sector ensuring domiciliary services to the breeders will partly solve their health care problems. The need for research and development support is high particularly in view of the fact that the cross-bred cows are easily susceptible to animal diseases. This could be entrusted to the Kerala Agricultural University to do problem oriented research for the development of animal husbandry and dairy in the State.

9.413 The objectives of the dairy development programmes envisaged in the plan for 1978-83 are:

- (i) augmentation of production of milk and milk products.
- (ii) adoption of improved animal husbandry practices such as better breeding, feeding and management for improving the productivity of livestock.
- (iii) organisation of the marketing of produce through a functional system of co-operatives on the lines similar to those adopted by dairy co-operative unions in Gujarat.
- (iv) production and propagation of cheap feed and fodder varieties required for cattle and increasing the per capita consumption of milk and milk products to a reasonable level by reducing cost of production of milk and through a well organised and efficient marketing system.

9.414 Increase in milk production can be achieved through a combination of genetic improvement, better animal health cover, improvement of feed and fodder availability and better management practices. Genetic improvement will be undertaken through the process of artificial insemination. To achieve this the present cross-breeding programme will be further intensified.

9.415 While the Animal Husbandry Department will be looking after the animal health cover programme, the Dairy Development Department and the K. L. D. & M. M. Board will be working in close liaison for achieving the goals of genetic improvement of cattle, improvement of cattle feed and fodder availability and better management practices. To raise the productivity of the cross-bred cattle, proper feeding and management practices are essential. To achieve this, the Rural Dairy Extension Programme will be intensified.

9.416 The entire success of cattle development depends on the efficiency of milk marketing. The Anand pattern approved by Government of India for dairy development and marketing will be implemented with suitable changes in the State. The primary societies of milk producers, which form the base level organisation, in addition to procuring milk and providing inputs to the producers will enter the rural

milk market in a big way. The marketable surplus from an area must be sold to the unions which can do better marketing in the urban centres. To handle the surplus milk available during flush seasons, a milk products factory will be established.

9.417 Intensive efforts will be made in the field of dairy development to bring down the cost of production of milk. Better facilities and assistance will be provided to the agricultural labourers and marginal farmers for producing sufficient quantity of fodder for the cattle owned by them and thereby produce milk at cheaper costs so that the propensity to consume milk will go up.

9.418 The Plan for 1978-83 envisages the maintenance of breedable cattle population of 14.50 lakhs. However, the composition of the dairy animals is expected to undergo changes as a result of the anticipated increase in the number of crossbred cows. While the local breeds are expected to decrease from 10.53 lakhs to 8.50 lakhs during the Plan period, the cross-bred is likely to increase from 2.69 lakhs to 4.50 lakhs. The population of the breedable buffaloes will remain steady at 1.50 lakhs. Consequent to the improved dairy management and animal husbandry practices, the herd average yields are expected to go up. A realistic assessment shows that the local cows will contribute to a milk production of 3.1 lakh tonnes at the rate of 1.0 litre per day per cow. The expected yield from the cross-bred cows is 4.9 lakh tonnes at the rate of 3 litres per day per cow and from the buffaloes 0.60 lakh tonnes at the rate of 1.13 litres per day per buffalo.

9.419 The target set for milk production in the Plan is 8.60 lakh tonnes in 1982-83. The additional production proposed to be achieved during 1978-83 is 3.20 lakh tonnes, registering a growth rate of 9.8 per cent per annum. This will help to raise the per capita availability of milk production in the State to 88 grams per day compared to 60 grams per day in 1977-78. The level of milk consumption at the all India level in 1982-83 is expected to be around 135 grams per capita per day as against 118 grams per capita per day in 1977-78.

9.420 Out of the total production of milk, the organised sector will handle about 15 per cent of the milk during the Plan for 1978-83. The rest will be consumed in the producing households and partly distributed in the local markets. The additional infrastructure facilities required comprise a total handling capacity of 290,000 litres per day. The expansion programme at Trivandrum, Ernakulam and Cannanore, which is on stream will cover 70,000 litres. The rest will have to be installed additionally during the Plan period. The plants proposed additionally are Trivandrum (45,000 litres per day), Ernakulam (100,000 litres per day) Palghat (25,000 litres per day), Calicut (40,000 litres per day) and Cannanore (10,000 litres per day).

9.421 The area targeted for production of fodder during 1978-83 is 79,340 ha. The bulk of this area is anticipated from catch crops/pasture and leys (61,000 ha), inter-cropping fodder in coconut gardens (9,000 ha), conservation of fodder from pulses crops (5,000 ha), social forestry (1,500 ha) and hay making from grass lands and inter crops (2,000 ha). Seed production through certified growers will cover 800 ha.

9.422 One cattle feed plant, one milk products factory and two pilot cheese plants will also be set up during the Plan period.

9.423 The total outlay envisaged in the plan for 1978-83 under dairy development is Rs. 22.39 crores. Of this, the provision proposed for Operation Flood II amounts to Rs. 10.76 crores. It is likely that a substantial portion of this fund will be refinanced through Operation Flood II which is contemplated on national level for organising dairy development activities. For dairy development outside the Operation Flood area a provision of Rs. 1.71 crores is proposed. The programme under KLD & M. M. Board involves a total outlay of Rs. 2.55 crores.

#### *Proposals for 1978-83 Plan.*

#### *Direction and Administration*

#### *Dairy Development Staff (Outlay 15 lakhs)*

9.424 The provision is for strengthening the middle level and supervisory staff both for administration and technical work connected with the implementation of the programmes during 1978-83.

#### **Dairy Development**

#### *Rural Dairy Extension Service (Outlay Rs. 125 lakhs)*

9.425 This is a continuing scheme implemented by the Dairy Development Department.

#### *Milk Products Factory (Outlay Rs. 71.50 lakhs)*

9.426 It is proposed to establish a milk products factory in addition to the feeder balancing plant in order to diversify the products like cheese, casein etc., with the surplus fluid milk available in the flush season. The factory will have a capacity to handle 30,000 litres of milk per day with facilities for expansion to 60,000 litres per day.

#### *Establishment of Cheese Plants (Outlay Rs. 24.50 lakhs).*

9.427 It is proposed to establish 2 pilot cheese plants which can handle 500 to 1000 litres of milk per day. It will be possible for farmers to convert surplus milk into cheese which has a better shelf life and can be marketed at longer intervals.

#### *Programmes under K.L.D. & M.M. Board*

*(Outlay Rs. 255.20 lakhs)*

9.428 The livestock development programmes under the K.L.D & M. M. Board are to be continued. These include breeding farms and semen banks at Madupatti, Peermade, Kulathupuzha and Dhoni. Cryogenic equipments and the semen packing and insemination equipments like straws, sheaths and guns will be imported under the Indo-Swiss Programme Agreements. Contributions for such expenditure are expected through the continuance of the collaboration with the Swiss Government during the Plan period also.

#### *Production of Buffalo Frozen Semen (Outlay Rs. 15.40 lakhs)*

9.429 The State has 1.5 lakh breedable buffaloes. There is no systematic breeding facility in the case of these animals. The proposal is to produce one lakh doses

of frozen buffalo semen per year at the Dhoni Farm by establishing a laboratory there. Frozen semen will be produced on a commercial basis.

*Jersey Frozen Semen Development (Outlay Rs. 86 lakhs)*

9.430 It is proposed to cover the cross-breeding programme in the entire State with frozen semen. For this purpose the Bull station at Dhoni where Jersey bulls are maintained and semen is now processed by the CME method will be converted into a frozen semen station. Necessary infrastructure facilities like liquid nitrogen plant and containers, semen refrigerators, vehicles for distribution of semen and liquid nitrogen etc., will be provided at the bull station.

*Calf Feed Subsidy Programme (Outlay Rs. 100 lakhs)*

9.431 The project envisages distribution of concentrate feed to female cross-bred calves to bring them up properly. Since mal-nutrition of the high potential cross-breeds is a serious problem, this programme will help the weaker sections considerably. The small farmers, marginal farmers and agricultural labourers, especially those belonging to scheduled castes and tribes, will be the beneficiaries of this programme. The concentrate feed will be supplied to them at subsidised rate. The proposal is to cover 30,000 calves per year. It is expected to be implemented as Centrally sponsored programme. An outlay of Rs. 100 lakhs is proposed as the State's share. An amount of Rs. 500 lakhs is anticipated from the Centre for the programme.

9.432 A special animal husbandry programme providing feed subsidy to cross-bred calves and assistance for the development of poultry, piggery and sheep has been under implementation by the Animal Husbandry Department in the SFDA Districts of Trichur, Trivandrum and Cannanore. In order to avoid duplication of efforts, the Dairy Development Department and the Animal Husbandry Department will implement their calf feed subsidy programmes in mutually exclusive regions.

9.433 It is proposed to set apart 20 per cent of the outlay envisaged for calf feed subsidy programme for the exclusive benefit of scheduled castes and tribes.

*Heifer Rearing Project (Outlay Rs. 29.70 lakhs)*

9.434 Heifer rearing can be tried on a commercial scale by an agency like K.I.D. & M.M. Board utilising the land resources available with the Government. It is proposed to set up a heifer rearing farm which will have an annual out turn of 300 heifers.

*Establishment of a Herd Book Organisation (Outlay Rs. 20 lakhs)*

9.435 A Herd Book Organisation will have to be formed to control the cattle breeding and other activities. It will have facilities to maintain records of animals with the help of computerised service.

*Operation Flood Programme II (Outlay Rs. 1,075.59 lakhs)*

9.436 The National Dairy Development Board has conducted a survey in Kerala with the objective of formulating projects for dairy development and milk marketing. They have divided the entire State

into three milk sheds viz., Trivandrum, Ernakulam and Cannanore. As per the programme, in the potential area within the milk sheds, the farmers will be organised into milk producers co-operatives and the milk will be collected from the producer members and transported to the urban markets where it will be processed and sold. The primary societies will form the floor level organisation in each milk shed. The three unions of co-operatives (one in each milk shed) will be federated into a cluster federation at the State level. All inputs to the milk producers will be channelled through societies and the cost of the inputs will be recovered from the milk sold. The societies will be paid subsidies in early years for making them viable and finally they will become part of a self supporting organisation. This programme has great potential for employment in the farm as well as in the processing and marketing sectors. The outlay proposed is for organising the Operation Flood Programme II in the State during the Plan period. This programme will cover 4.17 lakh breedable cattle and the total quantity of milk processed through this will be 4.12 lakh litres per day. A feeder balancing dairy plant will be established with a handling capacity of 1,00,000 litres per day under this programme. Along with this the capacity of Ernakulam plant will be enhanced.

*Dairy Programme in Non-Operation Flood Areas (Outlay Rs. 170.66 lakhs)*

9.437 The proposal is to augment dairy development activities outside the area envisaged under Operation Flood II. Whereas in the Operation Flood Programme only the most potential area as well as the area which can be linked to the urban centres will be covered, the less potential areas which can also be developed in future as dairy production centres will be included under this programme. Ten C. D. Blocks in the State located outside the Operation Flood Area having a breedable cattle population of 10,000 each will be selected in a phased manner. Live Stock Producers Associations will be formed covering on an average 1,000 milch animals under each Association. The Associations will be provided with necessary infra-structure facilities. There will be provision for cultivation of fodder, breeding, manufacturing of milk products and limited marketing of fluid milk locally. The beneficiaries of this scheme will be small farmers, marginal farmers and agricultural labourers.

9.438 Subsidised feed will be distributed to pregnant cows and the calves will be provided with calf starter. The cost of insemination will be provided as subsidy under a package programme executed by the Bharatheeya Agro Industries Foundation.

**Research, Education and Training**

*9.439 Training of Departmental Staff (Outlay Rs. 10 lakhs).*

Under this scheme, it is proposed to impart training to the Departmental officers in various disciplines of dairying and also to the personnel of the milk co-operatives and dairy farmers.



*Progeny Testing Programme (Outlay Rs. 38 lakhs)*

9.440 Cross-bred bulls will have to be selected according to their ability to transmit milk production traits to their daughters. Only relatively superior bulls will have to be used in the breeding programmes. For this, milk recording of cows and test insemination with the semen produced from this will be analysed for the selection of future breeding bulls. Such a progeny testing programme is already in operation sponsored by the Government of India as a Central sector scheme. This will have to be augmented so that more bulls can be tested every year for replacement in the bull station. This scheme will be taken up for implementation by the Kerala Agricultural University.

**Feed and Fodder Development***Inter-cropping Fodder in Coconut Gardens (Outlay Rs. 10.95 lakhs)*

9.441 The project envisages cultivation of fodder as inter-crops in coconut gardens. At the initial stages vegetative materials can be used for production since adequate quantity of seed will not be available. The grass slips supplied will be charged but free transport will be provided.

*Catch Crops in Rice Fallows (Outlay Rs. 5.60 lakhs)*

9.442 The proposal is for cultivating pulses like cowpea, horse gram etc., as catch crops in rice fallows during the third crop season utilising the moisture available. Small and marginal farmers will be given subsidy at admissible rates for the purchase of seeds. The subsidy will be provided through co-operatives and other farmers' organisations. Green fodder produced during the third crop season will have better value since there will be acute shortage of good quality fodder during this period. Seeds of suitable varieties will be procured from neighbouring States of Tamil Nadu and Karnataka.

*Hay-making from Grass Lands and Inter-crops in Plantation (Outlay Rs. 12.75 lakhs)*

9.443 Milk societies will be encouraged to take up hay-making from natural grass lands in Idukki, Calicut and Cannanore districts. Hay crops can be raised in inter-spaces of forest plantations (Eucalyptus) in these tracks. The hay thus produced will form the Fodder Bank. A portion of the expenses (limited to Rs. 250 per ha.) will be subsidised to the societies. The hay produced will be sold at cost price to the landless cattle breeders.

*Establishing Nursery/Seed Gardens (Outlay Rs. 57 lakhs)*

9.444 For the massive fodder development programme production of planting materials through vegetative propagation will have to be undertaken. Sufficient quantity of seeds will be available through certified seed production programme. The fodder nurseries will have to be established in such a way as to minimise the cost of transportation. The cost of such nurseries will amount to Rs. 3,000 per ha. per year. The seedlings thus produced will be sold to the farmers at cost price.

*Planting of Fodder Trees (Outlay Rs. 15.75 lakhs)*

9.445 Under this programme, seedlings will be supplied at nominal cost for planting trees along hedges, borders and bunds. The local bodies will be encouraged to plant fodder trees in vacant spaces available with them. Forest Department can contribute much to this by planting fodder trees in forest areas adjacent to villages and allowing farmers to harvest and utilise it under definite terms. A subsidy at the rate of Rs. 500 will be provided for raising 8000 seedlings necessary for planting one hectare, for the first three years of operation. The seedlings will be given free of cost during the period and later sold at cost price.

*Establishment of a Research Organisation by Kerala Agricultural University (Outlay Rs. 11 lakhs)*

9.446 One of the major reasons for the poor performance in fodder production is lack of proper knowledge in this field. A lot of research work is required for selecting the varieties suitable to the different agro-climatic zones of the State and for evolving new varieties through breeding, studying the optimum management practices required for higher yields and preservation techniques etc. The Kerala Agricultural University may be vested with the responsibility of conducting research on suitable techniques to better the quality of paddy straw, utilisation of adequate plants and agricultural and industrial wastes, conducting fundamental research on fodder crop husbandry, plant breeding, etc.

*Training and Demonstration (Outlay Rs. 9 lakhs)*

9.447 It is proposed to impart training at three levels for the transfer of technology for specialists, field workers and farmers. About one per cent of the newly cultivated area will be treated as demonstration plots. The training programme should be entrusted with the Kerala Agricultural University and the publicity programmes with the Farm Information Bureau.

*Organisational set-up for Fodder Development (Outlay Rs. 23.29 lakhs)*

9.448 For implementing the fodder development programmes, an effective field organisation is necessary. Since most of the programmes are linked with the incentive dairy development activities and utilisation of fodder is equally important as its production, there should be clear demarcation of functions between the Department of Agriculture and the agencies involved in dairy development. Therefore, for all fodder development programmes carried out through the milk societies and KLD and M. M. Board, Milk Unions may function as the implementing agency. For the rest of the fodder development programmes, the Department of Agriculture can effectively provide supplies and services through their existing extension net-work. The KLD & MM Board will be suitably associated in the fodder production programme.

9.449 A Department of Forage Crops will be formed in the Kerala Agricultural University to organise research on various aspects of production, utilisation and preservation of fodder and development of natural grass lands.

*Establishing a Cattle Feed Plant (Outlay Rs. 40 lakhs)*

9.450 A Cattle Feed Plant will be established during the Plan period with a capacity of 100 tonnes per day. The production anticipated is 30,000 tonnes per year.

*Assistance to Milk Co-operatives for Fodder Production (Outlay Rs. 17.50 lakhs)*

9.451 Milk co-operatives will be given a subsidy to raise fodder in common land for landless cattle owners who are members of the society. Planting materials also will be collected from these plots for establishing new plots within the area by the members of the society.

TABLE 9.19  
Dairy Development—Scheme wise Outlay

		(Rs. in lakhs)			
Sl. No.	Scheme	Fifth Plan Outlay (1974-79)	1974-78 Expenditure	1978-79 Outlay budgeted	1978-83 Outlay Proposed
(1)	(2)	(3)	(4)	(5)	(6)
I.	Direction & Administration	3.00	2.80	1.50	15.00
1	Dairy Development Staff	3.00	2.80	1.50	15.00
II.	Dairy Development	254.00	99.61	28.35	727.30
1	Establishment of Milk Colonies	..	0.04	..	..
2	Rural Dairy Extension Service	..	38.91	21.00	125.00
3	Rural Dairy Centres	10.00	0.04	..	..
4	Establishment of Milk Chilling Centres	..	4.50	..	..
5	Milk Products Factory	..	..	..	71.50
6	Establishment of Cheese Plants	..	..	..	24.50
7	Strengthening and Expansion of the Bull Station and Semen Banks and other activities relating to cross breeding programme	25.00	24.42	3.35	..
8	Cattle Improvement Scheme	..	..	..	..
9	International Dairy Congress	..	0.20	..	..
10	Stipend to Cattle Improvement Assistants	4.00	4.71	..	..
11	Dairy Advisory Service (Half a Million Jobs Programme)	..	26.79	..	..
12	Rural Dairy Extension and Advisory Service	50.00	..	..	..
13	Intensive Dairy Production and Marketing Blocks	..	..	3.00	..
14	Programmes under K.I.D. & M.M. Board	165.00	..	..	255.20
15	Production of Buffalo Frozen Semen	..	..	..	15.40
16	Jersey Frozen Semen Development	..	..	..	86.00
17	Calf Feed Subsidy Programme	..	..	..	100.00
18	Heifer Rearing Project	..	..	..	29.70
19	Establishment of a Herd Book Organisation	..	..	..	20.00
III.	Operation Flood Programme II	70.00	49.52	9.05	1075.59
(a)	<i>Trivandrum Milk Shed</i>	5.00	4.98	..	196.58
1	Dairy Plant	..	..	..	25.00
2	Farmers Organisation	..	..	..	44.60
3	Technical Inputs	..	..	..	97.14
4	Others	..	..	..	29.84
(b)	<i>Ernakulam Milk Shed</i>	5.00	2.73	..	322.38
1	Dairy Plant, Chilling Plants and Marketing System	..	..	..	168.61
2	Inputs (Technical)	..	..	..	109.66

(1)	(2)	(3)	(4)	(5)	(6)
3	Farmers Organisation	..	..	..	42.71
4	Others	..	..	..	1.40
(c)	<i>Campanore Milk Shed</i>	40.00	33.98	8.85	273.96
1	Dairy, Plants, Chilling Plants and Marketing System	..	..	..	104.52
2	Inputs (Technical)	..	..	..	126.46
3	Farmers Organisation	..	..	..	41.92
4	Others	..	..	..	1.06
(d)	<i>Feeder Balancing Plants</i>	..	..	..	282.67
(e)	Quilon Milk Supply Scheme	5.00	0.57	..	..
(f)	Alleppey Milk Supply Scheme	5.00	5.34	..	..
(g)	Kottayam Milk Supply Scheme	5.00	0.25	..	..
(h)	Munnar Milk Supply Scheme	..	0.44	..	..
(i)	Trichur Milk Supply Scheme and Milk Products Factory	2.00	0.46	..	..
(j)	Calicut Milk Supply Scheme	3.00	0.77	0.20	..
IV.	Dairy Programme in Non-Operation Flood Area and Intensive Dairy Production Programme in Blocks	..	..	..	170.66
V.	Research, Education & Training	0.50	0.38	1.50	48.00
1	Training of Personnel	0.50	0.38	1.50	10.00
2	Progeny Testing Programme	..	..	..	38.00
VI.	Feeds and Fodder Development	17.50	93.60	52.60	202.84
1	Inter Cropping Fodder in Coconut Gardens	..	..	..	10.95
2	Catch Crop in Rice Fallows	..	..	..	5.60
3	Haymaking in Grass Lands & Inter-Crop in Plantations	..	..	..	12.75
4	Establishing Nursery Seed Gardens	..	11.98	3.50	57.00
5	Planting of Fodder Trees	..	..	..	15.75
6	Establishment of a Research Organisation by K.A.U.	..	..	..	11.00
7	Training & Demonstration	..	..	..	9.00
8	Organisational set up for Fodder Development	..	67.76	45.00	23.29
9	Establishment of Cattle Feed Plant	..	..	..	40.00
10	Assistance to Milk Co-operatives for Fodder Production	5.50	2.00	4.00	17.50
11	Improvement to the Sewage Farm, Valiathura	10.00	..	..	..
12	Scheme for enhancement of Fodder Production in the Sewage Farm, Valiathura (Sewage, Sullage Utilisation Scheme Centrally sponsored)	..	..	..	..
13	Survey & Statistics	2.00	..	..	..
14	Spillover Expenditure in Respect of Schemes Institutions Transferred to the Kerala Livestock Development and Milk Marketing Board	..	0.86	0.10 (Covered vide item no 14)	..
15	Establishment of Dairy Development Corporation	..	11.00	..	..
<b>Grand Total</b>		<b>345.00</b>	<b>245.91</b>	<b>93.00</b>	<b>2239.39</b>

## Fisheries

9.452 During the past fifteen years fishing industry witnessed many rapid strides. Between 1951-55 and 1974-77, the average annual sea fish production in Kerala went up from 1.31 lakh tonnes to 3.78 lakh tonnes, registering an increase of 190 per cent. Taking the annual variations into consideration, the marine fish landings in Kerala between the years 1950 and 1977 registered an overall growth rate of 6.6 per cent. For the country as a whole, the corresponding growth rate was 5.0 per cent.

9.453 The total fish production in the State in 1973-74 was estimated at 4.74 lakh tonnes. The contribution from the marine sector comprised as much as 4.53 lakh tonnes (95.6 per cent), the balance being that of the inland sector. In 1977-78 the estimated production of fish was however, only 3.65 lakh tonnes. While inland fish production moved upto 25,000 tonnes from 21,000 tonnes in 1973-74, marine fish production declined to 3.40 lakh tonnes from 4.53 lakh tonnes. The marine fish catches suffered an average annual fall of 6 per cent per annum during the four years of the Fifth Plan period as against a growth rate of 10 per cent during the Fourth Plan period. The fall in the production of oil sardine, mackerel and prawn could be attributed as the main factor responsible for this adverse trend. Production of oil sardine declined from 1.23 lakh tonnes in 1973 to 1.14 lakh tonnes in 1977, while production of mackerel from 20,000 tonnes to 19,000 tonnes and prawns from 85,000 tonnes to 40,000 tonnes. While landings of oil sardines and mackerels, which together account for the bulk landings of the State, are subject to heavy cyclic fluctuations, prawn landings normally range between 30,000 and 40,000 tonnes.

9.454 Marine catches by mechanised boats account for 20 per cent of the volume and 40 per cent of the value, the balance being contributed by traditional craft.

9.455 In 1973-74 Kerala exported 31,561 tonnes of sea food products valued at Rs. 57.75 crores as against 18,482 tonnes valued at Rs. 20.25 crores in 1968-69. In 1976-77 the exports increased to 31,595 tonnes in quantity and Rs. 90.12 crores in value. However, in 1977-78, both the quantity and the value of exports declined, the former to 29,819 tonnes and the latter to Rs. 77.44 crores. Over the four years of the Fifth Plan, the quantity of exports declined by 6 per cent while the value increased by 34 per cent. The frozen shrimp accounts for 85 to 90 per cent of the seafood export trade.

9.456 Fish accounts for about 80 per cent of the animal protein intake in Kerala. The per capita annual consumption of fish in 1973-74, based on total population, stood at 17.2 kg. For the fish eating population, the consumption of fish was 21.5 kg. per annum. The corresponding figures for 1977-78 stood at 11.8kg. and 14.8 kg. per annum. For the country as a whole the per capita availability of fish for internal consumption was much below at 3.5 kg. per annum for all people and 5.3 kg. per annum for the fish eating population.

9.457 In 1977-78, there were 254 ice plants/freezing plants/cold storages in the private sector and 26 plants in the public sector in the State. The total

ice production capacity was estimated at 2572 tonnes per day, freezing capacity 670 tonnes per day, fresh fish storage capacity 855 tonnes and frozen fish storage capacity 9143 tonnes. The public sector accounted for 211 tonnes of the ice production capacity, 39 tonnes freezing capacity, 610 tonnes cold storage capacity and 1570 tonnes frozen fish storage capacity. Freezing plants are mainly concentrated in Cochin and Quilon, but these plants are characterised by high unutilised capacity

9.458 The Fifth Plan aimed at a production target of 7 lakh tonnes (6.75 lakh tonnes from the marine sector and 0.25 lakh tonnes from the inland sector). The additional production anticipated over the Fifth Plan period was 2.25 lakh tonnes (47 per cent increase) at an envisaged growth rate of 8.1 per cent per annum. The increase in the additional catches was expected mainly through the addition of 540 mechanised boats and 20 trawlers in the State sector and an equally large number of boats and trawlers in the private sector.

9.459 The estimated level of achievement in 1977-78 is 3.65 lakh tonnes—3.40 lakh tonnes from the marine sector and 0.25 lakh tonnes from the inland sector. Besides the failure in the catches of the principal fish species, the shortfalls in the expected additions to mechanised fishing boats and vessels also constituted to the low level of production during the four years of the Fifth Plan period. The mechanised boats introduced during 1974-78 number 125 small boats and 4 trawlers in the state sector. The additional catches from these units as well as from those introduced in the private sector together would be around 26,000 tonnes in 1977-78.

9.460 The outlay envisaged for fisheries development in the draft Fifth Plan of the State was Rs. 16.25 crores. Of this as much as Rs. 9.07 crores was earmarked for small boat mechanisation and deep sea fishing vessels. The proposal to introduce 540 mechanised boats and 20 trawlers was contemplated against this outlay. However, when the plan size for fisheries was pruned to Rs. 11.60 crores, the outlays for mechanisation and deep sea fishing were reduced to Rs. 3.02 crores and Rs. 1.10 crores respectively, (total Rs. 4.12 crores). No corresponding revision was effected in the physical target for mechanised boats as well as total fish production. With the reduced outlay it would have been possible to introduce only less number of boats and trawlers.

9.461 The target set for refrigeration facilities comprised 2 cold storage plants, 2 ice plants and 2 freezing plants. Out of this, one ice cum freezing plant with storage facilities was commissioned in 1975-76. The Baliapatam ice plant with freezing and storage facilities has nearly been completed.

9.462 The harbour projects under construction in the centrally sponsored sector comprised Vizhinjam, Neendakara and Beypore which would provide landing and berthing facilities to small, medium and large vessels. Mopla Bay and Baliapatam were also to be developed for providing berthing facilities for small mechanised boats. Very little progress has been achieved in the construction of these harbour projects, the main reason being delay in the finalisation of designs as well as paucity of funds. The Central Sector Harbour Project at Cochin initiated during the Fourth Plan period has been completed and commissioned.

9.463 Under inland fisheries, it was targeted to have 12 seed farms by the end of the Fifth Plan. But for the existing seed production facilities no additional farm could be set up on account of procedural delays. The level of spawn production in the State is estimated to have gone up from 5 millions to 7 millions and production of fry/fingerlings from 2.5 millions to 3 millions during 1974-78. The fingerlings were mainly used for stocking reservoirs, developing small water areas, etc. For improving the housing facilities of the fishermen, a housing programme has been under implementation since the beginning of the Third Plan. Till the end of the Fourth Plan 1743 houses were built for fishermen. During 1974-78, 440 houses have also been constructed.

9.464 The revised outlay envisaged for fisheries development during the Fifth Plan period was Rs. 11.60 crores. The expenditure during the first four years of the Plan (1974-78) amounted to Rs. 7.77 crores (67 per cent). The amount earmarked for inland culture fisheries was only Rs. 54.50 lakhs. The expenditure on this item during 1974-78 was Rs. 22.39 lakhs (41.1 per cent of the target). A major chunk of the outlay was earmarked on programmes like mechanisation and improvement of fishing craft and deep sea fishing which together accounted for Rs. 412 lakhs (35.5 per cent of the total outlay). While no expenditure was incurred under deep sea fishing programme, about 67 per cent of the provision set apart for the mechanisation programme was spent during 1974-78. The other items included in the Fifth Plan were (i) assistance to traditional fishermen, (ii) repairs and refitting facilities, (iii) assistance to co-operatives, (iv) housing and colonisation, (v) assistance to Kerala Fisheries Corporation, (vi) approach roads and (vii) ARDC schemes. They covered 46 per cent of the total outlay for fisheries. The expenditure over the years 1974-78 was 88.9 per cent of the target. The assistance rendered to the Kerala Fisheries Corporation amounted to Rs. 181.07 lakhs as against the target Rs. 100 lakhs. The aid given to the co-operatives totalled Rs. 56.78 lakhs compared to the target of Rs. 125 lakhs. For housing and colonisation, the amount spent stood at Rs. 78.96 lakhs. An amount of Rs. 75.09 lakhs was spent for roads and Rs. 33.93 lakhs for ARDC schemes at selected centres.

9.465 For the Centrally sponsored schemes the total expenditure anticipated during 1974-78 was Rs. 189.08 lakhs. The expenditure on the harbour projects and landing centres was estimated at Rs. 173.76 lakhs.

9.466 The main thrust of the development efforts in the past had been catching prawns and processing the same for exports. Consequently modern techniques of fishing other species like oil sardine, mackerel, white baits and perches in the offshore waters have not been developed so far. Purse-seining of shoal fishes like oil sardines and mackerels will help to increase the fish landings considerably. At present shrimp trawling in inshore waters for prawns seems to have reached an optimum level.

9.467 Exploitation of deep sea resources and tuna resources needs large ocean going vessels. These vessels necessarily have to be imported from abroad for which considerable amount of foreign exchange is required.

9.468 The absence of harbour facilities for mechanised fishing boats, particularly for large trawlers and other fishing vessels, has retarded the progress of off-shore and deep sea fishing development. Though attempts had been made for provision of a number of fishing harbours in the earlier plans, so far only Cochin could be commissioned. The harbour projects at Vizhinjam, Neendakara and Beypore have not made any significant progress as yet. Unless these harbour projects too are completed it will be difficult for the State to promote off-shore and deep sea fishing activities covering the entire coast of Kerala.

9.469 While there is no dearth of trained manpower for operation of small mechanised boats, the availability of qualified skippers and marine engineers for manning large vessels is short of demand. The training facilities offered by the Central and State Government institutions do not cater to these requirements fully.

9.470 The traditional fishermen are heavily exploited by the middlemen financiers and merchants. The rates of interest charged by them are exorbitant. The producer fishermen are not able to exercise any right for bargaining a fair price for their catches. The fishermen co-operatives have so far not succeeded in liberating the fishermen from exploitation by middlemen. Perhaps the most serious constraint faced by the traditional fishermen is the problem of evolving a suitable agency for marketing their catches in the right manner and realisation of a fair price thereof.

9.471 The lacuna of non-availability of reliable economic data has made proper assessment of past performance of fishery development activities as well as appraisal of fishery programmes difficult.

#### *Marine Resource Potential*

9.472 The marine resource potential of the south west coast comprising Kerala, Karnataka and Goa from 200 m. depth range is estimated at 14.20 lakh tonnes, as against the existing average production of 5.30 lakh tonnes, the additional production potential being 8.90 lakh tonnes. Of this, the share of Kerala is about 80 per cent.

9.473 The additional yield is expected out of more intensified exploitation of the inshore waters for conventional varieties like the oil sardine mackerel and other species like white baits, cat fishes and carangids. Farther beyond the shelf in the slope, we have an exploitable potential of deep water prawns and lobsters, especially off Quilon. The offshore and deep sea resources comprise extensive fishable stock of white baits, carangids, ribbon fishes, cat fishes, tuna like fishes, rockcods, threadfin breams and cephalopods.

9.474 The Wadge Bank which is located about 40 km. south of Vizhinjam provides rich fishing grounds for high quality perches, sharks, caranx, catfishes and balistids during the south west monsoon. The Pelagic Fishery Project, Cochin, has estimated the yield potential of the area at 73,000 tonnes.

#### *Inland and Culture Fishery Potential*

9.475 The inland water area comprises an extent of over 3,55,000 ha. The rivers account for 85,000 ha. tanks and ponds 3,300 ha. reservoirs 24,100 ha. and

brackish water, lakes back-waters and estuaries 2,42,600 ha. By the application of the available technology, it is feasible to raise the present yield rate of 5 kg./ha/yr in the reservoirs and 500 kg. of fish/ha/yr in the ponds and tanks to 20-30 kg/ha/yr and 3000 kg. of fish/ha/yr respectively. The requirements of seed for reservoirs and ponds could be met by enlarging the facilities, equipment and staff at Malampuzha and Pannivelichira.

9.476 Of the total brackish and backwater area, it is estimated that about 1,20,000 ha could be brought under brackish water fish/prawn culture in the long run. On an average 500 ha of water area could be converted into farms every year. By adopting improved techniques of culturing fast growing species it is possible to achieve a production rate of 1500-2000 kg/ha/yr and realise higher unit price. About 60 per cent of the prawn seed requirement could be met from those available in nature and the balance could be ensured through seed production centres.

9.477 The shallow inshore sea too provides scope for the culture of marine organisms such as mussels, oysters, prawns and sea weeds. While it is possible to raise an yield rate of 300 tonnes of mussel/ha/year, a production rate of 60-100 tonnes/ha/yr. has been obtained in field experiments. A pilot project on pearl culture is being carried out at present at Vizhinjam to demonstrate its commercial viability. A similar project on mussel is also being implemented in the Vizhinjam Bay. Mussel is also cultured in the open shallow sea off Calicut.

#### 9.478 Policies, Objectives and Strategy of 1978-83 Plan.

The broad policies to be adopted under fisheries in the Plan are indicated below:-

(i) Contrary to the emphasis given in the earlier Plans for shrimp trawling, the 1978-83 Five Year Plan will lay considerable stress on diversified fishing.

(ii) A good beginning will be made for the planned exploitation of the offshore and deep sea resources, including the tuna resources of the Indian Ocean.

(iii) Culture fisheries will be organised on a massive scale.

(iv) In the development of fisheries, the main focus of attention will be on improving the socio-economic conditions of fishermen.

#### 9.479 The objectives of the Plan are:-

(i) increasing considerably the annual fish production both in the marine and inland sectors;

(ii) organising small mechanised boats for diversified fishing for pelagic and demersal fishes;

(iii) organising purse-seining in offshore waters for anchoviella, oil sardine and mackerel;

(iv) exploitation of the deep sea perch resources in the Wadge Bank and the deep sea prawn and lobster resources in the slope of the continental shelf off Quilon;

(v) evolution of a suitable programme for exploitation of the Tuna resources of the Indian Ocean;

(vi) provision of substantial assistance to the development of the traditional sector including provision for an intermediate technology;

(vii) organisation of culture fisheries on a massive scale in the reservoirs, ponds and tanks, Kuttanad paddy fields, brackish waters and shallow protected seas;

(viii) provision of necessary infrastructure facilities for handling, processing and marketing of fish at principal landing centres;

(ix) reorganisation of fishermen co-operatives to ensure production, supply and marketing on an area development basis with emphasis for establishment of Regulated Markets at selected centres;

(x) provision of better housing facilities, social amenities including relief measures for fishermen;

(xi) provision of necessary research and development support to the envisaged fishery programmes.

9.480 The 1978-83 Plan envisages increase in the fish production in the State from 3.65 lakh tonnes to 5.65 lakh tonnes. Of the additional production as much as 1.80 lakh tonnes is expected from the marine sector and 0.20 lakh tonnes from the inland sector. The targeted production estimates for marine and inland sectors at the end of the Plan period are 5.20 lakh tonnes and 0.45 lakh tonnes respectively. The growth rate in fish production anticipated during 1978-83 Plan period works out to 9.1 cent per annum.

The vessel and production targets envisaged are shown here under:

1. State Sector (Marine)	Vessels (No.)	Catches (Tonnes)
(a) Mechanised Sector		
(i) Small boats (9.8 m.)	170	17,000
(ii) Purse-seiners (13.4 m.)	90	58,560
(iii) 20 m. Combination vessels	20	10,000
(iv) 23m. Combination vessels	10	8,000
(v) Tuna Super Seiners	3	14,400
Sub Total (a)	293	1,07,960
(b) Non-Mechanised sector	Crafts No.	Catches (Tonnes)
(i) Dorry fishing (Craft)	1200	6,600
(ii) Supply of craft and gear	1100	16,000
Sub-Total	2300	22,600
Total (a+b)		1,30,560
(c) Mariculture in Open Shallow sea (Mussel Meat)		25,000
Total (a+b+c)		1,55,560
2. Private Sector (Marine)		25,000
Total marine Sector (Rounded)		1,80,000

## 3. Inland and Culture Fisheries Sector

	<i>Area (Ha.)</i>	<i>Production (Tonnes)</i>
(i) Reservoirs	9,000	180
(ii) Ponds and tanks	2,500	7,500
(iii) Kuttanad	20,000	10,000
(iv) Brackish water	2,000	2,000
Total (Rounded)	33,500	19,680 (20,000)
Total additional production (Marine + Inland)		
		2,00,000

9.481. The strategy envisaged for increasing fish catches is the promotion of diversified fishing by all types of mechanised boats and fishing vessels. The 9.8 m boats will do mid water trawling for anchoviella during August-January besides bottom trawling for shrimp and miscellaneous fish during February-May. As a result the catch per boat on an average is expected to go up from 60 tonnes to 100 tonnes per annum. The fishermen will be given training in diversified fishing at the fishermen training centres and will be supplied with fish trawls along with mechanised boats. The purse-seine operations will yield about 600 tonnes per season at the rate of 5 tonnes per fishing day. The operations by 9.8 m boats as well as 13.4 m vessels will be organised and managed by fishery executives. The 13.4 m. vessels will do purse-seining during August-January and high open trawling and Kalava fishing during February-May. The combination vessels are to operate in the Wadge Bank for perches and on the slope of the continental shelf off Quilon for deep sea lobsters and deep sea prawns. The 20 m vessels will yield on an average 500 tonnes per annum while the 23 m vessels 800 tonnes per annum. The super-seiners will undertake the exploitation of the tuna fishery resources in the Indian ocean within the Economic Zone. As we have neither the vessels suitable for tuna fishing nor the expertise, the programme shall be undertaken in collaboration with foreign assistance.

9.482 The traditional fishermen will be issued canoes and catamarans for fishing through the Kerala Fishermen's Welfare Corporation. Arrangements will be made with the Forest Department for the supply of timber required by the fishermen for making their fishing craft. In order to provide the fishermen the benefit of an intermediate technology all the 13.4 m boats will involve selected groups of canoes in purse-seining at the rate of 10 canoes/boat. For hand-lining operations, canoes and catamarans will be tugged to the fishing grounds and back by the mother boats (13.4 m. vessels). This will help them to increase their catches by extending their actual fishing time and ensure the quality by icing the fish in the sea itself with the help of the mother boats.

9.483 For stepping up inland fish production, the strategy proposed involves the following measures:

(i) development of reservoir fisheries through better fishing techniques, increased stocking of suitable

species of fishes and rehabilitation of fishermen in the reservoir areas, (ii) establishment of organised culture fisheries in ponds and tanks; (iii) undertaking of polyculture in brackish water areas; (iv) developing mariculture in inshore waters and (v) ensuring necessary infrastructure facilities including supply of seeds, provision for nurseries, training facilities and extension.

9.484 In order to organise regulated markets infrastructure facilities like auction hall, storage, provision for ice, approach road, fresh water and curing sheds will be provided at each development centre. All fish landed in each development centre will be brought to the auction hall, where it will be publicly auctioned by specially trained leaders of fishermen's co-operative organisation. Only registered traders will be allowed to participate in the auctions. Necessary legal protection will have to be sought for this. The system will help to ensure elimination of exploitation of fishermen by middlemen and enable the payment of a fair price for their catches.

9.485 In order to step up the research and development support for the fishery development programmes, the strategy proposed is to organise a co-ordinated programme so that duplication of efforts could be minimised and greater efficiency achieved in this direction. While the Kerala and Cochin Universities will undertake the entire aquatic biological research relevant to development of fisheries in the State sector, the Kerala Agricultural University will take care of the applied research and training programmes in the field of inland and culture fisheries. The Department of Fisheries will be mainly concerned with extension, research, communicating the results of scientific works and technological developments to the fishermen and fishing industry. A fishery college will be set up in the State under the Agricultural University so as to meet the long term requirements of scientific and business executives to run fishery development activities in the State.

9.486 The total investment envisaged for the implementation of plan schemes for the development of fisheries in Kerala during the period 1978-83 amounts to Rs. 102.92 crores. Of this, the State plan outlay proposed constitutes Rs. 55.74 crores. The amount anticipated under the Centrally sponsored sector is Rs. 16.68 crores. The extent of finance expected from institutions like ARDC, HUDCO and Commercial Banks is of the order of Rs. 17 crores. Foreign assistance to the tune of Rs. 13.50 crores is also anticipated for organising tuna fishing.

9.487 Of the total State sector outlay, the schemes of a continuing nature involve a total provision of Rs. 28.34 crores. The outlay proposed for the new schemes amounts to Rs. 27.40 crores.

9.488 The requirements of manpower for the fishing vessels during the period are indicated in Table 9.20

TABLE 9.20

## Manpower Requirements of Fishing Vessels

Category (1)	Types of vessels				Total (6)
	9.8m (2)	13.4m (3)	20m (4)	23m (5)	
1 Skipper	..	..	20	10	30
2 Mat	..	..	..	10	10
3 Bosun	170	90	20	10	290
4 Chief Engineer	..	..	..	10	10
5 Chief Engine Driver	..	..	20	..	20
6 Engine Driver I	..	..	..	10	10
7 Radio Operator	..	..	..	10	10
8 Engine Driver II	170	90	20	..	280
9 Fishing Hands	510	450	100	100	1160
10 Engine Room Asst.	..	..	20	10	30
11 Cook	..	..	20	10	30
Total	850	630	220	180	1880

9.489 The crew for the super seiner will be partly Indian and partly foreign. The category of personnel required for the super seiner fishing programme can be assessed only when the details of the proposed project are worked out. The fishermen needed for

operating the proposed catamarans and canoes number about 7,000.

9.490 The requirements of personnel for the culture fishery programmes are indicated in Table 9.21

TABLE 9.21

## Personnel for Culture Fisheries

Field (1)	Senior Development Officers (2)	Development Officers (3)	Technical personnel (4)	Operatives (5)	Total (Cols. 2 to 5) (6)	Fishermen/Pisciculturists (7)
1 Reservoir Fisheries	3	26	105	200	334	1200
2 Fresh water fish culture	2	10	20	50	82	1800
3 Paddy cum fish culture at Kuttanad	2	6	10	25	43	12000
4 Brackish water fish/Prawn culture	2	25	80	40	147	4000
Mariculture	2	10	100	100	212	5000
Total	11	77	315	415	818	24000

9.491 Nearly 820 technical personnel are required for the implementation of the programme. In addition to this the fishermen and others will have to be organised to take up the culture operations including watch and maintenance of the farms. The implementation of other programmes like setting up of ice-cum-freezing plant, development of fishing harbours, organisation of regulated markets, and research and development including establishment of a fishery college requires large number of technocrats and administrators,

besides skilled and unskilled workers. The handling and marketing of the additional catches will generate further demand for manpower.

9.492 The programmes when implemented will produce an additional output of two lakh tonnes of fish. The gross value of the total additional production is estimated at Rs. 41 crores in 1982-83. The additional foreign exchange earnings will be of the order of Rs. 50 crores at the end of the Plan period.



9.493 The development programmes will help to generate regular employment for over 41,000 persons by 1982-83. Of these, 34,000 will be engaged in actual fish production programmes, the culture fisheries including the mariculture programme accounting for nearly 24,000. The employment from the construction phase of activities as well as that resulting from the forward and backward linkages will also be of a substantial magnitude. (In the calculation of employment, tuna fishing is not taken into account). Fishermen will have the larger benefits of the share of employment opportunities.

9.494 The quantity available for consumption from additional production, anticipated through the programmes will be 6.2 kg per capita/annum for all population and 7.8 kg per capita/annum for the fish eating population.

9.495 Establishment of development centres assured of package of facilities will ensure setting up of regulated markets for the primary sale of fish. This will free the producer fishermen from exploitation by the middlemen. The educational and social amenities of fishermen will be improved considerably by starting a Regional Fishery Technical High School each in six more districts, a Fishery College, Fishermen Relief Fund and Contributory Provident Fund during the Plan period. The housing problem of the indigent fishermen too will be solved simultaneously to a great extent.

### **Plan Proposals for 1978-83**

#### *Direction and administration*

#### *Strengthening of the administrative machinery (Outlay Rs. 50 lakhs)*

9.496 The existing administrative set up in the Directorate of Fisheries is quite inadequate to implement efficiently the various proposals for fisheries development during 1978-83, which envisage a several fold increase in Plan expenditure. Considering the imperative need for a thorough overhauling of the administration, a provision of Rs. 50 lakhs is proposed for this purpose.

#### *Extension (Outlay Rs. 25 lakhs)*

9.497 The State Department of Fisheries has a small extension wing. But the unit has not been able to keep the fishermen and the industry apprised of technological advancements, results of applied research etc. It is, therefore, proposed that a full fledged extension machinery be set up in the Department similar to the Farm Information Bureau for crop production and animal husbandry. This is particularly necessary in view of the massive culture programmes proposed to be taken up during the Plan period involving large number of fishermen and farmers. Besides organising the conventional publicity media like visual education, camps, seminars and exhibitions, the unit will have to undertake extension research like organisation of demonstration farms.

#### *Strengthening of Planning and Statistical Cell (Outlay Rs. 15 lakhs)*

9.498 Despite the importance attached to fisheries development, fisheries statistics continues to be a neglected subject. Reliable information on the inventory of fishing craft and gear, fishermen, input and output prices etc is hardly available. It is, therefore, proposed that the Planning and Statistical Cell in the Department may be suitably strengthened.

#### *Inland Fishing*

#### *Development of Reservoir Fisheries (Outlay Rs. 84 lakhs)*

9.499 The programme envisages development of 9000 ha. of reservoir areas during the Plan period. The important components of the project are:

- (i) Survey of fish fauna of the rivers before being impounded,
- (ii) clearance of submerged obstructions excluding the protected areas,
- (iii) strengthening of facilities at Malampuzha and Pannivelichira to produce adequate seed,
- (iv) establishment of nursery facilities at all the major reservoirs,
- (v) eradication of predators from reservoirs,
- (vi) stocking of reservoirs with locally preferred species,
- (vii) survey of spawning grounds,
- (viii) rehabilitation of fishermen facilities,
- (ix) harvesting and marketing and
- (x) establishment of fishermen co-operatives.

9.500 Of the outlay proposed, the provision earmarked for survey, improvement and development of reservoirs amounts to Rs. 28 lakhs and that for seed production Rs. 56 lakhs.

9.501 The implementation of the project is expected to augment productivity from the present level of 5 kg./ha./yr. to 20 kg./ha./yr. The total annual yield anticipated is 180 tonnes by 1982-83. Over and above the production of fish, development of reservoirs will help to produce large supplies of fish seed.

#### *Fish Culture in Ponds and Tanks (Outlay Rs. 155 lakh)*

9.502 The Programme is to bring 2,500 ha. of ponds and tanks in the State under fish culture by the end of the Plan period. The components of the projects are:

- (i) seed production through breed stock maintenance, induced breeding through hypophysation technique and mass rearing and nursery facilities;
- (ii) field culture operations;
- (iii) leasing of ponds/tanks for fishermen on long term basis; and
- (iv) organisation of fish culture demonstration farms in public tanks; and
- (v) incentive to fish farmers.

9.503 The incentives may be given in the form of free fingerlings and feed materials valued at the rate of Rs. 3000/ha for one year. Over and above the outlay proposed institutional finance of the order of Rs. 75 lakhs is anticipated for the investment towards development of ponds and tanks. The implementation of the project will yield 3,000 kg/ha. as against the present level of 500 kg/ha. The total yield from this programme during 1982-83 is estimated to be 7,500 tonnes. The project will provide employment for about 1,900 persons.

*Fresh Water Paddy cum Fish Culture (Outlay Rs. 50 lakhs)*

9.504 The scheme aims at integrated development of crop cum fish culture in the low lying paddy fields of Kuttanad. The proposal is to develop paddy cum fish culture in 20,000 ha. Following one crop of paddy, the water will be utilised for fish and prawn culture. The items of work include (i) survey of the area to assess the potential, (ii) selection of suitable species for culture in the paddy fields, (iii) production of adequate seed, (iv) culture operations suitable for the area and (v) harvesting and marketing. For meeting the seed requirements, a seed production centre will be established in the project area. Besides the proposed provision, institutional finance to the extent of Rs. 160 lakhs is anticipated for the actual operations.

9.505 When implemented fully the project is expected to yield 10,000 tonnes of fish and prawns/annum at the rate of 500 kg/ha/yr. The project will provide employment to over 12,000 persons.

*Culture of the Giant Fresh Water Prawn (Outlay Rs. 35 lakhs)*

9.506 The giant fresh water prawn is ideally suited for culture in the fresh water as well as low saline areas. It grows to a large size and fetches high unit prices. Although the techniques of breeding and rearing of this prawn have been developed, mass production of seed and large scale culture are yet to be accomplished. The outlay proposed is for developing suitable techniques for mass production of seed and their further culture in the field.

*Brackish Water Fish/Prawn Culture (Outlay Rs. 338 lakhs)*

9.507 This is a scheme for rehabilitating the traditional inland fishermen. The project area comprises the estuarine and brackish water regions of the State. A minimum of 500 ha. could be converted into brackish water fish farm every year. By 1982-83, 2000 ha. will be additionally brought under the programme.

9.508 The main components of the project are (i) production of adequate stockable prawn/fish seed, (ii) identification and selection of suitable brackish water area for culture operation, (iii) construction of fish prawn farms and supply of inputs, (iv) culture operation including integrated crop-livestock-prawn/fish culture, (v) harvesting and (vi) marketing.

9.509 The prawn and fish seed requirements could be met either from the natural sources or from the hatcheries to be established for the purpose. Twenty hatcheries will be set up to meet the prawn seed requirements. The seed production activities are to be organised by the Department of Fisheries. A Fish Farmers' Development Agency will be set up for promoting the brackish water fish/prawn culture.

9.510 The outlay proposed comprises Rs. 8 lakhs towards survey of sites, Rs. 160 lakhs for hatchery establishments, Rs. 70 lakhs for seed production and Rs. 100 lakhs for construction of farms. The programme when implemented will yield 2000 tonnes of fish/prawns at the rate of 1000 kg./ha./year. At the rate of half a hectare per person for culture, watch, maintenance and harvesting the proposal will benefit 4,000 fishermen.

*Mariculture (Outlay Rs. 156 lakhs)*

9.511 The investigations of the Central Marine Fisheries Research Institute have shown that the marine organism such as prawns, mussels, pearl and edible oysters and sea weeds could be cultured in the lagoons, bays and in the inshore sea. Utilising the expertise developed by the Institute, the Department of Fisheries is currently carrying out pilot projects, one each on pearl culture and mussel culture at Vizhinjam and a Co-operative project on intensive prawn farming at Njarakkal. The programme will be taken up as a co-operative venture involving the fishermen/fish farmers and the Government.

9.512 Major components of the project are (i) selection of suitable sites for mariculture, (ii) selection of suitable species, (iii) input supplies such as rafts/trackles, seed and other equipments, (iv) culture operation and (v) harvesting and marketing.

9.513 The programme envisages organisation of mariculture in 50 fishing villages along the coast of Kerala involving 5,000 fishermen at the rate of 100 fishermen/village. Besides the outlay provided in the State Sector, it is expected that an amount of Rs. 420 lakhs will be available from institutional agencies for implementing the project. By bringing 250 ha. under mussel culture, it will be possible to raise 75,000 tonnes of shell-on-mussels per year (25,000 tonnes of mussel meat/annum). The mussel meat is a cheap protein food while the shells can be used as industrial raw material and to a small extent as poultry feed. The indirect employment in mussel culture too is high.

*Patrolling in Backwaters (Outlay Rs. 10 lakhs)*

9.514 This is a continuing scheme. The amount is for purchase of boats for patrolling in the backwaters, etc. The scheme is important in view of the high incidence of illicit fishing and the need for conservation of resources in the backwaters.

*Research, Education and Training*

*Research on Marine Fisheries (Rs. 9.50 lakhs)*

9.515 The programme covers the approved outlay for 1978-79. The Department of Fisheries henceforth will continue to do only extension research.

*Assistance for Aquatic Biological Research by Kerala and Cochin Universities (Outlay Rs. 50 lakhs)*

9.516 There are well organised Departments in both Kerala and Cochin Universities with highly qualified staff. An investment of Rs. 25 lakhs for each Department for doing aquatic and marine biological research will be beneficial for the advancement of fisheries in the State.

*Assistance to Kerala Agricultural University for Inland Fisheries Research and Setting up of a Fishery College (Outlay Rs. 50 lakhs)*

9.517 The scheme provides financial assistance of the order of Rs. 25 lakhs to the Kerala Agricultural University for carrying out applied research in inland culture fisheries during the Plan period. Provision is also made to the extent of Rs. 25 lakhs for setting up a Fishery College under the Agricultural University. Post Matric courses in Fisheries including B.F.Sc. and M.F.Sc. courses will be organised in the college. A few fellowships will also be provided for advanced research in fisheries.

*Strengthening of Brackish Water and Inland Research Establishments (Outlay Rs. 10 lakhs)*

9.518 The outlay proposed is for strengthening the brackish water and inland water research establishments which will serve as extension research units.

*Establishment of Regional Fishery Technical High Schools (Outlay Rs. 20 lakhs)*

9.519 At present there are only 3 regional fishery technical high schools, one each in Trivandrum, Ernakulam and Cannanore. The proposal is to set up 6 more regional fishery technical high schools in the other districts, except Palghat and Idukki.

*Development of Fishermen Training Centres (Outlay Rs. 22 lakhs)*

9.520 The outlay proposed is for improving the training facilities at the fishermen training units so that the trainees get better proficiency in the handling and management of different kinds of marine engines, mechanised boats, navigational equipment, etc.

*Inservice Course for Technical Personnel (Outlay Rs. 15 lakhs)*

9.521 The provision is intended for organising specialised orientation courses for the benefit of technical personnel in the Department of Fisheries.

*Establishment of a Market Research Unit (Outlay Rs. 9.50 lakhs).*

9.522 The scheme aims at organising a Market Research Unit in the Department of Fisheries. This unit will conduct studies on problems relating to marketing of fish, provide market intelligence service and assist in the organisation of regulated markets for primary sale of fish in the State. It will also function in close collaboration with the Planning and Statistical Cell in the Directorate.

*Training of Pisci-Culturists (Outlay Rs. 20 lakhs)*

9.523 The outlay proposed is for providing training to 10,000 fishermen/fish farmers in modern fish culture techniques. The Kerala Agricultural University will organise the training in co-operation with the Department of Fisheries and the Central Marine Fisheries Research Institute.

*Marine Fishing*

*Small Boat Mechanisation for Diversified Fishing (Outlay Rs. 255 lakhs)*

9.524. The programme is to introduce 170 mechanised boats (9.8 m. size) during the Plan Period. The boats will be operated from Vizhinjam, Azhikode,

Beypore and Baliapatam with a fleet size of 50, 40, 40 and 40 boats respectively at each centre. The operation will be organised on the pattern of the ARDC sponsored fishing project at Pudiappa. The boats will do pair-trawling in midwater mainly for anchoviella during the months of August-January. The pair-trawling is expected to yield on an average 120 tonnes of fish per unit of 2 boats. During February-May the boats are to undertake single bottom trawling for demersal fishes and crustaceans. The anticipated yield from these operations will be at the rate of 40 tonnes per boat. The total production expected from all the boats is 17,000 tonnes. The programme will provide direct employment for about 850 fishermen. The Director of Fisheries may be authorised to register all mechanised boats operating in the waters of Kerala coast.

*Purse-seining (Outlay Rs. 70 lakhs)*

9.525 The project aims at introducing 90 boats of 13.4 m. size for purse-seining. The boats will be introduced at Cochin, Azhikode, Beypore and Cannanore, the proposed fleet size for each centre being 24, 16, 30 and 20 boats respectively. The boats will be issued to groups of fishermen on hire purchase basis. But fishing will be organised and managed by a Project Officer at each centre. The boats are expected to do purse-seining for 6 months from August to January for oil sardine and mackerel. The average catch expected is 600 tonnes per boat at the rate of 5 tonnes per fishing day. During February to May, 60 of the boats are expected to go in for "Kalava" hand-lining, which on an average will yield 36 tonnes of rock cod per boat at the rate of 0.5 tonne/fishing day. Thirty boats will undertake high open trawl fishing during these months for cat fish, ribbon fish etc. The average catch anticipated is 80 tonnes per boat at the rate of one tonne per fishing day.

9.526 The different types of operations by all boats are expected to yield 58,560 tonnes per annum. The cost of a 13.4 m. boat with its accessories is estimated at Rs. 5.14 lakhs. Besides the outlay envisaged, bank finance is anticipated to the extent of Rs. 370 lakhs. The scheme will provide employment to 630 persons.

*Deep Sea Fishing (Outlay Rs. 1135 lakhs)*

9.527 At present there are only 22 large fishing vessels operating in the waters of Kerala coast of which 12 belong to Central Government organisations doing exploratory cum commercial fishing. No dent has so far been made in the exploitation of the known resources in the offshore and deep sea waters. The programme aims at introducing 30 combination vessels, 20 of 20 m. size and 10 of 23 m size. The bases of operations will be Vizhinjam and Cochin. The vessels will undertake three types of operations viz. (i) lobster trawling in February-April for deep sea lobster and prawns, (ii) high open trawling in May-August for cat fish, ribbon fish and miscellaneous fish, and (iii) trawling in Wadge Bank in October-January for assorted perches.

9.528 The average output from the first type of operation is expected to be 100 tonnes in respect of the 20m. vessel and 150 tonnes for the 23m. vessel. High open trawling as well as trawling in Wadge Bank is expected to yield the same level of catches. The two operations together will produce 400 tonnes in the

case of 20m. vessel and 650 tonnes for 23m. vessel. The total fish production anticipated from all the 20m. vessels is 10,000 tonnes and that from all the 23m. vessels is 8,000 tonnes.

9.529 The vessels will be operated by the Kerala Fisheries Corporation. The Corporation will be rendered assistance for the efficient management of the vessels and marketing of the catches. The cost of a 20m. vessel is Rs. 31 lakhs and that of a 23m. vessel is Rs. 51.50 lakhs. The total investment required for the project towards cost of the vessels and gear amounts to Rs. 1135 lakhs. The vessels will have to be imported from abroad. Four hundred persons will get direct employment through the Project. The implementation of this programme is also important for the development of Vizhinjam Harbour Project.

#### *Tuna Fishing (Outlay Rs. 150 lakhs)*

9.530 The declaration of the 200 mile Economic Zone makes it imperative to exploit the tuna resources of the Indian Ocean, which now fall within our exclusive fishing rights. But we have neither the vessels nor the expertise to go in for tuna fishing by ourselves without suitable collaboration with specialised agencies. The outlay provided is the state share of the total investment estimated at Rs. 1,500 lakhs. The proposal is to introduce 3 superseiners during the Plan period. The rest of the investment required for the project (Rs. 1350 lakhs) is expected by way of foreign assistance. A separate agency will be organised for this purpose in the public sector, in which the State will be represented by the Kerala Fisheries Corporation.

#### *Organisation of Dorry Fishing*

9.531 The need for introducing an intermediate technology has long been felt for increasing the catches by the traditional craft. The programme during the Plan period is as follows:

(i) To involve 900 fishing craft in purse-seining operations by the 90 purse-seine boats of 13.4m. size. The canoes will assist in the manual lifting of the purse-seine catches from the sea. As the catches are usually large beyond the holding capacity of the boat, the canoes can also assist in transporting the excess catch which otherwise has to be thrown back to the sea. Further, a section of the crew on the traditional craft can replace the mechanical winch operated by the board for lifting the catches, as is being done in Mangalore. By this process each country craft will be able to increase its catches by 5 tonnes per annum. The total additional catches emerging from the 900 canoes will be 4500 tonnes.

(ii) The 13.4 m. fishing vessel intended for 'Kalava' fishing can tug 10 canoes/catamarans to the ground and give them mothership support while the mothership itself will use traps/lines on the ground. Each canoe/catamaran unit is expected to bring in an additional catch of 100 kg. per day yielding about 7 tonnes per fishing season (February-May) and that the fish brought on shore will be in prime condition. The proposal is to tug 300 canoes/catamarans by the 30 boats intended for Kalava fishing during February-May. The additional catch anticipated is 2100 tonnes from these traditional craft.

9.532 The Dorry fishing programme will be organised at each centre by the Project Officer responsible for management of the 13.4m. vessels. It involves no additional outlay as the vessels, craft and organisation will be available at each centre.

#### *Supply of Catamarans and Canoes (Outlay Rs. 150 lakhs)*

9.533 The programme envisages issue of 200 catamarans, 600 dug out canoes and 300 plank built canoes to fishermen on joint ownership basis. It will be implemented by the Kerala Fishermen's Welfare Corporation. The scheme will benefit 7,000 sea going fishermen who will be conferred with ownership of the fishing crafts. The project will yield an additional production of 16,000 tonnes.

#### *Distribution of Fishing Gear (Outlay Rs. 15 lakhs)*

9.534 The scheme is to continue the programme of distributing synthetic fibres at subsidised rates to fishermen. The provision is to meet the subsidy estimated at 15 per cent of the cost.

#### *Development of Fisheries in Selected Areas—(ARDC Schemes) (Outlay Rs. 7 lakhs)*

9.535 The amount provided is for spill over works at Parappanagudi project. ARDC projects during the Plan period will be merged with regular mechanisation programme.

#### *Marketing and Storage-Ice-Cum-Freezing Facilities (Outlay Rs. 50 lakhs)*

9.536 The provision is for meeting the spill over requirements of the Bali putam Ice Plant and also for setting up a new ice-cum-freezing plant at Vizhinjam.

#### *Drying Yards (Outlay Rs. 6 lakhs)*

9.537 The outlay is for providing natural hygienic drying yards at Vizhinjam, Cochin and Calicut.

#### *Financial Assistance for Marketing of Fish (Outlay Rs. 25 lakhs)*

9.538 The programme is to render financial assistance to head load and cycle load fish hawkers. Working capital assistance will be provided to headload hawkers for purchase of fish. The assistance proposed for cycle load hawkers is partly for purchase of cycles and partly towards working capital requirements. As a part of the programme financial assistance will also be given to 500 persons for providing cycloriskshaws, fitted with mi.u-motor, insulated chest, etc. for door to door sale of fish in the urban areas. The cost of a unit is expected to be Rs. 1,500. The assistance will be in the form of loans. This scheme which will be implemented by the Kerala Fishermen's Welfare Corporation, will benefit 1,500 head load hawkers, 3000 cycle load traders and 500 cycle riskshaw traders.

#### *Establishment of Development Centres through Adoption of Package Programme (Outlay Rs. 640 lakhs)*

9.539 The scheme provides for the completion of two spill over projects started as infrastructure schemes at Ambalapuzha and Cheruvathoor. This is a package programme providing all infrastructure facilities like

auction hall, drying yards, storages, provision for ice, water supply and sanitation and approach roads. It is proposed that during the Plan period 20 more centres will be developed on this pattern along the coast of Kerala. Those centres are Pulluvila and Anjengo in Trivandrum District, Wadi and Cheriashheekal in Quilon District, Thottappally and Arthungal in Alleppey District, Chellanam in Ernakulam District, Nattika and Chavakkad in Trichur District, Palappatty, Tanur and Parappanangadi in Malappuram District, Puthiangadi, Quilandy and Madappally in Calicut District and Chalil, Gopalapetta, Mattool, Trikaripur, Bekal and Kumbala in Cannanore District. The centres when completed will provide the infrastructure facilities needed for introducing regulated markets for fish.

*Fish Marketing Survey (Outlay Rs. 7.20 lakhs)*

9.540. In Kerala so far no comprehensive fish marketing survey has been carried out. During the Plan Period, it is proposed to undertake a detailed fish marketing survey in Kerala covering production, distribution, demand and other related aspects of marketing of fish. The survey will be organised by the Department of Fisheries.

*Large Markets (Outlay Rs. 90 lakhs)*

9.541 Fish markets in Kerala lack minimum facilities like chilled storage, ice, water and display and retail facilities. The proposal is to equip the large district markets in Kerala with modern fish markets in well constructed buildings with adequate provision for sanitation like fly proof netting, seep proof floors, drains and facilities for waste disposal. Ice plant and chilled insulated chambers will be provided as adjuncts. An overhead storage tank will be provided to ensure water supply for washing and cleaning of the floors. The markets proposed are for Trivandrum, Alleppey, Ernakulam, Trichur, Calicut, Cannanore, Quilon, Kottayam and Malappuram.

*Retail Markets (Outlay Rs. 60 lakhs)*

9.542 Retail markets will be located in the principal towns. As most of the towns do not have facilities for disposal of waste, separate waste treatment tanks will be constructed for this purpose. Thirty retail markets will be set up during the Plan period.

*Insulated Cabinets (Outlay Rs. 12 lakhs)*

9.543 The proposal is to introduce 60 insulated cabinets in the rural areas for distribution of fish. The cabinets will be issued to educated unemployed persons on hire purchase basis.

*Fish Boxes (Outlay Rs. 9 lakhs)*

9.544 In order to improve the quality of fish it is necessary to encourage use of ice. This could be stepped up by introducing fish boxes made out of G. I. sheets with thermocole insulation. The cost of a box would be around Rs. 300. It is proposed to distribute 3000 fish boxes, 1000 to the mechanised boats and 2000 for transportation at 50 per cent subsidised cost.

*Gold Chain Scheme (Outlay Rs. 50 lakhs)*

9.545. The scheme is to mop up supplies and make them available to deficit areas and in deficit seasons. Certain regular production centres are linked by refrigerated/insulated transport to certain marketing centres. The production centres would be regularly supplying chilled fish to these market centres. When large landings take place, the surplus quantity is frozen and held in frozen storage for release in the lean season in the marketing centres. On these lines, it is possible to have a limited cold chain scheme in Kerala during the Plan period. The project may be implemented through the Kerala Fisheries Corporation.

*Improvements to peeling Sheds (Outlay Rs. 25 lakhs)*

9.546 Many of the peeling sheds require structural and hygienic improvements. It is proposed to construct 500 peeling sheds at 50 per cent subsidy, the amount being equally shared between the Marine Products Export Development Authority and the State Government. At Rs. 10,000 subsidy per peeling shed, the State's share will be Rs. 25 lakhs.

*Area Development (Outlay Rs. 100 lakhs)*

9.547 Fish based industries have come up all over the coastal areas in an unplanned way, causing considerable inconvenience to the local residents and difficulties for future expansion. Hence, it is proposed that Government would engage suitable consultants to survey and earmark areas reserved for fish based industry.

*Other Schemes*

*Repair and Refitting Facilities (Outlay Rs. 10 lakhs)*

9.548 The provision is for meeting spill over works.

*Expansion of Gear Factory, Cochin (Outlay Rs. 10 lakhs)*

9.549 The nylon nets fabricated at the Nylon Net Factory, Cochin, have good demand, particularly for gill nets. The provision is for equipping the factory with one more machine for fabricating thinner variety nets.

*Development of Link Roads (Outlay Rs. 100 lakhs)*

9.550 The amount is intended for meeting the spill over works and the balance for new roads.

*Housing (Outlay Rs. 550 lakhs)*

9.551 The housing programme of fishermen has been under implementation from the Third Five Year Plan onwards. Though the achievements had over-shot the targets in the past, the problem continues to be very acute. The Kerala Fishermen's Welfare Corporation has drawn up a massive programme for constructing 25,000 houses during the Plan period for the benefit of indigent fishermen. The total cost of the programme is Rs. 1,000 lakhs, out of which 50 per cent is to be given as grant and the rest as loan. The Corporation anticipates institutional finance to the extent of Rs. 500 lakhs for providing loans. The grant portion is to be borne by the State Government. The present scheme of the Department of Fisheries for issue of full housing grants to the poorest fishermen will be implemented separately by the Department for which an additional provision of Rs. 50 lakhs is also proposed.

*Community Amenities including Dispensaries (Outlay Rs. 125 lakhs)*

9.552 The programme envisages construction of latrines, wells, common pathways, community halls, baby care centres, dispensaries and burial grounds. Young and educated members of fishermen community will be organised to take up social work and render leadership training to the fishermen so that they will be exposed to a new outlook for co-operative and collective efforts to promote their interests. The scheme will be implemented by the Kerala Fishermen's Welfare Corporation.

9.553 Out of the 19 dispensaries started by the Department of Fisheries, only 6 have permanent buildings. In respect of 7 dispensaries, construction of buildings is in progress. Out of the outlay, Rs. 75 lakhs is earmarked for improving the medical facilities in the coastal villages. The maintenance and administration of the dispensaries/hospitals will be the joint responsibility of the Director of Health Services and the Department of Fisheries.

*Fishermen Co-operatives and Organisation of Regulated Markets (Outlay Rs. 250 lakhs)*

9.554 Most of the MUCS and Marketing Societies have not been able to deliver the goods. But still organisation of Fishermen Co-operatives will be the only lasting solution to improve the living conditions of the poor fishermen and free them from exploitation by middlemen and financiers. The provision is partly for organising 100 Fishermen Service Co-operatives and establishment of 22 regulated markets in the State during the Plan period. The Fishermen Service Co-operatives will be organised on the pattern of Service Co-operatives in the farming sector.

9.555 Regulated markets for fish will be organised at all the 22 Development Centres where auction halls, ice, storage, etc., will be available under the package of services besides the Fishermen Service Co-operatives. The leadership for auctioning the catches will rest with representatives of fishermen's organisation trained for the purpose. All fish landed in the Centres will be brought to the auction halls for open auctioning. Only registered traders will be allowed to participate in the auctions.

*Fisheries Terminal Organisation for the Management of Fishing Harbours (Outlay Rs. 70 lakhs)*

9.556 The management of fishing harbours, including provision of services, regulation of traffic repair facilities, sanitation, fish auctioning, engineering work shops, processing units etc., form principal items of work of the Fisheries Terminal Organisation. The provision is intended for providing these facilities at Baliapatam and Beypore. At Vizhinjam, Neendakara and Cochin these will be provided along with the harbour facilities.

*Fishermen Welfare Fund (Outlay Rs. 150 lakhs)*

9.557 Government have been rendering relief measures to fishermen or their dependents as compensation for accidents or loss of equipment or loss of life while engaged in fishing. But the quantum of financial assistance so granted was neither substantial

nor in time to the family in distress. It is, therefore, proposed to set up a Fishermen Welfare Fund of Rs. 300 lakhs, out of which the State Government will contribute Rs. 150 lakhs. The rest is expected to be mobilised through exporters, traders and producer fishermen. The fund will be used to give old age benefits, to meet expenditure on death and marriage ceremonies, off-season expenditure, etc. The Fund will be operated by the Kerala Fishermen's Welfare Corporation. Part of the fund will also be utilised for organising a life insurance scheme for all sea going fishermen.

*Contributory Provident Fund Scheme (Outlay Rs. 50 lakhs)*

9.558 The programme is to institute a contributory provident fund scheme to the benefit of fishermen. The provision is for meeting the State's share of the expenditure. The scheme is expected to cover about 20,000 fishermen proposed to be brought under the regulated marketing programme. It will be operated by the Kerala Fishermen's Welfare Corporation.

*Subsidiary Industries (Outlay Rs. 25 lakhs)*

9.559 Presently some of the members of the fishermen families are engaged in coir making, poultry or goat farming, basket and mat making etc. The programme is to provide financial support for those interested in such subsidiary occupations.

*Assistance to Kerala Fisheries Corporation (Outlay Rs. 100 lakhs)*

9.560 The Kerala Fisheries Corporation is expected to organise and manage fishing by the large combination vessels. It is, therefore, necessary that the Corporation is given adequate financial support as in the past. The provision is for meeting this requirement.

*Guide Lights (Outlay Rs. 5 lakhs)*

This is a spill over scheme.

*Assistance to Kerala Fishermen's Welfare Corporation (Outlay Rs. 50 lakhs)*

9.561 The provision is partly for organising the activities of the Corporation and partly to be retained as a reserve fund to assist the fishermen with small loans.

*Centrally sponsored schemes*

Spill over Schemes.

*Development of Vizhinjam Harbour (Outlay Rs. 700 lakhs)*

9.562 The Vizhinjam Harbour project was conceived as early as 1960. The construction work was started in December 1967. The first stage comprising the breakwater on the Mathilpuram side is nearing completion. The second stage of the project envisages extension of the Mathilpuram breakwater, construction of a leeward breakwater at Kottappuram, dredging the basin, construction of quay, auction hall, slipway workshops, etc. The harbour when completed will provide berthing facilities even to large ocean going vessels. The estimated cost of the second stage of the harbour project is Rs. 700 lakhs. It is anticipated that this provision will be forthcoming in the centrally

sponsored sector for the completion of the harbour project during this Plan period.

*Development of Neendakara Harbour (Outlay Rs. 250 lakhs)*

9.563 Neendakara is one of the principal mechanised fishing centres in the country. Nearly 1500 mechanised boats operate from here during peak season. Despite the growing importance of the centre the boats have no convenience for landing and berthing facilities. The private wooden jetty owners are exploiting the fishermen heavily on account of this. Centralised landing, organised auctioning facilities and improved hygienic standards will help to boost the income of the fishermen and the quality of the products. Already a breakwater has been constructed at Neendakara. The harbour components now proposed are an inner breakwater (210 m long) quay walls, auction hall, slip way and workshop, etc. The total estimated cost of the harbour project is Rs.250 lakhs. This is anticipated as a Centrally sponsored scheme.

*Development of Beypore Harbour (Outlay Rs. 50 lakhs)*

9.564 Beypore, which has all the natural facilities, could be developed into a modern fishing harbour. It could cater to the needs of small and medium type mechanised boats. The developments are proposed in three stages. During stage I a quay wall of 180 m. long and an auction hall will be constructed. Dredging will also be done in the basin. This work is expected to be completed by 1983-84. Additional facilities will be provided during the II and III stages which will be taken up subsequently. While the outlay required for the project is estimated to be Rs. 200 lakhs, the outlay envisaged for the first stage amounts to only Rs. 65 lakhs. The provision proposed for 1979 to 1983 is Rs. 50 lakhs.

*Development of Mini-fishing Harbours and Landing Centres (Outlay Rs. 633 lakhs)*

9.565 Landing and berthing facilities for mechanised boats are at present available only in a few centres. viz. Neendakara, Cochin, Beypore and Baliapattam. However, mechanised boats operate from a number of other regions too. Already action has been taken to develop the following places into landing centres.

1. Manjeswar	Rs. 4.45 lakhs
2. Bekel	Rs. 14.50 "
3. Neeleswaram	Rs. 8.96 "
4. Cheruvathur	Rs. 10.30 "
5. Dharmadam	Rs. 9.65 "
6. New Mahe (Kallai)	Rs. 5.60 "
7. Irringal (Kottakal)	Rs. 12.00 "
8. Kootingal	Rs. 9.60 "
9. Ponnani	Rs. 14.50 "
10. Chettuway	Rs. 15.00 "
11. Munambam	Rs. 13.60 "
12. Muthalapozhy	Rs. 15.00 "
<b>Total</b>	<b>Rs. 133.16 lakhs</b>

9.566 Investigation works for fish landing centres at Neeleswaram, Cheruvathur, Ponnani and Chettuway have already been completed. Investigation works at Dharmadam are in progress. Detailed project reports for Cheruvathur and Neeleswaram have been prepared. The report on Ponnani is being prepared. The following centres will be developed into small fishing harbours.

Centre	Estimated cost (Rs. lakhs)	Outlay for 1978-'83 (Rs. lakhs)
1. Muthalapozhi	85.00	85.00
2. Kayamkulam/ Ambalapuzha	..	17.20
3. Munambam/ Azhikode	119.00	119.00
4. Chettuway	60.00	26.00
5. Puthiappa	113.00	92.00
6. Mopla Bay	152.70	77.70
7. Cheruvathoor/ Neeleswaram	107.50	18.65
8. Chambal	81.45	64.45
<b>Total</b>	<b>718.65</b>	<b>500.00</b>

In respect of Muthalapozhi investigations will commence during 1979-80. For Munambam/Azhikode, investigations and model studies will be completed in 1978-79 and work is expected to be commenced in 1979-80. For Kayamkulam and Chettuway, preliminary studies are yet to commence. The other projects are likely to spillover to the next plan. A total outlay of Rs. 633 lakhs is anticipated in the Centrally sponsored sector during 1978-83 for constructing landing centres and mini-fishing harbours.

TABLE 9.22

## Fisheries—Scheme-wise Outlay

(Rs. in lakhs)						
Sl. No.	Schemes	Fifth Plan Outlay (1974-79)	1974-78 Expenditure	Approved Outlay for 1978-79	1978-83 Outlay Proposed	
(1)	(2)	(3)	(4)	(5)	(6)	
<b>I. DIRECTION AND ADMINISTRATION</b>						
1	Strengthening of Administration	..	..	..	50.00	
2	Planning and Statistical Cell	5.00	0.87	3.00	15.00	
<b>II. EXTENSION</b>						
1	Extension	5.00	4.52	2.50	25.00	
<b>III. FISH FARMS</b>						
1	Fish Culture in Ponds and Tanks	..	..	..	155.00	
2	Fish Seed Farms	30.00	5.26	11.50		
3	Development of Small Water Area	2.50	0.02	2.00		
4	Subsidy to Private Pisciculturists	..	1.00	5.00	338.00	
5	Brackish Water Fish Farming	3.50	0.01	2.00		
6	Survey of Inland Brackish Water Fisheries	..	..	2.00		
7	Brackish Water Fish and Prawn Culture	..	..	..		
<b>IV. HATCHERIES</b>						
1	Fish Seed Production	10.00	2.45	14.09		(Provision included in Reservoir Fisheries)
<b>V. RESEARCH</b>						
1	Research in Marine Fisheries	19.50	9.84	9.50	9.50	
2	Assistance for Aquatic Biological Research by Kerala and Cochin Universities	..	..	..	50.00	
3	Assistance to Kerala Agricultural University for Inland Fisheries Research including setting up of a Fishery College	..	..	..	50.00	
4	Fresh Water Research	2.00	1.21	..	..	
5	Strengthening of Brackish Water and Inland Research Establishments	..	..	..	10.00	
6	Establishment of Market Research Unit	..	..	..	9.50	
<b>VI. EDUCATION AND TRAINING</b>						
1	Research and Training on Marine Fisheries	45.00	26.04	7.70	22.00	
2	Development of Fishermen Training Centres	..	..	..		
3	Establishment of Regional Technical Schools	..	..	..	20.00	
4	Training to Pisciculturists	1.00	0.58	0.30	20.00	
5	Inservice course for Technical Personnel	..	..	..	15.00	
<b>VII. INLAND FISHERIES</b>						
1	Development of Reservoir Fisheries	7.50	13.07	3.91	84.00	
2	Freshwater Paddy-cum-Fish Culture	..	..	..	50.00	
3	Culture of Giant Fresh Water prawns	..	..	..	35.00	
4	Patrolling in Backwaters	..	..	3.00	10.00	
5	Mariculture in Shallow Protected Open Sea	..	..	..	156.00	
<b>VIII. FISHING HARBOURS AND LANDING FACILITIES</b>						
1	Harbour Engineering Wing	8.00	0.25	1.00	1.50	
2	Development of Vizhinjam and Neendakara with World Bank Assistance	..	0.22	..	..	



(1)	(2)	(3)	(4)	(5)	(6)
3	Development of Vizhinjam	11.00	..	47.00	} 52.00 Proposed as Centrally sponsored
4	Development of Neendakara	..	..	5.00	
5	Fisheries Terminal Organisation for the Management of Fishing Harbours	..	..	..	70.00
<b>IX OFFSHORE FISHING AND DEEP SEA FISHING</b>					
1	Offshore Fishing-Purse-Seiners (13.4m)	..	..	..	70.00
2	Deep Sea Fishing-Combination vessels (20 m)	..	..	..	620.00
3	Combination Vessels (23m)	..	..	..	515.00
4	Tuna fishing-Super-seiners	110.00	..	22.00	150.00
<b>X PROCESSING, PRESERVATION AND MARKETING</b>					
1	Storage, Processing and Marketing	70.00	16.19	1.50	} 50.00
2	Ice -cum-Freezing Facilities	..	..	..	
3	Drying Yards	..	8.52	3.00	6.00
4	Financial Assistance for Marketing of Fish	..	..	..	25.00
5	Infrastructure Facilities in Two Selected Villages	14.00	10.00	10.00	} 640.00
6	Establishment of Development Centres through adoption of Package Programme	..	..	..	
7	Organisation of Internal Marketing	2.00	..	..	..
8	Fish Marketing Survey	..	..	..	7.20
9	Large Markets	..	..	..	90.00
10	Retail Markets	..	..	..	60.00
11	Insulated Cabinets	..	..	..	12.00
12	Fish Boxes	..	..	..	9.00
13	Cold Chain Scheme	..	..	..	50.00
14	Improvement to Peeling Sheds	..	..	..	25.00
15	Area Development	..	..	..	100.00
<b>XI MECHANISATION AND IMPROVEMENT OF FISHING CRAFT</b>					
1	Small Boat Mechanisation	302.00	202.20	10.00	255.00
2	Boat Building Yards	..	5.02	..	..
3	Improvement of Indigenous Craft and Tackles	..	0.05	..	..
4	Diversification of Fishing Accessories and Gear	..	..	45.00	45.00
5	Development of Fisheries in Selected Areas (ARDC Scheme)	40.00	33.93	7.00	7.00
<b>XII OTHERS</b>					
1	Assistance to Traditional Fisheries	9.00	4.59	}	150.00
2	Supply of Catamarans and Canoes	..	..		
3	Distribution of Fishing Gear	..	..	..	15.00
4	Repair and Refitting Facilities	4.00	2.84	5.00	10.00
5	Expansion of Gear Factory at Cochin	..	..	..	10.00
6	Development of Link Roads	80.00	75.09	25.00	100.00
7	Housing and Colonisation	150.00	78.96	20.00	530.00
8	Community Amenities including Dispensaries	..	0.35	5.00	125.00
9	Assistance to Fishermen Co-operative Societies	125.00	56.78	7.00	250.00

(1)	(2)	(3)	(4)	(5)	(6)
10	Transfer to Fishermen Relief Fund	..	25.00	5.00	} 150.00
11	Fishermen Welfare Fund	..	..	..	
12	Provident Fund Contributions	..	..	..	
13	Subsidiary industries	..	..	..	25.00
14	Assistance to K.F.C.	100.00	181.07	40.00	100.00
15	Guide lights	4.00	1.11	2.00	5.00
16	Assistance to K.F.W.C.	..	10.00	15.00	50.00
<b>Total</b>		<b>1160.00</b>	<b>777.03</b>	<b>342.00</b>	<b>5573.70</b>

### Forests

9.567 The recorded forests of Kerala in 1973-74 occupied 11,120 sq.km. The reserve forests constituted 9177 sq. km. and the nationalised private forests 1943 sq. km. However, the actual area under forests was much less, consequent to deployment of forest areas for non-forestry purposes like hydro-electric projects, irrigation projects and agricultural schemes and illegal occupation by encroachers. The available area under forests in 1977-78 is estimated to be 9480 sq. km. This works out to 24 per cent of the geographical extent of the State compared to 28 per cent under the recorded forests.

9.568 The area under forest plantations comprised 1,20,171 ha in 1973-74 of which teak plantations covered 60,554 ha. (50.4 per cent), eucalyptus 30,914 ha. (25.7 per cent), softwood 18,474 ha. (15.4 per cent), hardwood 1533 ha. (1.3 per cent) and fuel wood 223 ha. (0.2 per cent). The rest constituted a number of other species like bamboo, cashew, wattle and rubber. By 1977-78 the total area under forest plantations increased to 1,34,464 ha, registering an increase of 14,293 ha (11.9 per cent) over the four year period. The increases in respect of the major species have been, teak 7636 ha. (12.6 per cent), eucalyptus 811 ha (2.6 per cent) and softwood 3182 ha (17.2 per cent).

9.569 The out-turn of forest produce in 1973-74 consisted of 5,41,000 m<sup>3</sup> of round timber, 4,14,000 round poles and 4,15,000 tonnes of firewood. The other items included sawn timber, railway sleepers, minor forest produce and charcoal. The net revenue from forests during 1973-74 was estimated at Rs. 14.57 crores. In 1976-77, while production of timber (round logs) maintained status quo, that of round poles moved up to 14,16,000 registering 242 per cent increase over the three year period. The out-turn of round poles, which has been steadily increasing reflects mainly the impact of plantation programme carried out in earlier years. Production of firewood, however, declined drastically to 2,65,000 tonnes, the fall over the years being 36 per cent. The aggregate net income from forests in 1976-77 amounted to Rs. 26.18 crores, an increase of 80 per cent over 1973-74.

9.570 The recorded production of wood from the forests was considered to be very much less than what was actually removed from the forest by sale coupe contractors. Of late, there has been some improvement in this situation.

9.571 The utilisation of timber for industrial purposes in Kerala is estimated at 26 per cent compared to 9 per cent for the country as a whole. The corresponding figures for developed nations like U. S. A., Canada, Japan, Sweden and West Germany are above 90 per cent. The rest of the timber is consumed as firewood.

9.572 In 1975, a Forest Development Corporation was set up in the State with the primary objective of intensive development of forest resources of the State, by availing institutional finance. The Corporation aimed at planting quick growing species in an area of 45,000 ha. over a ten year period. But the progress achieved till the end of 1977-78 has been rather tardy mainly due to procedural delays. A Forest Research Institute was also established in the State in 1975 to provide research and development support for forestry and forest based industries.

9.573 The number of forest based workers in 1971 stood around 21,000. However, on account of the intensification of development efforts, the employment opportunities in the forestry sector have gathered considerable momentum subsequently.

9.574 The Fifth Plan envisaged a total outlay of Rs. 846 lakhs for development of the forestry sector. The expenditure incurred during 1974-78 amounted to Rs. 555.53 lakhs (66 per cent). The principal items of expenditure comprised Rs. 76 lakhs as assistance to the Kerala Forest Development Corporation as against the targeted provision of Rs.100 lakhs. The expenditure for raising plantations amounted to Rs. 212.68 lakhs (78 per cent) of the targeted outlay of Rs. 272 lakhs. For forestry cum fuel wood plantations the investment during 1974-78 was Rs. 21.06 lakhs as against the target of Rs. 35 lakhs, the percentage expenditure being 60. The amount spent on communications during the first three years of the programme was only Rs. 7.06 lakhs (12 per cent). The investment made in this direction till the end of 1977-78 continued to be meagre.

9.575 The physical targets set for the Fifth Plan comprised raising of 25,000 ha. of quick growing species, 12,000 ha of economic plantations and 1,500 ha. of farm forestry. The total area under forest plantations were thus to be raised from 1,20,000 ha in 1973-74 to 1,58,000 ha in 1978-79. The target set for communications was 300 km., raising the extent of forest roads from 2,340 km. to 2,640 Km. over the plan period.

9.576 During 1974-78, 19,248 ha. were additionally brought under plantations (raising the total extent of forest plantations to 1,39,419 ha), the percentage of achievement being 50. The shortfall in achievement of physical targets was caused by the slow pace of progress registered in the planting of quick growing species. Only 4,583 ha. could be planted under this item compared to the target of 25,000 ha, the achievement being 18 per cent. Even though the Kerala Forest Development Corporation was registered in the beginning of 1975, it could commence its planting operations only from the third year of the plan period and that too much below the targeted level. The primary reason for this was procedural difficulties in assigning areas suitable for clear felling and planting purposes. In respect of the economic species, the achievement during 1974-78 overshot the target, an area of 12,915 ha. was planted against the target of 12,000 ha. Under farm forestry, 1750 ha. were additionally planted, achieving 117 per cent of the target. The progress recorded in improving communication facilities was very low, 48 km. (16 per cent) as against the target of 300 km. The absence of a Special Engineering Wing directly responsible for drawing up designs and estimates coupled with the reluctance of the contractors to take up works in the forest area at the existing rate schedule contributed to the low achievement in this regard. Now that the Forest Department has its own Engineering Wing headed by an Executive Engineer, this situation is bound to improve. The estimate of employment generated during 1974-78 stood at 9,000 man years.

#### *Development Constraints*

9.577 Though the area under Eucalyptus plantations in the State has gone up considerably in the past, extensive areas under these plantations are affected by fungus and pest attack. This necessitates not only rehabilitation of the degraded plantations, but also a probe into the problem of developing a disease resistant quick growing species of local origin to meet the raw material requirements of industries.

9.578 Inadequate communication facilities in the forest areas have made efficient forest managements difficult. Large tracts of forests remain inaccessible for exploitation. Improvement of communication facilities as well as provision for staff quarters deserves high priority. The logging practices involve considerable waste of timber, and need certain amount of mechanisation.

9.579 The traditional coupe sale system is defective and has led to severe erosion of revenue from forests. Added to this, indiscriminate felling of trees and encroachment on forest lands cause steady denudation of forests and ecological imbalances.

9.580 Most of the wood based industries are working much below their full capacity for want of adequate raw materials. Only a massive investment programme of an unprecedented nature could save this situation. The plantation type of forestry should be suitably linked up with projects for industrial exploitation.

9.581 The scheduled tribes, who are mostly forest based, are inherent part of the forests. But they have been a neglected as well as exploited lot. The shifting system of cultivation pursued by them not only leads to destruction of forests but also makes encroachment on forest land easy.

#### *Resource Potential*

9.582 Of the total forest area actually available, about 65000 sq. km. (68 per cent) can be treated as production forests. The area suitable for agriculture etc. is reckoned to be 540 sq.km. of vested forests. The area to be left undisturbed for their natural environmental values is nearly 2440 sq. km. (26 per cent). Of the production forests, the forest plantations comprise 1394 sq. km. The potential area which can be additionally brought under plantations is about 1670 sq. km., consisting mainly of moist deciduous forests. The Kerala Forest Development Corporation has already brought under plantation 28 sq. km. It proposes to cover 417 sq.km. more over a decade.

9.583 As most of the requirements of the pulp and paper industry will be taken care of by the existing plantations of fast growing species and by the plantations proposed to be raised by the KFDC, the future stress should be on growing hardwood species suitable to meet the requirements of saw logs, veneer logs etc. The available moist deciduous forests (about 880 sq. km.) can be converted into hard wood plantations on a sixty year rotation. The area that will thus be available for clear felling works out to be 1500 ha. per annum.

9.584 The inadequacy of the timber resources of the forest to meet the growing demand of the wood based industries could partly be overcome by taking up farm forestry in a comprehensive manner. Voluntary organisations and the youth can play a leading role in this by raising trees on farm lands, government poramboke lands, waste lands, and on lands along the sides of roads and canals. There is considerable scope for augmenting supply of minor forest produce like medicinal plants. Some of these plants can be grown as cover crop in teak and eucalyptus plantations. The tribal cooperatives can be entrusted with this work.

9.585 The following policies are envisaged for the plan for 1978-83 in order to provide a package deal for forestry development:

- (i) maintenance of the available forest area in tact.
- (ii) strengthening of forest based industries so as to avail more of the institutional finance.
- (iii) adoption of an "agressive forest policy" as recommended by the N. C. A. for meeting the wood requirements and the social obligations.
- (iv) involvement of the local people, particularly the tribals, for taking up forest works.

The objectives of the Plan are:

- (i) optimisation of the exploitation of forest resources for augmenting supplies of timber, pulp wood and other industrial raw materials and fuel wood.
- (ii) increasing the area under forest and tree growth by promoting social forestry so as to meet the needs of fuel wood and small timber in the rural areas.
- (iii) organisation of mechanised logging, extraction and marketing of timber and firewood

- (iv) development of forest based industrial complexes.
- (v) Organisation of effective conservation and protection of forests in order to prevent erosion and deterioration of the forests.
- (vi) maintenance of a few biospheres (natural reserves) for the preservation of certain species of fauna and flora in their natural environment.
- (vii) promoting and encouraging tribal cooperatives for collection and marketing of forest produce.
- (viii) provision of the necessary infrastructure like roads and buildings, besides research and training support for implementing the programmes.

9.586 The strategy of development envisaged is outlined below:

- (i) The forest development proposals envisage to bring additionally 48,320 ha. under forest plantations during 1978-83 Plan period. Of this area, the KFDC will be covering 20,000 ha. and the Department the rest.
- (ii) In the development of social forestry programmes like farm forestry, extension forestry, reforestation of degraded forests, recreation forestry and afforestation of special sites will be taken up. Both farm forestry and extension forestry will be implemented by involving voluntary organisations, students and teachers besides village level officials.
- (iii) The present system of collection of forest produce through contractors will be replaced by Departmental operations, engaging labourers directly. For this, the Department will acquire modern logging equipment and train the officers and workers suitably.
- (iv) Two industrial complexes will be set up, each consisting of saw mill, seasoning plant, treatment plant joinery furniture unit, window manufacturing unit, chipper mill, particle board unit and decorative veneer unit.
- (v) An integrated development project involving teak forests and wood based industries will also be launched for which World Bank assistance is being sought.
- (vi) For maintaining the forest area in tact, a strong Forest Police Contingent will be constituted.
- (vii) An Engineering Wing has been set up in the Forest Department and it will be strengthened to take up the speedy implementation of providing adequate communication and building facilities in the forest areas.

9.587 The Plan proposals for forestry development envisage a total outlay of Rs. 40 crores. The total capital content of the programme amounts to Rs. 19.84

crores. The foreign exchange requirements are estimated at Rs. 1.21 crores. The investment anticipated for plantation schemes is Rs. 7.16 crores (17.9 per cent). For schemes like improved logging practices and development of forest based industries, a total provision of Rs. 12.90 crores (32.2 per cent) is provided in the plan proposals. An amount of Rs. 9 crores (22.5 per cent) is earmarked for providing better infrastructure facilities like roads and buildings. The rest of the outlay is mainly intended for forest conservation and development, preservation of wild life, assistance to Forest Development Corporation and Research, Education and Training. The outlay proposed will provide direct employment for 56,000 man years of labour.

#### *Proposals for 1978-83 Plan*

##### *Direction and Administration*

##### *Intensification of Forest Management (Outlay Rs. 50 lakhs)*

9.588 The outlay proposed is for strengthening the administrative machinery and providing it with improved office equipments. Part of the outlay is for equipping the principal Range Offices with telephone facilities, motor vehicles, etc.

##### *Kerala Forest Development Corporation (Outlay Rs. 115 lakhs)*

9.589 The Kerala Forest Development Corporation will be raising 20,000 ha. of quick growing species during 1978-83 at the rate of 4000 ha. per annum. The outlay proposed is for meeting the equity participation by the State in the KFDC.

##### *Research (Outlay Rs. 50 lakhs)*

9.590 The scheme is intended for the continuance of various research activities like the field trials, collection of data and experiments on management of crop by cultural operations. The proposed outlay includes the provision for grant-in-aid to Kerala Forest Research Institute, for continuing their applied research programmes on forestry with special reference to the State and establishing a Teak Museum and Research Study Centre at Nilambur under the auspices of the Institute. Part of the outlay (Rs. 15 lakhs) is intended for rendering financial assistance to the Kerala Agricultural University to promote its forestry research programme.

##### *Education and Training (Outlay Rs. 50 lakhs)*

9.591 The proposed outlay is for meeting the expenditure on the cost of training of officers of the Department at the Indian Forest College, Dehra Dun, State Forest Service College, Birmihati and the Southern Forest Rangers College, Coimbatore. Training will also be organised for the benefit of field staff and workers in the Department on methods of improved felling, logging and conversion of trees. It also includes provision for improving the training facilities in the Kerala Forest School, Walayar.

##### *Survey, Demarcation and Settlement of Forest Areas (Outlay Rs. 90 lakhs)*

9.592 For various reasons, the actual areas under forest has been decreasing steadily. The forest boundaries are not clear. Reliable forest maps are also

not available. In order to conserve the forest resources, it is necessary to survey and demarcate the boundary of the forest land to erect permanent cairns along the boundary and prepare reliable maps on the basis of the survey. It is proposed to complete the survey and refixation of the boundary along 3,000 km., of forests during the Plan period. The provision proposed is for implementing the scheme.

*Forest Resource Survey (Outlay Rs. 15 lakhs).*

9.593 The main object of the forest resources survey is to assess the extent of wood resources available in the forest according to utilisation categories and size classes. In Kerala during 1970 to 1972 a Pre-investment Survey of Forest Resources was taken up as a Centrally sponsored scheme and a part of the State had already been covered under this scheme. The present proposal is to complete the survey during the Plan period by forming a separate wing in the Department with adequate staff and equipment.

*Working Plan (Outlay Rs. 30 lakhs)*

9.594 This scheme is proposed with the object of dividing the forests into blocks and compartments for efficient administration and effective protection by erecting cairns at regular intervals and demarcating it with suitable boundary lines. The provision envisaged is for posting special staff for the purpose.

*Plantation of Quick Growing Species (Outlay Rs. 50 lakhs)*

9.595 This is a continuing scheme which is being implemented simultaneously by the Department of Forest and the Forest Development Corporation. The Department proposes to plant quick-growing species over an area of 5,000 ha. during the Plan period.

*Moist Deciduous Forest Area Plantations (Outlay Rs. 516 lakhs).*

9.596 This is a continuing programme. It envisages raising plantations of economic species for industrial and commercial uses. During the plan period 16,000 ha. will be additionally brought under teak plantations for which an outlay of Rs. 300 lakhs is proposed.

9.597 Softwood is an important raw material for small scale industries like match wood, and packing cases. It is proposed to raise softwood species over an area of 5,000 ha. An amount of Rs. 100 lakhs is envisaged for the scheme. The outlay proposed for raising other plantations viz., Rosewood (160 ha), Balsa (160 ha) and Bamboo (40 ha) amounts to Rs. 6 lakhs.

9.598 The programme for fuel wood species covers an area of 2,800 ha for meeting the needs of firewood and small timber in the rural areas. The outlay proposed for this scheme is Rs. 40 lakhs.

9.599 A provision of Rs. 10 lakhs is also proposed for planting miscellaneous species at the rate of 200 ha per annum during the Plan period. For carrying out weeding, tending and other silvicultural operations, required for the improvement of the younger plantations a provision of Rs. 60 lakhs is made in the plan proposals.

*Dry Deciduous Forest (Outlay Rs. 5 lakhs)*

9.600 The proposal is to carry out cultural operations for the existing stock of sandal wood and for adopting necessary operations to improve the artificial regeneration.

*Grass lands (Outlay Rs. 4 lakhs)*

9.601 The scheme is to take up planting of Wattle and tropical pines in some of the grass lands.

*Intensification of Management of Degraded Evergreen Forests (Outlay Rs. 30 lakhs)*

9.602 This scheme is for augmenting the existing natural regeneration of valuable species like Vateria, Dichopsis, Dysoxylum, Evodia and Hopea. The scheme also covers intensive management including manipulation of canopy, tending, improvement fellings, introduction of valuable species and extraction of mature and over-mature trees.

*Plantation Crops in Forests Areas—Cashew Plantation (Outlay Rs. 15 lakhs)*

9.603 The proposal is to raise 1320 ha of cashew plantation in the forest areas during the Plan period. The outlay proposed is for raising the plantation.

*Package Programme for Cashew (Outlay Rs. 18 lakhs)*

9.604 This programme is to take up intensive manuring and prophylactic measures in the existing cashew plantations over an area of 1,800 ha. during the plan period. The programme also covers a scheme to replace the sick and dying cashew trees in the plantation area with fresh high yielding seedlings. The operation will be done in accordance with the standard practices prescribed by the Kerala Agricultural University.

*Supplemental Crops Plantation (Inter crops in Plantations and forest trees (Outlay Rs. 4 lakhs)*

9.605 The proposed outlay is for growing pepper plantations and other similar species in the natural forests and also for the maintenance of the pepper plantations already raised.

*Social Forestry—Farm Forestry (Outlay Rs. 20 lakhs)*

9.606 Under this scheme the Forest Department will raise seedlings of some flowering species and fruit yielding plants. These will be supplied to the villagers for planting which are useful to them for their requirements of firewood, fodder, green manure, thatching grass, agricultural implements and small house construction materials.

*Extension Forestry (Centrally Sponsored Scheme) (Outlay Rs. 21 lakhs)*

9.607 The provision made is for the States share for the implementation of the scheme. Seedlings of trees suitable for firewood, fodder, green manure, fruits, oil seeds etc., will be planted by the Department over an area of 3,100 ha comprising revenue panchayat lands, panchayat lands and other waste lands. In this scheme students, youth organisations, and other

voluntary organisations will be involved. For implementing the scheme a Forestry Extension Wing will be organised in the Department.

*Reforestation of Degraded Forests including Civil Forests (Centrally Sponsored Scheme) (Outlay Rs. 21 lakhs)*

9.608 The provision made is for meeting the State's share of the expenditure under this scheme. The proposal is to plant annually 320 ha. of Reserve Forests which are having poor growing stock and in plantations with large scale blanks. Selected species suitable for meeting the requirements of firewood, green manure, fodder etc., of the adjacent villagers will be raised in these areas.

*Recreation Forestry (Outlay Rs. 26 lakhs)*

9.609 This programme aims at developing 'Forest Parks' and 'Mini Zoos' very near thickly populated and industrial urban areas so as to make available recreation and relaxation facilities to the people. Further, forests which are very easily accessible from cities will be developed into tourist centres with necessary infrastructure facilities such as wild life sanctuaries, watch towers, water holes, mountaineering, boarding and picnic spots.

*Afforestation of Special Sites (Outlay Rs. 12 lakhs)*

9.610 The proposal is to cover by afforestation 2,000 ha of denuded area, arid and semi-arid areas, coastal belts, river valley projects etc.

*Mechanised Logging, Extraction and Marketing of Timber and Fire wood (Outlay Rs. 390 lakhs)*

9.611 Introduction of modern logging and marketing methods is contemplated during the Plan period. This scheme involves the establishment of three transport units consisting of a fleet of lorries and tractors and fully equipped repair and replacement work shop. The estimated expenditure for this amounts to Rs. 900 lakhs at the rate of Rs. 30 lakhs per unit. As a part of modern logging practice, three skyline units will be formed at an estimated cost of Rs. 18 lakhs. Each unit will consist of skyline crane, gravity rope way and related equipments. Besides these, other logging equipments such as various kinds of saws, axes, ropes portable chipper mills, winches etc., are also required for implementing the scheme. The estimated cost of these amounts to Rs. 12 lakhs.

9.612 As a consequence to the introduction of the modern logging, extraction and marketing methods, additional technical and non-technical personnel are needed. The outlay proposed is for meeting the expenditure required for logging, transport, marketing, staff and training.

*Development of Forest based Industries (Outlay Rs. 600 lakhs)*

9.613 Under this new scheme it is proposed to establish two Industrial Complexes during this plan period. Each of these units will consist saw mill, seasoning plant, treatment plant, a joinery, a furniture unit, a door window manufacturing unit, chipper mill, particle board unit and a decorative veneer unit. The estimated expenditure for the two complexes is Rs. 600 lakhs.

*Integrated Development of Teak Forests and Wood-based Industries (Outlay Rs. 300 lakhs)*

9.614 The objective of the scheme is to provide a large sized and economically efficient wood industry complex integrated with forestry operations. The scheme includes planting and replanting extensive areas with teak and also setting up an industry complex of saw mill, plywood factory, fibre plant and furniture. This scheme is proposed to be launched with World Bank assistance. When implemented fully within a period of 25 years the total expenditure of the project would be Rs. 108 crores. The Agricultural Refinance and Development Corporation has been entrusted with the task of conducting feasibility study on industrial components of this project. It is expected to give direct employment for about 6,500 persons and will help to increase the State revenue by Rs. 7.5 crores per annum.

*Development of Minor Forest Produce (Outlay Rs 45 lakhs)*

9.615 The maintenance of cardamom plantations under the control of the Department and provision of grant-in-aid to K.F.D.C. for the efficient management of cardamom plantations transferred to the Corporation by the Department are the main aims of this scheme. The scheme will also help the rehabilitation of some of the Sri Lanka repatriates and raising of cardamom over an area of 220 ha in the ever green forests in Quilon and Calicut circles. An amount of Rs. 15 lakhs is proposed for this programme.

9.616 Further an outlay of Rs. 15 lakhs is also proposed for increasing considerably the production of other minor forest produce such as medicinal plants, cloves, nut meg, oil seeds, canes, tannin yielding plants, fodder grasses and bee keeping. An organisation would be set up for the proper collection, processing, grading, storage, transport, marketing, pricing and utilisation of these minor forest produce.

9.617 The present system of entrusting contractors for the collection of M.F.P. will be dropped during the Plan period. Instead, it is proposed to organise Tribal Co-operative Societies in all Divisions of Forests for collection and Marketing of M. F. P. so as to eliminate the exploitation of tribals by contractors. In order to give financial aid to these societies an amount of Rs. 15 lakhs is proposed,

*Forest Communications (Outlay Rs. 535 lakhs)*

9.618 A good network of roads is a must for the efficient management, effective protection and economic extraction of forests. Hence it is necessary to construct new roads and improve the existings ones both in the Reserve and evergreen forests. This task can be entrusted with the recently formed Engineering Wing of the Department. The proposed outlay is for implementing the programme.

*Buildings (Outlay Rs. 365 lakhs)*

9.619 The outlay proposed is for the construction of quarters for the officers and staff in the field, additional office accommodation for the Chief Conservator of Forests, construction of fullfledged school campus for Kerala Forest School, Walayar and establishment of a forest colony at Sultanbatterry.

*Wild Life Management and Conservation*  
(Outlay Rs. 250 lakhs)

9.620 Kerala is famous for its wild life resource potential of various types and kinds of fauna both in the forest and in the Wild Life Sanctuaries. But due to the interference and encroachment of forest by man, most of our valuable wild life species are becoming extinct. Proper management and preservation of these species are of national importance. For implementing this programme, it is proposed to organise a separate Wild Life Wing in the Department with adequate staff and equipments. It is also proposed to form nature clubs in schools and colleges to cultivate love for wild life among the younger generations.

*Forest Protection (Outlay Rs. 150 lakhs)*

9.621 The scheme visualises augmentation of the staff including police force for the protection of reserve forests and effective checking of the transport of forest produce from forests and for strengthening the check-posts at vulnerable points. Supply of telephone connections and provision of vehicles to Range Offices and connecting Divisions and Range Headquarters with V.H.F sets and the Divisions and circle headquarters with wireless sets are also envisaged in the scheme.

*Fire Protection (Outlay Rs. 85 lakhs)*

9.622 Kerala has more than 1.3 lakh ha. of plantations of various species and about 9480 sq. km of forest land. Protection of these resources from the ravages of wild fire is absolutely essential and with this object a fire depot-cum-fire training centre will be established in the State during the Plan period in collaboration with New Zealand. The object of the scheme is to impart training to the forestry personnel in modern fire control methods and fire fighting equipments and to undertake planning of fire protection, etc. A provision of Rs. 85 lakhs is made for implementing the scheme.

*Forest Publicity, Public Relations and Extension (Outlay Rs. 71 lakhs)*

9.623 This scheme envisages the organisation of forest clubs, wild life clubs, Friends of Trees Associations and creation of a publicity wing and Regional Mobile Units, improvement of the Forest Museum at the Headquarters and making arrangements for educational tours for children to forest areas and sanctuaries. Participation in exhibitions by the Department, Publication of literature, booklets and brochures on forest, etc., are also envisaged under this scheme.

*Planning, Statistical and Evaluation Cell*  
(Outlay Rs. 35 lakhs)

9.624 It is proposed to reorganise the existing Statistical Cell of the Department so as to cope with the needs of planning and evaluation of forestry schemes. The following are the main tasks before the planning, statistical and evaluation cell:—

- (i) estimation of growing stock of major forest produce on quinquennial basis;
- (ii) detailed survey on demand for forest produce by the forest-based industries with

particular reference to their installed capacity, expansion possibilities and scope for starting new units;

- (iii) collection of reliable data on sale of timber in sale coupe and other minor forest produce,
- (iv) conducting cropcutting experiments on a regular basis in Departmental Plantations where annual crops are cultivated; and
- (v) collection of other information required by the Department from the records of the Range/Divisional/Circle Offices.

The provision is for strengthening the machinery in charge of these activities.

*Special Programmes for Tribal Areas: (Outlay Rs. 32 lakhs)*

9.625 The proposal envisages provision of essential amenities such as accommodation, schools, dispensaries, and wells for the tribals engaged in forest activities and also for the development of communications leading to the tribal settlements.

*Centrally Sponsored Schemes*

*Raising of Mixed Plantations outside Reserve Forests (Outlay Rs. 21 lakhs)*

9.626 The scheme aims at raising plantations of species useful for firewood, fodder, green manure, fruits and small timber. The plantings will be done in Revenue poramboles, panchayat lands and other waste lands with the Co-operation of the local bodies and the public. After a few years they will be handed over to the local bodies for public use. The target is to raise 3,100 ha. in a period of three years in some selected districts. Fifty per cent of the cost will be met by the Government of India and the State's share of the scheme has been provided under extension forestry.

*Development of Social Forestry—Reforestation of Degraded Forests (Outlay Rs. 21 lakhs)*

9.627 The plan programme is to raise plantations of species useful for firewood, fodder, green manure, small timber, etc. Forest area with poor growth and plantations of failed patches will be utilised for planting the species at the rate of 320 ha/annum. Fifty per cent of the amount will be met by the Central Government. The State's share of the expenditure has been provided under Reforestation of Degraded forests.

*Central Sector Schemes*

*Periyar Tiger Reserve (Outlay Rs. 50 lakhs)*

9.628 The Periyar Wild Life Sanctuary has been converted into Periyar Tiger Reserve by including it under Project Tiger from 1978-79 onwards. Consequent on this conversion, various schemes that are to be implemented fall under two categories, viz., the State component and the Central sector component. The proposals under the State sector consist the expenditure required for improving tourism and providing better facilities for the existing staff.

9.629 The proposals under the Central Sector component is for improving the infrastructure facilities of the Project Tiger. The area of operation under this project is the core area of 350 km<sup>2</sup> and the buffer area of 427 km<sup>2</sup> excluding the tourism zone of 50 km<sup>2</sup>. The State plan envisages the development of the tourism zone. Under the scheme it is also proposed to acquire the privately owned cardamom estates situated in the core area for which an amount of Rs. 10 lakhs is also proposed.

*Eravikulam—Rajamally National Park (Outlay Rs. 16 lakhs)*

9.630 The Kannan Devan Hills Produce area and the adjoining Rajamally Estate are inhabited mainly by the Nilgiri Tahr and other animals. A Wild Life Sanctuary comprising these two areas was constituted by the Government of Kerala during 1975 and later on it was converted into a National Park. It is expected that the outlay proposed will be met in the Central sector.

TABLE 9.23

## Forests—Scheme-wise Outlay

(Rs. in lakhs)

Sl. No.	Scheme	Fifth Plan Outlay (1974-79)	1974-78 Expenditure	1978-79 Outlay budgeted	1978-83 Outlay Proposed
(1)	(2)	(3)	(4)	(5)	(6)
<b>I DIRECTION AND ADMINISTRATION</b>					
1	Intensification of Forest Management	10.00	8.56	2.50	50.00
<b>II RESEARCH</b>					
1	Research	30.00	11.15	7.00	50.00
<b>III EDUCATION AND TRAINING</b>					
1	Education and Training	20.00	15.69	8.00	50.00
<b>IV FOREST CONSERVATION AND DEVELOPMENT</b>					
1	Survey, demarcation and settlement of forest areas	60.00	25.89	6.50	90.00
2	Working Plan	..	..	..	30.00
3	Forest Protection	20.00	11.91	9.00	150.00
4	Fire Protection	45.00	27.71	15.00	85.00
<b>V FOREST RESOURCES SURVEY</b>					
1	Forest Resources Survey	..	..	..	15.00
<b>VI PLANTATION SCHEMES</b>					
1	Plantation of quick growing species	272.00	81.00	6.00	50.00
2	Plantation of Economic spices—Teak		127.26	49.50	300.00
3	Anjili Plantations	..	0.08	..	..
4	Soft wood Plantations	..	..	..	100.00
5	Rose Wood Plantations	..	..	..	2.00
6	Balsa Plantations	..	..	..	2.00
7	Bamboo Plantations	..	..	..	2.00
8	Fuelwood Plantations	..	10.00	..	40.00
9	Miscellaneous Plantations	..	..	..	10.00
10	Cultural Operations	25.00	18.77	5.00	60.00
11	Deciduous Forest Cultural Operations	..	..	..	5.00
12	Grass lands	..	..	..	4.00
13	Intensification of Management of degraded ever green forests	..	..	..	30.00
14	Cashew Plantations	..	3.68	3.00	15.00
15	Package Programme for Cashew	..	0.50	2.00	18.00
16	Supplemental Crop Plantations	..	..	..	4.00



(1)	(2)	(3)	(4)	(5)	(6)
<b>VII FOREST DEVELOPMENT CORPORATION</b> (equity participation)					
1	Forest Development Corporation	100.00	76.00	15.00	115.00
<b>VIII FARM FORESTRY</b>					
1	Farm Forestry	35.00	21.06	6.50	20.00
2	Extension Forestry (Raising of mixed plantations outside reserve forests under social forests)	..	..	7.00	21.00
3	Reforestation of Degraded Forests	..	1.50	3.50	21.00
4	Recreation Forestry	..	..	..	26.00
5	Afforestation of Special sites	..	..	..	12.00
<b>IX FOREST PRODUCE</b>					
1	Integrated development of Teak Forests and wood based industries in Kerala	..	1.00	1.00	300.00
2	Development of Cardamom Plantations				15.00
3	Development of Other Minor Forest Produce	10.00	5.86	2.00	15.00
<b>X COMMUNICATIONS AND BUILDINGS</b>					
1	Communications and Buildings	102.00	57.92	43.00	900.00
<b>XI PRESERVATION OF WILD LIFE</b>					
1	Preservation of wild Life	70.00	29.30	13.30	250.00
2	Periyar Game Sanctuary	..	0.30	0.30	..
3	Eravikulam Sanetuary	..	0.50	0.50	..
4	Parambikulam Game Sanctuary	..	0.32	0.10	..
5	Wynad Sanctuary	..	0.50	0.30	..
6	Neyyar Game Sanctuary	..	0.44	0.50	..
<b>XII OTHERS</b>					
1	Mechanised logging, extraction and marketing of Timber and Firewood	2.00	0.01	..	390.00
2	Development of Forest based industries	..	..	..	600.00
3	Collection and marketing—Tribal Co-operative Societies for collection of MFP Grant-in-aid	..	..	1.50	15.00
4	Forest Publicity	10.00	5.37	4.00	71.00
5	Planning, Statistical and Evaluation cell	15.00	6.25	4.00	35.00
6	Amenities to Staff and labour—Special Programme for Tribal Areas	20.00	7.00	4.00	32.00
<b>Total</b>		<b>846.00</b>	<b>555.53</b>	<b>220.00</b>	<b>4600.00</b>

*Investment in Agricultural Financial Institutions (Outlay Rs. 2400 lakhs)*

9.631 A massive agricultural development programme is envisaged during the Plan period. This calls for a sizable capital investment in agriculture. Such a huge investment envisaged cannot be provided through the regular budgetary channels and therefore will have to be mobilised through the financial insti-

tutions from within and outside the State such as Agricultural Refinance and Development Corporation, Agricultural Finance Corporation etc. Institutional finance for agricultural schemes are being channeled through the Kerala Central Land Mortgage Bank. In order to mobilise resources from institutional financing agencies the State would have to make a matching contribution. An outlay of Rs. 24 crores is provided for this purpose.

TABLE 9.24

**Agricultural Financial Institution—Scheme-wise Outlay**

(Rs. in lakhs)

Sl. No.	Scheme	Fifth Plan Outlay (1974-79)	1974-78 Expenditure	1978-79 Outlay budgeted	1978-83 Outlay Proposed
(1)	(2)	(3)	(4)	(5)	(6)
<i>Investment in Agricultural Financial Institutions</i>					
1	Central Land Mortgage Bank — Purchase of debentures	317.00	218.90	130.00	240.00

**Community Development and Panchayats***A. Community Development*

9.632 The development of rural areas calls for multidisciplinary approach to resource development and resource mobilisation. This requires the evolution of an organisational structure whose primary responsibility is to co-ordinate the efforts of the various agencies involved in the development of resources.

9.633 The problems of rural development in Kerala assume greater complexities on account of the extreme heterogeneity in the resource base. The heterogeneity in the capabilities of land resources arises from the extreme variations in topography and moisture regimes and consequent ability to grow a number of different crops. Normally, farmers in Kerala grow 8 to 10 crops even within a small homestead and in addition engage themselves in supplementary occupations like dairying, poultry keeping, bee keeping etc. Further the limitations of land resources call for a total approach to the resource development.

9.634 A large number of agencies are involved in rural development activities. The extension of these activities to the rural families in the State through the expansion of the individual development agencies at the grass-root level would turn out to be a highly costly proposition. Only a multi-purpose functionary can be effective and economic if provided in the community development system.

9.635 At present the entire State excluding the municipal areas is covered by 144 Development Blocks. Many of the development activities are carried on through the Community Development Blocks. Small Farmers Development Agencies are in operation in the districts of Cannanore, Quilon, Trichur and Trivandrum. The Community Development Block Organisation is functioning as their implementing agencies for S F D As at the field level. 'Integrated Rural Development Project' is being implemented in Taliparamba Block in Cannanore district. Another development programme viz. the 'Intensive Integrated Rural Development Programme' is also proposed to be implemented through Blocks. In 1978-79 forty five Blocks will be brought under the scheme. A brief description of the schemes proposed under community Development in the Plan for 1978-83 is given below:

*1. Special programme for the Rural Poor (Outlay Rs. 500 lakhs)*

9.636 In the past the fruits of development could reach only those who had resources or access to make use of the assistance rendered by the Government. Since more than 60 per cent of the population in the State is below the poverty line and their physical resource endowments are meagre, it is necessary to have an entirely different approach towards rural development. Formulating programmes to suit available skills and capabilities of those below the poverty line would go a long way in the economic rehabilitation of this section of the population. It is proposed to provide gainful employment to 33,000 persons belonging to poor families during the plan period 1978-83. Employment will be found in the rural sector but largely in non-farm occupations. The programmes will be implemented mainly through the mobilisation of institutional finance. Part of the assistance will be given by way of grant. An allocation of Rs. 500 lakhs is set apart in the Plan for this project.

*2. Community Development Programmes*

9.637 The following programmes are proposed to be implemented through the Community Development Blocks during the Plan period.

*(1) Agriculture (Outlay Rs. 71.90 lakhs)*

9.638 Programmes will be designed to help the development of agricultural resources of the weaker sections of the society. Intensive farm development programmes applying techniques of inter-cropping and multiple cropping with total farm development approach will be implemented. These programmes would benefit 30,000 persons covering 8,000 hectares of land.

*(ii) Minor Irrigation (Outlay Rs. 65.90 lakhs)*

9.639 A number of minor irrigation works are being executed with the participation of the people. It is proposed to expand the scope of the area of activity during the plan period. Many of the minor irrigation schemes are implemented with the aid of Government and CARE assistance. The outlay provided is for meeting Government's share of expenditure on minor irrigation schemes and also for meeting the cost of accessories of pumpsets supplied free by CARE.

(iii) *Animal Husbandry (Outlay Rs. 51 lakhs)*

9.640 Programmes under livestock development will focus on goat development and the development of Poultry especially, backyard poultry in 25,500 units. These units are mainly intended for helping the rural women, especially belonging to the weaker sections.

(iv) *Industry (Outlay Rs. 26 lakhs)*

9.641 Village artisans and craftsmen constitute a significant component of the rural poor. They could be helped by providing improved tools and equipments. About 5200 artisans are proposed to be assisted during the plan period under this programme

(v) *Social Education (Outlay Rs. 57.90 lakhs)*

9.642 Organisations like Mahila Mandals, Yuva Mandals, etc. are carrying out activities which are benefiting the entire community. Programmes of this nature are to be fostered during the plan period.

(vi) *Health and Sanitation (Outlay Rs. 21 lakhs)*

9.643 Programmes for the improvement of health and sanitation facilities of the families belonging to the weaker sections of the society will be implemented during the plan period. An outlay of Rs. 21 lakhs is provided under this scheme.

(vii) *Housing (Outlay Rs. 34.80 lakhs)*

9.644 Assistance will be rendered for improving the housing conditions of the weaker sections of the society. An outlay of Rs. 34.80 lakhs is provided for this scheme.

(viii) *Roads (Outlay Rs. 41 lakhs)*

9.645 Many rural areas in the State suffer from lack of minimum road communication facilities, especially link roads. It is proposed to construct link roads in rural areas with people's participation. An amount of Rs. 41 lakhs is provided for giving assistance to voluntary agencies.

3. *Strengthening of Supervisory Machinery for Women Workers (Outlay Rs. 2.50 lakhs)*

9.646 A number of programmes to benefit women and children such as balavadies, nutrition programmes, women education, etc. are being implemented through the Blocks. For proper implementation of these programmes, the Block level organisation needs to be strengthened during the plan period.

4. *Demonstration and Training (Outlay Rs. 10 lakhs)*

9.647 The Extension Training Centres in the State are meeting the training needs of functionaries engaged in community development in the State. Training programmes are being organised both for official and non-official functionaries. It is proposed to continue these training programmes during the plan period.

5. *Rural Manpower Programmes (Outlay Rs. 118 lakhs)*

9.648 In order to utilise the relatively abundant manpower available in the rural areas for building community assets, labour intensive projects will be undertaken. A Labour-cum-Development Bank is functioning in Ernakulam District. The experience of the Labour-cum-Development Bank has been encouraging. It is proposed to organise one Labour-cum-Development Bank each in all the remaining ten districts. An outlay of Rs. 118 lakhs is proposed in the Plan for this programme.

B. *Panchayati Raj*1. *Training Institution in Panchayati Raj (Outlay Rs. 15 lakhs)*

9.649 In the context of resource based planning active involvement of the people in the planning and implementation of development programmes has to be ensured. For generating proper appreciation of the roles and involvement it is necessary to impart training to official as well as non-official functionaries of the Panchayati Raj institutions. While a training institute in local administration has already been set up at Trivandrum, a new training centre is proposed at Kozhikode. The establishment of the training institute and the running of the courses during the plan period is expected to be met from the Plan provision of Rs. 15 lakhs.

2. *Assistance to Panchayati Raj Institutions (Outlay Rs. 475 lakhs)*

9.650 Owing to the poor finance of several panchayats, development activities in these panchayats are at a low pace. Investment on afforestation programmes, fishery programmes etc. can generate sustained income for the panchayats. It is therefore necessary to assist the panchayats to take up such investment programmes. For this purpose an outlay of Rs. 475 lakhs is provided in the Plan.

3. *Rural Development Board (Outlay Rs. 700 lakhs)*

9.651 The Kerala State Rural Development Board has been set up to help panchayats to execute revenue earning ventures such as construction of markets, shopping centres, bus stands, etc. The provision of Rs. 700 lakhs provided in the Plan is to help the Board to resort to open market borrowings to execute remunerative schemes in panchayats.

4. *Publication of Panchayati Raj Journal (Outlay Rs. 10 lakhs)*

9.652 The Panchayati Raj Journal is an official publication which carries news and messages to the villages in the State. The main objective of the publication is to inform, educate and convey the progress and achievements of various development programmes. At present the journal has a subscription of 15,000 which is proposed to be raised to 30,000. The outlay proposed is for the continuation of the publication of the journal.

TABLE 9.25

**Community Development and Panchayats—Scheme-wise Outlay**

(Rs. in lakhs)

Sl. No.	Scheme	Fifth Plan Outlay (1974-79)	1974-78 Expenditure	1978-79 Outlay budgeted	1978-83 Outlay Proposed
(1)	(2)	(3)	(4)	(5)	(6)
	<i>Community Development and Panchayats</i>	<b>627.00</b>	<b>512.05</b>	<b>170.00</b>	<b>2200.00</b>
<b>A. COMMUNITY DEVELOPMENT</b>					
1	Special Programme for rural development	..	..	..	500.00
2	Community Development Programmes				
	(i) Agriculture	..	30.18	9.10	71.90
	(ii) Minor Irrigation	..	14.58	8.50	65.90
	(iii) Animal Husbandry	..	17.49	5.00	51.00
	(iv) Industries	..	26.74	1.00	26.00
	(v) Social Education	..	12.66	9.90	57.90
	(vi) Health and Sanitation	..	9.48	1.00	21.00
	(vii) Housing	..	0.32	..	34.80
	(viii) Roads	..	7.83	1.00	41.00
3	Extension Strengthening of supervisory machinery for women workers	..	1.93	0.50	2.50
4	Demonstration and Training	..	5.54	2.00	10.00
5	Rural man power programme and labour-cum-development bank	..	52.41	18.00	118.00
6	Implementation of SFDA Programme in non SFDA districts	..	..	50.00	..
7	Other items	..	3.46	..	..
<b>B. PANCHAYATS</b>					
1	Training institutions in local administration	..	2.62	2.00	15.00
2	Loans to Panchayats	..	20.16	5.00	475.00
3	Rural Development Board	..	302.00	55.00	700.00
4	Publication of Panchayat Raj Journal	..	4.65	2.00	10.00

## CO-OPERATION

Early attempts to develop the co-operative movement in the State started with the establishment of the Kerala State Co-operative Bank and 7 central banks during the Second Five Year Plan period. During this Plan period a total number of 127 large-sized society with State participation in Share Capital, the Kerala Co-operative Central Land Mortgage Bank with 10 Primary Land Mortgage Banks and the Apex Marketing Co-operative Society with 36 primary marketing co-operative societies were organised.

10.2 Based on the recommendations of the Mehta Committee, the scope of the co-operative movement in the State was further widened and measures were taken to tune up the co-operative administration. During the Third Plan period, in each district, a viable Central Co-operative Bank was established and steps were initiated to reduce the number of primary agricultural credit societies from 2,220 to 1,600 viable service societies at the base level. The loan operations made a significant progress with Rs. 20.29 crores by way of short term and medium term loans to the agriculturists in 1960-61. Effective steps were also taken to improve the working of the marketing societies and the value of agricultural produce marketed by the marketing societies. A programme of organising Joint Farming Societies was launched during the Third Plan period. 79 Farming Societies in 9 pilot projects and 99 Farming societies outside the pilot projects were organised. But these farming co-operative societies did not achieve the desired goals. At the end of 1968-69, there were 148 farming societies in the State most of which were dormant. The consumer co-operative movement made considerable headway during the Third Plan period. 9 Wholesale Co-operative Stores with 139 branches and 34 primary consumer co-operatives were organised. A federation of wholesale co-operative stores also came into existence. The sales turnover of 9 wholesale co-operative stores amounted to Rs. 17.37 crores during 1968-69. As a part of the programme of developing consumer co-operatives, the wholesale co-operative stores set up a number of departmental stores. Under the rural consumer co-operative Societies scheme, 1166 village societies and 14 marketing societies effected sales of consumer articles to the tune of Rs. 46.16 crores during 1968-69. 36 labour contract co-operatives, 6 rickshaw pullers societies, 2 hand cart pullers' societies, 2 washermen co-operatives were also organised.

10.3 During the Fourth Plan period, the programme of reorganising the primary agricultural credit societies was continued and the number of societies was reduced to 1787 at the end of the plan period. The membership of the primary credit co-operatives increased to 19.62 lakhs. The short term and medium term loans issued by these societies increased to Rs. 44.54 crores in 1973-74. The long term loans advanced amounted to Rs. 3.28 crores. In 1973-74 the non-agricultural credit societies numbering 453 advanced loans amounting to Rs. 17.36 crores. A District Co-operative Bank was established in Idukki. The

Rubber Marketing Federation was organised during the Fourth Plan period. There were 96 Primary Marketing Co-operative Societies and they together handled agricultural produce worth Rs. 12.11 crores at the end of the Fourth Plan period. The value of fertilisers handled by the co-operatives during 1973-74 amounted to Rs. 11.73 crores covering 60 per cent of the total fertilizers distributed in the State. 36 processing units were installed in the State. Assistance was given for the construction of 75 mandi level godowns and 869 rural godowns. Of these, construction of 69 mandi-level godowns and 748 rural godowns was completed by the end of the Fourth Plan period. The wholesale co-operative stores and primary stores were given encouragement to expand their business and assistance was given for opening 57 multiroom shops. The value of retail distribution of consumer goods by co-operatives in rural and urban areas amounted to Rs. 44.98 crores and Rs. 21.71 crores respectively. An Apex Housing Society was organised with a view to financing the primary housing societies for giving loans to members for construction of houses. Co-operative Hospitals were started in Trivandrum, Cochin, Kozhikode, Trichur and Kulanada. 59 co-operative dispensaries, 9 Taxi Driver's Co-operative Societies, 22 Autorickshaw Driver's Co-operative Societies, 3 Printing and Publishing Societies and 19 Labour Contract Co-operative Societies and 28 Primary Consumer Stores were organised under the special employment programme.

10.4 The Fifth Plan envisaged a total financial outlay of Rs. 712 lakhs. Out of this Rs. 376.69 lakhs was intended for payment of Share Capital contribution to credit co-operative societies for borrowing from the long-term operation fund of the Reserve Bank of India. The rest of the outlay was earmarked for other schemes. The expenditure during 1974-78 amounted to Rs. 522.04 lakhs (73.3%) In addition to this a sum of Rs. 245.55 lakhs was spent under centrally sponsored schemes/central sector schemes. With a view to lending support for agricultural financing institutions, Government purchased Rs. 210.50 lakhs worth of debentures floated by the Kerala Co-operative Central Land Mortgage Bank. The expenditure for principal programmes under the State Sector comprised Credit Co-operatives (LTO Schemes) Rs. 277.92 lakhs, co-operative marketing and warehousing Rs. 42.89 lakhs, Housing Co-operatives Rs. 26.05 lakhs, Farming Co-operatives Rs. 9.42 lakhs, Processing Co-operatives Rs. 15.88 lakhs, Consumer Co-operatives Rs. 74.87 lakhs and other co-operatives Rs. 49.94 lakhs.

10.5 There are 11 District Co-operative Banks in the State and all of them are viable. Their deposit position is of the order of Rs. 55 crores. There were 154 primary housing societies with total membership of nearly 26,600 in 1977-78. Two collective Farming Societies and 9 Joint Farming Societies were organised during 1974-78. There were 71 labour contract societies with a total membership of 11,245 in 1977-78.

10.6 There are several features which have serious implications with regard to financing of agricultural development in the State. The heterogeneity in the cropping pattern even within a small tract of land, with a mix of seasonal, annual and perennial crops results in the demand for credit for different terms from various sources. It calls for drastic changes in the policy related to credit disbursement of the institutions in the organised sector especially the cooperative and commercial banks. Generally these institutions are either specialised in meeting the short term or long term credit needs of the farmer. Reorientation and restructuring of these institutions are therefore called for to bring about a breakthrough in agricultural production. The State has to depend largely on financial institutions rather than budgetary resources for the agricultural development

10.7 The dominance of perennial crops in the cropping pattern demands a higher proportion of long term credit. The long term credit system is relatively weak and concerted efforts have to be made to increase its capability to meet the challenging needs of agricultural credit.

10.8 Marketing is the weakest link in the agricultural system of the State. The lack of integration between credit and marketing poses a serious problem in the development of agriculture in the State.

10.9 Price stability is a key factor in the development process. A strong consumer cooperative system has to be built up.

10.10 Co-operative ventures especially for the depressed classes like Harijans and Girijans need special support. A number of functional co-operatives would also have to be developed. All these call for greater attention on the policies and programmes to be pursued in the co-operative sector.

10.11 Taking the development problems and needs of the cooperative sector the following objectives have been identified in drawing up the plan for co-operation.

(i) Co-operatives shall be built up as one of the major instruments of decentralised, labour-intensive and rural-oriented economic development and shall be closely associated with the process of planning for economic development and social change.

(ii) The co-operative movement shall be developed as a "shield for the weak". Small and marginal farmers and agricultural labourers, rural artisans and ordinary consumers belonging to the middle and lower income groups shall be provided the maximum scope to participate in the co-operative programmes and a massive effort will be made for the involvement of millions of our masses in the co-operative movement.

(iii) Cooperative development shall be promoted on a national basis, and regional imbalances in co-operative development shall be progressively reduced,

(iv) The co-operative movement shall be built up as an autonomous, self-reliant movement, free from undue outside interference and control, as also from politics. The autonomy of the co-operatives shall be based, inter alia, on increasing generation of internal resources, mobilising savings in rural and urban areas, and decreasing dependence on resources from outside financial institutions and Government.

(v) In the rural areas, a strong, viable and integrated co-operative system shall be built up to promote total and comprehensive rural development by progressively strengthening the links between credit, supply of agricultural inputs, agricultural production including ancillary activities like dairying, poultry keeping, fisheries and piggery and marketing and distribution of essential consumer articles.

(vi) A net-work of co-operative agro-processing and industrial units shall be built up to provide gainful and economic links between the growers and the consumers.

(vii) The consumer cooperative movement shall be built up to strengthen the public distribution system and act as a bulwark of consumer protection, and as an instrument of price stabilisation.

(viii) Professional management shall be built up in the cooperative institutions through a sustained programme of recruitment of suitable personnel and their systematic training.

The schemes proposed during the Plan period 1978-83 under Co-operation are outlined below:

*Direction and Administration (Outlay Rs. 100 lakhs)*

1. *Additional Departmental staff (Outlay Rs. 100 lakhs)*

10.12 It is necessary to strengthen the Co-operative Department at various levels for the effective implementation of plan schemes envisaged during the plan period. The provision is for meeting the expenditure in respect of the schemes relating to the restructuring and reorganisation of the Co-operative Department including strengthening of its audit wing.

2. *Publication of Co-operative Journal (Outlay Rs 5 lakhs)*

10.13 The proposed outlay is to meet the expenditure in connection with the publication of the co-operative journal by the Department.

*Credit Co-operatives*

3. *Share Capital Contribution to Apex and Central Co-operative Banks (Outlay Rs. 175 lakhs)*

10.14 The programme envisaged is to strengthen the share capital base of the Central/District Co-operative banks to raise their borrowing capacity so as to meet the additional loaning programme anticipated during the Plan period.

4. *Primary Agricultural Credit—Societies Share Capital Contribution (Outlay Rs. 200 lakhs.)*

10.15 For achieving the loaning programme as envisaged in the current Plan period it is necessary to strengthen the share capital base of the primary agricultural credit societies in order to command greater borrowing power. The proposed outlay is for this purpose.

5. *Primary Agricultural Credit Societies—Managerial Subsidy (Outlay Rs. 17.16 lakhs.)*

10.16 The provision is for giving managerial subsidy to Primary Agricultural Credit Societies.

6. *Kerala Co-operative Central Land Mortgage Bank Share Capital Contribution (Outlay Rs. 50 lakhs.)*

10.17 In order to implement special developmental schemes of the Co-operative Central Land Mortgage Bank, the share capital base of the bank has to be strengthened. The proposed outlay is to meet this requirement.

7. *Primary Land Mortgage Banks—Share Capital Contribution (Outlay Rs. 5 lakhs)*

10.18 The provision is for share capital contribution to the Primary Land Mortgage Banks.

8. *Primary Land Mortgage Banks—Managerial Subsidy (Outlay Rs. 0.10 lakhs)*

10.19 Managerial subsidy should be given to Primary Land Mortgage Banks to meet part of the cost of staff. The outlay is for this purpose.

9. *Warehousing and Marketing Co-operatives Godowns—Subsidy (Outlay Rs. 62.28 lakhs)*

10.20 For the effective handling of fertilisers, other inputs and agricultural products, the storage capacity of agricultural credit and marketing societies has to be increased considerably. Considering the increased volume of business at least 363 rural godowns will have to be constructed during the Plan period.

10.21 The proposed outlay is to meet the subsidy portion of the expenditure for construction of godowns and for revitalising the dormant societies. 60 per cent of the fund required for the purpose will be made available by the National Co-operative Development Corporation.

10. *Deposit Guarantee Scheme—Subsidy to Kerala State Co-operative Bank (Outlay Rs. 0.10 lakh)*

10.22 The scheme envisages a token provision to the deposit guarantee fund for giving guarantee to deposits in the Primary Agricultural Credit Societies other than those coming under Bank Regulation Act.

11. *Outright Grant for Special Bad Debt—Reserve Fund for Financing Weaker Sections (Outlay Rs. 15 lakhs)*

10.23 The proposed outlay is for giving outright grant to the Special Bad Debt Fund of the Central Co-operative Banks for writing off bad debts that may arise on account of financing the weaker sections.

12. *Subsidy to District Co-operative Banks for giving Consumption Loans to the Weaker Sections (Outlay Rs. 1.25 lakhs)*

10.24 Incentives have to be given to District Co-operative Banks for providing loans to the weaker sections. The outlay proposed is for giving grants to the District Co-operative Banks for this purpose.

13. *Outright grant to Service Co-operative Societies for Financing the Weaker Section (Outlay Rs. 2.50 lakhs)*

10.25 The programme envisages provision of grants to service co-operative societies for creating a special bad debt fund for writing off the bad debt that may arise on account of financing the weaker sections from own funds.

14. *Incentive grant for Mobilisation of Deposits by Primary Agricultural Credit Societies (Outlay Rs. 5 lakhs)*

10.26 The provision is for giving grant as incentive to Agricultural Credit Societies for mobilising rural savings.

15. *Financial Assistance to Farmers Service Co-operative Banks for Appointing Technical Staff (Outlay Rs. 0.05 lakh)*

10.27 The scheme envisages a token provision to meet part of the cost of technical staff to be appointed by the Farmers' Service Co-operative Banks to be organised in non SFDA Districts.

*Housing Co-operatives*

16. *Share capital Contribution to Kerala Apex Housing Society (Outlay Rs. 40 lakhs)*

10.28 Reorganisation of the housing co-operative will have to be taken up in a big way not only to revitalise the existing societies but also to organise new societies so as to enable them to work more effectively as envisaged in the plan period.

10.29 The provision is for giving additional share capital contribution to Kerala Apex Housing Co-operative Societies to strengthen its share capital base so as to increase its borrowing capacity. This will enable the primary Housing Societies to advance long term loans for construction of houses.

17. *Primary Housing Societies—Managerial Subsidy (Outlay Rs. 10 lakhs)*

10.30 The provision is for giving managerial subsidy to Primary Housing Societies to expand their activities and improve their efficiency.

*Labour Co-operatives*

18. *Labour Contract Societies—Share Capital Contribution (Outlay Rs. 5.20 lakhs)*

10.31 The provision is to meet the expenditure for giving share capital contribution to 11 District Labour Contract Societies and 30 Primary Labour Contract Societies and to revitalise their activities.

19. *Labour Contract Societies—Managerial Subsidy (Outlay Rs. 8.69 lakhs)*

10.32 It is necessary to strengthen and expand the activities of labour contract societies for which qualified staff is essential. The provision is to render assistance by way of managerial subsidy to these societies.

*Warehousing Marketing and Processing Co-operatives.*

20. *Primary Marketing Co-operative Societies—Managerial Subsidy (Outlay Rs. 10 lakhs)*

10.33 The provision is for payment of managerial subsidy to 12 primary marketing societies for a period of 3 years.

21. *Subsidy for Appointment of Departmental Secretaries (Outlay Rs. 5.90 lakhs)*

10.34 The outlay proposed is for payment of subsidy to meet 50 per cent of the cost of departmental officers appointed as chief executives in the Primary Marketing Societies.

22. *Financial Assistance for the Rehabilitation of Potentially Viable Marketing and Processing Co-operative Societies* (Outlay Rs. 20 lakhs)

10.35 It is proposed to provide long term loans to potentially viable marketing and processing societies. As a measure of revitalisation such societies are to be given working capital loan for expanding their activities. The provision is for giving share capital contribution and managerial subsidy for these societies.

23. *Kerala State Rubber Marketing Federation* (Outlay Rs. 20 lakhs)

10.36 The Rubber Marketing Federation has a programme to increase its business substantially. For this the Federation would require about Rs. 3.5 crores during the Plan period. The additional funds required by the Federation will have to be raised mainly from institutional agencies like N. C. D. C. as long term loans. In order to augment the borrowing capacity of the Federation, it is proposed to strengthen the share capital base of the Federation. The outlay proposed is intended for this purpose.

24. *Technical and Promotion Cell* (Outlay Rs. 1 lakh.)

10.37 The two Apex Marketing Societies need continued managerial subsidy for the staff appointed in the technical and promotion cell constituted by them. The provision is to meet this expenditure.

25. *Primary Marketing Societies—Share Capital Contribution* (Outlay Rs. 10 lakhs.)

10.38 The provision made is for strengthening the share capital base of the Primary Marketing Co-operative Societies.

26. *Central Arecanut Marketing and Processing Co-operatives (CAMPCO)* (Outlay Rs. 50 lakhs.)

10.39 It is proposed to expand the activities of CAMPCO considerably by opening more collection depots/branches during the Plan period. It has also plans to enter the export market in a big way. This would necessarily entail larger financial assistance from the Government. The proposed outlay is for this purpose.

27. *Special Price Fluctuation Fund* (Outlay Rs. 10 lakhs.)

10.40 In the context of revitalisation of processing and marketing societies it is necessary to contribute special price fluctuation fund for these societies for the outright purchase of agricultural commodities. The provision made is to meet this expenditure.

28. *Processing Co-operatives—Share Capital Contribution* (Outlay Rs. 32 lakhs.)

10.41 The provision is for giving share capital contribution to Apex and Primary Marketing/Processing Societies for installation of processing units and their revitalisation.

29. *Processing Co-operatives—Managerial Subsidy* (Outlay Rs. 5 lakhs.)

10.42 The proposed outlay is to provide managerial subsidy to the processing units.

30. *Interest Subsidy to Processing/Marketing Societies* (Outlay Rs. 10 lakhs.)

10.43 Processing societies will be given interest subsidy at 5 per cent subject to a maximum of Rs. 15,000 on their borrowings from financial banks for their proper working. The provision is for meeting this expenditure.

*Farming Co-operatives*

31. *Better Farming Societies—Share Capital Contribution and Managerial Subsidy* (Outlay Rs. 25.88 lakhs.)

10.44 The proposed outlay is to render financial assistance for the revitalisation of Better Farming Societies by means of share capital contribution, subsidy for the purchase of farm equipments, managerial subsidy, etc.

32. *Joint Farming Societies—Share Capital Contribution and Managerial Subsidy* (Outlay Rs. 36.20 lakhs.)

10.45 The programme is to revitalise 10 existing Joint/Collective Farming Societies during the Plan period. The proposed provision is for rendering financial assistance to these societies by way of share capital contribution, subsidy for the purchase of farm equipments and inputs, loans and subsidy for construction of farm houses and managerial subsidy.

33. *Rehabilitation of Land Reform Beneficiaries—Supply of Inputs* (Outlay Rs. 7.50 lakhs.)

10.46 The provision is for providing subsidy to the farming societies organised for rehabilitation of land reform beneficiaries for the purchase of agricultural implements, inputs, etc.

34. *Consumer Co-operative Societies—Share Capital Contribution* (Outlay Rs. 570 lakhs.)

10.47 In order to equip the Consumer Co-operatives both financially and administratively a package of practices will have to be adopted during the Plan period. The whole system has to be reorganised and strengthened. At present the consumer societies in the State comprise a 3 tier system, the apex federation at the State level, the wholesale stores at the District level and the Primary societies at the base. The new approach is to convert the wholesale stores into branches of the Federation in due course. For this it is necessary to revitalise the working of the whole sale stores by giving Government guarantee on bank loans. It will also be necessary to subsidise the interest payable on long term loans in the past which poses a serious problem to the societies.

10.48 There is good scope for augmenting the retail trade handled by the primary consumer stores. The primaries may be conveniently grouped and assisted under the rural consumer scheme. These societies should have adequate business linkages with the lead societies. These reorganised societies may have to be given suitable financial assistance for purchase of furniture and fittings as well as managerial subsidy.

10.49 As a part of the programme it is also proposed to organise centralised bulk purchases under the leadership of the State Federation and open regional distribution centres according to requirements.



10.50 The provision envisaged under the scheme is for giving share capital contribution to the whole sale and primary societies.

35. *Subsidy to Consumer Co-operative Societies (Outlay Rs. 68.66 lakhs.)*

10.51 The provision is to give managerial subsidy to the whole sale and primary consumer societies for revitalising their activities during the Plan period.

36. *State Co-operative Consumer Federation—Share Capital Contribution (Outlay Rs. 120 lakhs)*

10.52 The outlay proposed is to strengthen the share capital base of the State Co-operative Consumer Federation with a view to organise increased volume of business activities through the whole sale and primary consumer stores.

37. *Development of School and College Co-operatives (Outlay Rs. 12.30 lakhs)*

10.53 It is proposed to set up 2000 school and college co-operatives additionally during the Plan period. Assistance on the present pattern will be made available to 2500 school/college co-operatives under the programme. It is also proposed to organise two central societies, one at Trivandrum and another at Calicut. These central societies are expected to organise purchases in bulk and distribute the same to affiliated school/college co-operatives. The central societies will be given a share capital contribution of Rs. 50000 each. Of the total outlay envisaged Rs. 5.30 lakhs is for college co-operatives, Rs. 6 lakhs for school societies and Rs. 1 lakh for central societies.

38. *Co-operative Training, Research and Member Education (Outlay Rs. 33 lakhs)*

10.54 The State has 4 junior Training Institutes and 3 Co-operative Colleges offering courses in co-operation. It is felt that the training programmes offered by these institutions should be dovetailed to meet the overall requirements of co-operative development in various sectors. Accordingly the emphasis in future should be on inservice training, giving more importance to functional courses of short duration for specialisation in various co-operative activities. With this end in view the co-operative training programme is proposed to be reorganised in the following manner.

- (i) By providing improved physical facilities in the institutions for class room, library etc.
- (ii) By appointing full time teaching staff with specialisation in different fields of co-operation.
- (iii) By revamping the member education programme through extension methods, giving emphasis to functional aspects.
- (iv) By providing specialised training to the departmental officers of intermediate level so as to build up a cadre of specialists and executives in various co-operative activities.

The outlay envisaged is to meet the Government share of the expenditure.

#### *Other Co-operatives*

39. *Government Employees Co-operative Societies (Outlay Rs. 1.30 lakhs)*

10.55 The provision is for giving assistance to Government employees' co-operative societies as share capital contribution, managerial subsidy, rent subsidy etc.

40. *Co-operative Hospitals (Outlay Rs. 17.10 lakhs)*

10.56 The provision is intended for the revitalisation of the existing co-operative hospitals and setting up of 4 new co-operative hospitals during the Plan period. The hospitals will have to be suitably equipped. The outlay proposed is for the payment of share capital contribution, managerial subsidy and building loan and subsidy to the hospital societies.

41. *Co-operative Rural Dispensaries (Outlay Rs. 21.90 lakhs)*

10.57 The provision is to reorganise 50 existing co-operative rural dispensaries so that they could function more effectively and do better services for the rural population.

42. *Apex Society for Co-operative Hospitals and Co-operative Rural Dispensaries (Outlay Rs. 5 lakhs)*

10.58 The proposed outlay is to give share capital contribution of the Government for the above societies.

43. *Societies for the Welfare of Scheduled Castes and Scheduled Tribes (Outlay Rs. 30 lakhs)*

10.59 It is proposed to reorganise the existing scheduled caste and scheduled tribe societies into 150 viable units. They may, apart from engaging themselves in credit activities, bestow attention on developing traditional trades like mat weaving and basket making. The Department will provide necessary managerial and supervisory assistance for the efficient functioning of these societies. The proposed outlay is for this purpose.

44. *Auto-rickshaw Drivers Co-operative Society (Outlay Rs. 45.10 lakhs)*

10.60 The programme envisages revitalisation of dormant societies of autorickshaw drivers. Till the end of 1976-77, 25 societies covering a membership of over 10,000 persons were organised under the special employment programme. Each society was given a share capital contribution of Rs. 1 lakh and a managerial subsidy of Rs. 5400. The share capital was not adequate to provide margin money for raising institutional finance for the purchase of vehicles. For want of workshop facilities and arrangements for the supply of spare parts, these societies had to face further hardships. The proposed outlay is intended for providing share capital and managerial assistance to the existing Autorickshaw societies for the purchase of 35 vehicles per society and for setting up of a workshop and a spare part shop along with each society. Institutional finance is also anticipated for this programme. The scheme will benefit 1150 persons by the end of the Plan period.

45. *Job Workers' Co-operative Societies (Outlay Rs. 0.05 lakh)*

10.61 The provision is for giving financial assistance to job workers' co-operative societies.

46. *Balwadi Co-operative Societies (Outlay Rs. 1.50 lakhs)*

10.62 At present there is one balwadi society functioning at Trivandrum. As balwadi co-operatives could find self employment for nursery trained teachers and there is considerable need for this it is proposed to set up 10 balwadi societies in the State in the District Headquarters other than Trivandrum. The programme envisages training of 50 matriculates every year selected from the 10 balwadi societies. The training will be given with the help of the Kerala State Council for Child Welfare at Trichur, Kozhikode and Trivandrum. Members who have studied up to S. S. L. C. will be given training in child care so that they can be employed as nursery assistants in the societies.

10.63 Of the total outlay envisaged Rs. 1 lakh is for share capital contribution and Rs. 0.50 lakh is grant for the purchase of equipments. The 10 balwadies together are expected to provide employment for 420 persons.

47. *Women's Co-operatives (Outlay Rs. 1.50 lakhs)*

10.64 The outlay is for giving additional share capital contribution to the women's co-operatives.

48. *Agro-Industrial Society (Outlay Rs. 5 lakhs)*

10.65 The provision is intended for giving additional share capital contribution to the Cannanore Agro-Industrial Society.

49. *Literary Society (Outlay Rs. 5 lakhs)*

10.66 The proposed outlay is for providing assistance to the literary societies for their expansion and strengthening of activities.

50. *Motor Transport Societies (Outlay Rs. 7 lakhs)*

10.67 The existing Motor Transport Societies need financial assistance for replacing the old vehicles and adding new vehicles to the fleet. The proposal contains procurement of 3 vehicles for each of the 11 existing societies. In order to ensure proper maintenance and services a workshop and a spare part shop should be set up as an adjunct to each of the society. The outlay proposed for this amounts to Rs. 3. lakhs.

10.68 As a part of this programme it is also proposed to equip 2 societies with 5 lorries each for undertaking goods transport services and other 2 societies with 3 vehicles each for operating passenger services. Besides operating goods transport service/bus service these societies may establish petrol bunk service stations, mechanical workshop and units for manufacture and sale of spare parts. The share capital contribution required for these societies is Rs. 4 lakhs. The scheme can provide employment for unemployed drivers, conductors, mechanics, blacksmiths and other skilled workers.

51. *Tribal Co-operatives (Outlay Rs. 0.50 lakh)*

10.69 The provision is for giving financial assistance to tribal co-operatives in Tribal Sub Plan areas to undertake developmental schemes for the welfare of Girijans in these areas. The assistance is proposed to be given as outright grant.

52. *Other Co-operatives of Weaker Sections (Outlay Rs. 10 lakhs)*

10.70 Societies like the lime-shell co-operatives printing co-operatives, and co-operative colonisation societies need financial support for improving their efficiency. The outlay envisaged is for paying share capital contribution to these societies so that they could avail of institutional finance for their working.

TABLE 10.1

Co-operation—Scheme-wise outlay

(Rs. in lakhs)

Sl. No.	Scheme	Fifth Plan outlay (1974-79)	1974-78 Expenditure	1978-79 outlay budgeted	1978-83 outlay proposed
(1)	(2)	(3)	(4)	(5)	(6)
<i>Direction and Administration</i>					
1	Publication of co-operative journal	..	..	1.00	5.00
2	Additional Departmental Staff	23.90	6.16	10.00	100.00
3	Strengthening of Audit Wing of co-operative Department	..	..	2.00	..
<i>Credit Co-operatives</i>					
4	Share Capital Contribution to Apex and Central Co-operative Banks	123.00	110.25	35.00	175.00
5	Managerial Subsidy to Central Co-operative Bank	..	0.30	..	..
6	Share capital Contribution to Primary Agricultural Credit Societies	199.39	102.52	40.00	200.00
7	Managerial Subsidy to Primary Agriculture Credit Societies	0.75	0.95	0.40	17.16
8	Share capital contribution to Central Land Mortgage Bank	..	30.00	33.00	50.00
9	Managerial Subsidy and Technical Subsidy to Central L.M.B.	2.55	..	..	..
10	Additional Share Capital Contribution to Kerala Co-operative C.L.M.B. for World Bank Project	42.50	23.00	..	..

(1)	(2)	(3)	(4)	(5)	(6)
11	Share Capital Contribution to Primary L.M.B.	5.00	4.30	1.00	5.00
12	Managerial Subsidy to Primary L.M.B.	0.45	0.20	0.02	0.10
13	Loans to Central Co-operative Bank for construction of Buildings	2.00	2.00	..	..
14	Subsidy for Construction of Marketing Godown to Marketing Societies and Rural Godown to Primary Credit Co-operatives	19.76	16.58	5.00	62.28
15	Subsidy to State Co-operative Banks-Deposit guarantee Scheme	0.85	..	0.02	0.10
16	Outright Grant for Special Bad Debt Reserve fund for financing the weaker Section	2.50	1.27	1.00	15.00
17	State's Share for Seed Capital Investment for Project Taken up with Institutional Finance	..	50.00	..	..
18	Subsidy to District Co-operative Bank for giving Consumption Finance to the Weaker Sections	0.30	..	0.25	1.25
19	Outright grant to Service Co-operative Societies for financing the weaker Section	..	..	0.50	2.50
20	Incentive Grant for Mobilisation of Deposit by Primary Agriculture Credit Societies	3.00	3.07	2.50	5.00
21	Financial Assistance to Farmers Service Co-operative Banks for Appointing Technical Staff	3.00	..	0.01	0.05
<i>Housing Co-operatives</i>					
22	Contribution to Apex Housing Societies	22.00	10.00	13.00	} ..
23	Building Society-deduct recoveries in capital accounts from Building Society	..	-0.48	..	
24	Managerial Subsidy to Primary Housing Society	4.50	1.45	2.00	
<i>Labour Co-operatives</i>					
25	Share capital Contribution to Labour Contract Societies	..	..	..	5.20
26	Managerial Subsidy to Labour Contract Societies	0.71	0.43	0.20	8.69
<i>Warehousing, Marketing and Processing Co-operatives</i>					
27	Primary Marketing Co-operative Societies-Managerial Subsidy	0.16	1.34	5.10	10.10
28	Construction of Godown Under Scheme of Co-operative Storage—N.G.D.C.	6.03	10.69	..	..
29	Subsidy for Appointment of Departmental Secretaries and Managerial Subsidy	1.75	1.28	1.80	5.90
30	Share capital Contribution and Managerial Subsidy for Rehabilitation of Potentially viable marketing and processing Societies	1.00	..	6.00	20.00
31	Vegetable Marketing Societies Financial Assistance	0.97	0.56	..	..
32	Subsidy to Kerala State Co-operative Marketing Federation for Rubber Procurement Scheme	1.00	..	..	..
33	Grant for Purchase of Furniture and Delivery Van to vegetable Marketing Societies	1.00	0.50	..	..
34	Share capital Contribution to Kerala State Rubber Marketing Federation	25.00	15.00	..	20.00
35	Apex Marketing Societies Subsidy to Technical and Promotion Cell	..	..	..	1.00
36	Primary Marketing Societies—Strengthening of Share capital Contribution	..	..	..	10.00
37	Central Arecanut Marketing and Processing Societies Financial Assistance	..	..	..	50.00
38	Special Price Fluctuation Fund	2.02	1.92	0.10	10.00
39	Processing Co-operative Societies Share capital Contribution	25.00	25.84	11.00	32.00
40	Processing Co-operative Societies Managerial Subsidy	0.01	0.11	0.55	5.00
41	Interest Subsidy to Processing and Marketing Societies to Undertake Processing Activities	2.00	0.25	0.25	10.00
<i>Farming Co-operatives</i>					
42	Assistance to Co-operative Farming Societies	..	8.00	..	..
43	Better Farming Societies-Financial Assistance	..	..	..	25.88
44	Joint Farming Societies-Financial Assistance	..	..	..	36.20
45	Rehabilitation of Land Reform Beneficiaries-Supply of Input/Farm Equipment to Joint/Collective Farming Societies	15.00	1.50	1.50	7.50
<i>Consumer Co-operatives</i>					
46	Whole Sale Stores-Financial Assistance	21.85	10.12	17.00	} ..
47	Departmental Stores/ Multi Room Shops	11.54	9.79	2.75	
48	Longterm Loans for wholesale Co-operative Stores for Revitalisation	..	..	12.00	
49	Expansion of Consumer Co-operative Stores	..	18.33	..	570.00
50	Share Capital Contribution to Service Co-operative Societies for opening Consumer Wing	8.80	0.25	..	..
51	Godowns and Trucks	0.19	0.19	..	..
52	State Co-operative Consumer Federation	15.50	5.00	..	120.00
53	Primary Stores/Branches Subsidy	6.95	11.73	1.75	68.66
54	Share Capital Contribution and Managerial Subsidy to College Co-operatives	4.87	2.76	4.00	5.30
55	Share Capital Grant and Managerial Subsidy to School Co-operatives	8.60	7.77	4.65	6.00
56	Central Society for School and College Co-operatives	..	..	..	1.00
57	Rebate on supply of Essential Articles to College Hostels	3.50	1.99	..	..
<i>Research and Training</i>					
58	Junior Personnel Training and Non Official Education Grant	10.00	3.79	1.00	} ..
59	Training of Higher and Intermediate Personnel	2.11	1.77	1.00	
60	Starting of an Intermediate Personnel Training College (financial assistance)	4.10	0.60	1.00	
61	Seminar, Study Tour, Awards, Prizes etc.	..	7.97	2.00	
62	Grant to State Co-operative Union for Junior Personnel Training	4.94	..	..	..

(1)	(2)	(3)	(4)	(5)	(6)
<i>Other Co-operatives</i>					
63	Government Employees Co-operative Societies	2.41	1.46	0.26	1.30
64	Co-operative Hospitals	10.14	7.57	5.78	17.10
65	Co-operative Rural Dispensaries	28.90	18.54	3.85	21.90
66	Apex Society for Co-operative Hospitals and Dispensaries	1.25	0.10	1.00	5.00
67	Harijan/Girijan Welfare Co-operative Society, Share Capital Grant etc.	27.11	18.47	11.40	30.00
68	Autorickshaw and Taxi Drivers Societies	5.58	2.16	1.15	44.10
69	Literary and Printing Co-operative Societies-Subsidy towards purchasing of building	..	0.24	..	..
70	Working Capital Contribution to Job Workers co-operatives	0.20	0.10	0.01	0.05
71	Nooranad Leprosy Sanitorium Co-operative Society	0.20	0.20	..	..
72	S.K.V.A. Co-operative Pharmacy Investment	..	0.40	..	..
73	Additional Share Capital Contribution to Autorickshaw Co-operative Societies for Running Spare Part Shop and Workshop	0.25	..	1.00	1.00
74	Balawadi Co-operatives	0.20	0.10	0.30	1.50
75	Womens Co-operatives	1.00	0.50	0.30	1.50
76	Agro-Industrial Societies Share Capital Contribution	3.00	2.00	1.00	5.00
77	Literary Societies-Share Capital Contribution	2.49	0.85	1.50	5.00
78	Motor Transport Co-operatives	2.25	0.50	2.00	7.00
79	Forest Co-operative Societies for Scheduled Tribes	..	0.27	..	..
80	Tribal Co-operatives	0.12	0.01	0.10	0.50
81	Food Corporation of India-loss Sustained in Fulfilment of Guarantee given by State Government on behalf of Allepey Thozhilali Co-operative Society Ltd.—Subsidy	..	0.50	..	..
82	Primary Poultry Co-operatives	..	0.12	..	..
83	Homeo Co-operatives	..	0.45	..	..
84	Other Co-operatives of Weaker Sections	..	..	..	10.00
85	Handicrafts Co-operative Societies for Artisans at Attappady	..	0.50	..	..
86	Share Capital Contribution to Urban Co-operative Banks	6.80	..	..	..
87	Managerial Subsidy to Urban Co-operative Banks	0.18	..	..	..
88	Loan to Processing Societies Assistane given by NDCG During 1974-75 Included under State Plan by Government	6.87	..	..	..
Grand Total		739.00	566.12 (-0.48)	250.00	1900.82

## IRRIGATION, FLOOD CONTROL AND ANTI-SEA EROSION

**Irrigation—Major and Medium Projects**

The State is deficit in rice production to the extent of over 45 per cent of the requirement. Substantial increase in rice production can be achieved only if a large part of the paddy lands is brought under irrigation. This would help in stabilising and increasing the number of crops raised annually from unit land area. Large scale increase in irrigated area can be brought about only through major and medium irrigation projects.

*Development over the Plan Periods*

11.2 Even in the pre-Independence period, the importance of irrigation for increasing agricultural production was realised by the then rulers of the State. However, planned development and sustained progress in irrigation was started only after Independence. The first major step in the development of irrigation in the State was the starting of the Peechi Irrigation Project in 1947. This was followed by the Chalakudy Scheme and Malampuzha Irrigation Project in 1949. During the First Five Year Plan period (1951-56) four irrigation projects—Neyyar, Vazhani, Mangalam and Walayar—were taken up in the present Kerala area. By the end of the First Plan period 0.3 lakh hectares (net) or 0.6 lakh hectares (gross) were brought under irrigation. The investment during this period was Rs. 5.11 crores.

11.3 During the Second Plan period (1956-61), five more new irrigation projects viz; Periyar Valley, Meenkara, Chulliar, Cheerakuzhi and Pothundi were taken up. Chalakudy Stage I Scheme was completed in 1957 and Peechi Scheme was commissioned in 1959. By the end of this Plan 0.4 lakh hectares (net) or 0.8 lakh hectares (gross) were brought under irrigation. The investment during this period was Rs. 8.92 crores.

11.4 During the Third Plan period (1961-66), six more new irrigation projects viz, Kallada, Pamba Chitturpuzha, Kanjirapuzha, Kuttiyadi and Pazhassi were taken up. Vazhani Scheme was completed in 1962, Meenkara and Walayar in 1964, Malampuzha, Chalakudy Stage II and Mangalam in 1966. In this Plan 0.3 lakh hectares (net) or 0.6 lakh hectares (gross) were brought under irrigation and the investment in the plan period was Rs. 10.31 crores.

11.5 During the three Annual Plan periods (1966-69) that followed the Third Plan, no new irrigation projects had been taken up. The on-going projects were not fully commissioned during this period. The investment during these years was Rs. 11.11 crores.

11.6 No new schemes were taken up under the Fourth Plan (1969-74). Of the on-going schemes Chulliar was completed in 1970, Pothundi in 1971 and Cheerakuzhi and Neyyar in 1973. A total

area of 0.25 lakh hectares (net) or 0.5 lakh hectares (gross) was brought under irrigation during this Plan period. An investment of Rs. 28.91 crores was made in this sub-sector during this plan period.

11.7 There were 17 irrigation projects in the State, 10 completed and 7 on-going at the beginning of the Fifth Plan period (1974-79). The Fifth Plan envisaged an outlay of Rs. 83.63 crores out of which the outlay earmarked for the seven on-going projects viz. Periyar Valley, Pamba, Kallada, Kuttiyadi, Chitturpuzha, Kanjirapuzha and Pazhassi amounted to Rs. 74 crores. In addition to these seven projects, 4 new schemes viz., Muvattupuzha, Chimoni, Attapadi and Karapuzha were taken up during the Fifth Plan period. Four schemes viz., Pamba, Periyar Valley, Kuttiyadi and Chitturpuzha had already been partially commissioned during this period. Nearly 0.93 lakhs ha. (gross) were expected to be additionally irrigated by 1977-78 by the on-going projects. The physical target achieved by 1978 was 0.35 lakh ha (net) or 0.72 lakh hectares (gross). An investment of Rs. 76.69 crores was made during this period on major and medium irrigation projects. All the seven irrigation projects started during the earlier Plan periods and four new irrigation projects started during the Plan period will spill over to the 1978-83 Plan. The total area brought under irrigation up to the end of 1977-78 by the major and medium schemes was 1.3 lakh hectares (net) or 2.7 lakh hectares (gross) and the total financial expenditure on irrigation project till March, 1978 was Rs. 141.07 crores.

11.8 At the beginning of the Plan period there were ten completed projects and eleven projects under various stages of construction. The outlay required for completion of these on-going projects is Rs. 192 crores. The total area irrigated through major and medium irrigation projects at the beginning of the Plan period was 1.3 lakh hectares (net) or 2.7 lakh hectares (gross) out of a potential of nearly 5.8 lakh hectares (net) or roughly 14 lakh hectares (gross). It is estimated that ultimately a total of 7 lakh hectares of wet land can be brought under paddy cultivation. With proper irrigation and drainage facilities, it will be possible to convert a major portion of the area under cultivation into double crop lands and a sizeable portion into triple crop lands, resulting in a gross area of 18 lakh hectares roughly. It is estimated that irrigation is possible only over 9 lakh hectares of garden and other lands. The total extent of lands irrigable by the major and medium irrigation projects so far identified is 5.3 lakh hectares (net). The area that has irrigation potential in the State has been put at 16 lakh hectares (net) or 27 lakh hectares (gross).

*Plan proposals for 1978-83*

11.9 The main objective of 1978-83 Plan is to increase the net area irrigated through major and medium irrigation to 2.5 lakh hectares (net) equivalent

to a gross area of 5.2 lakh hectares. The policy on irrigation will be to maximise the output per unit area irrigated and minimise the requirement of water per unit area cultivated mainly for food crops. The strategy adopted in this Plan is completion of most of the on-going schemes, and to start off projects which will satisfy the irrigation water requirements of backward areas and drought-prone areas.

11.10 It is proposed to complete the continuing schemes of Pamba, Periyar Valley, Chitturpuzha, Kanjirapuzha, Kuttiyadi, Chimoni, Attappadi, and Karapuzha and partially commission the Kallada, Pazhassi and Moovattupuzha projects during the Plan period. Seven new projects—viz., Idamalayar, Meenachil, Vamanapuram, Beporepuzha, Kuriar-kutty-Karappara, Kakkadavu and Banasurasagar will be started during this Plan. A brief description of these projects is given below:

#### *Continuing Schemes*

11.11 The spill over cost of 11 on-going projects is Rs. 192 crores. Three projects viz. Kallada, Muvattupuzha and Pazhassi may spill over to the next Plan. The additional area expected to be irrigated by these (on-going) schemes, by the end of 1978-83 Plan is 2.15 lakh ha. (gross). The total outlay proposed on these schemes is Rs. 151.67 crores. The ultimate benefit expected on the completion of these schemes is 4.44 lakh ha (gross) and the total cost according to the latest estimates is Rs. 304.81 crores.

#### 1. *Periyar Valley Irrigation Project (Outlay Rs. 8.92 crores.)*

11.12 This project envisaged the construction of a barrage at Bhoothathankettu across Periyar river and a system of canals and distributaries. Periyar Valley Irrigation Project was taken up during 1956 for irrigating an area of 85,600 ha. (gross) of lands in Ernakulam district. An amount of Rs. 17.58 crores has been spent by the end of March 1978 and a potential of 44032 ha. (gross) developed. The outlay of Rs. 8.92 crores proposed is for completing the project by the end of 1981-82.

#### 2. *Pamba Irrigation Project (Outlay Rs. 14.08 crores.)*

11.13 The project comprises a barrage at Maniyar across Kakkad river, having a length of 115.22 M and a height of 16.76 M and a net work of canals taking off from the barrage. The project was taken up for execution during the year 1961-62. The latest assessed cost of the project is Rs. 33.50 crores and the ultimate benefit expected is 41,683 ha. (gross) and 19,800 ha. (net) irrigated area. The irrigation potential developed by the end of March 1978 is 14,622 ha. (gross). The outlay proposed (Rs. 1408 lakhs) is for completing the project by the end of 1981-82. The total expenditure incurred till the end of March 1978 is Rs. 1942 lakhs.

#### 3. *Kallada Irrigation Project (Outlay Rs. 49 crores.)*

11.14 The Kallada Irrigation Project, the biggest multi-purpose project conceived in the State is estimated to cost Rs. 88.3 crores and will benefit an area of 52,610 ha. (net) and 105,220 hectares (gross) in

Quilon district and in parts of Alleppey and Trivandrum districts. The project comprises a masonry dam 335 metres long with a maximum height of 78.5 metres across Kallada river in Quilon district to form a reservoir, a pick up weir at Ottakkal 4.6 km. downstream from the dam 118 M. long and 9 M. in height, a right bank canal 82.08 km. long, a left bank canal 96 km. long both taking off from the pick up weir and a net-work of canals. The project was taken up for execution during the year 1961-62. The area expected to be benefited by the scheme at the end of 1978-83 Plan is 30,000 ha. (gross). The total expenditure incurred on the project till the end of March 1978 is Rs. 18.06 crores and the outlay proposed for 1978-83 period is Rs. 49 crores. This scheme will spill over to the next Plan.

#### 4. *Kuttiadi Irrigation Project (Outlay 7.62 crores.)*

11.15 The project envisages the construction of a masonry dam across Kuttiadi river at Peruvannamuzhi, 13 earth saddle dams for a total length of 1844 m and a canal system. This project estimated to cost Rs. 32.75 crores, will provide irrigation facilities to 31161 ha. (gross) of paddy lands in Kozhikode, Badagara and Quilandy taluks. It was taken up for execution in 1962. A total amount of Rs. 25.13 crores was spent on this project till the end of March 1978 and a potential of 19047 ha. (gross) developed. The proposed outlay of Rs. 7.62 crores is for completing the scheme by 1980-81.

#### 5. *Chitturpuzha Irrigation Project (Outlay Rs. 3.48 crores.)*

11.16 The project envisages the remodelling of the existing irrigation system in Chitturpuzha for irrigation of lands in Chittur taluk. The proposals comprise replacing the Moolathara anicut by a regulator reconstruction of Thembra-madakku weir, and remodelling and extension of canal system. The Chitturpuzha Irrigation Project estimated to cost Rs. 9.98 crores is intended for benefiting an area of 32550 ha. (gross). The project was taken up during the Third Five Year Plan. A total amount of Rs. 650 lakhs was spent by the end of March 1978 and a potential of 24281 ha. (gross) developed. The proposed outlay of Rs. 3.48 crores is for completing the scheme by the end of 1980-81.

#### 6. *Kanhirapuzha Irrigation Project (Outlay Rs. 10.73 crores.)*

11.17 The project envisages the construction of an earth dam with a central masonry spill way across Kanhirapuzha and a net-work of canals. This project estimated to cost Rs. 19.82 crores has been envisaged to provide irrigation facilities for an area of 21868 ha. (gross) in the taluks of Mannarghat, Ottapalam and Palghat. The project was started in 1961-62. The total expenditure on the project till the end of March 1978 was Rs. 9.09 crores. The programme is for completing the project by the end of 1981-82.

#### 7. *Pazhassi Irrigation Project (Outlay Rs. 20 crores)*

11.18 This project is a diversion scheme across Valapattanam river in Cannanore district. The barrage is situated in Kuliur. The canal system is mainly on the left bank comprising 55 km. of main

canal and 133 km. of branches. This project costing Rs. 36.50 lakhs is intended to supply water for 32,314 ha. (gross) of paddy lands of Kuppam, Baliapatam Anjarakandy, Tellicherry and Mahe. The project was started in the year 1961. The total expenditure incurred on the project till the end of March 1978 was 14.19 crores. This scheme will spill over to the next plan.

8. *Karapuzha Irrigation Project (Outlay Rs. 6.99 crores)*

11.19 The project consists of a masonry dam across Karapuzha at Vazhavatta with earth blanking dams on either side, main canals, and a net work of canals. The ultimate benefit expected is the supply of water to 9,300 ha. (gross) of lands in the South Wynad taluk of Kozhikode district. This is the first irrigation project in the Wynad area. The project estimated to cost Rs. 760 lakhs, was started in 1971. The amount spent on this project till the end of March 1978 is only Rs. 61 lakhs. The outlay proposed is for completing the project by the end of 1982-83.

9. *Attappadi Irrigation Project (Outlay Rs. 7.98 crores)*

11.20 This project consists of a masonry dam at Chittar across Siruvani river in Attappadi and a canal system to irrigate 6,200 ha. (gross) in the tribal area of Attappadi in Palghat district. This project was started in 1974 and an expenditure of Rs. 76 lakhs has been incurred till the end of March 1978. The total cost of this project is estimated to be Rs. 8.74 crores. The proposal is to complete the project by the end of 1982-83.

10. *Moovattupuzha Valley Project (Outlay Rs. 12 crores)*

11.21 The project envisages the construction of a dam across Thodupuzha river at Malankara. The canal system consists of a right bank canal 30 Km. long, left bank canal 41 km. long and a distribution system. This project estimated to cost Rs. 29.69 crores envisages the utilisation of the tail race waters of Idukki Hydro-electric scheme for irrigating 52,200 ha. (gross) of land lying in the three districts of Idukki, Ernakulam and Kottayam. The project was started in the year 1975. The total expenditure on this project till the end of March 1978 was Rs. 1.13 crores. The proposal is to partially commission this project during the end of 1982-83 and the benefit expected is 12,000 ha. (gross) of irrigated area. The project will spill over to the next plan for completion.

11. *Chimoni Project (Outlay Rs. 10.87 crores)*

11.22 This project envisages the supply of water to 26,000 ha. (gross) of Kole lands and its peripheral lands in Trichur district. A masonry dam with an earth dam on the right bank across Chimoni river, a tributary of Karuvannur river forms the headworks. No canal system is contemplated. The estimated cost of this project is Rs. 11.49 crores. This project was started in 1975 and expenditure incurred till the end of March 1978 was Rs. 62 crores. The outlay proposed is for completing this scheme by the end of 1982-83.

*New Schemes*

11.23 Apart from the spill over schemes 7 new schemes will be taken up for implementation during

1978-83. The provision earmarked for the new schemes is Rs. 65 crores and the benefit expected is 34,220 ha. of gross irrigated area.

1. *Idamalayar Project (Outlay Rs. 15 crores)*

11.24 This project envisages the utilization of the tail race waters of Idamalayar Hydro-electric project. The water that will be released from Idamalayar Hydro-electric Project is proposed to be diverted by the barrage of Periyar Valley Irrigation Project at Planchode into a new canal to be constructed under the Idamalayar Irrigation Scheme on the right bank of Periyar. The estimated cost of the project is Rs. 24.58 crores and the anticipated irrigation potential is 52,400 ha. (gross)

2. *Meenachil (Outlay Rs. 8 crores)*

11.25 So far no irrigation scheme has been taken up in this basin. At present the irrigation needs of the basin are met by lift and minor irrigation schemes, but they serve only a portion of the area for two crops. There is scope for the construction of a storage reservoir in the basin at Cherripad. The estimated cost of the project is Rs. 10 crores and the anticipated benefit 10,000 ha. (gross).

3. *Vamanapuram Irrigation Project (1st Stage) (Outlay Rs. 7 crores)*

11.26 This project in the 1st stage envisages the construction of a dam at Valayanki across Kallar, the tributary of Vamanapuram river, and a net work of canal system to irrigate 24,520 ha. (gross) of land in Trivandrum district. The total estimated cost of project is Rs. 9.34 crores.

4. *Beyyorepuzha (Outlay Rs. 7 crores)*

11.27 The proposal is to construct a masonry barrage across Beyyorepuzha at Azhiyacode and to divert the flow to irrigate an area of 11,624 ha. (gross) in Kozhikode and Malappuram districts. The project is estimated to cost of Rs. 7.99 crores.

5. *Kuriarkutty - Karapara (Outlay Rs. 11 crores)*

11.28 This project envisages the utilization of the tail race waters of Kuriarkutty—Karapara Hydro-electric Scheme. The estimated cost of the project is Rs. 18.01 crores. It will provide irrigation facilities to 9,308 ha. (gross) of paddy lands, and 2,428 ha. (gross) of sugarcane lands in Palghat district. This scheme will be much beneficial to the chronically draught affected portion of Palghat district adjacent to Tamil Nadu.

6. *Kakkadavu (Outlay Rs. 13 crores)*

11.29 This project envisages the construction of a reservoir at Kakkadavu across Karingottu river to irrigate an area of 41,760 ha. (gross) in Cannanore district. The estimated cost of the project is Rs. 20 crores.

7. *Banasurasagar (Outlay Rs. 4 crores)*

11.30 This project will serve an area of about 4,800 ha. (gross) in Wynad which is predominantly occupied by Harijans and Adivasis. It envisages the

construction of a dam across Karamanathodu which is a tributary of Panamaram river. This river is a major tributary of Kabini river. An amount of Rs. 5 crores will be required for the completion of this scheme.

11.31 The outlay proposed for the on-going schemes is Rs. 151.67 crores and for the new schemes is Rs. 65 crores. A provision of Rs. 10 crores has been made for modernisation of old projects and command area development schemes. Also an amount of Rs. 8.33 crores has been provided for water development investigation and research. During the plan period 1978-83 it is proposed to bring under irrigation an additional extent of 1.2 lakh hectares (net) or 2.5 lakh hectares (gross). The total area under irrigation due to major and medium schemes at the end of 1978-83 plan will be 2.5 lakh hectares (net) and 5.2 lakh ha. (gross) corresponding to the total extent of 5.8 lakh ha. (net) land irrigable by major and medium irrigation projects so far identified in the State.

TABLE 11.1

**Plan outlays and Physical Targets—Major and Medium Irrigation**

S.I. No.	Name of Scheme	Plan outlay (Rs. crores)	Target (gross hectares)
(1)	(2)	(3)	(4)
<b>A. Continuing Schemes</b>			
1	Periyar Valley	8.92	41568
2	Pamba	14.08	27061
3	Kallada	49.00	30000
4	Kuttiadi	7.62	21868
5	Chitturpuzha	3.48	8269
6	Kanjirapuzha	10.73	12114
7	Pazhassi	20.00	20000
8	Karapuzha	6.99	9300
9	Attappadi	7.98	6200
10	Muvattupuzha	12.00	12000
11	Chimony	10.87	26200
<b>B. New Schemes</b>			
1	Idamalayar	15.00	12000
2	Meerachil	8.00	3000
3	Vamanapuram	7.00	8000
4	Beyyorepuzha	7.00	3000
5	Kuriarkutty-Karappara	11.00	2000
6	Kakkadavu	13.00	5000
7	Banasurasagar	4.00	1220
<b>C. Modernisation of Old Schemes and Command Area Development</b>			
		10.00	1200
<b>D. Water Development</b>			
	Investigation and Research	8.33	
Grand Total (A+B+C+D)		235.00	250000

### Flood Control

11.32 The special characteristics of the State, especially its small size and high density of population are matters that should not be ignored in any sphere of planning and these are relevant in respect of flood control also. Generally floods occur almost simultaneously in all the regions of the State accompanied

by land slides in the hills, flooding in the plains and erosion and tidal over flow along the sea-coast. The hazards of the floods are serious in the State and the worst victims of such floods are often the poor people, living in the hill slopes within the danger zones and on the river banks. The State with a high incidence of rainfall concentrated in a few months of the year has been experiencing floods almost every year. The damages caused by the floods during 1961, 1962 and 1974 were particularly severe. Damages to agricultural lands and public properties such as roads, canals etc. were also very significant. The problems caused by floods are likely to increase as years pass by owing to deforestation and silting of river beds. The problem of flood control in the State is to be viewed from the national angle and unless the flood control measures are planned, and taken up in time, the consequences of future high floods are bound to be more disastrous.

### Progress Under the Previous Plans

11.33 Flood control measures for the flood prone areas could not be taken up in the State as part of a comprehensive plan during the previous plan periods for lack of funds. Piece meal works taken up had helped to solve the problems only in certain areas to some extent. The works done were mainly, the construction of embankments to protect the thickly populated banks of rivers to save the lives and properties of the people and for the protection of schools, places of worship, roads, canals etc. from the ravages of floods. Costly type of protection works such as retaining walls were done only in very rare cases. Cheaper methods such as construction of bed-bars, permeable groynes etc. were also being tried.

11.34 Basin-wise flood problems in the State were studied in detail and an outline plan for Rs. 22.40 crores was prepared in 1963. But this plan could only serve as a guide for formulating basin-wise master plans as it contains only rough indication of protection works required.

11.35 The expenditure on flood control was Rs. 51.82 lakhs during the Second Five Year Plan, Rs. 64.43 lakhs during the Third Five Year Plan, Rs. 52.58 lakhs during the three Annual Plans, Rs. 163.565 lakhs during the Fourth Five Year Plan and Rs. 186.05 lakhs during the four years of the Fifth Five Year Plan. By March 1969, 10.87 km. of embankments and 1.78 km. of channels were constructed, and an area of 1,310 hectares were protected from floods. During the Fourth Plan period 11.66 km. of embankments and 1.5 km. of drainage channels were constructed for protecting 2,100 hectares from floods. The length of embankments and drainage channels constructed during the four years of the Fifth Plan was 23.5 km. and 3.07 km. respectively. Two villages were raised and protected and eight towns protected from floods during this period. The area benefited is 2,885 hectares.

### Proposals for 1978-83 Plan

11.36 The long range outline plan for flood control prepared by the State in 1963 envisaging works costing Rs. 22.44 crores is to be taken up in two stages of



fifteen years each. The present day cost of the works in this outline plan will be about Rs. 70 crores. The break up of this plan showing different categories of flood control works with approximate cost is as follows:

	<i>Rs. in lakhs</i>
1. Storage Reservoir	500
2. Embankments	1000
3. Improvements to River Channels and Inland Drainage Schemes	3000
4. Groynes and Other Protection Works	750
5. Diversion and Cut-offs	750
6. Improvements to Communications	500
7. Other Items	500
<b>Total</b>	<b>7000</b>

11.37 The cost of works done so far may be placed at Rs. 10 crores at current costs. Hence the cost of works included in the perspective plan is about Rs. 60 crores. This could be spread over a period of 20 years. The investment required for the next decade would be about Rs. 50 crores when the escalation of the prices is also taken into account.

11.38 The strategy to tackle the flood problems in the State is through (a) a long range plan aimed at controlling the factors which cause floods and thus reduce damages. The programmes envisaged under the Plan are provision of flood storage in future storage reservoirs, raising the levels of existing dams, if possible to absorb floods, construction of check dams, inter connecting rivers wherever possible to facilitate easy discharge of flood waters, river mouth and channel improvements, raising road levels in flood affected areas, formation of flood embankments, soil conservation, afforestation, prevention of encroachments of river margins, etc., (b) a short range plan to meet the immediate requirements. These requirements include the completion of works in hand and protection of river basins which are subjected to serious and frequent floods, widening and deepening the leading channel to Thottappally spill-way to relieve the flood problems in Kuttanad area, completion of the work of improving Amayizhanchanthode to avoid floods in Trivandrum city, providing better drainage facilities to low lying areas of Cochin, Calicut etc., and provision for purchase of a few dredgers for deepening river mouths of the lower reaches of certain rivers and backwaters for quick discharge of flood waters are envisaged under the short range plan.

11.39 The 1978-83 Plan envisages mainly the implementation of the proposals under the short range plan and also carrying out necessary investigation for the long-range plan. An outlay of Rs. 10 crores is provided in the Plan for flood control programmes. An amount of Rs. 2 crores is necessary for completing the works in progress that would spillover to the 1978-83 plan. There are a large number of identified

protective works which are urgently required and their basin-wise outlay are noted below:

	<i>Rs. in crores</i>
1. Southern rivers Karamana, Neyyar, Vamanapuram, Ithikkara, and Kallada	0.45
2. Kuttanad rivers Achencoil, Pamba, Manimala and Meenachil	0.60
3. Periyar, Chalakudy, Moovattupuzha rivers	0.40
4. Karuvannur and Keecheri basins	0.10
5. Bharathapuzha, Tirur, Poorapuzha, Kadalundi, Chulliyar, Baypore and Kallai	0.65
6. Northern rivers Valapattanam, Kuttiyadi, Mahe, Tellicherry, Ancharakandy, Payangode and Chandragiri etc.	0.80

11.40 In addition the following schemes are proposed in the 1978-83 Plan:

	<i>Rs in crores</i>
1. Deepening and widening the leading channel to Thottappally spill-way	0.55
2. Improvements to river channels, inland waterways, controlling the opening of bars, and purchase of dredgers	0.95
3. Measures to relieve floods in the low-lying areas of Trivandrum, Cochin and Calicut cities	1.00
4. Other items such as cut-offs, inter connecting rivers, embankments etc.	0.50

11.41 A provision of Rs. 1 crore for the preparation of a master plan for flood control works to be taken up in the State and Rs. 1 crore for maintenance of completed works are made in the Plan.

TABLE 11.2  
Plan Outlay on Flood Control

Sl. No.	Item of work	plan outlay (Rs. crores)
(1)	(2)	(3)
1.	Spillover works	2.00
2.	Identified works on zonal basis:	
(i)	Southern rivers—Karamana, Neyyar, Vamanapuram, Ithikkara and Kallada	0.45
(ii)	Kuttanad rivers—Achencoil, Pamba, Manimala and Meenachil	0.60
(iii)	Periyar, Chalakudy and Moovattupuzha	0.40
(iv)	Karuvannoor and Keecheri Basins	0.10
(v)	Bharathapuzha, Tirur, Poorapuzha, Kadalundi, Chulliar, Baypore and Kallai	0.65
(vi)	Northern rivers—Valapattanam, Kuttiyadi, Mahe, Tellicherry, Ancharakandy, Payangode, Chandragiri, etc.	0.80

(1)	(2)	(3)
<b>3. New Works:</b>		
(i)	Deepening and widening of the leading channel to Thottappally spill-way	0.55
(ii)	Improvements to river channels, inland waterways, controlling the opening of bars and purchase of dredgers etc.	0.95
(iii)	Measures to relieve floods in lowlying areas of Trivandrum, Cochin and Calicut cities	1.00
(iv)	Other items such as cut-off inter connecting rivers, embankments etc.	0.50
(v)	Preparation of a Master Plan for Flood control works	1.00
(vi)	Maintenance of completed works	1.00
Total		10.00

### Anti-Sea Erosion

11.42 The State has a coast line of 562 km. i.e. 1.5 km. per hundred sq. km. of territory. This is probably the highest among the coastal States in India. The long coast line is subjected to severe erosion at several places during the monsoons when the sea becomes rough. In these areas the sea has been continuously devouring away valuable lands, and buildings, rendering thousands of people homeless. In addition to the effect of erosion, the coastline is sometimes subjected to tidal overflow also. The high tidal waves submerge the adjoining low-lying lands destroying dwelling houses, paddy fields, etc., and pollute the inland fresh water sources rendering them unfit for cultivation and domestic use. Shore protection works are thus necessitated on the coast of Kerala to combat sea erosion and eliminate damages resulting from waves overflowing the beach.

11.43 Out of the length of the 562 km. the length of coast requiring protection is estimated to be 320 km. Of this the length of coast requiring immediate protection is 246 km. The estimated cost of protection and stabilisation of 320 km. of coast is Rs. 78.7 crores and that for 246 km. is Rs. 53 crores.

#### Progress under the Previous Plans

11.44 The first shore-protection work attempted in the Kerala coast was the groyne system in the Varkala-Anjengo coast in the year 1890. Subsequent attempts were made in 1910, 1936-39 and 1940 to protect the shore-line by the construction of sea-walls and revetments. The programme of coastal protection on a large scale was launched in 1959, as per the design suggested by C.W. & P. Research Station which consisted of a system of rubble groynes and sea-walls. The coastal line of the State was subjected to sea-erosion of an unprecedented scale during 1962-63. The sea-wall and groyne systems were damaged considerably within a very short time of construction. Further the groynes spread sea erosion down coast. Therefore based on the advice of Mr. George M. Walts the construction of groynes were dispensed with and a modified design for the construction of sea-walls alone was adopted from 1964 onwards. The design of the sea-wall underwent a revision in 1969 and the performance of works since carried out based on the modified design has been found to be satisfactory.

11.45 The expenditure on anti-sea erosion works was Rs. 1.84 crores in the Second Five Year Plan, Rs. 4.40 crores in the Third Five Year Plan, Rs. 1.61 crores during the three annual plans, Rs. 10.13 crores

in the Fourth Five Year Plan and Rs. 27.96 crores during the four years of the Fifth Five Year Plan. By the end of 1969 the coast length protected was 78.69 km. During 1969-74 an additional 35.28 km. of the coast line was protected. By 1978 March the total coast line protected in the State was nearly 189 km. through various types of coastal protection works; work is in progress over a length of 40 km.

11.46 The length of coast requiring protection within next decade has been estimated as 57 km. Besides, the beaches adjacent to the inlets need stabilisation and the areas of head-land bay formation need protection. 70 km. of existing sea wall, particularly those formed according to the earlier designs require reformation, and repairs. Artificial nourishment etc have to be adopted at selected beaches for their protection. The maintenance of the existing coastal protection is an absolute necessity. Provision is made for the spillover works and for the new coastal protection works mentioned above in the 1978-83 Plan.

#### Proposals for 1978-83 plan

11.47 The outlay proposed for 1978-83 for anti-sea erosion works in the State sector is Rs. 15 crores. The central outlay expected corresponding to the above State Plan outlay is Rs. 30 crores. Thus, schemes have been drawn up for a total outlay of Rs. 45 crores. The physical target envisaged is the protection of a length of 130 km. of coast line.

11.48 Coastal protection works are in progress for a length of 40 km. The outlay proposed for this is Rs. 11.45 crores. The provision made for reformation and repairs of 70 km. of existing sea wall works is Rs. 14 crores. The outlay earmarked for new rubble sea-wall protection works for a length of 39 km. is Rs. 13.65 crores and for artificial nourishment for a length of 7 km. is Rs. 0.70 crore. An outlay of Rs. 4 crores is proposed for the stabilisation of inlets and protection of coast adjacent to inlets and Rs. 1 crore for the protection of head-land bay formation by off shore breakwaters. The outlay proposed for the coast requiring new temporary protection for a length of 2 km. is Rs. 0.20 crore. All coastal protection works need maintenance. The amount required for the maintenance and repairs for coastal protection works is estimated at Rs. 10.5 crores.

TABLE 11.3  
Plan Outlay on Anti-Sea Erosion Works

Sl. No.	Items of works	Plan outlay* including State and Centre (Rs. crores)
1.	Coast where sea-walls are under construction (spillover works)	11.45
2.	Coast requiring new rubble sea-wall protection	13.65
3.	Coast where sea-wall requires reformation and repairs	14.00
4.	Coast requiring new temporary protection	0.20
5.	Coast to be nourished on top priority	0.70
6.	Stabilisation of inlets and protection of coast adjacent to inlets	4.00
7.	Protection at headland bay formation by off-shore break waters	1.00
Total		45.00

\*The outlay proposed under the State Sector is Rs. 15 crores and the Central Sector is Rs. 30 crores.

TABLE 11.4

## Financial Returns from Irrigation Projects

(Rs. in lakhs)

Sl.No.	Item	1977-78		1978-79		1979-83	
		Irrigation (Commercial)	Irrigation portion of multipurpose river valley projects	Irrigation (Commercial)	Irrigation portion of multipurpose river valley projects	Irrigation (Commercial)	Irrigation portion of multipurpose river valley projects
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
			(Irrigation cess)		(Irrigation cess)		(Irrigation cess)
(i)	Gross receipts	93.55	0.80	75.70	0.85	303.85	3.40
(ii)	Working expenses	49.62	..	58.00	..	298.00	..
(iii)	Interest charges	186.52	..	205.72	..	1135.88	..
(iv)	Net receipt	(—)142.59	..	(—)188.02	..	—1130.03	..

TABLE 11.5

## Water Rates for the Principal Crops

Name of crop	Water rates in Rs. per gross hectare	Date of enforcement of present water rates
Rice	Single crop Rs. 37	1st July 1974
	Double crop Rs. 62	
	More than 2 crops Rs. 99	

TABLE 11.6

## Irrigation, Flood Control and Anti-Sea Erosion—Schemewise Outlay

(Rs. in lakhs)

Sl. No.	Scheme	Fifth Plan Outlay 1974-79	1974-78 Expen- ditures	1978-79 Outlay budgetted	1978-83 Outlay proposed
(1)	(2)	(3)	(4)	(5)	(6)
<b>A. MAJOR AND MEDIUM IRRIGATION:</b>					
(i) <i>Major Schemes:</i>					
Continuing Schemes					
1.	Periyar Valley	100	1016.214	300	892
2.	Pamba	1400	1308.806	400	1408
3.	Kallada	1100	1349.197	800	4900
4.	Kuttiyadi	1400	1394.712	380	762
5.	Chitturpuzha	600	345.360	150	348
6.	Kanhirapuzha	900	603.651	350	1073
7.	Pazhassi	1000	940.368	400	2000
8.	Muvattupuzha	200	123.030	150	1200
9.	Chimony	220	62.345	170	1087
<i>New Schemes:</i>					
1.	Idamalayar	50	6.806	100	1500
2.	Vamanapuram			15	700
3.	Beyeporepuzha			15	700
4.	Kuriarkutty-Karappara			15	1100
5.	Kakkadavu			15	1300
Sub Total		7870	7150.489	3260	18970
(ii) <i>Medium Schemes</i>					
Ongoing Schemes					
1.	Attappady	130	79.679	60	798
2.	Karapuzha	130	62.743	60	699
<i>New Schemes:</i>					
1.	Meenachil	83	0.118	30	800
2.	Banasurasagar	..	..	10	400
Sub Total		343	142.540	160	2697
(iii) <i>Modernization of old schemes and command area development</i>					
		..	34.746	20	1000
(iv) <i>Research, Survey and Investigation</i>					
		150	23.102	60	833
Total A (i+ii+iii+iv)		8363	7350.877	3500	23500
<b>B. FLOOD CONTROL, DRAINAGE, ANTI-WATER LOGGING &amp; ANTI-SEA EROSION PROJECTS</b>					
(i)	Flood Control	867	186.050	50	1000
(ii)	Anti-sea Erosion	..	997.140	500	1500+
Total B (i+ii)		867	1183.190	550	2500+
Total (A+B) Irrigation, Flood Control and Anti-Sea Erosion		9230	8534.067	4050	26000+
					3000*

\* A Central Sector outlay of Rs. 30 crores is expected for anti-sea erosion works during the plan period 1978-83.

The power system in Kerala is entirely hydro-based. The overall inventory of hydro-electric power resources of Kerala that can be developed under very favourable conditions has been estimated at 1785 MW at 100 per cent load factor or 3000 MW at 60 per cent load factor. Of this potential about one third, ie; 1011.5 MW, has already been harnessed.

12.2 It was with the commissioning of the hydro-electric power station at Pallivasal in 1940, that the State started power generation on a major scale. Prior to the implementation of plan schemes the total installed power generation capacity in the State was only 28.5 MW.

#### *Development under the Past Plans,*

12.3 During the First Five Year Plan period (1951-56) the expansion of the Pallivasal Scheme to 37.5 MW capacity and the commissioning of the Sengulam Scheme with an installed capacity of 48 MW were carried out. This 85.5 MW plant capacity of the power system helped to step up generation of power to 350 million Kwh per annum in the final year of the plan. The annual per capita consumption increased from 14.3 units in 1951 to 18.5 units in 1956. By the end of the Plan period the length of the transmission and distribution line was 6655 km, the transformer capacity was 188 MVA for transmission and 50.7 MVA for distribution, the number of EHT substations was 15 and the number of distribution transformers was 845. During the plan period 222 villages were electrified, 50,656 consumers were given electric connections, 17,584 street lights were set up and 702 irrigation pumpsets energised additionally. The connected load on the system was 142.3 MW and the annual revenue was Rs.140.7 lakhs by 1955-56. The expenditure incurred on generation, transmission and distribution of power in this plan period was Rs.10.6 crores.

12.4 The Second Five Year Plan (1956-61) resulted in increasing the installed power generation capacity to 132.5 MW, by commissioning one unit of 15 MW capacity at Neriamangalam and adding 32 MW capacity by completing the first and second stages of Peringalkuthu project. The generation of energy was raised to 582 million units in 1961. The per capita consumption rose to 30 units per annum. During this period transmission and distribution line length was increased to 16,008 km. By the end of the plan period the transmission transformer capacity was 412 MVA and the distribution transformer capacity was 173.9MVA, the number of EHT sub-stations was 22 and the number of distribution transformers was 2893. During this plan period 491 villages were electrified, 96,219 electric connections were given, 57,156 more street lights were set up and 3722 additional irrigation pumpsets were energised. The connected load on the system was 331.3 MW and the annual revenue was Rs.311.6 lakhs by 1961. The expenditure on power development under the plan was Rs.21.92 crores.

12.5 The Third Five Year Plan (1961-66) started with a shortage of about 6 MW in firm power capacity. Two units of 15 MW were commissioned at the Neriamangalam Station. This addition to generation capacity did not contribute to the firm power output. By commissioning two units of 15 MW each at Panniar station, the firm power output increased by 4 MW in 1963-64. The peak demand met by the hydel stations during 1964-65 was 156 MW. To supplement power supply from hydel stations during the summer months, temporary power supply from Tamil Nadu for 20 hours, day with a maximum demand of 25 MW had to be resorted to. This was in addition to the 13 MW of permanent supply availed of from Tamil Nadu for distribution to Malabar. In spite of this, the shortage in firm power was about 75 MW at the close of the Third Five Year Plan. The per capita consumption rose to 40 units by the end of the plan. The length of transmission and distribution line by the end of the plan period was 22,850 km. The transformer capacity in transmission was increased to 658 MVA and the distribution transformer capacity was increased to 261.8 MVA, the number of E.H.T. sub-stations was 38 and the number of distribution transformers was 3980 by the end of the plan. During this plan period 211 villages were electrified, 1,50,069 consumers were given electric connections, 24351 more street lights were set up and 2392 additional irrigation pumpsets were energised. By 1966, the connected load was 509.9 MW and the annual revenue was Rs.706.8 lakhs. The State expenditure under the plan was Rs.60.84 crores against a financial provision of Rs.43.56 crores for this sector.

12.6 The important achievements during the three annual plans (1966-67, 1967-68 and 1968-69) were the commissioning of 3 units of 50 MW capacity each at Sabarigiri and 3 units of 18 MW capacity each at Sholayar, raising the total installed generation capacity of the system to 546.5 MW. By 1969, the annual per capita consumption of power rose to 66 units. During this period, the length of transmission and distribution lines was raised to 26,983 km, the transformer capacities in transmission and distribution were increased to 1466 MVA and 356 MVA respectively, the number of E.H.T. sub-stations was 41 and the number of distribution transformers was 4907. Fiftyfive villages were electrified, 1,14,618 consumers were given electric connections, 37,906 street lights were set up and 6902 additional irrigation pumpsets were energised in this period. The connected load was 805.4 MW and the annual revenue was Rs.1165 lakhs by 1969. The State expenditure during this plan in the power sector was Rs.41.86 crores.

12.7 The policy of power development in the Fourth Five Year Plan (1969-74) was to increase power generation capacity to 1011.5 MW. In November 1972, the Kuttiadi Hydro-electric project was commissioned, raising the total installed capacity to 621.5MW. The Idukki first stage (390 MW) project could not be completed during the plan period. By the end of the Fourth

Five Year Plan, the per capita consumption increased to 79 units per annum. The total length of transmission and distribution lines by the end of the plan was 33,792 km. The transformer capacities in transmission and distribution were 1986.5 MVA and 566.3MVA respectively, the number of E.H.T. sub-stations was 59 and the number of distribution transformers was 8285 by 1974. During this plan period 35 villages were electrified, 3,37,349 consumers were given electric connections, 28,685 street lights were added and 23,702 additional irrigation pumpsets were energised. The connected load was 805.4 MW and the annual revenue was Rs.2379 lakhs in 1974. The total expenditure in this sector during the Fourth Five Year Plan was Rs.114.60 crores.

12.8 During the Fifth Five Year Plan (1974-78) the generation capacity of Kerala's power system rose to 1011.5 MW and the per capita consumption per annum increased to 88.4 units in 1976-77. By March, 1978, the number of villages electrified stood at 1224 out of a total of 1268 villages, the number of consumers at 10,72,123 the number of street lights at 2,84,922 and the number of irrigation pumpsets energised at 58,922. The length of transmission and distribution lines as on March, 1978 was 53,482 km. and the transformer

capacity in transmission and distribution was 2903 MVA and 891 MVA respectively. The expenditure during the four years of the Fifth Five Year Plan was about 107 crores.

12.9 Tables 12.1, 12.2 and 12.3 provide details relating to investment and pattern of growth of Kerala's Rs. power system.

TABLE 12.1

Plan period	Capital Investment (Rs. crores)
First Five Year Plan (1951-56)	11.05
Second Five Year Plan (1956-61)	23.25
Third Five Year Plan (1961-66)	60.69
Annual Plan (1966-67)	14.55
Annual Plan (1967-68)	14.96
Annual Plan (1968-69)	12.37
Fourth Five Year Plan (1969-74)	118.81
Fifth Five Year Plan * (1974-78)	106.89

\* Provisional

TABLE 12.2

**Investments on Generation, Transmission and Distribution and Rural Electrification**

(Rs. Crores)

Period	Generation *	Transmission & Distribution	Rural Electrifi- cation **	Others	Total
(1)	(2)	(3)	(4)	(5)	(6)
Upto 1-4-1957	23.375	1.099	0.455	..	24.927
II Plan (Part) 1957-58 to 1960-61	8.838	7.986	2.582	..	19.406
III Plan Annual Plans (1966-67 to 1968-69)	47.500	10.845	2.328	0.021	60.694
IV Plan (1969-70 to 1973-74)	28.570	12.806	0.494	..	41.870
V Plan (1974-75 to 1977-78)***	66.763	46.672	1.389	3.613	118.437
	60.736	35.301	8.686	2.163	106.886

\* Includes investigation works also.

\*\* Under this column the investment on inter-state transmission lines under Centrally sponsored schemes and REC works are included.

\*\*\* Expenditure figure for 1977-78 is provisional.

TABLE 12.3

**Growth of Kerala Power System at a Glance**

Sl. No.	Particulars	Beginning of 1st Plan as on 1-4-1951	End of First Plan as on 31-3-1956	End of 2nd Plan as on 31-3-1961	End of 3rd Plan as on 31-3-1966	End of the annual Plans as on 1-4-1969	End of 4th Plan as on 31-3-1974	Fifth Plan as on 31-3-1978
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	Installed Capacity MW	36.0	85.5	132.5	192.5	546.5	621.5	1011.5
2	Maximum demand-MW							
	(a) System	24.4	62.9	116.3	173.7	352.7	500.2	802.2
	(b) Internal	24.4	62.9	116.3	173.7	277.7	434.4	551.8

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
3	Generation per annum—MU	151.0	350.0	591.0	841.9	1623.0	2510.0	4470.6
4	Import per annum—MU	16.9	1.5	56.8	116.0	19.0	1.2	2.53
5	Export per annum—MU	..	..	11.6	..	28.2	317.8	1625.0
6	Energy sales per annum—MU	140.0	274.0	517.2	749.7	1366.2	2105	3986.56
7	Energy losses as a % of energy available for sale	14.3	19.7	17.9	20.2	15.9	.4	10.41
8	Per capita consumption	13.0	18.5	30.0	40.0	66.0	79.0	88.4
9	220 KV lines—Ct. KM.	..	..	..	..	316.4	316.4	853.77
10	110 KV lines—Ct. KM.	..	..	527.0	617.0	1068.0	1350.0	1403.45
11	66 KV lines—Ct. KM.	910.7	1070.0	1373.0	1717.5	1601.0	1711.0	1840.89
12	11 KV lines—Ct. KM.	1067.0	2802.0	5209.0	6327.0	7046.0	9447.0	12176.0
13	L. T. lines—Ct. KM.	992.0	2783.0	8899.0	14189.0	16952.0	20968.0	37190.6
14	Step up transformer capacity—MVA	40.0	103.0	161.0	233.0	632.0	717.5	1149.6
15	No. of EHT sub-Stations	12	15	22	38	41	59	75
16	Step down transformer capacity—MVA	57.5	85.0	241.0	425.0	834.0	1269.0	1753.5
17	Distribution transformers							
	(a) Nos.	324	845	2893	3980	4907	8285	9877
	(b) Capacity—KVA	9950	50700	173906	261826	355972	566260	890959
18	No. of consumers	28119	78775	174994	325063	439681	777030	1072123
19	Connected load—MW	68.4	142.3	331.3	509.9	805.4	1231.5	1530.5
20	No. of Street lights	7905	25489	82645	106996	144902	173587	284483
21	No. of irrigation pumpsets	191	893	4615	7007	13909	37611	58922
22	Total revenue per annum Rs. lakhs.	58.4	140.7	311.6	706.8	1165.0	2379.0	3710.0*

\* The figure relates to the year 1976-77.

### Objectives, Policies, Strategy of 1978-83 Plan

12.10 The basic objectives of power development of the State during the Plan period 1978-83 are achievement of a ten per cent annual growth rate in power supply at the required voltage with maximum capacity utilisation and minimum losses, and stabilisation of the power system in the State. The policies to achieve these objectives are:

(i) building up power generation capability for internal requirements, (ii) balancing load generation to reduce line losses in transmission, (iii) rationalising transmission and distribution system to minimise voltage fluctuations and strains on the system and meeting the dormant demands and (iv) setting up of a thermal station with

Central assistance to meet the long-term power demands of the State and to stabilise the hydro-system.

12.11 The strategy proposed during the plan period will be to (i) complete all continuing projects for load balancing, (ii) phase out the backlog in transmission and distribution works and simultaneously build up the requirements for the period and (iii) confine State investments on power generation for internal requirements alone in the near future and avail of Central sector investments for building up of a thermal unit for meeting the long-term power needs of the State.

12.12 After allowing for system losses and reserves as envisaged by the Tenth Annual Power Survey Committee, the demand on the Kerala Power System during the period 1978-88 is presented in Table 12.4.

TABLE 12.4

### Projections for Generation Requirements

Year	1978-79	1979-80	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88
Energy demand on the system (MU)	3275	3585	3920	4255	4630	5040	5480	5930	6450	7020
Plant capacity requirement (MW)	755	825	905	980	1070	1160	1265	1365	1485	1620

12.13 The particulars in respect of generation projects which have been completed and those which require consideration during the next ten to fifteen years are given in Table 12.5. It is seen that on a regional basis the power generation capability of the present system is 4.9 per cent in the northern, 63.9 per cent in the Central and 31.2 per cent in the southern districts of Kerala. The load distribution is 19 per cent in the northern, 65 per cent in the central and 16 per cent in the southern districts, against a potential of 17.7 per cent in the northern, 69.9 per cent in the central and 12.4 per cent in the southern districts of Kerala. To reduce the line losses a balancing of load generation will be attempted in the Plan 1978-83.

TABLE 12.5

## Region-wise Generation Potential

Schemes	Firm power MW	Energy MW	Plant MW
(1)	(2)	(3)	(4)
<i>Northern Region (Cannanore, Kozhikode Malappuram &amp; Palghat)</i>			
<i>New Schemes:</i>			
1 Kuttiyadi Augmentation	26	230	
2 Pandiyar Punnappuzha	30	260	70/105
3 Cholattipuzha	12.5	110	30/60
4 Mannanthody	66	580	200
5 Silent Valley	60	522	240
6 Karappara Kuriarkutty	37	325	100
Sub Total	231.5	2027	705
<i>Existing Schemes:</i>			
1 Kuttiyadi	28.0	248	75
Total (Northern Region)	259.5	2275	780
<i>Central Region (Trichur, Cochin, Kottayam, Alleppey &amp; Idukki)</i>			
<i>New Schemes:</i>			
1 Adirappally	45	395	100
2 Peringalkuthu Right Bank	30	265	75
3 Idukki III Stage	43	376	..
4 Idukki II Stage	..	..	390
5 Idamalayar	36.5	320	75
6 Lower Periyar	70	615	180
7 Puyankutty	225	2000	750

8 Perinjankutty	170	1600	400
9 Pambar	18	155	40
Sub Total	637.5	5726	2010
<i>Existing Schemes:</i>			
1 Sholayar	26.6	233	54
2 Peringalkuthu left Bank	19.6	170	32
3 Pallivasal	32.5	284	37.5
4 Sengulam	20.8	182	48
5 Panniar	17.0	148	30
6 Neriamangalam	27.0	237	45
7 Idukki	230.0	2015	390
Sub Total	373.5	3269	636.5
Total (Central Region)	1011.0	8995	2646.5

*Southern Region (Quilon, Trivandrum area)**New Schemes:*

Sabarigiri Augmentation	14.5	125	..
Kakkad	30	260	50

*Existing Scheme:*

Sabarigiri	138.5	1213	300
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## Total (Southern Region)

183	1598	350
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12.14 Considering the position of deficits in peaking capacity and energy generating capacity in the coming decade, all on going generation schemes viz., Idamalayar, Idukki Stage-III, Sabarigiri Augmentation and replacement of Sabarigiri VI unit and Silent Valley will be given the first priority in the matter of allocation of funds in the plan. The Kakkad Hydro-Electric Scheme, and Idukki Stage-II Scheme are proposed to be taken up during the plan period for load balancing and for ensuring that the State may not face power shortage after the plan period. Advance action on Kuriarkutty-Karappara, Lower Periyar and Perinjankutty schemes is also contemplated in the plan in order to continue building up of the generation capability of the power system in the long run. With these schemes, the State would be able to add 75MW to the generation plant capacity during the plan period, and build up an additional energy generation capability of 501 million units annually by the end of 1979-80 and another 320 million units annually by 1982-83. It is planned to commission Kakkad H.E. Schemes and Idukki Stage II Scheme by 1983-84 (The addition to plant capacity and energy generation capacity are given in Table 12.6)

TABLE 12.6

## Power Generation During and After the Plan

Year	Schemes Commissioned	Additions to		Availability		System Demand	
		Plant MW	Energy Mu	Plant MW	Energy Mu	Plant MW	Energy MU
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1978-79	Nil	..	..	961.5	4730	755	3275
1979-80	Idukki Stage-III	..	376	1011.5	5231	825	3585
	Sabarigiri Augmentation	..	125				
	Sabarigiri VI Unit Replacement	50	..				



(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1980-81	Nil	..	..	1011.5	5231	905	3920
1981-82	Idamalayar	37.5	160	1049.0	5391	980	4255
1982-83	Idamalayar	37.5	160	1086.5	5551	1070	4630
1983-84	Idukki Stage-II	390	..	1501.5	5681	1160	5040
	Kakkad	25	130				
1984-85	Kakkad	25	130	1646.5	6072	1265	5480
	Silent Valley-I	120	261				
1985-86	Silent Valley-II	120	261	1766.5	6333	1365	5930
1986-87	Nil	..	..	1766.5	6333	1485	6450
1987-88	Nil	..	..	1766.5	6333	1620	7020

The energy supply will fall short of the demand by 1986, necessitating the commissioning of other projects before this date. None of the other schemes envisaged will be in a position to be commissioned by this date, since they are hydro-based projects requiring long gestation periods. The various schemes proposed for inclusion in the plan are discussed below. The anticipated expenditure on generation schemes is estimated to be Rs.123.40 crores during the plan period 1978-83.

#### PLAN PROGRAMMES FOR 1978-83

##### *Continuing Schemes*

##### *Idamalayar Project (Outlay Rs.23.20 crores)*

12.15 The Idamalayar Scheme in Periyar basin envisages the construction of (i) a masonry dam 90M high above the river bed across Idamalayar, (ii) a power tunnel 5.6 M.dia, and 1566 M long terminating in a surge shaft, (iii) a low pressure pipe tunnel 4.6 M dia. and 144 M long and (iv) two penstocks 3.2 M. average dia. and 120 M long, leading the waters to a power house with two generating units of 37.5 MW each. The firm power potential is 36.5MW (continuous 20 million Units/year). The scheme is to be completed in 1982-83 and is estimated to cost Rs.32.47 crores. In the plan for 1978-83 an amount of Rs.23.20 crores is to be invested to complete the project.

##### *Silent Valley Hydro-Electric Scheme (Outlay Rs. 26.10 crores)*

12.16 The Silent Valley Scheme envisages utilisation of the yield of Upper Kunthipuzha catchment in Bharathapuzha for power generation. The Project consists of construction of a dam of 127 M. high across Kunthipuzha to impound water to a height of 317 M. and a water conductor system comprising a circular lined pressure tunnel of 3.3 M. dia. and 4267 M. long and a penstock 1.9 M dia and 2335 M. long bifurcating at the power house. The power house will have two generators of 60 MW each in the first stage. In the second stage another penstock will feed two additional generation sets of 60 MW each. With a firm power draft of 8.7 causecs over 857 M head the power generation will be 60 MW corresponding to 522 million units per annum. The scheme is estimated to cost Rs 48.80

crores and will be completed by 1984-85. The project was sanctioned by the Planning Commission in February 1973 to be included in the Fourth Plan of the State with the target date of commissioning during 1978-79. Limited resources under plan allocation coupled with the pressure for completing the Idukki Project resulted in the slow progress of works with regard to this scheme. Certain suggestions have been given by the Subcommittee appointed by the Task Force for the Ecological Planning of the Western Ghats for implementing the scheme. In the present plan an investment of Rs 26.10 crores is proposed.

##### *Idukki III Stage (outlay Rs.5.70 crores)*

12.17 The scheme envisages pooling of more waters in the Idukki reservoir by diversion of waters from Kallar and Rettayar, tributaries of Perinjankutty river. The project comprises (i) a masonry gravity dam 12M high across the Kallar, (ii) an unlined tunnel 5 M dia., and 2.75 km. long to divert the waters from Kallar to Rattayar, (iii) 19.5 M. high masonry dam across Rettayar and (iv) 3.8km. long and 6M. dia. unlined tunnel from Rettayar to Idukki. The scheme will yield an additional energy of 376 million Kwh annually at Idukki and is estimated to cost Rs.8.75 crores. The project is slated for completion in 1979-80, and would require an investment of Rs.5.70 crores.

##### *Sabarigiri Augmentation Scheme (outlay Rs.1.41 crore)*

12.18 The proposals for augmenting generation under Sabarigiri H.E. project consist of two parts viz., (i) diverting into Pamba reservoir three small continuous streams Kullar, Gaviar, and Mcenar, which now drain away, by constructing diversion weirs, unlined diversion tunnel and channels and (ii) diverting into Kakki reservoir the yield available from the Upper Muzhiyar catchment by constructing a diversion weir and an unlined tunnel. The average annual yield available from the diversions will be 2.7 TMC which when pooled in the Sabarigiri reservoirs will yield 14.5 MW corresponding to 130 million units per annum at the Sabarigiri Power House. The Scheme will cost Rs.2.73 crores according to current estimates and will be completed in 1979-80. The investment required during this plan period will be Rs.1.41 crores.

*Sabarigiri VI Unit Replacement* (outlay Rs. 2.70 crores)

12.19 The scheme relates to the replacement of Unit VI of the Sabarigiri hydro-electric scheme, which would restore the 50 MW power potential, and bring the present power system capability of the State to 1011.5 MW. The replacement is scheduled to be completed by 1979-80. The outlay proposed for the scheme is Rs. 2.70 crores.

*New Schemes**Kakkad Hydro-Electric Scheme* (outlay Rs. 16.30 crores)

12.20 The Kakkad Project is at all development of existing Sabarigiri Power Station in Pamba basin. The Scheme comprises, construction of two dams 32 M high, an unlined inter-connecting tunnel 2900 M long and a pressure tunnel 7800 M. long and a pressure shaft 365 M. long to lead the tail race waters of Sabarigiri Power Station to the Kakkad Power Station. This would add 30 MW of firm power to the existing power system. The installed capacity proposed is two generation sets of 25 MW each. The Scheme sanctioned in September 1976 is estimated to cost Rs. 18.60 crores. The investment proposed during the plan period is Rs. 16.30 crores. The project is scheduled to be commissioned in 1983-84.

*Idukki Stage-II* (outlay Rs. 20.54 crores)

12.21 The Project estimated to cost Rs. 24.18 crores envisages installation of three additional units of 130 MW each in the Idukki Power House. At the time of completion of the First Stage works of Idukki most of the Civil works for the Second Stage were also completed. The works to be carried out are steel-lining the pressure shaft No. 2 and back filling with concrete and installation of the three additional machines in the space already provided. An investment of Rs. 20.54 crores is provided for the plan period. This scheme will be commissioned during 1983-84.

*Other Schemes* (outlay Rs. 27.46 crores)

12.22 *Kuriarkutty-Karappara H.E. Scheme.*—This Scheme comprises three dams and three power stations for the utilisation of the waters of Karappara, Pulikalar and Kuriarkutty rivers, all tributaries for Chalakudy river, for power generation and irrigation by diversion to Chitturpuzha Valley. The total storage capacity will be 200 cubic metres and the available yield has been assessed as 9 TMC from a total catchment area of 192 Sq. Km. The firm power of the Scheme, with a plant capacity of 100 MW, is assessed as 37 MW. The estimated cost of the Scheme is Rs. 40 crores.

12.23 *Lower Periyar.* This scheme, in Periyar Basin, contemplates construction of a 30 M high dam across Periyar above the existing Periyar Valley Irrigation Barrage to intercept the tail flows of the upper power stations and divert them through a 12 km. long tunnel and 2 penstocks 170 M long leading to a surface power station having 3 units of 60 MW each. The power potential of the scheme is 70 MW equivalent to 615 million units per annum. The plant capacity proposed is 180 MW. The estimated cost of the scheme is Rs. 41 crores.

12.24 *Perinjankutty.* This scheme envisages creation of a reservoir of 720 M<sup>3</sup> capacity by the construction of a concrete dam 135 M high across Perinjankutty river. The water conductor system comprises 3680 M long power tunnel 1000 M. long pressure shaft leading the waters to a power station having 240 MW plant capacity. By a chain of diversions, the waters from neighbouring streams are proposed to be pooled in the Perinjankutty reservoir. The firm power is 170 MW and plant capacity is 400 MW including the benefit in the auxiliary power stations in the chain of diversions. The estimated cost of the scheme is Rs.100 crores.

12.25 A total outlay of Rs. 27.46 crores only is provided for the above three schemes.

*Transmission* (outlay Rs. 97 crores)

12.26 The load balancing conceived in the generation plan will call for stabilising the transmission system. A transmission plan for the next decade will have to be based on the following additions to the system:

- (i) 220 KV sub-stations: Three numbers one at Cannanore with a capacity of 300 MVA, one at north of Trichur with a capacity of 400 MVA and one at Trivandrum with a capacity of 300 MVA.
- (ii) 220 KV lines: Idukki to Trichur, single circuit from Idukki to Lower Periyar and double circuit from Lower Periyar to Trichur; Trichur North to Kozhikode via Silent Valley; Kozhikode to Cannanore (double circuit); Lower Periyar to Kalamessery (single circuit), Sabarigiri to Edamon (double circuit), Edamon to Trivandrum (double circuit) and Idukki to Pallom (single circuit). Further a line from Perinjankutty to Kumili connecting the Sabarigiri Madurai line at Kumili to improve supply to the southern region.
- (iii) 110/66 KV sub-stations: At Kasaragod, Tirur, Kunnankulam, Muvattupuzha, Aroor, Alleppey (South), Palai, Trivandrum (Balaramapuram) and Alathur.
- (iv) 110 KV feeder lines: Double circuit lines from Kuttiyadi to Cannanore, Pandiyar-Punnappuzha to Malappuram Idamalayar to Chalakudy and Alwaye, Peringalkuthu Right-Bank to Trichur North, Peringalkuthu Right Bank to Chalakudy via Adirppally, and Kakkad to Edappon.
- (v) 110 KV grid lines: Malappuram to Tirur (SC/DC), Trichur (north) to Kozhikode via Kunnankulam and Tirur (SC/DC), Pallom to Alleppey south (DC.) Alleppey South to Aroor via Mararikulam (DC), Edamon to Edappon (DC), Kundara to Edamon (DC, second circuit), Cannanore to Mangad, Trivandrum to Balaramapuram (DC), Edappon to Alleppey South (DC), Vaikom to Palai (DC), and Trichur to Palghat via Alathur (DC). A few more links will be required to connect prospective EHT consumers.

- (vi) 66 KV lines: The redundant elements of the old 66 KV net-work will be reutilised to the fullest extent. New links to new sub-stations and EHT consumers are also required.
- (vii) 400 KV Transmission: Since the Central Power Authority is planning for a large network of 400 KV transmission lines for the Southern region, and since the power system is hydro-based, a high security link at 400 KV from the Super Thermal Station at Neyveli (Tamil Nadu) to Trichur (north) Station, and connecting up the Trichur Station to the major hydro stations of Idukki, Lower Periyar and Silent Valley have to be conceived in advance during this plan period and work started on the same. The future stations of Perinjankutty and Payankutty, Peringalakuthu Right Bank and Adirappally will also get connected to this Station.

2.27 In the past plans transmission and distribution sectors had very little investment leading to backlog of works. The spillover work content on transmission is estimated to be over Rs. 20 crores. On the basis of load balancing, reduction of line losses, better stability and better voltage condition in the grid, the 1978-83 plan anticipates the setting up of additional transmission capacity by constructing 389 Km. of 220 KV lines, 571 Km of 110 KV lines, 844 Km of 66 KV lines, 26 numbers of 66 KV sub-stations, 9 numbers 110 KV sub-stations, and one 220 KV sub-stations. The total outlay on transmission is Rs. 97 crores for 1978-83.

*Distribution and Rural Electrification* (Outlay Rs. 115 crores)

12.28 The deficiencies in the power distribution system in Kerala are inadequate transformer capacity and line capacity, frequent interruptions, poor voltage conditions, long waiting period for electric connections etc. The 1978-83 plan therefore aims at strengthening the distribution system by speedy elimination of the backlog in the distribution works and by keeping pace with the demand during the period. At present there are about 35,000 applications pending for power connections which do not require line extension. The number of pending applications which require line extension for connections is about one lakh. The accumulated backlog is planned to be cleared during the plan period of 1978-83.

12.29 The plan for distribution of power is to add 5200 distribution transformers, 5200 km of 11 KV lines and 2600 km of L.T. lines to the distribution system. With these additions it is proposed to add nearly 6 lakh consumers of various categories to the system on the whole, and give connection to tribal hamlets and tribal houses including harijan bastis. An additional 1,73,000 street lights and 76,100 numbers of additional irrigation pumpsets will be energised and necessary distribution facilities provided in rural areas for starting small scale industries. The total investment proposed for the distribution schemes is Rs. 115 crores.

12.30 Rural Electrification is a very necessary adjunct to planned development of the rural sector and programmes of rural electrification should be complementary to schemes for the construction of wells and

installation of pumpsets. The plan therefore conceives the electrification of all the villages in the State. For this purpose an outlay of Rs. 13.5 crores is provided out of which Rs. 4.50 crores will be for the normal programmes. The balance amount of Rs. 9 crores will be mobilised through the Rural Electrification Corporation for rural electrification programmes.

*Survey and Investigation* (outlay Rs. 4.60 crores)

12.31 A provision of Rs 4.60 crores is made for detailed investigation of untapped hydel resources in the State and for the preparation of detailed project reports. This would result in continued development of the hydroresources of the State for power generation.

TABLE 12.7

**Scheme-wise Outlays and Expenditure—Power Development**

Sl. No.	Scheme	(Rs. in lakhs)			
		Fifth Plan outlay 1974-79	1974-78 Expenditure	1978-79 outlay budgeted	1978-83 outlay proposed
(1)	(2)	(3)	(4)	(5)	(6)
<b>A. Generation:</b>					
Continuing Schemes					
1	Idukki Stage—I		4046.75		
2	Idamalayar		974.67	500.00	2319.63
3	Silent Valley		95.07	25.00	2610.00
4	Idukki Stage—III		443.89	350.00	570.36
5	Sabarigiri Augmentation		141.70	100.00	141.04
6	Sabarigiri Spillover		67.29	..	..
7	Kuttiyadi Spillover		78.20	..	..
8	Sabarigiri—VI Unit replacement		226.00	150.00	269.90
<i>New Schemes:</i>					
1	Kakkad		..	78.00	1630.00
2	Idukki Stage—II		..	..	2054.00
3	Other Schemes—Kuriarkutty-Karappara Lower Periyar Perinjankutty etc.		..	50.00	2746.00
Total A.			6073.57	1253.00	12340.93
<b>B. Transmission &amp; Distribution:</b>					
1	Transmission		2523.25	1500.00	9700.00
2	Distribution and reduction of line losses		1006.90	925.00	10150.00
Total B			3530.15	2425.00	19850.00
<b>C. General:</b>					
1	Rural Electrification (Normal)		868.61	100.00	450.00
2	Rural Electrification Corporation		..	..	900.00
3	Survey and Investigation		216.28	100.00	460.00
Total C			1084.89	200.00	1810.00
TOTAL (A+B+C)			12990.00	10688.61	34000.93

## INDUSTRY AND MINERALS

The prevalence of acute unemployment in Kerala calls for rapid development of the industrial sector in the next decade. More than half the cultivable area in the State is under cash crops which cannot absorb the annual additions to the labour force. The social service sector which is well developed in the State also offers only a limited scope for further expansion and employment creation. Hence in the Plan programmes for 1978-83 a special emphasis has to be laid on the field of industry. Units employing low level of technology dominate Kerala's industrial scene. Kerala's traditional industries like Coir, Cashew and Handloom account for the major share of employment in industry. A significant feature of the factory sector of industry in Kerala is that nearly a third of these units do not use power while they employ over fifty per cent of the workers. The unimpressive growth of the industrial sector of Kerala is no less due to the high priority given to other sectors and the low priority accorded to industrial development in the first four Plans. The outlay on industrial sector in the first five Plans for the State together came to only about Rs. 107.66 crores out of the total outlay of Rs. 1244.16 crores. The expenditure incurred for industrial development formed only 2 per cent of the total expenditure in the First Plan, 7.5 per cent in the Second Plan, 7.9 per cent in the Third Plan, 9.2 per cent in the annual plan years, 7.5 per cent in the Fourth Plan and 10.2 per cent in the first four years of the Fifth Plan. In the previous Plans social compulsions led to the allocation of larger share of the outlay to agriculture and social services. The degree of development reached in the provision of infrastructure for industrial growth and in the necessary social services in Kerala should now lead to a pattern of investment with a high degree of concentration within the industrial sector.

13.2 Kerala has failed to attract sufficient number of private entrepreneurs to the field of modern industry for various reasons. Most of the investments in the existing modern industries in the State has come from the meagre resources of the State exchequer or from outside Kerala, local people having directed their savings to investments in agriculture, plantations and traditional industries. Hence the State Government should continue to assume an important role as industrial entrepreneur. The initiative of the State Government has to compensate for the inertia of entrepreneurs. The public sector should enter in a big way in the development of large and medium industries; this will stimulate the growth of ancillary industries in the indigenous private sector. The small scale sector *per se* should also be given due emphasis during the plan period 1978-83.

13.3 The Central investment in industries in Kerala has been meagre during the early plan periods. Out of a total Central investment of Rs. 9112 crores in industrial enterprises at the end of March 1976, Kerala could get only about Rs. 247 crores (2.7 per cent of the total.) Balanced regional growth is one of the declared objectives of India's Five Year Plans. But this can

be achieved only by a balanced allocation of resources to different regions. Such an allocation should be based on a formula which takes into account the regional peculiarities. The increasing gap in the development as between the industrially poor States like Kerala and the industrially advanced States like Maharashtra, Punjab and West Bengal needs to be bridged in the coming years as rapidly as possible. The Centre should recognise that balanced regional growth requires equitable distribution of Central sector industrial units among the States. Hence the Centre should adopt a policy of locating more Central sector concerns in industrially poor States like Kerala.

13.4 The Central investment in industrial concerns of the State, though meagre as compared to other States, has enabled the establishment of certain major factories in Kerala. The Fertilizers and Chemicals (Travancore), Cochin Refineries, Indian Rare Earths, Modern Bakeries, Hindustan Machine Tools, Hindustan Insecticides and Hindustan Latex are the important Central industrial establishments functioning in Kerala. The FACT which has several well conceived schemes even now envisages schemes for the manufacture of ammonium sulphate, caprolactum etc, which would call for massive additional investment. Cochin Refineries has a proposal to set up facilities for secondary processing of the Bombay High crude and to convert low valued furnace oil into high valued products like LPG, motor spirit etc. The Hindustan Insecticides contemplates a large scale expansion and diversification programme during the period 1978-83. Recently the Centre has set up an Electronic Switching Factory at Palghat under the Indian Telephone Industries Limited. The Rs. 109 crore Cochin Shipyard has already reached an advanced stage of construction, while civil work is going on at a swift pace in the Rs. 130 crore Newsprint Factory at Velloor. The Newsprint Factory is expected to start production by the close of 1979.

13.5 With the announcement of Government of India's policy to curb private monopoly in industry, the concept of joint ventures has gained considerable momentum in this country. In Kerala, the State Industrial Development Corporation has accepted this policy in right earnest and has endeavoured to promote a number of joint sector projects. The eleven joint sector projects promoted by the KSIDC has a total investment of about Rs. 26 crores. There are 95 large and medium units in the private sector which account for a total investment of about Rs. 197 crores.

13.6 A significant achievement in Kerala's industrial sector in recent years is the setting up of the Kerala State Electronics Development Corporation. This Corporation, set up in June 1973, is the first of its kind to be established by a State Government. Within a short period of its existence it has made considerable progress in the field of electronic industry. Among the products of the Corporation special mention should be made of electronic calculators, cash registers, static inverters, electrolytic capacitors, voltage stabilizers,

electronic information display system and variable speed devices. The design, quality and price of these products compare favourably with other similar products manufactured elsewhere. The Central Government has recently issued a letter of intent to the Corporation for the manufacture of electronic process control instruments and systems. A special programme has been evolved for the development of small scale units in the field of electronics by transfer of know-how to small units from the Electronics R and D Centre and marketing of the products by KELTRON. The Corporation is now engaged in implementing a number of schemes for the manufacture of electronic items. This will provide employment to a considerable section of the educated unemployed in Kerala.

13.7 Among the industrial projects which are proposed to be set up in the next few years are a new cement factory based on the limestone deposits of Walayar and a titanium complex for the manufacture of titanium dioxide. The State Government has decided to set up the titanium complex in the public sector based on chloride technology, in Chavara, using the rich mineral deposits in that area at total cost of Rs. 75 crores. The Cement Plant at Walayar (Malabar Cements Limited) will have a capacity of 1200 tonnes per day. The plant is estimated to cost Rs. 30 crores. Steps are also being taken to set up a Steel Complex Unit at Alleppey with assistance from national financing institutions. The unit has been registered under the name Steel Industrials Kerala Limited. The four schemes formulated by this company involve a total investment of the order of Rs. 22 crores.

13.8 Though there has been significant growth in the small and village industries sector of Kerala during the past few years, this has not been commensurate with the needs of the State. The rapid and widespread development of small industries including cottage and household industries is one of the major objectives of the all India plan. This is part of the primary goal of reducing unemployment and under employment in the country. In a State like Kerala, characterised by chronic unemployment, the only effective remedy to solve this problem is the establishment of as many small scale industries as possible. Small industries can provide employment at a relatively small cost. Realising the importance of small scale industries the State Government has reorganised the Industries Department and entrusted the development of small scale industries to the Industries Development Commissionerate. This new Department has drawn up a massive programme of establishing ten thousand new industrial units and reviving two thousand and odd sick units in the small industries sector. According to this scheme the intending entrepreneurs have to invest ten per cent as seed capital, the Government will also provide an equal amount while the remaining eighty per cent will have to be met from banks and other financial institutions. It is hoped to intensify the scheme with greater assistance from the Government of India and the financing institutions. The Centre has reserved a large number of industries exclusively for the small sector. The target of the State during the plan period 1978-83 is to set up 15,000 small scale units in the State.

13.9 As already indicated a large number of workers are engaged in the State's traditional industries such as coir, cashew, handloom, bricks and tiles, beedi etc.

Cashew industry employs nearly 1.3 lakhs of workers of which majority are women. This industry is now facing a crisis owing to the shortage of raw cashew nuts. The import of raw nuts is steadily declining and in 1976-77 reached its lowest level. The Government has already initiated various steps to increase cashew production in the State itself by bringing more area under cashew plantation. The Cashew Development Corporation formed in the State to take over the sick units and to safeguard the interests of the cashew worker now manages 34 factories and employs more than thirty five thousand workers. As a relief measure the Corporation has agreed to run a number of additional private sector cashew units on a rental basis so that employment in this sector is not considerably reduced.

13.10 A comprehensive development plan for the reorganisation of the coir industry is being implemented expeditiously with the help of the Centre. This plan aims at reorganising and strengthening the coir cooperative societies and the Kerala State Coir Corporation and creation of a central organisation for the purchase and retting of husks in the nine major coir project areas. The implementation of this programme along with the various labour welfare measures will help to revive this industry. Though the State had a proposal to reorganise the industry at a cost of Rs. 44 crores, the assistance from the Centre hitherto has been only of the order Rs. 4.3 crores. The Centre is expected to provide substantial financial assistance to rehabilitate coir industry during the Plan 1978-83. A total investment of the order of Rs. 28 crores (in the Central and State sectors together) is envisaged in the Plan period 1978-83 under coir development.

13.11 In July 1975, a Committee was constituted by the State Government to formulate a comprehensive scheme for the development of handloom industry. This Committee drew up a time-bound programme to be implemented within a period of five years. Two intensive development projects under the scheme each costing Rs. 185 lakhs, one to be located in the north and another in the south for catering to internal consumption, have been sanctioned by the Centre, and they are being set up. In addition to these two projects, an export production project costing Rs. 40 lakhs is also being set up at Cannanore.

13.12 The Kerala Khadi and Village Industries Board has launched a special employment programme which envisages additional employment opportunities to one lakh persons under Khadi and Village Industries within a period of 3 years from 1-1-1978. A total outlay of Rs. 59 crores is contemplated for Khadi and Village Industries during the plan period 1978-83.

13.13 Special institutional agencies have been created in the State to promote rapid industrialisation. In this connection special mention may be made of the Kerala Financial Corporation, Kerala State Industrial Development Corporation, Kerala Industrial and Technical Consultancy Organisation, and Kerala State Small Industries Development and Employment Corporation.

13.14 In the promotion of industries in Kerala, the Kerala Financial Corporation has been given a crucial role. This institution provides industrial credit to different types of industries, of which a major portion reaches the small scale sector.

13.15 The Kerala State Industrial Development Corporation besides rendering financial assistance for establishing new companies, also provides assistance to undertake expansion, diversification and modernisation of existing companies. The Corporation is also setting up companies of its own. So far the Corporation has rendered share capital assistance to 36 companies for establishing new projects. It has also rendered loan assistance to 27 companies by the end of 1976-77. The estimated cost of the industrial projects of these 63 units is Rs. 142 crores. The KSIDC has already disbursed Rs. 21.76 crores to these units as its share of assistance. The Central Government has notified this Corporation as a financial institution eligible for refinance under the IDBI Act.

13.16 The Kerala State Small Industries Development and Employment Corporation was incorporated in November, 1975 by amalgamating the Small Industries Corporation and Employment Promotion Corporation. The main function of this Corporation is to help the channalisation of institutional finance and know-how for industrial development. Management consultancy organisations like KITCO (Kerala Industrial and Technical Consultancy Organisation) and SISI (Small Industries Service Institute) are rendering services to intending entrepreneurs in the preparation of economically viable projects.

13.17 The various agencies in the industries sector have formulated several schemes with a view to exploit the resources of the State. Some of these schemes involve imported sophisticated technology. The Centre should be favourably inclined to clear the Kerala projects expeditiously taking into account the industrial backwardness of the State. Special mention has to be made of the proposed District Industries Centres which will provide and arrange a package of assistance like credit, raw materials, training, marketing etc. It is hoped that these centres will help to usher in an era of rapid industrialisation in the State.

13.18 An examination of the industrial credit distribution by the major all India Financial Institutions like Industrial Finance Corporation, Industrial Credit and Investment Corporation of India and Industrial Development Bank of India shows that the major portion of resources is attracted to industrially advanced States like Maharashtra, West Bengal, Tamil Nadu and Gujarat. The share of Kerala has been less than 3 per cent of the total assistance. All efforts will therefore be made to attract more of industrial credit from these institutions to Kerala during the coming plan period.

13.19 The selection of the right type of industries for development will be given greater emphasis during the plan period. The strategy of development aims at a better utilization of the agricultural and mineral resources in the State like rubber, spices, mineral sands, graphite, limeshell, bauxite, timber and other forest produce, leather etc. A net-work of skill intensive industries based on the natural resources will enable the efficient utilisation of the relatively educated and skilled labour in the State. Industries such as electronics, silica-based industries, industries based on mineral sands (such as titanium), phyto chemicals, industries based on fish and fish products, timber based industries, industries linked with tourism and petrochemical industries have considerable potential in Kerala. Adequate attention to modernisation of industries in areas such as textiles will beaid during

the plan period. The 1978-83 plan period will find a considerable step up in the investment on transmission and distribution of electricity. Therefore the plan will aim at creating additional capacity in products like transformers, electric cables etc. Power based industries such as ferro-silicon which have export possibility will also be developed. The plan period will also find greater development in the sphere of chemical industries, particularly petro-chemicals. The engineering base already built up in the State will be further strengthened during the plan period. Efforts will be made to groom new entrepreneurs, skilled managers and technicians besides increasing productivity and increasing Kerala's market share in the all India and international markets. Institutions like the Kerala State Industrial Development Corporation and the Kerala State Industrial Technical Consultancy Organisation have a much greater role to play in this regard.

#### *Plan proposals for 1971-83*

The plan proposals under 'Industries and Minerals' are discussed under three heads, viz; Large and Medium Industries, Mineral Development and Village and Small Industries.

### **A. Large and Medium Industries**

#### **1 State Sector**

##### *1. Industrial Finance Institutions*

##### *(a) Kerala State Industrial Development Corporation (Outlay Rs. 500 lakhs)*

13.20 Apart from the financial assistance sanctioned to industrial units in Kerala in the form of share capital, loans and guarantees, the Kerala State Industrial Development Corporation also provides various other types of assistance to promote companies. Such assistance covers a wide range of essential activities such as identifying projects, submission of applications for letters of intent and obtaining licence, arranging technical collaboration, negotiating with other financial institutions for securing assistance, participation in projects reports, etc. The Corporation also enters into joint promotional agreements with private parties, and has so far promoted 11 companies in the joint sector of which five units have already gone on production. These eleven projects involve an estimated total investment of Rs. 26 crores, and their aggregate employment potential is 2300 persons. In the Plan for 1978-83 eight existing schemes and 24 new schemes sponsored by the Kerala State Industrial Development Corporation are included under the joint sector. The existing/continuing schemes involve an investment of about Rs. 15 crores, while the total investment for the new schemes is about Rs. 106 crores. As sponsors of these projects the Corporation will be obliged to invest substantial amounts in them. A portion of this investment will be available to the Corporation from its own resources (by way of recovery of principal, interest, and dividends). The capital base of the Corporation will be strengthened during the Plan period 1978-83 by increasing its authorised and paid up capital for enabling it to avail itself of the term loans from all India financial institutions. Hence it is necessary to enhance its authorised capital from the present Rs. 5 crores to Rs. 10 crores. The present authorised capital is nearly fully paid up. The State Government will provide a share capital support to the extent of Rs. 5 crores to the Corporation so that it can fulfil its financial commitments during the Plan period 1978-83. Short description of the projects sponsored by the Kerala

State Industrial Development Corporation is given below:

*Existing/Spill Over Schemes:*

*Kunnathara Textiles Ltd.*

13.21 The Company promoted in the joint sector by the Kerala State Industrial Development Corporation for establishing a powerloom complex at Kunnathara in Kozhikode district is expected to complete their scheme by the end of the year 1978. The unit which on completion will employ about 618 persons directly, expects loan assistance aggregating Rs. 101 lakhs from financial institutions.

*Kerala Chemicals and Proteins Ltd.*

13.22 This Company, promoted jointly by two Japanese industrialists and the Kerala State Industrial Development Corporation, is establishing an Ossein Factory at Koratti in Trichur district for manufacturing annually 2210 tonnes of Ossein and 4250 tonnes of dicalcium phosphate using animal bones. The project costing Rs. 187 lakhs is expected to go into production by the end of the year 1978.

*Formalin Products Ltd.*

13.23 This joint sector Company is establishing a 7500 tonne capacity formaldehyde plant at Kalavoor in Alleppey district, with facilities for undertaking downstream projects for the manufacture of Urea formaldehyde resins, paraformaldehyde and hexamine. The entire scheme involves an outlay of Rs. 105 lakhs.

*Premier-Morarjee Chemical Ltd.*

13.24 A project for manufacturing annually 16,500 tonnes of sulphate of alum (ferric alum) is being established at Kalavoor in Alleppey district by the Company in the joint sector at an estimated cost of Rs. 70 lakhs. An amount of Rs. 5 lakhs has already been invested in the project.

*Kerala Chlorates and Chemicals Ltd.*

13.25 The Company organised in the joint sector is setting up a plant at Mavelikkara, in the industrially backward district of Alleppey, to manufacture initially 1000 tonnes of potassium chlorate per annum and an equal quantity of sodium chlorate at a later stage. The cost of the project is estimated at Rs. 82 lakhs of which an amount of Rs. 7 lakhs has already been invested.

*Power Systems and Projects Ltd.*

13.26 This Company which is registered to undertake the manufacture of power carrier communication systems and equipment in a phased manner has already completed its first phase. The Kerala State Industrial Development Corporation has invested a share capital of Rs. 6 lakhs in the Company, apart from rendering substantial loan assistance. The scheme when completed will provide employment to about 215 persons.

*Carbon and Chemicals India Ltd.*

13.27 This Company promoted by the Kerala State Industrial Development Corporation is setting up a

Rs. 9 crore carbon black plant with an annual capacity of 13,700 tonnes at Ambalamedu in Ernakulam district in technical collaboration with a foreign company. The investment in the project by the end of 1977-78 is about Rs. 31 lakhs. The Company expects loan assistance aggregating Rs. 6 crores from financial institutions.

*Veneers and Laminations (India) Ltd.*

13.28 The Company has already established the project at Othara in Alleppey district. The unit which is now in the production stage has a proposal to install additional machinery to enhance its productive capacity upto about 2.1 million square metres per annum. The expansion programme is expected to cost Rs. 48 lakhs of which Rs. 25 lakhs will be provided by the Kerala State Industrial Development Corporation.

*New Schemes*

*Nylon Filament Yarn*

13.29 The Kerala State Industrial Development Corporation has secured a letter of intent from the Government of India to set up a factory with a capacity of 21,000 tonnes of nylon filament yarn per annum. But due to the uncertainty of the Centre's policy in regard to foreign technical collaboration in the wake of petroleum crisis, the project did not make much headway. But with the proposal to establish the Caprolactum plant in the Central sector, the prospects of the Nylon plant appear to be brighter. An economic size nylon plant is expected to cost Rs. 16 crores. It is proposed to take up this project in the joint sector by Kerala State Industrial Development Corporation.

*Dyes Project*

13.30 At present there is no unit in the organised sector for manufacturing dyes required largely by the coir and paper industries in the State. Their requirements are largely met by supplies from Maharashtra and Gujarat and partly through imports. A project for the manufacture of 90 tonnes of basic dyes may be established in the State at an approximate cost of Rs. 80 lakhs. Kerala State Industrial Development Corporation has already formulated a scheme for the joint sector, in which it may have to invest about Rs. 7 lakhs.

*Polyol and Polysulphide plant*

13.31 Polyol is an intermediate chemical used in the manufacture of polyurethane foams, castings, adhesives etc. which are largely in demand in the country. At present the requirement of this chemical is met from imports. Once polyol is manufactured it would be possible to produce polymethane, and poly sulphide. The Indian Space Research Organisation has developed the necessary technology based on castor oil derivatives. The Kerala State Industrial Development Corporation is preparing a scheme for a capacity of 1000 tonnes of Polyol and five tonnes of Poly-sulphide per year to be taken up in the joint sector. The total cost of the project will be Rs. 120 lakhs.

*Carbide Chemical Plant*

13.32 Carbide Chemicals are presently being imported and therefore it is suggested that a unit be set

#### *Ceramic Fibre Plant*

13.44 The utilisation of ceramic fibre as insulating material is becoming popular in India. At present the country's requirement of this item is met by imports. The raw materials required are Kaolin and Sillimanite which are available indigenously. It is suggested that a plant of capacity of 100 tonnes per annum be set up in the joint sector. The estimated cost of the unit is Rs. 6 crores.

#### *Decaffeinated Coffee Plant*

13.45 There is considerable demand for decaffeinated coffee (coffee from which caffeine is removed) in western countries where it is used as health coffee. This will not only increase our foreign exchange earnings on the export of coffee, but also reduce the import of caffeine for the drugs and pharmaceutical industry. A decaffeinated coffee plant of an annual capacity of 3450 tonnes is proposed to be set up in Kerala in the joint sector at a total cost of Rs. 5 crores.

#### *Vitamin 'C' Project*

13.46 The plan proposal is to promote a project in the joint sector for undertaking the manufacture of 100 tonnes of Vitamin C per year at an estimated cost of Rs. 250 lakhs.

#### *Precision Instruments Project*

13.47 The Kerala State Industrial Development Corporation has obtained letters of intent from the Government of India for establishing a unit for the manufacture of vernier instruments, micrometers, electric and level bridges and dial instruments of a total capacity of 70,000 numbers per annum. The project is proposed to be set up in the joint sector. The estimated cost of the project is Rs. 480 lakhs of which the investment by the Kerala State Industrial Development Corporation is expected to be about Rs. 42 lakhs.

#### *Geo-Scientific Instruments*

13.48 The Kerala State Industrial Development Corporation has formulated a scheme for the manufacture of different types of geo-scientific instruments required by the Meteorological Laboratories, Geological Survey Departments etc. This scheme costing Rs. 350 lakhs, will be taken up in the joint sector with the assistance of the Kerala State Industrial Development Corporation.

#### *High Tension Insulators*

13.49 Preliminary studies conducted by the Kerala State Industrial Development Corporation has proved the feasibility of setting up a high tension insulators project of a capacity of 6000 tonnes per annum, with the locally available raw materials. The project which is estimated to cost Rs. 250 lakhs and employ 400 persons is proposed to be set up in the joint sector.

#### *Silicon Carbide Plant*

13.50 The demand for silicon carbide in Kerala, which is required for the manufacture of special refractories and graphite products, is estimated at 400 tonnes per year. It is suggested that a 500 tonne

plant be established in the State by utilising the indigenous raw materials and technical know-how. The total cost of the project is estimated at Rs. 30 lakhs.

#### *Sea Water Magnesite Project*

13.51 Sea water magnesite can be used as refractories and for the manufacture of magnesium metal. The main raw materials required for the sea water magnesite project are sea water, limestone or dolomite. The proposal is to set up a large scale project with an installed capacity of one lakh tonnes per annum of sea water magnesite in Trivandrum district in collaboration with a firm in the United States. The project will cost about Rs. 30 crores.

#### *Mini Paper Plant*

13.52 The Plan proposal is to manufacture annually 4000 tonnes (to be expanded to about 9000 tonnes at a later stage) of Manila duplicating paper, air mail paper, manifold paper etc. at an estimated cost of about Rs. 80 lakhs.

#### (b) *Kerala State Industrial Enterprises* (Outlay Rs. 834 lakhs)

13.53 The Kerala State Industrial Enterprises is a holding company having control and management over the following subsidiary companies which are fully owned by the Government:

1. Kerala Soaps and Oils Limited, Calicut
2. Kerala Electrical and Allied Engineering Company, Mamala.
3. Kerala Ceramics Limited, Kundara
4. Travancore Plywood Industries Limited, Punalur
5. Travancore Rubber Works Limited, Trivandrum
6. Kerala State Drugs and Pharmaceuticals Limited, Alleppey.
7. Kerala Detergents and Chemicals Limited, Malappuram
8. Kerala Clays and Ceramic Products Limited, Cannanore.

13.54 During the plan period 1978-83 it will not only be necessary to replenish the accumulated cash losses of some of these companies like the Kerala Soaps and Oils Limited, the Kerala Electrical and Allied Engineering Company, the Kerala Ceramics Limited and the Travancore Rubber Works, but also to maintain production in these companies. The subsidiary companies have also expansion schemes which require financial support. An amount of Rs. 834 lakhs is allocated in the Plan for 1978-83 for the schemes of the subsidiary companies of the Kerala State Industrial Enterprises. The plan programmes of these companies and the financial requirements are furnished below:

#### *Kerala Soaps and Oils Ltd. (Outlay Rs. 48 lakhs)*

13.55 The company proposes to raise the required finance of Rs. 96 lakhs from the State Government and financial institutions in equal proportion for implementing its scheme for expanding the production of toilet soaps to 9000 tonnes per annum.

#### *Trivandrum Rubber Works Ltd. (Outlay Rs. 20 lakhs)*

13.56 This unit has a scheme to undertake modernisation and manufacture of journal lubricators and foam



up in the State, based on calcium carbide, which is already being manufactured in the State. The total investment required for a model plant will be about Rs. 180 lakhs. The Kerala State Industrial Development Corporation will be investing Rs. 16 lakhs in the project.

#### *Conveyor Belts*

13.33 The Kerala State Industrial Development Corporation holds a letter of intent for establishing a large scale project involving an estimated outlay of Rs. 24 crores for manufacturing annually 6,000 tonnes of different types of conveyor belts with foreign technical collaboration. A foreign collaboration proposal has already been submitted to the Government of India for approval. The Kerala State Industrial Development Corporation is expected to invest about Rs. 208 lakhs in the share capital of this project which is proposed to be set up in the joint sector.

#### *Surgical Rubber Goods*

13.34 There is scope for setting up an economic size plant costing about Rs. 80 lakhs for manufacturing different types of surgical rubber goods of high quality, largely required by the hospitals and dispensaries in the State. Kerala which produces an abundant quantity of natural rubber is ideally suited to establish such a plant. The Kerala State Industrial Development Corporation proposes to set up the plant by investing about Rs. 9 lakhs in the share capital of the company.

#### *Activated Carbon Plant*

13.35 At present superior grade activated carbon is imported. The Kerala State Industrial Development Corporation has formulated a scheme for manufacturing annually 2000 tonnes of pharmaceutical grade activated carbon from coconut shells. The scheme envisages foreign technical collaboration, and its approximate cost is Rs. 270 lakhs. Kerala State Industrial Development Corporation will invest Rs. 24 lakhs in the Project.

#### *Vinyl Acetate Plant*

13.36 Vinyl acetate monomer is the main raw material for the manufacture of poly vinyl acetate which is used for the production of various adhesives, emulsions etc. This product is not manufactured in India at present. There is considerable scope for establishing a plant in Kerala as the raw materials, calcium carbide and acetaldehyde, are locally available. The cost of the project is estimated to be Rs. 300 lakhs and the probable investment of the Kerala State Industrial Development Corporation is Rs. 26 lakhs.

#### *Sodium Tri-poly Phosphate (S.T.P)*

13.37 S.T.P. is the basic raw material for the manufacture of synthetic detergents. The present production of this chemical in the country is not adequate to cater to the increasing demand. It is suggested that a 10,000 tonnes per annum capacity plant be established in Kerala. The raw materials like rock phosphate, sulphuric acid, and soda ash are indigenously available. The scheme would cost about Rs. 400 lakhs and the probable investment of the Kerala State Industrial Development Corporation is Rs. 39 lakhs.

#### *Butenediol Plant*

13.38 Butenediol is a chemical used in the manufacture of endosulphan. It is not manufactured in the country at present and the entire demand is met by imports. M/s. Hindustan Insecticides Ltd. Alwaye, have set up a plant for manufacturing endosulphan and their annual requirement of butenediol is about 450 tonnes. The basic raw materials for butenediol are formaldehyde and acetylene which are indigenously available. Hence it is suggested that a plant may be set up in the State in the joint sector at an estimated cost of Rs. 350 lakhs.

#### *Nickel-Cadmium Cells*

13.39 The Kerala State Industrial Development Corporation has done considerable work in implementing a licence held by it for establishing a two million capacity nickel cadmium cell manufacturing plant costing about Rs. 57 lakhs using indigenous technical know-how. The project is proposed to be located in Alleppey district as a joint sector enterprise.

#### *Watch Case Manufacturing Unit.*

13.40 Under the initiative of the Kerala State Industrial Development Corporation a watch assembly unit (Astral Watches) is being set up in technical collaboration with Hindustan Machine Tools in the State sector at Kasaragode. Kerala State Industrial Development Corporation is now planning a watch case manufacturing unit at the rate of one million numbers per year which, according to present indications, would involve an outlay of Rs. 100 lakhs.

#### *Fibre Glass Project*

13.41 Kerala is an ideal location for setting up a fibre glass manufacturing project because large deposits of the requisite quality of silica sand and adequate supply of electric power are available in the State. Kerala State Industrial Development Corporation has obtained a letter of intent for putting a 4000 tonnes per annum capacity fibre glass plant at Alleppey district. The project is estimated to cost Rs. 12 crores and the Kerala State Industrial Development Corporation proposes to invest about Rs. 104 lakhs in this venture.

#### *Graphite Beneficiation Plant*

13.42 As a first stage in developing industries based on graphite deposits occurring in Ernakulam and Idukki districts, it is proposed to put up a graphite processing plant to process 10 tonnes of graphite daily. The project be estimated to cost Rs. 120 lakhs of which a share investment of Rs. 11 lakhs will be made by the Kerala State Industrial Development Corporation.

#### *Vacuum Flask Refills Project*

13.43 In its efforts to identify projects which can systematically utilise the silica sand available in Shertallai the Kerala State Industrial Development Corporation has located vacuum flask refills project as a prospective item of manufacture. It is suggested that a unit with a capacity of 20 lakh numbers of such refills per annum be set up at an estimated cost of Rs. 91 lakhs.

rubber lubricators, involving a total investment of Rs. 144 lakhs. The State is expected to invest Rs. 20 lakhs in the Company towards this scheme.

*Kerala Ceramics Ltd. (Outlay Rs. 213 lakhs)*

13.57 The Company envisages modernisation and diversification schemes to be undertaken in five stages:

1st stage: tablewares	1200 tonnes per year	
2nd stage: porcelainwares	2400	" "
3rd stage: (a) Sodium hydrosulphate	150	" "
(b) Sodium pyrephosphate	75	" "
(c) Sodium silicate	100	" "
(d) zirconium opacifier	100	" "
4th stage: China clay (mining)	2,00,000	" "
5th stage: transfer pictures	3.6 lakh sheets per year	" "

The entire scheme is estimated to cost Rs. 326 lakhs of which an amount of Rs. 213 lakhs is expected to be invested by the State.

*Kerala Clays and Ceramic Products Ltd. (Outlay Rs. 90 lakhs)*

13.58 This new company which is being registered as a subsidiary of the Kerala State Industrial Enterprises to implement a letter of intent to manufacture annually 2000 tonnes each of glazed wall tiles and glazed floor tiles, is establishing the project in the industrially backward district of Cannanore. The State outlay for the project is estimated at Rs. 90 lakhs.

*Kerala State Drugs and Pharmaceuticals Ltd. (Outlay Rs. 401 lakhs)*

13.59 The Kerala State Drugs and Pharmaceuticals, the only public sector drugs manufacturing concern in the State, has proposals to manufacture the following items:

1. Vitamin 'A' 30 M. M. U. per annum
2. (a) Acetyl Salicylic acid 1000 tonnes per annum  
(b) Salicylic acid 1000 tonnes per annum  
(c) Sodium salicylate 250 tonnes per annum
3. Expansion of formulation plant.

The entire scheme will cost Rs. 1138 lakhs, of which an amount of Rs. 401 lakhs is expected to be invested by the State Government.

*Travancore Plywood Industries Ltd.*

13.60 This Company has already incurred considerable financial investment in implementing its scheme for the manufacture of decorative plywood. An additional investment of Rs. 18 lakhs is required to complete the scheme, which the Company expects to raise from financial institutions.

*Kerala Electrical and Allied Engineering Company (Outlay Rs. 15 lakhs)*

13.61 This Government owned company has an expansion programme for the manufacture of 500 tonnes per annum of steel castings at an investment of Rs. 40 lakhs. Of this investment an amount of Rs. 15 lakhs will be provided by the State Government during the Plan period.

*Kerala State Detergents and Chemicals Ltd. (Outlay Rs. 47 lakhs)*

13.62 This new company, incorporated as a subsidiary of the Kerala State Industrial Enterprises, is setting up a Rs. 207 lakh project at Kuttippuram for the manufacture of 10,000 tonnes of synthetic detergents annually. The proposed State sector outlay of Rs. 47 lakhs is to finance the project by way of share capital.

13.63 The various schemes proposed for the subsidiary companies of Kerala State Industrial Enterprises can be considered as continuing schemes since the units are already in existence at the commencement of the plan period.

*(c) Kerala Financial Corporation (Outlay Rs. 20 lakhs)*

13.64 The Kerala State Financial Corporation plays a significant role rendering financial assistance to industries of the State. Though the accent is mainly on the development of small industries, it renders financial assistance to medium scale industrial units also. A number of schemes drawn under the medium industries sector can also avail themselves of the assistance of the Kerala State Financial Corporation. Hence it is appropriate to strengthen the capital base of the Corporation by providing more funds so as to enable it to avail of more institutional finance from all India institutions. An amount of Rs. 20 lakhs is earmarked for the purpose in the State sector.

*(d) Kerala State Financial Enterprises (Outlay Rs. 50 lakhs)*

13.65 The plan provision is for strengthening the share capital base of the Kerala State Financial Enterprises which is engaged in activities such as conduct of chitties etc.

## II. Investments in other Public Undertakings

13.66 The plan proposals of the Government-owned companies other than those managed by the holding company, the proposals of the companies in which the State Government has majority shares, proposals of the State Corporations like the Kerala State Textile Corporation, Kerala State Forest Development Corporation, Kerala State Electronics Development Corporation, Kerala State Industrial Products Trading Corporation, Plantation Corporation of Kerala, Kerala Film Development Corporation, Kerala Agro-Industries Corporation and Kerala Farming Corporation, proposals of industrial units in the co-operative sector and other miscellaneous State sector schemes are considered in this section. The details of the schemes are given below:

*Other Government Owned Companies*

*1. Kerala Minerals and Metals Ltd. (Outlay Rs. 1370 lakhs)*

13.67 This Company is implementing expansion schemes which involve raising the ilmenite production and establishing a titanium dioxide plant. The scheme consists of expansion of ilmenite production to 2 lakh tonnes per year and establishment of a separate plant to manufacture titanium dioxide up to 22,000 tonnes per annum initially and up to 44,000 per annum

in the second phase. These schemes are estimated to cost Rs. 7517 lakhs. An amount of Rs. 526 lakhs has already been spent by the unit. Out of the balance of Rs. 6991 lakhs the contribution of the State Government is expected to be Rs. 1370 lakhs. The balance amount required will be raised from Central financial institutions. The titanium complex as envisaged by the Company will provide employment to 1365 persons.

2. *Sitaram Textiles (Outlay Rs. 25 lakhs)*

13.68 This textile mill, licensed to install 25,000 spindles, started production with 12,500 spindles in May, 1978. It has now started not only the installation of the remaining 12,500 spindles but also the setting up of a processing house and establishment of preparatory and weaving facilities for which an amount of Rs. 131 lakhs is required. This amount includes the share capital contribution of Rs. 25 lakhs by the State Government.

*Steel Industrials Kerala Ltd. (Outlay Rs. 740 lakhs)*

13.69 Steel Industrials Kerala Limited has obtained letters of intent for establishing four units, viz., a forge shop, steel foundry, roller bearing unit and a steel fabrication unit. There is no forge shop in the organised sector of the State. The bearings manufacture unit proposes to cover cylindrical tapered and spherical roller bearings which have considerable demand in the country. The steel fabrication unit will be taking up special structural and engineering fabrications. The total investment outlay envisaged is Rs. 2165 lakhs. The State Government is expected to invest Rs. 740 lakhs and the balance is to be raised from financial institutions. The four units together have a potential to create employment opportunities for about 3,080 persons.

*Astral Watches Ltd. (Outlay Rs. 2 lakhs)*

13.70 This new venture is for establishing a watch assembly unit at Kasargode. The scheme, which involves an investment outlay of Rs. 30 lakhs, envisages the assembling of 2.5 lakh watches per annum with technical assistance from Hindustan Machine Tools. An amount of only Rs. 2 lakhs is suggested in the State sector for this scheme, as financial institutions have already come forward to invest in this venture.

*Malabar Cements Ltd. (Outlay Rs. 600 lakhs)*

13.71 This Company which is promoted in the State sector to implement an industrial licence for manufacturing daily 1200 tonnes of portland cement using the limestone deposits of Walayar, has taken several steps to establish the project costing about Rs. 30 crores. It is tentatively proposed to finance the project by share capital of Rs. 10 crores and loan of Rs. 20 crores. The State sector outlay proposed is Rs. 6 crores. The scheme when completed would employ about 1,000 persons directly.

*Scooters Kerala Ltd. (Outlay Rs. 90 lakhs)*

13.72 Manufacture of two-wheeler transport vehicles is a priority item in the overall plan strategy of the country. The existing unit in Kerala, Scooters Kerala Ltd. Alleppey, proposes to expand its productive capacity from its present 7,500 numbers to 24,000

numbers per year. The scheme involves an investment of Rs. 340 lakhs. Already an investment to the extent of Rs. 50 lakhs has been made. Of the balance amount of Rs. 290 lakhs an amount of Rs. 90 lakhs is expected from the State Government.

*Kerala Automobiles Ltd. (Outlay Rs. 200 lakhs)*

13.73 This Company proposes to set up a factory for manufacturing 10,000 numbers of three-wheelers per year for which the necessary letter of intent has been obtained from the Government of India. The cost of the project is estimated at Rs. 430 lakhs. Of this the State sector outlay is Rs. 200 lakhs. The project report has been prepared and necessary steps to establish the project are under way.

*Government Majority Concerns*

*Travancore Titanium Products Ltd. (Outlay Rs. 200 lakhs)*

13.74 The plan provision is for optimising the production of titanium dioxide in the unit. At present the production in the unit is much below the rated capacity. There is need for establishing balancing equipments to optimize production. Hence an outlay of Rs. 2 crores is provided in the State sector for the unit. The Company's internal resources can also be tapped for this purpose.

*Travancore Cochin Chemicals Ltd. (Outlay Rs. 100 lakhs)*

13.75 The State Government is expected to contribute Rs. 100 lakhs towards strengthening the capital base of the Company during the plan period so as to enable the Company avail itself of the required institutional finance. The outlay of Rs. 100 lakhs in the state sector is intended for reviving the unit into a viable one.

*Transformer and Electricals, Kerala Ltd. (Outlay Rs. 200 akhs)*

13.76 The schemes for 1978-83 contemplated by the Company include the manufacture of S.F. 6 gas circuit breakers, and expansion of transformers manufacturing capacity to 6,000 MVA. The total outlay required for these schemes is Rs. 800 lakhs. The investment by the Government will be Rs. 200 lakhs. The balance amount required will be raised from Central financial institutions and Company's own funds.

*Traco Cable Company Ltd. (Outlay Rs. 260 lakhs)*

13.77 The Traco Cable Company has already initiated the second stage expansion programme for the manufacture of 1000 L.K.M. telephone cables additionally. The cost of the scheme is about Rs. 650 lakhs, which is proposed to be raised by share capital contribution from State Government, loans from financial institutions and Company's own funds. Financial assistance from the State Government will be Rs. 260 lakhs.

*Chalaky Potteries Ltd. (Outlay Rs. 10 lakhs)*

13.78 Chalaky Potteries has already undertaken an expansion programme costing Rs. 74 lakhs to tone up its operations. An amount of Rs. 19 lakhs has been spent on the scheme. The Company proposes to raise Rs. 45 lakhs from financial institutions and obtain the balance Rs. 10 lakhs from the State Government.

*Pallathra Bricks and Tiles Ltd. (Outlay Rs. 10 lakhs)*

13.79 The amount provided in the State Sector is to diversify the production programme of the Company. It is proposed to produce 2,000 tonnes of precipitated calcium carbonate and six lakh numbers of mosaic tiles per annum. The total estimated cost of the programme is Rs. 25 lakhs.

*United Electrical Industries Ltd. (Outlay Rs. 120 lakhs)*

13.80 The Company proposes expansion of the present capacity and diversification items like electrolytic variable P.V.C., tantalum capacitors and ceramic rods. The total cost of the scheme envisaged for the plan period 1978-83 is Rs. 238 lakhs. Of this the State sector outlay will be Rs. 120 lakhs and the financial assistance expected from financial institutions is Rs. 118 lakhs. The direct employment expected by this investment is 500.

*Travancore Cements Ltd., (Outlay Rs. 100 lakhs)*

13.81 This Company has an expansion programme which consists of manufacturing 15,000 tonnes of calcium carbide, 3,000 tonnes of acetylene black and 6,000 tonnes of water based cement paint annually. All these schemes together involve a total outlay of Rs. 810 lakhs. The Company will be provided Rs. 100 lakhs by the State Government by way of share capital.

*New Schemes**Special Refractory Project (Outlay Rs. 400 lakhs)*

13.82 The Kerala State Industrial Development Corporation has obtained a letter of intent for manufacturing annually 12,000 tonnes of special refractory items. At the instance of the Corporation a Soviet firm has already conducted a feasibility study of the project. It is proposed to set up the plant in the State sector with Soviet technical collaboration. The State sector outlay for the Project is Rs. 400 lakhs.

*Sponge Iron Plant (Outlay Rs. 500 lakhs)*

13.83 The study conducted by the Kerala State Industrial Development Corporation on the reported occurrence of iron ore deposits in certain regions of Kozhikode district has revealed the scope of setting up a sponge iron plant of a capacity of one lakh tonnes per annum. It is proposed to take active steps to establish the project which is expected to cost over Rs. 40 crores. A provision of Rs. 5 crores is earmarked for this scheme in the State sector of the Plan for 1978-83. The scheme is likely to spill over to the subsequent five year plan period.

*Aluminium Smelter (Outlay Rs. 1500 lakhs)*

13.84 The Geological Survey of India has estimated the reserve of bauxite in Kerala at nine million tonnes, of which seven million tonnes are in Nileswar region of Cannanore district. Kerala is also in an advantageous position in respect of power generation. The plan proposal is to set up an aluminium smelter of 50,000 tonnes per annum capacity based on the bauxite resources of Cannanore. There is a network of units in the State consuming aluminium metal in its various forms but are often handicapped by shortage of the metal. The total cost of the project is estimated to

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be about Rs. 75 crores. A major portion of the investment will spill-over to the subsequent plan periods. A provision of Rs. 15 crores is made for investment in the project during the plan period 1978-83.

*White Cement Project (Outlay Rs. 130 lakhs)*

13.85 Detailed surveys conducted by the State Department of Mining and Geology have revealed the occurrence of large deposits of limeshell in the west-coast region of Cannanore district. It is proposed to set up a plant of capacity of 100 tonnes per day based on these deposits. The cost of the scheme is about Rs. 400 lakhs. The investment of the State Government during the plan period 1978-83 will be Rs. 130 lakhs.

*Pelletised Tapioca Plant (Outlay Rs. 50 lakhs)*

13.86 There is considerable scope for manufacturing pelletised tapioca in Kerala which is the major tapioca producing State in India. This product is largely in demand in the European countries, where it is mainly used as an ingredient for cattle feed. A plant for processing annually 60,000 tonnes of sun-dried tapioca chips is proposed to be established in the State. This scheme will involve an investment of Rs. 140 lakhs. Of this, an amount of Rs. 50 lakhs is to be contributed by the State Government.

*Petro-chemical Project (Outlay Rs. 2500 lakhs)*

13.87 With the implementation of the secondary processing scheme of the Bombay High crude by the Cochin Refineries Ltd., the stage will be set for establishing a naphtha cracker in Kerala, with facilities to manufacture several petro-chemical products including PVC. The scheme as proposed by the State will involve a total investment of about Rs. 60 crores. The scope for promoting the project as a central sector undertaking, or as a joint venture between the Central and State Governments has to be examined. An outlay of Rs. 25 crores is set apart for the scheme in the State sector Plan for 1978-83.

*Insulin (Outlay Rs. 90 lakhs)*

13.88 Insulin is a versatile item which could be taken up for manufacture in the State, preferably in the public sector. This vital drug is in short supply, mainly because of the shortage of pancreas containing the enzyme adequately. If the Government of India permits the import of pancreas from New Zealand or Australia it is possible to plan a project in the State. The investment for such a project will be around Rs. 200 lakhs. The Kerala State Drugs and Pharmaceuticals can set up this plant. The state sector outlay for the scheme provided is Rs. 90 lakhs.

*Steroids and Hormones Plant (Outlay Rs. 100 lakhs)*

13.89 In the drugs and pharmaceutical field, it is desirable to establish a unit in the State sector for the manufacture of steroids and hormones. A model scheme may involve a total investment of Rs. 300 lakhs. The Kerala State Drugs and Pharmaceuticals can undertake the implementation of the scheme; for which a State sector outlay of Rs. 100 lakhs is provided.

*R and D Centre for Drugs and Pharmaceuticals* (Outlay Rs. 100 lakhs)

13.90 Kerala State is reported to consume annually drugs worth Rs. 18 to 20 crores. Concerted efforts have to be made to expand the manufacturing facilities to meet the States' requirements of basic drugs and formulations. It is likely that many drug manufacturing units will come into existence, and for their integrated and healthy growth it is essential to set up Research and Development facilities. It is suggested that an R and D Centre may be established under the Director of Health Services. An outlay of Rs. 100 lakhs is proposed for this purpose in the State Sector plan.

*Phyto-chemical Project* (Outlay Rs. 40 lakhs.)

13.91 The high ranges of Kerala are quite suitable for the cultivation of medicinal plants in a systematic and scientific manner with the intention of developing a Phyto-Chemical industry in the State. A scheme is proposed for the proper utilisation of these medicinal plants. The scheme has two parts, which have to be properly integrated. First part is the organised cultivation of medicinal plants in the selected forest areas and the second is the manufacturing activity. It is the latter alone which is considered here. It is possible to manufacture various kinds of Phyto-Chemicals from these medicinal plants. A viable scheme would involve an investment of Rs. 100 lakhs. It is suggested that the scheme may be taken up in the State Sector. The State sector outlay for the scheme will be about Rs. 40 lakhs.

#### *State Corporations*

*Kerala State Textile Corporation* (Outlay Rs. 150 lakhs.)

13.92 The Kerala State Textile Corporation seeks to diversify its activities during the plan period 1978-83 by restarting and modernising the four textile units entrusted to it and also by establishing a knitting complex. Though no new employment generation is possible through the modernisation of the four textile units, the workers already on the rolls of these units who were unemployed for long periods can find steady and continuous employment with the execution of the plan programme. The projects proposed are:

(i) *Modernisation of Trivandrum Spinning Mills*

13.93 This spinning mill had undertaken a modernisation programme costing Rs. 112 lakhs which is expected to be completed during 1978-79. An amount of Rs. 63 lakhs which is proposed to be raised from financial institutions is expected to be utilised during 1978-79.

(ii) *Prabhuram Mills* (Outlay Rs. 15 lakhs.)

13.94 A provision of Rs. 15 lakhs is made towards expenditure involved in restarting this mill which has been taken over by the Kerala State Textile Corporation.

(iii) *Kottayam Textiles* (Outlay Rs. 20 lakhs.)

13.95 The management of this mill is now vested with the Kerala State Textile Corporation. An amount

of Rs. 20 lakhs is provided in the State sector to meet the contingencies arising out of restarting the mill.

(iv) *Malabar Spinning and Weaving Company* (Outlay Rs. 30 lakhs.)

13.96 The Government have entrusted the management of this mill also with the Kerala State Textile Corporation. A provision of Rs. 30 lakhs is made in the State sector to meet the cost of running the unit on economic lines.

*Knitting Complex* (Outlay Rs. 85 lakhs).

13.97 The Kerala State Textile Corporation proposes to establish at a cost of Rs. 85 lakhs a knitting complex in Alleppey district. This complex which envisages an annual production of textile goods worth Rs. 4 crores will employ about 1000 people on its completion. The scheme is proposed to be financed with the aid of a share capital of Rs. 85 lakhs to be wholly contributed by the Government.

*Kerala Forest Development Corporation* (Outlay Rs. 1175 lakhs.)

13.98 The Kerala State Forest Development Corporation has a major role to play in the development of forest and forest based industries. The Corporation has initiated schemes for the manufacture of plywood and veneers and wooden fixtures like doors, windows, ward robes etc., for the sophisticated foreign markets. The export potential of these items is considerable as also their employment potential. The Forest Development Corporation proposed to undertake the following schemes during the plan period:

(i) *Plywood cum Veneer Complex* (Outlay Rs. 150 lakhs.)

13.99 The Kerala Forest Development Corporation proposes to set up a plywood-cum-veneer complex at an estimated cost of Rs. 400 lakhs. The State Government will provide Rs. 150 lakhs for this venture while the balance amount of Rs. 250 lakhs will be obtained from financial institutions.

(ii) *Joinery Units (3 numbers)* (Outlay Rs. 26 lakhs.)

13.100 The Corporation will establish three Joinery units at Cannanore, Idukki and Trivandrum districts at an approximate cost of Rs. 75 lakhs (Rs. 25 lakhs each). These units will provide employment to 225 persons. The State sector outlay for the scheme is Rs. 25 lakhs.

(iii) *Management of 42,000 hectares of Teak Plantations in Malabar* (Outlay Rs. 500 lakhs.)

13.101 The Scheme is for setting up of forest management facilities to the 42,000 hectares plantation of teak and other superior timber species. An outlay of Rs. 500 lakhs for the plan period is provided to meet the contingencies arising out of the implementation of this scheme. Of this total outlay a portion will be earmarked for undertaking a detailed scientific survey by a specialised agency on the forest resources with a view to assessing the availability of various raw materials for industrial purposes.

(iv) *Wood Industry Complex at Nilambur* (Outlay Rs 500 lakhs.)

13.102 This composite and self sustaining project which is formulated for implementation on a long term basis so as to be completed within a period of ten years, is expected to have far-reaching relevance to the economy of Kerala. An outlay of Rs. 500 lakhs is earmarked for the establishment of this employment-oriented scheme at Nilambur.

*Kerala State Electronics Development Corporation* (Outlay Rs. 2005 lakhs)

13.103 During the early seventies there were hardly any electronic industry in the State except two units in the organised private sector. The value of electronic equipments and components in Kerala in 1971-72 represented only 0.25 per cent of the total electronic production in the country. The Government of Kerala realised the backwardness of the State in the field of electronics and appointed a High Level Committee to study the scope for integrated development of electronic industry in Kerala and to recommend steps to be taken for the promotion of this industry. On the recommendation of this Committee, the Government promoted the Kerala State Electronics Development Corporation (KSEDC) which started functioning in June 1973. The Corporation commenced production of various electronic equipment in its factory at Karakulam. Simultaneously it promoted 13 new companies for the implementation of various projects. The policy of the Corporation is to have equitable distribution of electronic industry throughout the State and therefore these units were distributed in different parts of the State. Besides the Corporation, there are four companies in the organised sector manufacturing electronic items in the State, viz., the United Electrical Industries, Quilon, O/E/N. India Limited, Cochin, Indian Telephone Industries, Palghat and British Physical Laboratories, Palghat.

13.104 Though the contribution of the State to the national electronic production is growing for the last few years, the present contribution of about 2 per cent of the total production does not give a very encouraging picture. There are two major reasons for this. First, the electronic industry in Kerala is comparatively of recent origin. Second, almost all the major projects envisaged by various agencies in the State during the last plan period are yet to reach their optimum level or are just starting production. When all these projects commence production, the percentage contribution will increase considerably.

13.105 The contribution of small scale sector in the electronic production of Kerala is very small. Though the small scale sector plays a significant role in the electronic production in the country as a whole, Kerala is lagging behind many other States in this respect. Entrepreneurial talent and outlook in this matter is not very encouraging. The Corporation, inspite of its best efforts, has been able to promote only four associate companies in the small scale sector. There are only less than ten organised units in the small scale sector.

13.106 The recent spurt in the growth of large number of small scale units in places like Bombay, Poona, Delhi,

Bangalore etc., clearly indicates that this sector can play an important role in the growth of electronic industry in the country. Electronic industry has several characteristics of its own, which make it one of the well suited industries to achieve the objectives of balanced regional development and generation of sizeable employment opportunities for the educated unemployed through the establishment of a number of small scale units. Kerala is well suited for the development of electronics industry in the small scale sector. The Corporation can function as a central agency for the promotion of small scale industries in the State. The Electronic Research and Development Centre of the Corporation would be able to render necessary assistance to the small scale sector by the transfer of know-how developed in this Centre. The Testing and Development Centre will also assist small scale units by making available its facilities.

13.107 During the period ending March 1978, which could be treated as the first phase of electronic industry in the State, more emphasis was given to establish a chain of component industry, since the equipment industry would sustain only with the support of a component industry. When a number of component industries are set up, it acts as catalyst for the promotion of equipment industry. During the plan period 1978-83 it is proposed to shift the emphasis from component industry to equipment/system units. The equipment industry is less capital intensive, provides more employment opportunities, and, brings greater returns on investments.

13.108 With this background in view a number of schemes are proposed for inclusion in the 1978-83 Plan. The total estimated cost of all these schemes is Rs. 29.40 crores of which Rs. 20.05 crores will be under the State sector, and Rs. 0.95 crores under Central sector. The Corporation is expected to mobilise an amount of Rs. 8.40 crores from financial institutions. In addition to these schemes, the Corporation recommends the setting up of a Television Centre costing about Rs. 10 crores and certain other schemes for the production of electronic items costing about Rs. 1.25 crores in the Central sector for which the Corporation can render all technical and equipment support. These schemes when implemented will provide direct employment to about 19,100 persons.

13.109 The salient features of the plan proposals under electronics include the setting up of a Regional Computer Centre, Establishment of a Maintenance Centre for Electro Medical Equipments in collaboration with Shri Chitra Thirunal Medical Centre, expansion of existing Testing and Development Centre and Electronic Research and Development Centre, and the organising of a Central Tool Room for electronic industry, besides making considerable investments in the equipment and component systems. These schemes of the Corporation together with the expansion/diversification programmes anticipated in the private sector should make it possible for the State to increase its share of the total value of production of electronic goods in the country to about five per cent by the end of the plan period.

*Kerala State Industrial Products Trading Corporation.*  
(Outlay Rs. 15 lakhs).

13.110 The Government has approved this Corporation as the sole selling agent of the products of the Travancore Titanium Products Ltd. The Company Law Board has also approved this selling agency. The Corporation is meant for procurement and sale of the monopoly products of Government companies like ilmenite, titanium dioxide, white cement and plywood. The Corporation expects to get the trade agreement with the Travancore Titanium Products concluded soon. An amount of Rs. 15 lakhs is suggested as the working capital requirement of the Corporation during the plan period 1978-83.

*Kerala State Film Development Corporation*  
(Outlay Rs. 577 lakhs).

13.111 The Corporation was formed by the Government of Kerala in July 1975 for the overall development of the Malayalam film industry and for effective utilisation of the medium of cinema to meet the needs of education and mass communication. For the healthy development of film industry, improvement of quality films and for the effective utilisation of cinema for education and mass communication the State has to establish a foothold in the fields of production, distribution and exhibition of films. With this objective in view the Corporation proposes to create facilities for production and exhibition of films within Kerala State. The proposals of the Film Development Corporation are given below:

*Studio Project (Outlay Rs. 182 lakhs).*

13.112 Work has already been initiated for the establishment of the Rs. 200 lakhs Studio Project. About Rs. 18 lakhs has been spent on the scheme as on 31st March 1978. The project requires the remaining amount of Rs. 182 lakhs to complete it according to schedule.

(ii) *Expansion Facilities to Studio Complex*  
(Outlay Rs. 148 lakhs).

13.113 Simultaneously with the completion of the Studio Project it is proposed to expand the facilities available there. Such a measure is likely to attract the producers of Malayalam films who are now making their pictures outside the State. An amount of Rs. 148 lakhs is proposed for this scheme.

(iii) *Permanent Film Theatres (Outlay Rs. 75 lakhs).*

13.114 At present the number of theatres in Kerala is insufficient to screen the films produced. Hence it is proposed to construct 25 permanent theatres in the different towns and cities of the State. The estimated cost of the project is Rs. 250 lakhs. Of this, an amount of Rs. 75 lakhs will be the State sector outlay. The Corporation has to obtain the remaining amount from financial institutions.

(iv) *Semi-permanent Theatres (Outlay Rs. 172 lakhs)*

13.115 The Corporation also proposes to construct 75 semi permanent theatres in the State at an approximate cost of Rs. 345 lakhs. The State Government will provide Rs. 172 lakhs towards the scheme while the balance amount has to be obtained from financial institutions.

*The Plantation Corporation of Kerala Ltd.*  
(Outlay Rs. 661 lakhs).

13.116 This leading public sector undertaking in plantation industry is now cultivating rubber and cashew on a large scale. The Corporation has programmes to extend the cultivation of these crops to further areas and also to introduce new crops such as cocoa, coffee, cardamom etc. The proposals of the Corporation consist of the following schemes:

(i) *Cashew Plantations (Outlay Rs. 179 lakhs).*

13.117 According to the decision of the State Government to let the Corporation handle the task of bringing fresh areas under cashew cultivation, the Corporation has started cashew planting in 800 hectares at Cheemini in Cannanore district, in addition to the lands already in possession of the Corporation in the various estates held by it. The Corporation has also taken advance possession of 3750 hectares in Kasargode area under a scheme of assistance from World Bank, and cashew plantation has already been started there. The corporation has prepared a cashew plantation scheme costing Rs. 577 lakhs, in which the State Government share is reckoned at Rs. 179 lakhs. An amount of Rs. 172 lakhs is expected from the Government of India and the remaining amount of Rs. 226 lakhs will be raised from financial institutions.

(ii) *Coffee Plantations (Outlay Rs. 240 lakhs).*

13.118 The Corporation proposes to enter the field of coffee cultivation. A scheme for covering 4000 hectares of land under coffee at an estimated cost of Rs. 480 lakhs has been drawn up by the Corporation. The share of the State Government is Rs. 240 lakhs for this scheme.

(iii) *Cocoa Plantations (Outlay Rs. 30 lakhs).*

13.119 As an experimental measure the Corporation proposes to bring 200 hectares of land under cocoa plantation at an estimated cost of Rs. 30 lakhs.

(iv) *Cardamom Plantation (Outlay Rs. 72 lakhs).*

13.120 The Corporation proposes to cultivate cardamom on a plantation scale. An amount of Rs. 72 lakhs is earmarked for this purpose.

(v) *Oil Palm Plantations*

13.121 The Oil Palm India Ltd., a subsidiary company of the Plantation Corporation of Kerala, is presently engaged in cultivating oil palm over an area of 2,000 hectares. The Company requires an amount of Rs. 537 lakhs more for this scheme and expects to raise the amount from financial institutions. The Company has also a proposal to bring new areas under oil palm cultivation. An amount of Rs. 297 lakhs proposed for it will also be raised from financial institutions.

*Kerala Agro-Industries Corporation (Outlay Rs. 462 lakhs).*

13.122 Kerala Agro Industries Corporation plays a significant role in the promotion of agro-based industries in the State. In addition to its on-going schemes, the Corporation is proposing to implement some new projects during the plan period 1978-83

involving a total investment of Rs. 13 crores. The scheme-wise details are given below

#### *Continuing Schemes*

##### *(i) Meat Products of India Ltd. (outlay Rs. 100 lakhs)*

13.127 This subsidiary company of the Kerala Agro-Industries Corporation has a proposal to establish a Rs. 6 crore meat processing plant at Chalakudy to process daily fifty buffaloes. The project, formulated a few years ago, could not show progress owing to the uncertain policy of the Government of India regarding the export of meat. Now the Government has lifted the ban, and necessary steps to establish the project are being taken. The project is proposed to be financed with the aid of a share capital of Rs. 100 lakhs each from the State and Central Governments and a loan of Rs. 400 lakhs from financial institutions.

##### *(ii) Kerala Agro-Machinery Corporation (Outlay Rs. 117 lakhs)*

13.124 The Kerala Agro-Machinery Corporation, another subsidiary of the Kerala Agro-Industries Corporation, proposes to establish a project for manufacturing initially 3000 numbers of 12 H. P. Kubota power tillers annually to be enhanced later to 12,000 numbers with foreign technical collaboration. This power tiller unit will be ideally suited for the type of agricultural land holdings in Kerala and adjoining states. It will also have wide industrial and civil applications for material movement. The scheme involves a total outlay of Rs. 250 lakhs, of which an amount of Rs. 117 lakhs will be provided by the State Government by way of share capital investment. The balance amount is proposed to be raised as loan from institutions like Industrial Development Bank of India and Industrial Finance Corporation of India. This unit will provide direct employment to about 470 persons.

##### *(iii) Mechanical Compost Plant (Outlay Rs. 47 lakhs)*

13.125 Another project contemplated by the Agro-Industries Corporation is a mechanical compost plant with a capacity to produce 125 tonnes per day of compost manure utilising the city garbage as raw material. Feasibility study of the project has been conducted by the Project Division of the Gujarat Agro Industries Corporation. The total cost of the project is Rs. 72 lakhs including a share capital of Rs. 47 lakhs to be provided by the State Government. This project which is proposed to be located at Cochin would give direct employment to 60 persons.

##### *(iv) Kraft Paper Project (Outlay Rs. 63 lakhs)*

13.126 The Kerala Agro Industries Corporation is considering the setting up of a unit for the manufacture of Kraft paper based on paddy straw as the major raw material with an annual capacity of 4950 tonnes. The unit is proposed to be located at Kollakadavu in Alleppey district. The equity capital to be provided by the State Government is Rs. 63 lakhs. The employment potential of the project is 200.

##### *(v) Agro Industrial Complex (Outlay Rs. 116 lakhs)*

13.127 One of the new schemes contemplated by the Corporation is an agro-industrial complex at Malappuram for the preservation, processing and marketing of tapioca, fruits and spices. The project will have facilities to produce 15,360 tonnes of industrial products and 3,600 tonnes of food products from tapioca, 4200 tonnes of pineapple products, 1200 tonnes of pepper products etc. The total capital cost of the project is Rs. 585 lakhs. of which the State Government will contribute a share capital assistance of Rs. 116 lakhs.

##### *(vi) Pineapple Processing Project (Outlay Rs. 19 lakhs)*

13.128 The Corporation proposes to set up a pineapple processing plant at Punalur in Quilon district with a capacity of 400 tonnes of products per annum. The Project Report for the unit has been prepared by the Central Food and Technological Research Institute, Mysore. This plant will produce squash, jam, fruit bars, jelly etc from mango, pineapple and pepper and will employ 40 persons directly. It will cost Rs. 19 lakhs and will be fully financed by the State Government.

##### *Kerala Farming Corporation (Outlay Rs. 450 lakhs)*

13.129 The State Farming Corporation of Kerala Limited is an undertaking fully owned by the State Government. Its main function is to make sugarcane available to the sugar factories of the State. The present authorised capital of the Corporation is Rs. 1 crore. It is suggested that the authorised capital be raised to Rs. 2 crores. The additional amount of Rs. 1 crore is proposed to be contributed by the State Government during the plan period.

13.130 The Corporation proposes to set up a sugarcane farm at Chungathara and Edathara Panchayat areas in Malappuram District. Land required for the farm will be made available from the vested forests areas. It is also proposed to establish a sugar factory of 1300 tonnes per day capacity for processing the sugarcane produced. The total cost of the scheme is nearly Rs. 10 crores. The State Government will provide Rs. 3 crores towards this scheme.

13.131 The Corporation has formulated a scheme for the supply of sugar cane to the Chittur Sugar Company at Palghat.

13.132 A total outlay of Rs. 4.5 crores in the State sector is suggested for the schemes of the Farming Corporation.

#### *State Co-operative Sector*

##### *Spill over schemes*

##### *The Quilon Co-operative Spinning Mills (Outlay Rs. 168 lakhs)*

13.133 This society is establishing a spinning mill at Chathannoor (Quilon District) with 25,000 spindles to manufacture cotton yarn as well as polyester



cotton and polyester viscose. The total cost of the project is estimated at Rs. 420 lakhs. The State sector outlay for this project is Rs. 168 lakhs.

*The Malappuram Co-operative Spinning Mills (Outlay Rs. 131 lakhs)*

13.134 A spinning mill with a capacity of 25,000 spindles is being set up at Malappuram in the Co-operative sector. Several active steps have already been taken up for the early execution of the scheme. The share capital contribution proposed to be made by the State is Rs. 131 lakhs. The estimated total cost of this venture is Rs. 366 lakhs.

*Cannanore Co-operative Spinning Mills (Outlay Rs. 150 lakhs)*

13.135 Several steps have been taken earlier for expanding the spindle capacity of this mill. But the progress of the scheme has slowed down owing to paucity of funds. It is proposed to implement this scheme costing Rs. 450 lakhs during the plan period 1978-83. The State Government will provide Rs. 150 lakhs for this purpose.

*ENCOS-Revival and Taking over (Outlay Rs. 25 lakhs)*

13.136 According to the Engineering Technicians Corporative Societies (Acquisition and Transfer of Undertakings) Act, 1977 (Act 20 of 1977) all the undertakings of the Societies under ENCOS stand transferred to and vested in the State Government. Adequate funds are required for discharging the financial liabilities and obligations cast on Government under the above section of the Act. Hence a provision of Rs. 25 lakhs is proposed for this scheme in the plan.

*New Schemes*

*Modern Rice Mills (Outlay Rs. 40 lakhs)*

13.137 Modern rice milling methods not only help to increase the yield but also retain higher quality of rice. Hence, it is important to establish modern rice mills at least in the major paddy production centres of the State. It is suggested that four milling units be set up, two in Kuttanad and one each in Palghat and Trichur. Total cost of the project is estimated at Rs. 100 lakhs, of which the State Government's share will be Rs. 40 lakhs. The employment potential of this scheme is 100.

*Mannam Sugar Mills (Outlay Rs. 40 lakhs)*

13.138 The Mannam Sugar Mills is facing the problem of acute scarcity of sugarcane for processing.

The unit has incurred an accumulated loss of about Rs. 2.5 crores. The Kerala State Farming Corporation has plans to supply adequate quantities of sugarcane to this Company. As a further measure to rehabilitate the Company, it is proposed to diversify production by installing a distillery unit to produce industrial alcohol from the by-product molasses, and a 30 tonnes per day capacity paper factory using the bagasse as raw material. The total capital investment for these two schemes will be about Rs. 150 lakhs. The Company expects an investment of Rs. 40 lakhs from the State Government and the balance amount from State and all India financial institutions.

*Other Miscellaneous Schemes*

*Development Areas (Outlay Rs. 250 Lakhs)*

13.139 The concept of industrial development areas has gained considerable importance. The availability of suitable areas with necessary infrastructure facilities for the establishment of industrial units not only helps to attract more industries but also enables their dispersal. It is suggested that suitable areas are acquired and developed especially in the backward districts. For the continuance of the scheme which has proved to be successful in earlier plans, a provision of Rs. 250 lakhs is earmarked in the State sector.

*Management Development Centre (Outlay Rs 25 lakhs).*

13.140 The importance of creating sufficient number of key personnel with adequate knowledge and experience in various disciplines of management is a pre-requisite for any programme of industrialisation. It is suggested that a Management Development Centre be set up in the State under Government initiative. A provision of Rs. 25 lakhs is earmarked towards meeting the expenditure required for this scheme.

*Weights and Measures (Outlay Rs. 30 lakhs).*

13.141 The Department of Weights and Measures proposes to set up two laboratories one at Trivandrum and another at Ernakulam. An investment of Rs. 10 lakhs will be required for this purpose. Other schemes of the Department include purchase of vehicles, purchase of equipment, setting up of mobile unit at headquarters etc.

*2. Private Sector Industries.*

*Expansion/Diversification/Moderanisation of Existing Units*

*Kerala Spinners Limited (Total cost Rs. 20 lakhs).*

13.142 Kerala Spinners has a proposal to enhance its spindle capacity upto 13,824 with an estimated

cost of Rs. 20 lakhs. Financial assistance amounting to Rs. 10 lakhs is proposed to be raised from financial institutions and the balance from the Company's internal resources.

*Madras Spinners Ltd. (Total cost Rs. 35 lakhs).*

13.143 This mill is implementing an expansion / diversification programme costing Rs. 35 lakhs. The major portion of the finance (Rs. 30 lakhs) is expected to be raised from financial institutions.

*Kathayee Cotton Mills Ltd, (Total cost Rs. 65 lakhs).*

13.144 The Company has an expansion programme costing Rs. 65 lakhs which is expected to be completed by 1980-81. The Company proposes to implement this scheme through assistance from financial institutions (Rs. 50 lakhs) and from its own fund generation (Rs. 15 lakhs)

*Vanaja Textiles Ltd., (Total cost Rs. 85 lakhs)*

13.145 The mill has a modernisation programme. The cost of the scheme is Rs. 85 lakhs. The Company proposes to raise a major portion of the funds from its own resources, and the remaining from financial institutions for which advance action has already been initiated.

*Rajagopal Textile Mills (Total Cost Rs. 110 lakhs).*

13.146 This mill has a proposal to expand its spindleage from the existing 12,880 numbers to 25,000 numbers at an estimated cost of Rs. 110 lakhs. Loan assistance aggregating to Rs. 95 lakhs will be raised from financial institutions, while the Company will contribute Rs. 15 lakhs towards the scheme.

*Travancore Electro-Chemical Industries (Total cost Rs. 75 lakhs).*

13.147 The Company has a diversification programme costing about Rs. 75 lakhs, for the manufacture of acetylene black at the rate of 1000 tonnes per year, and the necessary finance is proposed to be raised by way of loan (Rs. 65 lakhs) and from its own resources (Rs. 10 lakhs).

*West Coast Industrial Gases (Total cost Rs. 40 lakhs).*

13.148 The Company proposes to diversify its production into dissolved acetylene of two lakh cubic metres per year.

*Phosphorus and Chemicals (Travancore) Ltd. (Total Rs. 110 lakhs)*

13.149 The Company registered in 1976 for establishing a plant in Alleppey district to manufacture elemental/yellow phosphorus at the rate of 1000 tonnes per year has already built up certain fixed assets. The Company expects substantial loan assistance (Rs. 80 lakhs) from term lending institutions.

*Kerala Acids and Chemicals Ltd., (Total cost Rs. 207 lakhs)*

13.150 The Company located at the industrial development area at Edayar (Ernakulam district) will

manufacture annually 1200 tonnes of formic acid and 1500 tonnes to sodium sulphate (by-product) in technical collaboration with a West German firm.

*South India Wire Ropes Ltd, (Total cost Rs. 30 lakhs).*

13.151 The Company has a programme to enhance its installed capacity for wire rope manufacture by 360 tonnes per annum and also to manufacture annually 900 tonnes of ACSR wires and 600 tonnes of M. S. wires. The scheme costing Rs. 30 lakhs is proposed to be set up with the aid of financial institutions.

*British Physical Laboratories (Total cost Rs. 25 lakhs).*

13.152 The spill over cost of this diversification scheme is Rs. 25 lakhs. The Company expects to raise the amount required from financial institutions and from its own funds.

*Premier Cable Company (Total cost Rs. 325 lakhs).*

13.153 Premier Cable Company proposes to expand its production capacity for power cables upto 3000 km. per year, and also to manufacture cross-linked polythelene (KLPE) cables which is not presently manufactured in India. KLPE cables can replace paper-insulated load covered cables (PILC) in high voltage ratings. The schemes is estimated to cost Rs. 325 lakhs and financial assistance aggregating Rs. 245 lakhs is expected from financial institutions.

*Aluminium Industries Ltd, (Total cost Rs. 158 lakhs).*

13.154 This Company has obtained industrial licence for the manufacture of power relays, circuit breakers and current transformers. The total cost of the scheme is estimated at Rs. 153 lakhs, and for implementing this programme substantial loan assistance from financial institutions is anticipated.

*West India Company (Total cost Rs. 45 lakhs).*

13.155 The proposal of the Company is to expand its production upto 9000 tonnes per annum at an estimated cost of Rs. 45 lakhs. This amount is to be raised from financial institutions (Rs. 40 lakhs) and from own generation of funds (Rs. 5 lakhs).

*Cominco Binani Zinc Ltd., (Total cost Rs. 1100 lakhs).*

13.156 Cominco Binani Zinc is licenced to enhance its installed capacity upto 20,000 tonnes of zinc metal per year. The scheme involves an investment of Rs. 1100 lakhs, and it is expected to be completed during the plan period 1978-83.

*Travancore Ogale Glass Manufacturing Company (Total cost Rs. 30 lakhs).*

13.157 This Company has made considerable progress in installing a plan for the manufacture of foam glass in collaboration with the National Research Development Corporation (NRDC). Additional investment of Rs. 20 lakhs is required to complete the scheme.

*Indian Aluminium Company (Total cost Rs. 200 lakhs).*

13.158 The Company has a proposal to augment its productive capacity during the plan period 1978-83 at an estimated outlay of Rs. 200 lakhs which is proposed to be met from its own funds.

*Travancore Timber Products (Total cost of Rs. 5 lakhs).*

13.159 The scheme is intended for the diversification of production into block boards and flush doors.

*Southern Veneers and Wood Works (Total cost Rs. 45 lakhs).*

13.160 The proposal is to manufacture annually 15 million sq. ft. of decorative veneers at a cost of Rs. 45 lakhs. The required finance is expected to be raised by loan, Central subsidy and from own resources of the Company.

*Western India Plywoods Limited (Total Cost Rs. 725 lakhs).*

13.161 The Company has already installed a plant for the manufacture of Diallyl plan Phthalate (D. A.P.) resin. It has now another project in hand for the expansion of its hardboard units from 7500 tonnes to 20,000 tonnes per annum at an estimated cost of Rs. 725 lakhs. The scheme will be financed by loans amounting to Rs. 520 lakhs from financing institutions, Central cash subsidy of Rs. 15 lakhs and from its own resources Rs. 190 lakhs.

*New Schemes.**Pentacythritol Plant (Total cost Rs. 200 lakhs).*

13.162 Pentacythritol is a versatile chemical intermediate largely used in explosives, paints, and plastic manufacturing industries. The essential raw materials, viz., acetaldehyde, and formaldehyde will be indigenously available. A model scheme for a capacity of 600 tonnes per year costing about Rs. 200 lakhs is suggested for the State, to be taken up in the private sector.

*Resins and Paints (Total cost Rs. 40 lakhs)*

13.163 Large quantities of cashew shell liquid (CNSL) are obtained in the State as a by-product of cashew processing. It is possible to manufacture high valued items like epoxy resins, resins for foundry cores and moulds, brake lining compounds, corrosion resistant paints, varnishes etc., out of CNSL oil. An economic size plant of a capacity of 500 tonnes of resins per annum with facilities for the manufacture of paints, costing about Rs. 40 lakhs may be established in the State.

*Pesticides Plant (Total cost Rs. 300 lakhs).*

13.164 Investigations conducted by the Kerala State Industrial Development Corporation have established the feasibility of setting up a unit for the manufacture of suitable technical grades material of pesticides. Dinrow is the popular item which can be manufactured economically in the State. A plant with a capacity of 600 tonnes per annum, costing Rs. 300 lakhs is suggested in the private sector.

*Sorbitol (Total cost Rs. 100 lakhs)*

13.165 Sorbitol is an intermediate required in the the production of Vitamin C, and has also applications in food, cosmetics etc. The basic raw material for the production of Sorbitol is tapioca starch, which is at present manufactured in the State on a large scale. A viable project should have a capacity of 1200 tonnes per year and it would cost about Rs. 100 lakhs. Apart from its industrial aspect, this project will also help to stabilise the price of tapioca.

*Hydrogen Cyanide Plant (Total cost Rs. 200 lakhs).*

13.166 Cyanides are mostly required for the manufacture of heat treatment salts, in electroplating, in metallurgical industries, and in the manufacture of intermediates for pharmaceuticals, dyes, plastics etc. There is no unit manufacturing cyanide in the country and the entire requirement of about 2000 tonnes per annum is being imported. A process for the manufacture of Hydrogen Cyanide based on raw materials available within the State like ammonia, sulphuric acid, phosphoric acid, caustic soda and hydrocarbon gas is contemplated at an estimated cost of Rs. 200 lakhs.

*Phosgene and Derivatives Project (Total cost Rs. 500 lakhs).*

13.167 The project is intended to manufacture phosgene and to convert it into derivatives like methylene, diisocyanate, dimethyl, urea etc. The raw material required for the manufacture of phosgene are chlorine and carbon dioxide which are available from Travancore Cochin Chemicals and Fertilizers and Chemicals Travancore Limited. A model scheme would involve an investment of Rs. 500 lakhs.

*Synthetic Resins Plant (Total cost Rs. 40 lakhs).*

13.168 The proposal is to manufacture polyester and other synthetic resins with the indigenous know-how available.

*Oleoresins and Spice Oils Extracting Plant (Total cost Rs. 40 lakhs).*

13.169 Kerala offers tremendous scope for promoting a complex for the extraction of oleoresins from pepper, ginger and turmeric, as well as for producing oils from spices such as pepper, ginger and cardamom. The Central Food Technological Institute has already established the scope of this project, and is prepared to supply the technical know-how evolved by it.

*Fatty Alcohol Project (Total cost Rs. 370 lakhs).*

13.170 A private party in Calcutta has obtained a letter of intent for setting up a coconut oil based fatty alcohol manufacturing plant in Kerala. The plant will have a capacity of 3600 tonnes per annum, and will produce fatty alcohols like cetyl, lauryl, stearyl, sulphated alcohols, etc.

*Cast Phenols Plant (Total cost Rs. 30 lakhs).*

13.171 The proposal is to manufacture phenol formaldehyde which has varied uses in anti-corrosion

applications, in electroplating and in electrical insulations.

*Sodium Carboxy Methyl Cellulose (SCMC) (Total cost Rs. 60 lakhs).*

13.172 SCMC finds use in detergents, food products like ice cream, paints, paper and pharmaceuticals. It functions as a thickener, stabiliser and detergency builder. There is only one unit manufacturing this item in the country at present. The main raw materials required are cotton linters, chlorine and acetic acid. There is good scope for setting up a unit in Kerala.

*Polyvinyl Acetate Plant (Total cost Rs. 70 lakhs).*

13.173 This chemical has a wide range of applications in adhesives and paint industry and there is ample scope for setting up a unit in Kerala to cater to the needs of the southern States where no such unit is at present functioning.

*Plastic Containers Manufacturing Unit (Total cost Rs. 40 lakhs)*

13.174 The proposal is to set up a plant in the private sector for the manufacture of different types of plastic containers at an estimated cost of Rs. 40 lakhs.

*P. V. C. Leather Cloth Project (Total cost Rs. 80 lakhs).*

13.175 P. V. C. leather cloth is used for making travel goods such as hand bags, shoulder bags etc., and in the upholstery of cars and furniture. The proposal is to set up a unit for the manufacture of P. V. C. leather cloth from P. V. C. resin at an estimated cost of Rs. 80 lakhs.

*Epoxy Resins and Paints Project (Total cost Rs. 135 lakhs).*

13.176 Kerala State Industrial Development Corporation has examined the feasibility of setting up a project for the manufacture of epoxy resins and paints because of the increasing use and applications of these items. On the basis of this feasibility study, a model scheme costing Rs. 135 lakhs is proposed in the private sector.

*Polypropylene Corrugated Sheets (Total cost Rs. 100 lakhs)*

13.177 P. P. C. sheets because of their superior properties are replacing corrugated sheets made out of paper boards as packing material. A unit for manufacturing this item may be established in the State.

*Non-Ferrous Foundry (Total cost Rs. 75 lakhs).*

13.178 At present there is no unit in the State to manufacture non-ferrous cast items, and it is suggested that a unit of a moderate capacity be established during the Plan period, 1978-83 as non-ferrous castings are largely required by several existing industrial units in the State.

*Razor Blades (Total cost Rs. 535 lakhs).*

13.179 It is proposed to set up a project in Trichur District to manufacture high quality safety razor blades using imported technology and equipment.

*Mini Steel Plant (Total cost Rs. 75 lakhs).*

13.180 Kerala Steel Ltd., a private company, has done considerable work to implement a letter of intent received from the Government of India for setting up a mini steel plant in Alleppey district. The scheme which would involve an investment of Rs. 175 lakhs is included in the plan proposals.

*Ship Breaking Unit (Total cost Rs. 500 lakhs)*

13.181 There is considerable scope for establishing a ship breaking unit in Kerala, because of the special facilities such as long coast line, good harbours etc. Old scrapped ships have to be brought from international markets, broken up, and the various scraps could either be exported or sold in the domestic market. Such a unit will invariably help in the promotion of a number of steel making units.

*Sanitary Wares and Stone Ware Pipes (Total cost Rs. 72 lakhs).*

13.182 The proposal consists of manufacturing annually 6000 tonnes of sanitary wares and stone ware pipes. The growing demand for these items coupled with the availability of the required raw material and electric power makes Kerala an ideal location for the unit.

*Basic Drugs and Formulation Plant (Total cost Rs. 500 lakhs).*

13.183 It is suggested that a basic drugs and formulation plant be established in the private sector apart from the various schemes suggested in the Central and State sector to manufacture in a phased manner items such as metadiazole, tetraneisol, adalphan chloroquine etc., and their formulation.

### 3. Central Sector Industries

*Expansion/Diversification of Existing Units*

*The Fertilizers and Chemicals Travancore Ltd. (Central Sector Outlay Rs. 82.50 crores)*

13.184 The FACT has undertaken a scheme to manufacture annually 3000 tonnes of synthetic cryolite, for which an amount of Rs. 50 lakhs has already been spent. The balance amount of Rs. 204 lakhs is expected to be invested during the first two years of the Plan period. The Company has also a programme to expand the manufacture of ammonia and urea to 30,000 tonnes annually. This expansion programme also has to be taken on a priority basis in view of its national importance.

*Hindustan Insecticides Ltd. (Central Sector Outlay Rs. 8.52 crores)*

13.185 The Company is implementing a diversification programme to manufacture annually 2105 tonnes of endosulphan (formulation) and 1600 tonnes of endosulphan (technical). The total cost of the scheme is Rs. 868 lakhs of which Rs. 365 lakhs has already been invested. Hindustan Insecticides has also certain diversification programmes for various pesticides products. An R and D complex to support its manufacture of formulation, testing etc. is also proposed.

The Kerala Unit of the company can undertake a few of these proposals during the plan period 1978-83. An amount of Rs. 8.52 crores is proposed for this purpose.

*Cochin Refineries (Central Sector Outlay Rs. 39 crores)*

13.186 Cochin Refineries Ltd. proposes to expand its capacity through secondary processing of 3.5 million tonnes of crude per year based on the Bombay High crude. The secondary processing scheme consists of an F.C.C. Unit in which the low valued product (furnace oil) is upgraded to high valued products. The scheme envisages an investment of Rs. 39 crores, and is expected to be financed by the Central Government.

*Hindustan Latex Ltd. (Central Sector outlay Rs. 0.50 crore)*

13.187 An outlay of Rs. 1 crore is required by the Company to replace some of the existing machinery, by the installation of new and imported machinery. This investment is necessary for manufacturing lubricants.

*Parvathi Mills (Central Sector Outlay Rs. 0.50 crore)*

13.188 This mill managed by the National Textile Corporation is already implementing a modernisation scheme costing about Rs. 115 lakhs. The amount suggested in the Plan is required to complete this programme of modernisation.

*Alagappa Textiles Ltd. (Central Sector Outlay Rs. 0.80 crore)*

13.189 This mill also managed by the National Textile Corporation has launched a modernisation programme involving an additional investment of Rs. 116 lakhs. The scheme is expected to be financed by the Central Government and financial institutions.

*Cochin Shipyard (Central Sector Outlay Rs. 40 crores)*

13.190 The ship building activities of the Cochin Shipyard are only in an advanced stage, and the planned optimum capacity has yet to be achieved. The Shipyard has also a proposal to augment the ship building capacity with an additional investment of Rs. 23 crores, by which its present capacity of two ships of 75,000 DWT each will be doubled to four ships of 75,000 DWT each. The outlay of Rs. 40 crores is proposed to complete the present programmes to augment the capacity and to initiate future programmes envisaged under phase II.

*Indian Telephone Industries*

13.191 The recently started Palghat Unit of the Indian Telephone Industries has an expansion programme for the manufacture of electronic private automatic exchanges, and rural automatic exchanges. The scheme estimated to cost Rs. 30 lakhs, is proposed to be financed by financial institutions.

*Balmier Lawrie and Co., Ltd. (Central Sector Outlay Rs. 0.05 crore)*

13.192 This Company is a Government of India undertaking which has obtained a letter of intent for the manufacture of marine freight containers. The

Unit is proposed to be set up at Aroor in Alleppey district with the active participation of the Kerala State Industrial Development Corporation. The total cost of the project is Rs. 99 lakhs, of which Rs. 5 lakhs have to be provided by the Centre, and the rest will have to be raised from financial institutions.

*Kerala Newsprint Project (Central Sector Outlay Rs. 90 crores)*

13.193 This project is being established by the Hindustan Paper Corporation, at an estimated cost of Rs. 130 crores. It proposes to manufacture 80,000 tonnes of newsprint annually. An amount of Rs. 40 crores has already been invested in the project as on March 1978. The balance amount of Rs. 90 crores is required to complete the project which is expected to go on stream by July 1979.

*New Schemes*

*Caprolactum Plant (Central Sector Outlay Rs. 181 crores)*

13.194 There is considerable scope for establishing a caprolactum plant in Kerala in view of its importance in creating a network of employment oriented new projects in the medium and small scale sector. Caprolactum is the basic raw material for the manufacture of nylon-6 which itself is required for making fishing nets tyre cords, nylon filament yarn etc. F.A.C.T. has a proposal to establish a caprolactum plant as part of their diversification programme, at an estimated cost of Rs. 181 crores, to produce 5000 tonnes of caprolactum per annum.

*Ammonium Sulphate Plant (Central Sector Outlay Rs. 13.24 crores)*

13.195 FACT has a scheme to set up a plant for the manufacture of ammonium sulphate based on gypsum which is turned out by the factory in large quantities. The scheme envisages the production of 1.5 lakh tonnes of ammonium sulphate per annum at a total investment of Rs. 13.24 crores.

*Polypropylene Plant (Central Sector Outlay Rs. 25 crores)*

13.196 Polypropylene, a thermoplastic resin, is used for packing tobacco, candy, baked foods, meat, drugs etc. It is suggested that a plant with a capacity of 25,000 tonnes be established in the State by the Indian Petro-Chemical Corporation. The investment outlay will be about Rs. 25 crores.

*Phenol Plant (Central Sector Outlay Rs. 6 crores)*

13.197 It is recommended that a plant with a capacity of 6000 tonnes of phenol per annum, based on vapour phase exidation of benzene may be established in the Central sector by the Petro Chemical Corporation Ltd. by utilising the benzene available with the Cochin Refineries Ltd., when they start processing of the Bombay High crude.

*Demethyl Terapthalate/Terapthalic Acid Plant (Central Sector Outlay Rs. 50 crores)*

13.198 DMT/TPA is a raw material for the manufacture of polyester polymer, which in turn finds use

in the manufacture of polyester staple fibre, photographic films, capacitor films etc. It is proposed that a plant with a capacity of 30,000 tonnes of DMT/TPA may be established in the State at an estimated cost of Rs. 50 crores by the Indian Petro Chemical Corporation.

*Maleic Anhydride Plant (Central Sector Outlay Rs. 2 crores)*

13.199 Maleic Anhydride has a major use in the manufacture of polyester and alkyd resins. It is also used as an intermediate for the manufacture of pesticides, fumaric acid, tartaric acid etc. A medium size plant involving an investment of Rs. 2 crores can be set up in the State, as Benzene, the raw material, will be available with the Cochin Refineries, consequent on its processing of Bombay High crude.

*Styrene Plant (Central Sector Outlay Rs. 20 crores)*

13.200 Styrene, a hard thermoplastic widely used in packing electrical appliances, sports equipments, etc; can also be produced from benzenes available with the Cochin Refineries, when their expansion programme materialises. It is suggested that a plant with a capacity of 20,000 tonnes per annum may be set up under the Central sector at an estimated investment of Rs. 20 crores.

*Chemical Intermediates Complex (Central Sector Outlay Rs. 10 crores)*

13.201 A number of chemicals and intermediates are required by the pesticides, dyes, and pharmaceutical industries, and most of them are in short supply. A Chemical intermediate complex involving an outlay of Rs. 10 crores may be set up in the State as a unit of Hindustan Organic Chemicals Ltd.

*R and D unit of Central Mechanical Engineering Research Institute (Central Sector Outlay Rs. 0.80 crore)*

13.202 With the development of engineering industries in the State, adequate testing facilities for engineering goods will have to be set up. At present there are no such facilities in the State. It is proposed that a unit of Central Mechanical Engineering Research Institute may be set up in the State as part of C.S.I.R. Complex.

*Electro-Smelting of Ilmenite (Central Sector Outlay Rs. 12 crores)*

13.203 Considerable spade work has been done by State Government agencies on a project for the manufacture of titanium rich slag by the chloride route or sulphate route process. The State Government is already committed to the expansion of Kerala Minerals and Metals Ltd. which envisages the enhancement of capacity of ilmenite production. Hence it is desirable that a unit for the manufacture of titanium rich slag may be taken up by the Indian Rare Earths.

*Titanium Sponge Plant (Central Sector Outlay Rs. 25 crores)*

13.204 At present there is only a pilot plant in India (Defence Metallurgical Research Laboratory) which produces commercial grade titanium sponge and its capacity is 7.5 tonnes only. With the expansion and diversification of production of the Kerala Minerals and Metals Ltd., sufficient quantity of titanium tetrachloride will be available which could be utilised for the production of titanium sponge. Hence a plant to manufacture annually 1000 tonnes of titanium sponge and 1000 tonnes of ferro-titanium and other alloys at an estimated cost of Rs. 25 crores may be established in the State. It is proposed that the Indian Rare Earths Ltd., may establish this project.

*T.V. Glass Shell Project (Central Sector Outlay Rs. 15 crores)*

13.205 The television manufacturing industry has made considerable progress in the country, but the requirement of television picture tubes is met largely by imports. Kerala State with its good quality of silica sand deposits and sufficient supply of cheap electric power offers considerable scope for establishing a factory for the manufacture of T.V. glass shells. It is suggested that M/s. Bharat Electronics Ltd., may set up this factory.

*A Unit of Hindustan Antibiotics Ltd (Central Sector Outlay Rs. 10 crores)*

13.206 The Kerala State Drugs and Pharmaceuticals is the only public sector drug manufacturing unit in the State. There is considerable demand for antibiotics in the country, and it is suggested that a unit of Hindustan Antibiotics Ltd. may be established in the State to manufacture semi-synthetic penicillin.

TABLE 13.1

**Large and Medium Industries—Sector-wise Outlay and Employment Potential**

(Rs. in lakhs)

Sl. No.	Schemes	State Sector Outlay	Central Sector Outlay	Private Sector Outlay	Financial Institutions	Total Outlay	Employment potential
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<b>I. STATE SECTOR</b>							
<i>I. Industrial Finance Institutions</i>							
	(a) Kerala State Industrial Development Corporation	500	..	--	--	500	--
1	Existing/Spill over Schemes						
1	Kunnathara Textiles	..	..	..	101	101	618

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
2	Kerala Chemicals & Proteins	..	..	67	120	187	96
3	Formalin Products Limited	..	..	10	95	105	120
4	Premier-Morargee Chemicals	..	..	8	56	64	97
5	Kerala Chlorates and Chemicals	..	..	12	63	75	90
6	Power Systems and Projects	..	..	2	21	23	215
7	Carbon and Chemicals India Limited	..	..	207	662	869	200
8	Veneers and Laminations (India) Limited	..	..	23	25	48	62
<i>New Schemes</i>							
1	Nylon Filament Yarn	..	..	370	1230	1600	350
2	Dyes Project	..	..	18	62	80	116
3	Polyol and Polysulphide Plant	..	..	29	91	120	80
4	Carbide Chemicals	..	..	44	136	180	45
5	Conveyor Belts	..	..	592	1808	2400	600
6	Surgical Rubber Goods	..	..	21	59	80	30
7	Activated Carbon Plant	..	..	66	204	270	100
8	Vinyl Acetate Project	..	..	74	226	300	80
9	Sodium Tripoly Phosphate (STP)	..	..	111	289	400	150
10	Butenediol Plant	..	..	88	262	350	150
11	Nickel Cadmium Cells	..	..	15	42	57	50
12	Watch Case Manufacturing Unit	..	..	29	71	100	400
13	Fibre Glass Project	..	..	296	904	1200	400
14	Graphite Beneficiation Plant	..	..	29	91	120	100
15	Vacuum Flask Refills Project	..	..	22	69	91	450
16	Ceramic Fibre Plant	..	..	148	452	600	200
17	Decaffinated Coffee Plant	..	..	118	382	500	75
18	Vitamin 'C' Project	..	..	59	191	250	200
19	Precision Instruments Project	..	..	118	362	480	350
20	Geo-Scientific Instruments	..	..	100	250	350	575
21	High Tension Insulators	..	..	80	170	250	400
22	Silicon Carbide Plant	..	..	10	20	30	100
23	Sea Water Magnesite Project	..	..	1000	2000	3000	500
24	Mini Paper Plant	..	..	35	45	80	80
		500	..	3801	10559	14860	7073
<i>(b) Kerala State Industrial Enterprises</i>							
1	Kerala Soaps and Oils Limited	48	..	..	48	96	15
2	Trivandrum Rubber Works Limited	20	..	..	124	144	44
3	Kerala Ceramics Limited	213	..	..	113	326	501
4	Kerala Clays and Ceramic Products	90	..	..	210	300	1100
5	Kerala State Drugs and Pharmaceuticals Limited	401	..	..	737	1138	610
6	Travancore Plywood Industries	..	..	..	15	15	77
7	Kerala Electrical and Allied Engineering Company	15	..	..	25	40	40
8	Kerala State Detergents and Chemicals	47	..	..	160	207	281
		834	..	..	1432	2266	2668

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(c) Kerala Financial Corporation		20	..	..	..	20	..
(d) Kerala State Financial Enterprises		50	..	..	..	50	..
	Sub Total (1)	1404	..	3810	11991	17196	9741
<i>II. Investments in other Public Undertakings—</i>							
<i>Other Government-owned Companies</i>							
1	Kerala Minerals and Metals Ltd.	1370	..	..	5621	6991	1365
2	Sitaram Textiles Ltd.	25	..	..	106	131	500
3	Steel Industrials Kerala Ltd.	740	..	..	1425	2165	3082
4	Astral Watches Ltd.	2	..	..	28	30	110
5	Malabar Cements Limited	600	..	..	2400	3000	1100
6	Scooters Kerala Ltd.	90	..	..	200	290	330
7	Kerala Automobiles Ltd.	200	..	..	230	430	500
		3027	..	..	10010	13037	6987
<i>Government Majority Concerns</i>							
1	Travancore Titanium Products Ltd.	200	..	..	200	400	300
2	Travancore Cochin Chemicals Ltd.	100	..	..	150	250	25
3	Transformers and Electricals Kerala Ltd.	200	..	..	600	800	800
4	Traco Cable Company Ltd.	260	..	..	390	650	247
5	Chalakydy Potteries Ltd.	10	..	..	45	55	200
6	Pallathra Bricks & Tiles Ltd.	10	..	..	15	25	75
7	United Electrical Industries Ltd.	120	..	..	118	238	500
8	Travancore Cements Ltd.	100	..	..	710	810	358
		1000	..	..	2228	3228	2505
<i>New Schemes</i>							
1	Special Refractory Project	400	..	..	1000	1400	600
2	Sponge Iron Plant	500	..	..	3500	4000	2000
3	Aluminium Smelter	1500	..	..	6000	7500	2000
4	White Cement Project	130	..	..	270	400	200
5	Pelletised Tapioca Plant	50	..	..	90	140	250
6	Petro-chemical Project	2500	..	..	3500	6000	1200
7	Insulin	90	..	..	110	200	200
8	Steroids and Hormones Plant	100	..	..	200	300	200
9	R and D Centre for Drugs and Pharmaceuticals	100	..	..	..	100	50
10	Phyto-chemical Project	40	..	..	60	100	80
		5410	..	..	14730	20140	6780
<i>State Corporations—</i>							
<i>Kerala State Textile Corporation</i>							
1	Trivandrum Spinning Mills	..	..	..	63	63	541
2	Prabhuram Mills	15	..	..	..	15	255
3	Kottayam Textiles	20	..	..	..	20	320
4	Malabar Spinning and Weaving Company	30	..	..	..	30	705
5	Knitting Complex	85	..	..	..	85	1000
		150	..	..	63	213	2821



(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>Kerala Forest Development Corporation</i>							
1	Plywood-cum-Veneer Complex	150	..	..	250	400	500
2	Joinery Units (3 Units)	25	..	..	50	75	225
3	Management of 42000 hectares of Teak Plantation	500	..	..	..	500	3500
4	Wood Industry Complex (Nilambur)	500	..	..	..	500	3000
		1175			300	1475	7225
<i>Kerala State Electronics Development Corporation</i>							
1	T. V. Receivers	55	..	..	..	55	1800
2	T. V. Systems	25	..	..	..	25	400
3	Digital Electronic Products	85	..	..	..	85	1100
4	Industrial Electronic Products	80	..	..	..	80	1100
5	Printers and other Peripheral Equipments	85	..	..	..	85	1000
6	Special Products	100	..	..	..	100	400
7	Keltron Counters						
	(i) Railway Speed Recorders	50	..	..	50	100	400
	(ii) Instrumentation system and data acquisition system	300	..	..	..	300	4000
	(iii) Consultancy and traffic system	50	..	..	55	105	400
8	Keltron Projectors	25	..	..	25	50	400
9	Keltron Entertainment systems Ltd.	15	..	..	15	30	200
10	Electronic Watches	70	..	..	80	150	2500
11	Communication equipments	175	..	..	..	175	1000
12	Keltron Component Complex Ltd.	100	..	..	100	200	600
13	Keltron Crystals Ltd.	100	..	..	..	100	250
14	Keltron Magnetics Ltd.	35	..	..	..	35	150
15	Keltron Resistors Ltd.	35	..	..	30	65	100
16	Keltron Power Devices Ltd.	100	..	..	150	250	450
17	Keltron Rectifiers Ltd.	100	..	..	80	180	400
18	Dilecto Magnetics Ltd.	40	..	..	55	95	200
19	Metalised Plastic Film and Film Capacitors	100	..	..	150	250	250
20	I. C. D. Devices	50	..	..	..	50	100
21	Etched Aluminium foil	50	..	..	50	100	200
22	Electronic Research and Development Centre	100	..	..	..	100	50
23	Central Tool Room for Electronic Industry (Expansion)	30	..	..	..	30	100
24	Regional Computer Centre	25	25	..	..	50	250
25	Regional Maintenance Centre for Electro Medical Equipment	15	60	..	..	75	250
26	Testing and Development Centre (Expansion)	10	10	..	..	20	50
		2005	95	..	840	2940	19100
Kerala State Industrial Products Trading Corporation		15	..	..	..	15	..
<i>Kerala Film Development Corporation</i>							
1	Studio Project	182	..	..	..	182	50
2	Expansion Facilities to Studio Complex	148	..	..	..	148	100
3	Film Theatres	75	..	..	175	250	490
4	Semi-permanent Theatres	172	..	..	173	345	1125
		577	..	..	348	925	1765

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>Plantation Corporation of Kerala</i>							
1	Cashew Plantations	179	172	..	226	577	6000
2	Coffee Plantations	240	240	..	..	480	5000
3	Cocoa Plantations	30	..	..	..	30	100
4	Cardamom Plantations	72	..	..	..	72	1200
5	Rubber Plantations	140	..	..	..	140	300
6	New Oil palm Plantations	..	..	..	297	297	500
7	Oil palm Plantations (Expansion)	..	400	..	137	537	1500
		661	812	..	660	2133	14600
<i>Kerala Agro-Industries Corporation</i>							
1	Meat Products of India Ltd.	100	100	..	400	600	200
2	Kerala Agro-Machinery Corporation	117	..	..	133	250	470
3	Mechanical Compost Plant	47	25	..	..	72	60
4	Kraft Paper Project	63	..	..	81	144	200
5	Agro Industrial Complex	116	127	..	342	585	200
6	Pineapple Processing Project	19	..	..	..	10	40
		462	252	..	956	1670	1170
		450	..	..	550	1000	550
<i>State Co-operative Sector</i>							
1	Quilon Co-operative Spinning Mills	168	..	42	210	420	1000
2	Malappuram Co-operative Spinning Mills	131	15	37	183	366	900
3	Cannanore Co-operative Spinning Mills	150	15	50	235	450	700
4	ENGOS --Revival and Taking Over	25	..	..	..	25	..
<i>New Schemes</i>							
5	Modern Rice Mills (4 mills)	40	..	60	..	100	100
6	Mannam Sugar Mills	40	..	..	110	150	150
		554	30	189	738	1511	2850
<i>Other Miscellaneous Schemes</i>							
1	Development Areas	250	..	..	..	250	100
2	Management Development Centre	25	..	..	..	25	25
3	Weights and Measures	30	..	..	..	30	..
		305	..	..	..	305	125
Sub Total II		15791	1189	189	31423	48592	66478
Total State Sector (I+II)		17195	1189	3990	43414	65788	76219
2. PRIVATE SECTOR							
<i>Existing / Spillover Schemes</i>							
1	Kerala Spinners	..	..	10	10	20	53
2	Madras Spinners	..	..	..	35	35	22
3	Kathayee Cotton Mills	..	..	15	50	65	200
4	Vanaja Textiles	..	..	31	54	85	100
5	Raja Gopal Textiles	..	..	15	95	110	200
6	Travancore Electro Chemical Industries	..	..	50	25	75	29

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
7	West Coast Industrial Gases	..	..	25	15	40	24
8	Phosphorous and Chemicals (Travancore) Ltd.	..	..	45	65	110	150
9	Kerala Acids and Chemicals Ltd.	..	..	53	154	207	225
10	South India Wire Ropes	..	..	..	30	30	38
11	British Physical Laboratories (India) Pvt. Ltd.	..	..	13	12	25	55
12	Premier Cable Company	..	..	80	245	325	75
13	Aluminium Industries	..	..	45	93	138	145
14	West India Steel Company	..	..	5	40	45	45
15	Cominco Binani Zinc	..	..	350	750	1100	25
16	Travancore Ogale Glass Manufacturing Co.	..	..	..	20	20	15
17	Indian Aluminium Company	..	..	200	..	200	50
18	Travancore Timber Products	..	..	3	2	5	35
19	South India Veneers and Wood Works	..	..	15	30	45	125
20	Western India Plywoods	..	..	205	520	725	1150
		..	..	1160	2245	3405	2761
<i>New Schemes:</i>							
1	Pentacythritol Project	..	..	70	30	200	70
2	Resins and Paints	..	..	15	25	40	50
3	Pesticides Plant	..	..	100	200	300	120
4	Sorbitol (Starch based)	..	..	40	60	100	70
5	Hydrogen Cyanide Plant	..	..	70	130	200	100
6	Phosgene and Derivatives Project	..	..	150	350	500	200
7	Synthetic Resins Plant	..	..	15	25	40	30
8	Oleoresins and Spice Oils	..	..	15	25	40	50
9	Fatty Alcohol Project	..	..	100	270	370	170
10	Cast Phenols Plant	..	..	10	20	30	20
11	Sodium Carboxy Methyl Cellulose	..	..	20	40	60	50
12	Polyvinyl Acetate Plant	..	..	30	40	70	40
13	Plastic containers Manufacturing Plant	..	..	15	25	40	20
14	P. V. C. Leather Cloth Project	..	..	30	50	80	25
15	Polypropylene Corrugated sheets	..	..	40	60	100	50
16	Epoxy Resins and Paints Project	..	..	55	80	135	50
17	Non-ferrous foundry	..	..	30	45	75	150
18	Razor Blades	..	..	100	435	535	250
19	Mini-Steel Plant	..	..	65	110	175	330
20	Ship Breaking Yard	..	..	200	300	500	750
21	Sanitary Wares and Stone Ware Pipes	..	..	32	40	72	200
22	P. V. C. Silica Tiles Making Plant	..	..	60	100	160	80
23	Basic Drug Formulation Plant	..	..	100	400	500	1250
		..	..	1362	2960	4322	4125
	Total: Private Sector (2)	..	..	2522	5205	7727	6886

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)		
<b>3. CENTRAL SECTOR*</b>									
<i>Spillover/Existing Schemes</i>									
1	FACT	..	8250	..	8250	16500	557		
2	Hindustan Insecticides	..	852	..	1151	2003	1141		
3	Cochin Refineries	..	3900	..	..	3900	150		
4	Hindustan Latex	..	50	..	50	100	50		
5	Parvathi Mills	..	50	..	20	70	15		
6	Alagappa Textiles	..	80	..	36	116	20		
7	Cochin Shipyard	..	4000	..	..	4000	3000		
8	Indian Telephone Industries	..	..	..	30	30	291		
9	Balmier Lawrie and Co.	..	5	..	94	99	280		
10	Kerala Newsprint Project	..	9000	..	..	9000	1800		
		..	26187	..	9631	35818	7304		
<i>New Schemes</i>									
1	Caprolactum Plant in FACT	..	18100	..	..	18100	600		
2	Ammonium Sulphate Plant in FACT	..	1324	..	..	1324	500		
3	Polypropylene Plant	..	2500	..	..	2500	350		
4	Phenol Plant	..	600	..	..	600	250		
5	DMT/TPA Plant	..	5000	..	..	5000	500		
6	Maleic Anhydride Plant	..	200	..	..	200	120		
7	Styrene Plant	..	2000	..	..	2000	200		
8	Unit of Hindustan Organic Chemicals	..	1000	..	..	1000	500		
9	R and D Unit of Central Mechanical Engineering Industry	..	80	..	..	80	120		
10	Electric Smelting of Ilmenite	..	2100	..	..	2100	300		
11	Titanium Sponge Plant	..	2500	..	..	2500	1000		
12	T. V. Glass Shell Project	..	1500	..	..	1500	700		
13	A Unit of Hindustan Antibiotics	..	1000	..	..	1000	1500		
Total: Central Sector (3)		..	37904	..	..	37904	6640		
Grand Total (1+2+3)			17195		65280	6512	58250	147237	97049

\* Though the investment expected under the existing or on-going central sector schemes is likely to materialise during the plan period 1978-83, many of the new central sector schemes proposed might spill over to the subsequent Five Year Plan period.

## B. Mineral Development

13.207 Kerala possesses the largest deposits of beach sands in India. The main deposits found in the coastal tract between Neendakara and Kayamkulam bar are being mined and processed by M/s. Indian Rare Earths Ltd. and Kerala Minerals and Metals Ltd. It is felt that apart from these areas which are at present being worked, there may be other large areas in the hinterland and off-shore tracts of the State which are potentially important and therefore they merit detailed study. Clay is another industrial mineral abundantly available in many parts of the State. The reserves are estimated to be 72.41 million tonnes of China Clay, 1.67 million tonnes of ball clay and 9.65 million tonnes of fire clay. In

addition, there are abundant reserves of brick and tile clays. The available information is however tentative and requires field work for delineation of different deposits and their mineability. Extensive deposits of silica sand occurs as surface deposits in Sherthallai taluk of Alleppey district, and the reserves have been tentatively estimated at 70 million tonnes. Graphite is another strategic mineral found in many parts of the State, and these deposits have to be examined with regard to their economics of working, recovery of flakes, and feasibility for beneficiation. Kerala has already several industries utilising limeshell as raw considered as a minor mineral. The State has allowed material. For several decades limeshell has been considered as a minor mineral. The State has allowed private individuals and co-operative societies to exploit limeshell for the production of lime and for construction and agricultural purposes. Owing to

indiscriminate mining, large portion of shell deposits are left uncovered. No detailed estimates of limeshell deposits in the State have been made so far, except for certain pockets where investigations have been carried out recently. It would therefore be necessary to carry out detailed exploration in the vast silted and reclaimed areas of similar geomorphological origins located along the coastal tracts to locate sizeable deposits of lime shell. The iron ores of Calicut have been subjected to study by the Geological Survey of India. The ore has been found amenable to magnetic separation. However further studies of iron ore deposits including beneficiation tests, pilot plant and feasibility studies for the establishment of a pelletisation plant or sponge iron plant have to be carried out. Bauxite of a fair grade has been located in Cannanore district, and in certain parts of Trivandrum and Quilon districts. Detailed investigations carried out at Walayar in Palghat district have proved a mineable reserve of 17 million tonnes suitable for cement manufacture. Steps have already been taken to establish a cement plant utilising the above deposit.

13.208 In the past, the Government has not paid adequate attention for the systematic exploration, mineability, beneficiation tests, pilot plant and feasibility studies, and the economics of working of various minerals found in the State. Though an outlay of Rs. 79 lakhs was suggested for mining and mineral development in the Fifth Plan, only an amount of about Rs. 42 lakhs could be spent during the four year period 1974-78. The accelerated pace of development envisaged in the industrial sector calls for a higher order of investment under mining and mineral development.

#### *Plan Proposals for 1978-83*

13.209 A total outlay of Rs. 349 lakhs is proposed for the various schemes under mineral development. This is inclusive of the UNDP aided Kerala Mineral Exploration and Development Project. An amount of Rs. 79.50 lakhs is set apart as State's share for this project. The scheme-wise details are given below:--

#### *Continuing Schemes*

##### *1. Kerala Mineral Exploration and Development Project (Outlay Rs. 79.50 lakhs)*

13.210 The Kerala Mineral Exploration and Development Project established with the assistance of UNDP in the State, envisages the exploitation and evaluation of known and partially known deposits of iron ore, graphite, mica etc, and to conduct a general exploratory survey of other possible deposits over an area of 14500 sq. k.ms. in the north and south Kerala. The Project budget covers an assistance of 1.54 million dollars. In order to complete the project a State sector outlay of Rs. 79.50 lakhs would be required during the plan period 1978-83.

##### *2. Streamlining the Working of the Department of Mining and Geology (Outlay Rs. 119.72 lakhs)*

13.211 As a first step towards intensification of detailed mineral investigation for important known mineral deposits and to gather information on the industrial

utilisation of these minerals which would include pilot plant trials, feasibility studies, preparation of mine plans etc., it would be essential to streamline and strengthen the Department. With a view to achieving this object, a mineral economic division, a mineral investigation division, a photogeology cell, a petrology laboratory and sophisticated drilling equipments are required. The mineral economic division will be engaged in the study of reports furnished by various investigating agencies and in the assessment of the economic viability of the various mineral deposits, while the mineral investigation division will conduct detailed mineral investigations and prepare reports. For this purpose an amount of Rs. 119.72 lakhs is proposed in the Plan.

#### *New Schemes*

##### *3. Preparation of Feasibility Reports (Outlay Rs. 92 lakhs)*

13.212 The available information with regard to important known mineral deposits of the State, namely, clays, silica sand, beach sands, lime shell, iron ore, bauxite and graphite, from the point of view of their industrial utilisation is highly inadequate. Hence further work is required to evolve projects for the optimum utilisation of these minerals. Investigations on minerals should be complete up to the stage of feasibility reports and such reports should be complete in all respects including information regarding meteorological data, infrastructure facilities, financial viability and environmental impact. While preparing the feasibility reports the State Department of Mining and Geology should associate itself with the Geological Survey of India, Kerala-State Industrial Development Corporation, Indian Bureau of Mines and other national and international agencies and take into account the expertise and equipments available with them so as to avoid duplication. Feasibility reports for the utilisation of the following minerals will be prepared at a total cost of Rs. 92 lakhs as detailed below:--

Bauxite	Rs. 4 lakhs
Beach sands	Rs. 50 "
Clays	Rs. 20 "
Graphite	Rs. 10 "
Glass sands	Rs. 4 "
Kankar and Lime stone	Rs. 4 "

##### *4. Lime shell Investigation Cell (Outlay Rs. 16.20 lakhs)*

13.213 The backwater regions of the State, estuaries of rivers and adjoining land portions which constitute silted up lake portion contain sizeable deposits of lime-shell which are presently being utilised for the production of industrial lime, white cement, chemicals paper, rayon etc. As the State is deficient in high-grade limestone deposits, it has mainly to depend on the available limeshell resources. It is therefore necessary to carry out systematic and accurate assessment of lime shell deposits. Though some specific areas of the State have been investigated by the State Department of Mining and Geology during the Fifth Plan period, it is considered necessary to create a separate cell during the plan period,

1978-83, for speeding up the exploration, and identifying areas containing limestone deposits. This cell would undertake systematic and detailed investigations on the entire backwater regions, estuaries of rivers and adjoining land portions along the western coast of the State.

5 *Setting up of District Organisation (Outlay Rs. 41.58 lakhs)*

13.214 The provisions of the Mines and Minerals (Regulation and Development) Act and rules made thereunder are to be implemented and enforced more efficiently. The prevention of clandestine mining of minerals is of paramount importance for the State, both in checking the leakage of revenue and in preventing wasteful mining and misutilisation of valuable minerals. Further the directives of the Indian Bureau of Mines to the mine owners, based on the Mineral Conservation and Development Rules are to be watched and penal action taken in case the lessees do not comply with their directions.

13.215 The present set up in the Department of Mining and Geology is not adequate to ensure the implementation of these items of work. Hence in order to undertake these tasks along with the routine activities of the Department, it is proposed to create a unit in each district of the State comprising a Geologist and necessary supporting administrative staff.

13.216 The Plan proposals under Mineral Development are listed below:-

<i>Scheme</i>	<i>Outlay Rs. lakhs</i>
<b>Continuing Schemes</b>	
1. Kerala Mineral Exploration and Development Project	79.50
2. Streamlining the working of the Department of Mining and Geology	119.72
<b>New Schemes</b>	
3. Preparation of Feasibility reports	92.00
4. Lime shell investigation Cell	16.20
5. Setting up of District Organisation	41.58
Total	349.00

### **C. Village and Small Industries**

#### 1. *Small Scale Industries and Industrial Estates*

13.217 In Kerala nearly 12,000 small scale units are registered with the Industries Development Commission rate. Significant progress has been achieved by industrial units processing agro-based, forest-based, marine based and clay-based resources readily available in the State. High growth-oriented industries like engineering and chemical group of industries, have not made much headway in the State. At present the important products manufactured by the small scale engineering industries in Kerala are agricultural implements, cutlery, industrial machinery required for tile industry, wood industry, rubber industry and food

processing industry, steel wires and hardwares, tin containers, weighing and printing machines, switch gears, electrical machines, cables, electrical appliances, electronic instruments etc. Important products manufactured under chemical industries in the small scale sector are rubber products, drugs and pharmaceuticals, plastic conversion products, paints and varnishes, organic chemicals, matches, paper conversion products etc.

13.218 Inadequacy of resources (including capital, equipment, technology, and skills) raw material shortage, marketing difficulties and adverse land-man ratio constitute the major constraints in the development of industries in the State. Industrial development during the last two decades has not helped to bring about the desired change in the structure of the economy. Unemployment has also been mounting over the years. It is in this context that a greater emphasis has been laid on promotion of small scale industries in the current plan. Small industries not only make less demand on scarce capital resources, but also create the much needed employment opportunities.

13.219 One of the major constraints which has seriously retarded the growth of small scale sector in the State has been the non-availability of raw materials, both indigenous and imported, in time and in adequate quantities and also at fair prices. Whereas units registered with the Directorate General of Technical Development (DGTD) receive raw materials on the basis of their assessed capacities, the small scale units sector receive them on a purely adhoc basis, pegged to the value of machinery installed. Although the allocations of foreign exchange for import of raw materials have been raised in recent years, a number of units have still not been able to obtain their full requirement of such raw materials at reasonable prices. The price preference programme extended by the Government through their purchase agencies have often been cited as one of the main instruments of assistance to the small scale sector. But the share of small scale sector in the total volume of purchases of the Government is comparatively low.

13.220 The ancillary development programmes initiated by the Government have not made any significant headway inspite of the declarations made by Government with a view to encouraging the establishment of small scale industrial units to supply parts and components to large and medium scale undertakings. Recently various procedures have been prescribed to help the development of ancillaries. The conditions that any new licence to be taken up by a large scale unit, either in the public sector or in the private sector, should be scrutinised carefully in regard to its ability to farm out components is indeed a welcome step. Such a scrutiny should necessarily be comprehensive, looking for other aspects as well, such as the technology employed in the proposed undertaking and the type of machinery that is sought to be installed which often predetermines the extent of sub contracting that is possible in any enterprise.

13.221 Many of the small scale industrial units are not able to sell their products fully. Their meagre resources prevent them from undertaking elaborate publicity and market promotion activities. There are good possibilities even for exporting items such

as white ware ceramics, wooden articles, industrial machinery, drugs, rubber products, fruit products etc., and the small scale industries engaged on such production require specific assistance in ascertaining the market as well as in completing all the required formalities for their export. Some of the units also require assistance in marketing their goods within the country itself. Units undertaking ancillary work face great difficulties in getting regular orders in time and also in obtaining payment after execution of orders.

#### *Development Under the Five Year Plans*

13.222 During the First Five Year Plan there was little organised activity under small scale industries in Kerala State. No special targets were fixed for activities under this scheme. During the Second Plan period a number of schemes such as production cum service centres, training centres and commercial units were taken up for the development of small scale industries. A programme for the organisation of industrial co-operatives and the establishment of industrial estates was taken up. By the end of the Third Plan period 18 industrial estates were set up in the State. Departmental loans were provided to private industrialists and to industrial co-operatives. The formation of the Kerala State Small Industries Corporation was an important development during the Third Plan period. The Corporation was set up to assist the industrialists in procuring raw materials and acquiring machinery on hire purchase basis. The Corporation was also entrusted with the management of industrial estates and some of the production units run by the Department.

13.223 During the Fourth Five Year Plan period, stress was laid on setting up of development plots, without going in for conventional type of industrial estates, having regard to the huge construction costs involved. Experience has shown that it will be far more advantageous if industrialists are assisted in constructing factory sheds themselves, according to their own requirements. Six development plots were started during this period and the basic necessities such as roads, water supply arrangements, street lights etc., were provided in these development plots. According to this scheme small areas of land are demarcated and given to the industrialists on hire purchase basis. The setting up of functional industrial estates was another special feature of the activities taken up during the Fourth Plan period. The Functional Industrial Estate for rubber and plastics at Changanacherry started during the Third Plan period was developed further during the Fourth Plan period. A Common Facility Centre was also first provided in the State. The Functional Industrial Estates for ceramics at Quilon and for Electronics at Karakulam and the ancillary industrial estate for HMT at Kalamassery and for I.S.R.O. at Veli have come up since then. The success of the Rural Industries Programme at Alleppey and Calicut prompted a similar scheme to be taken up during the Fourth Plan period. According to this scheme, industrial units costing upto Rs. one lakh are set up by the Department and handed over to the prospective entrepreneurs on hire purchase basis.

13.224 Co-ordinated assistance was also rendered by the Industries Department to the intending entrepreneurs to secure finance from financing institutions

for setting up of small scale industries, as the amount available with the Department was limited. The importance of the Government and the Department playing a major role in co-ordinating the assistance from various sources including banks was recognised and adopted. Arrangements were made with the Kerala Financial Corporation to issue loans to small scale industrialists at liberalised terms, the difference in the rate of interest from the KFC loan and the Departmental loan being subsidised by the Government. Five districts of the State (Trivandrum, Alleppey, Trichur, Malappuram and Cannanore) have been declared as backward. Of these three districts, viz. Alleppey, Malappuram and Cannanore have been declared as industrially most backward. Industries set up in the most backward districts are eligible for subsidy of 10 to 15 per cent of the capital investment under a Government of India scheme. This scheme was in operation from 1972-73 and most of the units set up in these districts since then have availed themselves of this facility. Certain other concessions are also being offered by the Industrial Development Bank of India for the requirement of capital expenditure to units which are being set up in the backward districts. Two Rural Industries Projects are functioning in the State at Alleppey and Kozhikode. Two more projects have since been sanctioned at Trivandrum and Malappuram.

13.225 Realising the significant place of small scale industry in Kerala's industrial development programme and the limited funds that can be provided under the State sector of the plan, the approach to the Fifth Plan was designed in such a way that a major share of the finance required will have to come from financing institutions. The State's role consisted mainly in providing the necessary infrastructure, co-ordinating all available assistance, providing incentives for setting up small scale industrial units and creating a climate of confidence among the industrialists. In the Fifth Plan, an allocation of Rs. 849 lakhs has been made for various schemes under small scale industries. The total expenditure for the first four years was Rs. 767.5 lakhs. Bulk of the expenditure was made in the share participation of the newly formed Small Industries Development and Employment Corporation, share participation in ENCOS, reimbursement of sales tax paid by industrialists and for Development Plots. Subsequent to the formulation of the Fifth Plan, the Government of Kerala drew up a massive industrialisation programme, popularly known as the 'Mini Industrial Estates Programme' and it was incorporated in the plan. A sizeable amount from the plan funds has been allotted for this crash scheme sanctioned in April 1975.

#### *Mini Industrial Estates*

13.226 The Mini Industrial Estates Programme was designed to provide opportunities for self employment to the educated youth of the State. Exploitation of local raw material resources, mobilisation of maximum finance from financial institutions and utilisation of the abundant manpower available in the State are the main points of emphasis of this programme. The main feature of the programme is the establishment of one-growth centre in the form of Mini Industrial Estate in each panchayat of the State. The Mini Industrial Estates are set up in an area of about one acre of land

surrendered by the Panchayat to the Government. The buildings constructed there are owned by the Kerala State Small Industries Corporation or the district level industrial estate co-operative societies. The objective of the programme is to set up 10,000 new small scale industrial units in the rural areas and revitalise 2500 existing sick units. All new units coming up within and outside the panchayat level Mini Industrial Estates would come under the coverage of this target. A separate wing of the Industries Development Commissionerate and the Small Industries Development and Employment Corporation is attending to the various problems of the sick units and making arrangements for their revival. The Industrial Reconstruction Corporation of India has taken up a detailed study of the units reported to be sick in Kerala. Technical consultancy support for the Mini Industries Programme is being given by Kerala Industrial Technical and Consultancy Organisation (KITCO) and the Small Industries Service Institute (SISI). A panel of selected consultants inside and outside the State has been set up and their consultancy services also are being progressively utilised. District level technical consultancy cells have been set up with the participation of public and private sector managers, faculty members of technical colleges and institutions and such others who are prepared to assist in the matter. The Kerala Financial Corporation and the commercial banks have already come forward to assist this massive industrialisation programme.

#### *Technical Consultancy Service*

13.227 The level of technology adopted in the small scale sector has gone up with the setting up of a numerous modern type of small scale units in the State. Also, there is need to adopt appropriate technology suitable for certain situations. Kerala is only slowly building up the necessary organisations which can provide technical consultancy service to small units. The services now available to the industrialists in the State are mainly from the Commissionerate of Industries, Small Industries Development and Employment Corporation, Small Industries Service Institute and the Kerala Industrial and Technical Consultancy Organisation. Delay in providing technical advice will lead to delay in bank assistance. Having regard to the much larger scale of progress that has been planned, technical consultancy on a substantial scale should be made available during the Plan period, 1978-83.

#### *Commissionerate of Industries*

13.228 Kerala Government has taken a primary step in creating a separate Development Commissionerate for the promotion of small scale industries. The Industries Development Commissionerate deals with various aspects of promotion of small scale industries in order to give a new thrust for rapid industrialisation in Kerala. The development staff working under the Commissionerate in the districts concentrates exclusively on the promotion of small scale industries. District level services are organised in a joint manner by the Small Industries Development Organisation under the Development Commissioner, Small Industries Development and Employment Corporation, Small Industries Service Institute and Small Industries Asso-

ciation. The Industries Development Commissionerate is responsible, among other things, for:-

- (i) Promotion and development of small scale and ancillary industries, both proprietary and co-operative.
- (ii) Promotion and development of industrial estates and all land and buildings for the use of small scale industries in the State.
- (iii) Administration of various legislative acts and Government activities relating to small scale industries.
- (iv) Development of an infrastructure for the growth of small scale industries and self-employment projects.
- (v) Creation and operation of consultancy and counselling services either directly or through appropriate Corporate institution.
- (vi) Liaison with banks and term lending institutions with a view to securing maximum benefit to small scale industries.
- (vii) Allocation of scarce raw materials including controlled raw materials either directly or through appropriate institutions.
- (viii) Organising an Economic Investigation and Research Cell and a Data Bank for small entrepreneurs.

13.229 The Development Commissioner initiates and ensures formulation of policy by the State Government in such a manner that all other Departments of Government and Public Sector undertakings give facilities for the development of small industries in the State especially in relation to growth of ancillaries, stores purchase etc. The price preference programme extended by Government to the small scale sector will be fully implemented and this is one of the important tasks of the Development Commissionerate. It is also the task of the Development Commissionerate to achieve the necessary inter-institutional co-ordination which ensures the smooth and adequate flow of institutional finance to small scale sector.

#### *Kerala State Small Industries Development and Employment Corporation*

13.230 In order to achieve the target of industrialisation set by the New Industries Programme, it was felt necessary to have a single unified organisation of a corporate nature. Timely and systematic services needed by the small industries sector could be provided only by such an organisation. With this purpose in view the State Government decided to form an umbrella corporation under the name "The Kerala State Small Industries Development and Employment Corporation". The existing two corporate bodies in the field, viz. the Kerala Small Industries Corporation and the Kerala Employment Promotion Corporation, were integrated to form this new corporation.

13.231 The new Corporation was incorporated in November 1975, with an authorised capital of Rs. 500 lakhs and a paid up capital of Rs. 86 lakhs. This Corporation has the following 12 functional divisions for



rendering a package of integrated services to the small entrepreneurs.

1. Research and development division
2. Industrial estate and infrastructure division
3. Production division
4. Raw materials division
5. Machinery division
6. Finance division
7. Technical consultancy division
8. Entrepreneurial development division
9. Import and export division
10. Marketing division
11. Sick units division
12. Information and publicity.

13.232 Each of the divisions of the Corporation functions under a General Manager. These divisions establish effective linkages with all the appropriate agencies such as C.S.I.R., NSIC, NIDC, IDBI, KFC, Commercial Banks, Small Industries Service Institute, KITCO and the Development Departments of the Government in order to build up necessary services and deliver them to the small scale industrial sector. The Industries Development Commissioner is the executive chairman of the Corporation. One of the main functions of the Corporation is to help the channelisation of institutional finance for industrial development. After the massive rural industrialisation programme was introduced the Corporation has been functioning as a focal point for securing bank assistance. It was mainly through the efforts of this Corporation that finance has been raised from Kerala Financial Corporation, commercial banks, and Kerala State Co-operative Bank for the Mini Industrial Estates. The Corporation has also achieved a fair measure of success in the field of rehabilitation of sick units. The Corporation has also undertaken industrial potential surveys of various districts. In the field of marketing, the Corporation is equipping itself to provide active assistance to small entrepreneurs. A major area of work of the Corporation is to identify the potential market and support the case of small entrepreneurs to get adequate patronage from Government departments and other public undertakings.

#### *National Small Industries Corporation Limited*

13.233 The National Small Industries Corporation Limited was set up in 1955 by the Government of India. One of the main objectives of the Corporation is supplying machinery and equipment to small scale enterprises on hire purchase basis and assisting them in procuring orders from Central Government Purchasing Agencies. The Corporation takes the responsibility for procuring machines on hire purchase basis. Apart from supplying indigenous machines, the Corporation imports machinery from foreign countries for supply under hire purchase scheme. This saves the entrepreneurs from lot of both-eration involved in obtaining foreign exchange and import licence themselves.

#### *Kerala Industrial and Technical Consultancy Organisation (KITCO)*

13.234 The KITCO, established in 1972 by the Industrial Development Bank of India, is an agency

mainly engaged in preparation of project reports and feasibility studies. It has a Management Consultancy Division which was set up for attending to assignments originating from both healthy as well as sick industrial units. Industrial potential and credit plan surveys are also taken up by KITCO. For the sponsoring of Mini Industries Programme in the State, the Government has been availing the services of KITCO not only for preparation of project reports but also in regard to matters relating to the selection of sites, the training of entrepreneurs and the area potential surveys to identify viable projects. KITCO has offered its services for the establishment of Industrial Complexes from the stage of conception till commencement of operation.

#### *Small Industries Service Institute.*

13.235 The Small Industries Service Institute (SISI) functioning at Trichur as part of the Small Industries Development Organisation of the Central Government is the Central Government's agency in Kerala for the development of small scale industries in the State. The SISI provides a variety of services including technical advisory service, workshop and laboratory services, management consultancy service, assessment service, management training service, technological training, information service etc. The services offered by SISI are free of charge and are made available to entrepreneurs in all the areas. In order to provide service facilities to rural areas and disincentives to urban areas, it is necessary to impose some limitation on the functioning of SISI's. As such it is suggested that they should provide only post-investment consultancy to industrialists in urban areas and levy a fee for the provision of their services. The SISI should also be geared to lay sufficient emphasis on areas like process lay-out charts, production control and planning, testing and quality control etc.

#### *Finance*

13.236 The major requirement of small scale industries, viz. finance, will have to come from the different financial institutions. The role of these institutions in the Plan period 1978-83 is detailed below:

#### *Kerala Financial Corporation*

13.237 The Kerala Financial Corporation is one of the major financial agencies for providing fixed capital to small scale units in the State. It gives assistance to small industries within the State, public or private limited companies, co-operative societies, partnerships or sole proprietorships. It provides long term financial assistance for starting new industrial units and also for the expansion of existing units. The maximum amount of loan an industrialist can obtain from the Corporation is limited to Rs. 3 lakhs. The schemes of the Corporation include:

- (i) Technocrats assistance scheme which provides 90 per cent of the fixed cost of the project at one per cent below the normal rate of interest charged by the Corporation.
- (ii) Foreign exchange loan for import of plant and equipment from abroad.

- (iii) Scheme for providing seed capital to new industrial units in small scale sector at 3½ per cent below the normal lending rate.

#### *Banking Institutions*

13.238 At present the State Bank and the nationalised banks have evolved schemes by which they can render assistance to small scale industries for meeting their requirements of fixed capital as well as working capital. The most significant achievement of nationalised banks has been the extension of banking facilities to new areas and to new classes of borrowers. There is today a shift of emphasis from the insistence of tangible security to earning capacity or production potential in the case of small or poor borrowers. Nationalised banks and other commercial banks provide liberalised credit facilities to small scale industries under various schemes such as entrepreneur scheme, self-employment scheme, rural industries project scheme and panchayat level Mini Industrial Estate programme. Entrepreneur scheme envisages financial support for craftsmen and qualified entrepreneurs who have sound projects credit facilities up to a maximum of Rs. 2 lakhs is allowed under the scheme. Self-employment scheme has been evolved to encourage the technically qualified unemployed to take up self-employment by starting small industrial units. Financial assistance upto a maximum of Rs. 1 lakh is allowed under this scheme. Small scale units or artisans engaged in (or proposed to engage in) manufacturing, procuring activity of certain specified items of equipments are eligible to get financial assistance upto a maximum of Rs. 7,500 under the Rural Industries Project Scheme. The leading banks in the State are actively participating in the New Industries Programme launched in the State.

13.239 Recently the Reserve Bank of India has advised the banks to charge a rate of interest not exceeding 11 per cent on term loans of maturity of not less than 3 years to units falling under the following categories:—

- (a) Small scale units covered under the Credit Guarantee Scheme/and units promoted by technicians/entrepreneurs covered by the special guarantee scheme;
- (b) Small road transport operation and
- (c) Small units in the specified backward districts/areas

#### *State Government assistance*

13.240 The major share of finance required by the small industries come from the financial institutions. But from the practical point of view it may not be possible to completely do away with the Departmental assistance. Seed capital to intending entrepreneurs are provided at present on personal security or property security. Government provides financial assistance to Industrial Co-operatives also. The State is also responsible for other financial functions like share capital participation in the Small Industries Development and Employment Corporation and provision of interest subsidy to Kerala Financial Corporation.

#### *District Industries Centres*

13.241 In accordance with the new Industrial Policy enunciated by the Government of India, it has

been decided to set up a District Industries Centre in every district of the country under a phased programme. The scheme is proposed to be financed by the Government of India as a centrally sponsored scheme. Under the single roof of the District Industries Centre all the services and support required by small and village entrepreneurs will be provided. In the past there has been a tendency to proliferate schemes, agencies and organisations which have tended more to confuse the average small and rural entrepreneur than to encourage and help him. The focal point of development for small scale and cottage industries will be taken away from the big cities and State capitals to the district headquarters. Thus in each District Industries Centre there will be an agency to deal with all requirements of small and village industries.

13.242 The District Industries Centre will undertake economic investigation of the potential for development of the district including its raw material and other resources, supply of machinery and equipment, provision of raw materials, effective arrangements for credit facilities, marketing assistance and quality control, research, extension and entrepreneurial training. It is the intention of the Government to make the District Industries Centre also an operational mechanism for according sanctions and other facilities for setting up industries in rural areas and ensuring their continued viable operation by developing close linkage with the Rural Development Blocks on the one hand and with the specialised development institutions on the other. Institutions like Khadi and Village Industries Commission/Board, Directorate of Handlooms and Directorate of Handicrafts which are involved in grass root activities wherever these programmes are functioning will work through the District Industries Centres and integrate their activities with the District Industries Centre set up. As per the direction of the Government of India, the Kerala Government has also initiated action for the setting up of District Industries Centres in all the eleven districts of the State.

#### *Plan Proposals for 1978-83.*

13.243 It is proposed to commission 15,000 small scale units in the State during the period 1978-83. The State has today most of the infrastructure facilities needed to achieve this target. The pace of small industry growth will be accelerated during the plan period especially with the new industrial climate characterised by the recent industrial policy statement of the Government of India, liberalised import policy, curtailment of expansion by the industrial houses, liberalised policy of purchases from the small scale industries, greater credit facilities from the nationalised and other commercial banks and additional incentives for starting

small scale industries. The target of 15,000 small units is distributed as follows:—

Location	In the Mini Industrial Estates Major Industrial Estates	In the develop- ment plots	Industrial complexes	Outside Mini Industrial Estates	Total
(1)	(2)	(3)	(4)	(5)	(6)
City Corporations	300	450	500	800	6050
Municipal towns and Taluk head- quarters	1500			2500	
Panchayats	4450	500	..	4000	8950
Total	6250	950	500	7300	15000

13.244 The total capital investment in the State's industries sector as a result of the setting up 15,000 units will be about Rs. 150 crores worked out at the rate of Rs. 1 lakh of investment per unit. Nearly 80 per cent of the investment will be by way of institutional finance.

#### Beedi Industry

13.245 With the closure of prominent beedi factories of Cannanore district in November 1968, a large number of workers were thrown out of jobs. The Government, in the absence of any other alternative, organised the workers on a co-operative basis. Thus 20 primary societies, to cover the unemployed workers, and one central society were organised with the liberal assistance from the Government towards share capital and working capital loan. The production of beedies was started with the brand name "Kerala Dinesh Beedi" by the Co-operatives from 1-3-1969. Initially it was not possible to provide employment to all the beedi workers thrown out of employment but subsequently in a phased manner the society managed to absorb all the workers. At present the society provides employment to 13,850 workers and 500 staff members. The Central society purchases raw materials like kendu leaves, tobacco, labels and yarn and distribute them to the primaries. During 1976-77 the Central society purchased kendu leaves worth Rs. 57.70 lakhs, tobacco worth Rs. 51.72 lakhs and labels worth Rs. 1.68 lakhs and paid Rs. 19.86 lakhs as excise duty to the Central Government and Rs. 5.12 lakhs as sales tax to State Government. The Central Society purchased beedies worth Rs. 599 lakhs from primary societies.

13.246 In the plan for 1978-83 provision has been made to assist the Central society by participating in its share capital and the primaries by giving managerial grant and loans for the construction of worksheds. Encouraged by the success of the Cannanore Beedi Workers Society, it is also proposed to organise one more Central Society and its primaries in the State.

13.247 A short description of the various plan proposals under small scale industries is given below:

#### Continuing Schemes

(1) *Strengthening of Industries Commissionerate and Setting up of District Industries Centres (Outlay Rs. 75 lakhs)*

13.248 The plan proposal is to set up District Industries Centres as directed by the Government of

India. Setting up of District Industries Centres would lead to a reorganised district level set up with separate functional disciplines where all services and support required by small and village entrepreneurs will be provided in a package deal. During this plan period District Industries Centres will be established in all the eleven districts of the State. The State level and taluk level set up of the Industries Department will also be reorganised for the effective coordination and uniform implementation of the industries development programme contemplated during the plan period.

(2) *Training of Departmental personnel (Outlay Rs. 20 lakhs)*

12.249 The officers responsible for the implementation of the various industrial programmes will have to be sent to other States and abroad to keep them up to date with the latest technical advancement in the industrial field. Technical and Managerial training will also have to be imparted to the departmental personnel on a regular basis.

(3) *Setting up of District Information Centres, Technical Libraries and Documentation Centres (Outlay Rs. 10 lakhs)*

13.250 This scheme is aimed at equipping the information centres of the Industries Development Commissionerate and the eleven district offices with libraries and for setting up a documentation centre at head quarters where up to date data available from all sources for the promotional activities in small scale industries sector are to be collected, compiled and kept ready for easy reference. The scheme also aims at organising book corners in selected libraries where books on industries will be displayed.

(4) *Subsidy for Project Reports and Technical know how (Outlay Rs. 30 lakhs)*

13.251 The cost involved in the preparation of project reports, and acquisition of technical know how appropriate to Kerala's economic conditions will be subsidised. Such assistance will be applicable to imported technology also.

(5) *Subsidy for Proto-Type Development (Outlay Rs. 5 lakhs)*

13.252 This outlay is for giving financial assistance to individuals for development of proto-type or for fabricating new models for inventions.

(6) *Harijan Development Scheme - Loans to Harijan Entrepreneurs* (Outlay Rs. 75 lakhs)

13.253 This provision is for assisting Harijan entrepreneurs who possess real aptitude for starting new industries, but are not able to raise the required capital to start new small scale industries. Loans will be advanced to the entrepreneurs for procuring items of machinery, tools, raw materials and for other incidental expenses.

(7) *Schemes for Industries by Women Entrepreneurs* (Outlay Rs. 75 lakhs)

13.254 As part of the New Industries Programme programme for women entrepreneurs was also taken up with a view to organising small scale industries managed and run by women only. Under this programme about 120 units were organised in the State. It has been found that special type of assistance for industrial units for women entrepreneurs is necessary during the initial stages of organisation and production. Hence assistance by way of grant, to meet establishment charges, purchase of machinery and equipments, rent, cost of furniture etc. are suggested at the maximum rate of Rs. 10,000 per unit during the plan period.

(8) *Providing Additional Facilities in Existing Development Plots.* Outlay Rs. 10 lakhs

13.255 This provision is for improvements to existing roads, water supply, providing post offices, telephone and banking facilities etc. to certain development plots already set up by the Industries Department.

(9) *New Development Plots* (Outlay Rs. 30 lakhs)

13.256 It is proposed to set up new Development Plots in Kottayam, Idukki and Palghat districts. The required land will be acquired and developed by providing infrastructure facilities such as roads, water, power, post offices, banks etc. and allotted to entrepreneurs on hire purchase basis or out right purchase basis to set up small scale industries.

(10) *New Development Plots in Backward Areas* (Outlay Rs. 20 lakhs)

13.257 The provision is for setting up new development plots in the backward districts of Alleppey, Trichur, Malappuram and Cannanore.

(11) *Rent Subsidy to Industrial Estate* (Outlay Rs. 5 lakhs)

13.258 The sheds in industrial estates are given free of rent to unemployed engineers for a period of five years. As the industrial estates are owned by the Small Industries Development and Employment Corporation, (SIDEKO) the rent of such sheds is to be subsidised to SIDEKO by the State Government.

(12) *Expansion of Existing Production Centres and Glass Utility Centre* (Outlay Rs. 5 lakhs)

13.259 Till the end of the Fifth Five Year Plan fifty five small scale production centres, and a glass utility centre for the manufacture of table blown laboratory wares were established in the State. These units require expansion and modernisation for which

additional capital investment will be necessary. The amount provided is for this purpose.

(13) *Expansion of Existing Common Facility Service Centres and Starting of New Ones* (Outlay Rs. 30 lakhs)

13.260 The Common Facility Service Centre at Chenganacherry has to be expanded by providing modern equipments and testing facilities, as the facilities already available are inadequate for the units located in the industrial estate and around. It is also proposed to start more common facility service centres in the State. Instead of the traditional way of providing built-in space in the proposed industrial estates, the new common facility service centres will be set up first, and land made available near the facility centres to the entrepreneurs for constructing factory buildings.

(14) *Starting of Pilot Plants, Testing Centres and Quality Marking Units* (Outlay Rs. 15 lakhs)

13.261 This scheme envisages the setting up of pilot plants, testing centres and quality marking units where testing and marking of small scale industrial products can be carried out for maintaining the quality of the products. This will enable small scale industrial units to produce standard quality products which can expect to find better markets both inside and outside the State. It is proposed to provide testing facilities to the existing quality marking centres and testing centres, and also to establish more testing centres in the State to test more small scale industry products.

(15) *Surveys for Collection of Industrial Statistics and Preparation of Small Industries Directory* (Outlay Rs. 10 lakhs)

13.262 At present the Industries Department is not having a field machinery to collect, compile and maintain statistics relating to small scale industries. This causes considerable difficulty in furnishing information relating to small scale units. Hence it is proposed to create a field agency to feed the Department with various types of industrial statistics required from time to time.

(16) *Industrial Financing Co-operative Society* (Outlay Rs. 50 lakhs)

13.263 Nearly 2000 small scale industrial co-operative societies and cottage industrial co-operative societies (including Khadi and Village Industries) have been organised in the State. But adequate funds could not be provided to them at the right time, even though financial aid in the form of share capital loan, working capital loan, managerial grant etc. are being provided to them by the State. Commercial banks and even co-operative banks are reluctant to finance small scale units on the pretext of lack of security for the loans, feasibility and viability of the schemes. In the circumstances it is felt that there should be a separate financing institution to extend adequate and timely financial credit to the small industry sector. The formation of a separate industrial co-operative banking society at the headquarters with functionaries at the District and taluk level is proposed in the Plan.

- (17) *Share Participation and Strengthening of District Mini Industrial Estate Co-operative Societies* (Outlay Rs. 40 lakhs)

13.264 The District Mini Industrial Co-operative Societies have been organised in all the eleven districts of the State. Under each society ten mini industrial estates, each with ten units are envisaged. The District societies function is to help these units to avail themselves of financial and technical assistance. It is proposed to assist the District Mini Industrial Estate Co-operative Societies by way of Government share participation. An outlay of Rs. 40 lakhs is proposed for this purpose.

- (18) *Share Participation in Primary Industrial Co-operative Societies and Revitalisation of Industrial Co-operative Societies* (Outlay Rs. 25 lakhs)

13.265 The plan provision is for strengthening the potentially viable industrial cooperative societies, to revitalise the dormant societies, and to participate in the share capital structure of the societies in order to make them eligible for institutional finance.

- (19) *Managerial and Technical Assistance to Industrial Co-operatives* (Outlay Rs 10 lakhs)

13.266 The industrial cooperative societies are not in a position to meet the establishment and contingent expenses, and to acquire essential equipments and machinery from their own resources during the early periods of their working. Hence a subsidy to meet the managerial expenses including rent on a tapering scale for a period of four years and grant for machinery, tools and equipments subject to certain limitations will be given to the industrial cooperatives during the plan period.

- (20) *Share Participation in Unemployed Engineers Co-operative Societies* (Outlay Rs. 10 lakhs)

13.267 Under the special employment programme 24 societies of unemployed engineers were registered in the State. Most of the societies have not been able to start production in time due to various reasons including the enrolment of employee members far more than the capacity. In order to make these societies viable it is proposed to pay off the share amounts to the members who are in excess of the requirements and who cannot be provided with employment. As the funds of the societies are locked up in fixed and floating assets it is proposed to extend additional share participation by Government in such cases for the societies to pay off the surplus members. Hence an outlay of Rs. 10 lakhs is provided in the State sector under this scheme.

- (21) *Procurement of Project Reports, Patent Rights and Managerial and Technical Assistance.* (Outlay Rs. 7 lakhs).

13.268 Subsidy to small scale industrial co-operatives organised under the special employment programme to get project reports and patent rights of designs of machinery, and grant to meet the cost of technical or managerial personnel employed for these purposes is proposed to be met under this plan provision of Rs. 7 lakhs.

- (22) *State award for best export performance* (Outlay Rs. 2 lakhs.)

13.269 It is proposed to give awards for best export performance from small scale units with the intention of encouraging them in exporting small industry products. An outlay of Rs. 2 lakhs is suggested for this scheme.

- (23) *Seed capital to Entrepreneurs to Start Industries* (Outlay Rs. 500 lakhs.)

13.270 The main object of the scheme is to assist industrial units set up by entrepreneurs under the New Industries Programme who are unable to raise margin money from their own resources even though financing institutions have come forward to help them by giving 70 to 80 per cent of their capital requirements. In such cases the Government would provide margin money as soft loan. The provision under this scheme can be utilised for seed capital loan to units in mini industrial estates and S.S.I. units under semi urban areas as well as margin money for industrial complexes proposed to be set up in semi urban areas.

- (24) *Interest subsidy to Kerala Financial Corporation* (Outlay Rs. 250 lakhs.)

13.271 Loan assistance to small scale units is given by the Kerala Financial Corporation at a low rate of interest. The provision of Rs. 250 lakhs is to give subsidy to the Corporation towards the difference in the rate of interest at which loans are issued to small scale units and the usual lending rate of the Corporation.

- (25) *Aid to Small Industries Associations* (Outlay Rs. 10 lakhs)

13.272 This amount is for giving financial assistance by way of grant against the expenses incurred by the District level and State level Industries Associations.

- (26) *Subsidy for Cost of Construction of Mini Industrial Estates* (Outlay Rs. 150 lakhs.)

13.273 The cost of construction of buildings in the mini industrial estates has been on the increase due to the rise in prices of construction materials, and cost of labour. This has resulted in a corresponding rise in rent to be realised from the entrepreneur industrialists. In order to give some relief on the amount of rent payable it is proposed to subsidise the cost of construction of mini industrial estates at the rate of Rs. 0.50 lakhs per unit.

- (27) *Assistance for revitalisation of sick Small Scale Units* (Outlay Rs. 50 lakhs.)

13.274 Small Industries Development and Employment Corporation (SIDEKO) is operating the scheme for the revival of sick small scale units. The amount provided in the Plan viz. Rs. 50 lakhs, will be entrusted to SIDEKO to be handed over as margin money loan to sick units according to the revival project reports.

(28) *Share Participation in SIDECO (Outlay Rs. 50 lakhs.)*

13.275 SIDECO in the new corporate set up designated to have manifold functions right from research and development to marketing the products of the small scale sector. The amount is provided to strengthen the share capital base of SIDECO.

(29) *Departmental Publicity-cum-Display Van (Outlay Rs. 5 lakhs.)*

13.276 The provision is for meeting the fuel charges and other expenses of the departmental mobile demonstration van used for the exhibition of ancillary items required for the major industrial units of the State.

(30) *Trade Fairs and Exhibitions (Outlay Rs. 20 lakhs)*

13.277 This amount is intended for participation by the Department in various exhibitions conducted in and outside Kerala.

(31) *Share participation in Primary and Central Beedi Societies (Outlay Rs. 10 lakhs.)*

13.268 The outlay is for participation by Government in the share capital structure of the Central and primary beedi workers cooperative societies, so as to strengthen their equity base and thus enable them to avail of institutional finance in the long run.

(32) *Managerial Grant to Primary Beedi Societies (Outlay Rs. 10 lakhs.)*

13.279 The amount represents the grant to be paid to the primary beedi workers' cooperative societies of Cannanore Dinesh Beedi Workers Central Co-operative Society towards the salary of departmental officers deputed to work as paid secretaries.

(33) *Financial Assistance for the Construction of Workshop in Beedi Co-operative Societies (Outlay Rs. 5 lakhs.)*

13.280 At present beedi workers, cooperative societies are accommodated in rented buildings. Hence the workers could not be properly accommodated to ensure better quality and turn over of work. Today the societies are not in a position to raise funds for the construction of workshops. Therefore loans are proposed to be issued to the societies for the construction of workshop cum office buildings during the plan period.

(34) *Additional Facilities in the Existing Industrial Estates and Functional Estates (Outlay Rs. 5 lakhs.)*

13.281 The scheme is for providing necessary additional facilities to the existing industrial estates and also for setting up a functional industrial estate for leather at Kasaragodet to be implemented by SIDECO.

*New Schemes*(1) *Expansion of KITCO (Outlay Rs. 5 lakhs)*

13.282 For the planning and promotion of several industrial complexes KITCO will provide consultancy

support from the concept stage to commissioning of units on a turn key basis. Post commissioning consultancy will also be provided by KITCO. This organisation intends to evolve a detailed procedure for the identification and training of entrepreneurs for the small scale sector. These activities warrant considerable enhancement of the strength of professional staff in KITCO. The outlay proposed is for meeting part of the expenditure on this account.

(2) *Subsidiary Corporation for Marketing and Export Promotion (Outlay Rs. 20 lakhs)*

13.283 The function of the Marketing Division of the Small Industries Development and Employment Corporation (SIDECO) is very limited at present. Hence it has become necessary to set up a separate marketing organisation to look after the affairs relating to the marketing of small scale industrial products in the internal and external markets. It is therefore proposed to set up a marketing corporation as a subsidiary to the SIDECO to market the small scale products within and outside the State, and also to promote the export of these products to foreign countries.

(3) *Subsidy for Publication of Periodicals, Pamphlets etc., for Entrepreneurial Guidance (Outlay Rs. 3 lakhs)*

13.284 The Scheme aims at giving subsidy to Small Industries Development and Employment Corporation to publish the monthly magazine "Vyavasaya Kerala" and also to bring out a fortnightly news and tender, bulletin.

(4) *District Level Technical Consultative Committee (Outlay Rs. 3 lakhs)*

13.285 The plan provision is for meeting the travelling allowance of members of the District Level Technical Consultative Committees constituted to render advice and guidance to prospective industrialists.

(5) *Stipendary Training Programme for Scheduled Caste/Scheduled Tribe Entrepreneurs. (Outlay Rs. 3 lakhs)*

13.286 Owing to lack of entrepreneurial talent and want of technical knowledge, only very few entrepreneurs belonging to scheduled castes and scheduled tribes are coming forward to run industrial units. This renders it impossible to implement certain schemes earmarked for these people. To overcome this difficulty a State level training programme is proposed to be arranged in consultation with the Harijan Welfare Department and Kerala State Development Corporation for Scheduled Castes and Scheduled Tribes once in a year. The plan provision is for giving stipend to the trainees.

(6) *New Development Plots for Mini Industrial Estates in Rural Areas (Outlay Rs. 30 lakhs).*

13.277 It is found that in certain panchayats where sufficient number of entrepreneurs are not forthcoming but where there is good scope for industrial development, the panchayats are not financially sound for making available land for setting up mini industrial estates. In such cases the Department proposes to

acquire land, and provide necessary infrastructure as in the case of Development Plots.

- (7) *Major Industrial Estates in District and Taluk Headquarters Municipal Towns and Townships.* (Outlay Rs. 60 lakhs).

13.288 The State Government has a proposal to set up major estates in municipal areas with facilities for setting up 25 small scale units in each centre and industrial townships in district headquarters with facilities for setting up 100 units in each centre. The amount earmarked in the Plan is to make available the margin money required for the small scale units in these centres.

- (8) *Construction of Mini Industrial Estates* (Outlay Rs. 600 lakhs).

13.289 Under the New Industries Programme, mini industrial estates are being set up in every panchayat. While the panchayat is to make available the land, the construction of building and purchase of machinery will be carried out with the help of institutional finance. The State Government has to provide margin money to entrepreneurs coming under this programme.

- (9) *Setting up of an Entrepreneurial Institute and Training of Entrepreneurs* (Outlay Rs. 30 lakhs)

13.290 One of the main factors affecting the industrialisation of Kerala is the lack of entrepreneurial talents. A coordinated and concerted effort therefore should be made to stimulate and motivate potential entrepreneurs to undertake small scale industrial activities. It is proposed to establish an Institute to impart training in such a manner as to meet the requirements of different categories of industries and equip persons to become full fledged entrepreneurs, proprietors or managers of small scale units.

- (10) *Survey for Identification of Viable and Potentially Viable Cooperative Societies* (Outlay Rs. 5 lakhs).

13.291 The working of a number of existing industrial cooperative societies is unsatisfactory. It is necessary to locate viable and potentially viable societies and plan suitable schemes for their revitalisation. The outlay provided is for conducting a survey for this

- (11) *Managerial and Technical Assistance to District Mini Industrial Co-operative Societies* (Outlay Rs. 10 lakhs.)

13.292 The Plan provision is for giving grant to the eleven district mini industrial estate cooperative societies towards the cost of staff posted there and also to acquire furniture and other necessary office equipments.

- (12) *Grant towards Reserve Fund* (Outlay Rs. 5 lakhs)

13.293 As part of the revitalisation programme of industrial co-operative societies, it is proposed to issue grant towards reserve fund to the revitalised societies so that the net disposable resources position of the

societies can be improved so as to enable them to avail of institutional finance.

- (13) *Subsidy Towards Loss of Interest on Reserve Bank of India Credit.* (Outlay Rs. 10 lakhs)

13.294 The scheme of financing small scale industrial co-operative societies under the RBI Scheme of finance has been introduced in the State from 1976-77. In order to make the credit facilities available to the societies at a lower rate of interest, subsidy to recover loss of interest is proposed to be reimbursed.

- (14) *Margin Money Refund of Share Value Loan Assistance to Engineers Technocrats and their Co-operatives* (Outlay Rs. 10 lakhs).

13.295 As the societies formed under the special employment programme for engineers and technicians may not be having readily available margin money to avail of institutional finance, government share participation or loan towards the margin money requirements will have to be provided.

- (15) *Trade Delegations* (Outlay Rs. 5 lakhs)

13.296 The plan provision is for meeting the expenses of trade delegations to foreign countries. These delegations will explore overseas markets with a view to exporting products manufactured by the small scale industrial units of the State.

- (16) *Strengthening of Export Promotion Wing* (Outlay Rs. 3 lakhs).

13.297 This provision is to strengthen the staff of the export promotion section of the Industries Commissionerate which is at present inadequate to cope with the work relating to export promotion.

- (17) *Internal Market Survey* (Outlay Rs. 5 lakhs)

13.298 The Plan provision is for meeting the expenses for conducting a survey of the products of small scale industrial units in the State and to find home market for the products.

- (18) *Foreign Market Survey* (Outlay Rs. 5 lakhs)

13.299 It is proposed to conduct overseas market surveys of selected products of small scale sector in the State in all prospective foreign countries, with the intention of assisting small scale units in the export front.

- (19) *Organisation of District Level Marketing Depots* (Outlay Rs. 10 lakhs)

13.300 This scheme is for organising marketing depots in all districts in the State through SIDECO in order to display and sell the small scale products, and also to procure orders for the supply of small scale products.

- (20) *Subsidy for Advertisement, Publicity and Other Market Support for Small Scale Products* (Outlay Rs. 7 lakhs)

13.301 It is proposed to assist the small scale units in their effort to promote sales by giving subsidy to meet

part of the cost of their participation in trade fairs exhibitions and other publicity measures.

- (21) *Subsidy for Registration with Export Promotion Council, Indian Standards Institution etc.* (Outlay Rs. 5 lakhs)

13.302 The Plan outlay is for giving subsidy for small scale units for getting registration with export promotion councils, commodity boards, Indian Standards Institution etc, and for establishing testing laboratories.

- (22) *Modernisation Subsidy* (Outlay Rs. 20 lakhs)

13.303 The outlay proposed is for giving financial assistance to small scale units for modernisation of their plant and machinery in the context of heavy competition from large scale units.

- (23) *Interest Subsidy to Small Scale Units* (Outlay Rs. 100 lakhs)

13.304 The object of the scheme is to give some relief to units started in mini industrial estates on the interest which they are bound to pay on term loans availed of from banks and other financial institutions. The difference between the actual rate of interest and the subsidised rate of interest (5½%) will be reimbursed for an initial period of five years from the date of availing of the loan.

- (24) *Publication of Industries Guide, pamphlets, Research reports, Newspaper supplements etc.* (Outlay Rs. 7 lakhs)

13.305 The provision is required to publish the Industries Guide, Pamphlets, Research Reports etc. and to give newspaper supplements in order to publicise the various activities of the Department and small industries in general.

- (25) *Setting up of a New Beedi Workers' Industrial, Primary and Central Co-operative Society* (Outlay Rs. 40 lakhs)

13.306 The experience gained in the organisation and working of Cannanore Beedi Workers Industrial Co-operative Society shows that there is good scope for rehabilitation and reorientation of beedi workers in the unorganised sector. It is proposed to organize one more beedi workers central co-operative society with a few primary beedi workers' co-operative societies as its members in another centre of the State where there is scope for the working of such societies.

- (26) *Tribal Area Development Plans* (Outlay Rs. 1 lakh)

13.307 The scheme is proposed to develop the people belonging to scheduled tribes by providing financial assistance to them for their activities connected with small industries sector.

- (27) *Industrial Complexes* (Outlay Rs. 255 lakhs)

13.308 During the plan period it is proposed to establish 24 industrial complexes in the district head-

quarters and municipal towns. Each complex will have a number of units and will be supplementary to each other having considerable inter-dependency based on a particular technology. The industrial complexes proposed are:—

Industrial Complex	Outlay (Rs. lakhs)
1. Garment	5
2. Ceramic and Sanitary wares	5
3. Leather and Leather Goods	10
4. Glass	15
5. Building Materials	7
6. Fan	7
7. Dyes and Paints	7
8. Automobile	15
9. Industrial Fasteners	10
10. Hand tools and Cutting Tools	15
11. Socks Knitting	7
12. K. S. E. B. Ancillary	7
13. Shipyard Ancillary	15
14. Chemical Industry	10
15. Electrical and Electronic Goods	10
16. Agro-machinery	10
17. Forest Industries	10
18. Forest based Industries	10
19. Drugs and Pharmaceuticals	20
20. Marine Products	10
21. Rubber Products	20
22. Bicycle	10
23. Typewriter	10
24. Sewing Machines	10
<b>Total</b>	<b>Rs. 255 lakhs</b>

13.309 The land required for these complexes will be acquired and developed, buildings constructed and margin money assistance rendered during the plan period. The Small Industries Development and Employment Corporation (SIDECCO) will be the corporate set up for implementing the scheme, and the plan provision will be made available to SIDECCO.

- (28) *Equity Participation* (Outlay Rs. 50 lakhs)

13.310 Under this scheme it is intended to invest equal amounts on capital investment of small scale units which are running on a loss or which have become sick so that such units are made viable and rendered eligible for institutional finance.

- (29) *Issue of Loans for Construction of Factory Buildings in Rural Areas under District Industries Centre* (Outlay Rs. 275 lakhs)

13.311 This scheme is proposed in line with the Rural Industries Project Scheme which will be stopped consequent on the formation of the District Industries Centres. As per the new scheme, the entrepreneurs will be helped to set up, their own factory buildings with the help of long term loan facilities on reasonable rate of interest.

- (30) *Interest-free Working Capital Loan for Newly Started Tiny Units in Rural Areas* (Outlay Rs. 150 lakhs)

13.312 It is proposed to provide working capital facilities to tiny units which are incapable of availing



of facilities from financial institutions, as they are not in a position to give any collateral or personal security to the financial institutions. This facility will be made available for the five years of the Plan period.

- (31) *Re-imbusement of Sales Tax paid by Industrial Units as Loans, (Outlay Rs. 300 lakhs)*

13.313 The sales tax loan scheme introduced in 1971 continued up to 1976, but subsequently it was discontinued due to some serious drawbacks in its implementation. The present scheme is to give reimbursement of sales tax paid by the small scale units for a period of three years from the date of first sale on proper certificates from the sales tax authorities.

- (32) *Subsidy towards Sales Tax paid on Capital Investment of New Small Scale Units. (Outlay Rs. 60 lakhs)*

13.314 The purpose of the scheme is to reimburse the Sales Tax and Central Sales Tax paid by small scale units while acquiring plants, machinery, tools etc. for setting up units in selected areas. This will help the units to reduce the burden of preliminary capital expenditure.

- (33) *Transport Subsidy for Plant and Machinery (Outlay Rs. 25 lakhs)*

13.315 The scheme is to provide incentive in the form of subsidy to small scale industrial units under the New Industries Programme on the expenses of transportation of plant and machinery for starting the scheme approved by the Department. The subsidy will be limited to 50 per cent of the expenses on transportation from the place of purchase to the unit.

- (34) *State Subsidy in Capital Investment in Selected Areas (Outlay Rs. 150 lakhs)*

13.316 It is proposed to provide 10 per cent subsidy on capital investment of industrial units set up under the New Industries Programme for re-investment in their expansion activities or to clear arrears of liabilities. This scheme is quite similar to the central subsidy scheme now in operation in the most backward districts of the State.

- (35) *Subsidy for Power Wiring of New Units (Outlay Rs. 25 lakhs)*

13.317 It is proposed to give subsidy to small scale industrial units for getting electricity at a concessional rate, and for meeting a portion of the expenses connected with power connection and wiring of the unit. The subsidy will be limited to 25 per cent of the expenses incurred in acquiring power connection and also 25 per cent of the power charges of the unit for the first five years from the date of starting commercial production.

- (36) *Subsidy Towards Water Charges in Rural Areas (Outlay Rs. 5 lakhs)*

13.318 The provision is to meet a portion of the expenses incurred by small scale industrial units in getting water connection in rural areas, and also to give fifty per cent subsidy on water charges incurred by the units.

- (37) *Kasaragod Development (Outlay Rs. 5 lakhs)*

13.319 The scheme is for giving financial assistance to entrepreneurs who come forward to set up industrial units in the Kasaragode area to help the industrial development of the area as part of the Kasaragode Development Scheme.

#### *Centrally Sponsored Schemes*

- (1) *Central Subsidy for Units in Backward Districts (Outlay Rs. 1500 lakhs)*

13.320 The scheme envisaged by the Government of India for giving subsidy to industrial units set up in the three most backward districts of Kerala is in operation for the last few years. Subsidy at the rate of 10 to 15 per cent of the fixed capital investment of industrial units set up in the most backward districts is initially provided by the State Government and later on reimbursed by the Central Government. The scheme is being successfully implemented in the State in the districts of Alleppey, Malappuram and Cannanore. The provision suggested in the plan is for giving subsidy to all eligible units in these three districts during the plan period 1978-83.

- (2) *District Industries Centres (Outlay Rs. 225 lakhs)*

13.321 Steps have been initiated to establish District Industries Centres in all the eleven districts of the State where the services and support required by small and village entrepreneurs will be provided as a package deal. This scheme is proposed to be financed by Government of India as a centrally sponsored scheme. The contribution expected from the Centre for the implementation of the scheme is Rs. 225 lakhs.

- (3) *Marketing Assistance (Outlay Rs. 100 lakhs)*

13.322 During the Plan period 1978-83 it is proposed to set up a Marketing Corporation as a subsidiary to the Small Industries Development and Employment Corporation (SIDEKO) to market the small scale industry products within the State and outside the State and also to promote the export of small scale industry products to foreign countries. SIDEKO has now a marketing division, but its functions are limited. With the constant increase in the number of small scale units it becomes necessary to set up a separate marketing corporation to look after the marketing of small scale industry products. The Central Government is expected to invest an amount of Rs. 100 lakhs towards its share capital.

- (4) *Seed/Margin Money to Entrepreneurs (Outlay Rs. 500 lakhs)*

13.323 The object of this scheme is to assist the industrial units set up by the entrepreneurs who are unable to raise margin money from their own resources even though financial institutions have come forward to help them by giving 70 to 80 per cent of capital requirements. In such cases Government should come forward to provide margin money as soft loan. The provision suggested under this scheme is to be utilised for seed capital loan for units in mini industrial estates and other small units in semi-urban areas, and for margin money for entrepreneurs in the industrial complexes proposed to be set up in semi-urban areas.

13.324 The schemewise outlay under small scale industries is presented in Table 13.2

TABLE 13.2  
Small Scale Industry—Scheme-wise outlay

Sl. No.	Schemes	State sector outlay (Rs. lakhs)
(1)	(2)	(3)
<i>A. continuing Schemes</i>		
1.	Strengthening of Industries Commissionerate and setting up of District Industries Centres	75.00
2.	Training of Departmental Personnel	20.00
3.	Setting up of District Information Centres, Technical Libraries and Documentation Centres	10.00
4.	Subsidy for Project Reports and Technical know-how	30.00
5.	Subsidy for Proto Type Development	3.00
6.	Harijan Development Scheme—Loans to Harijan Entrepreneurs	75.00
7.	Schemes for Women Entrepreneurs	10.00
8.	Providing Additional Facilities in Existing Development Plots	15.00
9.	New Development Plots	30.00
10.	New Development Plots in Backward Areas	20.00
11.	Rent Subsidy to Industrial Estates	5.00
12.	Expansion of Existing Production Centres and Glass Utility Centre	5.00
13.	Expansion of Existing Common Facility Service Centres and Starting of New Ones	30.00
14.	Starting of Pilot Plants, Testing Centres and Quality Marking Units	15.00
15.	Surveys for Collection of Industrial Statistics and Preparation of Small Industries Directory	10.00
16.	Industrial Financing Co-operative Society	50.00
17.	Share Participation and Strengthening of District Mini Industrial Estate Co-operative Societies	40.00
18.	Share Participation in Primary Industrial Co-operative Societies and Revitalisation of Industrial Co-operative Societies	25.00
19.	Managerial and Technical Assistance to Industrial Co-operatives	10.00
20.	Share Participation in Unemployed Engineers' Co-operative Societies	10.00
21.	Procurement of Project Reports, Patent Rights and Managerial and Technical Assistance	7.00
22.	State Awards for Best Export Performance	2.00
23.	Seed Capital to Entrepreneurs to Start Industries	500.00
24.	Interest Subsidy to Kerala Financial Corporation	250.00
25.	Aid to Small Industries Associations	10.00
26.	Subsidy for Cost of Construction of Mini Industrial Estates	150.00
27.	Assistance for Revitalisation of Sick Small Scale Units	50.00
28.	Share Participation in SIDECO	50.00
29.	Departmental Publicity-cum-Display Vans	5.00
30.	Trade Fares and Exhibitions	20.00
31.	Share Participation in Primary and Central Beedi Societies	10.00
32.	Managerial Grant to Primary Beedi Societies	10.00
33.	Financial Assistance for the Construction of Worksheds in Beedi Co-operative Societies	5.00
34.	Additional Facilities in the Existing Industrial Estates and Functional Estates	5.00
<i>B. New Schemes</i>		
35.	Expansion of KITGO	5.00
36.	Subsidiary Corporation for Marketing and Export Promotion	20.00
37.	Subsidy for Publication of Periodicals, Pamphlets etc., for Entrepreneurial Guidance	3.00
38.	District Level Technical Consultative Committee	3.00
39.	Stipendary Training Programme for Scheduled Castes/Scheduled Tribe Entrepreneurs	3.00
40.	New Development Plots for Mini Industrial Estates in Rural Areas	30.00
41.	Major Industrial Estates in District and Taluk Head Quarters, Municipal Towns and Townships	60.00
42.	Construction of Mini Industrial Estates	600.00
43.	Setting up of an Entrepreneurial Institute and Training of Entrepreneurs	30.00
44.	Survey for Identification of Viable and Potentially Viable Co-operative Societies	5.00
45.	Managerial and Technical Assistance to District Mini Industrial Co-operative Societies	10.00
46.	Grant towards Reserve Fund	5.00
47.	Subsidy Towards Loss of Interest on Reserve Bank of India credit	10.00
48.	Margin Money Refund of Share Value Loan Assistance to Engineers, Technocrats and their Co-operatives	10.00
49.	Trade Delegations	5.00
50.	Strengthening of Export Promotion Wing	3.00
51.	Internal Market Survey	5.00
52.	Foreign Market Survey	5.00
53.	Organisation of District Level Marketing Depots	10.00
54.	Subsidy for Advertisement, Publicity and Other Market Support for Small Scale Products	7.00
55.	Subsidy for Registration with Export Promotion Council Indian Standards Institution etc.	5.00
56.	Modernisation Subsidy	20.00
57.	Interest Subsidy to Small Scale Units	100.00
58.	Publication of Periodicals, Pamphlets Research Reports, Newspaper Supplements etc.	7.00
59.	Setting up of a New Beedi Workers Industrial Primary and Central Co-operative Society	40.00
60.	Tribal Area Development Plans	1.00
61.	Industrial Complexes	255.00
	(1) Garment Complex	5.00
	(2) Ceramic and Sanitary wares	5.00
	(3) Leather and Leather goods	10.00
	(4) Glass	15.00
	(5) Building Materials	7.00
	(6) Fan Complex	7.00
	(7) Dyes and Paints Complex	7.00
	(8) Automobile Complex	15.00
	(9) Industrial Fasteners	10.00
	(10) Hand Tool and Cutting Tools	15.00
	(11) Socks Knitting	7.00
	(12) K.S.E. Board Ancillary	7.00
	(13) Ship Yard Ancillary	15.00
	(14) Chemical Industry Complex	10.00
	(15) Electrical and Electronic Complex	10.00
	(16) Agro Machinery Complex	10.00
	(17) Forest Industries Complex	10.00
	(18) Forest Based Industries Complex	10.00
	(19) Drugs and Pharmaceuticals	20.00
	(20) Marine Products Complex	10.00
	(21) Rubber Products Complex	20.00
	(22) Bicycle Complex	10.00
	(23) Typewriter Complex	10.00
	(24) Sewing Machine Complex	10.00
62.	Equity Participation	50.000
63.	Issue of Loans for Construction of Factory Building in Rural Areas under District Industries Centres	275.00

(1)	(2)	(3)
64.	Interest Free Working Capital Loans for Newly Started Tiny units in Rural Areas	150.00
65.	Reimbursement of Sales Tax paid by Industrial units as Loan	300.00
66.	Subsidy towards Sales tax paid on Capital Investment of New Small Scale Units	60.00
67.	Transport Subsidy for Plant and Machinery	25.00
68.	State Subsidy in Capital Investment in Selected Areas	150.00
69.	Subsidy for Power Wiring of New Units	25.00
70.	Subsidy Towards Water Charges in Rural Areas	5.00
71.	Kasaragode Development	5.00
		3864.00
<i>C. Centrally Sponsored Schemes</i>		
1.	Central Subsidy for Units in Backward Districts	1500.00
2.	District Industries Centres	255.00
3.	Marketing Assistance	100.00
4.	Seed/Margin Money to Entrepreneurs	500.00
		2325.00

## 2. Handloom and Powerloom Industry

13.325 Handloom industry is the second largest traditional industry in Kerala providing employment for over 2.5 lakh persons of which 1.2 lakhs get direct employment in the production process and the remaining in pre-loom and post-loom processing work. The important aspect of this employment is that it is largely in the rural and semi-urban areas. The industry contributes significantly to export of textiles from India. According to the Census of Handlooms conducted in 1976, there were 90,030 looms in Kerala distributed among 21,681 households and 2,057 non household units. Value of production of handloom cloth in 1976-77 was Rs.32 crores. The annual export of handloom cloth directly by Kerala exporters and through exporters based in other States is quite significant. The 'crepe' cloth was a special handloom variety produced in the handlooms in Cannanore area. Now this variety is being produced all over Kerala.

13.326 Though the handloom industry could rehabilitate itself to some extent and improve its productive and marketing services as a result of the liberal help extended by the Central and State Governments, there is the continuous threat from the mill sector with its advances in production technology, designs and marketing strategy. In addition, the problems of soaring prices of raw materials, accumulation of unsold stock, stiff competition from organised mill sector and marketing problems continue to persist in this sector. Regular and continuous employment of handloom weavers could be assured only by adequate and timely supply of raw materials at reasonable prices. The price of raw material has increased by about 50 per cent during the last five years. The mill sector has the advantage of consuming yarn produced at spindle point without any additional element of handling cost. On the other hand, the handloom industry has to pay extra cost for yarn by way of bundling, packing transporting, handling etc. At present about 50 per cent of the total requirement of yarn in the handloom sector of Kerala is being met by the spinning mills of other States. Most of these mills are composite mills

and they are often reluctant to part with yarn of higher counts.

13.327 The main problem facing the industry is the occasional glut in the market. Owing to the accumulation of stock, the Central and State Governments have often come to the rescue of this industry by allowing rebate on the sale of handloom cloth. It is estimated that the value of unsold stock of handloom cloth by the end of 1977-78 is Rs.20 crores. Of this, cloth worth about Rs.5 crores was produced by the co-operative sector.

13.328 Minimum wages for handloom workers were introduced with effect from 1-4-1974 increasing the earning capacity of the weavers. But the industry in Kerala is facing competition from neighbouring States where the cost of production and in turn the selling prices of handloom cloth are much lower mainly because the minimum wage has not been introduced there.

13.329 In order to attract consumers, diversification of production, evolution of new types of handloom fabrics and blended fabrics are necessary in the new as well as in the traditional markets. But the industry here continues with its traditional products and hence it gets only a secondary preference from the consumer.

### *Progress under the Fifth Plan*

13.330 In the Fifth Plan, a provision of Rs.340 lakhs was earmarked for handloom development. The total expenditure for the four years of the plan period (1974-78) was Rs.385.70 lakhs. The scheme for payment of rebate on the sale of handloom cloth often gets the major share of the expenditure under handloom Schemes like Government participation in the share capital of primary weavers co-operative societies, Handloom Apex Society and Kerala Handloom Finance and Trading Corporation and the setting up of intensive development projects and export promotion project are the other major programmes for which considerable amounts are being earmarked in the Plan. Allotments is also made for providing social and welfare amenities to the weavers and for improving the quality of goods and diversification of products to suit market tastes. The Common Facility and Design Centre for handloom weavers which imparts training to weavers is now under the management of the Handloom Apex Society. The Centre also provides technical advice for introducing new designs.

13.331 In July 1975 a Committee constituted by Government drew up a comprehensive scheme for the development of handloom industry in Kerala and suggested a time-bound programme for implementing it within a period of five years. On the basis of this report the Government of India sanctioned two intensive development projects covering 10,000 looms with an outlay of Rs.185 lakhs each, and an export production centre covering 1000 looms with an outlay of Rs. 40 lakhs. These schemes which are being implemented through the Handloom Finance and Trading Corporation are mainly aimed at assisting the handloom industry in the private sector for diversification, quality improvement and marketing of products. Under the auspices of the Intensive Development Project, Trivancrum, six factory type industrial co-operative societies providing

employment to 1000 weavers, and under the Cannanore Project, seven factory type industrial co-operative societies with 100 looms each providing employment to 1200 people have been organised. The export promotion project in Cannanore has given loans and grants for the expansion of weavers' co-operative societies and export items are being produced in 80 looms. Another five societies have been newly registered with 100 looms each. These societies will employ 800 people including 500 weavers who will produce exportable materials.

13.332 The State Government have realised the significance of co-operative movement in handloom sector and on the basis of the recommendations of the Sivaraman Committee on handlooms, have worked out and put into operation schemes for strengthening the co-operative sector. Accordingly programmes have already been initiated to bring at least sixty per cent of the total looms in the State under co-operative fold. About 33,000 looms have already been enlisted under co-operatives and 27,000 more looms have to be brought under co-operative fold within the first two years of the Plan period 1978-83.

#### *Plan Proposals for 1978-83*

13.333 A total provision of Rs.880 lakhs is earmarked for handloom development in this Plan. Of this an amount of Rs. 813.50 lakhs is for the continuation of the existing schemes, and Rs. 66.50 lakhs is for new schemes. The main objectives of handloom development in the present five year plan are:

- (i) ensuring a minimum of 300 working days in an year, for the ninety thousand and odd handlooms in the State;
- (ii) improving the quality of goods and diversification of products;
- (iii) checking the cost of production of handloom cloth without adversely affecting the wages of workers;
- (iv) increasing production by bringing more looms into the co-operative fold, and by expansion and organisation of factory type industrial co-operatives;
- (v) creating and maintaining a steady market demand for handloom cloth in this world of changing tastes and fashions.
- (vi) ensuring better living conditions to the workers in this industry.

13.334 With these objectives in view, the following schemes are identified for implementation during the Plan period.

#### *Continuing Schemes*

##### *Expansion and Organisation of Weavers Industrial Co-operatives (Outlay Rs.32 lakhs)*

13.335 A peculiar feature of handloom industry in Kerala is the existence of weavers who have no looms of their own. Those weavers can be provided with regular employment if they are brought under factory type

weavers' co-operative societies. The majority of weavers in the co-operative sector are registered with the primary weavers co-operative societies. If the weavers are organised to work in groups of 100 to 150 under a common roof, the productivity, income and quality of goods produced will increase. But the collective weaving centres organised under the primary weavers societies were not successful to the desired extent. Several problems cropped up when there were two types of weaving viz., collective weaving and household weaving. In order to tide over this difficulty more and more collective weaving centres with 100 or more looms have to be organised wherever feasible. It is proposed to organise 30 new industrial co-operative societies during the plan period 1978-83. One society will require Rs. 5 lakhs for non-recurring expenditure and Rs.2 lakhs for working capital.

13.336 At present there are 60 industrial co-operative societies working on factory basis. But most of them are not working to full capacity. In order to ensure full utilisation of capacity and make them viable and self supporting they have to be provided with adequate finance. It is proposed to give assistance at the rate of Rs.2.75 lakhs for capital expenditure and Rs.1 lakh as margin money for working capital to thirty existing weavers industrial societies. In addition, managerial grant for three years on a tapering basis (the amount limited to Rs.36,000 per year) will be given to each society.

#### *Strengthening of Primary Weavers Societies*

13.337 It is proposed to bring 60,000 looms under co-operative fold by the end of 1979-80. In order to achieve this target new primary societies have to be organised and existing societies strengthened. The following programmes are proposed under the scheme:

##### *Share Participation to Primary Societies (Outlay Rs.50 lakhs)*

13.338 It is proposed to strengthen the share capital base of primary societies with Central assistance. The schemes will cover 40,000 new looms and 10,000 existing looms at the rate of Rs.200 per loom. The matching contribution of the State will be Rs.50 lakhs.

##### *Managerial Assistance (Outlay Rs. 47 lakhs)*

13.339 The financial position of many of the primary societies do not permit the appointment of experienced staff in the initial stages of their working. This acts as a deterrent to their progress. Therefore managerial assistance has to be provided to many of the primary societies especially in their initial stages. The plan provision is for providing the services of departmental personnel and managerial grant to weavers societies.

##### *Share Capital Loan Assistance to Weavers (Outlay Rs. 18 lakhs)*

13.340 Share capital loans are to be given to the weavers for bringing them under the co-operative fold. The value of one share is Rs.100 and loan assistance is Rs 90 per weaver. The scheme which is aimed at covering 40,000 weavers will have a total cost of Rs.36 lakhs. Fifty per cent of the cost of the scheme is expected as Central contribution.

*Subsidy to Co-operative Banks Against Loss of Interest on Reserve Bank of India Credit (Outlay Rs.55 lakhs)*

13.341 Necessary financial assistance has to be provided for availing of institutional finance (R.B.I. cash credit scheme) by the existing and new co-operative societies. The plan provision is for providing subsidy to co-operative banks to meet the loss of interest due to the implementation of the Reserve Bank of India cash credit scheme.

*Subsidy for the cost of Bank Inspectors and other Establishment Charges (Outlay Rs.15.25 lakhs)*

13.342 The State and Central Co-operative Banks have appointed inspectors to examine and process the cash credit limit applications of Weavers' Co-operative Societies and to supervise the proper utilisation and operation of the amounts advanced. The Plan provision is to subsidise the cost of Bank Inspectors additionally required by the Co-operative Banks for the implementation of the Reserve Bank of India scheme and to meet other establishment charges on account of the implementation of the scheme.

*Share Participation in Handloom Apex Society (Outlay Rs.50 lakhs)*

13.343 When the Co-operative coverage of looms will be expanded upto 60 per cent of the total looms in the State, the business turnover of the Handloom Apex Society will also increase. This will necessitate more working capital. In order to obtain working capital through institutional finance, the margin money base of the Apex Society has to be strengthened. Share contribution of Rs.40 lakhs each in a year for five years with seventy five per cent Central assistance is contemplated during the plan period.

*Schemes for Improving Productivity*

*Modernisation of looms (Outlay Rs.50 lakhs)*

13.344 This scheme is intended for providing assistance to weavers to purchase additional fittings, accessories and improved appliances to enable them to improve productivity and to diversify the production. It is proposed to issue grant to the extent of 75 per cent of the cost incurred.

*Establishment of New Dye Houses, Warping and Sizing Units and Expansion of Existing Dye Houses (Outlay Rs. 17.50 lakhs)*

13.345 In order to switch over to new varieties of handloom cloth with colour combinations to suit the changing tastes of consumers more bleaching and dyeing facilities are needed in the production units. The present scheme aims at expansion of ten large dye houses, each costing Rs. 12.5 lakhs and ten warping and sizing plants each costing Rs. 8 lakhs. Establishment of 50 small dye houses each costing Rs. 25,000 and expansion of 50 existing dye houses each costing Rs. 15,000 is also contemplated. This scheme has been found necessary to meet the increasing requirement for dyeing of yarn and to avoid the difficulties experienced by members of primary societies for making

warps of their own. Central assistance to the tune of Rs. 167.50 lakhs and institutional finance amounting to Rs. 40 lakhs are envisaged under the scheme.

*Training of Weavers and Employees of Weavers' Co-operative Societies (Outlay Rs. 10 lakhs)*

13.346 Intensive training to weavers in advanced handloom technology is highly essential to enable them to switch over to modern improved fabrics. The staff employed in the societies will also have to be given proper training for efficient administration. The existing training centres which have a capacity to train only 92 weavers have to be strengthened, and three more training centres will have to be opened during the plan period. An outlay of Rs. 10 lakhs is provided for this purpose in the State Sector.

*Sales Promotion*

*Construction of Warehouses in the Primary Societies (Outlay Rs. 20 lakhs)*

13.347 The scheme is to provide aid to twenty primary weavers' societies which are functioning on efficient lines with 80 per cent loan and 20 per cent grant assistance for the construction of godowns.

*Marketing Depots (Outlay Rs. 4 lakhs)*

13.348 As the Apex Society is not in a position to procure and market the entire production of primary societies they have to make their own arrangements for marketing by opening sales depots. The provision is for giving assistance to primaries to open 50 marketing depots during the plan period.

*Handloom Houses (Outlay Rs. 10 lakhs)*

13.349 The scheme is for providing assistance to the Handloom Apex Society to open ten new handloom houses within and outside the State. Twenty-five per cent of the cost will be met by the State Government as grant and the remaining 75 per cent will be Central loan.

*Subsidy for Rebate on the Sale of Handloom Cloth (Outlay Rs. 200 lakhs)*

13.350 A rebate is usually allowed on the sale of handloom cloth every year as an incentive to the consumers to purchase handloom fabrics. During the four years of the Fifth Plan period an expenditure of Rs. 165 lakhs was incurred towards subsidy paid to co-operative societies and Apex Society. Though the ultimate aim is to do away with the rebate scheme by promoting sales through other means the scheme has to be continued during the plan period 1978-83 also, as the consumers look forward to the rebate period for purchasing handloom cloth. However, an amount of Rs. 2 crores is provided in the plan for 1978-83 in the State sector.

*Publicity, Exhibition, Competition of Design etc. (Outlay Rs. 20 lakhs)*

13.351 Publicity and propaganda are essential to promote sales and to attract the attention of the

consumer public. Advertisement through mass media, subsidy for participation in exhibition (50 per cent of expenses for exhibitions within the State and 100 per cent for those outside the State), arranging competition for new design and innovation in weaving techniques are the programmes envisaged under this scheme. An outlay of Rs. 20 lakhs is provided for this scheme in the State Plan.

*Mobile Van and Trucks (Outlay Rs. 15 lakhs)*

13.352 If sufficient transport facilities are provided to certain societies, they will be in a position to sell considerable portion of their products in places of religious festivals, melas etc. which are found to be good market places for handloom fabrics. The plan proposal is for issuing grant to ten societies to purchase mobile vans or trucks for delivery and sales.

*Quality Control (Outlay Rs. 17 lakhs)*

13.353 If handloom fabrics produced in Kerala are to survive the severe competition from mill sector and handloom fabrics of other States, the quality of the local fabrics has to be ensured. Strict quality control is essential to capture and retain the foreign markets also. The plan provision is for starting thirty new quality testing depots in five years (six units in each successive year) and for maintaining the existing quality testing depots.

*Market Research Wing (Outlay Rs. 12 lakhs)*

13.354 The plan provision is for strengthening the market research and export promotion wing established in the Department of Industries and Commerce by the end of 1977-78 for undertaking various market studies on the basis of which production can be re-oriented to suit domestic and foreign markets.

*Weavers' Welfare Schemes*

*Housing for Weavers (Outlay Rs. 50 lakhs)*

13.355 The Government of India have a programme to provide houses to handloom weavers under the Rural Housing Scheme of HUDCO. According to this scheme 70 per cent of the cost (Rs. 5000) will be provided by HUDCO as loan and the remaining 30 per cent will be met by the Government of India as grant. Assistance will also be given for the renovation of the weavers' houses in the same pattern. It is proposed to construct 10,000 new houses for handloom workers and renovate 2500 old houses during the plan period. The land will be provided by the State Government wherever necessary. An amount of Rs. 50 lakhs is provided for this scheme in the plan.

*Award of Scholarship to Weavers' Children (Outlay Rs. 2 lakhs)*

13.356 It is proposed to give financial assistance to hundred children of weaver members of co-operative societies for post-graduate courses and degree or diploma courses in technical subjects.

*Other Schemes*

*Intensive Development Project and Export Promotion Project (Outlay Rs. 73.75 lakhs)*

13.357 The scheme for two intensive development projects at Cannanore and Trivandrum and an export production project at Cannanore were sanctioned by the Government of India in 1976-77. These schemes are being implemented by the Kerala Handloom Finance and Trading Corporation. The total amount released by the end of 1977-78 for the implementation of the scheme was Rs. 91.25 lakhs out of which the State's share was Rs. 18.75 lakhs. The provision is the State's share of the balance amount required for the three schemes for the remaining period.

*Kerala Handloom Finance and Trading Corporation (Outlay Rs. 25 lakhs)*

13.358 The Kerala Handloom Finance and Trading Corporation is the only agency that provides financial and ancillary facilities for the development of that sector of handloom industry which is outside the Co-operative fold. The activities of the Corporation include the sale of raw materials like yarn, chemicals, dyes etc., export of handloom fabrics, issue of loans to private weavers and imparting training to weavers. In view of the increased activities of the Corporation, it has become necessary to strengthen its capital base. The Plan provision is towards the share participation of the State Government in the Corporation.

*Strengthening the Staff of the Directorate and Sub Offices (Outlay Rs. 15 lakhs)*

13.359 For enhancing the Co-operative coverage of handlooms to 60,000 by 1980, and for implementing the new schemes, the staff in the Directorate and Sub-Offices has to be strengthened. The plan provision is towards the cost of additional staff required during the Plan period.

*Training of Departmental Personnel (Outlay Rs. 5 lakhs)*

13.360 This scheme is intended to give advance training and refresher courses to the Departmental Officers in Co-operative supervisory business management and technical aspects of handloom industry.

*New Schemes*

*Managerial Grant to Handloom Apex Society (Outlay Rs. 1.25 lakhs)*

13.361 The amount provided is for giving an annual managerial grant of Rs. 25,000 for five years to the Handloom Apex Society to strengthen its administrative machinery.

*Processing Units for Polyester (Outlay Rs. 2 lakhs)*

13.362 Experiments have proved that the handloom industry can utilise polyester filament yarn, provided proper support is given in training weavers

and in modifying the looms. This will naturally increase the wages of weavers. But owing to lack of processing facilities within the State it has become difficult to introduce polyester filament weaving. Hence a scheme has been drawn up to establish two polyester processing units in the State under the Apex Society. The assistance will mainly be in the nature of Central loan for capital expenditure and institutional finance for working capital. A state sector outlay of Rs. 2 lakhs is also provided for the scheme.

#### *Expansion of Common Facility Centres*

13.363 Two common facility centres are being established at Trivandrum and Cannanore under the Intensive Development Projects. Institutional Finance to the tune of Rs. 30 lakhs is envisaged to expand and modernise machinery and equipments of the Centres.

#### *Training of Scheduled Castes/Tribes in Weaving (Outlay Rs. 2.5 lakhs)*

13.364 Under this scheme members of scheduled Castes/Scheduled Tribes will be given training in handloom weaving in the weaving centres of Apex Society and the Kerala Handloom Finance and Trading Corporation. Each trainee will be given a stipend of Rs. 250 per mensem for five months. Forty members will be trained every year. The outlay of Rs. 2.5 lakhs is for meeting the expenditure on this training programme during the plan period.

#### *Casualty Cash Credit Scheme (Outlay Rs. 2.25 lakhs)*

13.365 As the weavers are economically poor, it is difficult to meet any unforeseen expenditure arising out of serious illness, accident or death of nearest relatives. In such situations they are forced to seek the help of money lenders. This plan scheme contemplates the raising of a special fund in each weavers co-operative society with the contribution of not less than one per cent of the weavers' wages. Unforeseen expenditure of individual weavers will be met from this fund subject to a maximum of Rs. 100 with fifty per cent contribution from the Government.

#### *Raw Material Banks (Outlay Rs. 13.50 lakhs)*

13.366 Regular and continuous employment of weavers can be ensured only by adequate and timely supply of raw materials at reasonable rates. The cash credit facilities available with the primary and Apex Societies will not be adequate to have sufficient stock of raw materials. Hence necessary assistance will have to be provided in the form of interest-free loan to Apex Society and the Handloom Finance and Trading Corporation towards margin money for working capital requirements needed by raw material banks.

#### *Contributory Thrift Fund (Outlay Rs. 45 lakhs)*

13.367 The scheme envisages the creation of a thrift fund, collected from the wages of weavers, at the rate of four paise per rupee with a contribution from the Government at the rate of two paise per rupee, subject to the maximum of Rs. 3 per mensem per weaver. By the end of the Plan period (1982-83)

60,000 weavers will be benefited by the scheme. The Plan provision is for the contribution by the Government.

#### *Powerloom (Outlay Rs. 10 lakhs)*

13.368 At present there is a shift in favour of traditional handloom sector and the policy of the State is not to encourage the powerloom sector any further. But in the earlier plans the Government has spent substantial sums in the powerloom sector. Even in the Fifth Plan an amount of Rs. 21.37 lakhs was incurred for its development. If the amount already spent has to become fruitful it may be necessary to set apart some outlay for this sector to be utilised if found necessary. Hence a token provision of Rs. 10 lakhs is made for this purpose in the Plan.

13.369 Table 13.3 provides a list of schemes proposed under Handloom and Powerloom sectors.

TABLE 13.3

#### **Handloom and Powerloom—Scheme wise outlay**

Sl. No.	Name of scheme	Outlay in 1978-83 (Rs. lakhs)
(1)	(2)	(3)
<i>Continuing Schemes</i>		
(1)	Expansion and Organisation of Weavers' Industrial Societies	32.00
(2)	Strengthening of Primary Weavers Societies	
	(a) Share Participation in Primary Societies	50.00
	(b) Managerial Assistance	47.00
	(c) Share Capital Loan Assistance	18.00
	(d) Subsidy to Co-operative Banks against Loss of Interest	55.00
	(e) Subsidy for the Cost of Bank Inspectors and Other Establishment Charges	15.25
(3)	Share Participation in Handloom Apex Society	50.00
(4)	Schemes of Improving Productivity	
	(a) Modernisation of Looms	50.00
	(b) Establishment of New Dye Houses, Warming and Sizing Units and Expansion of New Dye Houses	17.50
	(c) Training of Weavers and Employees of Weavers Co-operative Societies	10.00
(5)	Sales Promotion.	
	(a) Construction of Warehouses to Primary Weavers Co-operative Societies	20.00
	(b) Marketing Depots	4.00
	(c) Handloom Houses	10.00
	(d) Subsidy for Rebate on the Sale of Handloom Cloth	200.00
	(e) Publicity, Exhibitions, Competition of Design etc.	20.00
	(f) Mobile Van and Trucks	15.00
	(g) Quality Control	17.00
	(h) Market Research Wing	12.00
6)	Weavers Welfare Schemes	
	(a) Housing for Weavers	50.00
	(b) Award of Scholarship to Weavers' Children	2.00

(1)	(2)	(3)
(7) Other Schemes		
(a) Intensive Development Project and Export Promotion Project		73.75
(b) Kerala Handloom Finance and Trading Corporation		25.00
(c) Strengthening the Staff in the Directorate and Sub-Offices		15.00
(d) Training of Departmental Personnel		5.00

## New Schemes

(1) Managerial Grant to Handloom Apex Society		1.25
(2) Processing Unit for Polyester		2.00
(3) Expansion of Common Facility Centre		..
(4) Training of Scheduled Castes/Tribes in Weaving		2.50
(5) Casualty Cash Credit Scheme		2.25
(6) Raw Material Banks		13.50
(7) Contributory Thrift Fund		45.00

Total	880.00
Powerloom Development	10.00
Grand Total	890.00

3. *Khadi and Village Industries (Outlay Rs. 600.09 lakhs)*

13.370 The Khadi and Village Industries Commission has recognised twenty three village industries including Khadi. The Kerala Khadi and Village Industries Board had been implementing programmes relating to eighteen industries in the State under the normal programme. The State Board proposes to introduce a special scheme to provide additional employment to one lakh persons more during the first three years of the Plan for 1978-83 under nine selected village industries, including Khadi. During the entire Plan period, it is proposed to provide additional employment to about 1.50 lakh persons more. The total outlay for the Plan is 5906.13 lakhs. A sum of Rs. 600.09 lakhs is the share of State Government and Rs. 4,512.13 lakhs is expected to be obtained from the Khadi and Village Industries Commission. The Board proposes to raise financial assistance from the Banks also to the extent of Rs. 793.94 lakhs. The State Government is to arrange, in addition to the financial support, cultivation of sea island cotton required by the State for producing Khadi muslin. The scheme also envisages construction of more than 1000 sheds, godowns and sales bhandars for implementing the scheme. It is expected that 40,850 charkhas and corresponding looms would be introduced during the plan period. The present production of khadi, estimated at Rs. 1.50 crores, will be increased to about Rs. 10 crores, by the end of the plan period, i. e. (1982-83). The value of production of village industries which is about Rs. 9 crores at present will be increased to about Rs. 20 crores by 1982-83. On implementation of the schemes, the employment under Khadi and Village Industries would rise from the present 0.92 lakhs to Rs. 2.40 lakhs by the end of the plan period. The State Board has proposed to develop nine industries specially during the plan period, viz. Village Pottery, Village Oil, Fibre, Lime Manufacturing, Blacksmithy and Carpentry, Cottage Match, Beekeeping, Cane and Bamboo and Khadi, for which vast

potential is available within the State. Hitherto the Board was getting charkhas required for the development of Khadi, mainly from outside the State. The Board has already made arrangements for the production of charkhas within the State itself. It is expected that the Board would be able to increase the earning capacity of the workers also.

4. *Handicrafts*

13.371 The crafts of Kerala include ivory, wood and horn carving, bell metal casting, lapidary works, hand embroidery, cane and rattan works, paper mache, coconut shell carving and paddy straw picture making. Some of these crafts provide full time employment while others provide only seasonal employment. The handicrafts industry in Kerala employs about 40,000 craftsmen. According to a rough estimate the total annual production of handicrafts in Kerala is around Rs. 40 million. Though a good portion of the handicraft products finds sales in export market, direct export is not significant.

13.372 The problems faced by Keralas' handicrafts are too many and varied. The workers do not get full-time employment mostly due to the difficulty in marketing their produce. Scarcity of raw materials especially of wood, ivory and horn has also affected the growth of this industry. Many of the craftsmen stick to the traditional and age old designs which face great difficulty to compete with the ever changing demands of the market. The craftsmen are quite often exploited by the middlemen. Their low earnings have made many to look for alternative means of livelihood. This has resulted in shortages of craftsmen in some of the crafts.

*Progress Under the Fifth Plan*

13.373 In the Fifth Plan the total outlay provided under handicrafts was Rs. 113 lakhs. The expenditure during the four year period of the plan was Rs. 84.94 lakhs. The schemes implemented in the Fifth Plan were mostly spill over schemes of the Fourth Plan. The new schemes included specialised training to craftsmen and old age pension to handicraft workers. Schemes exclusively for the benefit of scheduled castes and scheduled tribes were introduced during 1976-77, and five co-operative societies were organised by which about 250 craftsmen were benefited. For the revival of the lapidary industry which is concentrated in and around Trichur, twelve primary societies and a central society were organised with substantial assistance from the Government. These societies now provide full time employment to about 1000 craftsmen. The Handicrafts Development Corporation, and the Handicrafts Apex Society were also liberally assisted during the Plan period so as to improve their working.

*Plan Proposals for 1978-83*

13.374 The strategy followed during the previous plans will have to be continued during the five year period 1978-83 also by giving greater emphasis to co-operation, adequate supply of raw materials, export promotion measures etc. The responsibility of raw material distribution at reasonable rates to the artisans will be entrusted to the Handicrafts Development



Corporation and the Handicrafts Apex Society. Specialised training will be imparted to craftsmen for bringing about new and attractive designs. More outlets both inside and outside the country will be found for marketing the products, for which sufficient assistance will be provided in the form of publicity market research, export promotion etc. Certain welfare measures to craftsmen in the form of old age pension and housing will also be undertaken during these plan period 1978-83. With these objectives in view an amount of Rs. 500 lakhs is provided in the Plan for the development of handicrafts in the State. The scheme-wise details are given below:

#### *Continuing Schemes*

##### *Assistance to Co-operatives (Outlay Rs. 90 lakhs)*

13.375 This scheme aims at revitalisation of existing handicrafts co-operative societies and also organise new ones. At present there are 57 handicraft primary societies which are working satisfactorily. These societies provide direct employment to over 4,400 craftsmen. The products of these societies, are marketed through the Kerala State Handicrafts Apex Society at Ernakulam and the Central Lapidary Society at Trichur.

13.376 In addition to strengthening of existing societies, it is proposed to organise 100 new societies during the plan period, 1978-83 in places where the craftsmen are concentrated. Out of this 100 new societies, 20 will be exclusively for Scheduled Castes and Scheduled Tribes. These new societies will be organised mainly for taking up non-traditional crafts like papier mache, straw pictures, coconut shell carving, doll-making etc. after giving short term training to talented persons. The Handicrafts Apex Society at Ernakulam and the Central Lapidary Society at Trichur will also be strengthened considerably so as to enable them to market the increased output from the co-operative sector. The outlay of Rs. 90 lakhs is proposed for revitalisation of existing societies (Rs. 15 lakhs), organisation of new societies (Rs. 35 lakhs) and for assisting the two Central Organisations (Rs. 40 lakhs).

##### *Assistance to Handicrafts Development Corporation (Outlay Rs. 84 lakhs)*

13.377 The present share contribution of the State Government in the Handicrafts Development Corporation is Rs. 66 lakhs. The Corporation has a scheme to expand its activities by which more than 6000 new craftsmen will be directly benefited and its sales turnover more than doubled. With this object in view it is proposed to expand the capital base of the Corporation by Rs. 104 lakhs, making the total share contribution to Rs. 170 lakhs. Out of the additional share capital contribution of Rs. 104 lakhs, Rs. 84 lakhs will be contributed by the State Government and the remaining Rs. 20 lakhs is expected from the All India Handicrafts Board.

##### *Training in Handicrafts (Outlay Rs. 19.50 lakhs)*

13.378 For the rapid development of the handicrafts sector more and more skilled craftsmen are

necessary. It is also essential that the existing craftsmen are given specialised training to improve the quality of the products for better export performance. By imparting necessary training it will also be possible to make substantial progress in the production of fancy and fine items which will enable the craftsmen to earn higher wages. At present the responsibility of imparting specialised training to craftsmen in selected crafts is vested in the All India Handicrafts Board through its scheme "training of master craftsmen". Schemes not covered by this type of training will be taken up by the State Government. It is proposed to implement the following training schemes:--

- (1) basic training in simple crafts;
- (2) training of artisans through placement of orders with master craftsmen; and
- (3) employment of master craftsmen from other States for training of artisans in the State.

##### *Raw Material Supply (Outlay Rs. 53 lakhs)*

13.379 The cost of raw materials like rosewood, ivory etc. required by the handicrafts industry has increased many fold, while the selling price of finished products has not increased proportionately resulting in considerable reduction in the average earnings of the craftsmen. For the continuous growth of the handicrafts sector, it is essential that raw materials are made available to the craftsmen at reasonable prices and in sufficient quantities. At present a raw material depot at Trivandrum is functioning under the Handicrafts Development Corporation. It is proposed to open a new raw material depot at Trichur under the Handicrafts Apex Society to meet the requirements of craftsmen in the co-operative sector. Since these depots will require adequate finance to stock raw materials, it is proposed to place sufficient funds in the form of a revolving fund at the disposal of these institutions. It is estimated that an amount of Rs. 18 lakhs will be required as revolving fund, of which Rs. 10 lakhs will be for the Handicrafts Development Corporation and Rs. 8 lakhs for the Central Apex Society.

13.380 The price of rosewood, a major raw material required by the craftsmen, often varies while the selling prices of finished goods are almost standardised both in the internal and foreign markets. The impact of raw material price increase is borne mainly by the craftsmen. Therefore, in order to assure the craftsmen a satisfactory level of earnings, it is proposed to make available rosewood at reduced price to the extent of 25 per cent of cost at the distribution point. The scheme will be limited to craftsmen in the co-operative sector and to those covered by the Handicrafts Development Corporation. A provision of Rs. 35 lakhs is set apart for giving subsidy in the sale of rosewood to craftsmen.

##### *Craft Estates (Outlay Rs. 27 lakhs)*

13.381 Two craft estates covering only important crafts, one at Trivandrum and the other at Trichur, at an estimated outlay of Rs. 13.5 lakhs each will be established. Each centre will cover 100 craft units. The purpose of these centres are to provide better and healthy living and working conditions to craftsmen

which will lead to the improvement in quality of production and increase in productivity. Auxiliary services such as a common tool room, raw material depot, marketing service and design assistance, along other amenities like bank, post office, recreation centre, co-operative society etc. will form the major constituents of the craft estate.

*Assistance to Craftsmen (Outlay Rs. 8.30 lakhs)*

13.382 This scheme aims at providing modern tools and equipments to craftsmen at subsidised rates. Improved tools and equipments will be given to craftsmen at 50 per cent of the cost, subject to a maximum of Rs. 400 worth of tools per craftsman. The entire cost will be subsidised in the case of craftsmen belonging to scheduled castes and scheduled tribes. The scheme will benefit about 2000 craftsmen.

*Design Development (Outlay Rs. 20 lakhs)*

13.383 The Research cum Design Centre at Trivandrum at present covers eight crafts, i. e., ivory wood, screwpine, doll making, jewellery, bamboo, conchshell and saw dust. It is proposed to reorganise and expand the activities of this centre so that the Centre can play a more effective role in boosting the demand of handicraft goods.

*Survey of Handicrafts (Outlay Rs. 4 lakhs)*

13.384 It is proposed to conduct a Census of Handicrafts to collect and maintain basic data on the handicrafts sector in the State. It is also necessary to conduct socio-economic surveys covering all the major crafts and to conduct adhoc studies about crafts and craft centres. The provision is for meeting the expenses of the staff required for this purpose and for the printing of schedules, reports etc.

*Quality Marking (Outlay Rs. 3.50 lakhs)*

13.385 It is necessary that items of handicrafts exported have to be subject to strict quality check and identified by suitable marking. Along with the existing two quality marking depots at Trivandrum and Mannar, it is proposed to open two more depots, one at Ernakulam and the other at Trichur.

*Publicity (Outlay Rs. 8 lakhs)*

13.386 The provision is for conduct of All-India Handicrafts week celebrations, conduct of exhibitions advertisements etc. for boosting the popularity and marketability of handicraft goods.

*Craftsmen Welfare Schemes (Outlay Rs. 5.20 lakhs)*

13.387 This scheme is intended to enlarge the present scheme of giving old-age pension of Rs. 50 per month to all deserving craftsmen in the industry.

*Administration (Outlay Rs. 8 lakhs)*

13.388 The plan outlay is for the strengthening of the administrative set up in Headquarters and Districts and for the effective implementation of the various handicrafts development scheme.

### *New Schemes*

*Craft Museum (Outlay Rs. 16 lakhs)*

13.389 This scheme envisages the establishment of a craft museum at Trivandrum, where representative collection of traditional handicrafts of Kerala as well as other States of India will be preserved and exhibited, so that it will be a source of inspiration and guidance to future generation of craftsmen.

*Market Research (Outlay Rs. 5 lakhs)*

13.390 It is proposed to set up two market research cells to study the market demand and saleability of handicrafts goods. One cell each will be set up in the Kerala State Handicrafts Development Corporation and the Kerala State Handicrafts Apex Society. The entire expenditure on these cells for the first five years will be met by the State Government.

*Export Promotion (Outlay Rs. 5 lakhs)*

13.391 The plan provision is for sending delegations to foreign countries and also to assist in the opening of emporia in other countries for boosting exports.

*Interest Subsidy (Outlay Rs. 3.50 lakhs)*

13.392 To enable the maximum utilisation of institutional finance for working capital by the co-operatives, it is proposed to subsidise the interest charged by banks. The banks will be requested to advance to these organisations at a rate of interest fixed by Government and the difference between this rate and the normal lending rate will be reimbursed to the banks.

*Opening of Emporia (Outlay Rs. 15 lakhs)*

13.393 The amount provided in the plan is for assisting the Handicrafts Development Corporation and the Handicrafts Apex Society in opening new emporia to market the increased output resulting from the sustained efforts for the growth of handicrafts sector. The plan provision will also be used to meet the expenditure towards furnishing show rooms, paying rent and establishment subsidy for three years.

*Housing (Outlay Rs. 20 lakhs.)*

13.394 The craftsmen who own land without a house will be given Rs. 4000 for the construction of a small house and workshop. Out of this amount 30 per cent will be given as grant, while the remaining amount which will be interest-free loan has to be repaid within a period of ten years. It is proposed to assist 500 craftsmen during the period 1978-83 under this scheme.

*Artisans' Development Corporation (Outlay Rs. 100 lakhs)*

13.395 It is proposed to set up an Artisans' Development Corporation in the State for the promotion of the industrial enterprises of the village artisans during the Plan period. The outlay envisaged in the Plan is for meeting the share capital contribution of the State Government in the Corporation.

13.396 The outlay proposed under the various schemes for handicrafts development is given in Table 13.4

TABLE 13.4  
Handicrafts Scheme-wise Details

Sl. No.	Name of Scheme	Outlay (lakhs)
(1)	(2)	(3)
<i>Continuing Schemes</i>		
1.	Assistance to Co-operatives	90.00
2.	Assistance to Handicrafts Development Corporation	84.00
3.	Training in Handicrafts	19.50
4.	Raw Material Supply	53.00
5.	Craft Estates	27.00
6.	Assistance to Craftsmen	8.30
7.	Design Development	20.00
8.	Survey of Handicrafts	4.00
9.	Quality Marking	3.50
10.	Publicity	8.00
11.	Craftsmen Welfare Schemes	5.20
12.	Administration	8.00
<i>New Schemes</i>		
13.	Craft Museum	16.00
14.	Market Research	5.00
15.	Export Promotion	5.00
16.	Interest Subsidy	8.50
17.	Opening of Emporia	15.00
18.	Housing	20.00
19.	Artisans' Development Corporation	100.00
Total		500.00

#### 5. Coir Industry (Outlay Rs. 350 lakhs)

13.397 Coir industry in Kerala is providing direct employment to about five lakhs of people in the different operations starting from collection and retting of husks to manufacture of coir products. The industry plays a very important role in the economy of the State. The per capita capital investment for providing employment is comparatively low in coir industry. The industry, besides giving employment to the rural folk in the coastal areas, earns valuable foreign exchange (Rs. 23.86 crores in 1977-78) for the country.

13.398 Kerala produces 67 per cent of the total quantity of coconuts produced in India. Coconut is cultivated in 7.5 lakh hectares in the State and the annual production is estimated at 3740 million nuts. Only 54 per cent of the total number of husks is put to industrial use.

13.399 The production of coir has been more or less stagnant during the last decade. The total quantity of fibre produced in the State during 1977 is estimated at 1.6 lakh tonnes. Though attempts were made since 1959 to organise the coir workers into co-operatives and to improve their conditions, the desired results could not be achieved for a variety of reasons. The slackness of the foreign markets, competition from synthetic products, displacement of large number of weavers consequent on the closing down of large factories, the entry of middlemen in the co-operatives, exploitation by husk retters and the emergence of merchant exporters contributed to this distress condition in the industry.

13.400 Taking these issues into consideration, the State Government formulated a comprehensive scheme in 1968 embracing all aspects of the industry like production, marketing, export and welfare measures. The scheme was forwarded to the Government of India for approval and financial assistance. The proposals envisaging an outlay of Rs. 15.59 crores should have

been implemented during the Fourth Plan period itself. But the Planning Commission team appointed to study the industry in general and the schemes in particular recommended a total outlay of Rs. 6.99 crores for the development of coir societies. This study group recommended that societies should be organised and developed into viable units for availing institutional finance and estimated the working capital requirement of the societies at Rs. 20 crores. In 1973, the Planning Commission again appointed a Task Force to report about the various steps to be taken for the over all development of coir industry. This Task Force prepared a comprehensive report estimating the requirement of Central assistance at Rs. 32.38 crores and institutional finance at Rs. 54 crores. In the same year the Ministry of Industrial Development of the Government of India accepted the proposals of the Government of India for restructuring the coir societies and instructed the State Government to constitute an Action Committee to make early assessment of the financial requirements for the implementation of the scheme. This action Committee estimated the requirements of funds for the next three years at Rs. 1242.33 lakhs. But the Government of India released the first instalment of Rs. 100 lakhs in 1974 only as against the estimated requirement of Rs. 517.06 lakhs. Subsequently the Government of India allotted annually funds on an adhoc basis to the State. The funds so received upto 1976-77 was Rs. 431 lakhs. The coir co-operatives were also sanctioned cash credit accommodation from the Reserve Bank of India.

13.401 As the central assistance was not forthcoming adequately in time the State Government made financial investments for the various schemes connected with the restructuring of coir industry. During the five years beginning from 1973-74, the State Government spent an amount of Rs. 278.38 lakhs for this purpose

13.402 For the plan period 1978-83 a scheme costing Rs. 24.24 crores to be implemented as Central Sector programme has been drawn up for restructuring the coir industry. Except for certain minor changes, it is not very much different from the scheme originally envisaged for the development of the industry. The scheme aims at organising more primary co-operative societies with the intention of bringing 75 per cent of the workers in the spinning sector under co-operative fold. In the manufacturing sector, the scheme also aims at organising more co-operatives for eliminating the merchant exporters. In the light of experience gained it is also proposed to recognise the central marketing societies by forming a Marketing Federation to which all primary and manufacturing societies will be affiliated. The item-wise details of the scheme are given below:

#### Central Sector

##### Coir Development Scheme

Sl.No.	Coir Development Scheme	Outlay (Rs. in lakhs)
(1)	(2)	(3)
1(a)	Equity participation in primary Manufacturing Societies	8.40
(b)	Equity participation in Marketing Federation for	
	(1) Purchase of Husk	6.50
	(2) Purchase of Yarn	8.90
	(3) Purchase of Mats	5.88
(c)	Equity participation Manufacturing Societies	7.70

(1)	(2)	(3)
II. (a)	Marketing Capital loan to primary Co-operative Societies	775.50
(b)	Marketing Capital Loan to Manufacturing Societies	56.00
III.(a)	Interest Subsidy to Primary Co-operative Societies	415.63
(b)	Interest Subsidy to Manufacturing Co-operative Societies	48.43
(c)	Interest Subsidy to Marketing Federation	228.92
IV.	Godowns to	
(a)	Primary Co-operative Societies	94.00
(b)	Manufacturing Societies	2.60
(c)	Marketing Federation	60.00
V.	Managerial Assistance to	
(a)	Primary Co-operative Societies	52.22
(b)	Manufacturing Co-operative Societies	2.08
(c)	Thondu Societies	1.05
VI.	Welfare Measures	36.40
VII.	Administration	36.30
VIII.	Sales Depots	4.85
IX.	Publicity Propaganda	12.00
X.	Price Fluctuation Fund	208.54
XI.	Subsidy for Procurement of Husk	45.00
XII.	Kerala State Coir Corporation	107.20
	<b>Total</b>	<b>2424.10</b>

13.403 In addition to this Central Sector Scheme costing Rs. 2424 lakhs, a provision of Rs. 350 lakhs under State sector is also proposed in the plan for 1978-83 to implement the scheme pending approval, sanction and allotments from the Central Government. These development efforts, it is expected, will help the coir societies to become viable and thus enable them to attract institutional finance. It is envisaged that institutional finance to the tune of Rs. 32 crores will be required for the Primary Societies, Manufacturing Societies and Marketing Federation at the end of the plan period.

#### 6. Cashew Industry (Outlay Rs. 81 lakhs)

13.404 Cashew industry occupies a vital position in the economy of Kerala. About fifty per cent of the factory workers are employed in this industry. The availability of rawnuts, skilled labour and the pioneering spirit of the entrepreneurs were the major factors behind the origin and development of cashew industry in Kerala. The growth of cashew factories during the last two decades had been very significant. The total number of workers in the registered cashew factories in Kerala today is about 1.35 lakhs.

13.405 India exported cashew products valued at Rs. 19.44 crores in 1960-61. The export value of cashew products increased from Rs. 52.35 crores in 1970-71 and to about Rs. 148 crores in 1977-78. Though the export value of cashew products is increasing, owing to the non-availability of rawnuts for processing, kernel exports in terms of quantity has been declining. The year 1977-78 witnessed a sharp fall in export of cashew kernels which amounted to only 39,111 tonnes as compared to 51,515 tonnes in 1976-77 and 53,640 tonnes in 1975-76. The value of cashew

kernel exports reached a record figure of Rs. 147 crores in 1977-78 compared to about Rs. 106 crores in 1976-77 due to unprecedented spurt in prices. This is hardly a matter for satisfaction as quantitatively exports to most of the important markets declined during 1977-78.

13.406 Import of rawnuts in 1977-78 declined to 60,194 tonnes compared to 75,122 tonnes in 1976-77 and 1,37,196 tonnes in 1975-76.

13.407 The problems faced by the cashew industry are too many and varied. The cashew workers are not getting full employment throughout the year mainly due to the non-availability of adequate quantity of rawnuts. The internal production of rawnuts is only around one lakh tonnes which can provide employment to the cashew workers for less than three months. Nearly two-thirds of the total quantity of rawnuts required for the cashew industry were being imported from African countries like Mozambique, Kenya and Tanzania. These rawnut producing countries have built up their own cashew processing units. This has resulted in the steady decline in the import of rawnuts. Consequent on the fixation of minimum wages in cashew industry and enactment of certain ameliorative labour laws there is a tendency for shifting of the factories to the neighbouring States. The highly speculative nature of the business, fluctuations in the international market for raw cashewnuts and kernel and severe competition among industrialists threatened the stability of the industry in the home market.

13.408 The Kerala State Cashew Development Corporation manages 34 factories which provides employment to over 33,000 workers. The Corporation was able to work for 76 days only during 1976-77 owing to non-availability of rawnuts in sufficient quantity. It processed 21,176 tonnes of rawnuts and exported kernels worth Rs. 14.40 crores in 1976-77.

13.409 In the Fifth Plan an amount of Rs. 400 lakhs was provided for the development of cashew industry. It was proposed to bring under cashew cultivation 85,000 hectares, to acquire new cashew factories and to open new factories for utilising the by-products of cashew shell liquid and tannin. The Corporation's proposal to cultivate cashew on a plantation basis was entrusted to the Plantation Corporation of Kerala by the Government. The Corporation also refrained from acquiring new cashew factories due to the unprecedented difficulties experienced in the availability of rawnuts. The tannin factory was established at Kottiyam near Quilon and it started production during the Plan period.

13.410 At present the Corporation cannot hope to go in for expansion programmes unless rawnuts are made available in sufficient quantities, either imported or indigenous. The question of importing adequate quantity of rawnuts year after year has become a major problem. The Corporation has to wait for a few more years for obtaining indigenous raw nuts from the new plantations in the State. Taking into consideration the various factors relating to the industry an amount of Rs. 81 lakhs is provided in the Plan for 1978-83 for strengthening the capital base of the Corporation. This will enable the Corporation to obtain more institutional finance for its activities.

## 7. Bricks and Tiles Industry

13.411 Bricks and tiles industry in Kerala has to play a vital role in fulfilling the massive programmes of house-building activities proposed by the Government and other organisations. The industry which has an investment of over Rs. 30 crores, produces annually goods worth Rs. 40 crores and provides direct employment to nearly 50,000 persons in the State. The industry enjoyed a period of prosperity till recently, but today it is beset with various problems. The requirement of bricks in Kerala is estimated at about 300 crores per annum. The present tempo of construction activity in the State being so high, the annual requirement may be even more. Though no accurate data are available regarding the total number of units engaged in the manufacture of bricks or about the number of bricks being made, it is assumed that there are about 800 hand-moulded brick units producing about 120 crores of bricks per annum in the State.

13.412 The tile industry which is more than a century old was first established at Calicut, thanks to the natural advantages of the area and the pioneering spirit of German missionaries. Gradually the industry spread to different parts of the State. Kerala, with about 300 tile units, now accounts for about 40 crores of tiles and allied products valued at Rs. 13 crores. In the matter of both the value of production and the diversity of products, Kerala is foremost in the field. The tile industry today is beset with numerous problems such as the decline in the export market, scarcity and increasing price of raw materials and fuels, disparity in wage rates among tile producing States and high transportation costs. The fast rate of obsolescence of the existing machinery and technology and preference of the people towards RCC roofing have also contributed to the decline in the tile industry.

13.413 There is a sense of insecurity among the manufacturers based perhaps on these temporary set backs. But it is certain that the industry has to play a very important role in the coming years. The industry has, however, to produce goods to suit the market requirements by using improved machinery and technology. Also a State like Kerala can ill-afford to ignore the developmental aspect of this highly labour intensive industry which functions entirely with locally available raw material. It is in this context that the present proposals are drawn up for the effective utilisation of existing capacity and for the modernisation and diversification of the industry. The schemes suggested for the plan period 1978-83 are given below:

### *Establishment of a Process-cum-Product Development Centre (Outlay Rs. 10 lakhs)*

13.414 The technology already available in the industry is more than a century old. In order to modernise the industry based on latest technological developments, facilities for testing and analysis of the available raw material, research to develop new process and products etc., are required. A process cum product development centre equipped with most modern type of plant and machinery is proposed under the Small Industries Service Institute, Trichur, at an estimated cost of Rs. 100 lakhs. An amount of Rs. 10 lakhs is provided in the State sector for necessary land and infrastructure facilities for the centre.

### *Assistance for the Conversion of Small Tile Units to Brick Units (Outlay Rs. 80 lakhs)*

13.415 Small scale tile units will be encouraged to take up the manufacture of wire-cut bricks which are very much in demand now. The wirecut bricks have several advantages such as high load bearing strength, accurate size and dimensions, uniform burning, perfect and levelled surface and considerable economy in the use of cement. So it is suggested that at least 80 units should be assisted to the extent of Rs. one lakh per unit for converting their tile units to wire-cut brick units. For this purpose an outlay of Rs. 80 lakhs is proposed in the State sector Plan.

### *Assistance for Full Capacity Utilisation (Outlay Rs. 10 lakhs)*

13.416 The tile units now working below the installed capacity may be encouraged to utilise their idle capacity by diversification of their products into hollow and perforated bricks and blocks, ceiling and flooring tiles, special type facing bricks etc. The outlay proposed is to assist 50 units at the rate of Rs. 0.20 lakhs to undertake this programme.

### *Installation of Heavy Duty Presses (Outlay Rs. 50 lakhs)*

13.417 There is heavy demand for various kinds of flooring tiles, ceiling tiles, facing tiles etc. At present these tiles are made by plastic process which involves considerable time for drying the wet tiles apart from the investment required for drying sheds; drying racks etc. If dry-pressing is adopted, the wet tiles can be straightaway loaded into the kiln. It is proposed that a press costing about Rs. 12 lakhs each may be installed in Calicut, Trichur, Alwaye and Quilon where there is concentration of tile industry. The outlay of Rs. 50 lakhs is intended for the installation of Presses in these centres.

### *Introduction of Training Course in Ceramic Technology (Outlay Rs. 4 lakhs)*

13.418 Kerala has great potential for the development of Ceramic industry. But the absence of a ceramic institute is responsible to a great extent for the present poor level of technology in this industry and for the non-availability of qualified ceramists to man the industry. Therefore it is suggested that a four year degree course in ceramic technology with special emphasis on heavy clay technology should be introduced in the Government Engineering College, Trichur. The State Government will provide Rs. 4 lakhs towards recurring expenditure, and the Central Government has to bear the capital expenditure of the course which is estimated at about Rs. 30 lakhs.

### *Mechanised Brick Units (Outlay Rs. 50 lakhs)*

13.419 In view of the substantial demand for bricks, especially in cities like Calicut, Ernakulam and Trivandrum it is recommended to establish large scale mechanised brick units in these places with imported machinery and foreign collaboration, either in the public or joint sector. For this purpose an outlay of Rs. 50 lakhs is proposed in the Plan.

### *Modernisation and Diversification of Existing Tile Units (Outlay Rs. 96 lakhs)*

13.420 The proliferation of numerous small scale tile units in different parts of the State has made the

manufacture of tiles alone a non-profitable enterprise. It is suggested that 32 medium and big size tile manufacturing units may be assisted to modernise and diversify their production by the adoption of improved machinery and technology. These units will be assisted in installing machinery like high speed rollers, de-airing, pug mill, chain conveyor, low cost driers etc., besides switching over to coal firing after effecting necessary modifications in the kiln. The expenditure for effecting these changes will be about Rs. 3 lakhs per unit. An amount of Rs. 96 lakhs is provided in the plan for the modernisation of 32 tile units.

13.421 The scheme-wise proposals under bricks and tiles industry can be summarised as follows:

Sl. No.	Name of Schemes	State Sector Outlay (Rs. in lakhs)	Central Sector Outlay (Rs. in lakhs)
(1)	(2)	(3)	(4)
1	Establishment of a Process-cum-Product Development Centre	10.00	90.00
2	Conversion of Small Tile Units into Brick Units	80.00	..
3	Full Capacity Utiliation	10.00	..
4	Installation of Heavy Duty Press	50.00	..
5	Introduction of Training Course in Ceramic Technology	4.00	90.00
6	Mechanised Brick Units	50.00	..
7	Modernisation and Diversification of Existing Units	96.00	..
Total		300.00	120.00

#### 8. Bamboo Industry

13.422 The bamboo industry is probably one of the oldest traditional cottage industries of Kerala. Initially the industry started with the production of items like mats and baskets needed for agricultural operations. In course of time, new and varied uses were found for mats and baskets and the industry has developed to a considerable magnitude in certain areas in the State. The industry provides employment to about 1.8 lakh workers in Kerala. Women and children constitute 80 per cent of the workers employed. The formation of the Kerala State Bamboo Corporation is one of the important measures initiated by the State Government to counter the problems of bamboo workers. The Corporation with its headquarters at Angamally is entrusted with the responsibility of collection of bamboo and reeds from the forest areas, their distribution to workers and collection and marketing of finished products. At present its activities are localised mostly in and around Angamally. To help bamboo workers in other parts of the State the activities of the Corporation will have to be expanded. With this object in view the following schemes are included in the Plan for 1978-83.

#### Assistance to Kerala State Bamboo Corporation (Outlay Rs. 0.50 lakhs)

13.423 The Kerala State Bamboo Corporation came into existence in 1971 as a fully owned Government Company. The activities of the Corporation, though in a limited scale, consist in collection and distribution of raw materials and procurement and marketing of finished goods. An amount of Rs. 0.50 lakhs is provided to strengthen the capital base of the Corporation. The amount has already been provided in the annual plan for 1978-79.

#### Raw Material Depots and Procurement Centres (Outlay Rs. 60.00 lakhs)

13.424 At present the Kerala State Bamboo Corporation is the sole agency in the public sector for the collection and distribution of raw materials for the industry. The bamboo workers, because of their financial backwardness, will not have sufficient means to stock raw materials and finished products, with the result they are compelled to approach the merchant middlemen and are dictated by them. The cost of the raw materials has increased many fold, without any corresponding increase in the price of finished goods, resulting in reduction in the earnings of craftsmen. Therefore it is proposed to open one raw material depot and one procurement centre in each district under the Bamboo Development Corporation. The raw material depots will collect raw materials from forest areas and distribute them to the workers, while the procurement centres will procure finished goods from the workers and market them inside and outside the country. To organise these depots and to undertake this item of work, it is proposed to place an amount of Rs. 60 lakhs during the plan period at the disposal of the Corporation in the form of a revolving fund. The Corporation, in turn, will have to raise Rs. 180 lakhs from financial institutions for the successful working of this scheme.

#### Strengthening and Organisation of Bamboo Worker's Industrial Co-operative Societies (Outlay Rs. 150 lakhs)

13.425 In order to relieve the workers engaged in bamboo industry from the clutches of middlemen, it is proposed to bring them under co-operative sector in a phased manner. At present there are 35 industrial co-operative societies engaged in the production and marketing of bamboo and allied products. But most of them are either dormant or not working satisfactorily. It is proposed to reorganise and strengthen these societies and also organise 285 new societies in centres where there is concentration of craftsmen. Thus there will be altogether 320 societies, and they will be organised in such a way that there will be at least two societies in each block area. The State Government will provide funds amounting to Rs. 46,500 to each society in the form of share capital loan, share participation, working finance, grant and managerial assistance. The working capital will be met through institutional finance. Thus the scheme will require a State sector outlay of Rs. 150 lakhs and an amount of Rs. 100 lakhs from the financial institutions. About 80,000 workers will be directly benefited by the scheme.

13.426 The plan proposals under bamboo industry are indicated below:

Sl. No.	Scheme	State Outlay (Rs. lakhs)	Institutional finance (Rs. lakhs)
(1)	(2)	(3)	(4)
1	Assistance to Kerala State Bamboo Corporation	0.50	..
2	Raw Material Depots and Procurement Centres	60.00	180.00
3	Strengthening and Organisation of Bamboo Workers' Industrial Co-operative Societies	150.00	100.00
Total		210.50	280.00

TABLE 13.4  
Industry and Minerals  
Scheme-wise Outlays

(Rs. in lakhs)

Sl. No.	Scheme	Fifth Plan Outlay (1974-79)	1974-78 Expenditure	1978-79 Outlay budgeted	1978-83 Outlay Proposed
(1)	(2)	(3)	(4)	(5)	(6)
<b>A. LARGE AND MEDIUM INDUSTRIES</b>					
<b>I. Industrial Finance Institutions</b>					
(a)	Kerala State Industrial Development Corporation	650.00	999.00	150.00	500.00
(b)	Kerala State Industrial Enterprises Ltd.	450.00	294.38	175.00	834.00
	(1) Kerala Soaps & Oils Ltd.	..	..	..	48.00
	(2) Kerala Electrical and Allied Engineering Company	..	..	..	15.00
	(3) Kerala Ceramics Ltd.	..	..	..	213.00
	(4) Travancore Plywood Industries Ltd.	..	..	..	..
	(5) Trivandrum Rubber Works Ltd.	..	..	..	20.00
	(6) Kerala State Drugs & Pharmaceuticals Ltd.	..	..	..	401.00
	(7) Kerala Detergents and Chemicals Ltd.	..	..	..	47.00
	(8) Kerala Clays and Ceramic Products Ltd.	..	..	..	90.00
(c)	Kerala Financial Corporation	85.00	167.50	15.00	20.00
(d)	Kerala State Financial Enterprises	6.00	44.00	..	50.00
	Sub-Total (I)	1191.00	904.88	340.00	1404.00
<b>II. Investments in other Public Undertakings Other Government Owned Companies</b>					
1.	Kerala Minerals and Metals Ltd.	950.00	557.30	300.00	1370.00
2.	Sitaram Textiles Limited	200.00	94.00	25.00	25.00
3.	Steel Industrials Kerala Ltd.	300.00	113.96	90.00	740.00
4.	Astral Watches Ltd.	..	..	..	2.00
5.	Malabar Cements Ltd.	245.00	25.06	100.00	600.00
6.	Scooters Kerala Ltd.	200.00	65.00	40.00	90.00
7.	Kerala Automobiles Ltd.	150.00	30.00	40.00	200.00
		2045.00	885.32	595.00	3027.00
<b>Government Majority Concerns</b>					
1.	Travancore Titanium Products Ltd.	5.00	..	..	200.00
2.	Travancore Cochin Chemicals Ltd.	90.00	212.00	5.00	100.00
3.	Transformers and Electricals Kerala Ltd.	15.00	13.62	..	200.00
4.	Traco Cable Company Ltd.	..	5.00	15.00	260.00
5.	Chalakydy Potteries Ltd.	40.00	26.00	10.00	10.00
6.	Pallathra Bricks and Tiles Ltd.	4.00	4.00	10.00	10.00
7.	United Electrical Industries Ltd.	25.00	39.00	15.00	120.00
8.	Travancore Cements Ltd.	..	..	..	100.00
		179.00	299.62	55.00	1000.00
<b>New Schemes</b>					
1.	Special Refractory Project	..	..	..	400.00
2.	Sponge Iron Plant	..	..	..	500.00
4.	Aluminium Smelter	..	..	..	1500.00
4.	White Cement Project	..	..	..	130.00
5.	Pelletised Tapioca Plant	..	..	..	50.00
6.	Petro-Chemical Project	..	..	..	2500.00
7.	Insulin	..	..	..	90.00
8.	Steroids and Hormones Plant	..	..	..	100.00
9.	R & D Centre for Drugs and Pharmaceuticals	..	..	..	100.00
10.	Phyto-Chemical Project	..	..	..	40.00
		..	..	..	5410.00
<b>State Corporations</b>					
1.	Kerala State Textile Corporation	35.00	116.50	100.00	150.00
2.	Kerala Forest Development Corporation	..	..	..	1175.00
3.	Kerala State Electronics Development Corporation	730.00	635.00	250.00	2005.00
4.	Kerala State Industrial Products Trading Corporation	10.00	6.30	3.00	15.00
5.	Kerala Film Development Corporation	100.00	117.14	55.00	577.00
6.	Plantation Corporation of Kerala	18.00	51.00	15.00	661.00
7.	Kerala Agro-Industries Corporation	35.00	39.00	15.00	462.00
8.	Kerala Farming Corporation	45.00	49.00	30.00	450.00
		973.00	1013.94	468.00	5495.00

(1)	(2)	(3)	(4)	(5)	(6)	
<i>State Co-operative Sector</i>						
1.	Quilon Co-operative Spinning Mills	}	15.00	6.00	6.00	299.00
2.	Malappuram Co-operative Spinning Mills		..	3.01	4.00	150.00
3.	Cannanore Co-operative Spinning Mills		..	..	1.00	25.00
4.	ENCOS—Revival and Taking Over		..	..	..	..
<i>New Schemes</i>						
5.	Modern Rice Mills (4 Mills)	..	..	..	40.00	
6.	Mannam Sugar Mills	..	..	..	40.00	
			15.00	9.01	11.00	554.00
<i>Other Miscellaneous Schemes</i>						
1.	Development Areas	50.00	25.09	6.50	250.00	
2.	Management Development Centre	1.00	1.00	..	25.00	
3.	Weights & Measures	10.00	4.71	4.50	30.00	
		61.00	30.80	11.00	305.00	
SUB TOTAL (II)		3273.00	2238.69	1140.00	15751.00	
TOTAL (LARGE AND MEDIUM INDUSTRIES)		4464.00	3143.57	1480.00	17195.00	

## B. MINERAL DEVELOPMENT

*Continuing Schemes*

1.	Kerala Mineral Exploration and Development Project	}	79.00	41.85	21.00	79.50
2.	Strengthening the working of the Department of Mining and Geology					

*New Schemes*

3.	Preparation of Feasibility Reports	}	79.00	41.85	21.00	119.72	
4.	Lime shell Investigation Cell						92.00
5.	Setting up of District Organisations						16.20
							41.58
							..

TOTAL (MINERAL DEVELOPMENT)		79.00	41.85	21.00	349.00
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## C. VILLAGE AND SMALL INDUSTRIES

## I. Small Scale Industries and Industrial Estates including Beedi Industry

*Continuing Schemes*

1	Strengthening of Industries Commissionerate, setting up of District Industries Centre and Taluk Set up	}	849.00	17.44	1.00	75.00
2.	Training of Departmental Personnel			1.32	2.00	20.00
3.	Setting up of District Information Centres, Technical Libraries and Documentation Centre			2.55	5.24	10.00
4.	Subsidy for Project Report and Technical Know-how			10.00	2.00	30.00
5.	Subsidy for Proto-type Development			0.10	1.00	3.00
6.	Harijan Development Schemes—Loan to Harijan Entrepreneurs			42.00	1.00	75.00
7.	Scheme for Women Entrepreneurs			6.00	4.00	10.00
8.	Providing Additional Facilities in the existing Development Plots			8.67	2.50	15.00
9.	New Development Plots			29.77	2.00	30.00
10.	New Development Plots in Backward Areas			1.50	2.00	20.00
11.	Rent Subsidy on Industrial Estates			2.95	0.50	5.00
12.	Expansion of Existing Production Centres and Glass Utility Centre			31.22	2.05	5.00
13.	Expansion of Existing Common Facility Service Centres and Starting of New Ones			4.43	2.00	30.00
14.	Starting of Pilot Plants, Testing Centres and Quality Marking Units			7.34	5.00	15.00
15.	Survey for collection of Industrial Statistics and preparation of S.S.I. Directory			2.08	5.50	10.00
16.	Industrial Financing Co-operative Society (Bank)			0.10	0.10	50.00
17.	Share Participation and Strengthening of District Mini Industrial Estate Co-operative Societies			39.93	15.00	40.00
18.	Share Participation in Primary Industrial Co-operative Societies and Revitalisation of Industrial Co-operative Societies			32.54	1.00	25.00
19.	Managerial and Technical Assistance to Industrial Co-operatives			28.87	4.00	10.00



(1)	(2)	(3)	(4)	(5)	(6)	
20.	Share Participation in Unemployed Engineers' Co-operative Societies		180.29	2.55	10.00	
21.	Procurement of Project Reports and Patent Rights, Managerial and Technical Assistance		4.80	1.00	7.00	
22.	State Awards for Best Export Performance		0.12	0.15	2.00	
23.	Seed Capital to Entrepreneurs to Start Industries		20.00	20.00	500.00	
24.	Interest Subsidy to Kerala Financial Corporation		6.00	0.01	250.00	
25.	Aid to S.S.I. Association		2.24	1.50	10.00	
26.	Subsidy for Cost of Construction of Mini Industrial Estates		64.00	10.00	150.00	
27.	Assistance for Revitalisation of Sick S.S.I. Units		20.00	10.00	50.00	
28.	Share Participation in SIDECO		139.61	10.00	50.00	
29.	Departmental Publicity-cum-Display Van		0.41	0.10	5.00	
30.	Trade Fairs and Exhibitions		8.55	2.50	20.00	
31.	Share Participation in Primary and Central Beedi Societies		3.60	1.00	10.00	
32.	Managerial Grant to Primary Beedi Societies		7.20	1.00	10.00	
33.	Financial Assistance for Construction of Work Sheds to Beedi Co-operative Societies		1.00	1.00	5.00	
34.	Additional Facilities in the Existing Industrial Estates and Functional Estates		12.37	1.00	5.00	
35.	Schemes Under 20-Point Programme		23.46	..	..	
36.	Loans to Small Scale Industries Under various Acts		5.39	..	..	
37.	Reimbursement of Sales Tax paid by Industrial Units		128.36	..	..	
38.	Tool Room Unit at Umayanallor and Central Tool Room for Electronics		12.47	..	..	
39.	Other Schemes		12.15	..	..	
TOTAL—CONTINUING SCHEMES			849.00	920.82	119.70	1562.00

*New Schemes*

1.	Expansion of KITCO		..	..	5.00
2.	Subsidiary Corporation for Marketing and Export Promotion		..	..	20.00
3.	Subsidy for Publication of Periodicals, Pamphlets etc., for Entrepreneurial Guidance		..	1.00	3.00
4.	District Level Technical Consultative Committee		..	0.50	3.00
5.	Stipendary Training Programme for Scheduled Caste/ Scheduled Tribe Entrepreneurs	..	..	1.00	3.00
6.	New Development Plots for Mini Industrial Estates in Rural Areas	..	..	..	30.00
7.	Major Industrial Estates in District and Taluk Headquarters, Municipal Towns and Townships	..	..	2.00	60.00
8.	Construction of Mini Industrial Estates	..	..	3.00	600.00
9.	Setting up of an Entrepreneurial Institute and Training of Entrepreneurs	..	..	6.00	30.00
10.	Survey for Identification of Viable and Potentially Viable Co-operative Societies	..	..	0.10	5.00
11.	Managerial and Technical Assistance to District Mini Industrial Estates Co-operative Societies	..	..	1.00	10.00
12.	Grant Towards Reserve Fund	..	..	0.10	5.00
13.	Subsidy Towards loss of Interest on Reserve Bank of India Credit	..	..	0.50	10.00
14.	Margin Money, Refund of share Value Loan Assistance to Engineers, Technocrats and their Co-operatives	..	..	3.00	10.00
15.	Trade Delegations	..	..	1.00	5.00
16.	Strengthening of Export Promotion Wing	..	..	..	3.00
17.	Internal Market Survey	..	..	1.00	5.00
18.	Foreign Market Survey	..	..	1.00	5.00
19.	Organisation of District Level Marketing Depots	..	..	1.00	10.00
20.	Subsidy for Advertisement, Publicity and Other Market Support for Small Scale Products	..	..	3.00	7.00
21.	Subsidy for Registration with Export Promotion Council, I.S.I. etc.	..	..	1.00	5.00
22.	Modernisation Subsidy	..	..	1.00	20.00
23.	Interest Subsidy to Small scale Units	..	..	1.00	100.00
24.	Publication of Periodicals, pamphlets, Research Reports, News paper Supplements etc.	..	..	..	7.00
25.	Setting up of New Beedi Workers' Industrial Primary and Central Co-operative Societies	..	..	1.00	40.00
26.	Tribal Area Development Plan	..	..	0.10	1.00
27.	Industrial Complexes	..	..	2.00	255.00
28.	Equity Participation	..	..	..	50.00
29.	Issue of Loan for Construction of Factory Buildings in Rural Areas under District Industries Centres	..	..	..	275.00
30.	Interest-free Working Capital Loans for Newly Started Tiny Units in Rural Areas	..	..	..	150.00
31.	Reimbursement of Sales Tax paid by Industrial Units as Loan	..	..	..	300.00

(1)	(2)	(3)	(4)	(5)	(6)
32.	Subsidy Towards Sales Tax paid on Capital Investment of New Small Scale Units	..	..	..	60.00
33.	Transport Subsidy for Plant and Machinery	..	..	..	25.00
34.	State Subsidy on Capital Investment in Selected Areas (10%)	..	..	..	150.00
35.	Subsidy (25%) for Power Wiring of New Units	..	..	..	25.00
36.	Subsidy Towards Water charges in Rural Areas	..	..	..	5.00
37.	Kasaragode Development	..	..	1.00	5.00
	TOTAL—NEW SCHEMES	..	..	32.30	2302.00
	TOTAL (SMALL SCALE INDUSTRIES)	849.00	920.82	152.00	3864.00
II.	<i>Handloom and Powerloom Industry</i>	300.00			
1.	Expansion and Organisation of Weavers' Industrial Societies (Including Collective Weaving Centres)		50.16	10.50	32.00
2.	Strengthening of Primary Weaver's Societies				
	(a) Share Participation in Primary Societies		12.72	6.00	20.00
	(b) Managerial Assistance		2.71	0.99	47.00
	(c) Share Capital Loan Assistance		..	..	18.00
	(d) Subsidy to Co-operative and Commercial Banks Against Loss of Interest		23.67	7.30	55.00
	(e) Subsidy for the Cost of Bank Inspections and Other Establishment Charges		3.99	1.00	15.25
3.	Share Participation in Handloom Apex Society		25.00	1.20	50.00
4.	Scheme for Improving Productivity				
	(a) Modernisation of Looms Including Conversion of Pit Looms into Frame Looms		8.47	2.50	50.00
	(b) Establishment of New Dye Houses, Warping and Sizing Units and Expansion of New Dye Houses		7.48	0.30	17.50
	(c) Training of Weavers and Employees of Weavers Co-operative Societies		2.59	1.65	10.00
5.	Sales Promotion				
	(a) Construction of Warehouses to Primary Weavers' Co-operative Societies		1.02	2.00	20.00
	(b) Marketing Depots		0.59	..	4.00
	(c) Handloom Houses		4.14	..	10.00
	(d) Subsidy for Rebate on the Sale of Handloom Cloth		158.12	19.25	200.00
	(e) Publicity, Exhibitions, Competition of Designs etc.		4.50	2.60	20.00
	(f) Mobile Van and Trucks		0.57	0.60	15.00
	(g) Quality Control		0.05	0.20	17.00
	(h) Market Research Wing		0.51	0.75	12.00
6.	Weavers' Welfare Schemes				
	(a) Housing for Weavers		3.69	0.40	50.00
	(b) Award of Scholarship to Weavers' Children		0.24	0.25	2.00
7.	Other Schemes				
	(a) Intensive Development Project and Export Promotion Project (including Common Facility Centre)		43.54	40.00	73.75
	(b) Kerala Handloom Finance and Trading Corporation		9.00	..	25.00
	(c) Strengthening of Staff in the Directorate and Sub-Offices		1.00	1.00	15.00
	(d) Training of Departmental Personnel		0.57	0.60	5.00
	<i>New Schemes</i>				
8.	Managerial grant to Handloom Apex Society		..	0.01	1.25
9.	Processing Unit for Polyester		..	..	2.00
10.	Expansion of Common Facility Centre		..	..	..

(1)	(2)	(3)	(4)	(5)	(6)
11. Training of Scheduled Castes/ Tribes in Weaving		..	..	0.50	2.50
12. Casualty cash credit Scheme			..	..	2.25
13. Raw Material Banks			..	..	13.50
14. Contributory Thrift Fund			..	0.60	45.00
TOTAL (HANDLOOM)		300.00	364.33	100.00	880.00
<i>Powerloom</i>		40.00	21.37	6.00	10.00
TOTAL (HANDLOOM & POWERLOOM)		340.00	385.70	106.00	890.00
III. <i>Khadi and Village Industries</i> (Continuing Schemes)		25.00	12.29	54.00	600.09
TOTAL (KHADI AND VILLAGE INDUSTRIES)		25.00	12.29	54.00	600.09
IV. <i>Handicrafts:</i>		90.00			
<i>Continuing Schemes</i>					
1. Assistance to Co-operatives			32.28	5.00	90.00
2. Assistance to Handicrafts Development Corporation			15.00	3.50	84.00
3. Training in Handicrafts			0.74	1.50	19.50
4. Raw Material Supply			5.81	1.00	53.00
5. Craft Estates			..	1.00	27.00
6. Assistance to Craftsmen			2.68	1.00	8.30
7. Design Development			0.38	1.00	20.00
8. Survey of Handicrafts			0.70	0.50	4.00
9. Quality Marking.			0.17	0.50	3.50
10. Publicity			2.52	1.00	8.00
11. Craftsmen Welfare Schemes			1.76	0.50	5.20
12. Administration			0.30	1.00	8.00
<i>New Schemes</i>					
13. Craft Museum			..	..	16.00
14. Market Research			..	..	5.00
15. Export Promotion			..	..	5.00
16. Interest Subsidy			..	..	8.50
17. Opening of Emporia			..	..	15.00
18. Housing			..	..	20.00
19. Artisans Development Corporation			..	..	100.00
TOTAL (HANDICRAFTS)		90.00	62.07	17.50	500.00
V. <i>Coir Industry</i>					
<i>Continuing Scheme</i>					
Coir Development Scheme		300.00	396.23	70.00	350.00
VI. <i>Cashew Industry</i>					
<i>Continuing Scheme</i>					
Strengthening the Cashew Development Corporation and Tannin Factory for Cashew			0.10	5.00	81.00

(1)	(2)	(3)	(4)	(5)	(6)
<b>VII. Bricks and Tiles Industries</b>					
<i>New Schemes</i>					
1.	Establishment of a Process-cum-Product Development Centre	..	..	..	10.00
2.	Conversion of Small Tile Units into Brick Units	..	..	..	80.00
3.	Full Capacity Utilisation	..	..	..	10.00
4.	Installation of Heavy Duty Press	..	..	..	50.00
5.	Introduction of Training Course in Ceramic Technology	..	..	..	4.00
6.	Mechanised Brick Units	..	..	..	50.00
7.	Modernisation and Diversification of Existing Units	..	..	..	96.00
<b>TOTAL (BRICKS AND TILES)</b>		<b>Nil</b>	<b>Nil</b>	<b>Nil</b>	<b>300.00</b>
<b>VIII. Bamboo Industry</b>					
<i>Continuing Scheme</i>					
1.	Assistance to Kerala State Bamboo Corporation	..	19.27	0.50	0.50
<i>New Schemes</i>					
2.	Raw Material Depot and Procurement Centres	..	..	..	60.00
3.	Strengthening and organisation of Bamboo workers' Industrial Co-operative Society	..	..	..	150.00
<b>TOTAL (BAMBOO INDUSTRY)</b>		<b>Nil</b>	<b>19.27</b>	<b>0.50</b>	<b>210.50</b>
<b>TOTAL (VILLAGE AND SMALL INDUSTRIES)</b>		<b>1604.00</b>	<b>1796.48</b>	<b>405.00</b>	<b>6795.59</b>
<b>GRAND TOTAL OF A+B+C (LARGE &amp; MEDIUM INDUSTRIES, MINERAL DEVELOPMENT AND VILLAGE AND SMALL INDUSTRIES)</b>		<b>6147.00</b>	<b>4981.90</b>	<b>1906.00</b>	<b>24339.59</b>

## TRANSPORT AND COMMUNICATIONS

A good network of transport and communications is regarded as a strategic infrastructure of a developing economy. The development of transport network involves the development of roads, inland waterways, railways and airways. Comprehensive development of the transport network would provide an impetus to economic activity by facilitating mobility of goods and services on a large scale. Apart from its direct contribution to the national income, a good transport network helps to speed up the growth of the economy in several sectors and thus act as a catalytic agent for all round economic growth.

14.2 The transport sector accounted for nearly one fifth of the total investment in the national economy during the plan era. In the all-India Plan for 1978-83 the share of transport and communications is likely to be over 15 per cent of the total outlay. Individual investments in transport have long gestation periods and are often lumpy. However, any marked shortages in transport even in the short run will lead to serious impediments in the smooth functioning of the economy. Therefore it is necessary that transport requirements are assessed in detail in advance and suitable measures for development of transport capacities are taken sufficiently ahead of requirements.

14.3 Kerala has all the usual modes of transportation facilities like roads, railways and airways in addition to the extensive system of inland waterways which play a useful role particularly in respect of goods transportation. It is however found that there is little co-ordination in the various forms of transport with the result that development in each is allowed to take place in a manner not strictly consistent with the needs of the overall plan for the State. Though basic transport facilities exist in some measure in the State, it is time greater attention is paid to the task of distributing the overall load over the entire field in proportion to the unused capacity in existence in each sector of the transport network. Hence greater emphasis on transport planning in Kerala is called for in the coming years. While the total Plan investment in the national economy had been in the range of 15 to 20 per cent of the total outlay, that of Kerala had been only about 7 per cent. In the 1978-83 plan for Kerala 10 per cent of the total State sector outlay has been earmarked for Transport and Communications.

14.4 Kerala is better placed than most of the other States so far as road length is concerned. At present the roads in Kerala add up to 85,165 kilometres in length of which 21,822 kilometres are surfaced (cement concrete, bituminous or water-bound macadam). But the condition of the road surface is generally unsatisfactory. Again, a large number of bridges and culverts are weak. Many of the roads are narrow. The main emphasis, therefore, should be on improving the existing roads rather than on construction of new roads. The State Public Works Department is constantly engaged in the study of the requirements for improvement and development of the State Highways, Major

District Roads, Other District Roads, City Roads and Rural Roads. In spite of the development of the State Highways or Major District Roads, these arterial roads have become inadequate to carry the increased passenger and goods traffic in the State. Hence in the Plan period 1978-83 sufficient emphasis has been given to improving the State Highways and Major District Roads from a long term point of view. This is also necessary in view of the high motor vehicle density in the State. The financial outlay for roads, that can be expected in the Plan for 1978-83 will however be sufficient to undertake only a part of the improvement works on roads. Hence improvement works and completion of road works, continuing from the Fourth and Fifth Plans are given top priority. Development of Major State Highways, District Roads and Village Roads has been given due emphasis and the items of works are so chosen as to get wide dispersal over the entire State. Development of rural roads will receive special attention so as to meet the requirements of the rural economy and population. Emphasis is laid on improvement of the existing tracks in tribal areas and scheduled caste settlements. The need for converting some of the strategic arterial roads like the Main Central Road into National Highways is also emphasised in the Plan.

14.5 The proposals under Road Transport relate to the Kerala State Road Transport Corporation only. Increase in the fleet strength to meet the anticipated rise in the passenger traffic in the routes operated by the Kerala State Road Transport Corporation by the end of the Plan period (1978-83) is suggested in the Plan. The question of nationalisation of additional routes is given a low priority keeping in view the suggested policy of the Planning Commission. However, the Plan contains programmes and necessary financial allotments for taking over the services from private sector in areas where, in the interest of the economy, it is better to allow the public sector to have the monopoly instead of making it compete with the private sector and lose.

14.6 Under inland water transport, the P. W. D. Irrigation Wing and the State Water Transport Department made preliminary investigations on a number of projects and prepared a list of schemes. The expansion proposals of the newly formed Kerala Inland Navigation Corporation and the schemes to improve the ferry service operation of the KSRTC at Enakulam have also been included in the Plan proposals. The need to co-ordinate the activities of the different agencies engaged in inland water transport and bringing these activities under a single agency has been emphasised in the Plan.

14.7 Possible lines of development of railways and air transport facilities for which the Central Government is responsible have been indicated. The rapid growth of the railway system is necessary in Kerala as the railways constitute the most efficient and economic form of transport for bulk traffic and long distance passenger movement. Air transport facilities within the State

have also to be developed especially to attract foreign tourists to the State. Under communications, the possible lines of expansion of post and telegraph facilities, keeping in view the needs of Kerala, have been indicated. Improvements in telecommunication facilities are also proposed. The main thrust of the telecommunication plan will be support and backward for the development of the rural areas, smaller towns regions. The vital role of telecommunications in the industrial development of the State has been recognised in the Plan.

### Ports, lighthouses and shipping

14.8 Ports in Kerala have a special place in the State's transport system. Besides the major port at Cochin, the State has 14 intermediate and minor ports. Calicut, Alleppey and Neendakara are the intermediate ports. The minor ports are Kasargode, Cannanore, Azhikkal, Tellicherry, Badagara, Beypore, Ponnani, Munambom, Quilon, Trivandrum and Vizhinjam. The total traffic handled in all the minor ports of Kerala have declined from 16.95 lakh tonnes in 1961-62 to 2.46 lakh tonnes in 1976-77. Out of the 14 minor and intermediate ports, only 5 ports handled any traffic worth mention during the past few years. These ports are Azhikkal, Calicut, Beypore, Alleppey and Neendakara. All other ports have been virtually inactive.

14.9 There are several reasons for the decline in traffic in minor ports. Loading and unloading of cargo at the open roadstead would become hazardous during the monsoon season and the operations at all the minor ports have to be practically suspended during this season. The traders would, therefore, have to seek the facilities at the major port of Cochin for this period. They gradually shift their centre of activity from the undeveloped minor ports to the fast developing major port area.

14.10 There are also several other limitations in the facilities offered at a minor port, because cargo handling and shipping at the minor ports through piers are labour intensive. The transport of cargo to ships is done by lighters of small capacity which only can be berthed alongside the open piers. Therefore the number of handlings required at a minor port is more and this results in heavy costs. In addition to this, the minor and intermediate ports lack amenities for the supply of fuel, oil, fresh water etc. to the ships that call at these ports. The development of road traffic has made the diversion of cargo to the Cochin Port easier. Reliable long distance road transport has eliminated coastal traffic in steamers from the minor ports.

#### *Development in the Earlier Plans*

14.11 During the First Plan Period, a pier at Trivandrum was constructed at a cost of Rs. 13.87 lakhs and some improvements were effected to the ports at Alleppey and Calicut. The total expenditure incurred was Rs. 14.21 lakhs out of the Plan outlay of Rs. 30 lakhs. During the Second Plan period some development of minor ports at Alleppey, Kozhikode, Badagara, Tellicherry, Cannanore, Azhikkal and Ponnani was undertaken. Against a plan provision of Rs. 48.16 lakhs, an expenditure of only Rs. 12.00 lakhs could be incurred. Several works were delayed for want of foreign exchange and import licence. In the Third Plan an

outlay of Rs. 25 lakhs was made in the State sector for minor port development. Improvement works executed during this Plan period were more effective compared to the achievement of the previous two Plan periods. For centrally sponsored schemes a total provision of Rs. 155.65 lakhs was made in the Third Plan. Establishment of lighterage port at Neendakara was the major programme in this sector for which a provision of Rs. 111.65 lakhs was made. The total expenditure incurred under the centrally sponsored scheme was Rs. 161.69 lakhs.

14.12 The State Sector outlay in the Fourth Five Year Plan was Rs. 210 lakhs. The Neendakara Port was commissioned and operations commenced at the Port during this period. The construction of the dredger costing about Rs. 2.22 crores was completed and dredging was undertaken at Beypore. The various civil works of the Department were carried out by the PWD during the Plan period. A separate Harbour Engineering Wing under the Port Department was formed with Headquarters at Trivandrum. Likewise the hydrographic survey unit was developed. Besides, certain improvement works to the minor ports were also carried out most of which were completion of works undertaken during the Third Plan. The expenditure incurred in the State sector during the Plan period was Rs. 357.13 lakhs. Though the Government of India approved the scheme for the development of Beypore Port costing Rs. 111.00 lakhs, the outlay provided under Central Sector in the Fourth Plan was only Rs. 50.00 lakhs and expenditure incurred was only Rs. 39.14 lakhs.

14.13 An amount of Rs. 332 lakhs was allotted in the State Sector for Ports and Pilotage in the Fifth Plan period. The expenditure incurred during the four years 1974-78 to which the Plan was limited was Rs. 163 lakhs. A number of major schemes were included in the Fifth Plan. All the works contemplated in respect of the lighterage port at Neendakara were completed. The construction of a self propelled refrigerated barge for Neendakara Port at a total cost of Rs. 12 lakhs is nearing completion. Orders have been placed for the construction and supply of 3 steel cargo barges for Neendakara Port. Six fishing trawlers have been purchased from the Kerala Fisheries Corporation. Capital repairs and major additions for piers and other structures at intermediate and minor ports were undertaken. The inauguration of the Kerala Institute of Nautical Studies based at Kovalam/Vizhinjam in September 1977 is an important step in the field of maritime training in the State.

14.14 The only centrally sponsored scheme in the Fifth Plan was the development of Beypore Port. An expenditure of Rs. 74.77 lakhs was incurred under the centrally sponsored scheme during the Fifth Plan period. The dredging works at Beypore are in progress.

#### *Plan Proposals for 1978-83*

14.15 The development programmes in the previous Five Year Plans were barely adequate for stimulating the activities of the minor ports of Kerala. A fresh and bolder approach to minor port development is necessary during the Plan period 1978-83. The new functions which the minor ports are called upon to discharge necessitates a shift in the emphasis from the old roadstead

ports and open piers to the development of sheltered harbours for small crafts like coastal steamers of 2000-4000 tonnes capacity, self propelled cargo barges, Mini-LASH Vessels, mechanised sailing vessels and medium to large off-shore fishing vessels. Almost all our harbour sites (except Vizhinjam) are situated at river estuaries. The entrances of these river estuaries are restricted by the presence of a shallow bar over which the depth varies between 1.5 to 2.5 metres. By the construction of suitable breakwaters and with moderate maintenance dredging it may be possible to economically maintain depth of 4 to 6 metres of water at these river entrances. Traffic can be revived through these harbours by introducing vessels of 3 to 4.5 metres draft which can operate coastal services and sailings to Gulf countries. Introduction of Mini-LASH vessels for this purpose would be most ideal. A programme for gradual mechanisation of sailing vessels may also be undertaken to help the traditional seafarers to continue their profession. The off-shore fishing vessels have a draft between 3 to 4.5 metres only and it is possible to accommodate these vessels also in the harbours, thereby bringing additional returns on the capital invested. The various schemes for ports and harbours as envisaged in the Plan 1978-83 are indicated below.

#### A. Ports and Pilotage

##### 1. Development of Minor Ports

14.16 Cochin is the only major harbour in the State which can admit ships at all times of the year. It is proposed to develop four cargo harbours, two south of Cochin and two in the North. The harbours proposed for development during the Plan period are Vizhinjam, Neendakara, Beypore and Azhikkal.

##### (i) Vizhinjam Cargo Harbour (Outlay Rs. 250 lakhs)

14.17 Vizhinjam, located about 16 Kms. south of Trivandrum, is a fishing village, with a sandy beach about 1 km. in length protected on the east by a rock promontory known as 'Kottappuram' and on the west by another rock promontory known as 'Mathilpuram'. Vizhinjam harbour was initially planned as a fishery harbour. This harbour however is blessed with adequate natural depth and therefore has ample potential for development as a cargo harbour. The necessity for a cargo harbour for Trivandrum is being keenly felt for the industrial development of the region and therefore it would be advantageous if the natural facilities available at Vizhinjam are made use of for the construction of a cargo-harbour. The hinterland comprises Trivandrum district of Kerala State and Kanyakumari district of Tamil Nadu. The cargo anticipated comprise food grains, coal, salt, chemicals, building materials like bricks and granite stones, materials for road making and fresh water for drinking purposes to Gulf countries. The anticipated annual cargo is 2.5 lakh tonnes. A rough estimate of the cost of development of harbour facilities in this port is placed at Rs. 250 lakhs. Detailed investigation for this scheme is yet to be undertaken. Investigation and preparation of detailed designs for the harbour will take nearly two years. Once the project is taken up it can be implemented in three years.

##### (ii) Neendakara Cargo Harbour (Outlay Rs. 99 lakhs)

14.18 The port of Neendakara is situated in the estuary of Ashtamudi lake which is fed by the river

Kallada. Quilon which was formerly an international emporium of trade and even now an important commercial and industrial centre is 10 kms. south of Neendakara. The N.H. 47 crosses the port area while the inland waterway reaches the port through the T.S. canal.

14.19 In 1959 the Intermediate Port Development Committee of the Government of India recommended the development of Neendakara as a lighterage port for handling the traditional traffic of cashew and ilmentic of the nearby roadstead ports of Quilon and Koilthottam. The construction of the breakwater at Neendakara was started in 1963 and continued till 1967 when the Government stopped the work on the advice of the then Development Adviser (Ports). This was done with a view to examining the possibility of developing Neendakara as an all weather port for catering to vessels upto 30 ft. draft. To finalise the plan of the cargo harbour it was also necessary to finalise the layout of the fishing harbour of Neendakara for which the greater priority was given considering the large potential for fishery development. A revised project for the development of cargo harbour has been finalised and the report submitted to Government in June 1978. The total estimated cost of the first phase of the scheme is Rs. 99 lakhs.

##### (iii) Beypore Cargo Harbour (Outlay Rs. 260 lakhs)

14.20 Beypore is an ancient estuarine port which had enjoyed brisk foreign trade and was the main maritime outlet for the export of pepper, spices and timber of Malabar region. With gradual siltation and deterioration in depth, the Port has suffered a decline. A decision was taken to develop the Port for the use of sailing vessels of draft upto 4.5 m. A scheme costing Rs. 111.96 lakhs has already been approved by the Government of India and an estimate has been sanctioned by the State Government for the implementation of the scheme. The scheme included mainly the dredging at an approach channel with 6.0 m. depth in the sea and 5.5 m. depth inside the basin with a turning circle of 200 m. diameter. The present wharf at Beypore can be used only for vessels having a maximum draft of 3 m. This is not sufficient to accommodate the sailing vessels and coastal steamers of 4.5 m. draft. Therefore, a wharf suitable for these vessels has to be provided. There are only two transit sheds each of 500 tonne capacity. Two more transit sheds are necessary. In order to improve the existing facilities and also to expand the operations in this port, various items of works have to be undertaken. It is estimated that Rs. 260 lakhs would be required to complete all these items of work.

##### (iv) Azhikkal Cargo Harbour (Outlay Rs. 105 lakhs)

14.21 Azhikkal also known as Valapattanam is situated on the side of National Highway 17 (N.H.17) 10km. north of Cannanore town and on the south bank of Valapattanam river close to its mouth. The estuary is separated from the sea by a shallow sand bar and hence cargo vessels can enter the harbour only at high tide. The present port of Azhikkal, situated at the mouth of Valapattanam river, has only a wharf of 42.67 m. long and 12 m. wide. Only one vessel can be berthed at a time. The existing capacity of the Port is only 1000 tonnes of cargo per day. The Port registered a

traffic of 14,643 tonnes in 1975-76 and 20,192 tonnes in 1976-77. Sawm timber, coconuts, bamboo, tiles, iron scrap, fish manure etc. are some of the important items handled by this port.

14.22 The objective of the proposed development in the plan is to provide the necessary harbour facilities for the lighterage operations and complete terminal facilities for the lighters and small coastal steamers drawing upto 4.5 m. of water. The developments are proposed in three stages. The first stage is to be taken up in the Plan period 1978-83 for which an outlay of Rs. 105 lakhs is proposed.

### 2. Investigation Planning and Preparation of Master Plan for Future Development (Outlay Rs. 15 lakhs)

14.23 The Fifth Plan outlay for this scheme was Rs. 25 lakhs. Out of this an expenditure of Rs. 11.43 lakhs was incurred during the four years of the Fifth Plan. Investigation works in respect of certain ports are in progress. The investigation works in respect of the other selected Ports will have to be taken up during the Five Year Plan period 1978-83. The total outlay of Rs. 15 lakhs proposed in the Plan will be spent on investigation and preparation of Master Plan (Rs. 10 lakhs) and staff charges of the Harbour Engineering wing (Rs. 5 lakhs).

### 3. Construction and Repairs

#### (i) Purchase of New Supplementary Equipments for Ports and Dredger Unit. (Outlay Rs. 66.5 lakhs)

14.24 The total outlay in the Fifth Plan for this scheme was Rs. 65 lakhs. No expenditure was incurred during the Plan period since the purchase of the equipments proposed would not be effected. A provision of Rs. 66.5 lakhs is made for purchase of these crafts and equipments.

#### (iii) Capital Repairs and Additions to Piers and Other Structures (Outlay Rs. 58 lakhs).

14.25 The piers at Alleppey, Calicut and Trivandrum are old and in order to keep them in working condition it has become necessary to undertake regular capital repairs. For the piers at Alleppey the renewal of superstructure was undertaken in the Fifth Plan period. During the Plan period 1978-83 the remaining part of the work will be undertaken. At Calicut also the renewal of superstructure has to be undertaken periodically. At Trivandrum the pier has to be protected by gunniting. The second gunniting was done in 1975 and another gunniting may become necessary in 1982-83. A total provision of Rs. 58.00 lakhs is proposed for the repair of piers at Alleppey, Calicut and Trivandrum.

#### (iii) Capital Repairs and Major Additions to Equipments and Floating Crafts (Outlay Rs. 25 lakhs)

14.26 Out of the total outlay of Rs. 10 lakhs set apart in the Fifth Plan for this scheme, an expenditure of Rs. 4.27 lakhs was incurred. Major repairs like replacement of engine, renewal of hull etc. are contemplated under this scheme. Dry docking of the dredger, "Neendakara" was undertaken in 1977-78 and that

of "Meena-Kerala" is proposed to be undertaken during 1978-79. Certain major repairs and replacements of engine, renewal of hull etc. have to be arranged during the Plan period 1978-83. The two tugs at Alleppey are very old and therefore need some major repairs and renewal of engine. An outlay of Rs. 25 lakhs is proposed in the Plan for these items of works.

### 4. Dredger Unit (Outlay Rs. 40.5 lakhs)

14.27 The outlay provided is for meeting the establishment charges of the dredger unit.

### 5. Other Expenditure

#### (i) Housing for Port Staff (Outlay Rs. 15 lakhs)

14.28 The progress under this scheme during the Fifth Plan was poor. Construction of quarters to the Port Officer, Alleppey, was started in 1977-78. This is to be completed during the Plan period 1978-83. Additional quarters to the port staff at Neendakara, Alleppey and Beypore have to be constructed by the Department. An outlay of Rs. 15 lakhs is proposed in the Plan.

#### (ii) Seamen's Welfare (Outlay Rs. 100 lakhs)

14.29 Welfare of the seafarers of the State had been hitherto a neglected field. A good number of workers in the Kerala sea coast are employed in sailing vessels, mechanised fishing vessels, harbour crafts and country crafts engaged in loading and unloading of cargo from steamers and in fishing. The present service conditions of the above seafarers are very unsatisfactory. Various welfare schemes for the seafarers are being implemented by the Fisheries Department and the newly formed Fishermen's Welfare Corporation. As far as the Port Department is concerned, it is necessary to chalk out certain relief measures for the seafarers who meet with distress at sea. During the past years many lives were lost at sea for want of proper search and rescue operations. It is therefore proposed to set up a "Search and Rescue Organisation" by providing necessary crafts with modern communication facilities to be stationed at various ports. An outlay of Rs. 100 lakhs is provided in the plan to initiate the scheme.

### B. Shipping

14.30 Kerala is endowed with a long coast line which offers immense potentialities for development. In 1974, the State entered, in a small way, the field of international shipping. The total investment so far made in this sector is only about Rs. 150 lakhs. The cost of ship is very low at present, and this is the right time for buying ships and expanding the fleet.

14.31 From 1977 a conspicuous change in the pattern of the country's imports and exports is taking place. India has decided to build a buffer stock of fertilisers. So the import of fertilisers such as muriate of potash, ammonium phosphate, urea, rock phosphate, sulphur etc. has been stepped up. Cement which had been an export commodity till recently, is being imported now. While coal required for thermal stations is being exported action has been taken for importing coking coal for



our steel plants. Iron ore, which is a perennial source of export, chromium ore, manganese ore, steel products, etc. are other major items of export.

14.32 There is every indication of a boost of export and import trade of Kerala also in the near future, particularly in the bulk trade. FACT, which is a major consumer of rock phosphate, most of which is imported, may require for its Ambalamedu Division, on an average 2000 tonnes per day, when production improves in the near future. Fresh industrial and commercial development of the State would necessitate added shipping activity for export of our industrial products to the Middle East and other parts of the world and for import of raw materials and industrial products into the State.

14.33 An ambitious programme of investment in shipping is proposed in the Five Year Plan 1978-83 which will make a sea-change in the shipping scene in Kerala.

#### 1. Training and Education

##### (i) Shipping University (Outlay Rs.25 lakhs)

14.34 The Government of India have accepted in principle the setting up of a Marine Technological University to provide up-to-date training methods and techniques in the field of sea transportation. The University would embrace specialised disciplines such as Marine Engineering, Naval Architecture, Pure Navigation, Electronics, Shipping Economics, Ship Management, Chartering Marine Laws, Meteorology, Offshore Technology etc.

14.35 One of the objectives of Kerala Shipping Corporation is also the establishment of such training institutions. The two institutions for training officers now functioning in India are T. S. Rajendra in Bombay for navigating officers and D. M. E. T. Calcutta for engineering officers. In spite of the shortening of duration of courses and increase in the intake, the shortage of officers continues to be an acute problem. There is also the flow of Indian Officers to foreign companies for better offers creating a dearth of qualified personnel for manning Indian ships.

14.36 The problem of shortage of trained personnel can be solved by expanding the training facilities in the State. This will also help the country to provide men for world shipping and improve employment opportunities for our young men. As a forerunner of a University a full fledged marine technology institute can start functioning from 1979-80. The Arab countries are expanding their shipping activities on a big scale. The proposed Institute can also cater to the rising demand of Arab countries. We can also expect collaboration from other advanced countries and aid. The total cost of establishment of such a University will be Rs. 100 lakhs. The State may have to make an investment of Rs. 10 lakhs initially to set up the institute in the State. The State's share for the University will be approximately Rs. 25 lakhs. This amount is suggested in the State Sector Plan.

##### (ii) Development of Kerala Institute of Nautical Studies (Outlay Rs. 50 lakhs.)

14.37 Kerala is facing a serious problem of educated unemployment. There is considerable employment

potential for our educated young men in the Merchant Navy. But what is lacking is some basic training facilities. Kerala's fast developing fishing industry also requires trained seamen to man the sophisticated vessels. Considering these aspects, Government have sanctioned the establishment of a training centre based at Kovalam/Vizhinjam. It is proposed to develop this training centre into a full fledged one during the Plan period. A lumpsum outlay of Rs. 50 lakhs is provided in the Plan for this scheme.

#### 2. Kerala Shipping Corporation (Outlay Rs. 300 lakhs)

14.38 When the Kerala Shipping Corporation was formed, the long term objective was put at 100 ships over a time span of 15 years. Due to various reasons this objective could not be pursued vigorously. The Corporation is likely to go in for one more ship in 1978-79. The phenomenal fall in ship prices has not given an opportunity to launch a bold and ambitious expansion programme. In the present day market acquisition of 25 ships would mean an investment of Rs. 100 crores out of which only Rs. 13.5 crores need be provided by the State. The balance should be obtained from the Shipping Development Fund Committee or international banks. An outlay of Rs. 300 lakhs is provided initially towards this programme for 1978-83.

#### 3. Other Schemes

##### (i) Kerala Maritime Corporation (Outlay Rs. 230 lakhs)

14.39 Indian coastal trade is dwindling due to various factors, the most important of which is lack of adequate number of ships which can be admitted to the various minor and intermediate ports along the coast. The second important reason is the lack of facilities in the ports to receive these ships. The recent oil boom in the Gulf countries and the exodus of educated Keralites to these countries have opened up new avenues of trade for items like tiles, timber, bamboo etc. and other items of road and building materials. These items could be transported by river and canal routes to minor ports from where they could be directly exported to foreign countries, especially Gulf countries. This would mean considerable savings in the cost of transportation.

14.40 Again, our traditional cargoes like coconut, copra, tapioca, coir, ilmenite, clay, timber, bamboo etc. have to be transported to Bombay and other Indian Ports. For most of these commodities, the cost of transportation is a vital factor which would reflect adversely on its price at destination. For articles like tiles repeated handlings and transportation over road would result in higher percentage of breakage. Also these commodities are to be produced in small quantities so that stoppage of large ships for collection of the same may not be economical. All these factors point to the advantage in using smaller ships for the most efficient transportation of these commodities. Use of small ships would enable its entry in our Minor Ports like Vizhinjam, Neendakara, Beypore, Azhikkal etc. where facilities for the entry of these ships are being provided.

14.41 A preliminary project report for the formation of "Kerala Maritime Corporation" was prepared

by the State Port Department for the development of coastal shipping. This should revive the traffic through the minor ports of Kerala and improve the employment opportunities of the Port workers. The Government has entrusted M/S. Engineers India Ltd., New Delhi, with the preparation of detailed Project Report. The tentative plan proposal is to acquire three ships of 2000-2500 D.W.T. for coastal trade and two ships of the same size for trade with the Middle East. The State's share of investment for the procurement of 5 ships would be Rs. 1.25 crores. This together with the working capital and establishment charges required will put the total State Plan outlay on the scheme at Rs. 230 lakhs.

(ii) *Major Dry Dock and Repair Yard (Outlay Rs. 200 lakhs)*

14.42 Every ship necessarily has to be dry docked at least once in a year for under-water painting, repair

etc. But ships are generally drydocked oftener for better maintenance and upkeep. The dry dock facilities available in India are inadequate to meet the requirements of Indian ships. So most of the Indian ships are dry docked abroad and this leads to a drain on foreign exchange. A general study indicates that there is scope for eight more dry docks in India. Though a dry dock is planned in the Cochin Shipyard, its availability after meeting their refitting requirements is doubtful. So it is worthwhile to think of another major dry dock and repair yard in Kerala, preferably at Vizhinjam. Such a dry dock can cater to foreign ships also. A modern dry dock and repair yard may cost around Rs. 45 crores. It may take about three years for commissioning during which period no return from the investment need be expected. An outlay of Rs. 200 lakhs is made in the plan to start work on the proposed dry dock and repair yard during the five year period 1978-83.

TABLE 14.1  
Ports, Light Houses and Shipping—  
Scheme-wise outlays

		(Rs. in lakhs)			
Sl. No.	Scheme	Fifth Plan Outlay (1974-79)	1974-78 Expenditure	1978-79 Outlay Budgeted	1978-83 Outlay proposed
(1)	(2)	(3)	(4)	(5)	(6)
<b>(A) Ports and Pilotage</b>					
	(1) <i>Development of Minor Ports</i>				
	(i) Vizhinjam Cargo Harbour				250.00
	(ii) Neendakara Cargo Harbour				99.00
	(iii) Beypore Cargo Harbour	250.00	110.09	66.50	260.00
	(iv) Azhikkal Cargo Harbour				105.00
(2)	Investigation, Planning and preparation of master plan work including staff charges of Harbour Engineering and M. S. Wings	5.00	4.80	..	15.00
(3)	<i>Construction and Repairs</i>				
	(i) Purchase of new supplementary equipments for ports				66.50
	(ii) Capital repairs and major additions to piers and other Structures	20.00	..	..	58.00
	(iii) Capital repairs and major additions for equipments and floating crafts	..	..	..	25.00
(4)	<i>Dredging and surveying</i>	15.00	5.21	0.50	40.50
(5)	<i>Other items of Expenditure</i>				
	(i) Housing for Port Staff	..	0.30	1.00	15.00
	(ii) Construction of a boat transfer jetty at Alleppey Port	..	0.10	..	..
	(iii) Dry docking	10.00	..	..	..
	(iv) Shipping operations at Vizhinjam harbour	..	0.50	..	..
	(v) Establishment of a Central workshop stores organisation	..	1.00	..	..
	(vi) Provision of Steel Cargo Barges at Neendakara Port	..	5.05	7.00	7.00
	(vii) Purchase of trawlers	..	27.00	..	..
	(viii) Purchase of a refrigerated barge for Neendakara Port	..	6.83	7.00	7.00
	(ix) Inland Water Transport Corporation	32.00	1.81	..	..
	(x) Lighterage Port at Neendakara	..	..	..	4.00
	(xi) Seamen's Welfare	..	..	..	100.00
	Sub-Total (A)	332.00	162.69	82.00	1052.00

(1)	(2)	(3)	(4)	(5)	(6)
<b>(B) Shipping</b>					
1. Training and Education					
(i) Shipping University		..	..	..	25.00
(ii) Kerala Institute of Nautical Studies		..	6.10	5.00	50.00
2. Kerala Shipping Corporation					
(i) Shipping Services					
(ii) Acquisition and Expansion of Tonnage		180.00	143.00	..	300.00
(iii) Equity participation in Shipping Corporation					
<i>Other Schemes</i>					
(i) Kerala State Maritime Corporation		..	..	..	230.00
(ii) Dry Dock and Repair Yard		..	..	..	200.00
Sub-Total (B)		18f.00	149.10	5.00	805.00
Grand Total (A&B)		512.00	311.79	87.00	1857.00

### Roads and Bridges

14.43 Kerala State has a road length of nearly 36.6 km. per 10,000 population, more or less similar to the all India average, but on the basis of area it has larger road length of about 219 km. per 100 sq.km of area. Topographical variations from the mountains on the East through the hinterlands to the flat regions of the coasts on the west abounding in water logged areas, the high intensity of traffic, the high cost of land, ribbon development along the road margins and a very high incidence of rainfall pose problems in the construction, improvement and maintenance of roads in Kerala. Many of the roads in the State, however, were formed before the introduction of modern fast moving and heavy vehicles. They suffer from small width, acute bends, steep gradients, weak and narrow bridges and unbridged causeways. Besides the two

National Highways, N.H. 17 and N.H. 47, covering a distance of 838 km, there are 31 State Highways having a total length of 2028 km. many major district roads, other district roads and village roads in the State. Out of the total length of 85,165 km. of roads in the State, P. W. D. (B & R) maintains only 15,255 km. of roads.

14.44 The surface-wise distribution of the roads in the State indicates that only 15 per cent of the total length of roads has dust-free surface (that is, bituminous surfacing for 12,629 km and concrete surfacing for 135 km.) At the national level surfaced roads account for 41 per cent of the total. Therefore the improvement of the surfacing of the roads in the State is an urgent necessity. The details regarding surface-wise and category-wise distribution of the roads in the State are given in Table 14.2.

TABLE 14.2  
Length of Roads in Kerala (1977-78)

Sl. No.	Category of Roads Under	Length of Roads (Km.)				
		Total	Concrete	Bituminous	Water bound macadam	Gravel and Earth Roads
(1)	(2)	(3)	(4)	(5)	(6)	(7)
I (a)	National Highways	838	..	838	..	..
(b)	B & R—PWD					
	(i) State Highways	2028	45	1926	57	..
	(ii) Major District Roads	5324	8	4710	497	109
	(iii) Other District Roads	5229	48	3003	1660	518
	(iv) Village Roads	2674	..	110	2400	164
	Total (b)	15255	101	9749	4614	791
(c)	Irrigation Wing	404	2	113	183	106
(d)	Projects	25	..	10	15	..
II (a)	Corporations	957	8	400	240	309
(b)	Municipalities	2000	24	576	300	1100
(c)	Panchayats	60039	..	270	2001	7768
(d)	CD and N.E.S. Blocks	2905	..	..	1000	1905
III	K. S. E. Board	574	..	473	101	..
IV	Forest Department	1155	..	100	138	917
V	Railways	66	..	..	66	..
VI	Others	947	..	100	400	447
	Total (I to VI)	85165	135	12629	9058	3343

14.45 There has been appreciable increase in the number of vehicles in the State. The motor vehicle density is high in Kerala compared to many other States in India. It had 331 vehicles per 100 sq. km of area and 533 vehicles per lakh of population during 1976-77. The corresponding all-India figures in 1973-74 were 64 and 362 respectively. The total number of vehicles registered in the State is about 1.29 lakhs. The volume of traffic and the vehicle density in the existing roads call for a much higher investment on road development during the coming years.

*Progress under the previous Plans.*

14.46 An outlay of Rs. 1.75 crores was made in the First Five Year Plan for road development and in implementing it a sum of Rs. 2.58 crores was spent. The physical achievements attained at the end of the Plan period were construction of 32 km. of new roads, improvement of 844 km. of existing roads, construction of 1600 km. of new village roads and construction of 13 major bridges. The Second Five Year Plan provided an outlay of Rs. 4.78 crores for road development. The total expenditure incurred on this head of development was Rs. 5.75 crores. The achievements at the end of the Second Plan period were construction of 248 km. of new roads, special surfacing of 656 km. of roads improving and upgrading of 1232 km of roads, opening of 376 km. of village roads and completion of 23 major and 150 minor bridges. In spite of the efforts in the first two Plans, the condition of roads and bridges of the State remained far from satisfactory. In view of this, an outlay of Rs. 9 crores was provided in the Third Plan. The actual expenditure incurred was Rs. 11.07 crores. The targets achieved by this Plan were construction of 313 km. of new roads, special surfacing of 1305 km. of roads, improvement of 2206 km. of roads, construction of 97 major bridges, completion of 38 minor bridges and opening of 320 km. of village roads.

14.47 During the three annual plans beginning 1966-67, the spill over works of the previous Five Year Plans were given priority in relation to new works. In taking up new works special emphasis was laid on the provision of communication facilities in major industrial, mining and other development project areas and in backward, coastal and hill areas. The actual expenditure incurred in the annual plans for roads and bridges was Rs. 5.68 crores. The physical achievement during these three annual plans were construction of 134 km. of new roads, improvement and upgrading of 249 km. of roads, special surfacing of 1927 km of roads and construction of 19 major bridges. The Fourth Plan outlay for roads and bridges was Rs. 11.25 crores. The Plan envisaged improvement of existing roads and construction of missing links and bridges so that the State would have an integrated road system. The actual expenditure incurred in road schemes during this Plan period was Rs. 20.66 crores. Though this implies a high degree of spending, the achievement of physical targets was far from satisfactory. The physical achievements during this Plan were construction of 643 km of missing links, special surfacing of 3128 km of roads, completion of 95 bridges and opening of 298 km of Panchayat roads. Out of a total number of 1964 works proposed, only 415 items could be completed during the Fourth Plan period, constituting nearly 39 per cent of the target. Cost

escalation and shortage of equipment contributed significantly to this poor achievement. A Road Planning Board for the purpose of preparation of a perspective Plan for road development also existed during this Plan period. In the Fifth Five Year Plan an outlay of Rs. 22.82 crores was allotted for roads and bridges. During the period 1974-78 an amount of about Rs. 23.50 crores was spent on this head of development.

*Plan Proposals for 1978-83*

14.48 The poor state of the roads, the increasing trends in the passenger and good transport on roads and the accelerated pace of development envisaged in the different sectors of the State's economy provide adequate justification for a higher investment on road development. A start has been made in the earlier plans to improve the condition of the existing network, spillover works should, therefore, be given top priority as the completion of these will yield quicker results. The amount required by P. W. D. (B & R) for completing the spill over works is Rs. 1671 lakhs and the spill over liability on village roads is Rs. 302 lakhs. Thus the total amount required for spill over works alone is Rs. 1973 lakhs. The scheme-wise details and financial requirements for the Plan are given below:

(i) *State Highways (Outlay Rs. 1950 lakhs)*

14.49 There are 31 State Highways having a total length of 2028 km. of roads. Detailed project reports have been prepared in the case of the following six roads.

Name of Highway	Total Requirements in Rs. lakhs
(i) M. C. Road	1840
(ii) Calicut-Palghat Highway	680
(iii) Ettumanoor-Enrnakulam Road	500
(iv) Kottayam-Kumili Road	500
(v) Quilon-Shencottah Road	500
(vi) Punalur, Palai, Muvattupuzha Road (Main Eastern Highway)	980
	5000

Apart from the above, improvements in respect of the remaining 25 State Highways are also required for which a sum of Rs. 1000 lakhs is necessary. The spill over requirements will be Rs. 1,000 lakhs. Thus the total investment required for a ten year perspective will be about Rs. 7000 lakhs. In view of lack of resources, a sum of Rs. 1950 lakhs is provided for the Plan period 1978-83.

(ii) *Major District & Other District Roads (Outlay Rs. 1400 lakhs)*

14.50 Nearly 5,324 km. of roads maintained by the Public Works Department fall under major district roads and 5,229 km. under other district roads. Most of these roads need widening and improvement as they do not conform to P. W. D. standards. Detailed calculations indicate that the total requirement for a limited programme of developing 1650 km. of district roads, 10 in each district for an average length of

15 km. to start with and 2420 km. of other district roads, 220 km, in each district, would require an outlay of Rs. 5000 lakhs. Within the next ten years atleast this limited improvement to the district roads should be attempted. A sum of Rs. 1400 lakhs is proposed for the Plan period 1978-83 for improving at least 1200 km. out of the 4070 km. suggested for improvement in the next ten years.

(iii) *Purchase of Machi Road Works (Outlay Rs. 50 lakhs)*

14.51 For the construction of roads, equipments like rollers, road pavers, concrete mixers, tar boilers, bitumen conveyers etc. are essential. The equipments now available in the Public Works Department are old and often under repairs which delays the execution of works. In the Five Year Plan 1978-83 it is proposed to purchase equipments worth Rs. 50 lakhs.

(iv) *Rural Roads (Outlay Rs. 4038 lakhs).*

14.52 The total length of village and rural roads in the State is approximately 63,618 km. Out of this, the State P. W. D. is maintaining only 2,674 km. There is no regular maintenance of these roads. Their standards are also very poor. Most of these are earthen roads with insufficient width.

14.53 The Government of India under the Minimum Needs Programme stipulated that all villages having a population of 1,500 and above should at least have one metalled road within a radius of 4 km. Owing to the extreme pressure of population a village in Kerala has on an average about 14,000 persons. Therefore more roads are necessary in the State for every village. At least 9,000 km. need improvement in the next ten years for which a sum of Rs. 10,000 lakhs is required. During the Five Year Plan period 1978-83 an outlay of Rs. 4038 lakhs is proposed for bringing to proper standards a length of 3,818 km. of roads on which there is already heavy traffic, 5,000 km. of rural roads under the Panchayats and C. D. Blocks and for meeting spillover requirements.

(v) *Expansion of Kerala Highway Research Institute Trivandrum ( Outlay Rs. 207 lakhs)*

14.54 In order to ensure the economic use of road construction materials, adoption of modern techniques in road engineering is indispensable. Modernisation of road construction methods is also essential. The Kerala Highway Research Institute, Trivandrum, was established in 1973. The provision in the Plan 1978-83, is for equipping the laboratories of the Institute adequately and completing its expansion programmes and for investigation and planning of roads and bridges. An outlay of Rs.207 lakhs is proposed for the Five Year Plan period 1978-83.

(vi) *Railway Safety Works on Roads (Outlay Rs.50 lakhs )*

14.55 For construction of approach embankment and the works connected with railway level crossing, a sum of Rs.50 lakhs is earmarked for 1978-83.

(vii) *Other Items*

1. *Opening of Hill Highway (Outlay Rs.300 lakhs)*

14.56 There exists only meagre communication facilities in the forest regions in eastern part of the Western Ghats of the State. If a hill highway is opened along the Western Ghats, the vast potential wealth available in our forests can be fully and efficiently tapped and the hill produce can be transported and marketed easily. The works proposed are the construction of a hill highway running north to south by improving the existing roads, providing missing links, improving the existing cross roads which branch off from the proposed hill highway and constructing new link roads in order to open up inaccessible forest areas. The total length of the proposed hill highway is 912 km. About a third of this length has to be formed as new roads, while the remaining two thirds of the length either exists as a village road or as a forest tract. The approximate cost will be Rs.8000 lakhs and the work is proposed to be completed in 10 years. An Investigation Cell for the Hill Highway is necessary. World Bank assistance is being sought for this project. At least one Division with full complement of subordinate staff is required for this scheme. Besides one Circle and three Divisions will also be necessary for implementing the works. A sum of Rs.300 lakhs is earmarked to commence the preliminary works during the Five Year Plan period, 1978-83.

2. *Improvements of the Roads in the three Cities of Trivandrum Cochin and Calicut (Outlay Rs.300 lakhs)*

14.57 The roads within the city limits of Trivandrum Cochin and Calicut need considerable improvement in order to carry even the present traffic. These roads need, not only strengthening, but also widening and other improvements. The total cost of improving these roads is estimated as follows:

1. Trivandrum	(32.9km)	Rs.288 lakhs
2. Cochin	(35.8km)	Rs.397 lakhs
3. Calicut	(31.6km)	Rs.291 lakhs
	100.3km	Rs.976 lakhs

The outlay suggested for the Five Year Plan period 1978-83 is Rs. 300 lakhs.

3 *Improvement of Town Roads (Outlay Rs.100 lakhs)*

14.58 The roads within the town limits need urgent improvement. The following towns are proposed to be taken up for improvement in a phased manner over the years.

	Kilometres	Approximate total cost (Rs.lakhs)
1. Quilon	6.60	52
2. Alleppey	14.75	80
3. Kottayam	5.90	58
4. Idukki	3.50	40
5. Trichur	17.05	83
6. Palghat	13.40	88
7. Malappuram	3.10	36
8. Cannanore	5.70	40
	72.00	477

14.59 In addition, roads managed by 29 other Municipal towns are proposed to be improved for which Rs. 200 lakhs will be required. An outlay of Rs.100 lakhs is suggested for the Plan period 1978-83 towards this long term improvement plan.

4. *Improvement of the Roads in the Industrial Belt of Cochin* (Outlay Rs. 22 lakhs)

14.60 A sum of Rs.100 lakhs is required for improvement of the roads in the Cochin Industrial belt for which a sum of Rs.22 lakhs is provided for the period 1978-83.

5. *Improvements and Opening of new Roads in the Tribal areas and Tribal and Scheduled Caste Settlements* (Outlay Rs.400 lakhs)

14.61 The approximate total area of tribal habitation in the State is about 10,000 sq.km. While the average road length in the State is about 219 km. per 100 sq.km. of area, in tribal area it is less than 10 km. per 100 sq.km. The deficiency in communication facility in tribal areas is proposed to be made good in a period of ten years by providing roads connecting tribal settlements with schools, market places, hospitals, dispensaries etc. at an estimated total cost of Rs.800lakhs. This is one of the important schemes of development especially adapted to the needs and conditions of tribal areas and tribal communities. Similarly the roads in the scheduled caste settlements are also proposed to be taken up and improved. A sum of Rs.400 lakhs is proposed in the Five Year Plan period of 1978-83.

6. *Roads of Tourist Importance and those for the Security of the State* (Outlay Rs.3 lakhs)

14.62 A sum of Rs.3 lakhs is provided for improving the roads of tourist importance and those essential from the security point of view.

7. *Rubberisation of Roads* (Outlay Rs. 30 lakhs)

14.63 It has been reported that rubberised bituminous road surfacings have a longer life under normal conditions. In tough conditions such as on gradients, bus stops and roundabouts, on shifting foundations and in tropical conditions they show special advantages. It is proposed to try out on an experimental basis, the use of rubberised bituminous for surfacing 5 to 10 km. of road length in all district headquarters. The estimated cost of 100 km. of such experimental surfacing is around Rs. 67 lakhs. An outlay of Rs. 30 lakhs is proposed for the five year period 1978-83 under this scheme.

8. *Access to Islands* (Outlay Rs. 100 lakhs)

14.64 There are many islands along the Kerala coast which remain undeveloped due to lack of proper communication facilities. It is necessary to connect all these islands by constructing bridges. The total cost of the scheme as per the 1973-74 estimates itself is over Rs. 20 crores. The present cost will be still more. However a total provision of Rs. 100 lakhs is made for investigation and commencement of preliminary works during 1978-83.

9. *Improving Accident prone Spots in the Highways and Other Roads in the State* (Outlay Rs. 50 lakhs)

14.65 There are many accident prone spots in the highways and roads of the State. To improve the geometrics of the roads on such locations and create proper environment for safe driving an amount of Rs. 200 lakhs is required. An amount of Rs. 50 lakhs is proposed during the Plan period 1978-83.

*Central Sector Schemes*

14.66 The total length of roads under National Highways in Kerala is 838 kilometres. During the Fourth Plan period a sum of Rs. 15 crores was provided for National Highways in Kerala. The improvement works during the Fourth Plan consisted of widening NH 47 to two lane standards, widening the Alwaye-Ernakulam reach to four lane standards, constructing by-passes around the congested towns of Palghat, Trichur, Chalakudy, Koratty, Alwaye and Cochin and reconstructing and widening of weak and narrow bridges. The targets aimed at in the Fourth Plan could not be fully achieved owing to the delay in sanctioning works and in completing land acquisition proceedings.

14.67 The major works proposed in the Fifth Plan were widening the Trichur-Cochin and Trivandrum-Quilon reaches to four lane standards, and constructing by-passes around the congested towns of Alleppey, Quilon, Neyyattinkara, Trivandrum and Attingal.

14.68 The distribution of National Highways among the different States show that Kerala's share is comparatively low. Some of the major roads in the State carry traffic to such an extent that they require National Highway standards. Hence, it is suggested that the Main Central Road which forms the main artery in the mid-land region and the Cochin-Madurai road which offers immense potential for inter-state traffic should be taken over by the Centre and developed as National Highways during the Plan period 1978-83.

*Main Central Road*

14.69 A proposal was sent to the Government of India by the State Government in 1976 to declare the present M.C. Road from Trivandrum to Ankamali as a National Highway. Owing to financial stringency the Government of India has not yet taken up the Scheme. The M.C. Road which starts from Triandrum and extends upto Ankamali in Ernakulam district, is an arterial road connecting important towns like Kottarakkara, Adoor, Changanacherry, Kottayam and Muvattupuzha. The length of this road is about 241 km. The suggestion in this Plan is to convert this road into a National Highway. It is estimated that the total cost of improvement of this road will be about Rs. 10.5 crores. The State Government has forwarded proposals to the Centre to take up improvement of the first reach from Km 0/0 to 43/200. during the Plan period 1978-83 under the scheme for State Roads of Economic and Inter-State Importance. The estimated cost of this portion is Rs. 1.03 crores.

*Cochin-Madurai Road*

14.70 The State has made a proposal to the Centre to develop the Cochin-Madurai road. The proposed link road connecting Cochin Port and Cochin by-pass will form part of this road. The proposal is to have a direct and shorter route from Cochin to Madurai in a straight east-west direction.

14.71 Since the proposed road would pass through the high ranges of Kerala, it should play an important

role for the transportation of dollar-earning hill produce like, tea, cardamom, coffee, rubber, timber, etc., to the ports. The length of the road proposed is 158.5 km from Cochin to Bodimettu. The road passes through important places like Moovattupuzha, Kothamangalam, Neriamangalam, Adimalis Kallarkutty, Vellathooval, Pounmudi and Rajakad.

14.72 The approximate cost of improving the road for two lane traffic with 45 m. land width is estimated to be Rs. 16 crores.

TABLE 14.3

**Roads and Bridges--Schemes wise Outlay**

		(Rs. in lakhs)			
Sl. No.	Scheme	Fifth Plan Outlay (1974-79)	1974-78 Expenditure	1978-79 Outlay Budgeted	1978-83 Outlay Proposed
(1)	(2)	(3)	(4)	(5)	(6)
1.	Strategic Roads		0.10	3.00	3.00
2.	State Highways		293.10	121.00	1950.00
3.	District and other Roads	2282.00	846.65	261.00	1400.00
4.	Machinery and Equipments	..	..	7.00	50.00
5.	Rural Roads				
	(i) M.N.P.		881.78	218.00	4038.00
	(ii) Other than M.N.P.		..	..	..
6.	Planning, Research, Survey and Investigation		113.44	30.00	207.00
7.	Railway Safety Works		28.42	8.00	50.00
8.	Other Items:—				
	(i) Hill Highways		..	..	300.00
	(ii) Improvement of Roads in the Three Cities of Trivandrum Cochin and Calicut		..	5.00	300.00
	(iii) Improvement of Town Roads		..	20.00	100.00
	(iv) Improvement of Roads of Industrial Importance		6.53	20.00	22.00
	(v) Improvement and opening of New Roads in Tribal Areas and Tribal and Scheduled Caste Settlements		..	5.00	400.00
	(vi) Rubberisation of Roads		..	..	30.00
	(vii) Providing Access to Islands		..	1.00	100.00
	(viii) Improvement of Accident-prone Spots in Roads and Highways			5.00	50.00
	(ix) Palghat Infrastructure	..	2.86	..	..
	(x) Special repairs and Maintenance to Rectify Flood/Cyclone Damage		180.00	..	..
	<b>Total</b>	<b>2282.00</b>	<b>2351.88</b>	<b>704.00</b>	<b>9000.00</b>

**Road Transport**

14.73 The main form of transport in Kerala is road transport which is largely in the private sector. The Kerala State Road Transport Corporation which is jointly owned by the State Government and the Southern Railway on behalf of the Government of India offers passenger transport services in the public sector. The number of buses operated daily (bus schedules) by the Corporation is 2,310 (as on 1-1-1978) and that in the private sector is 3,999 (pucca and temporary permits).

14.74 At the time of the formation of the Corporation in 1965 the undertaking was operating 661 buses with a scheduled daily operation of 1,66,543 kilometres. The average daily collection was Rs. 2 lakhs and average number of passengers carried was 4

lakhs. At the beginning of the year 1978 the Corporation was operating 2,310 schedules with a scheduled daily distance of 6.8 lakh km. It owned 2,642 buses and its average daily income was Rs. 13.8 lakhs. Daily 14.9 lakh passengers on the average make use of the services run by the Corporation. For a few years since the commencement of the Corporation the contribution towards its capital by the Government of Kerala and the railways was in the ratio 4:1. From 1968 onwards, this ratio was altered to 2:1. This ratio remains in force even now. However, railways did not make up the additional contribution due from them for the capital raised prior to the revision of the ratio. The total capital contribution by the State Government and the Railways as at the end of March 1977 was Rs. 13.88 crores and Rs. 5.30 crores respectively.

14.75 The expansion of passenger transport services to meet the requirements of the travelling public is a social need and the public sector undertaking engaged in the industry cannot disown its responsibility to expand its services to meet the requirements of the public. But it may not become possible for the Corporation to meet in full the needs of the travelling public. It is hoped that the private sector will also expand its activities. There are however areas in the State in which both private and public sectors compete with one another in the matter of providing road transport services. The K.S.R.T.C. is operating 14,922 single trips daily (excluding Trivandrum City Services) and of this, 7,700 trips are operated in competition with private operator services. Measures have to be devised to reduce this kind of unhealthy competition to the minimum.

14.76 A preliminary study of the demand of travel of bus passengers indicates the requirements of buses at the end of the Five Year Plan period 1978-83 for service operations at 8,296 (3,289 under Kerala State Road Transport Corporation and 5,007 under private sector on the basis of existing proportions). The number of buses owned by the Corporation at the beginning of the year 1978 was 2,644. Provision should therefore be made to increase the fleet strength of Kerala State Road Transport Corporation by 645 buses during the Five Year Plan period 1978-83 to meet this requirement.

#### *Plan Proposals for 1978-83*

14.77 The policy of the Government of India is to lay emphasis on opening up of new areas rather than displacement of private operators. But as far as the Kerala State Road Transport Corporation is concerned the position has to be viewed in the light of the following factors:

- (i) Kerala State Road Transport Corporation services have spread extensively in the State;
- (ii) In a large number of routes the services offered by the Corporation and the private operators compete;
- (iii) As a result of the competition both the Corporation and the private sector suffer financial losses.

14.78 Therefore for streamlining the road transport services and for the avoidance of wastage of scarce national resources the nationalisation of services in certain areas as well as in certain number of routes is essential even though such a step will result in displacement of private operators. The operators so displaced can be accommodated against the demand for additional services for meeting increased traffic in the routes controlled by the private operators. Therefore the following trunk routes and areas will be taken up for nationalisation of services to the complete exclusion of private operator's service during the plan period.

#### *Trunk routes*

- (i) Trichur - Kozhikode via Kunnamkulam
- (ii) Trichur-Kozhikode via Perinthalmanna
- (iii) Trichur-Palghat via Shoranur
- (iv) Trichur-Palghat via Alathur

- (v) Kozhikode-Talapady in NH17 Road Sector
- (vi) Trivandrum Revenue District and
- (vii) A Compact Area in Quilon District.

14.79 All future nationalisation programmes of the Corporation will be for complete exclusion of private operators from selected areas. The areas may be Revenue Districts or Taluks or any other compact area. No other scheme for taking over of individual routes either to the complete or partial exclusion of private operators, services or for augmentation of services in routes operated by private operators will be taken up for implementation by the Corporation during the plan period.

14.80 Priority will be given to replacement of old buses (buses aged more than ten years) owned by the Kerala State Road Transport Corporation. This will be carried out in a phased manner so that there will be no bus aged more than 10 years in the fleet by the end of the Plan period. If the Corporation is able to mobilise sufficient resources, augmentation of services in existing routes to meet the growth in traffic will be attempted. This will be limited to 645 buses for the Plan period 1978-83. All possible economies in the working of the Corporation will be effected. Acquisition of land, construction of stations, offices etc., and purchase of costly machinery will be reduced to the minimum. In all cases the expenditure on these items will be made only after detailed examination including cost-benefit studies. A continuous review of the economics of each trip operated by the Corporation will be made during the Plan period and those found to be uneconomic will be taken up for improvement and in the event no improvement is possible uneconomic trips will be cancelled. However, all possible consideration will be given to social objectives of providing facilities to students, giving transportation facilities to isolated areas etc., before deciding on the cancellation of uneconomic trips.

14.81 The private sector will also be allowed to expand their services subject to an overall ceiling of 5,007 permits by the end of 1982-83.

#### *1 Research Studies on Road Transport (Outlay Rs. 10 lakhs)*

14.82 A lumpsum provision of Rs. 10 lakhs is made for launching research studies on aspects like inventory control, fare structure, traffic potential etc.

#### *2 Infrastructure Facilities (Land, Buildings and Workshops)*

##### *(a) General Infrastructure (outlay Rs. 4 crores)*

14.83 As regards the infrastructure facilities, the Corporation has already formulated proposals for the acquisition of land in places in Trivandrum (Thampanoor, Old Engineering College, Peroorkada, Medical College) Punalur, Nedumangad, Thiruvalla., Changanassery, Muvattupuzha, Trichur, Palghat, Kasargode, Perumbavoor and Vaikom.

14.84 The Corporation's programme of expansion to meet the increase in traffic in the existing routes would necessitate bus stations, offices at Thodupuzha, Kattappana, Kilimanoor, Adoor, Karunagappally, Mavelikkara, Parur, Munnar, Ponkumnam, Shoranur, Edapal, Malappuram, Thamarassery, Manantoddy,



Mundakkayam and Erumely. Land at these places will be acquired to the full extent necessary. However economy will be effected in construction of buildings for workshops, offices, bus stations etc.

14.85 A lumpsum provision of Rs. 4 crores (at the rate of approximately Rs. 10 lakhs per station and Rs. 100 lakhs for additional workshops including one at Kozhikode) is provided for the purpose.

(b) *Infrastructure for Nationalisation Programme* (outlay Rs. 6.2 crores)

14.86 Creation of infrastructure facilities in connection with the nationalisation programme will require an outlay of Rs. 6.2 crores. Only construction works which are most essential will be taken up during the plan period.

### 3 Acquisition of Fleet

(1) *Modernisation of the Fleet of Buses by the Replacement of 1615 Old Buses* (Outlay Rs. 25.8 crores)

14.87 By the end of the Plan period 1978-83, 1615 buses of the existing fleet will become aged (more than ten years). The proposed replacement programme is such that by the end of the Plan period the Corporations, fleet will consist of buses that are aged below ten years only. The replacement of vehicles for 1978-79 has already been decided upon by the State Government and the Planning Commission, the number of buses to be replaced being 200. At the rate of Rs. 1.6 lakhs per bus the total plan outlay required for this programme will be Rs. 25.8 crores.

(ii) *Expansion of Services to meet Growth in Existing Services by Commissioning 645 buses* (Outlay Rs. 10.4 crores)

14.88: A programme for putting on road 100 buses for this purpose in 1978-79 has already been approved. The balance of 545 buses will be put on road during the remaining four years of the Plan. A capital outlay of Rs. 10.4 crores is required for this scheme.

(iii) *Expansion of Nationalisation and Commissioning of 1282 buses for the Programme* (Outlay Rs. 20.6 crores).

14.89: The nationalisation programme requires the commissioning of 1282 buses during this Plan period and this will provide for the operation of 1096 schedules. An outlay of about Rs. 20.6 crores is required for this purpose. The programme is proposed to be implemented on a phased manner as follows.

1978-79: Some inter-State services will be taken up for operation. Buses for this purpose will be met from the fleet of 100 buses earmarked for expansion in the Annual Plan for 1978-79.

1979-80: Complete nationalisation of services in the Trivandrum Revenue District. 125 route permits (pucca and temporary) 111 by R.T.O. Trivandrum and 14 by R.T.O. Quilon as on 1-1-1978 have to be taken over. Providing for 5 per cent growth in traffic for 1978-79 and 17 per cent spare, 163 buses will be required for this programme.

1980-81: Nationalisation of Trichur-Palghat via Alathur (51 route permits—pucca and temporary—as on 1-1-1978—Trichur-Palghat via Shoranur (29 permits pucca and temporary as on 1-1-1978), Trichur

Kozhikode via N.H. 17 (120 pucca and temporary permits as on 1-1-1978) and Trichur-Kozhikode via Perinthalmanna (70 pucca and temporary permits as on 1-1-1978) to the complete exclusion of private operators will be carried out during this year. 348 buses for operating 297 schedules (providing 5 per cent annual growth for 1978-79 and 1979-80) are required for this purpose.

1981-82: The programme for the year is to nationalise the bus routes in a compact area in Quilon revenue district. This will require a fleet of 137 buses.

1982-83: Complete nationalisation of Kozhikode-Thalapadi (northern border) via N.H. 17 (354 pucca and temporary permits by Cannanore and 105 pucca and temporary permits by Kozhikode RTOs as on 1-1-1978)—644 buses for operating 551 schedules—5 per cent annual growth for 1978-82 provided.

### 4 Other Items

*Introduction of Trolley buses in Trivandrum Cochin and Calicut Cities* (Outlay Rs. 5 crores)

14.90 It is proposed to introduce trolley buses in the urban centres of Trivandrum, Cochin and Calicut. Studies in this regard are being made. A provision of Rs. 5 crores is provided for this purpose. This amount will be spent during the last three years of the five year period 1978-83.

### *Financing the Schemes*

14.91 It may be difficult for the Corporation to generate sufficient internal resources to help finance the developmental programmes suggested. External resources may have to be tapped for implementing the programmes. Some suggestions in this regard are indicated below:

(a) The State Government and the Southern Railway should make annual capital contribution in the ratio 1:1 as against the present ratio of 2:1.

(b) The Corporation should streamline its working so as to make available at least the annual contribution to the Depreciation Reserve Fund and Sinking Fund for investment. A sum of Rs. 11 crores is expected from this source. The balance amount required for the purpose should be raised by floating public loans, loans from Life Insurance Corporation and other financing bodies and by accepting deposits from the public. An amount of Rs. 16.1 crores is expected from this source.

14.92 The sources of finance together with the amount expected from each are indicated below:

	Rs. Crores
(a) Capital contribution by State Government	30.0
(b) Capital contribution by Railways	15.0
(c) D.R.F. and Sinking Fund of K.S.R.T.C.	11.0
(d) Loans from public, L.I.C., Banks and other financing bodies, deposits from public and other sources	16.1
Total	72.1

### *Private Sector and Transport Development*

14.93 The number of permits in the private sector as at the beginning of 1978 was 3,980 and it is expected that it will be expanded by 1,027 subject to the

extent of nationalisation proposed. The road transport industry is facing some organisational and financial problems. The industry now consists mainly of entrepreneurs possessing single buses. There are also a large number of cases in which more than one person jointly own a bus and most of the owners are also employed in the business as driver, conductor etc. Bus operation in the private sector has become essentially a programme for self-employment. The influx of single owner and self employed joint owners have created the urgent need for (i) finance at reasonable rates of interest and (ii) proper control over granting of permits and fixation of timings. It is therefore essential that this sector of the industry is properly controlled and its activities well co-ordinated. At the same time this sector should also have its natural growth till it is fully absorbed in the public sector of the industry. Taking into consideration all these aspects it is suggested that this sector should be permitted to grow under the following conditions:

- (i) Additional permits to the extent mentioned earlier may be granted to this sector. Requisite finance for development may be made available through Banks, Finance Corporations, L. I. C. etc. at reasonable rate of interest.
- (ii) As far as possible permits may be granted to self-employed persons.
- (iii) Granting of permits may be strictly controlled so as to avoid competition between private operators, between private operators and the K.S.R.T.C and between the private operators and the Railways.
- (iv) Filling of annual returns giving operational data for the year like kilometre operated, passengers carried, revenue, expenditure, fuel consumed etc. may be made an obligatory condition for the grant of permits.

TABLE 14.4

## Road Transport—Scheme-wise Outlays

(Rs. in lakhs)

Sl. No.	Scheme	Fifth Plan Outlay (1974-79)	1974-78 Expenditure	1978-79 Outlay Budgeted	1978:83 Outlay Proposed
(1)	(2)	(3)	(4)	(5)	(6)
	Road Transport	1163.00	981.86	247.00	
1.	Training and Research				10.00
2.	Land & Buildings and Workshop Facilities				1020.00
3.	Acquisition of Fleet				
	(i) Cost of Replacement of 1615 Old Buses during 1977-78				2580.00
	(ii) Commissioning of 645 buses for expansion of Services to meet the Growth in the Existing Routes				1040.00
	(iii) Commissioning of 1282 buses for Nationalisation Programme				2060.00
4.	Other items				
	Introduction of Trolley Services				500.00
	<b>Total—Road Transport</b>	<b>1163.00</b>	<b>981.86</b>	<b>247.00*</b>	<b>5710.00 + 1500.00</b>

\* Provisional

Note The State sector outlay for Road Transport is Rs. 5710 lakhs only. The balance of Rs. 1500 lakhs is expected as Central contribution through the Railways.

## Water Transport

14.94 Waterways have always been an important mode of transportation in Kerala. The maritime importance of the various ports like Trivandrum, Quilon, Cochin, Alleppey, Cranganore, Calicut and Cannanore was chiefly due to the availability of waterways extending all along the coast. The inland water transport system in Kerala carried as much as 3.8 million tonnes of freight traffic in 1969. As regards the passenger traffic, it is estimated that in the year 1976 mechanised vessels of both private and public sectors carried 266 lakh passengers. The development of inland water transport having inherent advantages is very essential and it should be assigned its rightful place in the integrated transport system.

14.95 The steady replacement of slow moving country craft by mechanised vessels has been recognised as one method of revitalising inland water transport. Certain standards of width and depth are necessary for the plying of mechanised craft. The Government of India have decided that the development of Inland Water Transport on a priority basis should be undertaken in regions where the existing waterways afford easy and economic development, and where they provide a chief means of transport to a major port. Kerala's main waterways namely the West Coast Canal inter-connects all the minor ports with the major port of Cochin. It is also the principal means of communication in the areas through which it passes. Hence the development of West Coast Canal will certainly qualify under any norms for inland waterway improvement in the State.

14.96 The West Coast Canal stretches from north to south and lies parallel to the coast. South of Quilon, this canal extends to Trivandrum and beyond. The artificial cuts in this section are narrow and shallow. The Varkala tunnel which is of 9 metres width and 5 metres height with a draft of 1 metre only is the major bottleneck in this southern region. The Varkala tunnel is so narrow that it cannot accommodate larger vessels. Narrow sections and low bridges in the artificial canals north of Kodungallur are also bottlenecks. Between Badagara and Balipatam there are three gaps of 16 km, 8 km, and 16 km. in length respectively. Separation of some sections of waterways from others by land-locked area makes continuity of voyage from north to south impossible. The cost of improvement of the West Coast Canal to make it fit for heavy barge traffic with draft of 2.5 metres is estimated at about Rs. 60 crores. Since Cochin-Quilon section of this Canal carries about 60 per cent of the traffic, improvement of this section has to be taken as a first step. The country crafts used in the State's waterways are old and sometimes leaky and are not safe for certain commodities. They are also too small for transport of bulky and heavy commodities. Most of the crafts are of the old conventional type and unsafe for transport for both men and materials. It is necessary to introduce more mechanised crafts such as tugs, motor boats, launches, self-propelled carriers and tankers. Mechanised transport such as push-tugs etc., has to be provided. It should be possible to use crafts having a carrying capacity of 150 to 500 tonnes in the waterways. The substantial growth in the volume of traffic through mechanisation would raise total employment opportunities through the proliferation of activities incidental to the growth of traffic.

14.97 Protection and safety of cargo are not assured in the water transport system in Kerala. Pilferage is common during transit especially in the Cochin-Beyport section and the slowness in transportation by the open country craft render this easy. Terminal facilities for loading and unloading heavy and bulk cargo are inadequate. Warehouses, repair facilities, basic amenities for passengers and other facilities at terminals are grossly inadequate. Passenger and cargo services under the Water Transport system in Kerala are not properly organised and the public is subjected to difficulties. This leads to a reduction in revenue and consequent diminution of investment on the services. A major bottleneck to the unhindered operation of inland water transport is the extensive prevalence of the weed 'African Payal' in the inland canals. The removal of weed growth has to be tackled with the co-operation of public. Scientific research on tackling this problem has also to be undertaken. It is high time the artificial canals and the feeder or cross canals connecting the major inland navigation routes are critically studied and a comprehensive programme of development is worked out taking into account the traffic potential of the State.

#### *Development in the Earlier Plans*

14.98 The allocation in the national plan for inland water transport development has been negligible in the past. This is true for Kerala also. During the First Five Year Plan little attention was paid to works

under inland navigation in the State. The outlay for the development of inland waterways during the Second Plan period was Rs. 43.00 lakhs. The actual expenditure during the Plan period was Rs. 33.08 lakhs. The outlay for the Third Five Year Plan was Rs. 50 lakhs while the expenditure was only Rs. 39.14 lakhs. The programme for the subsequent annual plans was mainly concentrated on completion of the spill over works of the Third Plan. During the annual plan years (1966-69) an amount of Rs. 44.99 lakhs was spent. An important work taken up during this period was the Badagara-Mahe new cut, which was intended to complete the missing link between Badagara and Kattampalli (Azheekkal) in part. However, this ran into technical difficulties and could not be completed.

14.99 In the Fourth Plan an amount of Rs. 30 lakhs was provided under the State sector while an amount of Rs.296 lakhs was suggested under the Central sector. The financial target under the State sector was overhit even at the end of the third year of the plan period. But the amount spent under Central sector schemes was only Rs.40.72 lakhs. The scheme relating to acquisition of additional fleet was taken up by the State Water Transport Department during the Fourth Plan period under the Central Sector in conformity with the Bhagavathy Committee Report. Though the scheme was scheduled to be completed during the plan period itself, the work on the scheme commenced only in 1973. The construction of boats could not be completed as programmed owing to non-availability of engines. The State Water Transport Department completed the construction of three cargo boats at the end of Plan period. The total expenditure incurred under this scheme during the Plan period was about Rs.23.50 lakhs. Of this expenditure the major portion was incurred for giving advance to Fisheries Corporation for constructing passenger boats.

14.100 For the development of Inland Water Transport an amount of Rs.75 lakhs was allotted in the State Sector in the Fifth Plan period. An expenditure of Rs.58.58 lakhs was incurred during the first four years of the Plan, the major portion of which was expended for inland canal schemes of the Public Works Department.

14.101 For want of funds even proper maintenance could not be done and the prevalence of 'African Payal' a fast-multiplying water weed that bogs water transport, created problems which have not yet been tackled to any appreciable extent. The improvements so far done have not been on a planned basis and a major portion of the routes still remains to be improved.

14.102 Only an amount of Rs.21 lakhs has been ear-marked in the State Budget for the schemes under Water Transport during 1978-79. This amount is not in keeping with the vast requirements of this head of development. Of the State sector outlay of Rs.21 lakhs, an amount of only Rs.4 lakhs is set apart as provision for acquisition of fleet for augmentation of ferry services of the State Water Transport Department. The overall requirement of the Water Transport Department for the purchase of 30 boats intended for augmentation of ferry services and 10 boats to be used as spare boats is Rs.30 lakhs.

14.103 The Kerala Inland Navigation Corporation has already started functioning in the State. A provision of Rs.5 lakhs is made in the annual plan for 1978-79 for giving assistance to the Corporation by way of share capital contribution.

14.104 It is already recognised that major public works under inland canals can be taken up with the aid of the Centre through the centrally sponsored schemes. A provision of Rs.100 lakhs is made in the annual plan for 1978-79 under centrally sponsored schemes to meet the cost of both spill over and new works under inland canal works approved by the Government of India.

*Plan Programmes for 1978-83.*

14.105 The plan schemes proposed for the five year period 1978-83 under inland water transport are to be implemented by four agencies viz., Public Works Department, State Water Transport Department, Kerala State Road Transport Corporation and Kerala Inland Navigation Corporation.

*(a) Public Works Department*

*Inland Canals*

14.106 Kerala's 1900 kilometres of inland canals have considerable potential for both passenger and goods transport. The main canal, viz., the West Coast Canal, has a length of 550 km. In addition to this main canal there is a system of feeder canals connecting the central longitudinal strip of Kerala to this canal system. Among these canals are the important water routes from Cochin to Ambalamugal where FACT Cochin Division has established the new fertiliser factory and that from Cochin to Udyogamandal near Alwaye where a number of big industries (mainly chemicals) have been established. An integrated programme of development of the waterways which would involve the simultaneous completion of civil works and procurement of craft for operation of services should be the ideal to be aimed at. From the point of view of efficient working of State Water Transport Department the following canals require deepening at the earliest:

1. Stretch from Alleppey Boat Jetty to Nehru Trophy Kayal.
2. Eastern Canal of Pallathuruthy Kammita Jetty upto Meenapally Kayal.
3. Southern Canal at Kainakary reaching Kainakary River.
4. Kainakary Church Thodu
5. Chaliachira Canal
6. Venattukad Canal
7. Vettikad to Kottayam Toll Junction (Kottayam Thodu)
8. Kavalam to Kainady Outpost
9. Kavalam Pulincunnu Canal.

10. Puthenthodu between Mangalam Kayal and Kavalam
11. Kunnarankary to Kidangara Thodu
12. Changanacherry Jetty to Kidangara School (Changanacherry Canal)
13. Canal leading to Arookutty Jetty
14. Orukary Canal
15. Mampuzhakary to Puthenkary
16. Karumady Light House to Ambalapuzha
17. Canal in front of Karumady Church
18. Chavara Canal
19. Wadai Canal

14.107 The improvement of these stretches should be given priority during the Plan period 1978-83. The Quilon-Ernakulam stretch should also be improved immediately.

14.108 Inland water transport scheme executed by the Public Works Department can be divided into two categories:

- (i) State Sector Schemes
- (ii) Centrally Sponsored Schemes

14.109 Centrally sponsored schemes are taken up with central assistance in the form of loans. At present major schemes are taken up with central assistance and the annual provision under the State sector is very small, being of the order of Rs.10 lakhs. Petty improvements to existing canals like provision of side protection in short lengths, construction of foot bridges, desilting shallow portions, construction of jetties and improvements to terminal facilities are the works usually taken up under State Sector Schemes.

*State Sector Schemes—Schemes under P. W. D. Inland Canals*

1. *Establishment of a Dredger Organisation (Outlay Rs. 250 lakhs)*

14.110 The dredgers available with the State Public Works Department are more than thirty years old and they require maintenance and replacements of major components. An approximate quantity of 20 million cubic metres of dredging work will be required to deepen the canal between Quilon and Beypore. About five dredgers costing about Rs. 2.65 crores will be required for completing this work in a period of 5 to 6 years. The cost of establishing a major repair workshop with dry dock facilities at Alleppey and subsidiary workshop in the northern region has been estimated to be about Rs. 1.5 crores including cost of civil works, slipways, mechanical equipment etc. Establishment cost will be about Rs. 50 lakhs and operational charges about Rs. 25 lakhs during the plan period. The total cost can thus be estimated to be about Rs. 5 crores. Since the acquisition of the dredgers and equipment may

take sometime a provision of Rs. 2.5 crores may be made during the period between 1978-83. Till the establishment of the workshop and acquisition of necessary craft, reliance will have to be made on the existing dredger and part of the proposed work in the canals will have to be entrusted to private dredging firms. However, the establishment of the dredger organisation is a scheme which demands utmost priority. The setting up of this organisation will reduce reliance on private contractors by the State. This will also provide more employment opportunities for local people.

## 2. Completion of Existing and a Few New Canal Schemes (Outlay Rs. 800 lakhs)

14.111 One hundred and ninetytwo works are included in the budget for 1978-79, of which 43 schemes are in actual progress. The provision for the current year (1978-79) is Rs. 11 lakhs of which Rs. 8.03 lakhs will be available for the works portion and the remaining towards share debit of establishment, machinery and equipment. Estimates are not available for most of the remaining 149 works. Government have recently given sanction for constructing a lock-cum-regulator across Tirur—Ponnanipuzha at Kottayi the cost of which is Rs. 87 lakhs. Since it will be difficult to take up all the new schemes proposed in the budget, a selection will have to be made of the more useful schemes. A sum of Rs. 8 crores is provided for the State Sector schemes of waterways during the five year period 1978-83.

## 3. State Water Transport Department Schemes

14.112 The State Water Transport Department was formed in June 1968 by taking over the assets and liabilities of the State Inland Water Transport Services. The main activity of the Department is the operation of boat services in inland canals of the State especially in the four districts of Alleppey, Quilon, Kottayam and Ernakulam. The Department is operating services in over 60 routes covering a route distance of 1640 km. per day. Fifty one boats were in operation and about 87.45 lakh passengers were carried by the boats of State Water Transport Department during the year 1976-77. The Department possesses mostly very old boats. Out of the 72 boats owned by the Department 41 have an age of 20 years or more. This renders the operation of the fleet difficult and uneconomical. If old boats are substituted by new ones a significant reduction is likely to occur in the fuel cost.

14.113 The State Water Transport Department at present does not have adequate workshop facilities for repairs of crafts promptly. It would be worthwhile to establish a well equipped workshop at Alleppey and mini workshops at Quilon, Changanacherry and Ernakulam.

14.114 Plan schemes costing Rs. 99 lakhs are suggested for State Water Transport Department. The details are furnished below:

### (a) Terminal Facilities (Outlay Rs. 17 lakhs)

14.115 The various jetty offices now used by the State Water Transport Department are not owned by the Department. Some of them are owned by P.W.D. (Irrigation) Department. The question of transfer of these buildings from the control of PWD is under consideration of the Government. As a first step jetties at Alleppey, Kottayam, Changanacherry, Vaikom, Muhamma, Edathua, Quilon and Cochin are proposed to be taken up for providing proper terminal facilities at a total cost of Rs. 17 lakhs.

### (b) Crafts (Outlay Rs. 65.90 lakhs)

14.116 The State Water Transport Department has already initiated a scheme for procuring 20 new boats for the augmentation of the ferry services of the Department sanctioned by the Government. Orders have been placed for two new boats. The total estimated cost of this scheme is Rs. 30 lakhs. Of this an amount of about Rs. 1.5 lakhs has been incurred in 1977-78. Hence an outlay of Rs. 28.5 lakhs is included in the plan.

14.117 Considering the fact that out of the existing 72 boats only 31 boats are in good condition, it is suggested that the Department should acquire 20 more boats in addition to the boats proposed to be acquired under the above mentioned scheme. The cost of one boat of 75 passenger capacity fitted with 40.5 HP. engine works out to Rs. 1.87 lakhs (cost of engine Rs. 58,000 and cost of body Rs. 1,29,000). Hence an amount of Rs. 37.4 lakhs for the acquisition of these additional boats will also be needed during the plan period.

### (c) Equipment and Workshop Facilities (Outlay Rs. 14.10 lakhs)

14.118 The State Water Transport Department has only one workshop now at Alleppey. This workshop needs considerable improvement. Besides mini workshops are proposed at Quilon, Kottayam, Changanacherry and Ernakulam. A draft master plan for the improvement of the workshop facilities is under consideration by the State Government. But during the plan period 1978-83 atleast the essential improvements in machinery, procurement of equipment and introduction of workshop facilities have to be taken up and implemented. An outlay of Rs. 14.10 lakhs is provided for improving/establishing workshop facilities.

### (d) Training of Staff (Outlay Rs. 2 lakhs)

14.119 A token amount of Rs. 2 lakhs is set apart for the training of the Staff of the Department.

## 4. Ferry Services of the Kerala State Road Transport Corporation (Outlay Rs. 110 lakhs)

14.120 The Kerala State Road Transport Corporation is operating ferry services in the Cochin harbour area as an ancillary service under the Road Transport Corporation Act, 1950. Now there are 11 boats operating in the routes Ernakulam-Cochin, Ernakulam—Vypeen, Ernakulam—Vallarpadom, Ernakulam—Fort Cochin, Terminus—Cochin, and Terminus—Vypeen. About 31,000 passengers make

use of this service for travel between the mainland and the Island and between points in the mainland every day. The population of Cochin has started showing a trend to shift to nearby islands and if proper transportation through the waterways is provided places like Parur, Kodungalloor and Eloor in the north, Fort-Cochin etc. in the west, Aroor, Kumbalam etc. in the south and all isolated places in the backwaters upto Vaikom would develop to form an integral part of the Cochin mainland. The development of the Greater Cochin area would become a reality only when the waterways are properly developed.

14.121 Boat services can definitely augment the transportation system of Cochin due to the availability of navigable waterways around it. The present position in this area is that the roads are saturated and congested with heavy traffic. It is high time the transport system in this area is augmented utilising the potential offered by the waterways.

14.122 At present boats are being constructed out of teak wood and iron materials which makes the boats very heavy and their speed considerably low. In order to increase the speed the displacement resistance of boats should be reduced which could be done by reducing the weight of boats. This can be achieved only by using fibre glass for boat building. Boats of standardised design could be economically produced out of fibre glass and the initial investment required for the building yard will be more than compensated if ten or more boats of the same design are produced per year. Further, the maintenance cost is also considerably less in the case of fibre glass. A Standard design of 100 seating capacity with 10 metres keel length would be an economical proposition.

14.123 The number of jetties available for operation at present is inadequate and even these jetties are not service-worthy. The size of these jetties are not sufficient to handle the volume of traffic. In order to meet the passenger demand efficiently and conveniently minimum embarking facilities should be provided at all major traffic generating places.

14.124 The repair facility will have to be largely expanded to meet the full requirement. The workshop should have all modern machinery, trolley cranes, and electrical hauling winches. It should also be provided with facilities for repair and maintenance of fibre glass boats, which are to be introduced.

14.125 The details of the proposed outlay for schemes under the ferry services of the KSRTC are given below.

Sl. No.	Item	Amount (in lakh Rs.)
1	Procurement of 30 fibre glass boats	75.0
2	(i) Providing jetties 8 nos. with waiting sheds	8.0
	(ii) Providing embarking facilities at these places	4.0
3	(i) Workshop building	5.0
	(ii) Slipway construction (2 nos)	5.0
	(iii) Machinery	12.0
4	Training facilities	1.0
	<b>Total</b>	<b>110.0</b>

#### 5. Training and Research-Traffic Studies and Establishment of a Hydrographic Survey Unit (Outlay Rs. 35 lakhs).

14.126 The last survey of traffic in the waterways was carried out in 1967 by the National Council of Applied Economic Research. The traffic pattern has changed considerably since then. Besides the actual traffic, projected figures of anticipated traffic after improvements to canal system and formation of an organisation to move traffic (especially goods) have to be worked out. This will involve a survey of traffic in all the sectors and only a share of this should be earmarked to the waterways.

14.127 A permanent organisation to monitor the physical conditions of the canal system has also to be established during the five-year plan period, considering the fact that the State will have to embark on ambitious schemes in subsequent plan periods. A provision of Rs. 35 lakhs is suggested for these schemes in the Plan.

14.128 The details of the proposed outlay for the Public Works Inland Canal Schemes are given below:

Sl. No.	Item	Amount (in lakh Rs.)
1	Completion of existing and a few new canal schemes	800
2	Establishment of dredger organisation	250
3	Deepening of water routes operated by State Water Transport Department	50
4	Traffic studies, hydrographic survey organisation etc.	35
	<b>Total</b>	<b>1135</b>

#### Workshop Facilities

#### 6. Deepening and Improving Existing Boat Routes (Outlay Rs. 50 lakhs).

14.129 The State Water Transport Department is finding it difficult to operate in certain routes. The amount required for deepening these routes which are essential for running the boat services of this Department has been estimated to be Rs. 50 lakhs. This item deserves top priority among the schemes under inland water transport.

#### 7. Kerala Inland Navigation Corporation (Outlay Rs. 200 lakhs)

14.130 The main aim of the Corporation is to acquire vessels and enter into cargo transport business taking into account the huge quantities of raw materials to be transported in bulk to the factories in and around Cochin. It has already acquired two tugs and a Junghar with country boats. It is proposed to put the two tugs into regular use after acquiring necessary barges. The major portion of the cargo to be transported in the Cochin area is the raw materials for FACT.

14.131 The supply of raw materials to Cochin Division of FACT is now arranged through lorries. As per the Bhagavathy Committee Report (1970), the

total quantity of goods to be transported for FACT. Cochin Division alone is estimated at 8.23 lakh tonnes per year. This includes 2.50 lakh tonnes of finished products to be transported through waterways. Thus the quantity of raw materials expected to be handled through water transport was 5.73 lakh tonnes after the second phase expansion of the factory.

14.132 The Corporation has already taken action for the purchase of four steel dump barges of 60 tonne capacity each at an estimated cost of Rs. 8 lakhs. Four more barges will be acquired in 1978-79. The Corporation proposes to acquire at least one more powerful tug equipped with a 150 H.P. marine engine, and also one big size barge of 400 tonnes at an estimated cost of Rs. 5 lakhs and Rs. 12 lakhs respectively before 1980.

14.133 The Corporation has already entered business activities with the introduction of passenger boats with a seating capacity of about 150 each. Additional boats will be required by the Corporation during the plan period.

14.134 Another proposal is to acquire six lorries as a complement to the water transport. This is mainly intended to transport goods from jetties to the interior destinations.

14.135 The Corporation has already acquired land at Thevara for a work shed. Development works in the land is estimated to cost Rs. 1.5 lakhs. Action has already been initiated for the construction of a work shed at an estimated cost of Rs. 1.5 lakhs. Machinery like lathes, gas welding plants, drilling machines, power hammers, gas cutting torch etc. and tools worth Rs. 1.5 lakhs are also to be purchased. The water frontage has to be reclaimed and slipway and an 'L' shaped jetty have to be constructed. This will cost about Rs. 2 lakhs.

14.136 A total outlay of Rs. 200 lakhs is provided for the schemes under Kerala Inland Navigation Corporation. The schemes are listed below:

Sl. No.	Item	Amount (in lakh Rs.)
(1)	(2)	(3)
1	Cost of 20 nos, Steel dump barges of tonnes capacity at Rs. 2 lakhs each	40.00
2	Cost of 2 nos. big size power barges 400 tonnes capacity	24.00
3	Procurement of 2 nos. of medium sized power barges 200-250 M.T.	20.00
4	Cost of three powerful tugs at Rs. 5 lakhs each	15.00
5	Cost of 7 passenger boats for supplementing the services at Rs. 3 lakhs	21.00
6	Cost of 6 lorries for bringing down goods to the jetties from interior parts at Rs. 1.5 lakhs	9.00
7	Cost of civil works, construction of buildings, slipway, jetty and development of land	5.50
8	Cost of providing terminal facilities, motorised cranes at important stations etc.	10.00

(1)	(2)	(3)
9	Procurement of 100 nos. of containers	2.00
10	Establishment and maintenance of work shop with machineries	5.00
11	Cost of 2 nos. Express boats with cushion seats and extra fittings at Rs. 3.5 lakhs	7.00
12	Cost of machinery and tools	1.50
13	Traffic feasibility and managerial consultancy services	4.50
14	Cost of 5 nos. of barges of 100 M.T. Capacity at 3 lakhs	15.00
15	Purchase of speed launch for inspection purposes	1.50
16	Administrative office and opening up of booking station, stores, equipment and storage facilities	19.00
Total Cost		200.00

#### Centrally Sponsored Schemes

14.137 In the past the Central Government had approved 37 schemes of which 28 schemes have been completed. Of the remaining 9 schemes, 7 have spilled over from Third Plan and two are Fourth Plan Schemes. One of the major Third Plan Schemes still remaining incomplete is the Badagara-Mahe Canal. The two Fourth Plan spill over schemes to be completed are the Champakara canal and the Neendakara-Cheriyazhikal canal. The present position of these schemes and the proposed programme for development are indicated below:

#### 1. Badagara-Mahe Canal (Outlay Rs. 300 lakhs)

14.138 This scheme could not be completed so far due to the technical difficulties and increased cost. Government of India decided to stop central assistance for this scheme since they feel that the cost is too heavy and the construction work has been too long delayed. It is estimated that an amount of Rs. 3 crores will be required for completing the scheme. The financial position of the State does not permit it to take up and complete the scheme with State funds. Hence assistance to the tune of Rs. 300 lakhs for this scheme is expected from the Centre.

#### 2. Champakara Canal (Outlay Rs. 36 lakhs)

14.139 The original estimated cost of the scheme was Rs. 112.50 lakhs but mainly due to the increased cost of dredging and some other unexpected factors like removal of rock and laterite from the base, the cost of the scheme has gone up substantially. The revised estimated cost now is Rs. 243 lakhs. The revised estimate, however, is pending sanction of the Government of India. A Public Works Department Division with head quarters at Tripunithura is attending to the work. An amount of Rs. 207 lakhs has been spent till now. The budget provision for 1978-79 is Rs. 53.93 lakhs. Ninety six per cent of land acquisition, 31 per cent of protective

work, 88 per cent of the dredging work and 100 per cent of other allied works have been completed. An additional amount of Rs. 36 lakhs will be needed for completion of this scheme. The Centre has already agreed to finance the remaining works relating to this scheme.

*Neendakara—Cheriyazhikkal Canal (Outlay Rs. 25 lakhs)*

14.140 This waterway consisting of four kilometres of artificial canal and ten kilometres of backwaters is part of the West Coast Canal system. To facilitate movement of rare earths from the Chavara region to the minor port of Neendakara a proposal was finalised to deepen this canal to a depth of 2.5 metres below low water level and a width of 25 metres. The original estimated cost was Rs. 41.50 lakhs of which an amount of Rs. 17.54 lakhs has been spent so far. Kerala Metals and Minerals Ltd., a public sector undertaking, is proposing deep-mining in the area. As a result, the canal has to be realigned, and therefore the work is now held up. An amount of Rs. 25 lakhs required for the scheme is expected from the Centre.

14.141 In addition to the above three works which have already been approved as centrally sponsored schemes the following two schemes are proposed for central loan assistance:

- (i) Improvement to Cochin—Udyogamandal Canal (Estimated outlay Rs. 60 lakhs)

- (ii) Improvements to Quilon—Cochin Section of the West Coast Canal (estimated cost Rs. 259 lakhs). The Centre has recognised the Cochin Alleppey water route which forms part of this section as a national waterway.

14.142 Central loan assistance is now being given to improve waterways leading to major ports and to places where this is the only means of transport. The total amount required during 1978-83 for the schemes for which Central assistance can be expected is about Rs. 7 crores. Because of the absence of suitable dredgers with the State P.W.D. these works may cost more, if they are entrusted to private contractors. An abstract of the Centrally sponsored schemes suggested for the plan period 1978-83 is given below:

		(Outlay Rs. lakhs)
1	Badagara—Mahe Canal Completion works	300
2	Champakkara Canal	36
3	Neendakara—Cheriyazhikkal Canal	25
4	Improvements to Cochin—Udyogamandal Canal	60
5	Cochin—Quilon Section of West Coast Canal Improvements	250
6	Improvement of Waterways leading to Ports	20
Total		700

TABLE 14.5

**Water Transport—Scheme-wise Outlays**

		(Rs. lakhs)			
Sl. No.	Scheme	Fifth Plan Outlay 1974-79	Expenditure during 1974-78	Outlay budgeted 1978-79	Outlay proposed 1978-83
(1)	(2)	(3)	(4)	(5)	(6)
<b>I Direction and Administration</b>					
	(1) Establishment of a Dredger Organisation (P.W.D.)	..	..	..	250.00
<b>II Assistances to Transport Services</b>					
	(i) Completion of existing & a few new canal schemes in State Sector (P.W.D.)	55.00	36.05	11.00	800.00
	(ii) State Water Transport Department Schemes				
	(a) Terminal facilities	} 18.00	3.50	5.00	99.00
	(b) Crafts (Augmentation of Ferry Services)				
	(c) Equipment & Workshops				
	(d) Training of Staff				
	(iii) Ferry Services of the K.S.R.T.C.				
	(a) Acquisition of fleet— Fibre Glass Boats	..	..	..	75.00
	(b) Provision of jetties of embarking facilities	..	..	..	..
	(c) Workshop machinery & slipway construction	..	..	..	35.00
	(d) Training	..	..	..	..
<b>HI Training and Research</b>					
	(1) Traffic Studies, Hydrographic Survey Unit etc.	..	..	..	35.00
<b>IV Land and Buildings (S.W.T.D.)</b>					
		..	3.53	..	..
<b>V Workshop Facilities</b>					
	(i) Preparation of Master Plan	2.00	0.50	..	..
	(ii) Deepening and improving existing boat routes operated by the S.W.T. Department	..	..	..	50.00
	(iii) Kerala Inland Navigation Corporation Scheme	..	15.00	5.00	200.00
Total—Water Transport		75.00	58.58	21.00	1544.00



## Tourism

14.143 Kerala State offers immense potential for tourism development with its beautiful beach resorts, hill resorts, backwaters, wild life sanctuaries, fairs and festivals, archaeological monuments and above all its scenic beauty. The State can provide a tourist destination in itself provided our tourism products are properly planned and marketed. The important role which tourism can play in the development of the State's economy therefore needs special recognition. Tourism is no longer a leisure activity of the affluent few. It can act as an important lever for economic development and an agency for providing large scale employment opportunity which is one of the objectives of the national Plan.

14.144 Tourism was not given the required importance during the past five year plans. The investment in the field of tourism development in the State has so far been very meagre. It is therefore necessary to think in terms of large scale investment for the development and promotion of tourism in the State. It is expected that the number of visitors coming to India will be over one million in 1980. It is estimated that nearly 3 per cent of the foreign tourists, are visiting Kerala. To attract a large number of such foreign as well as domestic tourists to the State adequate infrastructure facilities by way of accommodation, transport and recreational and other facilities have to be provided during the next five to ten years. The strategy of tourism development in the Plan for 1978-83 will be to have an integrated programme involving the support and co-operation of all the governmental agencies connected with tourism as well as private agencies and public in general. This calls for adequate investment in tourism during the Plan period. Provision has to be made to improve the accommodation facilities for both the high spending category and the low spending category of tourists. Institutional finance to the extent necessary has also to be attracted to this sector. Schemes for tourism development have been categorised into three under the plan:

- (1) Centres which are of local importance to be developed by the State Tourist Department.
- (2) Centres which are of National importance the development of which is the responsibility of the State Tourism Development Corporation and
- (3) Centres of national and international importance to which domestic as well as foreign tourists can be attracted in a large measure and whose development is to be entrusted to the Central Government.

### I State Sector Schemes

#### 1. Strengthening of Tourist Organisation (Outlay Rs. 25 lakhs)

14.145 The State Department of Tourism needs strengthening at various levels to cope with the increasing work connected with the promotion of tourism in the State. The present Directorate of Tourism is more geared towards the hospitality function than tourism service. The Plan provision made is for meeting the expenditure on staff required for the better functioning of the Tourist Organisation.

#### 2. Kerala Tourism Development Corporation

14.146 Schemes of national importance are to be undertaken by the Kerala Tourism Development Corporation. The following schemes are proposed in the Plan:

##### (a) Development of Trivandrum-Veli-Kovalam Complex (Outlay Rs. 800 lakhs)

14.147 The Administrative Staff College of India, Hyderabad, was entrusted with the work of preparation of a Master Plan for Tourism in Kerala. A project report on Trivandrum-Veli-Kovalam Tourist Complex has been prepared by this institution. The project report envisages the construction of (i) a five star hotel with 300 rooms; (ii) a mid-range hotel with 200 rooms at Kovalam; (iii) a four star hotel with 300 rooms at Trivandrum; (iv) a two star hotel with 100 rooms at Trivandrum; (v) a Janatha hotel with 200 rooms at Trivandrum and (vi) two restaurants at Trivandrum. Besides these, construction of beach cottages, resting places, cars, deluxe tourist buses, wayside restaurants, sports facilities, toilets and drinking water facilities and information centres has also been suggested in the Report. The whole complex will involve a total capital cost of Rs. 23 crores. As these schemes are to be undertaken for implementation by the Kerala Tourism Development Corporation, the State Government's share is calculated at one-third of the capital cost. Hence an amount of Rs. 800 lakhs is included in the State Sector Plan.

##### (b) Development of Kumarakom: (Outlay Rs. 142 lakhs)

14.148 In the project report for the Kumarakom Complex prepared by the Administrative Staff College of India, Hyderabad, they have suggested the construction of a Four Star Hotel with 100 rooms, a mid-range hotel with 100 rooms, house boats, luxury boats, wayside restaurants, cars, deluxe coaches, sports facilities etc., at a total capital cost of Rs. 425 lakhs. As this scheme is also to be implemented by the Kerala Tourism Development Corporation a provision of Rs. 142 lakhs (i.e., one third of the total capital cost) being the Government's share capital contribution is proposed under the State Sector Plan.

##### (c) Development of Cochin: (Outlay Rs. 251 lakhs)

14.149 The Administrative Staff College of India, Hyderabad, in the Master Plan for Tourism Development in Kerala, has proposed construction of a Janatha Hotel with 200 rooms, a Three Star Hotel with 300 rooms and a Four and Five Star Hotel with 100 rooms each at Cochin at a total capital cost of Rs. 751 lakhs. This scheme again is to be implemented by the Kerala Tourism Development Corporation. The provision of Rs. 251 lakhs now proposed in the plan is for payment of Government's share capital contribution to the Kerala Tourism Development Corporation.

##### (d) Development of Thekkady: (Outlay Rs. 87 lakhs)

14.150 The Project Report of the Administrative Staff College for Thekkady envisages creation of additional accommodation facilities like a mid-range hotel with 200 rooms, a Three Star Hotel with 100 rooms and boating other facilities at a total capital cost of Rs. 254 lakhs. The provision of Rs. 87 lakhs made in the

Plan is for payment of the Government's share capital contribution to the Kerala Tourism Development Corporation.

### 3. *Development of Malappuram as Tourist Centre*

#### *Construction of a Guest House (Outlay Rs. 5 lakhs)*

14.151 Malappuram is the headquarters of Malappuram district which has considerable forest wealth. The oldest teak plantations exist in this area. Kottakal, the famous centre for Ayurvedic treatment and research and a tourist attraction in itself, is near Malappuram. Construction of Guest House with ten rooms has already been started at Malappuram. An amount of Rs. 5 lakhs is allocated in the Plan to provide the Guest House with all essential amenities.

#### 4. *Construction of Guest House at Alleppey (Outlay Rs. 20 lakhs)*

14.152 At present there is no Guest House at Alleppey. The Plan proposal is for the construction of a Guest House with 15 to 20 rooms with all modern amenities. Government have already accorded sanction for the transfer of land from Revenue Department for this purpose. The Plan and estimate for the construction are under preparation.

#### 5. *Additional Accommodation at Cannanore Guest House (Outlay Rs. 10 lakhs)*

14.153 The existing main Guest House at Cannanore has only four suites of rooms. This is quite inadequate to meet the requirements of tourists and distinguished guests. The necessity for constructing an additional Guest House is therefore keenly felt. The present Plan proposal is to construct an additional Guest House with 10 to 15 rooms at Cannanore.

#### 6. *Construction of a Guest House at Idukki (Outlay Rs. 25 lakhs)*

14.154 The largest Hydro-Electric Project in Kerala is located at Idukki. Idukki offers great scope for development of tourism. There is at present no Guest House at Idukki to provide accommodation for tourists. The plan provision is to construct a Guest House with 15 to 20 rooms at Idukki.

#### 7. *Additional Accommodation at Trichur Guest House (Outlay Rs. 25 lakhs)*

14.155 There are only four suites of rooms in the existing Guest House (Ramanilayam) at Trichur. This is highly inadequate compared to the demand for accommodation facilities. It is therefore proposed to construct an additional Guest House at Trichur with 25 to 30 rooms.

#### 8. *Additional Accommodation at Ernakulam Guest House (Outlay Rs. 25 lakhs)*

14.156 The existing Guest House at Ernakulam is an old building having only four suites of rooms. The necessity of constructing a new Guest House is keenly felt. There is already a proposal to acquire land from Krishnavilas Palace compound at Ernakulam for constructing a new Guest House. The present

Plan proposal is for constructing a Guest House with 20 to 25 rooms with all modern amenities, staff quarters, garages for parking cars etc.

### 9. *Motels (Outlay Rs.20 lakhs)*

14.157 It is proposed to construct wayside motels along the State Highways and National Highways with toilet facilities at Peermede, Aroor, Kuttipuram, Kolappuram and Kanhangad in order to meet the requirements of tourists.

### 10 *Publicity (Outlay Rs. 100 lakhs)*

14.158 Like any other industry the tourist industry also needs adequate publicity. In spite of the overall increase in tourist traffic, Kerala's share is meagre not because of lack of tourist attractions, but due to inadequate publicity. The provision made in the earlier plans for publicity was quite inadequate. In the Plan for 1978-83 a comprehensive package of programmes in the field is envisaged. It is proposed to bring out films depicting all places of tourist attractions in the State.

### 11. *Promotion of Local Cultural Programmes, Boat Races Festivals etc. (Outlay Rs. 25 lakhs)*

14.159 The tourists visiting the State are interested in seeing local arts, cultural programmes and boat races. It is necessary to give financial assistance to the private or semi-Government agencies organising such programmes for enabling them to organise programmes in a better way so as to attract more tourists. A provision of Rs. 25 lakhs is made for this purpose.

### 12. *Tourist Reception Centres (Outlay Rs. 25 lakhs)*

14.160 There are no tourist reception centres in the State. This Plan programme envisages the construction of tourist reception centres at Trivandrum (Kanakakunnu Palace Premises), Cochin, Calicut, Kovalam and Thekkady. Each Centre will be provided with good rooms with toilet facilities, auditorium and parking facilities. The cost of setting up a reception centre will be about Rs. 5 lakhs.

### 13. *Tourist Information Counters (Outlay Rs. 25 lakhs)*

14.161 The proposal is to open tourist information counters manned by trained personnel at the Railway Stations at Trivandrum, Quilon, Cochin, Kozhikode and New Delhi to give detailed information about the tourist attractions and facilities available in Kerala to both foreign and home tourists. The estimated cost of setting up each counter is Rs. 5 lakhs.

### *Tourist Centres*

#### 14. *Development of Kappad as Tourist Centre (Outlay Rs. 10 lakhs)*

14.162 Kappad, a place of historical and archaeological importance, is about 16 kilometres north of Calicut. Vasco-da-Gama, the first European Navigator who set foot in India, landed at Kappad beach. It is a place ideal for sea-bath. Tourist traffic to the commercial city of Calicut is on the increase. Kappad beach, with

its scenic beauty, can be developed into an attractive tourist centre. Though development of Kappad was included in the Fifth Plan, no significant progress could be made during that Plan period. The plan scheme for 1978-83 envisages the construction of a rest house, bath house, pump house, formation of approach road, etc. Improvement of the beach to ensure safe sea-bath is planned.

15. *Additional Accommodation at Ponnudi. (Outlay Rs.25 lakhs)*

14.163 Ponnudi which is 3000 ft. above the sea level is one of the two hill stations in Kerala which is very much liked by foreign tourists, the other being Munnar. The development of Ponnudi and creation of additional accommodation facilities will be advantageous to tourists visiting Kovalam. The proposal is to provide additional accommodation facilities at an estimated cost of Rs. 25 lakhs.

16. *Development of Pilgrim Centres (Outlay Rs. 140 lakhs)*

14.164 (a) *Sabarimala*—Sabarimala is famous for its Lord Ayyappa Temple which attracts lakhs of pilgrims every year. The Centre is in Quilon District. The temple which is located at about 5 km. away from Pamba is accessible by road only upto Pamba. A number of facilities for the pilgrims are to be made at Sabarimala. The Plan proposal is for constructing dormitory type of accommodation for pilgrims with toilets, bathing and canteen facilities at an estimated total cost of Rs. 15 lakhs.

14.165 (b) *Malayattur*—Malayattur is an important Christian pilgrimage centre near Alwaye in Ernakulam district. This Centre is connected by road. The famous Malayattoor Church which attracts thousands of pilgrims every year is located on a hill top. The Plan proposal is for providing dormitory type of accommodation to pilgrims and for improving the roads and other facilities at an estimated total cost of Rs. 5 lakhs.

14.166 (c) *Varkala*—Varkala is a well-known pilgrim Centre about 40 km. from Trivandrum towards Quilon. The famous Janardhana Temple and Sivagiri Mutt are located here. Varkala can be developed as a satellite to Kovalam. An extensive plot of land is available at Varkala for the construction of building to provide accommodation for the pilgrims and other tourists. There is a Guest House at Varkala but it has only two rooms. The Plan scheme proposed envisages the construction of a Guest House with 20 to 25 rooms and another building for providing dormitory type accommodation to pilgrims at an estimated total cost of Rs. 25 lakhs.

14.167 (d) *Mambram*—Mambram in Malappuram district is an important pilgrim centre for the Muslim community. It is necessary to provide more accommodation facilities at this pilgrim centre. The cost of plan programme envisaged is Rs. 10 lakhs.

14.168 (e) *Kalady*—Kalady, near Alwaye, is the birth place of Sankaracharya. It is an important centre of culture and learning. Kalady has to be developed into a township by providing various amenities like accommodation, transport and other facilities. Kalady attracts large number of tourists, both domestic

and foreign. It can be converted into an important centre of India's culture and philosophy. The Centre therefore requires more accommodation facilities. The plan scheme aims at providing accommodation facilities with catering arrangements at an estimated total cost of Rs. 60 lakhs.

14.169 (f) *Guruvayoor*—The Lord Krishna Temple at Guruvayoor attracts large number of pilgrims all round the year. Accommodation facilities are available at Guruvayoor to some extent. Kerala Tourism Development Corporation at present runs a 50 room hotel with modern amenities. But the place requires more accommodation and other facilities to meet the growing requirements of the pilgrims. The proposal is to provide more accommodation facilities including a Marriage Hall and Community Centre at an estimated cost of Rs. 25 lakhs.

17. *Development of Tourist Centre at Ezhumalai (Outlay Rs. 10 lakhs)*

14.170 Ezhumalai is a hill on the seashore lying 22 kilometres north of Cannanore. It is rich in natural scenery and has a good beach. The plan proposal is for the improvement of the road from Payyannur to Ezhumalai and the construction of a Guest House with 10 to 15 rooms with all modern amenities on the hill top with provision of direct access to the beach through a flight of steps and setting up of a restaurant and cloak rooms at the beach.

18. *Development of Tourist Centre at Bekal (Outlay Rs. 30 lakhs)*

14.171 Bekal Fort is an important archaeological monument situated about 40 kilometres from Cannanore Town. It is rich in beautiful scenery and is eminently fit for development as an attractive tourist centre. The proposal is to construct a Guest House with all facilities at a cost of Rs. 30 lakhs.

19. *Development of Palaruvi as a Tourist Centre (Outlay Rs. 20 lakhs)*

14.172 Palaruvi, located at about 40 km. south of Quilon-Shencotta road inside the reserve forests in Thenmala Range, has unlimited scope to be developed as the Courtallam of Kerala with additional benefit of water availability throughout the year. The plan programme is for the improvement of the site and construction of bath-house, a restaurant and a Guest House with 10 to 12 rooms and staff quarters.

20. *Other Schemes*

*Training of Staff (Outlay Rs. 10 lakhs)*

14.173 The scheme aims at sending departmental personnel for specialised training in tourism, hotel keeping and other allied subjects and deputing officers of the Tourist Department for attending Conferences and Conventions relating to tourism in India and abroad.

21. *Camping Sites (Outlay Rs. 20 lakhs)*

14.174 This scheme is intended for making available suitable sites of land at Cochin, Thekkady, Malappuram

and Trivandrum to provide low cost accommodation to tourists travelling by road, especially along the National Highways.

22. *Backwater Beautification (Outlay Rs. 50 lakhs)*

14.175 Proper development of tourism in Kerala calls for the beautification of the banks of the backwater and inland waterways. The coastline and waterways of the State are already fringed by a profuse and vigorous growth of coconut palms. Location of cottage industries and small scale units manufacturing coir, ivory, horn and coconut shell products on the banks of the waterways and backwaters at places like Cochin, Alleppey, Quilon and Veli will be an additional attraction to the tourists who go out for cruising along the backwaters and waterways.

23. *Improvements to the Existing Guest Houses (Outlay Rs. 50 lakhs)*

14.176 The existing Guest Houses at Quilon, Kottayam, Alwaye and other centres require improvements by way of repairs, renovation etc. The provision made in the plan is for carrying out the required improvements in these institutions.

24. *Improvements to Gardens at Various Dam Sites (Outlay Rs. 25 lakhs)*

14.177 The gardens near the various dam sites in the State are important tourist attractions today. But these gardens are not being maintained properly. The plan scheme proposed envisages payment of grants for bringing about effective improvements to the gardens at dam sites.

II *Central Sector Schemes*

*Construction of a Convention Hall at Trivandrum (Outlay Rs. 100 lakhs)*

14.173 Convention tourism has not received adequate attention so far particularly in South India. With the development of Kovalam as one of the finest beach resorts in the world it has become an absolute necessity to establish a fully equipped Convention Centre in Trivandrum, the State's Capital. The scheme is for establishing a Convention Centre at Trivandrum with all amenities capable of holding conventions both at the national and international level. This will certainly be a booster to tourism development in Kerala. The outlay of Rs. 100 lakhs required for the scheme is suggested in the Central Sector.

TABLE 14.6  
Tourism—Scheme-wise Outlays

		(Rs. in lakhs)			
S.I.No.	Scheme	Fifth Plan Outlay (1974-79)	Expenditure (1974-78)	Outlay Budgeted (1978-79)	Outlay Proposed (1978-83)
(1)	(2)	(3)	(4)	(5)	(6)
I	Direction and Administration				
1.	Strengthening of Tourist Organisation	3.00	1.22	0.50	25.00
II	Tourist Accommodation				
1.	Guest House at Kovalam	50.00	58.37	18.35	1280.00
2.	Kerala Tourism Development Corporation				
3.	Taking over of Rest Houses under P.W.D., P.H.E.D. etc.	..	0.88	..	..
4.	Construction of a Guest House at Malappuram	3.00	..	..	5.00
5.	Construction of a Guest House at Alleppey	..	..	..	20.00
6.	Additional Accommodation Facilities at Cannanore	..	..	..	10.00
7.	Guest House at Idukki	..	..	..	25.00
8.	Additional Accommodation Facilities at Trichur	..	..	..	25.00
9.	Additional Accommodation Facilities at Ernakulam	..	..	..	25.00
10.	Motels at Peermade, Aroor, Kuttipuram, Kolappuram and Kanjhangad..	..	..	..	20.00
III	Tourist Information and Publicity				
1.	Publicity including the Preparation of Master Plan	9.00	6.51	4.00	100.00
2.	Promotion of Local Cultural Programmes, Boat Races, Festivals etc.	2.00	0.84	0.10	25.00
3.	Tourist Reception Centres at Trivandrum, Cochin, Calicut, Kovalam and Thekkady	..	..	..	25.00
4.	Tourist Information Centres at Trivandrum, Quilon, Cochin and Kozhikode	..	..	..	..
IV	Tourist Centres				
1.	Development of Kappad as a Tourist Centre	1.00	..	..	25.00
2.	Development of Ponmudi	..	..	..	10.00
3.	Development of Pilgrim Centres at Sabarimalai, Malayattoor, Varkala, Mambram, Kalady and Guruvayoor	..	..	..	140.00
4.	Development of Tourist Centre at Ezhimala	..	..	..	10.00
5.	Development of Tourist Centre at Bekkal	..	..	..	30.00
6.	Development of Tourist Centre at Palaruvi	..	..	..	20.00
V	Other Items of Expenditure				
1.	Training of Staff and Guides	..	..	..	..
2.	Other Works	3.00	11.11	7.05	10.00
3.	Improvement to Golf Course	..	..	..	..
4.	Ex-gratia Payments to Encroachers (Kovalam Project)	..	0.10	..	..
5.	Camping Sites at Cochin, Thekkady, Malappuram and Trivandrum	..	..	..	20.00
6.	Backwater Beautification	..	..	..	50.00
7.	Improvements to Existing Guest Houses at Various Places	..	..	..	50.00
8.	Improvements to Gardens at Various Dam Sites	..	..	..	25.00
Total—Tourism		71.00	79.03	30.00	2000.00

TABLE 14.7

## Transport and Communications—Outlay 1978-83

		(Rs. in lakhs)			
Sl. No.	Head of Development	Fifth plan Outlay	Expenditure (1977-78)	Outlay Budgeted (1978-79)	Outlay proposed (1978-83)
(1)	(2)	(3)	(4)	(5)	(6)
1.	Ports, Light Houses and Shipping				
	(a) Ports and Pilotage	332.00	162.69	82.00	1052.00
	(b) Shipping	180.00	149.10	5.00	805.00
2.	Roads and Bridges	2282.00	2351.88	704.00	9000.00
3.	Roads and Water Transport Services				
	(a) Road Transport	1163.00	981.86	247.00	5710.00
	(b) Water Transport	75.00	58.58	21.00	1544.00
4.	Tourism	71.00	79.03	30.00	2000.00
	Total	4103.00	3783.14	1089.00	20111.00

**Railways**

14.179 Kerala has at present 886.35 Km. of railway lines of which 773.64 Km. are broadgauge and 112.71 Km. are metre gauge. There is a double line track over a length of 63 Kms. of broadgauge railways. Including 21 passenger train halts and another 33 flag stations, there are 156 railway stations in Kerala with an average inter-station distance of 5.5 Km. Though there have been some favourable developments in the recent past, in general the progress of expansion of railways in Kerala has been tardy. In spite of the, terminal location, predominance of single line tracks, inferior traction mix and saturated levels of operation, the railway system in Kerala earns about Rs. 340 million deals with about 3.2 million tonnes of goods traffic and serves over 25 million passengers per annum. The conversion of metre gauge into broadgauge between Trivandrum and Ernakulam and the introduction of long distance express trains especially the new Kerala-Karnataka Express Service linking Trivandrum and Delhi directly are a few welcome developments that took place in the recent past.

14.180. The Rs. 23 crores Trivandrum-Tirunelveli broad gauge link via Nagarcoil with branch line to Kanyakumari (160 Kms.) to provide a North-South direct rail connection from Kashmir to Kanyakumari is under implementation. This is the only new broad-gauge line whose work is in progress at present in the Southern Railway. The Trivandrum-Tirunelveli line will add about 30 Km. of broadgauge track and 4 new railway stations to Kerala by 1979 besides removing the break of continuity of rail network on the Southern side of the State. The Trivandrum-Nagercoil Section, having a length of 71 Km. is expected to be commissioned by December 1978 or early 1979 and the Nagercoil-Kanyakumari line by December 1979. The break of continuity of the railway network at Ernakulam was removed during 1976 with the conversion into broadgauge of 221 Km length between Trivandrum and Ernakulam. The doubling of the Ernakulam-Alwaye route has already been completed. The second line construction from Alwaye to Shoranur is in progress.

14.181 The deficiencies of the existing rail network in Kerala include the following:-

- (i) Discontinuity of West Coast link, South of Trivandrum.
- (ii) Missing links in the Alleppey and Guruvayoor (Ponnani) coastal belts.
- (iii) Gauge discontinuity at Quilon junction to wards Punalur.
- (iv) Absence of double line track in the intercity routes.
- (v) Discontinuity of West Coast link beyond Mangalore.
- (vi) Absence of superior electric traction for passenger and goods services.
- (vii) Unsatisfactory average speeds of steam hauled services especially for passenger traffic from the chain of population centres along the corridor.
- (viii) Absence of rail links to the backward districts and areas.

14.182 The advantages of the State's railway system include the railway network along the principal corridor with most of the population centres within its influence zone except in parts of Alleppey, Malappuram, Idukki, Calicut and Cannanore Districts. By 1979 the discontinuity in the Southern region will be eliminated with the commissioning of Trivandrum-Kanyakumari link.

14.183 Retarded growth of rail transport facilities in this overcrowded State continues to be a serious handicap in its economic development. For historical reasons the development of railways in the erstwhile Travancore and Cochin princely States left much to be desired. During the three decades since Independence attempts at improvement were limited to the construction of two missing links viz. (i) between Ernakulam and Quilon which was opened as metre gauge in 1956 and converted to broad gauge 20 years later and (ii) the link between Trivandrum and Tirunelveli,

work on which is now in progress for completion before 1980. The backlog of arrears of railway development still to be cleared include:—

- (i) the coastal link to the thickly populated district of Alleppey (which is separated from the mainland by the Vembanad lake).
- (ii) the Kuttippuram – Guruvayoor – Trichur link to the most backward district of Malappuram and
- (iii) the construction of 150 Km. of missing link in the Cochin-Madurai inter-city route.

14.184 The transport needs in the intercity routes, both inter-state and intra-state, can be met adequately, at minimum cost and maximum benefit to the economy only by an efficient inter-city rail link network, preferably electrified.

14.185 The principal inter-city routes of vital economic importance to the State can be identified as under:-

(a) *Intra-State.*

- (i) Ernakulam-Trivandrum
- (ii) Ernakulam-Calicut

(b) *Inter-State*

- (i) Ernakulam-Madurai (Cochin)
- (ii) Trivandrum-Cochin-Bombay-Delhi
- (iii) Trivandrum-Cochin-Coimbatore-Madras-Howrah.
- (iv) Calicut-Bangalore
- (v) Trivandrum-Madurai

14.186 The rail network for a lakh of population for the country as a whole is quite inadequate (being only about 10 Km.) compared to the average for other developed and developing countries. Kerala's position is considerably below the all-India average. Its 886 Km. of railway lines has to be compared with the 60,000 Km. of railway lines for India as a whole. This figure alone is indicative of the fact that development of railways in Kerala has not received adequate attention. Against 10 Km. length of railway line for one lakh population at the all India level, Kerala has only about 4 Km. length. It is therefore urged that at least during the plan period 1978-83 vigorous steps are taken to remedy the shortfall in railway investment in Kerala in the previous plans.

14.187 A railway network connecting the maximum number of towns with a railway station within ten to fifteen Kilometres of each population centre can be taken as the optimum choice for expansion of railway network from the micro level planning requirement. The priority items for railway network in the State should be considered under two heads:—

- (i) Construction of missing links-new railway lines
- (ii) Doubling or electrification of lines. This will involve optimisation of goods and passenger movement in the routes connecting cities and

principal towns within the State and outside by improvement of track capacity and traction mix.

*Plan Proposals for 1978-83*

(a) *New Railway Lines*

(i) *Construction of 51 Km of Ernakulam-Alleppey Rail Link.*

14.188 The scheme relating to construction of 51 Km. of the new broadgauge line linking Ernakulam with Alleppey assumes great priority. This arterial broadgauge link is vital for the development of Alleppey District. A project appraisal done by the Southern Railway has clearly established the financial viability of the project. The estimated cost of construction of the line is Rs. 4.85 crores. In spite of the fact that land and wooden sleepers required for the line have been offered free by the State Government, the green signal for the commencement of construction is still awaited from the Centre. This new line will connect a number of towns and villages especially in the Alleppey District. The Alleppey port also would receive a fillip after this railway line comes into being. Any delay in the commencement of work on this rail link will delay the commissioning of several industrial units from being developed in this area.

(ii) *Construction of 60 Km. of Guruvayoor Link from Trichur to Kuttippuram*

14.189 The present West Coast Railway alignment deviates away from the coast near Tirur to avoid the crossing of Ponnani (Bharathapuzha) river. The areas south of this river course have remained industrially very backward due to lack of proper transport facilities. A chord line from Kuttippuram to Trichur via Kunnankulam and Guruvayoor for a length 60 Km. will cut down the distance in the inter-city route by 3 Km. besides connecting the important towns of Guruvayoor, Kunnankulam and Pazhanji. Since Shoranur Junction yard is bypassed, substantial reduction in transit time for inter-city travel is also possible by this link. The cost of construction of this line is estimated at about Rs. 7.56 crores and with this investment the coastal link in this belt also gets connected.

(iii) *Construction of 42 Km. of Kayamkulam-Alleppey Link*

14.190 This railway line connects the existing broadgauge line from Quilon to Ernakulam (via Kottayam) with the proposed Ernakulam-Alleppey rail link. The estimated cost of this 42 Km. railway line is Rs. 7 crores.

(iv) *Construction of 45 Km. of Tellicherry-Irity Railway Link.*

14.191 The inter-State link from Tellicherry to Mysore, the feasibility of which was surveyed and confirmed as early as 1958, is yet to be taken up for construction by the Railway Ministry. As a first stage of this construction the 45 Km. length from Tellicherry to Irity connecting the important commercial towns of Kuthuparamba and Mattannur should be taken up. This length will be passing mainly through plains and

involves only very little bridging. This rail link will cost about Rs. 10 crores.

(v) *Construction of the 150 Km. of Ernakulam Bodinayakanur Link.*

14.192 The estimated cost of construction of this inter-state railway line is Rs. 42 crores. Apart from the District Headquarters at Idukki, this line would serve other important towns in the region such as Moovattupuzha, Thodupuzha, Kanjirappally, Munda-kkayam and Munnar.

(vi) *Construction of the 60 Km. Calicut-Nilambur Line*

14.193 There are demands for a railway link from Calicut to Nilambur for developing the backward areas in the region and for improving the train services in the 66 Km. branch line from Nilambur to Shoranur. The priority for this line can be decided only after the conduct of a detailed survey involving cost-benefit analysis and identification of the best alignment for the link.

14.194 While taking up traffic cum engineering surveys the State Government should also be associated with the surveys so that it can assist the Railways in preparing realistic estimates. It can also have a sense of participation in such survey reports

(b) *Optimisation of tracks and track Capacities*

14.195 The optimisation of tracks and track capacities can be effected not only with regard to intra-state movements, but also with regard to long distance inter-state movements. Optimisation of movement of passengers and goods within the State will require the augmentation of capacities in the principal inter-city west coast route of Trivandrum-Ernakulam-Calicut, doubling of Olavakkot-Shoranur section in the Cochin-Coimbatore Madras route and conversion of Quilon-Punalur section into mixed gauge.

14.196 The superiority of service of and the consequent customer preference for a fast and reliable broadgauge rail service in the State has been amply established by the substantial diversion of passenger and goods traffic from road to rail consequent on the conversion of the Trivandrum-Ernakulam metre gauge line into broadgauge. Even though the commencement of this conversion work was delayed for quite some time since 1964 on the plea that the project was not financially justified, the operating results after conversion have clearly established that the actual volume of passenger and goods traffic diverted to rail is far beyond the normal conservative estimates of traffic taken note of.

14.197 The main schemes suggested for the optimisation of intra-state movements are the following:—

(i) *Doubling of Trivandrum-Quilon-Kayamkulam Route.*

14.198 The Ernakulam-Trivandrum broadgauge section opened for traffic during 1976 has reached over-saturation level of operation within two years. Unsatisfied demand for more fast trains in this section cannot be met without augmentation of the section.

This augmentation of capacity can be conveniently done by doubling the 106 Km. long Trivandrum-Kayamkulam section (where land widths and other basic facilities are already available over 65 Km. length from Trivandrum upto Quilon for providing an additional (line) and by the construction of a 42 km. long coastal link from Kayamkulam to Alleppey. Besides reducing the inter-city distance by over 20 Km. this coastal route will serve the industrial units coming up along the coast in Quilon and Alleppey districts, including the Kerala Minerals Limited Complex. The cost of doubling the Trivandrum-Quilon-Kayamkulam line is estimated at Rs. 15 crores.

(ii) *Doubling of remaining 25 km. of Railway Line between Shoranur and Alwaye*

14.199 As a double line track is already available between Ernakulam and Alwaye for 20 km. and work on doubling the line is in various stages of progress for another 40 km. in the Alwaye-Trichur section, augmentation of capacity in the Ernakulam-Calicut inter-city route is comparatively simple. The cost of doubling the balance of 25 km. of railway line between Shoranur and Alwaye is approximately Rs. 5.25 crores.

(iii) *Doubling of Kuttippuram-Calicut Line.*

14.200 Besides the 60 km. long chord line from Trichur to Kuttippuram via. Guruvayoor, the 56 km. length from Kuttippuram to Calicut will have to be doubled to provide adequate capacity to the inter-city route. The cost of doubling Kuttippuram-Calicut line will be about Rs. 11.75 crores.

(iv) *Mixed gauge for 45 km. from Quilon to Punalur.*

14.201 The estimated cost of construction of rendering the Quilon-Punalur line into a mixed gauge line is Rs. 4.50 crores.

(v) *Electrification of inter-city routes*

14.202 Kerala which is far remote from the collieries should have been assigned high priority for electrification of railway routes, especially when cheap power is available in abundance in the State. Hence the proposition for electrification of railways in Kerala should receive urgent attention.

14.203 While the ultimate solution to the transport problem lies in electrifying the sections on either side of Ernakulam, immediate relief can be sought by switching over to diesel traction for all passenger services. With an efficient and imaginative schedule of services, this 400 km. corridor serves the three cities of Trivandrum, Ernakulam & Calicut and the continuous chain of principal and other towns. Quick development of electric suburban railway systems in metropolitan areas and in areas like Kerala with high density of population and commuter traffic will go a long way in saving petrol and diesel. For a densely populated area with heavy passenger traffic like the west coast traffic corridor (Trivandrum to Mangalore) steam traction is not suitable. Kerala is a chain of towns, one merging into another. There are railway stations every 4 to 5 kilometres and more stations are likely to develop in future with heavy

passenger traffic. Between Trivandrum and Ernakulam, a distance of about 221 km. there are 42 stations and with steam trains the passengers lose about 2 hours by way of stopping and starting time. Between Trivandrum and Mangalore, a distance of 635 km. there are 123 railway stations and steam hauled passenger train takes about 29 hours out of which 5 hours could be saved in stopping and starting time if steam engine is replaced by electric traction. Electrification today is absolutely justified both for saving precious travel time of passengers and for saving petrol and diesel oil. Electrification of passenger oriented West Coast Corridor, from Trivandrum to Calicut, could be done with about Rs. 24 crores. This will help to save nearly Rs. 5 to 6 crores worth of petrol and diesel annually. Hence the electrification of the West Coast corridor-Trivandrum to Calicut-to start with is a high priority item of work for Railways in Kerala. Kerala has adequate supplies of electricity to meet this demand.

14.204 The doubling of the 44 km. line between Shoranur and Olavakkot is essential for the speedy movement of goods for the two principal streams of traffic branching off at Shoranur towards north and south. Better services to the District Headquarters of Palghat can also be ensured only after the completion of the last patch of this doubling between Madras and Shoranur. While this is an item of work accepted for execution in principle, the delay in actual commencement of work is seriously handicapping the improvement of rail services in the State.

14.205 With the completion of Broadgauge conversion between Ernakulam and Trivandrum, three important towns of Kilikollur, Kundara and Punalur are cut off from the main railway network. As these towns in Quilon District have substantial industrial potential, it is necessary to extend the broadgauge rail head to Punalur. This can improve the forest based industry at Punalur and movement of timber to broadgauge destinations. As an incentive the State should make available wooden sleepers required for this line.

14.206 Most of the Railway Stations in Kerala especially those in the sub-urban centres are small buildings built over 60 to 70 years ago and do not have the required passenger facilities and amenities. Many stations today need rebuilding. Modern station buildings with all modern amenities with sufficient cover-over platforms and good approach roads should be provided at these stations on a programmed basis. While the State has water borne sanitation in most important towns, most of the railway stations still have dirty unsanitary pan-type-latrines. These should all be replaced during the Plan period and all passenger and goods facilities modernised.

14.207 While container terminals have been established at a number of important stations in India, this facility is yet to be extended to Kerala. At important stations where valuable goods are dealt with, for example Calicut, Ernakulam, Kottayam, Quilon and Trivandrum, container terminals should be established during the Plan period.

14.208 The State has over 20,000 km. of roads which carry very heavy traffic. There are about 500 level crossings in Kerala, of which 250 are manned

level crossings with heavy road traffic. Being a thickly populated region, the level crossings are busy and being full of trees and cultivation, the visibility is also not good. The apportionment of level crossing fund which subsidises the construction of level crossings is not on a fair basis for Kerala, since it is based on passenger earnings. Without sufficient railway lines, the passenger earnings cannot go up. The apportionment should be related to the number of busy level crossings requiring grade separation. Unless the apportionment is done on a realistic basis the State will not be in a position to finance these safety works adequately. The busy level crossings should be replaced with road over/under bridges during the Plan period.

#### *Inter-State Traffic.*

14.209 The principal long distance traffic from the State to Tamil Nadu and beyond at present move through the Shoranur-Podanur Link. While the line from Madras-including 26 km. from Walayar upto Olavakkot falling within the State--has been doubled the work on the 44 km. stretch that separates Olavakkot from Shoranur junction is still to be taken up. Another rail facility which vitally affects the economy of Kerala is the West Coast Railway from Mangalore to Apta. Though not lying within the State limits, this link, when completed will reduce the distance from the various industrial and commercial Centres in the State to the important cities like Bombay, Ahmedabad, Baroda etc. in the Western India by more than 1000 Kilometres. The provision of this missing link can also improve the competitiveness of the various industries located through the length from Kasargod to Parassala.

14.210 From a national point of view also, a shorter direct link from Kanyakumari to Kashmir will be established connecting the numerous places of historical and cultural importance in the States of Tamil Nadu, Kerala, Karnataka, Maharashtra, Gujarat, Rajasthan, Uttar Pradesh, Haryana, Punjab and Jammu and Kashmir and substantially boosting the tourist traffic potential in the length. Even though work on this project has been commenced on a small scale from Apta in the north, it is necessary that the construction from Mangalore end is also started simultaneously to optimise benefits from this project.

14.211 Line capacity proposals accepted for implementation by the Railway Board and works in progress in the Olavakkot-Alwaye reach aggregate to Rs. 1480 lakhs. In view of the serious line capacity problems experienced even now, works on these schemes are expected to be completed by this decade itself.

14.212 The various schemes under Railways which are most essential for the overall developmental needs of Kerala and the expected outlays on these schemes are listed below:—

#### *A. New Lines.*

Schemes	Cost (lakhs Rs.)
1. Construction of 51 km. long Alleppey link from Ernakulam Junction	485



2. Construction of 60 km. of Guruvayoor Link from Trichur to Kuttippuram	765
3. Construction of 42 km. of Kayamkulam-Alleppey Link	700
4. Construction of 45 km. of Telli-cherry-Iritty Link	1000
5. Construction of 150 km. of Ernakulam-Bodi Link	4200
6. Construction of 60 km. of Calicut-Nilambur	1200
Total—A	8350
 B. Optimisation of Tracks and Track Capacities.	
1. Doubling of remaining 25 Km. between Shoranur and Alwaye	525
2. Doubling of Trivandrum-Quilon-Kayamkulam (106 Km)	1500
3. Doubling of Kuttippuram Calicut (56 Km.)	1175
4. Mixed gauge for 45 Km. from Quilon to Punalur	450
5. Electrification of inter-city route	2400
Total—B	6050
Total (A+B)	Rs. 14400 lakhs

#### Resources Plan for Proposed Schemes

14.213 The outlay for Railways in the all India Plan is Rs. 3350 crores. In view of the higher priority assigned to augmentation of capacity, modernisation of the system in respect of equipment and practices and promotion of better utilisation of existing assets, the availability of funds for construction of new lines is likely to be limited. The investment required for the six new lines suggested for the period 1978-83 is Rs. 83.5 crores. Of these the maximum priority has to be assigned to the three missing links viz. Ernakulam-Alleppey, Trichur-Kuttippuram (via. Guruvayoor) and Kayamkulam-Alleppey. The total requirement for these lines is Rs. 19.5 crores.

14.214 Similarly out of the five optimisation schemes costing Rs. 60.5 crores, the doubling of Shoranur-Alleppey line (Rs. 5.25 crores), provision of mixed gauge from Quilon to Punalur (Rs. 4.5 crores) and doubling of Quilon-Trivandrum-Kayamkulam section (Rs. 15 crores) aggregating to a total investment of Rs. 24.75 crores will have to be given utmost priority. The electrification of inter-city routes may require mobilisation of additional resources from other agencies, on the pattern of resources planning for Metropolitan transport projects in the bigger cities of Calcutta, Delhi etc.

The doubling of the Kuttippuram-Calicut section is likely to spill over to the next five year plan period even if work on this scheme is commenced during the Plan for 1978-83.

#### Communications

##### Posts and Telegraphs

##### (a) Postal Network.

14.215 Kerala has at present 16 Postal Divisions, two Railway Mail Sorting (R. M. S.) Divisions, two Postal Stores Depot Units and one Mail Motor Service Division Unit. At the beginning of the Fifth Plan, the Kerala Postal Circle had 4918 post offices comprising 28 head post offices, 1204 sub post offices and 2786 branch post offices. Of these, 530 were in the urban areas and 3488 in rural areas. During the four years to which the Fifth Plan was limited 212 new post offices were opened and of these 188 were in rural areas. As on 1-4-1978, 4218 Post Offices were functioning in the State, distributed as head post offices (33), sub post offices (1270) and branch post offices (2915). As on this date each post office in the circle was serving an area of 9.23 sq.km. and a population of 5078 on an average as against the national average of 27.4 sq.Km. and 4688 population. The average area served by a post office in Kerala on 1-4-1977 was 9.47 sq. Km. and 5203 people. The average for rural areas were 7.71 sq.Km. and 5007 people and for urban areas 2.55 sq. Km. and 6501 people.

14.216 The density of population in Kerala is the highest compared to the other States in India. The number of letters received per sq. km. is also very high in Kerala due to the high literacy and mobility of its people. The post offices in Kerala are mostly remunerative and the opening of more post offices and upgradation of existing post offices would certainly be a viable step helping to improve and develop the existing services.

14.217 Kerala has as on 1-4-1978, 120 mobile post offices, and with the installation of more letter boxes no customer anywhere in the State will have to travel more than one and a half kilometres to post a letter and every village receiving at least one letter a day will have a letter box.

##### Proposals for 1978-83 Plan

14.218 Based on the existing standards laid down for opening post offices, nearly 100 more Post Offices have been opened in this Circle during last year of the Fifth Plan period viz., 1977-78. The additional number of Post Offices justified according to the present standards for the Plan period 1978-83 is about 394. But if a more realistic method is adopted for laying down the distance condition in respect of post offices which are anticipated to work on profit, it is likely that the Circle may be able to open upto 500 Post Offices during the Plan period 1978-83. It is proposed to open 42 urban post offices during the plan period.

14.219 There are 434 branch offices with heavy work in the Kerala Postal Circle. If conditions are favourable about 318 branch offices can be upgraded

into district sub offices. Extra Departmental Branch Offices (EDBOS) can be converted into Extra Departmental Sub-Offices (EDSOS). The Projections regarding the upgradation of Sub-Post Offices into Head Post Offices are based on the operational requirements arising out of opening of more Sub-Offices and upgradation of branch offices into Sub-Offices. It is planned to upgrade the following Sub Post offices into Head Offices during the Plan year ending 1982-83:

Karunagappally, Perumbavoor, Chalakudi, Malappuram, Neyyattinkara, Kottarakkara, Kayamkulam, Chengannur, Palai, Idukki, Quilandy, Kuttaparamba and Talipparamba.

14.220 At the end of the Five Year Plan period 1978-83 it is expected that there will be 591 post offices in the urban areas and 4063 post offices in the rural areas. The average area and population proposed to be served by each post office in the urban and rural areas are shown below:—

<i>Urban:</i> Area per post office	2.25 sq.km.
Population per post office	5732
<i>Rural:</i> Area per post office	6.75 sq.km
Population per post office	4387

#### Postal Facilities in Backward and Tribal Areas

14.221 Special attention is being paid to the development of postal facilities in the backward areas of the State. The areas which are declared as very backward and/or hilly for purpose of development of postal facilities are:

- (i) Devikulam, }  
Peermade and } Taluks of Idukki district  
Udumbanchola }
- (ii) North Wynad taluk of Cananore district
- (iii) South Wynad taluk of Calicut district
- (iv) Attappady valley of Palghat district
- (v) Part of Kuttanad taluk and Alleppey district and
- (vi) Lakshadweep Islands.

14.222 Kerala Government have declared some areas of Kasargode, Hosdurg, Tellicherry, North Wynad, South Wynad taluks and Attapady valley of Palghat District for an integrated tribal development project. Of these North Wynad and South Wynad taluks and Attapady Valley are enlisted as very backward in the list approved by the Postal Directorate. Branch Offices have been opened in backward centres like Chittoor (Agali), Paloor and Kallamala.

14.223. The Sub plan for development of tribal areas contemplates the opening of 11 branch offices and upgradation of four sub post offices as detailed below:

#### Opening of Post Offices:

- (i) Birepadavu
- (ii) Kayarigadde
- (iii) Balamoole
- (iv) Ullody

- (v) Pareppa
- (vi) Samakochi
- (vii) Peruva
- (viii) Narikattimala
- (ix) Ellumannam
- (x) Muthenga
- (ix) Chingeri

#### Upgradation of Branch Offices

- (i) Mukkali
- (ii) Thavalam
- (iii) Pavelike BO
- (iv) Tharicode North BO

#### Mobile Post Offices.

14.224 The mobile post office scheme is a new scheme under which postal facility is provided to semi-urban areas or villages or groups of villages by a travelling Branch Post Master. Mobile post offices are meant to meet the growing demand for additional number of Post Offices particularly where a post office could not be opened due to distance limitation or due to the heavy financial loss to retain a stationary post office. The first mobile Post Office of its kind was opened in Kerala at Midayikunnu in Thalayolaparambu near Vaikom in Kottayam Division on 3-6-1976. Now an effort is being made to have more branch offices as Mobile Post Offices to afford better facility to the people of the interior regions. At present there are 126 mobile post offices in the State. It is proposed to have 200 Mobile Post Offices during the Plan period, 1978-83.

14.225 During the Five Year Plan period (1978-83) emphasis will be laid on upgrading sub-post offices into head post offices and branch post offices into sub-post offices and on opening of branch post offices. Mobile Post Offices and night post offices should be opened in all the district headquarters in the State. This will facilitate the creation of an integrated postal network. In a State like Kerala where postal services are run economically and where they are to subservise a highly literate population a much higher outlay than in the Fifth Plan has to be provided during the Plan period for 1978-83.

14.226 Tables 14.8 and 14.9 give the details regarding the opening of new post offices and upgradation of existing ones.

TABLE 14.8

#### Expansion Programme of Postal Services in Kerala Upgradation of Post Offices during 1978-83

Sl. No.	Name of Division	Conversion of Extra Departmental Branch Offices into Extra Departmental sub Offices	Conversion of Extra Departmental Sub-Offices into D.S.Os.
(1)	(2)	(3)	(4)
1.	Trivandrum	20	23
2.	Quilon	74	24
3.	Alleppey	35	15
4.	Tiruvalla	38	22

(1)	(2)	(3)	(4)
5.	Kottayam	67	32
6.	Idukki	19	27
7.	Ernakulam	7	12
8.	Alwaye	51	22
9.	Trichur	35	19
10.	Irinjalakuda	21	11
11.	Palghat	8	11
12.	Ottappalam	15	12
13.	Malappuram	42	34
14.	Calicut	57	22
15.	Cannanore	44	16
16.	Tellicherry	17	16
Total		550	318

14.227 It is also planned to upgrade the following 13 sub offices into head offices during the period 1978-83.

1.	Neyyattinkara	Trivandrum Division
2.	Karunagapally	Quilon Division
3.	Kottarakara	Quilon Division
4.	Kayamkulam	Alleppey Division
5.	Palai	Kottayam Division
6.	Chengannur	Thiruvalla Division
7.	Perumbavoor	Alwaye Division
8.	Chalakydy	Irinjalakuda Division
9.	Malappuram	Malappuram Division
10.	Koothuparamba	Tellicherry Division
11.	Taliparamba	Cannanore Division
12.	Quilandi	Calicut Division
13.	Idukki	Idukki Division

TABLE 14.9

**Expansion Programme of Postal Services in Kerala  
Opening of Branch Offices and Sub offices  
during 1978-83**

Sl. No.	Name of Division	Opening of Branch Offices in Rural areas including Mobile Branch Offices	Opening of Sub Offices in urban areas
1.	Trivandrum	41	7
2.	Quilon	37	4
3.	Alleppey	29	4
4.	Thiruvalla	4	2
5.	Kottayam	14	1
6.	Idukki	33	3
7.	Ernakulam	4	3
8.	Alwaye	15	2
9.	Trichur	15	3
10.	Irinjalakuda	16	3
11.	Palghat	32	3
12.	Ottappalam	13	..
13.	Malappuram	48	1
14.	Calicut	20	4
15.	Cannanore	48	2
16.	Tellicherry	25	..
		394	42

TABLE 14.11

Position at the end of	No. of exchanges	Working connections	Equipped capacity	Waiting list	Telegraph offices	Telex lines
(1)	(2)	(3)	(4)	(5)	(6)	(7)
3rd Plan	170	24,898	31,219	8,390	12+528	Nil.
4th Plan	268	52,601	65,060	13,236	12+857	311
5th Plan	371	78,368	88,305	7,395	12+1,338	621

\* Departmental Telegraph offices Combined Offices.

## (b) Tele-Communication

14.228 The strategy adopted in the Five Year Plan for 1978-83 is to extend telegraph and telephon facilities mainly to rural areas simultaneously with improvement of urban services, Kerala State is quite advanced in respect of telecommunication facilities. At the end of the Fifth Plan period there was on an average, a telephone exchange at every 11 km and a telegraph office at every 6 km. Out of eleven district headquarters nine had Subscriber Trunk Dialling facilities, not only to the State Capital but also among themselves. There were 2.3 telephones per sq. km. compared to the national average of, 0.7. Out of 1268 villages (to which the State is delimited in 1971 census), 790 had telephone/telegraph facilities. There are also 371 telephone exchanges of which 340 are automatic and 31 manually operated. Salient features of the telecommunication network in Kerala (as on 31st March 1978) are indicated in Table 14.10.

TABLE 14.10

Item	Kerala Circle	Ernakulam Telephones	Total
<b>(a) Telephone Lines</b>			
Direct Exchange Lines	68,052	10,316	78,368
Enquipped Capacity	77,305	11,000	88,305
Number of Telephones	79,845	14,941	94,792
<b>(b) Waiting Applicants</b>			
OYT	339	309	648
Special	313	138	451
General	4,960	1,477	6,437
<b>Total</b>	<b>5,612</b>	<b>1,924</b>	<b>7,536</b>
<b>(c) Telex Services</b>			
Number of lines	315	306	621
Capacity	450	400	850
Waiting list	21	10	31

14.229 A separate P&T Circle in Kerala came into being only in 1961. In 1974, Kerala Tele-Communication Circle was formed under the charge of the General Manager, Telecommunications, at Trivandrum. The telephone system has grown by five times since the formation of the Kerala P & T Circle in 1961. The growth of telecommunications during the last three Plan periods is indicated in Table 14.11.

14.230 The following targets are laid down for Kerala Circle for the Plan period 1978-83:

- (i) Extension of telephone/telegraph facilities to all places above 5000 population in normal areas and 2500 population in backward areas.
- (ii) Connection of the remaining District Headquarters to the State Capital on S. T. D.
- (iii) Provision of demand service/ STD service between Taluk Headquarters and District Headquarters.
- (iv) Automatisation of exchanges above 1000 lines capacity and extending automatisation of the telephone service to above 90 per cent.

#### Expansion of Telecommunication System

##### Telephone Services

##### (i) Local Systems:

14.231 Telecommunication network in Kerala represents approximately 4 per cent of the all-India network. It can, therefore, be reasonably expected to get about four per cent of the proposed national investment for development of telecommunications in Kerala. On this basis, Kerala is expected to get 60,000 lines of new equipment involving an outlay of approximately Rs. 40 crores for development of local telephone systems. The Main Exchange Systems (MAX I) which constituted 43.2 per cent of the telephone network in Kerala, will be expanded by 25,000 lines as indicated below:

- |                |            |
|----------------|------------|
| (i) Trivandrum | 5700 lines |
| (ii) Quilon    | 2200 "     |

(iii) Alleppey	900 "
(iv) Kottayam	2400 "
(v) Ernakulam	6200 "
(vi) Trichur	2000 "
(vii) Palghat	1200 "
(viii) Calicut	3200 "
(ix) Cannanore	1200 "
Total	25000 lines

Calicut Telephone System which will cross 10,000 lines mark, will be formed into a separate Telephone District during the Plan period.

##### (ii) New Exchanges

14.232 The following new exchanges are also proposed to be opened during 1978-83:

(i) Alwaye	1500 lines
(ii) Tellichery	1800 "
(iii) Changanachery	1200 "
(iv) Kasargode	1200 "
(v) Tiruvalla	1200 "
(vi) Irinjalakuda	1200 "
(vii) Perumbavur	1200 "

The exchange at Alwaye is now under installation and is expected to be commissioned by the end of 1978-79. Sites for Tellichery and Changanachery have been acquired and planning for building has been taken up. As regards Kasargode, Tiruvalla, Irinjalakuda and Perumbavur, sites will have to be acquired during the Plan period.

##### (iii) Automatic Exchanges

14.233 Under medium and small size automatic exchanges (MAX II, MAX III) the following additions are proposed:

Exchanges	1978-79	1979-80	1980-81	1981-82	1982-83	Total Lines
1. 25 line MAX III	20	20	25	25	30	3000
2. 50 line MAX III	20	25	25	30	30	6500
3. MAX II (200 to 600 lines)	2500	3000	4000	4500	6000	20000
4. CBM CBNM*	700	800	900	1000	1100	4500

\* Central Battery Multiple and Central Battery Non-Multiple.

The MAX II equipment will generally be installed in Taluk Headquarters—while smaller exchanges will be installed at places where industrial centres are planned by the State Government.

##### (iv) Trunk Exchanges:

14.234 Eight new trunk exchanges are proposed bringing the total to 71 in Kerala at the end of the Plan period.

##### STD Services

14.235 Large scale expansion of the STD network is proposed during the Plan period. A new 800 line trunk automatic exchange (TAX) is proposed at

Calicut in addition to the existing ones at Trivandrum and Ernakulam. The following stations are likely to be converted to automatic trunk network:

1. Neyyattinkara
2. Nedumangad
3. Attingal
4. Tiruvalla
5. Changanacherry
6. Kasargode
7. Alwaye
8. Perumbavur

9. Muvattupuzha
10. Irinjalakuda
11. Kunnamkulam

In addition to the above, inter-dialling between the following Exchanges is proposed:

1. Quilon-Kundara
2. Quilon-Chathannur
3. Quilon-Kottiyam
4. Adoor-Kottarakara
5. Alathur-Palghat
6. Neyyattinkara-Trivandrum
7. Muvattupuzha-Perumbavoor
8. Muvattupuzha-Kothamangalam
9. Malappuram-Manjeri
10. Alwaye-Perumbavur
11. Chalakudy-Irinjalakuda
12. Kunnamkulam-Guruvayur (Chowghat)

14.236 The objective will be to connect taluk headquarters to district headquarters on dialling or demand basis. Since there is acute shortage of STD equipment in the country, trunk dialling has to be provided in a phased manner.

#### Long Distance Transmission Systems

14.237 The inter-State traffic from Kerala to the rest of India is handled by the following long distance systems:

- (i) Trivandrum-Ernakulam-Coimbatore- Madras 960 Channel Coaxial Cable System
- (ii) A wide Band 1800 Channel Microwave System connecting Trivandrum to Bombay, via. Ernakulam-Calicut-Mangalore-Panjim. This is now in the final stages of completion.
- (iii) Narrow Band Microwave (300 channel) system also exists between Kottayam-Alleppey and Calicut-Tellicherry-Cannanore.

14.238 The following systems will be added during 1978-83:

1. Calicut-Coimbatore W/B Microwave 1800 chls
2. Ernakulam-Coimbatore " 1800 chls.
3. Trivandrum-Madurai W/B Microwave 1800 chls  
(via. Kanyakumari)
4. Ernakulam-Alwaye " 300 chls
5. Ernakulam-Irinjalakuda " 300 chls
6. Calicut-Manjeri UHF 60 chls
7. Calicut-Kalpetta UHF 60 chls
8. Calicut-Badagara UHF 60 chls
9. Alleppey-Shertalai UHF 60 chls
10. Trichur-Kunnamkulam UHF 60 chls
11. Kottayam-Palai UHF 60 chls

14.239 In addition to the above, 960 channels Coaxial Cable system is proposed between Kottayam and Alwaye (via. Thodupuzha and Palai) and between Trichur and Mangalore (via. Calicut and Cannanore). The above system will enable provision of direct dialling facilities between all major towns in Kerala.

#### Telex Services

14.240 Telex facility is available at the following places in Kerala at present:

Trivandrum	100 lines
Quilon taluk	100 "
Kottayam taluk	50 "
Alleppey taluk	50 "
Calicut taluk	100 "
Cannanore taluk	50 "
Cochin taluk	400 "

New Telex Exchanges will be opened at Trichur, Palghat and Alwaye shortly. Telex Exchanges at Trivandrum, Quilon and Cannanore will be expanded by 50 lines in the next Plan. It is proposed to provide long distance Telex PCOs at other large cities in Kerala during the Sixth Plan.

#### Telegraph Services

14.241 The major thrust in the Current Plan will be on improvement of the telegraph services particularly in expeditious delivery of telegrams. Combined offices will be opened at 424 places during 1978-83.

#### Rural Services

14.242 Telecommunication facilities are already available to 790 out of 1268 villages in Kerala. During the Plan period 1978-83 it is proposed to extend the facilities to all the villages. Special attention will also be given to tribal areas of Wynad in Calicut District and Mannarghat area in Palghat District.

#### Public Call Offices

14.243 About 500 more Public Call Offices (PCOs) will be opened during the Plan period in the rural areas, in addition to the existing 192 PCOs. Nobody will have to walk more than 5 km. for booking a telegram or making a telephone call except in very remote areas.

#### Wireless Services

14.244 Wireless Services linking mainland with Lakshadweep Islands are operated from Calicut. This will be shifted to Cochin during the Plan period to provide better communication facilities with High Power Transmitters. The Coastal Station facilities at Cochin Radio will also be improved. To provide alternative channel of communications to Lakshadweep, it is proposed to provide a Wireless Telegraph link between Trivandrum and Minicoy. Radio Telephone Service will be provided between Calicut-Minicoy and Calicut-Androth during the Plan period.

#### Satellite Centres

14.245 Six circuits will be provided between Calicut and Kavarathi via Madras and the Intelsat for Indian Ocean Satellite. This will substantially improve the telecommunication facilities between Kerala and Lakshadweep. This will be further augmented when the Indian-made Satellite Intelsat is launched as a part of Rs. 176 crore project to connect the mainland to remote areas of the country. An Earth Station has been planned near Perumbavoor as a part of this project. This will enable direct communication facility for Kerala to farflung areas of the country, like Ladakh and NEFA.

*Land and Building requirements*

14.246 Land and building represent the basic requirement for housing the tele-communication equipment. It is the general policy of the Department to acquire land required for Exchanges, a decade in advance of actual commissioning of the Exchange. About 100 cents (approximately 4000 sq. metres) of land is required in each of the following places for putting up large Automatic-cum-Trunk Exchange buildings in future.

1. Neyyattinkara
2. Perumbavur
3. Tiruvalla
4. Badagara
5. Kasargode
6. Irinjalakuda
7. Kalady
8. Payyannur
9. Angamali
10. Thodupuzha
11. Feroke
12. Muvattupuzha
13. Kunnankulam
14. Chengannur
15. Parur
16. Haripad
17. Kayamkulam
18. Baliapatam
19. Tirur
20. Kanjirappalli
21. Palai
22. Karunagappalli

14.247 It is also proposed to acquire land for medium size Automatic Exchanges to local MAX II in Taluk headquarters. The following places, therefore, need approximately 50 cents of land (approximately 2000 sq. metres) for putting up medium size Automatic Exchanges:—

1. Manjeri
2. Pathananthitta

3. Varkala
4. Poovar
5. Alathur
6. Chittur
7. Kandassankadavu
8. Erattupettah
9. Nilambur
10. Kozhencherri
11. Malappuram
12. Ollur
13. Ponnani
14. Kundara
15. Punalur
16. Olavakkot
17. Pulincunnu

14.248 In addition to the above, land is also required for staff quarters. It is the policy of the Department to provide residential quarters for essential maintenance staff in the Exchange premises and for other staff in colonies at convenient places. At present only 3 per cent of the P & T employees have been provided with quarters compared to the national average of 6.4 per cent. The Plan for 1978-83 envisages construction of about 300 quarters in Kerala to improve the percentage availability to five. Sites measuring about 2 acres will be acquired by the Department at the following places:

1. Alleppey
2. Alwaye
3. Trivandrum
4. Kottayam
5. Changanacherry
6. Tiruvalla
7. Idukki
8. Irinjalakuda
9. Muvattupuzha
10. Tellicherry
11. Chalakudy

14.249 There will be all round development of telecommunication facilities in Kerala, maintaining its lead as one of the most advanced States in the country in the matter of telecommunications.

TABLE 14.12

**Augmentation of Telephone Exchanges in District Headquarters in Kerala During 1978-83**

Exchange	Capacity at the beginning of plan	Additional lines proposed in the plan					Total during the plan	Capacity at the end of Plan	Remarks
		1978-79	1979-80	1980-81	1981-82	1982-83			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1 Trivandrum Telephone district	9800	860	1500	1000	1400*	1000	5700	15500	New Exchange at *Fort and Srikaryam
2 Quilon	2700 +400 (M)	100	900	300	600	300	2200	5300	New Exchange at Chinnakkada to replace Manual
3. Alleppey	1800	..	600	..	300	..	900	2700	
4 Kottayam	2700	600	..	..	1500*	300	2400	5100	*2nd Exchange replacing kanjikuzhi
5 Ernakulam Telephone district	11000	3200	400	2000*	600	..	6200	17200	*New Exchange at kalamassery

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
6	Trich ur (X-Bar)	4000	..	..	1000	..	1000	2000	6000
7	Palghat	1800	300	..	300	300	300	1200	3000
8	Calicut	7500	..	1200	2000*	..	..	3200	10700
9.	Cannanore	2100	300	300	..	300	300	1200	3300
10	Malappuram	200 MAX II	100	..	100	..	..	200	400
11	Idukki—Painavu, Vazhathope	50 MAX III 50 „	..	100	..	100	..	200	300
		44100	5400	5000	7300	4500	3200	25400	69500

\*New Exchange at Central School.

## Air Transport

14.250 Air transport has a vital role to play as a quick means of transport. Kerala State has two airports, one at Trivandrum and another at Ernakulam. Only the airport at Trivandrum is owned by the Civil Aviation Department of the Government of India. The Airport at Cochin belongs to the Defence Department and Civil authorities are using it subject to the restrictions imposed by the Defence Department. These two airports help internal movement between Trivandrum and Cochin.

14.251 The need for connecting the northern part of Kerala is acutely felt. The State Government has therefore requested the Government of India to open an airport at Calicut to cater to the needs of the people of Malabar. The State Government hopes that the construction work relating to Calicut airport would commence shortly. It is therefore expected that the northern part of Kerala would be connected by air transport by the commissioning of the airport at Calicut.

14.252 During the Plan period (1978-83) it will be necessary for the Government of India to improve the existing airports considerably. Kovalam beach near Trivandrum has now acquired the status of an International Beach resort and it is expected that during the coming years international tourist traffic would increase considerably. It would, therefore, be necessary to extend the runway of the Trivandrum Airport to 10,000 feet and provide other facilities so as to accommodate Jumbo Jet aircrafts.

14.253 The existing airport at Cochin is hardly adequate to cater to the needs of the increasing traffic. The Indian Airlines have found it difficult even to operate 737 Boeing aircrafts at Cochin. Cochin, being commercially important and being an assembly point for tourist traffic, has also to be developed to receive bigger jet aircraft, and airbus. Therefore, there is absolute necessity to include the project for expansion of facilities at Cochin airport during the Sixth Plan period. The State Government have already taken up the matter with the Government of India.

14.254 There is a steady flow of passenger traffic from Kerala to foreign countries, especially Gulf countries. The majority of the passengers are young people who are on their way to take up jobs in these countries.

14.255 The Trivandrum to Dubai flight was inaugurated on January 31, 1978. A second Boeing service between Trivandrum and Dubai was also introduced thus making the Trivandrum-Dubai air link a bi-weekly service. A booking office at Calicut is among the expansion plans for Air India in Kerala. An estimated number of 3,000 people from the State travel from Trivandrum to the Gulf countries every month. Till now this traffic was routed through Bombay. The new service will not only reduce the flying time from Kerala but also reduce the pressure on the Trivandrum-Bombay sector. With the starting of the direct flight to Dubai, Trivandrum has achieved the rare distinction of being the fifth Indian City to operate international flights. The other four are Bombay, Delhi, Calcutta and Madras.

14.256 The Civil Aviation Department has developed Trivandrum aerodrome for regular Boeing-737 operations and occasional Boeing-707 operations at a cost of Rs. 80 lakhs. The airport runway which had a length of 6,000 feet has been strengthened and also extended to 8,500 feet. Preliminary work has been taken up to further strengthen the runway for regular Boeing 707 operations. The terminal building at Trivandrum is being extended to cope with the increased traffic both in domestic and international sectors. Additional room is being provided for customs, health and immigration authorities. Further improvement of the Trivandrum airport to make it suitable for operations with large aircraft on a long term basis is on the anvil. This includes the introduction of Air-bus flight by Indian Airlines which would go a long way in providing the necessary capacity to meet the fast growing air traffic demand of this area. The Centre has announced its decision to develop Trivandrum Airport suitable for air-bus flights. To meet this requirement the runway will be strengthened and extended to 10,000 feet.

14.257 Apart from expanding the runways to receive bigger type aircraft, the needs of the travelling public and the amenities to the staff also should receive attention. With the growing volume of tourist traffic to Trivandrum and Cochin, the terminal facilities for passengers including stay facilities have to be improved. It is urged that new terminal buildings on modern lines be constructed in Trivandrum and Cochin during the Sixth Plan. The staff amenities by way of quarters may also be provided near the Airports to increase efficiency.

## CHAPTER 15

### SOCIAL SERVICES

#### Education

Kerala is ahead of other States in India in respect of literacy, enrolment ratio, proportion of State income devoted to education and per capita expenditure on education. While the percentage of literacy in India increased from 24 to 29 during 1961-71, it increased from 48 to 60 in Kerala during the same period. With the sole exception of Kerala, all the remaining States show a percentage of literacy ranging upto 40 only. About 38 per cent of the State budget allocation is set apart for education sector, while the all-India percentage is only 23. The educational investment as a proportion of State income is 6 per cent in Kerala while at the national level this proportion is only 3 per cent. The liberal educational policy of the State characterised by generous assistance to the private sector coupled with the inescapable needs of expansion was the most crucial factor which accelerated the tempo of educational development in Kerala.

15.2 The Sixth Plan envisages restraint on the opening of new institutions for secondary and higher education. Even in primary education, the opening of new schools will be done only in rural areas where literacy and enrolment ratios are poor and facilities for schooling are inadequate. Non-formal education programme will be introduced at all levels of education for sections of population which cannot, for various reasons, attend full time teaching institutions. In order to equalise educational opportunities and make education relevant to practical life, greater priority will be given to the following three areas:

- (i) Universalisation of Primary Education.
- (ii) Adult Education.
- (iii) Vocationalisation of Education.

15.3 In the field of primary education, the main thrust will be on extending education to the non-attending children and drop-outs through non-formal education, reduction of wastage and stagnation, introduction of socially useful productive work and development of pre-primary education.

15.4 In respect of secondary education, what is envisaged in the present Plan is the normal development and consolidation of facilities rather than expansion. The general policy to be adopted is to discourage the indiscriminate opening of new secondary schools, but to ensure better utilisation of the existing schools. Priority will be given to vocationalisation of secondary education and improvement of the quality of education.

15.5 In Art and Culture, special attention will be given to schemes relating to preservation and promotion of traditional arts and cultural heritage of Kerala.

15.6 Adult education programme did not receive due priority in the previous Plans. The main emphasis in the Sixth Plan will be on organising a very large and intensive programmes for eradication of

illiteracy. The Plan, therefore, makes a higher allocation of funds for this programme.

15.7 In higher education, the Sixth Plan envisages only normal development. Priority will be given to quality improvement programmes, vocationalisation, and non-formal education.

15.8 In the field of technical education, the main emphasis will be on consolidation and qualitative improvement. The Plan also envisages a phased programme of modernisation of facilities and integration of curriculum development.

#### General Education

15.9 At present, there are 1680 High Schools, 2725 Upper Primary Schools and 7015 Lower Primary Schools with a total enrolment of 54.93 lakhs (26.50 lakhs in the lower primary stage, 17.55 lakhs in the upper primary stage and 10.88 lakhs in the secondary stage) in the State. The total number of teachers is about 1.7 lakhs (1977-78). The enrolment in schools represents 23 per cent of the total population. The past one and a half decades have witnessed rapid expansion of educational institutions, enrolments and number of teachers. Between 1960-61 and 1977-78, the number of High Schools increased from 885 to 1680, Upper Primary Schools from 1932 to 2725 and Lower Primary Schools from 6706 to 7015. While the Third Plan and the subsequent Annual Plans brought about remarkable growth of institutions, the Fourth Plan witnessed a slower pace of growth. In the Fifth Plan period, this trend reversed and the number of institutions recorded speedy growth. During the Fifth Plan period alone, 562 new schools have been opened. Most of the schools opened during this period were in the backward areas or in school-less habitations identified by the Second All India Educational Survey. The private sector accounts for about two thirds of the total institutions in the State.

15.10 Between 1960-61 and 1977-78, the enrolment in the primary stage, increased from 29.39 lakhs to 44.05 lakhs and in the secondary stage from 3.31 lakhs to 10.88 lakhs. This represents an increase of 50 per cent in enrolment at the Primary stage and 229 per cent at the Secondary stage. The total number of teachers increased from 1.08 lakhs to 1.70 lakhs between 1960-61 and 1977-78. The pupil-teacher ratio showed an increasing trend in all stages of school education during the period. In the primary stage it has increased from 31 to 35 and in the secondary stage, from 24 to 27.

15.11 The educational endeavours, particularly in the first three Plans, were predominantly confined to quantitative expansion as detailed above. The inevitable consequence of this numerical growth was a general decline in the quality of education. Hence the improvement of quality of education was given high priority in the programmes undertaken in the



Fourth and Fifth Five Year Plans. The measures taken up in this regard consist of upgrading the curriculum, examination reforms, improvement of science education, inservice training to teachers etc.

#### *Elementary Education*

15.12 In the field of universalisation of primary education, the main emphasis will be on extending education to non-attending children, reduction of wastage and stagnation and raising the attendance rates. A system of part-time continuing education will have to be designed for children who enter the primary school, but drop-out later, generally in the age group 9—14. As many children in the age group 5—6 as possible should be enrolled in the beginning of each school year after detailed census of such children and by organising special enrolment drives. Opening of new schools will be done only in backward areas where schooling facilities are lacking. Provision should be made for such programmes of qualitative improvement as introduction of socially useful productive work experience curriculum reform, inservice training of teachers, adoption of dynamic methods of teaching and evaluation, etc. The importance of pre-primary education in the programme of universalisation of elementary education has to be duly recognised.

15.13 It is estimated that about 10 per cent of the children in the age group 6—11 and 15 per cent of the children in the age group 11—14 are still outside schools. They form a problem group which is not attracted by the regular schooling programmes alone. For most of these children who belong to the deprived sections of society, (scheduled tribes and other socially backward sections) alternative methods of schooling such as non-formal type of education are more appropriate.

#### *Proposals for the Plan 1978-83*

##### 1. *Minimum Needs Programme*

###### (i) *Additional Enrolment of Students—Lower Primary Schools (Outlay Rs. 393 lakhs)*

15.14 The present trend of growth of enrolment in standards I to V does not indicate a large scale expansion of enrolment during the next 5 years. A slightly increasing trend in enrolment in standard I is seen in recent years, in spite of the wholesale promotion policy adopted in the primary stage. This is likely to create need for additional enrolment of 0.75 lakh pupils during the Sixth Plan period. In order to absorb the additional enrolment in the formal education sector, new school divisions will have to be provided in extremely backward areas. The break up of the outlay proposed is given below:

- (a) Teacher cost: Departmental—Rs. 120 lakhs, Non-departmental—Rs. 183 lakhs.
- (b) Opening of new lower primary schools divisions (buildings)—Departmental Rs. 75 lakhs.
- (c) Supply of furniture to lower primary schools Departmental—Rs. 15 lakhs.

###### (ii) *Additional Enrolment—U. P. Schools (Outlay Rs. 621 lakhs)*

15.15 Following the estimates provided by the National Working Group on Universalisation and

Enrolment in 1977-78, there is still a gap to be made up, especially in the case of girls in the age group 9—14. The additional enrolment would be 0.75 lakh during the Sixth Plan period. The composition of the outlay provided is as follows:

###### (a) *Teacher Cost:*

Departmental	Rs. 211 lakhs
Non-Government	Rs. 310 lakhs

###### (b) Opening of new departmental Upper Primary Schools/Divisions (building)—Departmental Rs. 80 lakhs

###### (c) Supply of furniture to new Upper Primary Schools—Departmental Rs. 20 lakhs

###### (iii) *Enrolment of Children—Non-formal (Outlay Rs. 378 lakhs)*

###### (a) *Lower Primary Stage.*

15.16 Non-formal education has to be considered for pupils of 9 plus who have either dropped out or have never had lower primary education. The State has to provide for one lakh of pupils in the age group 9—11 during the 1978-83 Plan period. This will require provision for 220 centres per year for 5 years, each centre comprising 2 divisions of 45 children each. The outlay proposed is Rs. 125 lakhs.

###### (b) *Upper Primary Stage*

15.17 Based on the existing strength in standard V, it is estimated that 20 per cent of the above strength is the drop-out children who may require non-formal continuing education. This works out to a figure of 1.2 lakhs. Another 0.8 lakh is estimated to be the illiterate youth who may not have had primary education, but through the non-formal education, may come to upper primary stage. Thus two lakhs of children in the age group 11—14 will have to be provided for under non-formal education for a period of 5 years. This will require provision for 666 centres per year, each centre comprising 2 divisions of 30 pupils each. The outlay provided for the scheme is Rs. 253 lakhs.

###### (iv) *Supply of Minimum Furniture to Existing Primary schools (Outlay Rs. 98 lakhs)*

15.18 All schools in the State should be equipped according to the prescribed norms at the most within a period of 10 years. A provision of Rs.98 lakhs is made in the Plan for the supply of furniture to the existing departmental primary schools. The following is the break up of the outlay proposed;

###### (a) L.P.Schools—Rs.58 lakhs

###### (b) U.P.Schools—Rs.40 lakhs

###### (v) *Improvement of physical facilities in Lower Primary Schools (Outlay Rs.35 lakhs)*

15.19 The scheme is intended to raise the physical facilities in L.P. Schools to the prescribed minimum level. It is proposed to give a matching grant of Rs. 500 per school provided an equal amount is collected by local contribution. The total amount of Rs. 1000 will be utilised by each school for the purchase of equipments,

teaching aids' etc. During the Plan 7000 primary schools are proposed to be covered under the scheme. Outlay proposed is Rs.35 lakhs.

(vi) *Improvement of Selected Lower Primary Schools* (Outlay Rs.66 lakhs)

15.20 With a view to raise the quality of instruction in lower primary schools, 500 schools with heavy strength will be taken up for provision of one additional teacher in each. The programme will be phased for 5 years by providing 100 teachers per year. The outlay set apart for the scheme is Rs.66 lakhs.

(vii) *Provision of Minimum Site and Building for Lower Primary Schools run in Rented Buildings* (Outlay Rs. 350 lakhs)

15.21 About 700 primary schools in the Malabar region are run in rented buildings. Each school should be provided with a proper site and at least a functional building. It is proposed to take up 350 schools in the Sixth Plan period for both acquisition of site and construction of buildings. The average cost is estimated to be Rs.1 lakh per school. The outlay provided for the scheme is Rs.350 lakhs.

(viii) *Replacement and Addition of Departmental School Buildings* (Outlay Rs.30 lakhs)

15.22 Some of the primary school buildings require immediate renovation or replacement. An amount of Rs.30 lakhs is provided in the Plan for this purpose.

(ix) *Establishment of Text Book Bank* (Outlay Rs. 50 lakhs)

15.23 Book Banks have been opened for the benefit of pupils of the deprived sections of the community studying in L.P.Schools. The Text Books are issued to students after obtaining 50% of the cost of books as caution money. Under the scheme, additional staff has been posted in the Stationery Department for implementing the scheme of supply of paper at concessional rates for the production of text books and note books to schools, colleges, private publishers, etc. The outlay provided is for the continuance of the scheme.

(x) *Appointment of Primary School Teachers from among Scheduled Castes/Scheduled Tribes* (Outlay Rs.30 lakhs)

15.24 The provision is for meeting the salary of primary school teachers belonging to Scheduled Castes/Scheduled Tribes appointed against the additional posts of P.D. Teachers created.

## 2. Quality Improvement Programmes

15.25 The following schemes are proposed for improvement of quality of education in primary schools.

(i) *Improvement of Science Education in Primary Schools* (Outlay Rs.156 lakhs)

15.26 Equipments necessary for teaching science in primary schools, according to the revised syllabus, have to be supplied to all schools by the end of the Plan period. Many primary schools do not have the minimum equipments necessary for science education. It is proposed to supply science equipments to lower primary schools

at the rate of Rs.300 per school. For the upper primary schools where the contents of science curriculum are heavier, it is proposed to supply science equipments worth Rs. 5,000 per school. The break up of the outlay of Rs. 156 lakhs is given below:

(a)	L.P.Schools	Rs. 21 lakhs
(b)	U.P.Schools	Rs.135 lakhs
	Total	Rs.156 lakhs

(ii) *Introduction of socially useful productive work* (Outlay Rs.21 lakhs)

15.27 In about 7000 primary schools equipments worth Rs.300 per school will have to be provided for the introduction of socially useful productive work (according to Patel Committee Recommendations) An outlay of Rs. 21 lakhs is provided for this purpose.

(iii) *Work Experience Programme in Primary Schools* (Outlay Rs.159 lakhs)

15.28 Work experience is a regular curricular item of work in all the primary schools. In the lower primary schools, the programme is intended in general to develop basic attitudes towards work and the essential basic skills. The programme does not entail any expenditure. But in the Upper primary schools, some socially useful productive work is to be introduced for which financial provision is necessary. The main item introduced during the previous Plan periods was workshop practice. This programme has to be extended to 100 new upper primary schools at the rate of 20 schools per year, which will cost Rs.94 lakhs for five years. In addition, crafts like coir work, Rattan work card board work, cutting and tailoring and agriculture and bee-keeping are to be introduced in 450 upper primary schools which will involve an expenditure of Rs.65 lakhs. The total outlay provided for this scheme is Rs.159 lakhs.

(iv) *Construction of School Buildings* (Outlay Rs. 35 lakhs)

15.29 The provision is for meeting the expenditure for construction of departmental school buildings for providing additional accommodation.

## 3. Tribal Welfare

(i) *Opening of primary schools in Tribal Sub-Plan Areas-Teacher Cost* (Outlay Rs. 5 lakhs)

15.30 This is a new scheme for the Tribal sub-plan areas introduced in 1978-79. The provision is for payment of salary to teachers appointed in the new schools in the Tribal Sub-Plan areas.

(ii) *Purchase of furniture for new schools in the Tribal Sub-Plan areas* (Outlay Rs. 2.50 lakhs)

15.31 The provision is to supply essential furniture to the new schools opened in the Tribal sub-plan areas.

(iii) *Construction of School Buildings in Tribal Sub-Plan Areas* Outlay Rs.15 lakhs

15.32 The outlay is for providing minimum site and buildings to the new primary schools opened in the Tribal Sub-Plan areas.

(iv) *Construction of Staff Quarters in Tribal Sub-Plan Areas* (Outlay Rs. 75 lakhs)

15.33 In remote hilly areas, tribal pockets and backward areas, there are no housing facilities for trachers with the result that they are reluctant to work in those areas. In order to overcome this difficulty, it is proposed to construct at least 500 quarters for teachers in such difficult areas.

4. *Institute of Primary Education* (Outlay Rs. 15 lakhs)

15.34 The periodical revision of curricula necessitates the teacher's knowledge of subject-matter being updated every five years. It is desirable that every teacher receives a month's training during every five years, in the subjects he has to handle. The Institute of Primary Education will take up this work with the assistance of the State Institute of Education and State Institute of Science. The following training courses are proposed to be undertaken during the Plan period.

- (i) Two training courses for Assistant Educational Officers (One week each)
- (ii) 3 courses for Headmasters of U. P. Schools (10 days each)
- (iii) 5 Inservice courses (20 days each)

The outlay of Rs. 15 lakhs provided is for the conduct of the training courses and for strengthening of the Institute.

5. *Health Education Programme* (Outlay Rs.2 lakhs)

15.35 It is necessary that one teacher from every primary school receives a short intensive training in school health, hygiene and first aid. Department of Health Services will provide resource persons. A first aid box will have to be provided to the school. To start with, 200 teachers are to be trained annually. The scheme will cost Rs. 2 lakhs for 5 years.

6. *Free Supply of Text Books and Stationery to Scheduled Castes/Scheduled Tribes and other Weaker Sections* (Outlay Rs. 31 lakhs)

15.36 Since the students to be brought to the formal education sector will be mostly from economically backward sections of the society provision of incentives at the rate of Rs. 30 per pupil has been made towards the supply of stationery, text books, uniforms, etc. The total expenses for the plan period will be Rs. 31 lakhs.

7. *Enrolment Campaign at Panchayat Level* (Outlay Rs. 6 lakhs)

15.37 It is proposed to conduct enrolment campaigns at the Panchayat level in the State with Panchayat level committees to work on a voluntary basis. Provision of Rs. 6 lakhs is made to meet the contingent expenditure in connection with the campaign.

8. *Removal of Educational Backwardness and Improvement of Girls Education* (Outlay Rs. 37 lakhs)

15.38 In order to achieve universalisation of primary education and reduction of drop-out expeditiously it is necessary to identify backward pockets where motivation is poor. At present 35 pockets for

intensive work in stepping up enrolment particularly for girls and also to reduce wastage at primary level, are functioning. There is an urgent need to extend the programme during the Plan period. It is proposed to start 100 more such centres in selected areas. These centres will be shifted every two years to more needy areas. An outlay of Rs. 37 lakhs is set apart for the scheme.

9. *Creation of a Cell for Development of Scheduled Castes and Scheduled Tribes and Appointment of a Project Officer for educational promotion* (Outlay Rs. 13.50 lakhs)

15.39 In order to provide special emphasis in the development of educational opportunities for the Scheduled Castes and Scheduled tribes, several measures have been taken like the opening of new schools in vulnerable areas, provision of incentives, free textbooks, uniforms, etc. But at present, there is no effective machinery for co-ordination, supervision and evaluation of the programme. It is, therefore, proposed to create a Cell in the Directorate of Public Instruction for the purpose. The outlay provided is Rs. 13.50 lakhs.

10. *Certificate Examination for Standard IV and Std. VII* (Outlay Rs. 23 lakhs)

15.40 Introduction of Certificate Examination (district level) at the end of Std. IV for non-formal students and Standard VII for formal and non-formal streams, will help multiple entry of pupils who leave the formal system for a time and wish to re-enter and also for new entrants. A sum of Rs. 23 lakhs is provided to implement the scheme.

11. *Educational Survey Unit* (Outlay Rs. 10 lakhs)

15.41 A comprehensive survey to identify areas where part-time non-formal education can be conducted is required as a preliminary to its implementation. This will also help in mapping out areas hitherto not served by schools. The Government of India has sanctioned the Fourth Mini Educational Survey in the State (1978). The survey is not comprehensive enough to identify areas where there are scope for opening non-formal centres of education. A special survey, along with the Mini Survey or separately, is required to cover the entire range of problems connected with provision of facilities leading to universalisation of elementary education. It is proposed to create a special cell in the Directorate with sufficient staff for one year and field staff at the sub-district level for a period of six months.

12. *Strengthening of Supervision and Administration* (Outlay Rs. 30 lakhs)

15.42 For the purpose of supervising the non-formal education and also for achieving universalisation in the field of primary education, it is necessary to strengthen the machinery for supervision and administration. An outlay of Rs. 30 lakhs is made for this purpose.

13. *Pre-Primary Education* (Outlay Rs. 23 lakhs)

15.43 It is generally admitted that droppage in Primary Schools occur in the case of children coming

from economically and educationally backward homes. If proper intellectual stimulation is provided in the early childhood, such children will be attracted to schools and will remain in schools till they complete the course. Nursery education is undertaken mostly by voluntary agencies and it has to be so in future also, considering the costs involved. It is essential that the Government, however, take necessary steps to standardise the programme undertaken by various agencies, supervise their work and organise training programmes etc. Details of the programme are given below:

(a) Opening a resource centre for training of Nursery teachers, production of literature etc. The defunct nursery training school at Trivandrum will be revived to take up this work. Outlay proposed is Rs. 3 lakhs.

(b) It is necessary that one teacher at least from every primary school is given a short training in Nursery School practices so that they can handle newly admitted children in standard I in a better way and make transition from home to school smooth and enjoyable to children. 5000 primary school teachers will be given training during the plan period, apart from the training of Nursery School teachers to be undertaken by the resource centre. The scheme will cost Rs. 15 lakhs.

(c) The Development Department is also running Balwadis in several centres with a view to make available nursery education to children of backward areas. Grant at the rate of Rs. 500 per school will be paid to 1000 schools (200 each year). An amount of Rs. 5 lakhs is provided for the purpose.

15.44 Total outlay proposed for Primary Education in the Sixth Plan amounts to Rs. 27.10 crores.

#### Secondary Education

15.45 The development of secondary education in the previous Plans was mainly in the form of expansion of facilities. Considering the rapid quantitative growth of secondary education in the past, the present Plan envisages only normal development and consolidation of the facilities rather than expansion. The general policy to be adopted is to discourage the indiscriminate expansion of secondary education, but better utilisation of the existing facilities. Though the priority is in terms of universalisation of primary education, having achieved a satisfactory level of enrolment in primary education, it is imperative that secondary education opportunities have to be expanded lest those with primary education should get frustrated for lack of further educational opportunities. Emphasis will be laid on qualitative improvement and work-oriented educational programmes. The scheme-wise details are given below:

#### 1. Direction and Administration (Outlay lakhs Rs. 50)

##### (1) Strengthening of Planning Machinery in the Directorate

15.46 There is very urgent need to evolve a suitable planning machinery for proper planning of educational development and implementation of Plan programmes. A planning cell will have to be created in the Directorate with units at the Revenue District level. This will enable co-ordination of the educational programmes,

timely collection of planning statistics, cost benefit studies, monitoring and evaluation of the programmes. The outlay proposed is Rs. 25 lakhs.

##### (ii) Strengthening of Administration

15.47 The Plan provides Rs. 25 lakhs for strengthening of administration at all levels.

#### 2. Additional Enrolments—Teacher cost (Outlay Rs. 1480 lakhs)

15.48 The normal increase in enrolment in the existing conditions will be 2 lakhs during the Sixth Plan period. The number of additional teachers for the Plan period would be 6670. The estimated cost is as follows:

(a) Departmental schools	Rs. 495 lakhs
(b) Private Schools	Rs. 985 lakhs
Total	Rs. 1480 lakhs

#### 3. Building and Equipment for new High Schools/Class Division (Outlay Rs. 350 lakhs)

15.49 Of the total number of class rooms required only 40 per cent will be in the Government sector. The remaining 60 per cent will be in the private sector where the private agency concerned will provide the class rooms and other facilities. The details of the outlay to be made by the State for the additional facilities during the Plan period is given below:

Construction of class rooms	Rs. 300 lakhs
Equipments and furniture	Rs. 50 lakhs
	Rs. 350 lakhs

#### 4. Appointment of Graduate Teachers from among Scheduled Castes/Scheduled Tribes (Outlay Rs. 3 lakhs)

15.50 This is a special scheme for the benefit of Scheduled Castes/Scheduled Tribes. Only 36 graduate teachers belonging to Scheduled Castes/Scheduled Tribes were appointed during 1977-78. Against 362 posts of graduate apprentice teachers created under special recruitment from Scheduled Castes/Scheduled Tribes only 138 persons could be appointed upto October 1977. The provision is for meeting the salary of teachers appointed under the scheme.

#### 5. Scholarships (Outlay Rs. 63.50 lakhs)

##### (i) Creation of Scholarship Unit and Enhancement of Scholarships (Outlay Rs. 27.50 lakhs)

15.51 The Department now operates a number of scholarship schemes. In order to co-ordinate the activities of the scholarship programme, a small scholarship unit will have to be created. Many of the scholarships are low in value. It is necessary that the value of scholarships are enhanced. Provision has to be made for increasing the number of scholarships on account of additional enrolment. Outlay proposed is Rs. 2.50 lakhs for scholarship unit and Rs. 25 lakhs for enhancement of scholarships.

(ii) *Award of Scholarships to Scheduled Caste/Scheduled Tribe students (Outlay Rs. 36 lakhs)*

15.52 Merit scholarships are given to S.C. and S.T. students from Std. VIII onwards, if they have secured more than 50 per cent of marks, since the coverage under this scheme is poor it is proposed to enhance the provision for such scholarships. A sum of Rs. 36 lakhs is set apart for implementing the scheme.

6. *Educational Research (Outlay Rs. 38 lakhs)*(i) *State Institute of Education*

15.53 The State Institute of Education is the academic development wing of the Education Department catering to the needs of primary, secondary and training schools in the matter of curriculum, syllabus and inservice training. In view of the increasing number of teachers and the backlog of a large number who have not undergone a refresher course, it is necessary to strengthen the Institute and the academic activities. An outlay of Rs. 24 lakhs is set apart for implementing the following schemes during the Sixth Plan period:

	<i>Rs. in lakhs</i>
(a) Strengthening of the Text Book and Curriculum Research Wing	1.50
(b) Strengthening of Administrative Staff	2.00
(c) Seminars and Inservice Programme	15.00
(d) Formation of Educational Technology and Research Cell	5.50
Total	24.00

(ii) *Institute of Science*

15.54 In view of the upgraded syllabus in science and advancing technology, the Institute of Science has to be strengthened both in terms of staff and contents of programmes. The following schemes are proposed to be undertaken during the plan period:

	<i>Rs. in lakhs</i>
(a) Strengthening of the Institute	3.00
(b) Improvement of Science Clubs	1.50
(c) Inservice Courses for Resource persons and Content Courses	5.00
(d) Development of Science Talent	2.50
(e) Grants to Schools for Opening Science Clubs	2.00
Total	14.00

7. *Improvement of Secondary Schools*(i) *General Improvement of Secondary Schools (Outlay Rs. 45 lakhs)*

15.55 Most of the Secondary Schools in the State are not properly equipped. Schools which have been started in the previous plan periods do not have adequate library or laboratory facilities. By a phased programme it is proposed to raise the standard of all secondary

schools to reach optimum level of efficiency. Fifty per cent of the Departmental High Schools (300) will be given grant at the rate of Rs. 15,000 per school for the purchase of equipments library books, charts and other teaching aids. The scheme will cost Rs. 45 lakhs.

(ii) *Strengthening of Staff of Large Secondary Schools (Outlay Rs. 48 lakhs)*

15.56 Duties and responsibilities of Headmasters of Secondary Schools have increased to a considerable extent, leaving them very little time for academic supervision of the school. It is therefore necessary to make some provision for second level supervision. In about 200 large secondary schools with strength of 1500 and above, one additional teacher will be provided. The scheme will involve an expenditure of Rs. 48 lakhs.

(iii) *Construction of New Buildings in the Place of Temporary Sheds (Outlay Rs. 50 lakhs)*

15.57 In about 320 schools in the State, classes are functioning in temporary sheds. During the monsoon, inspite of precautions, a few sheds collapse every year. Permanent buildings will have to be constructed in the place of temporary sheds. During the present Plan period, it is proposed to replace the temporary sheds in 100 High Schools. An amount of Rs. 50 lakhs is provided for the purpose.

8. *Supply of Minimum Furniture to Departmental Secondary Schools (Outlay Rs. 50 lakhs)*

15.58 Accommodating children comfortably in schools is an essential pre-requisite for proper instruction. The existing provision of furniture in most of the departmental schools is totally inadequate. It is, therefore, proposed to provide departmental schools with the minimum furniture required, during the plan period. A sum of Rs. 50 lakhs is set apart for providing furniture to 300 schools.

9. *Text Book Banks (Outlay Rs. 50 lakhs)*

15.59 During the previous plan period, the scheme was introduced in all schools in order to enable the poor and needy children to get text books for use. It is necessary to expand the programme during the current plan period. The outlay proposed is Rs. 50 lakhs.

10. *Improvement of Science Education in High Schools (Outlay Rs. 31.50 lakhs)*

(i) Because of the revision of curriculum, it has become necessary to prepare graded text books and diagrams. This will involve an expenditure of Rs. 0.50 lakh towards remuneration to the participants in workshop and contingencies.

(ii) In order to meet the requirements of the modified syllabus, provision of literature in the shape of background material, instructional material, manuals etc. will be required. The above materials are to be prepared and supplied free of cost to 1000 schools in the State. The scheme will cost Rs. 1 lakh.

(iii) Minimum equipments required for demonstration and experiments in science subjects in the secondary stage have to be supplied to those High Schools which are lacking these facilities. It is proposed to take up 50 per cent of the existing departmental

schools for supply of these materials. A sum of Rs. 30 lakhs is set apart for implementing the scheme.

11. *Work Oriented Education in Secondary Schools* (Outlay Rs. 64 lakhs)

15.60 The programme of work-oriented education is at present carried on in 173 Secondary Schools. The items included in the work experience programme introduced during the previous plan period were garment making, home science, tailoring, printing, book-keeping, agriculture, spinning, electronics, etc. The activities will be further extended to more schools and other useful trades will be introduced in all the schools. During the current plan period, the existing courses will be introduced in another 100 secondary schools. The outlay proposed is Rs. 64 lakhs.

12. *Vocationalisation of Secondary Education* (Outlay Rs. 432 lakhs)

15.61 The present system of education is, by and large, overwhelmingly academic and literary and as such it does not offer enough scope to students to find employment. In our class room education, admittedly there is little scope for acquisition of skills. This calls for a radical change in the structure of traditional type of learning. If purposeless seeking of education resulting in waste of scarce resources is to be avoided, overhauling the current educational system and linking it with vocationalisation appears to be an urgent need. The ultimate objective of vocationalisation should be to strengthen the technical contents of the educational system in the State in a manner that will enable matriculates and post matriculates to find employment in different occupations. The appropriate stages for introduction of vocationalisation are the secondary stage and the plus two stage. A variety of non-academic courses of technical education and training which are employment oriented and directly useful to the students should be introduced. The choice of trade should be made in conformity with the availability of industries or employment opportunities in a particular area. The Committee for Vocationalisation of Education has examined all these aspects and submitted its report to Government recently. It is proposed to introduce the scheme from the third year of the plan onwards, selecting one High School from each of the 144 Blocks every year. Thus at the end of the Plan period there will be 432 vocationalised High Schools (3 Schools in each Block). A sum of Rs. 432 lakhs is provided for implementing the scheme.

13. *Improvement of physical Education in Schools* (Outlay Rs. 40 lakhs)

(i) *Physical Education*

15.62 About one fourth of the population of Kerala is inside the class rooms. Therefore, the most economic and efficient way of producing a healthy generation is by ensuring the physical efficiency of the students attending schools. At present the programme of physical education touches only a small percentage of the pupils. The primary aim of the scheme of physical education will, therefore, be to provide a programme for all pupils. Another aim will be to provide adequate facilities for the pupils talented in games and sports to develop their talents

to the maximum extent possible. The following schemes will be taken up during the Plan period:

	<i>Rs. in lakhs</i>
(a) Short term courses for physical Education teachers and primary Schools Teachers	1.50
(b) Coaching camps for probable players and athletes	1.50
(c) Participation in National School Games	2.00
(d) Provision for equipments to 1000 U. P. Schools and 500 high schools (at the rate of Rs. 1000 per U. P. School and Rs. 2000 per High School)	20.00
(e) Strengthening of the Sports wing in the Directorate and appointment of District Organisers in sports and games	5.00
Total	30.00

(ii) *Youth Services*

It is necessary to imbibe a spirit of service and discipline in the School children. Another extra-curricular item that deserves backing up from an early age is literary and artistic activities. An amount of Rs. 10 lakhs is provided in the plan for giving financial support to these activities of the youth.

	<i>Rs. in lakhs</i>
(a) Grant to Junior Red Cross, Band Troupes, Social Services League etc.	2.50
(b) Grant for Youth Festival, (State and Districts) Sevanavaram etc.	7.50
Total	10.00

14. *Other Programmes*

(i) *Establishment of Schools for Talented Children from Rural Areas* (Outlay Rs. 30 lakhs)

15.63 A model school for the talented children belonging to rural areas has been established at Thaliparamba. The first batch of the students have been presented for the S.S.L.C. Examination. The School achieved cent per cent pass in the examination. It is proposed to open two more such schools in the State, one in the Central region and the other in the southern region. The schools will be fully residential, both for staff and students. The scheme will involve an expenditure of Rs. 30 lakhs during the plan period.

(ii) *Vocational Guidance Programme* (Outlay Rs. 13 lakhs)

(a) There is a trained career master in almost every Secondary School in the State, whose main function is to implement a programme of occupational information service to high school students. It is now possible to implement a programme of educational guidance, with emphasis on special programmes of remedial teaching for the backward and enrichment

programmes for the gifted, if some additional training is given to the trained career masters. Provision will have to be made for maintaining cumulative records and also for training 200 teachers. The scheme will cost Rs. 4 lakhs.

(b) This programme will also be implemented in primary schools. It is felt that, to a large extent, wastage and stagnation can be prevented if there is a regular inbuilt process of remediation in the instructional programmes of the Primary School. 5000 teachers are to be given proper training for undertaking the work. Provision should also be made for production of cumulative records. The scheme will involve an expenditure of Rs. 9 lakhs during the plan period.

(iii) *Revision of Curriculum (Outlay Rs. 3.75 lakhs)*

15.64 Periodical revision of curriculum and text books have become necessary in view of the Ishwar Bhai Patel Committee recommendations. A revised syllabus cannot remain new for more than five years. Based on the experience of teachers and evaluation studies, periodical revision of the curricula will be undertaken. An annual expenditure of Rs. 0.75 lakh will be required for revision of curriculum. The total outlay provided for five years is Rs. 3.75 lakhs.

(iv) *Examination Reforms (Outlay Rs. 32.00 lakhs)*

15.65 Improvements in the public examination system is as important as revision of syllabus. To make examination objective based, organisation of workshops and training programmes for prospective paper setters of public examinations is necessary. With this object in view, Evaluation Units will be set up at revenue district level, which will involve an expenditure of Rs. 22 lakhs. The cost of inservice programme will be Rs. 10 lakhs. Thus the total provision for examination reforms will amount to Rs. 32 lakhs during the plan period.

(v) *School Complex Programme (Outlay Rs. 11.50 lakhs)*

15.66 For breaking the isolation existing between primary and secondary schools and for cross utilisation of resources available at the two levels of institutions, school complexes were recommended as an effective measure. Complexes were started in some schools during the Fifth Plan period. But all schools should be covered under the programme. For the effective implementation of the scheme, a small grant of Rs. 150 per secondary school will be given annually. This is to meet contingent expenses for the discussion meetings, school visits, etc. Outlay proposed is Rs. 11.50 lakhs.

(vi) *Coaching classes for Scheduled Caste/Scheduled Tribe Students in S.S.L.C. (Outlay Rs. 20 lakhs)*

15.67 Special coaching classes were arranged for S.C. and S.T. students appearing for S.S.L.C. Examination in order to improve their performance. The provision made for 1978'79 is only Rs. 1 lakh, to meet the honorarium to teachers handling special coaching classes. Coverage at present is very limited. It is necessary to expand the coverage of students with an annual provision of Rs. 4 lakhs. The total cost of the scheme during the plan period will be Rs. 20 lakhs.

(vii) *Popularisation of Science Literature (Outlay Rs. 5 lakhs)*

15.68 The scheme for popularisation of science literature among the rural population already

launched is to be continued. Further, assistance is to be given to the Kerala Sastra Sahitya Parishat for purchase of materials and popularisation of science in village areas. The provision is for the purpose.

(viii) *Improvements of Library facilities in Departmental High Schools (Outlay Rs. 3 lakhs)*

15.69 Many of the High Schools, including those opened during the plan period lack in library facilities. The introduction of modern syllabus based on the broad guidelines of NCERT has necessitated provision of more library facilities. The outlay suggested is for providing minimum facilities to selected schools on a priority basis.

(ix) *Library Movement (Outlay Rs. 10 lakhs)*

15.70 The Government have already constituted a State Planning Committee for formulating State Projects for Library development with assistance of the Raja Ram Mohan Roy Library Foundation. The State Government give contribution to the foundation on condition that the Foundation will be spending double the amount for the development of libraries in the rural areas of the State. The provision is for payment of contribution to Raja Ram Mohan Roy Library Foundation and for meeting the expense of the State Planning Committee of the Foundation.

*Special Education (Outlay Rs. 127.75 lakhs)*

1. *Development of Education for the Handicapped*

15.71 It is widely recognised that the welfare of the handicapped population depends upon the extent to which educational and rehabilitational facilities are made available to them. In both these aspects, the State Government has to do a lot. The educational facilities now offered to them are quite inadequate. There are at present 10 special schools having standards up to VII for imparting education to the deaf and the blind. Among these schools, facility for education of the deaf exists in 6 schools and that for the blind in 8 schools. It is very unfortunate that there is no facility for the deaf children to continue education beyond Standard VII, while the blind children can continue their studies in secondary schools under the Integrated Scheme of Education. In four Districts of Kerala, there is no institution for the blind. The number of applicants for admission in Deaf Schools is approximately three times the seats available and as such a good number of children are denied opportunity for education. There is no school at present for the education of the mentally retarded excepting very few custodial homes run by philanthropic organisations and the Social Welfare Department. No efforts have so far been made in the public sector for the education of the orthopaedically handicapped children. Considering all these facts, the opening of a few institutions for the handicapped has been recognised as a pressing need. Improvement of facilities in the existing schools, like supply of adequate equipments, expansion of hostel and class room accommodation etc., is also an urgent need which should receive due attention in the present plan. There is no training school in the State for training teachers for these special schools. For proper co-ordination and direction of the programme, formation of a 'Board for the Education and Rehabilitation of the Handicapped' is felt essential. The following

schemes are included in the Plan for improvement of education of the Handicapped.

	<i>Rs. in lakhs</i>
(i) Integrated Education for the Handicapped	5
(ii) Opening a Junior Technical School for the Deaf (Post Elementary Vocational Course)	25
(iii) Opening of New Schools	
(a) One School for the Blind	10
(b) One School for the Partially Deaf	10
(c) One School for the Mentally Retarded	10
(d) Providing Basic Education Facilities to the Orthopedically Handicapped at Pre-primary Level	10
(iv) Starting a Training School for Special Teachers	15
(v) Improvement of Facilities in the Existing Schools	15
(vi) Formation of a Board for the Education and Rehabilitation of the Handicapped	5
Total	105

2. *Development of Sanskrit Education (Outlay Rs.12.75 lakhs)*

15.72 The following schemes are proposed for the improvement of sanskrit education.

- (i) Award of a number of scholarships to the students who are studying in sanskrit schools and students who are studying it as 1st language in oriented schools (Outlay Rs. 10 lakhs)
- (ii) Voluntary course for training of Sanskrit Teachers for One Year (Outlay Rs. 2.50 lakhs)
- (iii) Production of guide books, background materials etc., for teaching sanskrit. (Outlay Rs. 0.25 lakhs)

3. *Other Language Education (Outlay Rs. 10 lakhs)*

*Regional Institute for Language Training*

15.73 The scheme includes English language training for high school teachers, inservice course for high school headmasters, orientation course for hindi teachers for U. P. Schools etc. The outlay proposed is Rs. 10 lakhs.

*Centrally Sponsored Schemes*

1. Appointment of Hindi Teachers in Non-Hindi Speaking States      Rs. 150 lakhs
2. Development of Sanskrit Education      20 ,,  
(Scholarships, Sanskrit Padasalas, teaching of Sanskrit in high Schools financial assistance to Sanskrit Pandits in indigent circumstances and other proposals for promotion of Sanskrit.)

Total	170 lakhs
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*Teacher Education*

1. *Teacher Training—Primary (Outlay Rs. 56 lakhs)*

(a) *Strengthening of Teacher Training Schools (Outlay Rs. 48 lakhs.)*

(i) There are at present 92 teacher training schools in the State, 30 in the Government sector and 62 in the private sector. Many of the schools are woefully lacking in facilities and equipments to cope with the revised curriculum. In order to make primary education qualitatively effective, it is necessary to equip them at least to the minimum level. An outlay of Rs. 15 lakhs is proposed for the supply of books and equipments to the existing 30 departmental training schools.

(ii) Well qualified post-graduates are not attracted to the teacher training schools. At least in the departmental training schools, an allowance of Rs. 100 per month will be attached to the post of headmaster and Rs. 75 p.m. to that of teacher, so that better qualified teachers (viz. post-graduates) will be induced to take up teaching profession. An amount of Rs. 6 lakhs is provided for the purpose.

(iii) Poorly equipped and economically unsound institutions will be offered matching grant of Rs. 0.25 lakh per institution, provided the management is able to contribute an equal amount for the purchase of equipments. The scheme will cost Rs. 7 lakhs.

(iv) Absence of hostel facilities makes teacher training less effective. It is proposed to provide hostel facilities in 10 selected departmental schools so that the same could be used for both pre-service and in-service training programmes. The outlay envisaged is Rs. 20 lakhs.

(b) *In-service and Pre-Service Training (Outlay Rs. 8 lakhs)*

15.74 A sum of Rs. 8 lakhs is provided to meet the expenses in connection with the teacher training, both pre-service and in-service. This is meant for imparting pre-service training to half the number of new teachers to be appointed during the plan period and in-service training to 1000 teachers out of the existing personnel.

The total outlay provided for teacher education in the primary sector amounts to Rs. 56 lakhs.

2. *Teacher Training—Secondary (Outlay Rs. 30 lakhs)*

*In-service Education of Secondary School Teachers*

15.75 A regular programme of in-service education is necessary for maintaining professional competence of secondary school teachers. As the majority of the secondary school teachers have received some kind of training during the previous plan periods, only a short duration training for 10000 teachers is envisaged in this Plan. The scheme will cost Rs. 30 lakhs.

*Sports and Youth Welfare*

1. *Physical Education*

- (i) *Restarting of Physical Education Colleges (Outlay (Rs. 5 lakhs)*

15.76 The two Physical Education Colleges in the State are defunct at present. It is proposed to restart one of the colleges. An outlay of Rs. 5 lakhs is provided.



## 2. Youth Welfare (Outlay Rs. 80 lakhs)

15.77 The following schemes are proposed to be implemented during the Plan period.

	Rs. in lakhs
(i) Development of Scouting and Guiding	10.00
(ii) Assistance to N.C.C./N.S.S.	5.00
(iii) Construction of Building for N.C.C. Directorate and Sub-Offices	50.00
(iv) Constitution of Youth Welfare Board	5.00
(v) Planning Forums	10.00

## 3. Games and Sports

15.78 In the earlier Plan periods, adequate efforts and resources could not be devoted to the development of sports and games. The programme received comparatively low priority owing mainly to financial constraints. Therefore during the present Plan period, special emphasis will have to be given to this sector.

15.79 Games and sports in educational institutions cover only a small portion of the students. A comprehensive programme of the N.B.S. model to cover all the young persons in the specified age group alone can help to build up the physical fitness and endurance of the coming generations. Such a programme has to be conceived and implemented at a national level.

### (i) Assistance to Sports Council (Outlay Rs. 100 lakhs)

15.80 The following schemes which cost Rs. 100 lakhs represent only a modest effort for the development of games and sports outside the educational institutions.

#### (a) Village Recreation Clubs

15.81 Each village recreation club recognised by the Kerala Sports Council will be paid annual grant at the rate of Rs. 200 for the purchase of sports equipments. At present there exist 107 such village recreation clubs and it is planned to organise 600 clubs more during the current plan period. A sum of Rs. 6 lakhs is set apart for the scheme.

#### (b) Development of Playing facilities in Villages

15.82 There is already a scheme for the development of playing facilities in villages. But the scheme has not gathered momentum so far. An outlay of Rs. 10 lakhs is proposed to provide facilities in villages to play badminton, volley ball, Kabadi etc.

#### (c) District Coaching Centre

15.83 According to the National Coaching Scheme, there shall be a Regional Coaching Centre at the State capital and a District Coaching Centre in each district. As one Regional Coaching Centre and four District Centres are functioning, the scheme is intended for establishing 7 District Coaching Centres. The outlay proposed for the scheme is Rs. 5 lakhs.

#### (d) Coaching Camps

15.84 A financial provision of Rs. 4 lakhs is made for conducting State level and district level coaching camps.

(e) Intensive coaching to specially selected players by coaches of international repute. A lump sum provision of Rs. 1 lakh is set apart for the purpose.

#### (f) Indoor Stadia

15.85 A provision of Rs. 25 lakhs is proposed for the construction and development of indoor stadia.

#### (g) Indoor Playing Facilities

15.86 Facilities for indoor games will be provided in all Districts. Total financial requirement for this is estimated as Rs. 3 lakhs.

#### (h) Financial Assistance to Sportsmen

15.87 An amount of Rs. 10 lakhs is set apart for giving financial assistance to sportsmen in indigent circumstances.

#### (i) Stipend to Trainees

15.88 A lump sum provision of Rs. 1 lakh is made for giving stipends to trainees to be sent to NIS.

#### (i) Establishment charges of Sports Council

15.89 The Kerala Sports Council is the agency to implement all the above programmes for the development of sports and games. Therefore it is necessary to provide adequate financial assistance to the Sports Council for meeting the establishment charges, T.A. and D.A. to coaches, cost of additional equipments etc. The outlay proposed is Rs. 35 lakhs.

#### (ii) Sports School, Trivandrum (Outlay Rs. 20 lakhs)

15.90 The accommodation available in the sports school is inadequate. For intensive training additional play grounds are also necessary. An outlay of Rs. 20 lakhs is provided for meeting the teacher cost, boarding charges, and improvement of facilities in the school.

#### (iii) Providing facilities for Sports Division in Government Schools (Outlay Rs. 10 lakhs)

15.91 The department is running parallel sports divisions, in selected high schools in the State. The department is bound to provide required facilities for running the divisions. Improvement of play fields in those schools is an urgent necessity. The outlay of Rs. 10 lakhs is for providing minimum facilities in the Departmental High Schools during the Plan Period.

#### (iv) Physical Culture (Outlay Rs. 200 lakhs)

15.92 There is a growing tendency on the part of the younger generations to avoid physical labour. This tendency has to be curbed by making the young persons inside and outside educational institutions to do regular physical exercise by way of drill, outdoor games and sports including inexpensive rural games. Facilities for diverse physical exercises may be provided by setting up rural stadia-cum-gymnasiums at the rate of two per panchayat, preferably attached to local schools. A sum of Rs. 200 lakhs is provided for the purpose.

15.93 The total outlay under Sports, Games and Youth Welfare amounts to Rs. 415 lakhs.

TABLE 15.1

## General Education—Schemewise outlay

Sl. No.	Name of Scheme	Fifth Plan outlay	Expenditure 1974-78	Rs. in lakhs Budgeted outlay 1978-79	Proposed outlay for 1978-83
(1)	(2)	(3)	(4)	(5)	(6)
<i>Elementary /Primary Education</i>					
1.	Minimum needs programme				
(i)	Additional Enrolment of Students Lower Primary Schools:—				
(a)	Teacher Cost departmental	200.00	186.86	60.00	120.00
	Non-departmental	160.00	170.78	70.00	183.00
(b)	Opening of new Lower Primary Schools, Divisions (buildings)—Departmental	90.00	91.82	20.00	75.00
(c)	Supply of Furniture to Lower Primary Schools—Departmental	5.00	3.61	2.00	15.00
(ii)	Additional Enrolments Upper Primary School				
(a)	Teacher Cost:				
	Departmental	126.00	116.16	70.00	211.00
	Non-Government	200.00	304.87	100.00	310.00
(b)	Opening of new Upper Primary Schools/Divisions (buildings) - Departmental	50.00	55.72	20.00	80.00
(c)	Supply of Furniture to new Upper Primary Schools - departmental	4.00	3.08	2.00	20.00
(iii)	Non-formal education - teacher cost	..	0.50	5.00	378.00
(iv)	Supply of Furniture to existing Departmental Schools				
(a)	Supply of Furniture to Lower Primary Schools (existing)	10.00	23.98	6.50	58.00
(b)	Supply of Furniture to Upper Primary Schools (existing)	10.00	41.42	5.00	40.00
(v)	Improvement of Facilities in Lower Primary School	10.00	23.98	6.50	35.00
(vi)	Improvement of Selected Lower Primary Schools	..	..	..	66.00
(vii)	Provision of Minimum Site and Buildings for Lower Primary Schools run in Rented Buildings	20.00	13.00	25.00	350.00
(viii)	Replacement and Addition of Departmental School Buildings	50.00	16.00	30.00	30.00
(ix)	Establishment of Text Book Bank	50.00	30.21	10.00	50.00
(x)	Appointment of Primary School Teachers from among Scheduled Castes and Scheduled Tribes	15.00	18.11	14.00	30.00
2.	Quality Improvement Programmes				
(i)	Improvement of Science Education in Primary Schools	10.00	9.92	3.00	156.00
(ii)	Introduction of Socially Useful Productive Work	..	..	..	21.00
(iii)	Work Experience Programme in Primary Schools	15.00	8.37	5.00	159.00
(iv)	Construction of School Buildings	75.00	42.61	35.00	35.00
3.	Tribal Welfare				
(i)	Opening of Primary Schools in Tribal Sub Plan Areas	..	..	0.75	5.00
(ii)	Purchases of Furniture to new Schools in the Tribal Sub Plan Areas	..	..	0.50	2.50
(iii)	Construction of school buildings in Tribal Sub Plan Areas	..	..	15.00	15.00
(iv)	Construction of Staff Quarters in Tribal Sub Plan Areas	..	..	7.00	75.00
4.	Institute of Primary Education	16.00	11.24	4.00	15.00
5.	Health Education Programme	1.00	0.33	0.15	2.00
6.	Free Supply of Text Books and Stationery to Students of Schedule Castes/Scheduled Tribes and other Weaker Sections	..	..	5.00	31.00
7.	Enrolment Campaign at Panchayat level	..	..	..	6.00
8.	Removal of Educational Backwardness and improvement of Girls Education	4.00	6.91	3.00	37.00
9.	Creation of a Cell for Development of Scheduled Castes/Scheduled Tribes and Appointment of a Project Officer for Educational Promotion	..	..	0.50	13.50
10.	Certificate Examination for Standard IV and VII	..	..	..	23.00
11.	Education of Survey Unit	..	..	..	10.00
12.	Strengthening of Supervision and Administration	..	..	..	30.00
13.	Pre-primary Education	..	..	..	23.00
(a)	Appointment of Unemployed Trained Teachers in Primary Schools (Half a million jobs programme)	..	0.01*	..	..
(b)	Introduction of Work Experience Programmes in L. P. Schools and U. P. Sections of High Schools	..	0.04*	..	..
Sub Total: Primary		1121.00	1082.26	524.90	2710.00
			+0.05*		

\*Special assistance

(1)	(2)	(3)	(4)	(5)	(6)
<i>Secondary Education</i>					
1.	Direction and Administration:				
(i)	Strengthening of Planning Machinery in the Directorate	..	..	1.00	25.00
(ii)	Strengthening of Administration-Government Secondary Schools	..	1.60	2.00	25.00
2.	Additional Enrolment-Teacher Cost:		171.54		
(a)	Departmental	210.00	11.61*	71.65	495.00
(b)	Non-Government	80.00	168.36	70.00	985.00
3.	Buildings and Equipments for New High Schools/Class Divisions	75.00	127.36	26.00	350.00
4.	Appointment of Graduate Teachers from among Scheduled Castes/Scheduled Tribes	10.00	4.61	3.00	3.00
5.	Scholarships:				
(i)	Creation of Scholarships Unit and Enhancement of Scholarships	..	1.56	1.50	27.50
(ii)	Award of Scholarships to Scheduled Castes/Tribes Students	..	1.00	2.00	36.00
6.	Educational Research:				
(i)	State Institute of Education	..	..	..	24.00
(i)	Institute of Science	..	..	..	14.00
7.	Improvement of Secondary Schools:				
(i)	General Improvement	3.00	9.91	2.00	45.00
(ii)	Strengthening of staff of large Secondary Schools	..	..	..	48.00
(iii)	Construction of new Buildings in the place of temporary sheds	..	..	..	50.00
8.	Supply of Furniture to Departmental Schools	5.00	8.33	2.50	50.00
9.	Text Book Bank	..	..	..	50.00
10.	Improvement of Science Education in High Schools	10.00	13.39	3.00	31.50
11.	Work oriented Education in Secondary Schools	10.00	9.46	4.25	64.00
			6.82*		
12.	Vocationalisation of Secondary Education	..	..	..	432.00
13.	Improvement of Physical Education in schools:				
(i)	Physical Education	..	..	..	30.00
(ii)	Youth Services:				
(a)	Grants to Junior Red Cross	..	..	..	2.50
(b)	Grants to Youth Festivals	..	..	..	7.50
14.	Other Programmes				
(i)	Establishment of Schools for talented Children from Rural Areas	..	13.31	4.00	30.00
(ii)	Vocational Guidance Programme	..	2.00	2.00	13.00
(iii)	Revision of Curriculum	..	..	..	3.75
(iv)	Examination Reforms	..	..	..	32.00
(v)	School Complex Programme	..	..	..	11.50
(vi)	Coaching Classes for Scheduled castes/Scheduled Tribes Students in S.S.L.C.	5.00	5.49	1.00	20.00
(vii)	Popularisation of Science Literature	5.50	3.70	2.50	5.00
(viii)	Improvement of Library Facilities in Departmental High Schools	..	..	3.00	3.00
(ix)	Library Movement	..	5.99	1.50	10.00
	Sub-Total	413.00	547.61	202.90	2923.25
	Secondary		(+)*18.43		
<i>Special Education:</i>					
1.	Development of Education for the Handicapped:				
(i)	Integrated Education for Handicapped	4.00	2.41	5.00	5.00
(i,i)	Opening of a Junior Technical School for the Deaf	..	..	..	25.00
(iii)	Opening of New Schools:				
(a)	One School for the Blind	..	..	..	10.00
(b)	One School for the partially Deaf	..	..	..	10.00
(c)	One School for the Mentally Retarded	..	..	..	10.00
(d)	Providing Basic Education facilities to the Orthopaedically Handicapped	..	..	..	10.00
(iv)	Starting a Training School for Special Teachers	..	..	..	15.00
(v)	Improvement of Facilities in the Existing Schools	..	..	..	15.00
(vi)	Formation of a Board for the Education and Rehabilitation of the Handicapped	..	..	..	5.00
2.	Development of Sanskrit Education	3.00	3.49	1.20	12.75
3.	Other Language Education:				
(i)	Regional Institute for Language Training	6.00	7.39	4.00	10.00
3. (a)	Direct grant to non-government special schools—general teaching	..	0.04	..	..
(b)	Workshop for production of science equipments	..	1.99	..	..
	Sub-Total: Special Education	13.00	15.32	10.20	127.75
<i>Teacher Education</i>					
1.	Teacher Training - Primary	14.00	27.44	7.00	56.00
2.	Teacher Training Secondary	10.00	18.89	4.00	30.00
	Sub-Total: Teacher Education	24.00	46.33	11.00	86.00

\* Special assistance

(1)	(2)	(3)	(4)	(5)	(6)
1.	Sports and Youth Welfare: Physical Education: Restarting of one Physical Education College	1.00	0.50	0.50	5.00
2.	Youth Welfare				
(i)	Development of Scouting and Guiding	10.00	11.13	3.50	10.00
(ii)	Assistance to N.C.C. /N.S.S.	30.00	1.00	1.00	5.00
(iii)	Constructing of Building for N.S.S. Headquarters and sub offices	..	..	..	50.00
(iv)	Constitution of Youth Welfare Board	..	5.00	2.00	5.00
(v)	Planning Forums	4.00	..	0.90	10.00
3.	Games and Sports				
(i)	Assistance to Sports Council	30.00	50.63	18.00	100.00
(ii)	Sports School Trivandrum	10.00	8.00	8.00	20.00
(iii)	Providing Facilities for Sports Division in Departmental Schools	..	..	4.50	10.00
(iv)	Physical Culture Programme	..	..	..	200.00
(v)	Improvement to Playground to Selected Departmental Schools	2.00	..	..	..
Total (Sports and Youth welfare)		87.00	76.26	38.40	415.00
Centrally Sponsored Schemes					
(i)	Appointment of Hindi Teachers in Non-Hindi speaking states	..	154.03	85.00	150.00
(ii)	Development of Sanskrit Education	..	4.68	2.24	20.00
(Scholarship Sanskrit Padasalas, teaching of Sanskrit in high schools, financial assistance to Sanskrit pandits in indigent circumstances and other proposals for promotion of Sanskrit)					
Total			158.71	87.24	170.00

### Cultural Programmes

15.94 Cultural development is best ensured by the voluntary effort of interested public through organisations and institutions constituted for the purpose. Government's role in this field may be limited to providing patronage and incentives to such bodies. There are certain art forms, such as some of the traditional theatrical arts, which have little popular appeal today and which are likely to become extinct but for Government's active encouragement. This is the case with most of the audio-visual or performing art forms which call for special knowledge or training on the part of audience/spectators to appreciate and enjoy. These have to be thoroughly studied for their intrinsic value and prospects of survival. Those with intrinsic value which can be revived may be identified for promotional efforts by Government and voluntary organisations of art-lovers. Those which have no prospects of survival need only be preserved in films, tape records, writings, etc.

15.95 There are some ancient arts like architecture, sculpture, drawing, painting, playing of traditional musical instruments, etc. which have great intrinsic merit and have to be saved from dying out. While they may be preserved in all their purity for posterity, it is worth trying whether they can be adapted to suit the modern trends or amalgamated with the modern forms of such arts. Some experiments made to present temple architecture and sculptures in concrete deserve special mention in this context. Some traditional art forms like 'Kakkarisi', 'Padayani', 'Velakali', 'Panappattu' etc. have some amount of artistic and entertainment value but can hardly suit the tastes of present day or future audience. Such arts may simply be preserved in recorded forms, in films, tape records, books, etc. On the other hand, there are certain traditional martial arts and acrobatics like 'Kalarippayattu' and circus which will never lose their charm and appeal. These have to be revived at all costs.

15.96 There are other cultural programmes which are encouraged for their educative value. The library movement, museums and zoos, archives,

documentation of history, etc. belong to this category. These cultural areas are modern in origin and character and deserve all efforts for promotion.

15.97 In the light of the points made above, the various aspects of cultural development that demand immediate attention are the following:

1. Preservation and promotion of traditional arts.
2. Promotion and development of Kerala's ancient arts like Kalarippayattu and circus.
3. The role of Kerala Sahitya Akademi, Kerala Sangeetha Nataka Akademi, Kerala Lalitha Kala Akademi and Kerala Kalamandalam in cultural development.
4. Feasibility of setting up a Centre for Cultural Studies and Research.
5. Future development of the library movement.
6. Norms for aiding cultural organisations and institutions.
7. Establishment and maintenance of memorials for leading men of arts and letters.
8. Whether the pension schemes for artists and writers is to be expanded.
9. Development of activities relating to film production.
10. The programme content of Government and semi-Government agencies engaged in cultural activities.
11. The organisational set up at Government level to oversee cultural activities.

15.98 The programmes suggested under the various subheads mentioned above are briefly discussed below:

#### *Colleges of Music (Outlay Rs.10 lakhs)*

15.99 A scheme of visiting professorships should be instituted for the music colleges so that the services of eminent persons who have acquired great proficiency in the fields of vocal and instrumental music may be obtained for teaching the students. It is suggested that a course in 'nagaswaram' be offered in the College of

Music, Trivandrum. An air-conditioned library of tapes with recording facilities may also be provided in the College. There is a strong case for equalising the terms of service of the teachers of these colleges with those of colleges of arts and science.

### 2. *Sahitya Akademi (Outlay Rs.28 lakhs)*

15.100 The main programme of the Akademi is production of literature. During the next five year period the Akademi may expand its activities in the fields of production of children's literature, translation of Malayalam books into other languages and books from other languages into Malayalam. The Akademi should make proper assessment of current literature and publish articles or books on the subject. It may also provide various incentives to talented writers including budding litterateurs for producing original contributions in the fields of literatures and literary criticism. A writers' museum consisting of exhibits associated with the life and works of eminent writers has to be set up. A new building may be constructed to accommodate the library, gallery and auditorium attached to the Akademi.

### 3. *Sangeetha Nataka Akademi (Outlay Rs.15 lakhs)*

15.101 The main schemes proposed for implementation during the Plan period are indicated below:

- (i) A Folk-lore Museum.
- (ii) An air-conditioned archives section for the preservation of films, slides, tapes and rare manuscripts.
- (iii) A library consisting of reference books for the use of performing artists.
- (iv) A mobile unit equipped with tape recorders, cameras etc. for recording field or outdoor performances of arts.
- (v) A mobile theatre which should conduct performances of classical folk arts in important centres and at important functions. A fully equipped van will serve as the mobile unit.
- (vi) A repertoire troupe to cater to the needs of cultural exchanges.
- (vii) Experimental productions which will help the growth of the Kerala Theatre.
- (viii) Adequate provision for celebrating the centenary of the Malayalam drama which falls during the Plan period.
- (ix) Short-term theatre courses in technical subjects like make-up, stage setting and lighting.

### 4. *Lalitha Kala Akademi and College of Fine Arts (Outlay Rs.10 lakhs)*

15.102 The Lalitha Kala Akademi and the College of Fine Arts should expand their activities over the ensuing Plan period. Post-graduate courses should be started in the Colleges of Fine Arts, Trivandrum and the scheme of visiting professors should be instituted. A good library and an art gallery for exhibition of modern arts should be set up in the college. The Lalitha Kala Akademi should provide art galleries for

organising exhibitions of paintings of certain individual artists and groups of artists. A gallery for permanent exhibition of paintings also may be provided.

### 5. *Kerala Kala Mandalam (Outlay Rs.20 lakhs)*

15.103 The Kerala Kalamandalam, established in 1930 functions in a 32 acre campus at Vallathol Nagar, Cheruthuruthy. It offers courses in Kathakali, Koodiyattom, Mohiniyattam, Ottamthullal, Bharata Natyam, Mridangam and Thimila. There is also another campus in the Old Kalamandalam premises which houses the Koodiyattam Department.

15.104 A few construction works have to be undertaken at the Campus. They are five Kalaries for Kathakali, Mohiniyattam etc., five residential quarters, a guest house, an open air theatre conforming to the 'silaguhakara' conceived in the Natya Sastra for the stage and compound wall. A provision of Rs.11 lakhs is made for this purpose.

15.105 The salary of the staff and stipend to the students will have to be revised. Some additional teaching staff will have to be appointed also. The total cost is put at Rs. 4 lakhs.

15.106 The Kalamandalam has to provide facilities for research and experimentation on subjects related to the arts of Kerala. An art museum, a library, a survey-cum-demonstration unit and a publication wing may also have to be developed.

### 6. *Financial Aid to Societies and Institutions for Promotion of Art and Letters (Outlay Rs.10 lakhs)*

15.107 There are a number of organisations devoted to promotion of art and letters such as the Samastha Kerala Sahitya Parishad, the Sahitya Pravarthaka Co-operative Society, the Kerala History Association etc. There are also organisations like the Veera Kerala, Gymhana, Kathakali clubs, Fine Arts Societies, etc., functioning in different parts of the State. Such cultural organisations deserve financial aid from Government.

### 7. *Pension and Financial Assistance to Men of Art and Letters (Outlay Rs.12.50 lakhs)*

15.108 Government have a scheme for giving pension to writers and artists who live in indigent circumstances. The scheme is a commendable one but the benefit of the scheme does not go to all those who deserve it. Special care has to be taken to see that indigent artists who have been engaged in practising the traditional arts of Kerala like Koothu, Koodiyattam, Ottamthullal, Thalavadyams, Kathakali, etc., get the benefit of the scheme. The scheme has to be extended so as to bring within its ambit the masters of traditional crafts like carpentry, wood carving, ivory carving etc.

### 8. *Grant-in-aid to Authors for Publication of Books (Outlay Rs. 2.50 lakhs)*

15.109 The objective of the scheme is to provide grant-in-aid to authors for publication of books which are of literary or educative value.

9. *Kerala School of Traditional Arts (Outlay Rs.15 lakhs)*

15.110 Koodiyattam is the only surviving theatrical art representing Sanskrit dramas in the whole of India. It, therefore, represents a vital aspect of our heritage and has to be preserved. Kerala Kala Mandalam is giving instruction in the Kalluvazhi style of Kathakali which is typical of North and Central Kerala. The Kidangoorazhi style of Kathakali which is the legacy of South Kerala has suffered neglect owing to lack of patronage. It is suggested that a school for imparting training in Koodiyattam, Kidangoorazhi style of Kathakali and other traditional theatrical arts of Kerala which are not taught at Kerala Kala Mandalam may be set up in Trivandrum.

15.111 The 'Thalavadyas' of Kerala like 'Pancha Vadyam' and 'thayambaka' are highly enjoyable. Some special effort is necessary to save them from extinction. A course in Thalavadyas may be conducted in the Kerala School of Traditional Arts suggested in the foregoing paragraph.

15.112 The Kerala School of Traditional Arts may preferably be set up in the private sector as a separate institution or as an adjunct of the Kerala Kala Mandalam. Government should provide a convenient site in south Kerala and meet the entire cost of construction of buildings and give an annual grant for the conduct of the courses.

10. *Archaeology (Outlay Rs. 25 lakhs)*

15.113 The Department is at present not fully equipped for the efficient discharge of its functions. The following schemes are proposed for improvement and expansion of the activities of the Department.

- (i) Qualified persons will be appointed to man the sections in charge of the various activities
- (ii) The display techniques have to be improved by providing modern equipment
- (iii) Models of monuments such as temples, churches, mosques, palaces etc. have to be exhibited in the museums
- (iv) Technical staff of the Department have to be given training in institutions outside the State where training facilities exist.
- (v) Technical books on different branches of archaeology may be published
- (vi) In case the office of the Cochin University is shifted to the Thrikkakkara campus, the Hill Palace at Trippunithura and its premises may be converted into an Archaeological Museum-cum-Zoo and Botanical Gardens
- (vii) Construction of a museum building at Thakkalai
- (viii) A Regional Conservation Laboratory for this conservation of cultural properties kept in various museums and other institutions in the State may be set up, preferably at Trivandrum
- (ix) The work of exploration and excavation with a view to preparing a comprehensive book on architectural antiquities of Kerala has to be given top priority. Moreover, considerable work has to be done in the

fields of epigraphy and palaeography. The old Travancore Archaeological series which have become out of print have to be re-edited and reprinted under the new, title 'Kerala Archaeological Series'.

11. *Archives (Outlay Rs. 30 lakhs)*

15.114 The Archives Department which functions with the Special Secretary, Higher Education as Ex-Officio Director is at present a minor Department with three Regional Offices located at Trivandrum, Ernakulam and Calicut. The department has to be developed during the Plan period. The most urgent need is to have a new building with modern facilities for the scientific preservation of archival records.

15.115 Additional facilities such as photo-copying machines etc., have also to be provided for the proper functioning of the Archives Department. Purchase of equipment for the better preservation of age old records of historical importance, purchase of records of archival value from public and private sources, publication of selected records, publicity and training of staff are other important items of development contemplated.

12. *Museums and Zoos (Outlay Rs. 35 lakhs)*

15.116 The Department of Museums and Zoos has under its control the Museum and Zoo complexes at Trivandrum, Trichur and Calicut and the Shri Chitra Art Gallery. It has a number of schemes which are in the process of implementation. More important among them are (1) construction of a new building for the Shri Chitra Art Gallery after the traditional Kerala style of architecture, (2) development of the Trichur Museum and Zoo, (3) expansion and development of the Trivandrum zoo and (4) educational service and publication activities of the Trivandrum museum and zoo.

15.117 The new schemes proposed to be taken up in the Five Year Plan 1978-83 are the following:-

1. An open Lion Safari Park at Neyyar Dam Site in Government land extending over an area of about 75 to 100 acres.
2. Improvements to the gardens in Trivandrum museum and zoo by planting rare species of plants and providing additional facilities in children's park, etc.
3. Strengthening of the administrative set up of the Directorate of Museums and Zoos.

13. *State Central Library (Outlay Rs. 40 lakhs)*

15.118 The development of the State Central Library, Trivandrum deserves special attention in view of its pivotal position in the State's Library set up. The construction of a separate children's library with an auditorium, air-conditioning of about half the space within the present library building for the preservation of rare books and the purchase of a micro film unit and photo copying machine are some of the proposals which deserve immediate attention.

14. *Kerala Grandhasala Sangham (Outlay Rs. 80 lakhs)*

15.119 The Kerala Grandha Sala Sanghom is the co-ordinating agency in the State's library movement. The provision is for giving grants to the Sangham for the following projects formulated for the Plan.

1. Continuation of the Village and Bell-Bicycle Libraries, 72 of which are in the existing Harijan Welfare Libraries
2. Providing Neo-literate corners in 300 village Libraries including the Harijan Welfare Libraries.
3. The Publication of the weekly 'Sakshare Keralam' for free distribution among neo-literates and semi-literates
4. The expansion of the Grandhasala Press in order to ensure that all the publications of the Sangham are printed in the Sangham Press itself

The Sangham has been receiving an annual grants of Rs. 32 lakhs, out of which Rs. 29 lakhs is disbursed to the libraries as grants. The grant amount has to be increased substantially.

15. *Research and Training in Vastu Vidya (Outlay Rs. 5 lakhs)*

15.120 Some of the major buildings which are to be constructed in future for institutional and residential purposes should be designed after the State's traditional architecture. The wisdom and practical knowledge and skill of the veterans among carpenters should be preserved by suitable measures. Essentials of Kerala architecture should be incorporated in the curriculum for civil engineering and architectural courses of study. Government may establish, or give liberal financial aid for establishing, a Vastu Vidyalaya the study of and research in traditional architecture sculpture and painting of India in general and Kerala in particular.

16. *Preservation of Folk and Ritual Arts of Kerala (Outlay Rs. 10 lakhs)*

15.121 Cultural bodies like Sangeetha Nataka Akademi and Lalitha Kala Akademi should make a thorough study of the Folk and Ritual Arts of Kerala. Such a study may bring out certain art forms which have little scope of survival. Detailed documentation of all features and aspects of all the Folk and Ritual Arts should be attempted as a priority item of work because, at least in the case of quite a few of them the few surviving members of a generation that could supply reliable information on them are getting reduced in number with passage of time. This is very important in respect of Arts that are no longer performed. In the case of those traditional art forms which are receding in popularity but are not extinct yet, there are two categories namely (1) those which have no prospects of survival and (2) those which can be revived with or without slight modifications to suit the present tastes of spectators/audience. So far as the first category is concerned attempt has to be made to preserve those art forms in tape-records and films in addition to producing descriptive literature on them.

In the case of the second category, what is needed is to revive them by suitable innovations and promotional measures.

17. *Promotion of Kalarippayattu and Circus (Outlay Rs. 37 lakhs)*

15.122 Kalarippayattu is the most important of the martial arts of Kerala. This art began to decline with the coming of the British, but staged a revival in recent times owing to the efforts of the C. V. N. Kalari Sanghom which has a net work of branches all over the State. For the development and popularisation of Kalarippayattu, it is necessary to establish full-fledged Kalaries in all district headquarters. Each Kalari should have an Instructor and an Assistant on a monthly salary and all the weapons and accessories used in Kalarippayattu. In addition the Departments of Physical education in the Universities which are at present concentrating on modern games and sports should be required to start a Kalarippayattu wing and gyinkhana. As part of the development of Kalarippayattu, steps should be taken to promote the facilities attached to it in respect of medicine Marmani etc. and research relating to the traditional body building techniques and treatment of physical injuries. An amount of Rs. 10 lakhs is provided for establishing Kalaries in District headquarters other than Trivandrum. A special provision of Rs 2 lakhs is made for the development of the Kalari at Trivandrum.

15.123 Kerala has made its mark in the field of Circus. The circus companies as well as circus artistes are facing heavy odds. The maintenance and transportation cost of the circus units has increased considerably while the circus shows have to compete with modern alternatives for entertainment which are comparatively cheap. The life of the artistes is one of maximum risk but least insured against it. Therefore, the prime need in the field of circus is a comprehensive scheme to provide to the artistes, security of employment and means of support in old age as also insurance against the risks of injury and death involved in their work. A Circus Artistes' Welfare Fund may be instituted with contribution from the artistes, the circus companies and the Government for the purpose. The circus companies also deserve encouragement by way of grants, tax remissions etc. It is also necessary to establish a circus training institute, preferably at Tellicherry. An amount of Rs. 20 lakhs is provided for setting up the Circus Training Institute and Rs. 5 lakhs for instituting circus Artistes' Benefit Fund and for giving pension to overaged artistes in need for such assistance.

18. *Centre for Cultural Studies and Research (Outlay Rs. 20 lakhs)*

15.124 There is a strong case for establishment of a Centre for Cultural Studies and Research. The Centre may work in co-ordination with other existing cultural institutions and those which are proposed to be established. It may be located at Cheruthuruthy in the campus of the Kalamandalam. Cultural studies and research may be undertaken in co-operation with the Kalamandalam and other institutions such as the College of Fine Arts, Trivandrum, the College of Music and other cultural institutions in the public and private sectors. The School of Drama which functions in the Trichur Centre of the Calicut University could also

provide facilities for research programmes. The Centre might attract scholars from other States of India and foreign Countries. In due course, financial aid may also flow in from Government of India and foreign sources.

19. *Establishment of Memorials (Outlay Rs. 5 lakhs)*

15.125 At present there are mainly three memorials viz. Thunchan Memorial at Tirur, Asan Memorial at Thonnakkal and Kunchan Memorial at Ambalapuzha. These memorials should be maintained properly. Government may extend financial aid for this purpose in the form of annual grants.

20. *Kerala Gazetteers (Outlay Rs. 5 lakhs)*

15.126 The Department of Kerala Gazetteers has already published nine District Gazetteers. The following items of work are to be taken up during the ensuing Plan period.

- (i) Preparation and publication of district Gazetteers of Malappuram and Idukki.
- (ii) Preparation and publication of the State Gazetteer.
- (iii) Translation of the District Gazetteers into Malayalam.

21. *Encyclopaedia (Outlay Rs. 25 lakhs)*

15.127 The State Institute of Encyclopaedia Publications is at present engaged in the preparation

of the comprehensive Malayalam Encyclopaedia in 20 volumes. The Institute has already published four volumes of the Encyclopaedia. Schemes for preparation of a Children's Encyclopaedia (20 volumes) and an encyclopaedia of Dravidian culture (10 volumes) have been finalised. The Institute will however give priority to completion of the remaining 16 volumes of the Malayalam Encyclopaedia.

22. *State Institute of Languages (Outlay Rs. 55 lakhs)*

15.128 The Institute will give priority to production of text books and general reading materials for University stage in Malayalam. The other major schemes proposed are strengthening of staff, School of Indian Languages, scientific dictionary and construction of a godown.

23. *Organisational set up for Cultural Affairs at Government Level (Outlay Rs. 5 lakhs)*

15.129 The cultural activities being carried on under the auspices of various Departments of Government and of private agencies in Kerala range over a wide spectrum. At present it is the Secretariat Department of Education that is mainly dealing with cultural matters. The need for a separate Department at Secretariat level to deal exclusively with cultural affairs is being increasingly felt. Therefore it is proposed to form a Department of Cultural Affairs to be in charge of all the cultural activities which are now being attended to by different departments of Government. There should be a separate Secretary to Government, Cultural Affairs.

TABLE 15.2  
Art and Culture Scheme wise outlay

Sl. No.	Scheme	(Rs. in lakhs)			
		Fifth Plan Outlay 1974-79	1974-78 Expenditure	1978-79 Budgetted Outlay	1978-83 outlay proposed
(1)	(2)	(3)	(4)	(5)	(6)
1.	Colleges of Music	5.00	1.85	2.00	10.00
2.	Sahitya Akademi	14.00	13.75	5.00	28.00
3.	(a) Sangeeta Nataka Akademi	7.00	5.93	3.00	15.00
3.	(b) Award of Fellowship to outstanding Artists	..	0.13	..	..
4.	Lalitha Kala Akademi and College of Fine Arts	5.00	4.45	2.50	10.00
5.	Kerala Kala Mandalam	10.00	18.54	4.00	20.00
6.	(a) Financial Aid to Societies and Institutions for Promotion of Arts and letters	5.00	4.74	1.50	10.00
6.	(b) Raja Ram Mohan Roy Library Foundation Grant in-aid	..	1.00	..	..
6.	(c) Translation of Published Volumes of 'Who is Who' of Indian Martyrs.	..	0.03	..	..
7.	(a) Pension and Financial Assistance to men of Arts and Letters	3.00	3.15	1.50	12.50
7.	(b) Committee for Reorganising Kathakali	..	0.10	..	..
8.	Grant-in-aid to Authors for Publication of books	1.00	1.24	0.50	2.50
9.	Kerala School of Traditional Arts	..	..	1.00	15.00
10.	Archaeology	7.00	11.69	4.00	25.00
11.	Archives	5.00	3.52	1.00	30.00
12.	Museums and Zoos	5.00	7.56	4.00	35.00
13.	State Central Library	..	..	0.10	40.00
14.	(a) Kerala Grandhasala Sangham	..	..	..	80.00
14.	(b) Training of Unemployed Librarians	..	0.17	..	..
15.	Research and Training in Vastu vidya	..	..	..	5.00
16.	Preservation of Folk and Ritual Arts of Kerala	..	..	..	10.00
17.	Promotion of Kalari Payattu and Circus	..	..	..	37.00
18.	Centre for Cultural Studies and Research	..	..	..	20.00
19.	Establishment of Memorials	..	..	..	5.00
20.	Kerala Gazetteers	2.00	1.23	0.50	5.00
21.	Encyclopaedia	7.00	2.69	..	25.00
22.	State Institute of Languages	15.00	19.70	7.00	55.00
23.	Organisational set up for Cultural Affairs at Government level	..	..	..	5.00
Total (Art and Culture)		91.00	111.47	37.60	500.00



### Adult Education

15.130 Considering the prominent role of adult education in the socio-economic development of the country, the National Plan envisages higher allocation of funds for this sector. The financial provision for the programme in the previous Plans, both National and State, had been very low and hence no concrete steps could be taken to eradicate illiteracy on a wide scale. The number of illiterates who are to be brought under this programme in Kerala is estimated to be 50 lakhs.

15.131 The Adult Education Programme should form one of the important activities of the Government instead of being left entirely to voluntary organisations. The programme will be mainly confined to the age-group 15-35. Besides eradication of illiteracy, the main elements of the programme will include an appropriate mix suited to the needs and interests of the individual such as citizenship training, health education, family planning, development of vocational skills and cultural activities. In developing the programme, full utilisation will be made of voluntary agencies, worker's organisations, school teachers etc. A State Board of Adult Education has been established recently to guide the programme. Working Committees will have to be set up at the district, block and panchayat levels for effective implementation of the programme.

15.132 The essential aspects of the schemes included in the Plan are indicated below. By the implementation of these programmes, it is expected that 20 lakhs of illiterates could be made literate during the ensuing Plan period.

#### Minimum Needs Programme

##### 1. Starting of Adult Education Centres (Outlay Rs. 180 lakhs)

15.133 The Scheme is included under Minimum Needs as suggested by the Planning Commission. The outlay proposed is Rs. 180 lakhs.

15.134 In each Panchayat 4 or 5 centres are to be opened according to necessity. Similar centres will be set up in Towns/Municipalities also. In selecting the wards for opening Centres, priority should be given to educationally backward areas and weaker sections of the community. 5000 Adult Education Centres are proposed to be opened during the Plan period, out of which 400 centres will be set up in areas predominantly inhabited by scheduled castes and 100 centres in tribal pockets. Each centre will conduct two courses in a year, one course having a duration of 6 months. Thus in each Centre two batches of trainees will be handled in an year, one batch numbering 40 trainees. No provision for buildings and equipments is made as

the neighbouring schools, libraries or buildings of voluntary organisations could be utilised for running the centres.

15.135 There should be one Adult Education Worker in each Centre for whom remuneration at the rate of Rs. 50 p.m. will be paid.

(a) Remuneration to workers	Rs. 150 lakhs
(b) Contingent expenses	Rs. 30 lakhs
Total	Rs. 180 lakhs

##### 2. Supervision of the Centres (Outlay Rs. 60 lakhs)

15.136 There should be one supervisor in each Panchayat/Town. Each supervisor will look after 5 centres. The scheme envisages 1000 such supervisors for whom remuneration at the rate of Rs. 100 p.m. will be paid. The scheme will cost Rs. 60 lakhs.

##### 3. Resource Material for the Trainees (Outlay Rs. 200 lakhs)

15.137 Assistance should be given to the trainees for purchase of educational materials at the rate of Rs. 10 per head. An amount of Rs. 200 lakhs is provided for the purpose.

##### 4. Resource Materials for the Workers and Supervisors (Outlay Rs. 5 lakhs)

15.138 Assistance is to be given to each Adult Education Worker at the rate of Rs. 15 per year for the purchase of resource materials. The supervisors will also be entitled to get similar financial assistance at the rate of Rs. 25 per year. The scheme will cost Rs. 5 lakhs.

##### 5. Training Programmes for the Workers and Supervisors (Outlay Rs. 3 lakhs)

15.139 An amount of Rs. 3 lakhs is provided in the Plan for training programmes.

##### 6. Follow-up Measures and Production of Literature (Outlay Rs. 50 lakhs)

15.140 Reading materials and the facilities for extra curricular activities, entertainments, film-shows etc. are to be made available to the neoliterates as follow-up measures. A sum of Rs. 50 lakhs is provided in the Plan for this purpose.

##### 7. Organisational Expenses (Outlay Rs. 10 lakhs)

15.141 A sum of Rs. 10 lakhs is provided to meet the organisational expenses.

15.142 The total outlay for Adult Education Programmes in the Five Year Plan, 1978-83, amounts to Rs. 508 lakhs.

TABLE 15.3  
Adult Education Schemewise outlays

Sl. No.	Scheme	(Rs in lakhs)			
		Fifth Plan Outlay 1974-79	1974-78 Expenditure	1978-79 Outlay budgeted	1978-83 Outlay proposed
1.	Starting of Adult Education Centres	..	..	30.00	180.00
2.	Supervision of the Centres	..	..	..	60.00
3.	Resource Material for the Trainees	..	..	..	200.00
4.	Resource Materials for the Workers and Supervisors	..	..	..	5.00
5.	Training Programmes for the Workers and Supervisors	..	..	..	3.00
6.	Follow-up Measures and Production of Literature	..	..	..	50.00
7.	Organisational Expenses	..	..	..	10.00
Total (Adult Education)		..	..	30.00	508.00

*University Education.*

15.143 Considerable expansion has taken place in the field of higher education in Kerala. In the First and Second Plan periods, the pace of development of higher education was comparatively slow. It was from the Third Five Year Plan period onwards that the progress of higher education gathered momentum. The facilities for higher education witnessed rapid expansion during the past one and half decades. The number of Universities increased from one to three (excluding the Agricultural University) during 1966-78 period. The number of Arts and Science colleges which provide general higher education in the State increased from 100 in 1966-67 to 131 in 1977-78 (27 Government and 104 Private). During the Fifth Plan period, 11 new colleges have been opened. Student enrolments at the University level increased from 1.06 lakhs to 1.76 lakhs between 1965-66 and 1976-77. Stage-wise, the proportions of enrolment are 61 per cent at the Pre-degree stage, 36 per cent at the Degree stage and 3 per cent at the Post-graduate level. Facility for Post-graduate studies exists in 40 Arts and Science Colleges and in the University Teaching Departments. About 20 per cent of the Post graduate students in the State receive instruction in the University Departments. In the case of Teacher Training Colleges, there has been no change either in the number of institutions or in the annual intake. The number of institutions and the enrolment remained more or less constant at 19 and 2000 respectively.

15.144 In financial terms, the expenditure on Plan schemes in the University Education sector during the Fourth Plan period amounted to Rs. 401 lakhs as against the outlay of Rs. 498 lakhs, showing a financial achievement of 81 per cent. The expenditure for the first 4 years of the Fifth Plan amounted to Rs. 422 lakhs as against the total outlay of Rs. 381 lakhs. The total annual expenditure on higher education (Plan and non Plan) has increased from Rs. 3.27 crores in 1966-67 to Rs. 16 crores in 1976-77.

15.145 In the University sector, the ensuing Plan envisages consolidation and qualitative improvement rather than expansion. The Plan does not provide for new Universities. No new colleges will be opened except in educationally backward areas. Emphasis will be placed on consolidation and strengthening of the existing colleges and Universities. Non-formal education including correspondence courses and private study will have to be encouraged further so as to absorb the increase in enrolment in respect of arts subjects. The Plan also envisages the introduction of vocationalisation at the 'plus two' stage, i.e. Pre-degree level in colleges. The Scheme-wise details are given below.

1. *Direction and Administration (Outlay Rs. 19 lakhs)*

15.146 The work of the Department of Collegiate Education has increased considerably in consequence of the introduction of direct payment of salaries to the staff in private colleges. Planning and Statistics wings of the staff in private colleges. Planning and statistics wing of the Department also is under-staffed. It is therefore proposed to strengthen the ministerial, planning and statistics wings of the Department at a cost of Rs. 10 lakhs during the plan period, 1978-83.

15.147 In the three Zonal offices of the Department additional staff has been sanctioned. An amount of Rs. 9 lakhs is provided to meet the additional expenditure in connection with the strengthening of the Zonal offices.

2. *Government Colleges (Outlay Rs. 342 lakhs)*

15.148 One college in each of the backward districts of Idukki and Malappuram needs to be newly started in the Government Sector.

15.149 Educational facilities are not uniformly spread all over the State. In order to reduce the inter-district disparities in educational facilities, certain colleges have to be upgraded during the present Plan period. The colleges started during the Fifth Plan period require additional buildings.

15.150 Though the general policy is to restrict the introduction of new courses in colleges, the starting of new courses may become inevitable in some cases. There is scope for starting post-graduate courses in some of the existing colleges. A provision of Rs. 3 lakhs will be required for continuance of the evening courses for L.L.B in the Government Law Colleges.

15.151 Many of the Government colleges require hostel facilities and staff quarters. All Government colleges are to be provided with hostels in a phased programme. Staff quarters also will have to be provided for some of the colleges. Provision has to be made for giving advances to the hostels in order to purchase and supply essential commodities required for students at controlled prices. The formation of book banks in colleges is a popular scheme which has to be continued.

15.152 A separate building has to be constructed in order to implement the scheme for bifurcation of Maharaja's College, Ernakulam. A building has to be constructed for the Law College at Calicut also.

15.153 The schemes proposed for development of Government Colleges along with the outlays are listed below:

	Rs. lakhs
(i) Starting of new Colleges	100
(ii) Upgrading of Colleges	75
(iii) Building for Existing Colleges	100
(iv) Starting of New courses in Colleges	25
(v) Conduct of Evening Course for L.L.B. in Government Law Colleges	3
(vi) Hostels and Staff Quarters	20
(vii) Providing Essential Commodities to Hostels	3
(viii) Implementation of Book Bank scheme in Colleges	10
(ix) Building for Bifurcation of Maharajas' College, Ernakulam	4
(x) Building for Law College, Calicut	2
Total	342

3. *Assistance to Non-Government Colleges (Outlay Rs. 115 lakhs)*

(i) *Direct Payment of Salary to Private College Teachers*

15.154 An amount of Rs. 15 lakhs is provided in the Plan to meet the salary of private college teachers in connection with starting of new courses.

(ii) *Improvement of Facilities in Affiliated Colleges.*

15.155 A sound foundation for advanced study and research could be laid only if instruction at the Pre-Degree level and Degree level is strengthened. The Scheme envisages providing facilities in colleges for adequate class rooms, separate laboratories in each science subject for each course of study, adequate library and reading room facilities, seminar room for post-graduate courses, well-equipped auditorium, hostel facilities, etc. Most of the private colleges in the State are deficient in these facilities. Over a period of years all colleges must be improved. The present Plan provides Rs. 50 lakhs for the scheme.

4. *Scholarships (Outlay Rs. 20 lakhs)*

15.156 The provision of Rs. 20 lakhs is for meeting the expenditure for the award of scholarships during the period 1978-83 in Arts, Science, Music, Sankrit and Sports.

5. *Vocationalisation of Higher Education (Outlay Rs. 75 lakhs)*

15.157 The vocationalisation of under graduate courses envisaged in the Plan needs financial support. It would be desirable to secure services of experts from outside the academic community in organising and running the vocational courses. At the same time, a good number of teachers will have to be trained to conduct these courses. A sum of Rs. 75 lakhs is provided for the scheme.

6. *Autonomous Colleges (Outlay Rs. 75 lakhs)*

15.158 A few well-equipped colleges in the State are to be given the status of Autonomous Colleges with freedom to frame their own courses of study and scheme of examination. These colleges would be expected to maintain high academic standards. An amount of Rs. 75 lakhs is allocated in the Plan for improving the laboratories, libraries and other physical facilities of these colleges.

7. *Faculty Improvement (Outlay Rs. 30 lakhs)*

15.159 The scheme includes deputation of teachers to centres of advanced study and higher learning for improving professional competence. The scheme also envisages conduct of inservice programmes of short duration.

8. *Development of Universities*

15.160 The proposals for the development of the Universities fall into three categories, namely, expansion and strengthening of the existing Schools and Departments, starting of new Schools and Departments

and general schemes for the provision of physical and infrastructural facilities. While allocating grants to Universities, the Cochin University deserves special financial support in view of the modest assistance it has received so far and its technological character. The total provision of Rs. 13.20 crores in the plan 1978-88 will be shared by the three Universities as indicated below.

(1) *Assistance to Universities*

A. *Kerala University*

(i) *Grouping of Departments into Schools and their Expansion (Outlay Rs. 180 lakhs)*

15.161 The University grants Commission has now begun to think in terms of Multi-disciplinary Schools rather than Departments. The University is also in favour of this proposal. Under the Schools, course of a multi-disciplinary character at the M. Phil levels are proposed to be introduced, contributing to the development process in the State. The starting of such courses would require expansion of the faculty and more library and laboratory facilities. The schemes proposed and the outlay are the following:

	<i>Rs. lakhs</i>
(a) School of Social Sciences	50
(b) School of Mathematical Sciences	30
(c) School of Physical Sciences	50
(d) School of Life Sciences	50
Sub-total	180

(ii) *Development of the Existing Departments (Outlay Rs. 50 lakhs)*

15.162 There are a good number of University Departments which require planned development. An outlay of Rs. 50 lakhs is provided under the Plan. The break-up of the outlay is given below:

	<i>Rs. lakhs</i>
(a) Manuscript Library and Oriental Research Institute	10
(b) Malayalam Lexicon	10
(c) Institute of Correspondence Course	10
(d) Department of Publications	10
(e) Department of Students' Services	10
Sub-total	50

(iii) *New Departments (Outlay Rs. 30 lakhs)*

15.163 It is proposed to start the following new Departments during the Plan period.

	<i>Rs. lakhs</i>
(a) Department of Hindi	10
(b) Department of modern Indian Languages	10
(c) Department of French	10
Sub-total	30

(iv) *Starting of New Centres of Study (Outlay Rs. 80 lakhs)*

15.164 It is high time that the Universities shifted emphasis to research on specific problems having an inter disciplinary focus. The problems of study must also be related to the development programmes of the State. It is proposed to start a few centres which would cut across Schools and Departments. Each centre would be staffed by part-time and full-time Fellows with one of the Fellows functioning as Director by rotation. The centres contemplated for the Plan period 1978-83 are the following.

	<i>Rs. lakhs</i>
(a) Centre for Aquatic Research	15
(b) Centre for Policy Studies	10
(c) Centre for Indian Ocean Area Studies	15
(d) International Institute of Kerala Studies	15
(e) Centre for Continuing Education	10
(f) Sree Narayanan Centre for Study of Social Change	10
(g) Survey Research Centre	5
Sub-total	80

(V) *General Schemes (Outlay Rs. 70 lakhs)*

15.165 The general Schemes proposed to be implemented during the plan period are listed below:

	<i>Rs. lakhs</i>
(a) Centralised Library attached to Kariavattom Campus	25
(b) Residential quarters	25
(c) Development of University Health Centre	5
(d) Reserach Fellowships	15
Sub-total	70

The total development outlay on Kerala University is Rs. 410 lakhs.

B. *Cochin University*(I) *Strengthening of the Existing Schools (Outlay Rs. 150 lakhs)*

15.166 The existing schools of the University will have to be strengthened. The Five Year Plan (1978-83) provides an amount of Rs. 150 lakhs for expansion of these Schools, priority being given to Schools of Humanities, Law, Management Studies and Marine Sciences.

(II) *Starting of New Schools*

15.167 During the Plan period, 6 new Schools will be started under the University of Cochin. Each School will be organized into divisions corresponding to existing Departments. It is also expected that during the course of the next plan period, some of the divisions in a School may develop into independent Schools. Financial provisions for the new Schools are shown below:

	<i>Rs. lakhs</i>
(a) School of Continuing Education	20
(b) Schools of Environmental Studies	20
(c) School of Transportation Studies	20
(d) School of Technology	50
(e) School of International Studies	20
(f) School of Forest Studies	20
(g) School of Rural Studies	20
(h) School of Mass Communications	20
(i) School of Health Sciences	20

Sub-total 210

(III) *General Schemes (Outlay Rs. 130 lakhs)*

	<i>Rs. lakhs</i>
(a) Strengthening of University Library	20
(b) Scholarships and Fellowships	10
(c) Health Centre	5
(d) Central Instrumentation Service Laboratory	10
(e) Youth Welfare	10
(f) Campus Development	5
(g) Industrial Consultancy Centre	10
(h) Faculty Development	5
(i) Aquarium and Museum	5
(j) Departmental and Hostel Buildings	50

Sub-total 130

15.168 The total amount earmarked for development of the Cochin University is Rs. 490 lakhs.

C. *Calicut University*(I) *Development of the Existing Departments (Outlay Rs. 150 lakhs)*

15.169 The Plan provides Rs. 150 lakhs for strengthening the existing Departments.

(II) *Starting of new Departments*

15.170 The new Departments/Centres proposed to be started during the Plan period and the financial allocations are shown below:

	<i>Rs. Lakhs</i>
(a) Department of Anthropology	10
(b) Department of Archeology and Museology	10
(c) Department of library Science	8
(d) Department of Geography	20
(e) Department of Statistics	8
(f) Department of Wood Science	10
(g) Department of Kannada	4
(h) Department of Urdu	4
(i) Centre for Moppla Art and Literature	1
Sub-total	75

(III) *Campus Development (Outlay Rs. 42 lakhs)*

15.171 The scheme envisages the development of the University Centres at Trichur and Tellicherry by providing additional buildings for the Departments, hostel facilities for the students and residential quarters for teachers. The total provision is Rs. 42 lakhs.

(i) *University Campus at Trichur*

	<i>Rs. lakhs</i>
(a) Departmental buildings including Recording Studio and Museum for School of Drama	10
(b) Hostel	10
(c) Quarters for Teachers	5
Sub-total	25

(ii) *University Campus at Tellicherry*

(a) Departmental Buildings	3
(b) Teachers' Hostel	4
(c) Students' Hostel	10
Sub-total	17

(IV) *General Schemes (Outlay Rs. 133 lakhs)*

15.172 The Plan provision for general schemes amounts to Rs. 133 lakhs as detailed below:

	<i>Rs. lakhs</i>
(a) Building Construction	70
(b) Faculty Development	3
(c) Fellowships and Scholarships	30
(d) Visiting Professorship	3
(e) Research Schemes of Teachers	20
(f) Furniture and Utensils for Hostels	5
(g) Development of Health Centre	2
Sub-total	133

The total provision for development of the Calicut University amounts to Rs. 425 lakhs.

(II) *University Centres at Quilon and Changanacherry (Outlay Rs. 10 lakhs)*

15.173 The provision is for giving financial assistance to the University of Kerala for the development of the Centres

(III) *Ship-Technology Course (Outlay Rs. 10 lakhs)*

15.174 The proposed Outlay of Rs. 10 lakhs is for giving financial assistance to the University of Cochin for the development of ship-technology course.

9. *Institutes of Higher Learning-Assistance to Centre for Development Studies (Outlay Rs. 75 lakhs)*

15.175 The Centre for Development Studies, Trivandrum is an autonomous institution engaged in studies and research relating to development problems, particularly to those concerning India. The centre, as an institution of excellence, deserves continued assistance from the Government. An amount of Rs. 75 lakhs is provided in the Plan for giving annual grants for the maintenance and expansion of the activities of the Centre.

10. *Non-formal Education—Evening Courses in Government Colleges (Outlay Rs.75 lakhs)*

15.176 It is proposed to introduce evening courses in 10 Government Colleges in the State. The outlay proposed is Rs.75 lakhs.

11. *Other Programmes*(i) *Student Amenities*

15.177 An outlay of Rs.10 lakhs is proposed for providing amenities like water coolers, steel furniture etc. to students residing in hostels.

(ii) *Implementation of U.G.C.Assisted Schemes (Outlay Rs. 10 lakhs)*

15.178 The outlay is for providing matching grants<sup>8</sup> for schemes assisted by U.G.C. in respect of construction works.

(iii) *Development of Under-Graduate and Post-Graduate Educational facilities in Government Colleges with U.G.C.Assistance (Outlay Rs.15 lakhs)*

The provision made is for meeting the University's share in the amounts expended for the scheme.

(iv) *Study Tour (Outlay Rs.5 lakhs)*

15.179 Study tour is an integral part of the syllabus in science faculties like Zoology, Botany, Chemistry, Geology, Geography etc. The provision of Rs.5 lakhs is for meeting the expenses connected with study tours in colleges.

(v) *Advance Study and Research in Colleges (Outlay Rs.20 lakhs)*

15.180 At present advanced study and research is the monopoly of the University Departments. They should find a place in colleges also. Teachers and senior students in colleges will undertake research which has a bearing on solution of problems faced by the community. In order to provide fellowships and grants for research, the Plan allocates an amount of Rs.20 lakhs.

(vi) *Furniture, Library and Laboratory Equipments (Outlay Rs. 34 lakhs)*

15.181 The outlay is for providing furniture, books and science equipments in Government Colleges.

(vii) *Cost of Land etc., Transferred from Defence Ministry, Government of India (Outlay Rs.36 lakhs)*

15.182 The provision is for payment of the cost of Haig Barracks and Firing range, Malappuram to the Ministry of Defence.

The aggregate outlay provided under University Education amounts to Rs.22.26 crores.

*Centrally sponsored schemes*

1. Opening of Hindi Teachers' Training Colleges in Non-Hindi Speaking States  
Rs. 25 lakhs
  2. Book Production at University Level in Hindi and Regional Languages  
Rs. 40 lakhs
- Total Rs. 65 lakhs

TABLE 15.4  
University Education Scheme-wise Outlay

(Rs in lakhs)					
Sl. No.	Scheme	Fifth Plan Outlay 1974-79	1974-78 Expenditure	1978-79 Outlay budgeted	1978-83 Outlay proposed
(1)	(2)	(3)	(4)	(5)	(6)
1.	Direction and Administration				
(i)	Planning, Statistics, Academic and Administrative wings of the Directorate of Collegiate Education	3.00	3.08	2.00	10.00
(ii)	Deputy Directorate of Collegiate Education Zonal Offices	..	2.11	1.75	9.00
2.	Government Colleges:				
(i)	Starting of New Colleges	15.00	28.39	15.00	100.00
(ii)	Upgrading of Colleges	..	..	..	75.00
(iii)	Buildings for Existing Colleges	53.00	69.13	11.50	100.00
(iv)	Starting of New Courses in colleges	6.00	6.97	3.50	25.00
(v)	Conduct of Evening course for LL.B. in Government Law Colleges	1.00	1.25	0.50	3.00
(vi)	Hostels and Staff-Quarters	10.00	27.43	0.50	20.00
(vii)	Providing essential commodities to Hostels	2.00	0.52	0.50	3.00
(viii)	Implementation of Book Bank Scheme in colleges	5.00	3.36	2.00	10.00
(ix)	Building for Bifurcation of Maharaja's College, Ernakulam	3.00	1.00	1.00	4.00
(x)	Building for Law College, Calicut	4.00	2.50	2.00	2.00
3.	Assistance to Non-Government Colleges:				
(i)	Direct payment of salary to private college teachers in connection with starting of new courses	5.00	6.31	3.00	15.00
(ii)	Improvement of facilities in affiliated colleges	..	..	..	50.00
4.	Scholarships: Renewal of Scholarships granted in Arts, Science, Music, Sanskrit and Sports	3.00	2.98	1.00	20.00
5.	Vocationalisation of higher education	1.00	0.50	0.50	75.00
6.	Autonomous Colleges	..	..	..	75.00
7.	Faculty Improvement	..	..	..	30.00
8.	Development of Universities:				
(i)	Grant to Universities	185.00	197.50	45.00	1300.0
(ii)	University Centres at Quilon and Changanacherry	..	5.00	3.00	10.00
(iii)	Ship Technology Course Grant-in-aid to University of Cochin	10.00	5.00	3.00	10.00
9.	Institute of higher learning Assistance to Centre for Development Studies	45.00	28.10	10.00	75.00
10.	Non-formal Education-Introduction of Evening courses in Government colleges	..	..	..	75.00
11.	Other Programmes:	4.00	2.83	1.25	10.00
(i)	Student amenities	4.00	2.83	1.25	10.00
(ii)	Implementation of U.G.C. assisted schemes	2.00	7.02	1.00	10.00
(iii)	Development of undergraduate and post-graduate studies in Government colleges with U.G.C. assistance	5.00	2.00	8.00	15.00
(iv)	Study Tour	2.00	1.34	0.75	5.00
(v)	Advanced Study & Research in colleges	2.00	1.91	0.75	20.00
(vi)	Furniture, library and laboratory equipments	15.00	15.30	2.00	34.00
(vii)	Cost of land, etc. transferred from Defence Ministry, Government of India	..	..	36.00	36.00
<b>Total (University Education)</b>		<b>381.00</b>	<b>421.53</b>	<b>155.50</b>	<b>2226.00</b>
Centrally Sponsored Schemes					
(i)	Opening of Hindi Teachers Training Colleges in non-Hindi Speaking States	..	4.33	4.71	25.00
(ii)	Book Production as University level in Hindi and Regional Languages	..	32.00	10.00	40.00
<b>Total</b>		<b>..</b>	<b>36.33</b>	<b>14.71</b>	<b>65.00</b>

### Technical Education

15.183 There was considerable expansion in the field of technical education in the State during the post-independence period, particularly in the Second and Third Plans. Kerala did not lag behind the rest of India at least in quantitative growth. The enrolments in Engineering Colleges increased four-fold and in Polytechnics three-fold during the period 1961-67 with the result that the supply of trained personnel was in excess of the demand. Hence as a preventive measure, the annual intake of students in Engineering Colleges and Polytechnics was reduced by 20 per cent during 1968-69. The need for consolidation of achievements in the field of technical education by way of improvements of standard and quality was keenly felt. Improvement of quality and standard was, therefore, the key-note of the Fourth Plan. During the Fourth Plan period, there was no considerable expansion in the number of technical institutions except the starting of one Junior Technical School and 2 Pre-vocational Training Centres. Part-time Degree Course for Diploma holders was introduced in the Government Engineering College, Trichur. The development programmes in the field of technical education during the Fifth Plan were more or less on the same lines as in the previous Plan. During the Fifth Plan period, there was no increase in the number of technical institutions. Among the different programmes undertaken in the Fifth Plan, the starting of 'Book-Banks' in Engineering Colleges, Polytechnics and Junior Technical Schools, introduction of 'Apprentice Training Programme' and starting of a centre for curriculum development are worth mentioning.

The Plan allotments in the Fourth and earlier Plan periods could not be fully expended for various reasons. In the Fifth Plan (4 years) the expenditure under Stat Plan sector was Rs. 164 lakhs as against the total outlay of Rs. 236 lakhs (5 years). Under Centrally sponsored scheme the expenditure was Rs. 57 lakhs as against the outlay of Rs. 48 lakhs.

15.184 The institutions for imparting technical education in the State, at present, consist of 5 Engineering Colleges (2 Government colleges and 3 private colleges) one Regional Engineering College, 18 Polytechnics (including 3 women's Polytechnics) and 21 Junior Technical Schools. In addition, there are 3 Fine Arts, institutions, 2 Government commercial institutions, 40 recognised institutions conducting Kerala Government Commercial Certificate Examination courses, 26 Government Institutions and about 100 recognised institutions conducting courses in tailoring and garment making, book binding, weaving, carpentry, printing etc. There are also 4 Pre-vocational Training Centres which provide technical education to drop-outs from schools in selected trades. Facility for post-graduate education exists in the two Government Engineering Colleges and in the Regional Engineering college. Also facilities are available in the two Government Colleges for part-time Engineering Degree course for Diploma holders.

15.185 Owing to increased intake of technical institutions and the sluggish growth of the industrial sector, the economy was not able to absorb all the out-turn of the technical education system. The live register figures of Employment Exchanges in the State

reveal that, at the end of the year 1977, the technical job-seekers included 1784 Engineering Graduates, 3585 Diploma holders in Engineering and 21376 I. T. I. certificate holders. According to the available estimates, the existing facilities are considered adequate to meet the additional requirements of Engineering man power during the next Plan period. The present Plan does not, therefore, provide for any new Engineering College. But, financial provision is made in the Plan for opening a few Polytechnics, Junior Technical Schools and Tailoring and Garment Making Centres in unrepresented areas, in particular, in undeveloped and rural areas. The process of consolidation of existing facilities and quality improvement of technical education will get highest priority in the Sixth Plan. The Plan provides for a phased programme of modernisation of facilities, reduction of wastage and integration of curriculum development. The 1978-83 Plan also envisages that the existing internal resources of technical education system should be put to extensive use not merely for teaching, but also for continuing education, assisting the process of neighbourhood development and for serving local enterprises.

#### Schemes

##### 1. Direction and Administration (Outlay Rs. 35 lakhs)

###### (a) Planning and Statistics Cell.

15.186 The Directorate of Technical Education needs adequate machinery for man-power assessment, planning and monitoring, evaluation of the programmes etc. To achieve this end, reorganisation of the Directorate is felt highly essential. The planning and statistics cell in this Directorate needs strengthening. The allotment for this scheme would come to Rs. 20 lakhs.

###### (b) Construction of Administrative Block:

15.187 A provision of Rs. 15 lakhs is made for the construction of the Administrative Block of the Directorate of Technical Education.

##### 2. Engineering College and Institutions

###### (i) Engineering Colleges (Outlay Rs. 205 lakhs)

###### (a) Consolidation of Facilities in the Engineering Colleges:

15.188 A new orientation of the teaching practices calls for special equipments, additional class rooms, quality testing facilities, etc. for the existing 5 Engineering Colleges. The Plan provides Rs. 75 lakhs under this scheme.

###### (b) Upgrading of one Engineering College:

15.189 One of the Engineering Colleges has to be upgraded and provided with centralised facilities for quality improvement for staff (at the post graduate, doctorate and post doctoral level), continuing education for staff and inservice personnel, central Reference Library and Documentation Centre, Computer Centre for academic and research work, improvement of faculty at the post graduate, doctorate, and post doctorate

level, strengthening of research programmes etc. The funds provided are as follow.

Centre for fundamental and applied research	Rs. 25 lakhs
Central Technical Library and Documentation Centre	Rs. 25 lakhs
Computer Centre	Rs. 15 lakhs
Centre for quality improvement	Rs. 25 lakhs
<b>Total</b>	<b>Rs. 90 lakhs</b>

(c) *Centre for Continuing Education*

15.190 Opportunities for continuing education shall be made available to those who are already in the professional field and in the class room to enable them to acquire professional competency according to their abilities and convenience through part-time/full-time course based on the credit system and multiple entry. A provision of Rs. 15 lakhs is made in the Plan for this Scheme.

(d) *Central Instrument Workshop*

A central Instrument workshop is to be established to render repair, maintenance and calibration services to all the engineering, medical and other institutions. A sum of Rs. 25 lakhs is provided for the scheme.

(ii) *Assistance to Regional Engineering College, Calicut (outlay Rs. 10 lakhs)*

The outlay of Rs. 10 lakhs is to meet the State's share of expenditure for the development of the campus of the Regional Engineering College at Calicut.

(iii) *Assistance to Computer Centre (outlay Rs. 10 lakhs)*

A sum of Rs. 10 lakhs is provided for expansion of the computer centre.

(iv) *Part-time Course (outlay Rs. 10 lakhs)*

The proposed outlay of Rs. 10 lakhs is for meeting the salary and contingent expenditure in respect of the part-time degree course for diploma holders being conducted in the Engineering Colleges at Trivandrum and Trichur.

3. *Polytechnics (Outlay Rs. 170 lakhs)*

(a) *Consolidation of Polytechnics*

15.191 The Polytechnics in the State are at different levels of growth and need substantial financial investment for consolidation and modernising the facilities in the workshops and laboratories. A provision of Rs. 135 lakhs is made for this scheme.

(b) *Project Work*

15.192 Group efforts or individual efforts in Project work flame up the creativity of the students. Importance has therefore been given to project work in the new curriculum. A provision of Rs. 10 lakhs is made in the Plan for the scheme.

(c) *Extension centre of the Technical Teachers Training Institute*

15.193 The extension of the Technical Teachers' Training Institute, presently housed in the Government Polytechnic, Kalamassery, is a joint endeavour of the State and Central Governments. A separate building for the Extension Centre is necessary, with hostel facilities. An amount of Rs. 25 lakhs is provided under the Plan for this scheme.

4. *Junior Technical Schools (Outlay Rs. 30 lakhs) Consolidation of Junior Technical Schools*

15.194 Facilities in the Junior Technical Schools have to be improved and modernised. A financial provision of Rs. 30 lakhs is made under the Plan for this.

5. *Assistance to Non-Government Technical Colleges and Institutions*

(i) *Private Engineering Colleges (Outlay Rs. 25 lakhs)*

15.195 The proposed outlay of Rs. 25 lakhs is for payment of grants to the private Engineering Colleges at the approved rate of 25 per cent of the total cost of development and expansion, construction of buildings, purchase of equipments, etc.

(ii) *Foodcraft Institute, Kalamassery (Outlay Rs. 20 lakhs)*

15.196 The Institute conducts certificate level courses in Bakery and Confectionary, Cooking, Canning, Food Preservation etc. Considering the great demand and employment opportunity for the certificate holders of these courses, at least two Extension Centres of the present Institute are to be started, one each at Calicut and Trivandrum. Further a full-fledged Diploma Institute is to be attached to the present Food craft Institute during the Plan period. A provision of Rs. 20 lakhs is made for the development programmes of the Institute.

(iii) *Private Polytechnics (Outlay Rs. 10 lakhs)*

15.197 A sum of Rs. 10 lakhs is provided for giving grants to the private Polytechnics at the approved rate of 25 per cent of the total cost of development.

6. *Book Banks (Outlay Rs. 10 lakhs)*

15.198 The scheme envisages the purchase of books in the Book Bank of the Government and private institutions under the Technical Education Department for the use of economically backward students. A provision of Rs. 10 lakhs is made for the scheme.

7. *Starting of New Institutions (Outlay Rs. 210 lakhs)*

(a) *Polytechnics*

15.199 In order to promote job-oriented education in the State, it is accepted as a policy to provide at least one Polytechnic in each district, with this end in view, the Government have decided to start two Polytechnics in the unrepresented districts



of Idukki and Palghat during the Plan period 1978-83. Provision for the establishment of the two Polytechnics amounts to Rs. 100 lakhs.

(b) *Junior Technical Schools*

15.200 There is scope for further expansion of the system with new areas of study. The Government have approved the establishment of four Junior Technical Schools in areas where there is real demand for it. A provision of Rs. 60 lakhs is made for the scheme.

(c) *Tailoring and Garment making centres*

15.201 These Centres impart education to girls who do not have opportunities for higher education. A financial provision of Rs. 25 lakhs is made for starting new centres in unrepresented areas giving priority to rural areas.

(d) *Pre-Vocational Training Centres*

15.202 Pre-Vocational Training Centres are intended for children between the V and VII standards. The scheme envisages some practical and job-oriented training in addition to the normal school education. It is proposed to start one Pre-vocational Training Centre attached to each Junior Technical School. Financial outlay required is Rs. 25 lakhs.

8. *Faculty Development (Outlay Rs. 115 lakhs)*

15.203 Improvement of the faculty through part time courses and full time courses is an essential requirement for up-dating the technical competence of the teachers in imparting education to their students. An amount of Rs. 115 lakhs is provided under the Plan for the purpose.

(a) *Polytechnics*

15.204 The minimum qualifications for the polytechnic teacher at the Lecturer's level should be a Degree in Engineering and for the Head of the Section, a Master's Degree. A sum of Rs. 20 lakhs is set apart for providing study allowance to the existing staff for qualifying themselves.

(b) *Engineering Colleges*

15.205 For the Engineering Colleges, the present Q. I. P. Programme of deputation for Master's and Doctoral courses have to be continued with increased seats and better facilities. Outlay proposed is Rs. 50 lakhs.

(c) *Industrial Residencies*

15.206 The scheme envisages introduction of professorships in Polytechnics and Engineering Colleges, commonly termed as Industrial Residencies. The scheme will cost Rs. 15 lakhs.

(d) *Training Reserve Personnel*

15.207 When the quality improvement programmes are implemented, many of the staff members in the college will have to be away from the institutions

for varying periods. This may normally affect the instructional programmes in the respective institutions. A 20 per cent reserve capacity will be required to meet this demand. Outlay proposed is Rs. 30 lakhs.

9. *Scholarships (Outlay Rs. 5 lakhs)*

15.208 The provision is for meeting the scholarships of the students from Kerala studying in the Film Institutes at Madras and Poona and for Mining and Metallurgy. Provision has also been made for continuing the scheme of merit scholarships in Polytechnics for backward and forward community students. The outlay proposed is Rs. 5 lakhs.

10. *Other Programmes*

(i) *Students' amenities and Youth Welfare (Outlay Rs. 50 lakhs)*

15.209 Adequate facilities for extra curricular activities have to be made available in each institution. Students must be given opportunities for developing their literary and artistic talents. The present Plan provides Rs. 50 lakhs for this scheme.

(ii) *Staff quarters (Outlay Rs. 30 lakhs)*

15.210 The scheme envisages construction of staff quarters for all members of the staff of the Institutions. A provision of Rs. 30 lakhs is made for the construction of staff quarters during the Plan period.

(iii) *Rural Development Centre (Outlay Rs. 5 lakhs)*

15.211 The scheme envisages transfer of technical know-how from the Engineering Colleges and Polytechnics to the rural population and improve their living conditions. A sum of Rs. 5 lakhs is provided for the purpose.

(iv) *Remedial Courses to Reduce Wastage (Outlay Rs. 10 lakhs)*

15.212 In order to reduce drop-outs and other forms of wastage, special efforts in the form of remedial courses are to be organised to help the weaker sections at polytechnic and college level. A provision of Rs. 10 lakhs is made for the scheme.

(v) *Science and Technology Museum (Outlay Rs. 7 lakhs)*

15.213 It is proposed to establish a Science and Technology Museum in the State. The outlay envisaged for the scheme is Rs. 7 lakhs.

(vi) *Introduction of Sandwich courses (Outlay Rs. 15 lakhs)*

15.214 The scheme envisages acquisition of practical experience by deputing the students for industrial training between semesters. Thus the theory classes and practical training will be sandwiched and will go on side by side. A provision of Rs. 15 lakhs is made for the scheme.

vii *Management Education (Outlay Rs. 3 lakhs)*

15.215 The scheme envisages starting of management study courses for the benefit of degree and diploma

holders both employed and unemployed. A combination of technological and management skills is desideratum for the industrialisation programme the country is embarking upon. A provision of Rs.3 lakhs is proposed for the scheme.

viii. *Industrial Liaison (Outlay Rs.3 lakhs)*

15.216 The advantages of maintaining liaison between technical institutions and the industries using the respective technologies have wide acceptance today. The outlay provided is for promoting such liaison.

ix. *Curriculum Development Centre (Outlay Rs.2 lakhs)*

15.217 An outlay of Rs.2 lakhs is provided to meet the cost of staff and other contingences of the Extension Training Centre established at the Government Polytechnic, Kalamassery.

x. *College of Fine Arts (Outlay Rs.15 lakhs)*

15.218 The provision (Rs.15 lakhs) is for meeting the expenditure on salary of staff, purchase of equipment and furniture and faculty improvement programmes of the college of Fine Arts.

xi. *Apprenticeship Training and Teacher Training (Outlay Rs. 15 lakhs)*

15.219 A sum of Rs.15 lakhs is provided for meeting the expenditure of Apprenticeship training scheme and for deputation of workshop Instructors and Skilled Assistants of Engineering Colleges, Polytechnics and Junior Technical Schools for higher training in workshop Technology in Industrial Training Schools run by Director General of Employment and Training.

xii. *Starting of additional courses and diversification of the existing courses (Outlay Rs. 65 lakhs)*

(a) *Engineering Colleges*

15.220 Considering the man-power requirement in certain industrial sub sectors, it is proposed to start courses in new emerging technologies like Industrial Engineering and Management, Textile Technology, Material Technology, Process control etc. An outlay of Rs. 30 lakhs is made for this.

(b) *Polytechnics*

15.221 The scheme envisages the introduction of elective subjects in the second and third year of the diploma courses, starting of new courses like Industrial Electronics Air conditioning and Refrigeration at the post diploma level. These post diploma courses will be started as industrially oriented one with support to the extent possible from industrial concerns. Diploma courses on the subjects like Inspection Engineering, Aeronautical maintenance Engineering, Agricultural Engineering etc. are also proposed to be introduced in stages during the Plan period. A sum of Rs.20 lakhs is provided for the purpose.

(c) *Junior Technical Schools*

15.222 It is proposed to introduce new trades in all the existing Junior Technical Schools. By the expansion of new trades the strength in the

institutions will be increased by about 20 per cent. The outlay proposed is Rs. 15 lakhs

xiii. *Centre for Diploma in Commercial Practice (Outlay Rs.10 lakhs)*

15.223 The provision is for meeting the teacher cost and contingent expenditure of the existing centres and for starting similar centres in backward areas. The outlay proposed is Rs.10 lakhs.

xiv. *Free supply of text books to Scheduled Caste students (Outlay Rs. 0.50 lakhs)*

15.224 The proposed outlay of Rs. 0.50 lakhs is for the purchase of books for supply to the scheduled caste students in technical institutions.

xv. *Teaching Aids (Outlay Rs. 2.50 lakhs)*

15.225 The provision (Rs.2.50 lakhs) is for giving grant to teachers in Engineering Colleges and Polytechnics for manufacture of teaching aids.

xvi. *Matching Grant for Central Schemes (Outlay Rs. 10 lakhs)*

15.226 The outlay of Rs.10 lakhs is proposed toward matching grant for central schemes

xvii. *Modernisation of Laboratories and Workshops (Outlay Rs. 70 lakhs)*

15.227 Modernisation of workshops and laboratories in Engineering Colleges through replacement of old worn-out machinery by new one is an inevitable item that deserves special attention. I.B.M. computer facilities installed in the College of Engineering, Trivandrum have to be supplemented by purchasing punching machines and auxiliary peripheral equipments. In polytechnics the replacement of old and out-dated machinery and tools by their recent models is an urgent necessity in view of the introduction of new electives. The scheme will cost Rs.70 lakhs.

(a)	Engineering Colleges	Rs.40 lakhs
(b)	Polytechnics	Rs.30 lakhs
		Rs.70 lakhs

xviii. *Improvement of Library Facilities (Outlay Rs. 40 lakhs)*

15.228 The present library facilities are inadequate in most of the Engineering Colleges and Polytechnics. A proper environment for concentrated reading, scientific classification of books, better facilities for reference and selection of books etc. will introduce a change in the teaching and learning process. Provision is essential for the purchase of new books in the existing libraries with accent on text books for the students. Production of text books by the college staff should form a major activity supported by organisational and financial help. Encouragement should be given for the production of text books in regional language. A sum of Rs.40 lakhs is provided for the purpose.

xix. *Pilot Research Project on Transport Modes-Ernakulam-Quilon Area (Outlay Rs.3 lakhs)*

15.229 The National Committee on Science and Technology has agreed to finance partly the Pilot

Research Project on the division of Traffic between different modes of Transport in the Ernakulam-Quilon area to be undertaken by the National Traffic Planning and Automation Centre, Trivandrum. The project is estimated to cost Rs.6.5 lakhs and the outlay of Rs. 3 lakhs provided contributes the State's assistance to the Project

15.230 The Sixth Plan provides a total outlay of Rs.12.21 crores under technical Education.

Centrally sponsored schemes

1. Post graduate Engineering Education and Research Rs 150.00 lakhs
  2. Improvement of Polytechnics and Regional Engineering Colleges Rs.75.00 lakhs
- Total Rs.225.00 lakhs

TABLE 15.5

Technical Education—Schemewise Outlay

Sl.No.	Scheme	Rs. lakhs			
		Fifth Plan Outlay 1974-79	1974-78 Expenditure	1978-79 Budgetted Outlay	1978-83 Outlay Proposed
1.	Direction and Administration	12.00	6.34	2.00	35.00
2.	Engineering Colleges and Institutions:				
	(i) Engineering Colleges	42.00	30.45	4.50	205.00
	(ii) Regional Engineering College, Calicut	5.00	2.71	1.00	10.00
	(iii) Assistance to Computer Centre	..	0.75	0.25	10.00
	(iv) Part time Course	..	7.48	2.00	10.00
3.	Polytechnics	56.00	25.66	7.25	170.00
4.	Junior Technical Schools	..	13.91	4.50	30.00
5.	Assistance to Non-Government Technical Colleges and Institutions				
	(i) Private Engineering Colleges	4.00	2.79	3.00	25.00
	(ii) Food Craft Institute, Kalamassery	..	3.00	1.00	20.00
	(iii) Private Polytechnics	4.00	2.73	1.00	10.00
6.	Book Banks	11.50	1.58	1.00	10.00
7.	Starting of new Institutions	..	..	..	210.00
8.	Faculty Development	41.00	27.41	8.10	115.00
9.	Scholarships	3.00	3.06	0.75	5.00
10.	Other Programmes:				
	(i) Student's amenities and Youth Welfare	..	0.25	..	50.00
	(ii) Staff quarters	..	..	..	30.00
	(iii) Rural Development Centre	..	..	..	5.00
	(iv) Remedial course to reduce Wastage	..	..	..	10.00
	(v) Science and Technology Museum	..	..	..	7.00
	(vi) Introduction of Sand-wich courses	..	..	..	15.00
	(vii) Management Education	..	0.10	0.10	3.00
	(viii) Industrial Liaison	..	0.24	0.25	3.00
	(ix) Curriculum Development Centre	5.00	0.48	0.50	2.00
	(x) College of Fine Arts	..	6.32	4.65	15.00
	(xi) Apprenticeship Training and Teacher Training	..	4.29	2.20	15.00
	(xii) Starting of additional courses and diversification of the existing courses	52.50	13.45	5.00	65.00
	(xiii) Centre for Diploma in Commercial Practice	..	2.93	1.25	10.00
	(xiv) Free supply of Text Books to scheduled caste students	..	0.10	0.10	0.50
	(xv) Teaching Aids	..	0.14	0.10	2.50
	(xvi) Matching Grant for Central Schemes	..	..	2.00	10.00
	(xvii) Modernisation of Laboratories	..	0.62	1.00	70.00
	(xviii) Improvement of Library facilities	..	2.61	1.00	40.00
	(xix) Pilot Research project on Transport Evaluation Quilon Area	..	..	..	3.00
11.	(i) Lal Bahadur Sastry Experimental Station	..	0.11	..	..
	(ii) Technological University	..	0.07	..	..
	(iii) Special Employment Schemes	..	2.56*	..	..
	(iv) Research work of the Faculty	..	0.17	..	..
	(v) Establishment of work Centres	..	0.19	..	..
	<b>Total (Technical—Education)</b>	<b>236.00</b>	<b>161.07</b>	<b>55.00</b>	<b>1221.00</b>
			+2.56*		
	Centrally Sponsored Schemes				
	(i) Post graduate Engineering Education and Research	..	67.20	22.00	150.00
	(ii) Improvement of Polytechnics and Regional Engineering College	..	..	..	75.00
	<b>Total</b>	<b>..</b>	<b>67.20</b>	<b>22.00</b>	<b>225.00</b>

\* Special assistance

### Scientific Service and Research—Science and Technology

15.231 The national objectives of providing the basic minimum needs of the common man such as food, clothing, housing, health, education, water supply and communications emphasise the need for proper planning in the area of science and technology. This calls for the formulation and implementation of a science and technology policy which should aim at reduction of import of technology, maximisation of returns from existing investments and full development of the national endowments of each region safeguarding the quality of environment. As Science and Technology are relevant to all development sectors they have to be promoted with reference to each sector in the light of the level of science and technology currently available to that sector. The Government of Kerala has already constituted a State Committee on Science and Technology representing various disciplines and institutions of importance in the region. It is charged with the task of constant review of scientific and technological policies in relation to the objectives of development plans. The State Government have already set up several institutions which are concerned with one or more of the four areas of science and technology, viz., research and development, application of science and technology, provision of scientific and technological services and the creation and diffusion of scientific knowledge. A brief description of the development activities envisaged in the Plan for the institutions already created and those proposed to be created is given below:

1. *Lal Bahadur Sastri Experimental Station (Outlay Rs. 10 lakhs)*

15.232 The provision is for the payment of grant to Lal Bahadur Sastri Research and Consultancy Centre.

2. *Sree Chitra Tirunal Medical Centre (Outlay Rs. 200 lakhs)*

15.233 Sree Chitra Tirunal Medical Centre was started in 1976. In a short period of two years, the Centre has established a reputation in the fields of cardiac-surgery and neuro-surgery. Taking into account the hospital performance, waiting list, installed capacity of equipments and availability of qualified personnel, the services of the Centre could be expanded to meet the demands of the region. The Departments of Neurology and Neuro-surgery have successfully offered an entire range of services including EMG, EEG etc. and the surgical procedures covered a wide range including micro neuro surgery. A major deficiency has been the lack of research facilities in Neuro-physiology including a study of consciousness. The importance of this field of research is widely accepted and therefore it is proposed to set up new laboratories for Neuro-physiology and study of consciousness. The Research and Development Campus of the Setalmound Place for the development of Biomedical Technology a establish recently under the Centre has to be expanded to cover all Polymer Laboratories, Instrumentation Section, Batch Preparation Unit, Processing Section, Devices Section, Radiation Sterilisation Unit and Toxicology Laboratories. It is also proposed to add a Laboratory for Bioalloys and Bioceramics.

3. *Electronics Research and Development Centre (Outlay Rs. 400 lakhs)*

15.234 The Electronics Research and Development Centre that started functioning from 1974 has attained a sales turnover of about Rs. 300 lakhs and provided direct employment for about 600 persons. KSEDC along with its Electronics Research and Development Centre has been a major contributor in increasing Kerala's portion of National Electronic production from 0.2 per cent before its inception to about 2 per cent

15.235 During the Plan period 1978-83, the Electronic Research and Development Centre has plans to strengthen its development work in industrial electronics primarily to cater to steel industry. The other new areas of development activities of the Centre will include:

- (i) Process control instrumentation including system engineering as well as development of microprocessor based data acquisition and control systems for different process industries and for thermal power generation.
- (ii) microprocessor based traffic control system utilising closed circuit television.
- (iii) medical electronics instrumentation
- (iv) microprocessor based control systems for railway locomotives
- (v) minicomputers and dedicated micro-processor based systems.

15.236 At the end of five years of the Plan Kerala's contribution towards all India electronic production is expected to be about Rs. 100 crores (which will be 5 per cent of national production of Rs. 2000 crores) giving employment to about 30,000 people directly and 1½ lakhs of people indirectly through ancillaries, sales and services. The major contribution to this, in terms of product design and development, will come from the Electronic Research and Development Centre.

4. *Kerala Forest Research Institute (Outlay Rs. 300 lakhs)*

15.237 The Kerala Forest Research Institute was established at Peechi during the Fifth Plan period. The Institute has established a sub-centre at Nilambur and will be organising a few more sub-centres during the Plan period. A new Wood Science Division of the Institute will be organised. Department of Silviculture, Forest Pathology, Genetics Ecology will be further strengthened and necessary laboratory equipments and library facilities will be provided. Construction of laboratory buildings, residential quarters for the staff, auditorium and augmentation of water supply scheme for the Institute's campus will be completed. during the Plan period.

5. *Centre for Water Resources Development and Management (Outlay Rs. 600 lakhs)*

15.238 The Centre for Water Resources Development and Management was established in 1978 with the objective of undertaking inter-disciplinary investigation on aspects of assessment, conservation, development and management of water resources of Kerala. During the Plan period 1978-83 the Centre will

establish its main and regional stations as well as carry out short term and long term studies of problems of water management, problems of proper water utilisation and management practices which are of an interdisciplinary nature. It is proposed to organise new divisions like education and extension, economics and statistics, surface water, ground water and water management. Many scientists of national reputation have already been attracted to the Institute. It is proposed to establish the new campus at Peruvannamuzhi in Calicut District. The programme to be implemented during the Plan period includes also the construction and equipment of the main research station, library and the development of the office buildings and residential campus.

6. *Centre for Biochemical Research on Atherosclerosis and Diabetes (Outlay Rs. 4 lakhs)*

15.239 The Centre for Biochemical Research on Atherosclerosis and Diabetes working under the Department of Biochemistry in the University of Kerala started functioning on 1-8-1974. The Centre is engaged in research on various aspects of Atherosclerosis and Diabetes. The provision is for the continuance of activities.

7. *State Committee on Science and Technology (Outlay Rs. 100 lakhs)*

15.240 The State Committee on Science and Technology has plans to expand its activities. It is proposed to provide assistance to outstanding scientists and technologists by providing fellowships and grants for research programmes. The operation of the Scientific Research Fund will be continued on an expanded scale. It is also proposed to encourage outstanding scientists and technologists through appropriate prize awards.

8. *Establishment of C.S.I.R. Complex (Outlay Rs. 100 lakhs)*

15.241 The C. S. I. R. has taken over the Industrial Testing and Research Laboratory in Kerala on 1-10-1975 to form a C. S. I. R. Complex in Trivandrum. Another wing of the C. S. I. R. Complex will be set up in Cochin.

9. *State Committee on Environmental Planning and Co-ordination (Outlay Rs. 15 lakhs)*

15.242 The provision is for meeting the expenditure in connection with the functioning of the Committee on Environmental Planning and Co-ordination and for implementing its action programmes.

10. *Institute for Development Administration and Adaptive Technology (Outlay Rs. 75 lakhs)*

15.243 A Centre for Adaptive Technology and Development Administration is being set up in the State. Recent developments in the field of technology transfer have underlined the need for setting up such a Centre of excellence where the scope and relevance of intermediate technologies will have to be explored in depth so that technology transfer under the varied

conditions in India is organised with proper assessment of both technical and economic issues involved in the process. An interdisciplinary group with a view to organise proper working links with technological scientific institutions in the country and abroad is proposed to be organised to act as a catalyst in the development process. The role of the innovator and the organiser has to be integrated with the concept of development administration where the bureaucrat of a new type has to be developed in tune with the growing task. This Centre is to design and conduct new courses in development administration which shall help to develop this new concept of a trained administrator fully informed of the development implications of the modernising role of science and technology. This programme essentially is an inter-disciplinary programme and is meant to develop a class of innovators in society.

11. *Centre for Earth Sciences (Outlay Rs. 600 lakhs)*

15.244 A Centre for Earth Sciences has been established which includes disciplines of Geology, Geophysics and Geo-chemistry together with Geodesy, Climatology, Meteorology, Physical geography, Oceanography and astronomical aspects of earth-moon system. The Centre is modelled on the same lines of the institutions in America and Europe and intends to cover training courses on Photogrammetry, Cartography, Natural Resources Surveys based on aerial photo interpretation and remote sensing systems. The Centre in Kerala is the first of its kind in India which integrates various disciplines under the overall term of Earth Science. A programme of basic Research and Development has been drawn up for the five year period 1978-83 which includes geomorphology, river basin morphometry, coastal processes, study of the continental shelf, causes of coastal erosion, plateau uplift studies, geochemistry, studies of weathering processes, geoscientific atlas project and studies on environmental geology. These projects are to be taken up and implemented in a carefully phased programme depending upon the identification and availability of necessary science talents. Also the main laboratories, and onshore and offshore equipments and facilities are to be built upon a priority basis.

12. *Centre for the Study of Energy (Outlay Rs. 300 lakhs)*

15.245 This Centre will study all aspects of energy production, both from the conventional sources and from non-conventional sources, hitherto inadequately used like sunlight, wind, bio-gas, etc. The Centre will also co-ordinate the work of projects which may be entrusted to groups of scientists in existing Technological Institutes and Universities. Some aid is expected from the Department of Science and Technology, Government of India. An outlay of Rs. 300 lakhs is proposed as State sector outlay for the Centre.

13. *Centre for Environmental Studies (Outlay Rs. 106 lakhs)*

15.246 A research-cum-monitoring Centre for the study of environmental factors, pollution control and proper use of natural resources and for advising user departments on the replenishing of the same, is to be established during the Plan period. We are rapidly facing problems of pollution and serious erosion to the

natural scenic attractions of Kerala. A scientific study of various aspects of environment is very necessary. We may expect international aid for this work as environmental science is receiving greater attention at present in other parts of the world. The Centre will be multi-disciplinary in composition and it will have a documentation section where all relevant information regarding the ecology of the State will be available for reference and future work.

15.247 The provision made is for meeting the recurring and nonrecurring expenses in connection with the establishment and activities of the Centre. The studies proposed to be taken up during the course of the Plan period are listed below.

	(Cost in Rs. lakhs)
1. Study of the changes in the ecosystem of Kuttanad consequent to construction of Thanneermukkom Bund	14
2. Water quality surveys in major rivers and installation of monitoring stations	15
3. Study of water pollution due to retting of coconut husks	10
4. Environmental studies in relation to pollution of Cochin Backwaters	6
5. Pilot study of water pollution due to run off from agricultural fields	4
6. Study of the problem of alarming proliferation of 'African Payal'	6
7. Air quality studies in industrial areas	6
<b>Total</b>	<b>61</b>

The amount earmarked for the setting up of the centre with essential staff and equipment is Rs. 45 lakhs. As the starting and equipping of the Centre will take time, it is suggested that studies having a bearing on serious and urgent problems like the pollution of river waters and the Cochin backwaters and the problem of 'African Payal' may be entrusted to existing competent agencies in the respective fields.

14. *Establishment of a Regional Botanical Garden (Outlay Rs. 100 lakhs)*

15.248 Kerala's climate is ideally suited for growing many plants of economic and ornamental value available in South East Asia. It is desirable to establish a Regional Botanical Garden in collaboration with the National Botanic Garden's Lucknow under the CSIR. It is hoped that the CSIR would support this project with a matching grant. The garden will serve also as a Centre of research on plant resources of the State and as a Centre for plant introduction.

15. *A National Museum on Science and the Man (Outlay Rs. 400 Lakhs)*

15.249 Museums are unique among man-made institutions for collecting and displaying samples of our three dimensional world under attractive conditions so that

the visitor's interest and wonder are aroused and they are encouraged to ponder deeply on them to embark on the pursuit of their knowledge and to contribute to the understanding and betterment of life on earth. The most valuable contribution that a museum can make is to bring before our eyes the story of man's Odyssey on Earth showing how he built up his knowledge of the world he lives in, how he developed his social structure, his cultures and civilisations, his arts and crafts and in the present day his science and technology which while promoting his well being and life span seems to threaten his survival on this globe.

15.250 It is proposed to build a National Museum in Kerala on Science and Man which would show by exhibits, illustration and various audio-visual methods, the impact of science and technology on mankind and the dangers of total destruction that man faces through warfare, exhaustion of natural resources and pollution of the environment, so that the younger generation may be stimulated to think and to discover alternate route for human progress to ensure their survival and well-being on this planet.

The museum will have the following broad sections:

1. The Universe Around us
2. The Earth
3. Physical Sciences
4. Life Sciences
5. History of Mankind or the Ascend of Man
6. Cultural and Economic Achievements
7. Contemporary science and Technology
8. World in the 21st Century

The museum will be laid out in surroundings housing biological garden's, children's paradise and other attractions.

16. *All India Institute of Health Sciences (Outlay Rs.1500 Lakhs)*

15.251 Over the last few decades, Kerala State has built up a comparatively well developed health-delivery system consisting of sub centres, primary health centres, taluk hospitals, district hospitals and medical college hospitals. Many difficult problems have been thrown up in the process of this growth and it is necessary to provide top level scientific, technological and research leadership through the establishment of an Institute of Health Sciences covering medical education, advanced medical care, medical research and primary health care at the community level which would experiment with alternative strategies of health care, delivery to the rural population. It is, therefore, proposed to upgrade one of the well developed medical colleges in the State into an all India Institute of Health Sciences. For this purpose an outlay of Rs. 1500 lakhs is provided in the Plan.

17. *Institute for Mass Communication (Outlay Rs. 300 Lakhs)*

15.252 The field of communication is experiencing a technological explosion. With the development of radio, television and satellite communication system,

structure of mass media in the earth is undergoing substantial modifications. India's own national satellite, INSAT, will be providing a regular service throughout the nation by 1980-81. Literacy and electrification will improve in both breadth and depth influencing communication processes in urban and rural India. It is necessary therefore that new means of communication must be explored, tested and developed. People must be trained to carry out the task of organised communication and in new communication techniques. There is also the need for an intergrated communication programme geared to provide communication support to developing programmes. Communication is necessary not only for creating awareness and motivating people to accept new ideas and practices but also to unlock the minds of the people and thus create a climate for development. With this objective, an Institute for

Mass Communication is proposed to be organised during the Plan period.

#### 18. Science Centre (Outlay Rs. 25 Lakhs)

15.253 Compared to the rest of Kerala, the Malabar region is backward in terms of the exploitation of the physical resources as well as in the level of scientific and technological infrastructure services. The need for a regional Science Centre to disseminate information in applied sciences as an aid to non-formal learning through practical demonstrations and activities has been recognised by the scientific community. The Centre is designed to provide a science gallery, a regional work shop, a museum of natural resources, library and extension services, so that it can effectively function as an instrument for non-formal education. The project is estimated to cost Rs. 25 lakhs.

TABLE 15.6

#### Science and Technology Schemewise outlay

Rs. in lakhs)

Sl. No.	Scheme	Fifth Plan outlay 1974-79	1974-78 Expenditure	1978-79 Budgetted outlay	1978-83 Outlay proposed
(1)	(2)	(3)	(4)	(5)	(6)
1.	Lal Bahdur Sastri Experimental Station	..	1.19	2.00	10.00
2.	Sri Chitra Thirunal Medical Centre	406.00	338.50	130.00	200.00
3.	Industrial Testing and Research Laboratory	..	1.18	..	..
4.	Electronic Research and Development Centre	190.00	144.00	40.00	400.00
5.	Kerala Forest Research Institute	90.00	38.00	38.00	300.00
6.	Centre for Water Resources Development and Management	25.00	15.60	15.00	600.00
7.	Centre for biochemical Research on Atherosclerosis and Diabetes	8.00	15.70	1.50	4.00
8.	State Committee on Science and Technology	13.00	13.44	5.50	100.00
9.	Establishment of C.S.I.R. Complex	60.00	15.02	20.00	100.00
10.	State Committee on Environmental Planning and Co-ordination	6.00	4.00	3.00	15.00
11.	Institute for Development Administration and Adaptive Technology	..	10.00	10.00	75.00
12.	Centre for Earth Sciences	..	..	15.00	600.00
13.	Centre for the Study of Energy	..	..	..	300.00
14.	Centre for Environmental Studies	..	..	..	106.00
15.	Establishment of a Regional Botanical Garden	..	..	..	100.00
16.	A National Museum on Science and the Man	..	..	..	400.00
17.	All India Institute of Health Sciences	..	..	..	1500.00
18.	Institute of Mass Communication	..	..	..	300.00
19.	Science Centre	..	..	..	25.00
	<b>Total</b>	<b>798.00</b>	<b>596.63</b>	<b>280.00</b>	<b>5135.00</b>

#### Employees State Insurance

15.254 The scheme is intended for providing medical service facilities to the persons and their families covered by it. There are ten E.S.I. hospitals with a total of 736 beds and 83 E.S.I. Dispensaries in the State. In addition there is an annexe with 24 bed attached to the T.B. Hospital, Pulayanarcottah. During the Fifth Plan period the benefit of the E.S.I. scheme was extended to a wider range of employees comprising those working in shops and commercial establishments, transport companies and plantations. In order to cater to the needs of these employees, 32 dispensaries were upgraded in 1975-76 and 4 dispensaries in 1976-77. Besides, two new dispensaries were opened in 1975-76,

10 dispensaries in 1976-77 and 3 dispensaries in 1977-78. The E.S.I. Corporation is meeting 87.5 per cent of the total expenditure of the E.S.I. Scheme. The State Government meets only the remaining 12.5 per cent of the expenditure.

15.255 During the Plan period 1978-83, 29 dispensaries and 4 hospitals, including the completion of one hospital at Ezhukone are proposed to be opened. The other three hospitals will be located at Kozhikode, Palghat and Cannanore. The estimated outlay for the scheme during the Plan period is Rs. 320 lakhs (Dispensaries Rs. 151 lakhs and hospitals Rs. 169 lakhs). The outlay of Rs. 40 lakhs proposed is towards the State's share of the total expenditure under the E.S.I. Programme.

TABLE 15.7

**Employees' State Insurance—Scheme-wise outlay**

(Rs. in lakhs)

Sl. No.	Scheme	Fifth Plan Outlay 1974-79	1974-78 expenditure	1978-79 budgeted Outlay	1978-83 outlay proposed
	E.S.I. Scheme	33.00	17.01	10.00	40.00

**Health***A. Modern Medicine*

15.256 It was only in 1951 that the first Medical College in the State was established. This had naturally limited the availability of qualified doctors within the State for service both in the public and in the private sectors. The situation was not in any way better in respect of the supply of para-medical personnel. It was really the rapid and vast expansion of health education covering both allopathic and indigenous systems of medicine that laid the foundation for all the remarkable progress since achieved in the sphere of improvement of medical care facilities in the State.

15.257 In 1950-51 there were only 197 medical institutions in the State including 15 grant-in-aid institutions and 6 newly started primary health centres. The total number of beds in all these institutions put together was only 6752. As a result of the planned effort during the last few years both the number of medical institutions and beds have increased more than four times. In 1977 there were 888 medical institutions under the allopathic system of medicine in the State and the total number of beds in the above institutions was 27,607.

15.258 The most important step taken to develop health care facilities since the introduction of planning

has been the starting of a chain of Primary Health Centres in the country. At present there are 164 P.H. Centres in Kerala. Each of the 144 Community Development Blocks is served by atleast one P.H. Centre. A few of them have more than one P.H.C.

15.259 Steps were also taken to control communicable diseases, in tune with the National Programme. Through a sustained effort, both in the rural and urban areas, small-pox has been eradicated. Besides, as a result of these efforts epidemics like Malaria, F. B., Cholera and Plague which took a heavy toll of life are no longer the menace they used to be.

15.260 In the earlier plans priority had perforce to be given to creation of infrastructure and expansion of medical facilities. Efforts in this direction naturally involved heavy investment. Thus during the first three plans a total amount of Rs. 24 crores was invested under health programmes. The level of investment suffered a slight set-back in the three subsequent annual plans and the Fourth Plan. This was due mainly to a shift of emphasis from infrastructure development and expansion of facilities (which involved heavy outlays) to improvement in the quality of medical service. This policy of quality improvement has been continued in the Fifth Plan also. The details of plan outlay and expenditure are presented in Table 15.8

TABLE 15.8

**Plan Outlay and Expenditure on Medical and Public Health Services in Kerala**

(Rs. in lakhs)

Period	Plan outlay	Actual expenditure	% of Expenditure to Plan outlay
1st Plan 1951-56	192.00	258.96	135.00
2nd Plan 1956-61	847.74	655.40	77.32
3rd Plan 1961-66	1350.00	1588.49	177.63
Three Annual Plans 1966-67 to 1968-69	477.45	495.02	103.68
4th Plan 1969-74	1044.00	839.21	81.00
5th Plan 1974-78	1249.00	1013.25	81.12
Total	5160.19	4870.39	94.38

15.261 In spite of the concerted efforts during the Fifth Plan period to correct the regional disparities in the distribution of medical institutions and hospital beds, disparities exist even today. Even though Kerala achieved the target of one bed for every thousand population by 1969-70 itself, the district-wise break up of medical institutions and the number of beds per lakh of population showed regional variations. The bed population ratio is less than the desired norm of one per thousand population in the district of Idukki, Malappuram, Palghat, Quilon and Cannanore in that order. Even within one district wide disparities exist in the availability of medical care facilities. Therefore the policy to be followed during the next plan period should be aimed at correcting these regional imbalances. To achieve a rational distribution of medical institutions and beds, priority should be given to districts like Idukki and Malappuram while creating additional facilities. Within those backward districts priority should be given to the rural population especially the economically vulnerable sections such as the Girijans and Harijans and to geographically isolated people living in the hilly and water logged areas.



15.262 Equally important is the improvement in the quality of available medical services. The policy in the plan period 1978-83 should therefore be to step up quality and standardisation in the services available. There are deficiencies in equipment, expertise and other facilities. More important perhaps is the omission and failures in making proper use of the existing infrastructure. For the efficient utilisation of the health services system in the State built up at such a huge cost to the exchequer, the management and supervision need to be strengthened. Besides, it is also essential to take steps to develop the Primary Health Centres by providing additional beds and other facilities. The number of sub centres also will have to be increased taking into account the increase in population.

15.263 It is envisaged that the three major systems of medicine, viz. allopathy, ayurveda and homoeopathy, may be integrated for purposes of medical services at the P.H.C. level. This type of co-ordination and integration can be ultimately extended to the higher levels also.

15.264 It would also be desirable for the Government to exercise some control over the private medical institutions in the matter of quality and cost of service. Health care planning should also be concerned with the location of such institutions, so as to ensure that the rural areas are also benefited.

15.265 The strategy of development underlying the health services development programme can be summarised into the following ten points:

1. Expansion of rural health service by setting up rural dispensaries in all the unserved Panchayats
2. Increase of bed strength of all the P. H. Cs to 30
3. Provision of all the essential specialities like Paediatrics, E. N. T., Orthopaedics, etc. in all taluk hospitals.
4. Development and standardisation of district hospitals as full-fledged referral hospitals
5. Expansion of medical education and research
6. Comprehensive medical insurance coverage to the entire population, beginning with all those enrolled in schools during the present plan period. The scheme should be self-supporting.
7. Development of a health administrators' cadre so as to relieve qualified medical personnel of the burden of day to day administration.
8. Social regulation of health care by bringing the private sector activities also into the main stream of medical care and ensuring that they maintain minimum standards with regard to qualifications of medical and paramedical personnel, the quality of services and the charges they levy.
9. Greater emphasis on preventive medicine than on curative. Supply of protected drinking water and substantial improvement of sanitation facilities.

10. Greater emphasis on family planning programme so as to achieve sizable reduction in the growth rate of population.

A short description of the schemes under health proposed to be taken up in the 1978-83 Plan is given below:

#### *Minimum Needs Programme*

- (1) *Providing more Beds in the P. H. Centres and construction of New P. H. Centres in C. D. Blocks (Outlay Rs. 330 lakhs)*

15.266 According to the specified norms the Primary Health Centres should have 30 beds. At present there are 164 P. H. Centres and the number of beds available is only 1600. To attain the target of 30 beds in each P. H. C. 3320 beds have to be provided additionally. Besides, a few more P. H. Centres have to be opened in certain C. D. Blocks where the population and area covered by the existing P. H. Centres are very large. An amount of Rs. 330 lakhs is set apart for the scheme.

- (2) *Strengthening of Primary Health Centres (Outlay Rs. 120 lakhs)*

15.267 When the number of beds is increased in the Primary Health Centres, it is necessary to strengthen the staff. Additional sub centres will also have to be opened in those areas where the population under each sub centre is very large. An amount of Rs. 120 lakhs is provided for strengthening the staff in the P. H. Centres and to open new sub centres.

- (3) *Providing Quarters for the Staff in Primary Health Centres (Outlay Rs. 150 lakhs)*

15.268 At present the staff posted to the Primary Health Centres are reluctant to serve the rural areas because of difficulty in getting good accommodation. Therefore accommodation is to be provided, at least for the key personnel of the Primary Health Centres.

- (4) *Rural Dispensaries (Outlay Rs. 251 lakhs)*

15.269 At the lowest level of the rural health service system is the Government Rural Dispensary. At present all except 251 Panchayats have Government Rural Dispensaries. Therefore it is proposed to start Government Rural Dispensaries in the remaining 251 Panchayats during this plan period. The health care facilities in the existing hospitals and dispensaries will also have to be improved. The outlay earmarked for the scheme is Rs. 251 lakhs

- (5) *Drugs for Existing Sub Centres and Other Institutions (Outlay Rs. 200 lakhs)*

15.270 The outlay provided is for the supply of drugs to the sub centres and other institutions.

- (6) *Mobile Medical Unit (P. H. C. For Tribal Block Attappady (Outlay Rs. 3 lakhs)*

15.271 One P. H. Centre is proposed to be set up in the Tribal Block, Attappady. The provision is for construction of building and appointment of staff for this P. H. Centre.

(7) *Revision of Staff Pattern—Nurses (Outlay Rs. 40 lakhs)*

15.272 The outlay is for the appointment of additional staff nurses in order to make the nurse-bed ratio 1:6.

*Hospitals and Dispensaries*(1) *Raising the bed strength in District Hospitals (Outlay Rs. 160 lakhs)*

15.273 While the policy of increasing the number of beds in the hospitals has a rural bias, certain accepted standards should be maintained in the district hospitals as far as the number of beds is concerned. Seven out of the eleven district hospitals do not satisfy the specified norm of 500 beds per hospital. Therefore, the bed strength in those hospitals should be raised to the specified level. The total number of additional beds required is 1670. Additional buildings also have to be constructed for the district hospitals in Malappuram and Idukki. An amount of Rs. 160 lakhs is provided for the scheme.

(2) *Introducing all Essential Specialities in District Hospitals (Outlay Rs. 100 lakhs)*

15.274 In addition to the quantitative buildup, the District Headquarters Hospitals have to be provided with all the essential specialities and ancillary services. There is hardly any district hospital which does not lack one or the other of the required specialities. An amount of Rs. 100 lakhs is provided for the scheme.

(3) *Polyclinics at District Hospitals (Outlay Rs. 80 lakhs)*

15.275 At present only three of the district hospitals have polyclinics. The remaining eight district hospitals should also be provided with polyclinic facilities. An outlay of Rs. 80 lakhs is suggested for this scheme.

(4) *Better Equipments to Major Hospitals (Outlay Rs. 50 lakhs)*

15.276 All the major hospitals in the State should be provided with essential equipments like high pressure steriliser, X-ray plant, E. C. G. apparatus etc. The scheme requires an outlay of Rs. 50 lakhs.

(5) *Janatha Pay Wards (Outlay Rs. 100 lakhs)*

15.277 In order to reduce the pressure of patients in general wards, Janatha Pay Wards may be started in District and Taluk Hospitals. Kerala Health Research and Welfare Society or some such agency may be entrusted with this task. These pay wards will not only ensure better personal services to those who can afford to pay but also divert this group of patients from competing with the poor patients for beds in the general wards. At least 50 Janatha Pay Wards may be provided in each District Headquarters Hospital and 10 to 20 in each of the Taluk Headquarters Hospitals. The major share of the amount required could be raised by loans from financial institutions. A provision of Rs. 100 lakhs is made for the additional staff required and for the initial expenses during the plan period.

(6) *Taluk Headquarters Hospitals (Outlay Rs. 30 lakhs)*

15.278 The prescribed number of beds in a taluk hospital is 100-200. There are a few taluk hospitals in which the bed strength is less than 100. Altogether 332 additional beds have to be provided to raise the bed strength to 100 in those hospitals which have only less than 100 beds at present. The amount provided for the scheme is Rs. 30 lakhs.

(7) *Opening of New Taluk Hospitals (Outlay Rs. 40 lakhs)*

15.279 Deviculam, Peermaedu, Udumbanchola and Kuttanad are the four Taluks which do not have Taluk Headquarters Hospitals at present. A provision of Rs. 40 lakhs is made for establishing headquarters hospitals in these four taluks.

(8) *Providing Specialities in Taluk Hospitals (Outlay Rs. 50 lakhs)*

15.280 All the major Taluk Headquarters Hospitals with more than 100 beds already have surgical, medical, obstetrics and gynaecology specialities. In addition to these specialities the taluk hospitals should provide specialist units for Eye, E.N.T. Dentistry, Paediatrics, Skin and Venereal Diseases. The medical records section in taluk hospitals should also have to be strengthened. An amount of Rs. 50 lakhs is set apart for the scheme.

(9) *Construction of Buildings and Provision of Vehicles to District Medical Stores (Outlay Rs. 10 lakhs)*

15.281 The provision is for completing spill-over works and for constructing new buildings. It also includes provision for purchase of vehicles for District Medical Stores.

(10) *Conduct of Medical Check-up Camps (Outlay Rs. 3 lakhs)*

15.282 The provision is for conducting medical check-up camps in all Districts.

(11) *Improving Medical Facilities in Idukki District (Outlay Rs. 3 lakhs)*

15.283 In view of the difficult terrain of Idukki District it is proposed to improve the medical facilities in the District, including provision of vehicles. The outlay is for this purpose.

(12) *Providing Ambulance Vans to District and Taluk Headquarters Hospitals (Outlay Rs. 50 lakhs)*

15.284 The outlay is meant for providing Ambulance Vans to District and Taluk Hospitals.

(13) *Drug Banks in District Hospitals (Outlay Rs. 0.50 lakh)*

15.285 It is proposed to open Drug Banks in district hospitals with the assistance of Rotary Clubs, Medical Associations and other Organisations. A Pharmacist will be appointed in each of the Drug Banks. The provision is for meeting the salary of Pharmacists.

(14) *Mobile Dispensary, Kuttanad (Outlay Rs. 1 lakh)*

15.286 It is proposed to establish a Mobile Dispensary to cater to the medical needs of the people of Kuttanad area. The provision is for the purchase of boat and medicines and appointment of staff.

(15) *Health Transport (Outlay Rs. 14 lakhs)*

15.287 The Health Transport Organisation is mainly designed to carry out preventive maintenance with a view to ultimately reduce repair cost, increase vehicle utilisation and enhance reliability factor of each vehicle. At present there are 580 vehicles including motor cycles, and motor boats deployed all over the State under the various Health and Family Welfare programmes. Comprehensive preventive maintenance should be done for every vehicle once in 30 to 35 days. To carry out the maintenance work more efficiently four more additional Mobile Workshops are required. Additional buildings have to be constructed both for the Central Workshop and the Regional Workshop at Calicut. Further, one more regional Workshop has to be established at Ernakulam during the Plan period. One Mobile Health Equipment Repair Unit also is to be started. As the health care facilities are extended to rural areas the transportation of equipments to urban centres for repair has become a problem. At present a lot of equipments attached to different institutions are not functioning for various reasons. The majority of such instances are due to lack of periodical inspection and preventive maintenance. To improve this state of affairs a Mobile Equipment Repair Unit is essential. To carry out these programmes a sum of Rs. 14 lakhs is required.

(16) *Institute for Mental Health and Neuro Sciences (Outlay Rs. 50 lakhs)*

15.288 Mental illness is a major problem in Kerala. But if detected in the earlier stages of illness and treated with the help of modern methods more than 70 percent of the cases could be cured completely. The mental health care system now centralised in the three Mental Hospitals of the State is not in a position to make available modern medicine, ayurveda system, yoga, transcendental meditation and other accepted forms of therapy. It is proposed to set up an Institute for Mental Health and Neuro Sciences which will make use of modern system of medicine as well as the indigenous systems of medicine for the treatment of mental diseases. The Institute will also conduct a state wide survey of mental illness utilising the services of the health workers in the Primary Health Centres and Sub Centres. The survey will cover state-wide detection of mental illness, prevention of mental illness and other epidemiological studies. It will be a Centre for post graduate studies and training in all fields of mental health and allied sciences.

15.289 It is also noted that many of the indigenous systems of therapy in mental illness that exist in Kerala such as ayurveda, yoga, and transcendental meditation are not properly evaluated and made use of in the treatment of mental illness. The proposed Institute aims at conducting research and training as well as therapy in modern medicine, ayurveda and other indigenous systems.

15.290 The Institute will be located in the mental hospital campus at Peroorkada, Trivandrum. Facilities

for expansion are available in the present location of the Mental Hospital. Additional buildings required for the Institute would be constructed in the mental hospital campus itself. An amount of Rs. 50 lakhs is provided for the proposed Institute.

(17) *Improvement of the Health Care System (Outlay Rs. 380 lakhs)*

15.291 Government of Kerala have constituted a High Power Committee on Health to study the problems and short comings of the health care system in the State. The Committee has undertaken a detailed and comprehensive study of the various problems faced by the patients, doctors and other hospital staff involved, and they are expected to submit their report to the Government shortly. This report will naturally include valuable suggestions to improve the existing health care system in the State. Therefore an amount Rs. 380 lakhs is provided in the Plan to implement the recommendations of the High Power Committee.

(18) *Health Care Programme in Selected Areas (Outlay Rs. 1 lakh)*

15.292 It is proposed to bring all the families in selected areas under a Health Care Programme. The members in the family will be given medical check up at regular intervals and medical cards will be issued to them. This will necessitate appointment of additional doctors and staff to the Primary Health Centres or dispensaries of the areas.

*Medical Education*

15.293 Though Kerala has done quite well in primary and secondary education, its performance at the undergraduate and post-graduate level and in the field of research has not been very satisfactory. In the case of medical education also the number of seats available both for graduate and post-graduate courses in the State is relatively small when compared to the neighbouring States. However, considering the huge investment required and the scope for fuller utilisation of the existing infrastructure in the field it will not be feasible to start another medical college in the State during this Plan period. What is required at present is to make full use of the present intake capacity in the existing four medical colleges and to strive for improvement of the quality of education. The emergence of a certain degree of unemployment among medical graduates should not be construed as a justification for reducing the number of seats either at the undergraduate or post graduate level since the number of qualified doctors has reached nowhere near the accepted norms. What is actually needed is an increase in the number of seats for post-graduate education and making adequate provision for research in various branches of advanced medicine with special reference to the practical problems of the State. This will necessitate revision of the service conditions of the teaching staff, amounting in certain aspects to radical reforms. Similarly, teachers and students who have the aptitude and genuine interest in research should be encouraged with high status and emoluments (salaries or scholarships) and all other possible incentives apart from ample financial support to procure necessary materials and equipments and to meet other expenses incidental to their research work.

15.294 There is a tendency in some quarters to underestimate the importance of non-clinical subjects like bio-chemistry, micro-biology, pathology, pharmacology, physiology etc. in medical education and research. This defect has to be rectified and any programme for development of medical education and research should assign due priority and emphasis to the strengthening of these departments. Again, it should be accepted as a policy to provide facilities for education and research as well as expert treatment in all specialities in one or other of the four medical colleges in the State. This would involve not only availing the services of appropriate personnel, but also the purchase of all the modern sophisticated equipments and instruments.

1. *Medical College, Trivandrum (Outlay Rs. 428.20 lakhs)*

15.295 Medical College, Trivandrum, which has completed 27 years of existence has a well consolidated undergraduate programme. The stress in the matter of future development will therefore be on improving facilities for post-graduate training and research. At present MD courses are being held in all the subjects which constitute basic disciplines in the College. There is great demand for admission to post-graduate courses in clinical subjects which cannot be met due to inadequate number of seats. The present number was fixed 10 years ago. In view of increasing demand for admission to post-graduate courses it is suggested that the number of seats in clinical subjects be increased as follows:

	<i>Number recommended</i>
General Medicine	20
General Surgery	21
Obstetrics and Gynaecology	10
Paediatrics	6
MD	10
DCH	10
DGO	10
Anaesthesia	6
MD	12
DA	12

15.296 In the case of preclinical subjects the present number may be continued. But it needs periodical review and increase as and when required.

15.297 Steps should also be taken to improve and start new specialities as detailed below in the Trivandrum Medical College:

1. Haematology
2. Chest diseases
3. Nephrology
4. Toxicology and snake bite
5. Oncology
6. Nuclear medicine
7. Endocrinology
8. Medical electronics and technology under biophysics
9. Vascular surgery
10. Traumatology
11. Clinical pharmacology
12. Experimental surgery
13. Sports medicine
14. Department of Statistics.

15.298 A refresher course for service personnel for a period of 6-12 months in clinical subjects may also be started. The certificate issued after this course may be considered for promotion to higher posts in Health Services. The number of admissions to the para medical courses should also be increased.

2. *Medical College, Calicut (Outlay Rs. 400.50 lakhs)*

15.299 This College was started in 1957, in the second year of the Second Five Year Plan. As a result of the developmental activities undertaken during the Third and Fourth Five Year Plan periods, the College has grown into a large complex with the intake capacity of 180 students at the under graduate level and with post graduate courses in different branches of medicine. But during the last few years, the developmental activities of the college were mainly spill over works from previous years. Therefore new specialities should be started in the college to enable it to keep pace with the rapidly expanding frontiers of Medical Science. The specialities suggested below may be introduced in the Medical College, Calicut during the Plan period.

1. Endocrinology
2. Genetics
3. Nuclear Medicine
4. Immunology

15.300 In addition to the starting of new specialities steps should be taken to increase the number of admission to the post graduate courses, to strengthen the staff and to provide more facilities in the existing departments.

3. *Medical College, Kottayam (Outlay Rs. 279.80 lakhs)*

15.301 The Medical College at Kottayam is still functioning in the old temporary structure constructed about fifteen years back. The college does not have accommodation for house surgeons, nurses, and post-graduate students. Accommodation for the staff is inadequate as also for some of the departments like Obstetrics and Gynaecology. The college requires urgent provision for accommodation and strengthening of staff in various departments like Medical Surgery, Obstetrics and Gynaecology.

4. *Medical College, Alleppey (Outlay Rs. 307.20 lakhs)*

15.303 The T. D. Medical College, Alleppey was a private college, the administration of which was taken over by the Government during 1967 for a period of five years. Finally the College has become vested in the Government from 1973. During the period of temporary administration by the Government from 1967-1973 no substantial development took place. Therefore in addition to the development of the various departments a hospital building should also be constructed in the college campus as a phased programme. The first stage of the hospital building has to be completed during the plan period 1978-83. Further, the following specialities also may be developed.

1. Tropical diseases including filariasis and leprosy
2. Nutrition and Industrial Medicine
3. Cardiology
4. Thoracic surgery
5. Neurology
6. Neuro surgery

15. *Cancer Institute Medical College, Trivandrum (Outlay Rs. 15 lakhs)*

15.304 An Institute for organising Cancer Screening Programme has been established in the Medical College, Trivandrum. The Institute is functioning with financial assistance of Government of Kerala, Government of India and external aid agencies. The first phase of the programme includes construction of building procurement of sophisticated equipments, training of staff etc. The provision is for the continuance of the Institute.

6. *Providing Generators in the Medical College Hospitals (Outlay Rs. 15 lakhs)*

15.305 The outlay is for installing generators in all the Medical College Hospitals in the State.

7. *Health Resort for Workers (Outlay Rs. 1 lakh)*

15.306 The outlay is for the continuance of three health resorts for workers in the State.

8. *Training of Teachers in Specialities and Continuing Medical Education (Outlay Rs. 10 lakhs)*

15.307 The outlay is for continuing the training programme for specialists and teaching staff in the Medical Colleges.

9. *Dental College, Trivandrum (Outlay Rs. 64.00 lakhs)*

15.308 The Bhole Committee has recommended as early as in 1946, a target norm of one Dental Surgeon to every 4000 population by the year 1981. The present position is one Dental Surgeon for every 67000 population. Therefore the number of admissions to the BDS course may be increased from 30 to 50.

15.309 The incidence of oral cancer is very high in the State. A number of such cases require maxillo facial surgery and prosthetic rehabilitation. Considering the importance of such treatment, a Maxillo Facial Surgery Unit has to be set up in the College. It has also been a long felt need to conduct refresher courses for the benefit of Dental Surgeons in service.

10. *College of Nursing, Trivandrum (Outlay Rs.105.30 lakhs)*

15.310 The number of admissions to the B.Sc. Nursing course may be increased from 25 to 30. Steps may be taken to start the B.Sc. Nursing course in other Medical Colleges also. Periodic refresher courses have to be conducted in the College hospital for the nurses already in service. It is also proposed to start an M.Sc. course in Nursing and to train nurses in specialities.

11. *College of Pharmaceutical Science, Trivandrum (Outlay Rs. 15 lakhs)*

15.311 The degree course in Pharmacy was started in the Medical College, Trivandrum in 1967. A separate building for the pharmaceutical college was constructed in 1975. Since the 2nd floor of the building as envisaged in the original plan has not been constructed there is only insufficient accommodation. Hence 1st year B. Pharm class is still being conducted in the University College, Trivandrum, on a part-time basis.

Therefore the second floor of the existing building should be constructed immediately. Post graduate courses in all branches of Pharmacy and a refresher course for the benefit of people who are already in service may also be started.

12. *School of Health Sciences (Outlay Rs. 25 lakhs)*

15.312 University of Cochin has proposed that a School of Health Sciences for post graduate studies may be started in Cochin during the Plan period. The cost of developing such a school at Cochin will be much less than normal. It is pointed out that advantage may be taken of the existence of several private hospitals in the area, which have very well developed departments in neurology, gynaecology, medicine, cardiology, cancer paediatrics etc. with very competent and highly qualified medical personnel in charge of them. Such departments could be recognised as postgraduate centres and the personnel as honorary members of the faculty. The only expenditure to be incurred will be on a common facility centre in the university campus. The estimated expenditure on developing this Centre (library, class rooms and laboratory) will be Rs. 25 lakhs for the entire Plan period.

15.313 Scheme-wise outlay for the development of various institutions of medical education in the State is provided in Tables 15.9 and 15.10.

TABLE 15.9

**Schemewise Outlay on Medical Education, 1978-83**

Sl. No.	Name of Scheme	State Plan outlay (Rs. in lakhs)
(1)	(2)	(3)
<i>Modern Medicine</i>		
<b>I. Medical College, Trivandrum</b>		
1.	Anatomy	1.35
2.	Physiology	5.14
3.	Biophysics	3.98
4.	Biochemistry	11.45
5.	Animal House	7.00
6.	Pharmacology & Therapeutics	7.10
7.	Pathology	6.10
8.	Social and Preventive Medicine	8.25
9.	Forensic Medicine	3.10
10.	Microbiology	20.00
11.	Ophthalmology	14.90
12.	Otorhinolaryngology	1.98
13.	Medicine	7.92
14.	Central Research Laboratory	7.90
15.	Infectious Diseases	0.90
16.	Haematology	6.25
17.	Blood Transfusion Section	13.67
18.	Nephrology	10.01
19.	Endocrinology	5.15
20.	Nuclear Medicine	13.00
21.	Clinical toxicology	1.35
22.	Neurology	4.32
23.	Gastroenterology	5.90
24.	Chest Diseases	11.36
25.	Surgery (Casualty & Emergency)	15.48
26.	Experimental Surgery	20.00
27.	Vascular Surgery	3.61
28.	Orthopaedics	3.42
29.	Traumatology	5.10
30.	Physical Medicine	3.80

(1)	(2)	(2)	(1)	(2)	(3)	(4)
31.	Genitourinary Surgery	5.54	26.	Nephrology	4.45	
32.	Plastic Surgery	5.05	27.	Gastroenterology	5.54	
33.	Thoracic Surgery	9.05	28.	Endocrinology	4.34	
34.	Surgical Gastroenterology	2.26	29.	Paediatric Surgery	7.76	
35.	Neurosurgery	7.20	30.	Neurosurgery	9.84	
36.	Obstetrics & Gynaecology	2.70	31.	Thoracic Surgery	3.00	
37.	Department of Child Health	3.16	32.	Genito-Urinary Surgery	4.11	
38.	Surgical Paediatrics	3.16	33.	Plastic Surgery	3.92	
39.	Dermatology and Venereology	1.00	34.	Genetics	3.84	
40.	Radiology	31.04				
41.	Central Audiovisual Department	2.14		Total—Medical College, Calicut	400.50	
42.	Central Workshop	11.42				
43.	Auditorium	15.00				
44.	Staff Quarters	23.00				
45.	House Surgeons Quarters	10.00				
46.	Sports Medicine	1.51				
47.	Medical Laboratory Technology	10.58				
48.	Stipends for P.G. Students and Senior House Surgeons	45.00				
49.	Regional and Peripheral Limb Fitting Centre	8.00				
50.	Epilepsy and Headache and Rheumatic Clinic	2.00				
	Total—Medical College, Trivandrum	428.20				
II. <i>Medical College, Calicut</i>			III. <i>Medical College, Alleppey.</i>			
<i>Construction of New Buildings:</i>			1.	Anatomy	1.00	
1.	Institute of Maternal & Child Health—Additional Floors to 02 Block	8.00	2.	Physiology	3.00	
2.	Casualty cum Blood Bank Complex	8.00	3.	Bio-Chemistry	3.00	
3.	Speciality Complex including Cancer-Institute	40.00	4.	Pathology	3.00	
4.	Dental Wing	7.50	5.	Bacteriology	3.00	
5.	Peripheral Limb Fitting Centre Additional Floor	1.50	6.	Pharmacology	2.00	
6.	T. B. Hospital	10.00	7.	Forensic Medicine	3.00	
7.	Institute of Maternal & Child Health—Administrative Block cum Store section	8.00	8.	S.P.M.	4.00	
8.	Laundry for Institute of Maternal and Child Health	4.00	9.	Library	10.00	
9.	Central Gas Supply to Institute of Maternal and Child Health	5.00	10.	Overhead Tank	3.00	
10.	Generator for the Hospital	10.00	11.	Quarters	20.00	
11.	Improvements to Mental Hospital	20.00	12.	Nurses' Quarters	10.00	
12.	Nurses Hostel—Additional Floor	7.50	13.	Construction of Hostel	7.50	
13.	Examination Hall cum Auditorium	10.00	14.	Specialities	10.00	
14.	P. G. Hostel cum Single Officers Hostel	9.00	15.	College Building	17.05	
15.	Women's Hostel—Additional Block	8.50	16.	Acquisition of Land	50.00	
16.	Residential Quarters to Staff	25.00	17.	Construction of Hospital	30.00	
17.	Sports Pavilion cum Gymnasium cum Indoor Court	8.00	18.	Equipments for Hospital	25.00	
18.	Building for Consumer Stores	3.00	19.	School of Nursing	12.00	
			20.	Pharmacy Building	2.50	
			21.	Tower Clock	0.70	
			22.	Canteen and Other Building	2.00	
			23.	House Surgeons' Quarters	5.00	
			24.	Guest House	1.00	
			25.	Staff Club	0.50	
			26.	Stadium with Pavilion	2.00	
			27.	Administrative Block	10.00	
			28.	Central Library	10.00	
			29.	Auditorium	5.00	
			30.	Rural Hospital Quarters	1.00	
			31.	Quarters Interns	0.75	
			32.	Quarters in 8 Sub-Centres	4.00	
			33.	O.P. Block	10.00	
			34.	Labour Room	2.00	
			35.	Tropical diseases including Filariasis and Leprosy	2.00	
			36.	Nutrition and Industrial Medicine	1.00	
			37.	Central Workshop	5.00	
			38.	E.N.T.	2.00	
			39.	Child Health	2.00	
			40.	Psychiatry	3.00	
			41.	Medicine (to add 2 more units)	5.40	
			42.	Surgery (to add 2 more units)	5.40	
			43.	O & G (to add 3 more units)	8.40	
				Total—Medical College, Alleppey	307.20	
<i>Development of Departments</i>			IV. <i>Medical College, Kottayam.</i>			
1.	Bio-Chemistry	9.35	1.	College Building	50.00	
2.	Bio-Physics	7.90	2.	Hospital Complex	50.00	
3.	Physiology	4.02	3.	Staff Quarters	10.00	
4.	Anatomy	5.93	4.	House Surgeons' Quarters	5.00	
5.	Pharmacology	3.93	5.	P. G. Hostel	5.00	
6.	Pathology	10.24	6.	Nurses' Hostel	5.00	
7.	Microbiology	8.98	7.	Animal House	3.00	
8.	Forensic Medicine	4.78	8.	Instrument Service	4.00	
9.	Social and Preventive Medicine	11.56	9.	School of Nursing	10.00	
10.	Medicine	3.00	10.	Mental Hospital	3.00	
11.	Surgery	4.00	11.	Anatomy	4.16	
12.	Obstetrics and Gynaecology	5.84	12.	Bio-chemistry	4.70	
13.	Child Health	8.68	13.	Nutrition and Development Department	4.16	
14.	Dermatology and Venereology	3.95	14.	Pharmacology	4.16	
15.	Orthopaedics	7.68	15.	Pathology	5.32	
16.	Ophthalmology	2.00	16.	Microbiology	6.26	
17.	Otorhinolaryngology	2.00	17.	Physiology	4.16	
18.	Tuberculosis and Chest Diseases	5.44	18.	Medicine	4.32	
19.	Anaesthesiology	6.64				
20.	Radiology	8.68				
21.	Psychiatry	2.25				
22.	Dentistry	6.84				
23.	Physical Medicine and Rehabilitation	9.11				
24.	Blood Bank	6.15				
15.	Cardiology	11.75				

TABLE 15.10

(1)	(2)	(3)
19.	Surgery	4.32
20.	Obstetrics and Gynaecology	2.36
21.	Endocrinology and Diabetes	4.16
22.	Cardiology	8.78
23.	Gastroenterology	7.52
24.	Neurology and Neurosurgery	7.68
25.	Physical Medicine and Rehabilitation	3.66
26.	CSR., and Pharmacy	4.00
27.	Social Services	1.08
28.	Ophthalmology	5.60
29.	Institute of Paediatrics	9.40
30.	Preventive Medicine	3.00
31.	Ambulance Van and Staff Car	2.00
32.	Post Graduate Education	19.00
33.	G. P. Training and Stipend	15.00
	Total—Medical College, Kottayam	279.80
<b>IX. Dental College, Trivandrum.</b>		
1.	Construction of Additional Building	25.00
2.	Additional Equipments/Instruments	20.00
3.	Additional Library Facilities	5.00
4.	Organisation of Peripheral training Centres for the Teaching of Community Dentistry	5.00
5.	Organisation of a Unit of Maxillofacial Surgery/Prosthetic Unit, and training P. G. students in Oral Surgery	5.00
6.	Additional Staff	3.50
7.	Refresher Course	0.50
	Total—Dental College	64.00
<b>X. Nursing Education</b>		
1.	Improving the Existing Conditions in Schools of Nursing in the State, and Enhancing Annual Strength of Admission	42.40
2.	Development of Educational Facilities and increasing the strength of Annual Admission to 4 year B. Sc. Nursing Programme	12.90
3.	Starting one New College of Nursing attached to the Medical College	40.00
4.	Revival of Post-Basic B.Sc. Course in Nursing of 2 years Duration	5.00
5.	Organisation of Department of Continuing Education for Nurses in the College of Nursing, Trivandrum	5.00
	Total—Nursing Education	105.30
<b>XI. The College of Pharmaceutical Sciences, Trivandrum.</b>		
1.	Starting of M. Pharm Courses and Refresher Course	9.60
2.	Research Scheme for Ayurvedic Drugs	1.00
3.	Drugs Manufacturing Unit	3.00
4.	Survey of Medical Plants and Research on Medical Plants	1.40
	Total—Pharmaceutical Sciences	15.00

Medical Education—Summary of Programmes

Sl. No.	Name of Scheme	State Plan Outlay (Rs. in lakhs)
I	Medical College, Trivandrum	428.20
II	Medical College, Calicut	400.50
III	Medical College, Kottayam	279.80
IV	Medical College, Alleppey	307.20
V	Cancer Institute (Pilot Project)	15.00
VI	Providing Generators in Medical College Hospitals	15.00
VII	Starting Health Resorts for Workers	1.00
VIII	Training of Teachers in Specialities	10.00
IX	Dental College, Trivandrum	64.00
X	Nursing Education	105.30
XI	The College of Pharmaceutical Science, Trivandrum	15.00
XII	School of Health Sciences, Cochin	25.00
	Grand Total	1666.00

**Control of Communicable Diseases****1. Tuberculosis (Outlay Rs. 5 lakhs)**

15.314 The provision is for meeting the operational cost of T. B. isolation wards already constructed and for taking up the construction of new wards.

**2. Filaria (Outlay Rs. 15 lakhs)**

15.315 The outlay is for the continuance of the existing two units and four clinics and for starting new units and clinics.

**3. Prevention of Air and Water Pollution (Outlay Rs. 20 lakhs)**

15.316 The Government have constituted a Board for the prevention and control of water pollution in the State. The provision is for giving financial assistance to the Board to enable it to perform its functions under the Water Act, 1974.

**4. National Malaria Eradication Programme (Outlay Rs. 100 lakhs)**

15.317 The provision is for the continuance of additional staff appointed under Plan schemes and for appointing District Malaria Officers, one for each District.

**5. Mass Immunisation Programme (Outlay Rs. 20 lakhs)**

15.318 It is proposed to implement the mass immunisation programme with Public support through Panchayats and Social Service Organisations. This programme provides for preventive inoculation against T. B., Small Pox, Diphtheria, Tetanus and Whooping cough among children in the age group zero to five.

**B. Other Systems of Medicine****Indigenous Medicine**

15.319 In Kerala the Ayurveda system of medicine was quite popular from very early times, and it was practised by hereditary 'Vaidyas' as a family

profession. Kerala is one of the states which has preserved and practised this system all through the years. The State has produced many renowned practitioners and 'Pundits' of this 'science of life' and has evolved certain special types of treatment for preservation and recuperation of health. However the starting of colleges both in the public and private sectors offering degree and diploma courses in Ayurveda has naturally pushed up the number of qualified Ayurveda physicians. As a result of the increase in the number of qualified doctors, more Ayurveda hospitals and dispensaries could be opened. At present there are 67 Ayurveda hospitals including 2 Vishavaidya hospitals and one hospital for mental diseases in the State. In addition to the hospitals, 390 dispensaries including 5 Vishavaidya dispensaries are also rendering medical aid to the public. But the existing hospitals and dispensaries are quite insufficient to meet the health care requirements, especially of the rural population.

15.320 There are some other indigenous systems of treatment like 'Sidha' 'Unani' and 'Nature Cure' which are practised on a limited scale in Kerala. These are also found very effective in tackling some diseases. It is, therefore, necessary to preserve the wisdom of the ages that they represent. The schemes proposed in the Plan for indigenous medicine are outlined below:

#### *Minimum Needs Programme*

- (1) *Opening of new Ayurveda Dispensaries (Outlay Rs. 66 lakhs)*

15.321 There are 585 Panchayats in the State without an Ayurveda dispensary. Although it would be desirable to have an Ayurveda dispensary in every Panchayat such a target can be achieved only as a phased programme spread over a reasonably long period. In the Plan for 1978-83 it is proposed to open 110 dispensaries, at the rate of 10 dispensaries in each district. Priority will be given to hilly areas and tribal areas in opening new dispensaries. An amount of Rs. 66 lakhs has been provided in the Plan for starting 110 dispensaries.

- (2) *Upgrading Dispensaries into hospitals (Outlay Rs. 20 lakhs)*

15.322 There is demand for upgrading a large number of dispensaries into hospitals. The situation in the State does not warrant such conversion on a large scale. It is proposed that 25 of the existing dispensaries located in remote and under-developed areas may be upgraded into hospitals during the plan period. The scheme will cost Rs. 20 lakhs.

#### *Hospitals and Dispensaries.*

- (1) *Opening of New Ayurveda Hospitals (Outlay Rs. 60 lakhs)*

15.323 At present 11 taluks do not have any Ayurveda hospitals. Therefore new hospitals may be started in those taluks. The status of some of the existing taluks hospitals will also have to be raised. An amount of Rs. 60 lakhs is provided in the Plan for starting new Ayurveda hospitals and for raising the status of some of the existing hospitals.

- (2) *Construction of Buildings for Ayurveda Hospitals and Dispensaries (Outlay Rs. 99 lakhs)*

15.324 Most of the Ayurveda institutions are housed in rented buildings. These buildings designed for other purposes are not suited to have a hospital or dispensary. At the same time Government has to spend a large amount as rent. It is proposed to construct buildings for three district hospitals, 10 taluk hospitals and 100 dispensaries during the present plan period. The outlay earmarked for the scheme is Rs. 99 lakhs.

- (3) *Construction of Nurses' Quarters (Outlay Rs. 50 lakhs)*

15.325 A sum of Rs. 50 lakhs is provided for the construction of Nurses' Quarters for all the District Hospitals and for 11 Taluk Hospitals.

- (4) *Construction of Staff Quarters for 100 Dispensaries (Outlay Rs. 50 lakhs)*

15.326 A large number of dispensaries are functioning in remote rural areas of the State. The Staff working in such places are finding it difficult to get accommodation in such areas. Therefore, quarters will have to be provided for the staff working in such areas. An allocation of Rs. 50 lakhs is made for the construction of staff quarters attached to 100 dispensaries.

- (5) *Starting of 'Marma Section' in Taluk Hospitals and development of Panchakarma (Outlay Rs. 20 lakhs)*

15.327 It is proposed to start a 'Marma Section' and panchamarma treatment in all the Taluk Hospitals. The outlay envisaged for the scheme is Rs. 20 lakhs.

- (6) *Improvement of Mental Hospital, Kottakkal (Outlay Rs. 12 lakhs)*

15.328 The present facilities at the mental hospital, Kottakkal are to be improved. A clinical laboratory should be started in the mental hospital. Additional accommodation is also required. An amount of Rs. 10 lakhs is provided for the scheme.

- (7) *Model Ayurveda Health Resort (Outlay Rs. 10 lakhs)*

15.329 People from different parts of India and abroad visit Kerala now with a view to undergo Ayurveda treatment and to take rest in some Ayurveda Health Resort. Therefore, it is proposed to start a model Ayurveda Health Resort during the next plan period. The outlay needed for the proposed health resort is Rs. 10 lakhs.

- (8) *Nature Cure Centre (Outlay Rs. 14 lakhs)*

15.330 Nature cure is found to be very effective for certain types of diseases. At present there is no Government institution in the state with all the necessary facilities to give treatment in Nature Cure (Naturopathy). A Nature Cure centre may, therefore, be started at Varkala. The financial outlay needed for the centre is Rs. 14 lakhs.

- (9) *Survey of Medicinal plants and Establishment of Medicinal Plant Farms*

*Plant Farms (Outlay Rs. 14 lakhs)*

15.331 Some of the very important Ayurveda plants and herbs are not easily available now. Unless



timely steps are taken to grow them in farms, in due course these valuable herbs may become extinct and may thus be lost for ever. Therefore, to preserve such plants and herbs and to make them easily available to the medical practitioners and patients it is necessary to start farms to grow medicinal plants and herbs. 5 such farms are proposed to be started during the plan period. The total outlay envisaged for the purpose is Rs. 14 lakhs.

(10) *Other Schemes (Outlay Rs. 125 lakhs)*

15.332 Establishment of 2 Sidha Vaidya hospitals and dispensaries, establishment of 3 Unani dispensaries, starting of Mobile dispensaries, Expansion of Drug standardisation unit, starting of Drugs Testing Laboratory, Training Programme for Nurses and Pharmacists, starting of paywards, and strengthening of District Offices and the administrative machinery are some of the other schemes included. The list of schemes and outlay proposed are appended.

### III. Education

#### *Indigenous System of Medicine*

15.333 Eventhough Ayurveda system of medicine had a glorious past it has failed to keep abreast of modern developments in science and technology, as it was allowed to stagnate for centuries. Many of the monumental works of stalwarts of the science are not available, or only partly available today. Though the gurukula system has served as an unailing means to preserve and transmit the knowledge of Ayurveda, it does not suit the taste, demand and convenience of the present day society. Therefore steps should be taken to bring about qualitative and quantitative improvement to Ayurvedic Education, giving due impotence to advanced study and research.

15.334 At present there are five Ayurveda colleges in the state with an intake capacity of 140 students. This intake capacity is very meagre when compared with the population and requirements of the state. Therefore the facilities in the colleges have to be increased so that a greater number of students could be admitted. Further, the facilities now available in the colleges do not satisfy the criteria laid down by the Central Council of Ayurveda and it is imperative that steps are taken to make qualitative improvement in the major faculties in all the colleges.

(1) *Ayurveda College, Trivandrum (Outlay Rs. 20 lakhs)*

15.335 The Departments of Sanskrit, Samhita and Sidhantha should be strengthened. The existing museum has to be enriched with the addition of charts and models. The department of Sareera also has to be strengthened by providing additional staff, furniture equipment and chemicals. The department of Dravyaguna and Rasasastra should be equipped with a museum and the necessary instruments. The staff position has to be improved in the department of Swasthawritha also.

(2) *Ayurveda College, Trippunithura (Outlay Rs. 30 lakhs)*

15.336 All the major departments like Sanskrit, Samhita and Sidhantha, Sareera, Dravyaguna and Rasasastra, and Swasthawritha require strengthening. The departments of Dravyaguna and Rasasastra need more machines and equipments. The museum in the

department of Swasthawritha has to be enriched by obtaining more charts and models to be exhibited.

(3) *Ayurveda College, Shoranur (Private) (Outlay Rs. 25 lakhs)*

15.337 The college was started by private management about 60 years ago. It appears that the management is not in a position to invest the necessary amount to improve the teaching facilities in the college to the specified level. The very nature of the course of study offered in the college makes it absolutely necessary to have adequate facilities such as hospitals, laboratory, theatre, pharmacy, library etc., involving huge financial commitments. If financial assistance is not given by the Government the standard of education in this college will deteriorate to a very low level. Therefore it has become imperative on the part of the Government to render liberal financial assistance to this institution and to improve the standard of education there. Scheme to improve all the major departments in the college have been included in the plan. The financial outlay required for these schemes is Rs. 25 lakhs.

(4) *Ayurveda College, Kottakkal (Private) (Outlay Rs. 30 lakhs)*

15.338 The facilities in the pre-clinical departments need improvement in this institution also. The department of Sanskrit, Samhita and Sidhantha require additional building, furniture and equipment. All the departments have to be strengthened. At present the students are not getting adequate training in pharmacy owing to lack of facilities. A building has to be constructed immediately to house the pharmacy. Necessary machinery and requirements must also be provided in the department of pharmacy. A sum of Rs. 30 lakhs have been earmarked to improve the facilities in this college.

(5) *Ayurveda College, Ollur (Private) (Outlay Rs. 35 lakhs)*

15.339 The college came into existence only two years back. The college does not have even the necessary buildings to run an institution of its kind. If the college is to function efficiently and to maintain the specified standards of education the required facilities will have to be provided. But the management may not be in a position to invest all the necessary amount immediately. Therefore the state government will have to give financial assistance to the college to face this difficult situation. However the management should also be made to contribute 50 per cent of the total amount needed. The financial outlay required to be earmarked by the Government to improve the facilities in this college during the Plan period is estimated at Rs. 35 lakhs.

(6) *Opening a new Ayurveda College at Cannanore (Outlay Rs. 90 lakhs)*

15.340 Since the present annual intake of 140 students is not sufficient to meet the medical care needs of a population of 250 lakhs it is high time that steps were taken to start a new Ayurveda College. Further as there is no Ayurveda College in the northern parts of the State the proposed Ayurveda College may be started at Cannanore. A provision of Rs. 90 lakhs is made for the establishment of the new Ayurveda College.

(7) *Education at post-graduate level (Outlay Rs. 210 lakhs)*

15.341 Post-graduate course in Kayachikitsa was started in the state only during 1971. The scheme was sponsored by the Government of India with cent per cent financial assistance. Accommodation and hospital facilities were provided by the state government. The admission capacity was 20 of which 10 seats are reserved for students from outside the State.

15.342 One more department 'Pharmacy and Dravyaguna' was started during 1972. Pharmacy, Dravyaguna and Rasasastra are the subjects of specialisation available in the department. Due to the dearth of qualified teachers and other facilities and on account of financial difficulties the post graduate centre at Trivandrum does not yield the result expected of it. The present difficulties in its functioning should be removed and it may be developed into a fullfledged and autonomous institution. Rs. 210 lakhs is provided for improving the education at post graduate level.

(8) *Research at Advanced Level (Outlay Rs. 50 lakhs)*

15.343 At present is no facilities for advanced research in Ayurveda in the State. The only institute for advanced research in the country is functioning at Jaipur under the direct control of the Central Government. But a single institute for the whole country is insufficient especially to conduct research in Kerala specialities and on herbs available only in the State. Therefore it is essential to establish an institute for advanced research in the state. The expenditure for the Centre could be reduced to a great extent if the research activities are done in collaboration with the university of Kerala and Medical College, Trivandrum. A provision of Rs. 50 lakhs is made for the Institute in the Plan.

(9) *Establishment of an Ayurveda University (Outlay Rs. 125 lakhs)*

15.344 The only one Ayurveda University in India is in Gujarat. Even though Ayurveda is more popular in Kerala and there are five Ayurveda Colleges in the State, a university for the promotion of this branch of knowledge could not be started in the state so far. A project report for the proposed university has already been prepared and submitted to the government. The Government also accepted in principle the need for the establishment of a university. Hence a provision of Rs. 125 lakhs is included in the plan for the starting of an Ayurveda University as envisaged in the project report already submitted. The existing Regional institute, Poojappura will be brought under the proposed university.

(10) *Training in Prakurthi Chikitsa (Outlay Rs. 15 lakhs)*

15.345 Prakurthi Chikitsa (Naturopathy) has been in vogue in our country from time immemorial. It is becoming more popular now a days. This system of treatment is less expensive and is found very effective in certain types of diseases. It is therefore considered necessary to give some encouragement to this system of treatment. For this a Prakurthi Chikitsa Centre (Naturopathy Centre) may be started at Trivandrum with 25 beds. Both training and treatment can be arranged at the Centre. The amount required for the proposed Centre is Rs. 15 lakhs.

(11) *Sidha Vaidya Education (Outlay Rs. 7.50 lakhs)*

15.346 Sidha Vaidya is not so popular as Ayurveda in this state and there is no scope to open a Sidha Vaidya college in the State at present. But five students can be selected and sent every year to undergo the training course at the Sidha Vaidya College at Palayamkotta in Tamil Nadu on reciprocal basis, i.e. giving admission to an equal number of students from Tamil Nadu to the Ayurveda Colleges in the State. Arrangements have also to be made to give a short term training course of 6 months to existing unqualified practitioners in the state. On completion of training they may be given registration. The course can be conducted in Ayurveda College, Trivandrum, obtaining the services of experienced hands. Rs. 7.50 lakhs has been provided for stipend to students and to meet other expenses.

(12) *Unani Education (Outlay Rs. 7.50 lakhs)*

15.347 There are no approved institutions imparting unani education in the state. The system of treatment is however popular in certain parts of the state. As in the case of Sidha system 5 students may be selected and sent to the colleges in Hyderabad or Mysore for training. They may be given a stipend of Rs. 300 p.m. Short term training courses may be conducted for existing practitioners in the State and they may be given registration. An amount of Rs. 7.50 lakhs is provided.

(13) *Training in Yoga Chikitsa (Outlay Rs. 10.00 lakhs)*

15.348 Yoga Chikitsa is popular in the state. People from other countries came to India and especially to Kerala for undergoing this system of treatment. Therefore a Yoga Chikitsa Centre may be started at Trivandrum. Both training and treatment could be conducted at the Centre. The amount required for establishing the Centre is Rs. 10 lakhs

(14) *Other Schemes (Outlay Rs. 298.00 lakhs)*

15.349 In addition to the major schemes, provision has been made for the construction of hostels, conducting courses for unqualified practitioners, collection and preservation of manuscripts, preparation of text books, development of a herbs garden and museum, expansion of college libraries, health education programme, etc. The list of schemes and the proposed outlays are appended.

II. *Homoeopathy*

15.350 The treatment of diseases under the Homoeopathic system is considered to be simple, harmless and inexpensive when compared to other systems of medicine. In spite of this advantage, the number of Government institutions offering medical aid under this system is quite few in state. This is mainly due to the late start made in the case of this system. There are at present only 122 Homoeo institutions in the State, 9 hospitals and 113 dispensaries.

A. *Hospitals and Dispensaries*(1) *District Hospitals (Outlay Rs. 10.00 lakhs)*

15.351 Out of 11 districts in the state Homoeo Hospitals exist only in 9 districts. The two districts which do not have a Homoeo hospital are Idukki and Quilon. Two more Homoeo hospitals will have to be

started in these districts during the plan period. The hospitals will be having 25 beds to start with. The financial outlay required for starting the hospitals is Rs. 10 lakhs.

(2) *Taluk Hospitals (Outlay Rs. 43.50 lakhs)*

15.352 There are no Taluk Hospitals at present under the Homoeo system of medicine. Hence as a first step 20 taluk hospitals may be started during the plan period. As far as possible these hospitals should be opened in Taluks where the health care facilities are relatively underdeveloped. Rs. 43.50 lakhs has been provided for this purpose.

(3) *Dispensaries (Outlay Rs. 110 lakhs)*

15.353 Out of the 985 Panchayats in the State 105 have been provided with a homoeo dispensary. The starting of dispensaries in all the panchayats during the next plan period itself will necessitate huge investments. Therefore new dispensaries may be opened in 110 Panchayats only. The Panchayats which are lying in inaccessible hilly areas and water-logged areas should be given priority when these dispensaries are started. The financial provision required for the scheme is Rs. 110 lakhs.

(4) *Opening of District Offices (Outlay Rs. 12 lakhs)*

15.354 At present there are no district offices for the department. The expansion of the department with hospitals in more Taluks and dispensaries in a large number of Panchayats will make it necessary to constitute an Agency at the District level for proper supervision and co-ordination of the various activities. Therefore, eleven district offices may be started during the plan period. A provision of Rs. 12 lakhs is provided in the plan for the starting of district offices.

(5) *Strengthening of Administrative Wing in the Directorate (Outlay Rs. 3.70 lakhs)*

15.355 As the activities of the department expand, there will be a corresponding increase in the workload at the Directorate. To cope with the increasing workload, the administrative wing of the Directorate will have to be strengthened. An amount of Rs. 3.70 lakhs is provided for strengthening the Directorate.

(6) *Increasing the bed strength in District and Taluk Hospitals (Outlay Rs. 33.55 lakhs)*

15.356 At present there are only 225 hospital beds in the State under the homoeopathic system of medicine. This is quite insufficient to meet the requirement for hospital beds. Therefore, 1000 additional hospital beds will have to be provided during the plan period. The scheme will cost Rs. 33.55 lakhs.

(7) *Providing modern equipments and other facilities in the hospitals (Outlay Rs. 33.55 lakhs)*

15.357 The Homoeo Hospitals in the State have not been provided with any modern diagnostic devices such as X-ray, Clinical Laboratory, E.C.G. etc. At least the district headquarters hospitals should be equipped with these essential facilities. While providing these facilities priority should be given to the hospitals in Trivandrum, Kurichy and Ernakulam where clinical training is imparted to the students of Homoeo colleges. The outlay required for the scheme is Rs. 30 lakhs.

(8) *Mobile Dispensaries (Outlay Rs. 15 lakhs)*

15.358 To provide medical relief at the door step of the villagers and to make it within easy reach of people living in remote areas, it has become necessary to start Mobile Dispensaries. Moreover, the starting of Mobile Dispensaries will also help to detect diseases at the early stage itself, especially among the backward people like Tribals who do not go to the hospitals in the normal course. It is proposed to start eleven Mobile Dispensaries during the period 1978-83. A financial outlay of Rs. 15 lakhs is needed for the scheme.

(9) *School Health Programme (Outlay Rs. 6.25 lakhs)*

15.359 Detection of diseases at the early stages among the children would be greatly helpful in curing it completely. The efficiency of Homoeopathy in treating the common diseases among children is well established. Therefore, it is high time that steps were taken to bring more students under the school health programme (Homoeopathy). Since the number of students is so large the scheme may be introduced at primary and upper primary level in selected areas of the State only. An outlay of Rs. 6.25 lakhs has been provided for the scheme.

(10) *Starting of Urban Hospitals for Infectious Diseases (Outlay Rs. 6 lakhs)*

15.360 Infectious diseases can be brought under control and cured speedily by Homoeopathic treatment. Hence there is scope for starting Homoeo hospitals exclusively for the treatment of infectious diseases. Three hospitals of this kind may be started during the next plan period. To start with, the number of beds in each hospitals can be limited to 10. The amount required for the scheme is Rs. 6 lakhs.

(11) *Starting of a Drug Unit (Outlay Rs. 10 lakhs)*

15.361 There is already a Pharmacy in the Co-operative sector for the manufacture of Homoeo medicines. But medicines produced by this unit are not sufficient to meet the demand from Government institutions and private practitioners in Homoeopathy. A drug manufacturing unit may be started in the Public sector during the Plan period. This unit will cost Rs. 10 lakhs.

(12) *Construction of buildings for the hospitals and the Directorate (Outlay Rs. 60 lakhs)*

15.362 At present most of the hospitals and the Directorate are housed in rented buildings. It may not be possible to construct new buildings for all of them immediately. However this has to be undertaken as a phased programme. As the first stage, buildings may be constructed for all the district hospitals and for Directorate. Now, only the district hospital at Trivandrum has its own building. Therefore, during the present plan period, buildings should be constructed for 10 district hospitals and for the Directorate. An amount of Rs. 60 lakhs is earmarked for the scheme.

(13) *Co-operative Society for the manufacture of Homoeo Medicines (Outlay Rs. 2.50 lakhs)*

15.363 The outlay is for giving financial assistance to the co-operative society engaged in the manufacture of Homoeo medicines.

## II. Education (Outlay Rs. 500 lakhs)

15.364 In the State a regular Homoeopathic College was started in 1958 at Kurichi near Kottayam, conducting an academic Diploma course of four years duration followed by an internship of 6 months in Homoeo hospitals. Later on two more colleges came into existence conducting the same type of Diploma course in Homoeopathy. In 1971, in order to fall in line with the All India pattern and to ensure uniformity throughout the country in respect of Homoeopathic Education, the State Government decided that the D.H.M.S. course formulated by the Homoeopathic Advisory Committee of the Central Government should be the Diploma course conducted in all the three colleges of the State.

15.365 In Medical Education Diploma Courses should always be only a stop gap arrangement to meet the demand in the initial stage. The idea would always be very comprehensive and intensive course of study leading to Degree and post-Degree courses. With this end in view the Government started a degree college in Homoeopathy in 1975. This institution is only in its infancy and the three colleges started in the private sector are still conducting only Diploma courses. These colleges themselves are in very great financial difficulties and are not able to keep up desired standards in Homoeopathic Education. Therefore the proposals made in the Plan aim at the following objectives.

(1) The Degree College which is in its infancy be developed into a full-fledged College in the next 3 years by which time the first batch admitted to the Degree Course completes the academic career.

(2) There are nearly 2000 Diploma holders in the State and every year about 200 Diploma holders are coming out from the 3 existing Colleges. It is essential that condensed courses are conducted and these diploma holders given a chance to undergo further intensive training and acquire degrees. Provision is to be made to start a condensed degree course in Homoeopathy in the state and make it a full-fledged institution within 2 years, which is the duration fixed by the Central Council of Homoeopathy for the condensed course.

The existing degree college in Homoeopathy is in a northern district, viz., Calicut. The present intake is restricted to 30 per year. It is essential that more graduates are turned out every year and for that the admission in the Calicut College should be raised to 50 and a new College should be started in one of the southern districts. Provision has to be made for this also.

(3) The private colleges running the Diploma Courses are financially handicapped. Government have evolved a Grant-in-aid Scheme and have offered some help to the private colleges. But the help is not adequate to give the desired effects owing to paucity of budget allotments. Hence, in order to make the colleges viable and to upgrade them into Degree Colleges substantial help is to be given in the form of instituting 'Direct Payment' to the staff by Government.

### (4) Research in Homoeopathy

Homoeopathy is founded on the nature's law of cure. This law of cure is unchangeable as far as the

nature remains unchangeable. Hence research or any endeavour to change this law of cure appears to be futile but the scope of research in Homoeopathy is unlimited and can be classified as drug proving and clinical proving of medicines and study of medicines in the light of the recent developments in pathology, combining the study of medicine with pathological data.

15.366 In addition to the study and research in drug proving and clinical proving, it is proposed to undertake research studies in the treatment of Cancer, Hypertension and Cardiac diseases and Filariasis.

### C. Other Programmes

#### 1. A. Laboratory Services (Outlay Rs. 100 lakhs)

##### (i) Anti-rabic Vaccine Manufacturing Section

15.367 The demand for anti-rabic vaccine both curative and prophylactic is increasing progressively year by year. With the present facilities it is difficult to increase the production further. Therefore it is essential to expand the Anti-rabic Vaccine manufacturing units. An outlay of Rs. 38 lakhs is required for the scheme.

##### (ii) Anti-Cholera and T.A.B. Vaccine Manufacturing Sections

15.368 This laboratory is catering not only to the Government medical institutions but to the private practitioners and local bodies like City Corporations and Municipalities who are also involved in the activities of health promotion. An amount of Rs. 12 lakhs is proposed for the expansion of facilities in the laboratory.

##### (iii) Sterile Solution Section

15.369 Sterile Solution, Glucose saline and distilled water are supplied by this laboratory. Rs. 3 lakhs may be provided for the expansion and improvement of facilities in the laboratory.

##### (iv) Biological Standardisation Units

15.370 Development of this branch of diagnostic service has become a necessity as the bio-chemical techniques are developing at very fast rate. Further, being, a State level laboratory, highly specialised bio-chemical investigations are to be done here. This requires additional equipments chemicals and buildings. For the scheme Rs. 10 lakhs is proposed.

##### (v) Bacteriology Section

15.371 This is an important branch in the laboratory services and detailed bacteriological tests like culture and sensitivity are done here. This work is very essential for epidemiological investigations. The role of this unit becomes crucial at the times of out-break of communicable diseases. A provision of Rs. 1 lakh is made for the improvement of facilities in this unit.

##### (vi) Serology Section

15.372 Detailed tests like Blood Widal and VDRL are done here. As a result of the increasing attention being given to the prevention of sexually transmitted

diseases, the volume of VDRL test done here is also increasing. Hence the facilities in this unit may be expanded. An amount of Rs. 3 lakhs is provided for this.

(vii) *Media Section*

15.373 The work in this unit includes the preparation and sterilisation of Media, Solutions and other equipments for all the units. Rs. 4 lakhs is set apart for the improvement of the unit.

(viii) *Animal House*

15.374 For conducting the biological test in animals like Mice, Guinea Pigs, Rabbits, etc., breeding of the animals in large numbers in the laboratory is an absolute necessity. A provision of Rs. 3 lakhs is made for improving the facilities.

(ix) *Workshop*

15.375 Proper maintenance and repairs of instruments in the central laboratory as well as district laboratories are very essential. To expand the facilities in the workshop Rs. 3 lakhs is provided.

(x) *Library (Technical)*

15.376 The books of a referral nature are costly. But they are absolutely necessary to the technical staff in their day to day activities. The technicians working in the laboratory should be exposed to the latest developments in the field. For the expansion of the library Rs. 1 lakh is earmarked.

(xi) *Regional Laboratories*

15.377 Besides the State Laboratory there are two Regional Laboratories, one at Ernakulam and the other at Calicut. To improve the existing facilities in these two laboratories Rs. 6 lakhs is provided.

(xii) *Administration, Store and Transport*

15.378 Rs. 4 lakhs has been provided for the construction of a new building to accommodate the store. For getting more equipments and chemicals Rs. 10 lakhs has been earmarked. This outlay includes the provision for the purchase of a vehicle also. Rs. 2 lakhs has been set apart for strengthening the administrative personnel.

(b) *Chemical Examiners Laboratory (Outlay Rs. 14 lakhs)*

15.379 More than 1500 chemical examinations have to be carried out in the Laboratory every year. It is essential to supply results of the chemical analysis to the Judiciary and Police Departments within the prescribed time limit. To expedite such items of work it is necessary to strengthen the staff. Additional building and equipments are also essential for the laboratory. The outlay proposed is for strengthening the Chemical Examiner's Laboratory with additional staff and with modern equipments and also for construction of the building.

2. *Drugs Control (Outlay Rs. 35 lakhs)*

15.380 The provision is for strengthening the Drugs Control Organisation and Drugs Testing Laboratory and for appointing additional staff. Additional buildings will also have to be constructed for the laboratory.

3. *Health Statistics and Research (Outlay Rs. 1 lakh)*

15.381 The outlay is for strengthening the Statistical Wing in the Directorate and the District Offices, purchase of calculating machines and for setting up an inspection wing.

4. *Health Education and Publicity (Outlay Rs. 30 lakhs)*

15.382 Health Education aims at building up a new outlook on health, developing a group norm for new patterns of behaviour in tune with the progress achieved by medical science from time to time and preparing the community at large to avail of the various health services provided by government and other agencies. This has to be achieved by emanating basic knowledge on health, providing information on services and achieving a new value orientation based on health consciousness. For this the existing Medical Division has to be strengthened and Audio Visual Equipments and educational materials have to be supplied to the various district Health Education Units. The Education and Training programme of the personnel in the health department has to be pursued more vigorously. Community leaders and representatives of voluntary organisations should be given health education by conducting workshops and camps. Health education camps should be organised exclusively for school teachers so as to enable them to prepare a curriculum on health education. Seminars and camps should be organised for students also to make them health conscious.

5. *Food Administration (Rs. 100 lakhs)*

15.383 Food Administration consists of two parts—

1. Implementation of 'Prevention of Food Adulteration Act' and

2. Laboratory Services.

15.384 At present there are 50 Food Inspectors working in the Panchayats. According to the specified norm 2745 food samples will have to be collected from the Panchayats. In the normal course one Food Inspector is able to collect only 35 samples a month. Therefore 28 Food Inspectors are to be posted additionally. Besides, more Mobile Vigilance squads should also be posted. Since the Food Inspectors have to cover remote areas of the State, the inspectors working in those areas should be provided with motor bicycles.

15.385 With the increase in the collection of samples the work in the Analytical laboratories will also go up. Therefore the services of more Chemists will be required in the Laboratories. They will have to be provided with necessary equipments also. Thus an amount of Rs. 100 lakhs will have to be provided for Food Administration during the next five years.

6. *School Health Programme (Outlay Rs. 28 lakhs).*

15.386 The objective is to introduce a comprehensive school medical inspection and health education programme in all the Panchayats. All the L. P. Schools in the State will be covered during the Plan period. On an average there are six Panchayats in a P. H. C. area, and in each Panchayat there are seven L. P. Schools. Thus every P. H. C. has to cover 42 L. P. Schools in the Plan period.

15.387 Regarding health education a one week training in health education will be conducted for 45 teachers, selecting one teacher from each of the primary schools in the P. H. C. area.

15.388 In every revenue district a full time school medical officer, preferably a paediatrician will be posted. He will assist the District Medical Officers and the Medical Officers of the P. H. Centres and Government Rural Dispensaries to carry out the medical inspection programme of school children in the district.

7. *Tribal Sub-Plan (Outlay Rs. 15 lakhs)*

15.389 It is proposed to start M. C. H. Centres and Health Education Centres in the Tribal Block, Attappady. Purchase of M. M. Units and conduct of health survey in the Tribal Block area is also proposed.

8. *Providing power Laundries and Generators (Outlay Rs. 30 lakhs)*

15.390 It is proposed to provide power laundries and generators in the major hospitals where they do not exist at present.

9. *Schemes benefiting Scheduled Castes and Scheduled Tribes (Outlay Rs. 10 lakhs)*

15.391 The provision is for the continuance of the two dispensaries started and for opening new dispensaries in areas where scheduled castes and scheduled tribes are concentrated.

10. *Medical Insurance Scheme (Outlay Rs. 100 lakhs)*

15.392 Comprehensive coverage of medical services for all sections of society is a social obligation in a welfare State. The increasing cost of medical services makes medical care the privilege of the socially and economically advanced classes. It is therefore, proposed that a comprehensive medical insurance scheme be initiated in the State. During the present plan period, the scheme will cover all the children enrolled in the lower primary, upper primary and secondary schools and other recognised educational institutions in the State by a phased programme. The ultimate goal should be to bring the entire population under the scheme. The scheme will be on the lines of the Blue Cross in U. S. A. and the National Health Service in Britain. A society will have to be registered for this. All Government hospitals and recognised Private hospitals can be brought under the scheme for medical insurance. The rates of premium can be worked out later taking into consideration the cost of the service and the capacity of the insured. It is expected that this will help in due course to bring down the premia for life insurance and educational policies. The scheme should be self supporting, but an initial outlay of Rs. 100 lakhs is included for this in the Plan.

11. *Starting a programme of studies in health/hospital administration (Outlay Rs. 20 lakhs)*

15.393 The intention is to introduce modern management practices in health administration and thus to release medical personnel from the chores and responsibilities of day to day administration, thereby enabling them to concentrate on their own profession. The hospital administration programme of studies should be designed in such a way that the students are exposed to and trained in the application of modern management practices to hospital and health administration problems. The programme may be developed jointly by Health Department authorities and the school of Management, University of Cochin.

15.394 An outlay of Rs. 20 lakhs is earmarked for the scheme.

TABLE 15.11

Health—Scheme-wise Outlay

(Rs. in lakhs)

Sl. No.	Scheme	Fifth Plan outlay 1974-79	Expenditure 1974-78	Budgeted Outlay 1978-79	Outlay Proposed for 1978-83
(1)	(2)	(3)	(4)	(5)	(6)
<i>Public Health and Sanitation</i>					
<i>Modern medicine</i>					
1. <i>Minimum Needs Programme</i>					
1.	New P. H. Centres in C.D. Blocks and providing more beds in the P.H. centres	55.00	45.63	13.00	330.00
2.	Strengthening of P.H. Centres	4.00	1.71	2.00	120.00
3.	Providing quarters for the staff in P.H. centres	20.00	6.01	5.00	150.00
4.	Rural Dispensaries	275.00	206.47	53.00	251.00
5.	Drugs for existing sub-centres and other institutions	85.00	68.55	20.00	200.00
6.	Mobile medical unit/P.H.C. for tribal Block, Attappady	4.00	1.56	1.00	3.00
7.	Revision of staff pattern—Nurses	10.00	35.00	12.00	40.00
Sub total (Minimum Needs)		453.00	364.93	106.00	1094.00

(1)	(2)	(3)	(4)	(5)	(6)
<b>II. Hospitals and Dispensaries</b>					
1.	Raising bed strength in District Hospitals and Construction of District Hospital buildings at Idukki and Malappuram	10.00	3.51	6.00	160.00
2.	Introducing all essential specialities in District Hospitals	24.00	10.72	6.00	100.00
3.	Poly clinics in District and General Hospitals	50.00	54.48	5.00	80.00
4.	Better equipments to major Hospitals including steriliser	19.00	6.96	5.96	50.00
5.	Janatha Pay Ward and Pay Ward Scheme (K.H.R.W.S.)	6.00	2.23	4.00	100.00
6.	Taluk Headquarters Hospitals raising bed strength etc.	40.00	29.25	5.00	30.00
7.	Opening new Taluk Hospitals, Deviculam, Peermade, Udumbanchola etc.	15.00	2.80	5.00	40.00
8.	Providing specialities, opening new units and strengthening of Medical record section in Taluk Hospitals	4.00	3.94	1.00	50.00
9.	Construction of building and provision of vehicles to District Medical Stores	25.00	12.02	5.00	10.00
10.	Conduct of medical check up camps	2.00	1.70	0.50	3.00
11.	Improving medical facilities in Idukki District	2.00	..	0.50	3.00
12.	Providing Ambulance Van in District and Taluk Hospitals	4.00	..	2.00	50.00
13.	Drugs banks in District Hospitals	--	..	0.01	0.50
14.	Mobile Dispensary, Kuttanad	--	--	0.01	1.00
15.	Health Transport including Mobile unit for Repairs and Maintenance of Hospital equipments	..	..	0.01	14.00
16.	Institute for Mental Health and Neuro Sciences	..	..	..	50.00
17.	Improvement of Health care system	..	..	..	380.00
18.	Health care programme in selected area	..	..	0.01	1.00
	Sub-total	201.00	127.61	46.00	1122.50
<b>III. Medical Education</b>					
1.	Medical College, Trivandrum	67.00	35.46	13.50	428.20
2.	Medical College, Calicut	54.00	65.96	17.50	400.50
3.	Medical College, Kottayam	46.00	59.21	10.00	279.80
4.	Medical College, Alleppey	25.00	21.75	13.00	307.20
4.(a)	T.B. Association, grant-in-aid	..	0.74	..	..
4.(b)	E.S.I. Hospital, Arpookkara	8.00	20.13	..	..
5.	Starting Pilot Project for Cancer and Cancer Institute	..	2.00 5.00	1.00 3.00	15.00
6.	Providing generators in the Medical College Hospitals	4.00	2.00	3.00	15.00
7.	Starting Health resorts for workers	--	2.00	0.20	1.00
8.	Training of Teachers in specialities and continuing Medical Education	7.00	7.60	1.50	10.00
9.	Dental College, Trivandrum	..	..	..	64.00
10.	Nursing Education	..	..	..	105.30
11.	College of Pharmaceutical Science, Trivandrum	33.00	22.90	9.00	15.00
12.	School of Health Sciences at Cochin	..	..	..	25.00
12(a)	Establishment of Kerala Institute of Health Sciences (included under Science and Technology).	..	..	1.00	..
	Sub-total	244.00	244.75	72.70	1666.00

(1)	(2)	(3)	(4)	(5)	(6)
<b>IV. Control of Communicable diseases</b>					
1. Tuberculosis		5.00	4.23	1.00	5.00
1 (a) Leprosy		1.00	0.03	..	..
2. Filaria		13.00	5.98	3.00	15.00
3. Prevention of air and water pollution		11.00	8.00	6.00	20.00
4. National Malaria Eradication Programme—Additional operational cost		..	19.86	18.79	100.00
5. Mass immunisation programme		..	7.00	4.00	20.00
Sub-Total		30.00	45.10	32.79	160.00
<b>B. Other Systems of Medicines</b>					
<b>(i) Indigenous Medicine</b>					
<b>I. Minimum Needs Programme</b>					
1. Opening of New Dispensaries		110.00	91.44	20.00	66.00
2. Upgrading Dispensaries into hospitals		..	..	..	20.00
<b>H. Hospitals &amp; Dispensaries</b>					
1. Opening New Ayurveda hospitals		11.00	8.99	5.00	60.00
2. Construction of buildings to Ayurveda Hospitals, Dispensaries and increasing bed strength		18.00	13.78	6.00	99.00
3. Construction of Nurses quarters		..	..	..	50.00
4. Construction of staff quarters for 100 Dispensaries		..	..	..	50.00
5. Starting Marma section in Taluk hospitals and development of Panchakarma		..	1.00	1.00	20.00
6. Improvement of Mental Hospital, Kottackal		..	..	..	12.00
7. Model Ayurveda Health Resort		..	..	..	10.00
8. Nature cure centre		..	1.00	2.00	14.00
9. Survey of Medical Plants and Establishment of Medical plant farms		..	..	..	14.00
10. Establishment of Sidha Vaidya Hospitals & Dispensaries		..	..	..	3.60
11. Establishment of 3 Unani units		..	..	..	6.90
12. Starting of Mobile dispensaries		..	..	..	6.00
13. Expansion of drug standardisation Unit		3.00	1.23	2.00	5.00
14. Starting of drug testing laboratory		..	..	..	10.00
15. Training programme for Nurses & Pharmacists		..	..	0.10	5.00
16. Starting of Payward in the Irinjalakuda & Cannanore Hospitals		..	..	..	5.00
17. Strengthening of Staff	(i) District (ii) Directorate	3.00	1.77	2.00	9.00 10.00
18. Improvement to Botanical Garden, Poojappura—Model demonstration garden of herbs—Poojappura		..	1.00	1.00	5.00
19. Purchase of vehicles for dispensaries and District offices		..	..	..	14.50
20. Improvement of Pharmaceutical Corporation		3.00	3.00	2.00	5.00
21. Improvement of central stores and establishment of district stores		..	..	..	18.00
22. Raising status of Hospitals into District Hospitals		..	..	..	15.00
23. Construction of buildings for district offices		..	..	..	13.00
Sub-Total		148.00	123.21	41.10	540.00



(1)	(2)	(3)	(4)	(5)	(6)
<b>III. Education (Ayurveda)</b>					
1.	Ayurveda College, Trivandrum	1.00	1.55	0.50	20.00
2.	Ayurveda College, Tripunithura	1.00	2.37	1.00	30.00
3.	Ayurveda College, Shoranur	1.00	0.35	0.10	25.00
4.	Ayurveda College, Kottackal	4.00	3.09	2.00	30.00
5.	Ayurveda College, Ollur	..	..	..	35.00
6.	Ayurveda College, Cannanore	..	..	..	90.00
7.	Education at Post-graduate level	..	..	..	210.00
8.	Research at advanced level	..	..	..	50.00
9.	Establishment of Ayurveda University, Regional, Research Institute, Poojappura	1.00	0.80	0.20	125.00
10.	Training in Prakrithi Chikilsa	..	..	..	15.00
11.	Sidha Vaidya Education	..	..	..	7.50
12.	Unani Education	..	..	..	7.50
13.	Training in Yoga Chikilsa	..	..	..	10.00
14.	Construction of Men's and Ladies Hostels and staff quarters, Pharmacy building and building for P. G. Course in Trivandrum	3.00	2.32	6.00	60.00
15.	Courses for unqualified practitioners	..	..	..	2.50
16.	Collection and Preservation of manuscripts	..	..	..	14.25
17.	Preparation of Text Books	..	..	..	5.00
18.	Development of Herb garden and Museum	..	..	..	20.00
19.	Expansion of college libaraires	..	..	..	3.00
20.	Health Education programme	..	..	..	8.00
21.	Specialisation in various branches of Ayurveda	..	..	..	5.00
22.	Service training for teachers and Medical Officers	..	..	..	5.00
23.	Contensed degree courses for Diploma holders	..	..	..	2.50
24.	Documentation of traditional knowledge	..	..	..	3.50
25.	Conducting classes by traditional practitioners	..	..	..	0.75
26.	Re-printing of valuable source books in Ayurveda with Malayalam translation	..	..	..	10.00
27.	Workshop for text book writers	..	..	..	2.50
28.	Strengthening of Publication Division, Ayurveda College, Trivandrum	..	..	1.00	7.50
29.	Refersher course for para medical staff	..	..	..	1.00
30.	Development of the college pharmacy and standardisation of medical preparation	1.00	0.65	..	21.00
31.	Starting of B Pharm course	..	..	..	22.00
32.	Preparation of detailed parmacopea	..	..	..	1.00
33.	Publication of Ayurveda Medical Journal	..	..	..	0.75
34.	Pedagogy of Ayurveda	..	..	..	5.00
35.	Expansion of the Collegiate hospital at Trivandrum	..	..	..	35.00
36.	Starting of English Medium Degre Course	..	..	..	4.25
37.	Development of Physical Education	..	..	..	10.00
38.	Exchange programme for practitioners	..	..	..	10.00
39.	Construction of buildings for Pharmacy, Ladies Hostel, Hospital, College & Staff quarters, for the Ayurveda College, Thrippunithura	4.00	2.21	4.00	30.00
40.	Payward facilities for Ayurveda College Hospital	..	..	..	7.50
41.	Continuing Degree course in Pharmacy	1.00	0.65	0.30	1.00
Sub Total		17.00	13.99	15.10	953.00

(ii) *Homoeo*I. *Hospitals and Dispensaries*

1.	District Hospitals	..	..	..	10.00
2.	Taluk Hospitals	..	..	..	43.50
3.	Dispensaries	27.00	28.00	12.50	110.00
4.	District Offices	..	..	..	12.00

(1)	(2)	(3)	(4)	(5)	(6)
5.	Strengthening of Administrative Machinery	1.00	0.42	1.00	3.70
6.	Increasing bed strength in District & Taluk Hospitals	..	..	..	33.55
7.	Providing modern equipments and other equipments in hospitals	..	..	..	30.00
8.	Mobile dispensaries	..	..	..	15.00
9.	School Health Programme	..	..	..	6.25
10.	Starting of urban hospitals for infectious diseases	..	..	..	6.00
11.	Starting a drug unit	..	..	..	10.00
12.	Construction of buildings for the Directorate, Hospitals and Dispensaries	3.00	1.90	..	60.00
13.	Co-operative Society for the manufacture of Homoeo Medicines	2.00	1.00	0.50	2.50
	Sub Total	33.00	31.32	14.00	342.50
<b>11. Education</b>					
1.	Development of existing Homoeopathic Degree college, Kozhikode	..	..	4.00	172.00
2.	Starting of Condensed degree course in Homoeopathy	..	..	..	3.00
3.	Upgrading private diploma colleges into degree colleges	2.00	4.34	3.00	75.00
4.	Research centre	..	..	..	250.00
	Sub Total	2.00	4.34	7.00	500.00
<b>G. Other Programmes</b>					
1.	Laboratory services				
(a)	Public Health Laboratories	12.00	2.52	2.00	100.00
(b)	Chemical Examiners Laboratory	8.00	3.50	3.10	14.00
2.	Drugs control	10.00	5.47	3.00	35.00
3.	Health Statistics & Research	3.00	0.47	0.20	1.00
4.	Health Education & Publicity	5.00	1.52	1.00	30.00
5.	(a) Food Administration & Augmentation	10.00	3.64	3.00	100.00
	(b) Government Analysts Laboratory	30.00	26.00	4.00	
6.	School Health Programme	..	3.00	2.00	28.00
(a)	Sanitation Centre under Directorate of Health Services	..	0.02	..	..
7.	Tribal Sub Plan	..	..	2.01	15.00
(a)	Grant-in-aid to Thamarassery Panchayat	..	0.82	..	..
8.	Power Laundries and Generators	7.00	2.11	5.00	30.00
9.	Scheme benefitting Scheduled Castes and Scheduled Tribes	3.00	1.30	5.00	10.00
10.	Medical Insurance Scheme	..	..	..	100.00
11.	Introducing Modern Management practices in Health Administration	..	..	..	20.00
	Sub Total	88.00	50.37	30.31	483.00
	Grand Total (Health)	*1216.00	1005.62	**365.00	6861.00

\*excludes Rs. 33 lakhs—E. S. I.

\*\*excludes Rs. 10 lakhs—E. S. I.

## Centrally Sponsored Schemes

### I. Control of Communicable Diseases

15.395 This is a centrally sponsored project fully financed by the Government of India. The constituents of the programme are briefly discussed below:

(1) *National Malaria Eradication Programme (Outlay Rs. 60 lakhs)*

15.396 Intensification of surveillance, both domiciliary and institutional, strengthening of laboratory services at P. H. Centre level, remedial operations at the foci of malaria are some of the proposals made. Remedial operations include focal spray, mass blood survey, medical treatment, and follow up and assessment. This will also cover supervision of N. M. E. P. activities at the peripheral, P. H. Centre and district level, entomological survey at the vulnerable and receptive areas including susceptibility test and assessment, analysis and interpretation of epidemiological data. An outlay of Rs. 60 lakhs is necessary for the above items of work.

(2) *National Filariasis Control Programme (Outlay Rs. 75 lakhs)*

15.397 The staff strength in the existing National Filariasis Control Programme Units was fixed about 25 years ago. In view of the increase in the population and also the mosquitogenic problems in the unit area, the staff strength of the units should be increased to cope with the additional work. Further, since no survey unit is functioning in the State now, a new survey unit has to be established to re-survey the areas surveyed before 1959.

15.398 Out of the nine million population exposed to the risk of filariasis in Kerala, only two million people are now protected under N. F. C. P. In addition to the remaining to more filariasis control units to be established during 1978-79 for achieving the Fifth Five Year Plan physical targets, it is proposed to start five additional filariasis control units at the rate one new unit per year during the Plan period. For the proper assessment and co-ordination of the activities of N. F. C. P. units and for the effective guidance and improvement of field work the strengthening of the Headquarters Bureau of Filariasis is also essential. The programme will cost Rs. 75 lakhs for the five year period 1978-83.

(3) *T. B. Control Programme (Outlay Rs. 25 lakhs)*

15.399. The three T. B. Hospitals in the State have been redesignated as Sanatoria for Chest Diseases. But sufficient facilities have not been provided for the upgraded chest hospitals. Facilities for thoracic surgery will have to be provided at Mulankunnathukavu and Pariyaram. There is urgency for organising better laboratory facilities in the three chest hospitals. The post of a full time bacteriologist is necessary for each hospital. Also better laboratory facilities will have to be provided. The organisational pattern for T. B. Control also needs strengthening on the lines proposed by the Government of India. District T. B. Officers should be given high status and authority. Likewise the State T. B. Officer should be made solely responsible for running the T. B. control programme.

Strengthening of the State T. B. Centre to take up responsibilities of monitoring, teaching and conducting research should be given high priority. Training of personnel to run the T. B. institutions will have to be planned. Tuberculosis is a less attractive speciality for more than one reason. Hence doctors should be sent on deputation for training in this speciality. Qualified T. B. Health Visitors are also not available even to fill up the existing vacancies. Therefore steps will have to be taken to train the Health Visitors in the State T. B. Centres. A sum of Rs. 25 lakhs is necessary for the above activities.

(4) *Leprosy Control (Outlay Rs. 23 lakhs)*

15.400 In the case of leprosy patients rehabilitation is as important as treatment. A comprehensive leprosy control programme should include schemes for the rehabilitation of leprosy patients when the disease is cured completely. Since the early detection of the disease will make the treatment very easy, the health visitors should be given special training in detecting the disease in the very early stage itself. Expansion and improvement of facilities of leprosy hospitals at Nooranad, Koratty and Chevayur have also been proposed. The programme will cost Rs. 23 lakhs over the next five year period.

(5) *Cholera Control (Outlay Rs. 25 lakhs)*

15.401 Cholera Control programme is functioning in the State as a Centrally sponsored programme with central assistance. Two Cholera combat teams are established in the State with headquarters at Trivandrum and Calicut. The Central assistance for the programme is limited to certain equipments under non recurring item and medicine and disinfectants under recurring item. The experience in the last few years shows that the Gastroenteritis cases are reported throughout the year. But the incidence develop into epidemic form during and after monsoon periods. This calls for a permanent machinery in the Health Department to undertake immediate preventive and control measures. An outlay of Rs. 25 lakhs is proposed for the programme.

(6) *Trachoma Control (Outlay Rs. 15 lakhs)*

15.402 Trachoma is prevalent in all the districts of Kerala. The prevalence of this disease is estimated to be more in the districts of Quilon, Trichur and Kottayam. It is proposed to organise trachoma control units in all districts.

(7) *Small Pox (Outlay Rs. 50 lakhs)*

15.403 Even though the State has succeeded in eradicating small pox completely, surveillance activities have to be continued for some more time. The outlay provided is for continuing the surveillance programme.

(8) *Veneral Diseases (Outlay Rs. 5 lakhs)*

15.404 At present there are V. D. clinics in all District hospitals. The amount earmarked is for strengthening the clinics.

### II. Indigenous System of Medicine Programme for Higher Education and Research (Outlay Rs. 50 lakhs)

15.405 At present post graduate courses are offered in 'Kayachikilsa' and 'Pharmacy and Dravyaguna' at the post graduate centre, Trivandrum. Due to

dearth of qualified teachers and on account of financial difficulties, the centre does not yield the result expected of it. The proposed outlay is for developing the centre in to a fullfledged research institute.

### III. National School Health Programme (Outlay Rs. 25 lakhs)

15.406 The school health programme is now being implemented in 16 P. H. Centres benefiting only 20,000 school children. It is proposed to extend this scheme to the entire State by stages. In the first stage all the students in the primary level may be brought under the scheme.

#### Family Welfare

15.407 The population problem in India is one of the most pressing problems requiring speedy and effective solution. Family planning was accepted as a national policy since 1952. The ultimate objective of family planning is to bring about a reduction of birth rate in every state and thereby in the nation as a whole. At the end of the Fourth Plan, the birth rate had been reduced to 35 per thousand population. The objective of the Fifth Plan was to reduce the birth rate further to about 30 per thousand.

15.408 The term family planning has since been replaced by a more comprehensive term, namely family welfare. The progress of the family welfare programme however depends largely on the extent of acceptance and practice of birth control methods. The yearly achievements in this regard are indicated below. (Table 15.12)

TABLE 15.12  
Practice of birth control technics in India  
(in millions)

Year	C.C. Users		
	Sterilisation	I.U.C.Ds.	at the end of the period
(1)	(2)	(3)	(4)
1974-75	1.35	0.45	2.52
1975-76	2.67	0.61	3.53
1976-77 (P)	8.26	0.56	3.51
1977.78 (P)	1.00	0.50	3.00

(P)—Provisional.

TABLE 15.14  
Family Planning—Targets and Achievements in Kerala

Method Adopted	m					
	1974-75		1975-76		1976-77	
	Target	Achievement	Target	Achievement	Target	Achievement
(1)	(2)	(4)	(4)	(5)	(6)	(7)
1. Vasectomy	..	18466	..	94,270	..	1293334
2. P. P. S.	..	43685	..	62,352	..	82459
Total (Sterilisations)	63300	62151	148400	1,56,622	222500	211873
3. I. U. D.	23100	21221	50900	28302	77500	17490

The number of I. U. D. insertions has declined as a result of the preference on the part of the people concerned for P. P. S. which is a sure and permanent method of averting conception.

15.409 It is estimated that over 33 million births have been averted since the inception of the programme.

15.410 In Kerala, concerted efforts to limit the size of the family have been made only from the Fourth Plan period onwards. During the Fifth Plan period, steps were taken to strengthen P. H. Centres in the rural areas and hospitals in the urban areas to undertake family welfare work. It can be seen that there has been a remarkable increase in the number of sterilisation operations conducted as well as I. U. D. insertions over the last few years. Table 15.13 indicates the level of achievement both in sterilisation operations and I. U. D. insertions at the end of the Fourth Plan.

TABLE 15.13  
Family Planning—Level of Achievement up to  
1973-74 in Kerala

Method Adopted	Total No
Vasectomy	5,21,181
P.P.S.	1,93,702
Total sterilisation operations	7,14,883
I.U.D.	2,78,793
Total	9,93,676

15.411 In the first three years of the Fifth Plan, the targets have been almost fully achieved in respect of sterilisation operations while the achievement has been far below the target in the case of I. U. D. insertions. Table 15.14 indicates the targets and achievements in the adoption of birth control measures during the first three years of the Fifth Plan.

15.412 The expenditure incurred on family planning increased from Rs. 88.58 lakhs in 1966-67 to Rs. 626.52 in 1976-77. The expenditure increased consistently till 1971-72, then declined sharply over the next two years and registered steady rise thereafter. The year-wise expenditure figures are furnished below:

Year	Total Expenditure on Family Welfare in Kerala (Rs. lakhs)
1966-67	88.58
1967-68	131.84
1968-69	184.72
1969-70	198.88
1970-71	227.43
1971-72	333.33
1972-73	324.27
1973-74	260.50
1974-75	268.83
1975-76	391.36
1976-77	626.52

15.413 As a result of the increased efforts made under the family welfare programme there has been a sharp fall in the birth rate in the State. The following census data show that the birth rate is tending to come down in Kerala.

Year	Birth Rate
1941-51	39.8
1951-61	38.9

The data collected under Sample Registration in Kerala indicate that the trend continued at an accelerated pace in later years. Figures are presented below:

Year	Birth Rate Rural
1966	37.4
1967	36.3
1968	34.3
1969	33.3
1970	32.3
1971	31.9
1972	32.1
1973	29.9
1974	27.0
1975	27.8

15.414 The birth rate which was 37.4 per thousand in 1966 came down to 27.8 per thousand in 1975. This is a very remarkable achievement compared to the all India record, as it is already less than the all India target fixed for the end of the Fifth Plan.

15.415 At the all India level the Fifth Plan target could not be achieved since the birth rate is found to have come down to only 33 per thousand at the end of 1977-78.

In view of the poor performance in the past of the goal now set for the plan is to reach a birth rate of 30 per 1000 population for all India by 1982-83. To reach this goal it is considered that an operational programme of the following magnitude is necessary.

TABLE 15.15  
Family Welfare Programme for the 1978-83 Plan  
(All India)

Year	(in millions)		
	Voluntary Sterilisations	I.U.D.s.	C.C. and O.P. Users
1978-79	4.0	0.6	4.0
1979-80	4.5	0.8	4.5
1980-81	5.0	1.0	5.0
1981-82	5.5	1.2	5.5
1982-83	6.0	1.4	5.0

15.416 As in December 1977, 32.1 per cent of the 106 million eligible couples in India were protected by one or the other of the approved methods of family welfare. From the inception of the programme of voluntary sterilisations till December 1977, 27.78 million operations have been performed. This amounts to 44.5 per 1000 population. In the case of I. U. Ds, 6.82 million insertions were made since the inceptions of the programme till December 1977. This gives the cumulative rate of 10.9 per 1000 population for the country.

TABLE 15.16  
Family Welfare Programme Plan Outlay 1978-83  
(All India)

Programmes	(Rs. in crores)	
	Fifth Plan Outlay 1974-79	Plan Outlay (1978-83)
1. Services and Supplies	419.41	640.30
2. Training	13.07	44.40
3. Research and Evaluation	9.03	9.80
4. India Population Project	24.74	4.50
5. Mass Media and Extension Education	13.13	27.00
6. Maternity and Child Health	8.57	26.00
7. Organisation	9.41	13.00
Total	497.36	765.00

#### Family Welfare Programmes for 1978-83

15.417 Family Welfare Programme deserves high priority since the reduction of birth rate is accepted as a National necessity. The strategy will be to increasingly integrate the health, family welfare, maternity and child health and nutrition services at all levels.

15.418 The proportion of women of reproductive age group showed a decline during 1961-71. According to the projections of the Expert Committee on Population Projections, the proportion of reproductive women is likely to increase in the coming years. Thus even if age specific fertility rates remain

unchanged, the birth rate may show a rising trend. This highlights the need for a more determined effort to step up the family welfare programme.

15.419 The following proposals are made to promote Family Welfare Programme in Kerala during the Five Year Plan Period (1978-83);

1. *Starting of A.N.M. Schools (Outlay Rs. 4.50 lakhs)*

15.420 It is proposed to start one school with facilities for intake of 30 students per year in each district. For keeping up the programme of Maternal and child health in consonance with the approved pattern of multi-purpose work, additional A. N. Ms. will be necessary to cover the rural area completely. Also, additional A. N. Ms are necessary to avoid complications arising out of pregnancy control services.

2. *Providing 50 Sterilisation Beds (Outlay Rs. 44.52 lakhs)*

15.421 There is provision in the Plan for starting 50 sterilisation beds attached to each Women and Children Hospital or district hospital.

3. *Providing 25 Sterilisation Beds for Taluk Hospitals (Outlay Rs. 22.53 lakhs)*

15.422 It is decided to provide 25 sterilisation beds attached to each taluk headquarters hospitals.

4. *Establishment of P. H. Centres (Outlay Rs. 1050 lakhs)*

15.423 It is decided to provide one P. H. Centre for a population of about 75,000. In order to achieve this target within the Plan period, it will be necessary to establish about 160 new P. H. Centres. Those sub-centres which are housed in rented buildings should be provided with land and buildings. The number of sub-centres also will have to be increased proportionately. A provision is also made in the Plan for acquiring land and constructing buildings for 1000 sub-centres. The total cost of the scheme is Rs. 1050 lakhs.

5. *Repairing Units (Outlay Rs. 7.45 lakhs)*

15.424 There are several cases of essential hospital equipments having gone out of order for lack of maintenance and repair. Many of these could be repaired and used, had there been a special unit to attend to this. It is, therefore, proposed to set up repairing units for hospital equipments in all districts.

6. *Mobile Service Team (Outlay Rs. 200 lakhs)*

15.425 Mobile service teams will be organised in all the districts, particularly in remote areas. These will be well-equipped units with all facilities for simple sterilisation operations and for attending to post-sterilisation problems.

7. *Providing Operation Theatre (Outlay Rs. 250 lakhs)*

15.426 Fully equipped operation theatres are proposed to be provided in all P. H. Centres so that sterilisation facilities are made available in all the rural areas. This is a continuing scheme since this has already been started under British Aid Programme.

8. *Buildings for Family Welfare Blocks (Outlay Rs. 500 lakhs)*

15.427 There is also a proposal to construct buildings for Family Welfare Blocks in P. H. Centres and for the sub-centres. Eventhough this scheme was started, it had to be discontinued owing to paucity of funds. Family Welfare Blocks have to be provided in all P. H. Centres.

9. *Sterilisation Programmes (Outlay Rs. 1000 lakhs)*

15.428 According to the 1971 Census the rate of population growth during the decade 1961-71 was as high as 2.63 per cent per annum as against 2.48 per cent during the previous decade. This increase in the growth rate was due to the rapid fall in death rate without a corresponding decline in birth rate. It has, therefore, become necessary to intensify the population control programme so as to arrest the population growth. Sterilisation operations are found to be the most popular and effective method of averting conception and reducing the birth rate.

15.429 Sterilisation programme involves the promotion of sterilisation operations, continuation of monetary incentives for sterilisation, publicity and propaganda, financial aid to voluntary organisations for population control activities, etc. An amount of Rs. 1000 lakhs has to be provided to meet the recurring expenses for stepping up the population control programme.

TABLE 15.17

Centrally Sponsored Schemes—Outlay for 1978-83

		Rs. in lakhs
Sl. No.	Name of Scheme	Outlay
(1)	(2)	(3)
<b>I. Control of Communicable Diseases</b>		
1.	National Malaria Eradication Programme	60.00
2.	National Filariasis Control Programme	75.00
3.	T. B. Control Programme	25.00
4.	Leprosy Control	23.00
5.	Cholera Control	25.00
6.	Trachoma Control	15.00
7.	Small Pox	50.00
8.	Veneral Diseases	5.00
Sub total		278.00
<b>II. Indigenous System of Medicines</b>		
Programme for Higher Education and Research		50.00
<b>III. National School Health Programme</b>		
		25.00
<b>IV. Family Welfare</b>		
1.	A.N.M. Schools	4.50
2.	Sterilisation Beds at District Hospitals	44.52
3.	25 Beds of Tubectomy	22.53
4.	P. H. Centres—1 per 75,000 population	
	(i) P. H. Centre	800.00
	(ii) Sub-Centre	250.00
5.	Repairing Unit	7.45
6.	Mobile Unit	200.00
7.	Operation Theatre at P.H.C.	250.00
8.	F.W. Block at P.H.Cs.	500.00
9.	Sterilisation Programmes	1000.00
Sub total		3079.00
Total (I+II+III+IV)		3432.29

## Sewerage and Water Supply

15.430 National water supply and sanitation programme was included only towards the end of the First Five Year Plan period. At the commencement of the Second Five Year Plan, the State Public Health Engineering Department was constituted for carrying out water supply and sanitation programmes. In the Second Plan, a sum of Rs. 444.85 lakhs was expended for urban water supply and drainage schemes against the allotment of Rs. 461.46 lakhs. The total expenditure for rural water supply schemes was Rs. 31.32 lakhs against an allotment of Rs. 48.04 lakhs. During the Plan period five urban water supply schemes and two drainage schemes were taken up for execution. None of these schemes could be completed during this Plan period.

15.431 During the Third Five Year Plan period all the ongoing water supply schemes except Ernakulam-Mattancherry water supply scheme were commissioned. Under rural water supply programme, 139 schemes were commissioned during the Plan period. The total allotment and expenditure for urban water supply and drainage schemes were Rs. 450 lakhs and Rs. 444.47 lakhs respectively. For rural water supply schemes, the allotment was Rs. 50 lakhs and the expenditure incurred was Rs. 67.22 lakhs. Extension of Trivandrum drainage scheme to new blocks and 71 rural water supply schemes were completed during this Plan period.

15.432 The original allotment of the funds under the Fourth Five Year Plan for both urban and rural water supply schemes was Rs. 925 lakhs. But revised estimates for urban water supply and sewerage schemes alone amounted to Rs. 925 lakhs and that for rural water supply schemes to Rs. 250 lakhs. The actual expenditure on these two schemes amounted to Rs. 2327 lakhs and Rs. 419.05 lakhs respectively. During this Plan period, commendable progress was achieved, particularly in the field of urban water supply. From 1970-71 onwards Institutional Finance by way of loan assistance from L. I. C. of India was availed of for the implementation of water supply and sewerage schemes. This enabled the Government take up 18 new urban water supply schemes, water supply and sewerage scheme to Greater Cochin Development Area, and 204 rural water supply schemes. The number of rural water supply schemes completed during this Plan period was 126. During the year 1973-74, with special assistance from Government of India, 86 rural water supply schemes were taken up under the Accelerated Rural Water Supply Programme, out of which 12 schemes were commissioned.

15.433 Under the Fifth Plan, works on the following new urban water supply schemes were taken up, along with the works on the spill over schemes.

<i>Name of Scheme</i>	<i>Estimated Cost (Rs. in lakhs)</i>
(i) Palghat Water Supply (Augmentation Scheme)	165.50
(ii) Trichur Water Supply (Augmentation Scheme)	275.50
(iii) Construction of a Storage Dam for Trivandrum Water Supply Scheme	298.00

15.434 The total allotment in the Fifth Plan for urban water supply schemes was Rs. 2260 lakhs and for urban sewerage Rs. 315 lakhs. The outlay for rural water supply schemes was 1247 lakhs, out of which Rs. 607 lakhs was for schemes under the Minimum Needs Programme. During 1977-78, the Government of India also allotted Rs. 102 lakhs for the Centrally Sponsored 'Accelerated Rural Water Supply Programme'. During this Plan period water supply schemes were taken up for all the municipal towns which were not provided with protected water supply. Only the cities of Trivandrum and Cochin had been served and that too partially, with sewerage systems. Sewerage scheme to Guruvayoor Township was the only new scheme taken up during this Plan period. The percentage of urban population in the State which has water supply facilities is approximately 65. The percentage of rural population covered is approximately 26.

### *Plan Proposals for 1978-83.*

15.435 A brief description of the schemes proposed to be taken up during the Plan period 1978-83 is given below:

#### *1. Research Wing (Outlay Rs. 25 lakhs)*

15.436 In the Public Health Engineering Department, a research wing with a cell for ground water exploration is essential. On a rough estimate this unit may require additionally about 15 graduate engineers, 200 diploma holders, 300 I. T. I. certificate holders, 25 chemistry graduates and 50 laboratory assistants on the technical side. A provision of Rs. 25 lakhs is made for creating a research wing in the Public Health Engineering Department.

#### *2. Training Programme (Outlay Rs. 25 lakhs)*

15.437 With the increasing tempo of implementation of environmental sanitation programme, the necessity to train personnel in several specialised fields is inevitable. To cover the expenses for such training programmes, which would primarily be towards the cost of stipend, travelling and daily allowances and fees an amount of Rs. 25 lakhs is proposed in the Plan.

#### *3. Investigation, Planning and Design Units (Outlay Rs. 150 lakhs)*

15.438 To implement water supply and sewerage programmes with financial assistance from World Bank and other Financing Institutions a number of projects are to be drawn up for which the existing investigation and planning units have to be strengthened. An outlay of Rs. 150 lakhs is proposed for this purpose.

#### *4. Inventory Control (Outlay Rs. 4 lakhs)*

15.439 The purchase, storage and upkeep and utilisation of large variety of materials and equipments which are essential for the execution and maintenance of water supply and sewerage systems have to be organised on scientific lines. A special wing having persons with knowledge of modern methods of Inventory Control has to be set up in the Department for which an outlay of Rs. 4 lakhs is proposed.

*Urban Sewerage Schemes*5. *New Schemes (Outlay Rs. 1105 lakhs)*

15.440 The following sewerage schemes are proposed to be completed during this Plan period.

- (i) *Alleppey Drainage Scheme (Outlay Rs. 375 lakhs)*
- (ii) *Cochin Drainage Scheme (Outlay Rs. 480 lakhs)*
- (iii) *Kottayam Drainage Scheme (Outlay Rs. 250 lakhs)*

15.441 Under the Comprehensive Water Supply and Sewerage Scheme for Greater Cochin, only a limited portion of the most densely populated areas of Cochin Corporation are proposed to be covered during the Plan period 1978-83.

*Augmentation Sewerage Schemes*6. *Trivandrum Drainage Schemes (Outlay Rs. 495 lakhs)*

15.442 The scheme is intended for providing sewerage facilities to an additional area of 15 Sq. miles of Trivandrum City.

7. *Quilon Drainage Scheme (Outlay Rs. 498 lakhs)*

15.443 The scheme is intended to provide sewerage facilities in Quilon Municipality.

8. *Calicut Drainage Scheme (Outlay Rs. 497 lakhs)*

15.444 The scheme is designed to benefit an area of 18 Sq. miles in Calicut Corporation.

9. *Guruvayoor Drainage Scheme (Outlay Rs. 25 lakhs)*

15.445 The scheme is designed to serve the Guruvayoor Township.

10. *E. S. P. Latrines (Outlay Rs. 100 lakhs)*

15.446 The provision is for distribution of E.S.P. type latrines to Harijan housing colonies constructed under the various housing schemes.

*Urban Water Supply Schemes*11. *Kottayam Water Supply Scheme—Augmentation (Outlay Rs. 258 lakhs)*

15.447 A scheme to augment the water supply system in Kottayam is proposed to be taken up during this Plan period.

12. *Water Supply to Newly Formed Municipalities (Outlay Rs. 450 lakhs)*

15.448 Water supply schemes for all the newly formed municipalities such as Nedumangad, Kodungallur, Chengannur, Ponnani etc., are proposed to be investigated and completed during the present Plan period. To provide water supply to the Municipal Towns which do not have a water supply scheme at present and to extend the supply to additional areas, where schemes are in operation, an outlay of Rs. 450 lakhs is proposed.

13. *Water Supply to Non-municipal Towns (Outlay Rs. 950 lakhs)*

15.449 It is proposed to provide water supply to all towns where there is water scarcity. Out of the total population in the 55 non-municipal towns (1971 census) in the State, only about 20 per cent had the benefit of protected water supply schemes so far. To cover the remaining population it is estimated that Rs. 950 lakhs would be required.

14. *Improvements to Existing Water Supply Schemes (Outlay Rs. 200 lakhs)*

15.450 An outlay of Rs. 200 lakhs is proposed for improving the existing water supply schemes.

15. *Greater Cochin Water Supply Scheme (Outlay Rs. 60 lakhs)*

15.451 This is a comprehensive scheme for providing water supply to Cochin Corporation as well as the adjoining Panchayats in Vypeen Island.

16. *Vaikom Water Supply Scheme (Outlay Rs. 35 lakhs)*

15.452 The scheme is designed to serve the Vaikom Municipality.

17. *Palghat Water Supply Scheme (Outlay Rs. 110 lakhs)*

15.453 The scheme envisages augmentation of the existing scheme which is inadequate to cope with the present demand. The provision is for procuring pumpsets, construction of pump houses, transformer yards, reservoirs etc.

18. *Trichur Water Supply Scheme (Outlay Rs. 195 lakhs)*

15.454 The scheme is for augmenting the existing water supply scheme which is inadequate to meet the present demand. The provision is for procurement of pumpsets, pipes, construction of pumphouses and laying of pipes.

19. *Punalur Water Supply Scheme (Outlay Rs. 6 lakhs)*

15.455 The scheme is intended to provide protected water supply to the entire town of Punalur.

20. *Chalakyady Water Supply Scheme (Outlay Rs. 15 lakhs)*

15.456 The Scheme is designed to serve the entire population of Chalakyady town.

21. *Tirur Water Supply Scheme (Outlay Rs. 15 lakhs)*

15.457 The scheme is designed to serve the entire population of Tirur municipal town.

22. *Malappuram Water Supply Scheme (Outlay Rs. 15 lakhs)*

15.458 The objective of the scheme is to improve the existing water supply facility which is too inadequate to meet the requirements of Malappuram town.

23. *Construction of a Storage Dam for Augmentation of Trivandrum Water Supply Scheme (Outlay Rs. 575 lakhs)*

15.459 The provision is to continue works relating to the construction of a dam to meet the increasing demand for protected water in the city.



24. *Kayamkulam Water Supply Scheme (Outlay Rs. 30 lakhs)*

15.460 The existing water supply facility at Kayamkulam is inadequate to meet the present requirements. It is proposed to augment the water supply scheme at Kayamkulam at a cost of Rs. 30 lakhs.

25. *Shertallai Water Supply Scheme (Outlay Rs. 21 lakhs)*

15.461 The existing water supply facility is too inadequate to meet the requirements of Shertallai municipal town. It is proposed to augment the water supply scheme there at a cost of Rs. 21 lakhs.

26. *Completion of Partially Commissioned Schemes Outlay Rs. 280 lakhs)*

15.462 The Plan provision of Rs. 280 lakhs is intended for completing the balance works on partially commissioned water supply schemes in the State.

27. *Rural Water Supply under Minimum Needs Programme (Outlay Rs. 3825 lakhs)*

15.463 The following are the Rural Water Supply schemes included under the Minimum Needs Programme.

- (i) Rural Water supply schemes.
- (ii) Comprehensive rural water supply scheme for Nattika.
- (iii) Comprehensive water supply scheme for Anjengo, Vakkom etc.
- (iv) Comprehensive rural water supply scheme for Ayilur, Nemmara areas.
- (v) Accelerated water supply scheme.
- (vi) Special repairs and maintenance to rectify flood/cyclone damages.
- (vii) New Rural Water supply schemes.
- (viii) Water supply schemes for the benefit of weaker sections of the community.
- (ix) Open draw wells.

15.464 The above programme is for continuing/completing the works on the schemes under Minimum Needs Programme.

TABLE 15.18

## Water Supply and Drainage—Schemewise Outlay

(Rs. in lakhs)

Sl.No.	Scheme	Fifth Plan Outlay 1974-79	1974-78 Expenditure	1978-79 Budget Outlay	1978-83 Outlay Proposed
(1)	(2)	(3)	(4)	(5)	(6)
1.	Research and Employment	} 35.00	..	..	25.00
2.	Training Programme		3.80	2.00	25.00
3.	Investigation, Planning and Design Units		49.65	8.00	150.00
4.	Inventory Control	..	..	..	4.00
	<i>Drainage Schemes</i>	321.00	..	..	..
5.	<i>New Schemes</i>				
	(i) Alleppey Drainage Scheme	..	..	..	375.00
	(ii) Cochin Drainage Scheme	..	..	..	480.00
	(iii) Kottayam Drainage Scheme	..	..	..	250.00
	<i>Augmentation Schemes</i>				
6.	Trivandrum Drainage Scheme	..	47.99	10.00	495.00
7.	Quilon Drainage Scheme	..	25.00	10.00	498.00
8.	Calicut Drainage Scheme	..	38.23	10.00	497.00
9.	Guruvayoor Drainage Scheme	..	61.43	10.00	25.00
10.	E. S. P. Latrines	..	10.00	15.00	100.00
	<i>Urban Water Supply Schemes</i>	2260.00	..	..	..
11.	Kottayam Water Supply Scheme	..	..	..	258.00
12.	Water supply to newly formed municipalities such as Nedumangad Grangannor, Chengannoor, Ponnani etc.	..	..	..	450.00
13.	Water supply to non-municipal Towns	..	..	..	950.00
14.	Improvements to existing schemes	..	..	..	200.00
15.	Greater Cochin water supply scheme	..	414.53	35.00	60.00
16.	Vaikom water supply scheme	..	113.45	13.00	35.00
17.	Palghat water Supply Scheme	..	60.10	44.00	110.00
18.	Trichur Water Supply Scheme	..	72.09	61.00	195.00
19.	Punalur Water Supply Scheme	..	48.97	2.00	6.00
20.	Chalaky Water Supply Scheme	..	47.07	11.00	15.00
21.	Tirur Water Supply Scheme	..	75.36	5.00	15.00

(1)	(2)	(3)	(4)	(5)	(6)
22.	Malappuram Water Supply Scheme	..	..	13.00	51.00
23.	Construction of a storage dam for augmentation of Trivandrum Water Supply Scheme	..	102.00	222.00	575.00
	(a) Alleppey Water Supply Scheme	..	108.62	..	..
	(b) Chittur-Thathamangalam Water Supply Scheme	..	39.69	..	..
24.	Kayamkulam Water Supply Scheme	..	..	10.00	30.00
25.	Shertallai Water Supply Scheme	..	..	10.00	21.00
	(a) Peppara Dam	..	46.50	..	..
26.	Completion of partially commissioned Schemes	..	942.39	39.00	280.00
27.	Rural Water Supply under Minimum Needs Programme	1247.00	..	..	..
	(i) Rural Water Supply Schemes	..	559.20	125.00	250.00
	(ii) Comprehensive rural water Supply Scheme for Nattika	..	14.93	9.00	1200.00
	(iii) Comprehensive rural water Supply Scheme for Anjengo, Vakkom, etc.	..	15.13	9.00	
	(iv) Comprehensive rural Water Supply Scheme for Ayilur, Nemmara areas	..	16.75	9.00	
	(v) Accelerated Water Supply Scheme	..	2.00	2.00	
	(vi) Special repairs and maintenance to rectify flood/cyclone damages	..	10.00	..	
	(vii) New Rural Water Supply Scheme	..	395.79	71.00	
	(viii) Water supply schemes for the benefit of weaker sections of the community	..	10.00	60.00	300.00
	(ix) Open draw well	60.00	73.08	28.00	200.00
	Total	3923.00	3403.75	843.00	10000.00

## Housing

15.465 In Kerala where the density of population is nearly three times the all India average the problem of housing is particularly acute. The data thrown up by the 1971 Census highlight the seriousness of the housing problem in the State. According to the Census figures there were 34.18 lakhs houses and 3543 lakhs households in Kerala during 1971. These figures show that there was a shortage of 1.25 lakhs houses in 1971. As the population of the State increases by more than 5 lakhs every year, nearly one lakh houses have to be constructed annually to provide for the additional population.

15.466 It may, however, be noted that house construction is mainly an activity of the private sector and about 60,000 to 70,000 new houses are completed every year in the State, a vast majority of them by private individuals without any help from the Government. Even after taking into account the annual increase, the gap widens by 30,000 houses every year. Thus to provide for the increase in population from 1971 onwards to 1983 alone, nearly 4 lakhs houses are required which, when added to the already existing shortage of 1.25 lakhs houses, would raise the total shortage to 5.25 lakhs houses.

15.467 It is estimated that 20 to 25 per cent of the existing houses are not fit for human dwelling. The materials used for the construction of most of these houses are mud, leaves, grass and straw. If these sub-standard houses are to be replaced, another 8.5 lakhs houses have to be constructed. Thus the total

number of houses required to be constructed will be nearly 13.75 lakhs during 1978-83, if the problem of housing is to be solved. This would call for an investment of the order of Rs. 687.50 crores even at a low rate of Rs. 5,000 per house. With the limited financial resources at its disposal the State Government is not in a position to undertake such a massive house construction programme.

15.468 Under the first three five year Plans and the three annual Plans a total expenditure of Rs. 472.23 lakhs was incurred on housing. In the Fourth Plan, eventhough the State sector outlay for housing was only Rs. 230 lakhs, the actual expenditure had gone up to Rs. 463.34 lakhs. Subsidised Industrial Housing Scheme, Housing for Agricultural Labourers, Co-operative Housing Scheme, Schemes for Weaker Sections, Poor Housing Scheme, Low Income Group Housing Scheme, Village Housing Project, Middle Income Group Housing Scheme and Rental Housing Scheme were the important schemes implemented in the Fourth Plan. Of the various housing schemes implemented so far it is the Low Income Group Housing Scheme which has proved to be very successful.

15.469 In the Fifth Five Year Plan an amount of Rs. 19.14 crores was set apart for the implementation of the various housing programmes. The schemes envisaged in the Fifth Plan were aimed at improving the housing conditions of the rural poor, especially the landless agricultural labourers and other weaker sections of the community. Due emphasis was given in the plan for provision of housing facilities to low and middle income groups also.

### *One lakh Houses Scheme:*

15.470 Construction of 57,000 houses have been completed and 33,000 house sites have been distributed under the "One lakh houses Scheme". Though the full target has not been achieved so far as the construction of houses is concerned, it stands out as one of the rare instances of a massive development programme being successfully implemented with popular participation.

### *Agencies in the Field of House Construction*

15.471 With the increase in the importance of Housing there has also been a multiplication in the number of agencies implementing housing programmes. Following are the agencies now in the field.

1. Kerala State Housing Board
2. Apex Co-operative Housing Society
3. Greater Cochin Development Authority
4. Town Planning Trust, Trivandrum
5. Town Planning Trust, Calicut
6. Kerala State Development Corporation for Scheduled Castes and Scheduled Tribes
7. Kerala Fishermen Welfare Corporation
8. Harijan Welfare Department
9. Fisheries Department
10. Tribal Welfare Department
11. Board of Revenue
12. Labour Department
13. Public Works Department
14. Finance Department
15. Public Department
16. Nationalised Banks
17. Local Authorities.

15.472 A multiplication of agencies involves a corresponding multiplication in overheads. It is time that the difficulties experienced by the beneficiaries and the confusion created in the field by a wide variety of programmes are resolved and efforts made to streamline the implementation of the programmes. It may not be possible to reduce the number of agencies working in the field of house construction all on a sudden. However, it should be possible to entrust a Central Agency with the task of co-ordinating the activities of the different organisations working in the field at present.

15.473 Any policy formulated to solve the problem of housing in the State will have to take into consideration four categories of people in need of housing facilities. The first group consists of people, who have neither a house nor the land to construct a house. For them it is necessary to have a scheme which would give assistance both for acquisitions of land and for construction of house. To the second group belong the people who have sites already with them but do not have a house. A colony type of housing scheme would not be suitable for them. What they need is a loan scheme for construction of houses on the sites in their possession. The third category has both house sites and houses, but the houses are too small and/or insecure to serve as a dwelling unit. A scheme of renovating these huts is of great relevance to the State

considering the fact that as much as 21% of the estimated total of the shortage is qualitative and not quantitative. Along with satisfying these three kinds of needs, a housing agency would also have to look into the acute shortage of houses for rent mainly in the urban areas.

15.474 Any housing policy for the State should take into account the evolution of suitable designs of low cost houses for the different regions, giving due consideration to all the relevant factors such as climatic conditions, local availability of building materials, and the living habits and requirements of the various classes of people. The designs should also be in harmony with the landscape of the State. Another important aspect to be borne in mind is that the methods adopted for reduction of construction costs shall not be such that they lead to increase in maintenance costs. The poor people are apt to neglect maintenance which will naturally render the houses useless before long and shorten their lives. These considerations are all the more important when the housing programme envisaged is as big as the situation demands.

### *1. Minimum Needs Programme*

#### *(a) Sites and Services Scheme: (Outlay Rs. 1500 lakhs)*

15.475 Under this scheme developed plots in small and medium colonies provided with access roads, drainage, individual sanitary latrines, drinking water schools, health clinics, work Centres, etc. will be distributed to the landless families. Excess land taken over by Government under the Land Reforms Act can be utilised for this scheme. The emphasis will be to equip such colonies with basic civic amenities, in addition to the distribution of house sites. All others will be helped to put up their own houses in a phased manner using self help method. An outlay of Rs. 1,500 lakhs is provided to develop sites and services for one lakh households. For those who possess land and who are not able to make use of the loan schemes, provision may be made to help them by supplying ESP latrines free of cost and also by giving assistance to them for construction of sanitary latrines with pit and enclosure. This will go a long way to improve the hygienic conditions in and around the houses.

#### *(b) Grant for Co-operative Housing Scheme for Economically Weaker Sections (Outlay Rs. 1250 lakhs)*

15.476 The Co-operative sector and the Housing Board have jointly launched a housing scheme for the economically weaker sections in the rural areas. The bulk of the finance comes as loan from HUDCO and the Co-operative Societies. Government gives a grant of Rs. 500 per house. The programme is to construct 2.5 lakh houses in the plan period for which an outlay of Rs. 1250 lakhs is needed.

### *2. Share Capital Contribution of Housing Co-operatives: (Outlay Rs. 500 lakhs)*

15.477 There is at the State level an Apex Co-operative Housing Society with about 100 primary Co-operative Societies at the various levels, viz., village, taluk, block, etc. The activities of this Apex Society are mainly of two types: (1) to give loans to persons already owning house sites, and (2) to give

loans for acquiring contiguous blocks of land for constructing houses, on it. The former activity is carried on by primary societies which have territorial jurisdiction over the area concerned, while the latter is carried on by house construction societies formed for this purpose. There is wide scope for strengthening the activities of these societies by pumping in more institutional finance from sources like HUDCO, L.I.C. etc. During the plan period it is proposed to start one society each in every Panchayat. The Plan provision required for this would be the contribution of the Government towards the share capital of Apex Society. In the initial stages the primary societies must be given secretarial support also.

(3) *Public Borrowing by the Housing Board (Outlay Rs. 1000 lakhs)*

15.478 Like the Apex Society the Housing Board also depends mainly upon institutional finance for implementing their programme. At the same time the Housing Board requires seed capital for starting programmes, especially because loans from Financial Institutions do not cover 100 per cent of the project cost. This is now provided in the form of public borrowing to the tune of Rs. 110 lakhs per year. It is proposed that this may be increased to Rs. 200 lakhs. With this seed capital and with the revolving fund the Housing Board may be in a position to construct 5,000 houses in a year adopting cost reduction techniques. This Scheme will cost Rs. 1000 lakhs during the Plan period.

(4) *Integrated Subsidised Housing Scheme for Industrial workers and Economically Weaker Sections (Outlay Rs. 100 lakhs)*

15.479 This is a modified form of the original subsidised industrial housing scheme. This scheme contemplates financial assistance by way of grants and loans to the Housing Board, Local Bodies and to Co-operative Societies formed by eligible Workers for the construction of houses. The scheme envisages provision of financial assistance both to the industrial workers and plantation labourers. An outlay of Rs. 100 lakhs is set apart towards the cost of the scheme.

(5) *Housing Scheme for the Employees of State Government and Local Bodies (Outlay Rs. 1435 lakhs)*

15.480 There are already separate schemes by which loans are given to State Government employees for house construction and to local bodies for housing their low paid staff. In the case of local bodies, the ownership of houses constructed will vest in the local bodies who may rent out the houses constructed to their staff. These two schemes may be combined into one and made into a loan scheme, the loan amount being paid directly to the employees on the basis of their monthly income. The loan scheme for the employees has the added advantage that repayment is certain and easy. The estimated cost of the scheme is Rs. 14.35 crores.

(6) *Rental Housing Scheme for the Employees of State Government and Local Bodies. (Outlay Rs. 750 lakhs)*

15.481 This scheme is intended to construct houses and to give them to the employees of State Government and local bodies on rental basis. This is an existing scheme.

(7) *Special Rental Housing Scheme for Police and Excise (Outlay Rs. 600 lakhs)*

15.482 Under the existing rental housing scheme houses are constructed and given on rent to Government employees including police personnel. Since the functioning of the Excise Department is as important as police, construction of houses on rental basis to the excise personnel should also be given due importance. The amount provided is intended for the construction of rental houses for the personnel of both police and Excise Departments. An amount of Rs. 600 lakhs is earmarked for the scheme.

(8) *Low Income Group Housing Scheme (Outlay Rs. 500 lakhs)*

15.483 This is an existing scheme which has been popular from its very inception. The scheme envisages financial assistance by way of loan for persons who do not own a house and whose income does not exceed Rs. 7,200 per year. The scheme is to be implemented by the District Collectors under the overall control of the Board of Revenue.

(9) *Middle Income Group Housing Scheme (Outlay Rs. 400 lakhs)*

15.484 This is also a continuing scheme. The object of the scheme is to provide loans to people whose annual income fall between Rs. 7,200 and Rs. 18,000. The ceiling for loan amount per house is Rs. 25,000. The loan is repayable in 300 monthly instalments.

(10) *Village Housing Project (Outlay Rs. 600 lakhs)*

15.485 Among the various schemes, the Village Housing Project is most suited for rural development. While all the other Government housing schemes have the sole objective of adding to the number of houses, this scheme realises the fact that improvement of village housing should be part of a programme for all round economic and physical development of the rural areas. In order to achieve planned development of the villages, the scheme provides for the preparation and implementation of perspective development plan for selected villages. Further, the scheme attempts to stimulate local initiative and encourage maximum use of local resources. Technical assistance and guidance are given to the house builders in the form of improved designs and free engineering supervision.

(11) *Scheme for Making Structural and Environmental Improvements to Existing Houses (Outlay Rs. 150 lakhs)*

15.486 This scheme is meant for helping families to improve the structural and environmental conditions of their existing sub-standard houses. Under this scheme loan assistance will be given to change the roof, (from perishable to durable) to provide additional accommodation, and to improve sanitary facilities such as bath, closet and water supply. The scheme will be implemented through local bodies.

(12) *Research in Low Cost Housing and Production of Building Materials (Outlay Rs. 50 lakhs)*

15.487 At a time when the cost of house building materials are soaring up it is essential to find out new and cheap substitutes to reduce the house construction

cost to the minimum e el possible. The amount provided in the Plan is for encouraging research in low cost housing and to construct experimental houses.

(13) *Colonisation Schemes (Outlay Rs. 26 lakhs)*

15.488 This scheme envisages the twin programmes of developing large underdeveloped tracts of Wynad area and rehabilitation of ex-servicemen, aboriginals and landless inhabitants of erstwhile Malabar region.

(14) *Tribal Area Sub Plan (Outlay Rs. 50 lakhs)*

15.489 This scheme is meant for constructing houses to every tribal family included in the sub-plan area, on a phased manner. The provision is for construction of houses in the sub-plan area.

(15) *Housing Scheme in Kasaragode (Outlay Rs. 10 lakhs)*

15.490 The scheme envisages the development of housing facilities in the backward taluks of Kasaragode and Hosdurg.

TABLE 15.18  
Housing Scheme-wise Outlay

Sl. No.	Name of Scheme	State Plan Outlay (Rs. in lakhs)
(1)	(2)	(3)
1.	<i>Minimum Needs Programme</i>	
	(a) Sites and Services Scheme to Rural Workers	1500.00

TABLE 15.19  
Housing Scheme-wise Outlay

Sl.No.	Scheme	(Rs. in lakhs)			
		Fifth Plan Outlay 1974-79	1974-78 Expenditure	1978-79 Outlay Budgeted	1978-83 Outlay Proposed
(1)	(2)	(3)	(4)	(5)	(6)
1.	Integrated Subsidised Housing Scheme for Industrial Workers and Economically Weaker Sections of the Community	15.00	8.99	5.00	100.00
2.	Low Income Group Housing Scheme	130.00	99.91	25.00	500.00
3.	Middle Income Group Housing Scheme	100.00	84.64	25.00	400.00
4.	Rental Housing Scheme (including construction of quarters to Government Servants)	90.00	84.13	40.22	750.00
5.	Police Housing Scheme (including Excise)	325.00	274.68	69.78	600.00
6.	Village Housing Project	100.00	71.33	25.00	600.00
7.	Provision of House-sites to Rural Workers in Rural Areas				
	(a) Provision of House-sites to landless Workers in Rural Areas	354.00	348.80	75.00	1130.00
	(b) Settlement of Agricultural Workers in Government Poramboke Lands	45.00	33.13	10.00	120.00
	(c) Construction of Houses for Rural Workers	20.00	5.00	20.00	250.00
8.	<i>Other Schemes</i>				
	1. Loans to Government Servants	150.00	236.77	212.50	1435.00
	2. Grants for Co-operative Housing Scheme for Economically Weaker Sections	..	..	..	1250.00
	3. Share Capital Contribution to Housing Cooperatives	..	..	..	500.00
	4. Public Borrowing by the Housing Board	560.00	453.00	187.50	1000.00
	5. Making Structural and Environmental Improvements to Existing Houses	..	..	..	150.00
	6. Research in Low-cost Housing and Production of Building Materials	..	..	..	50.00
9.	Colonisation Schemes	20.00	12.80	4.00	26.00
10.	Tribal Area Sub-Plan	..	4.00	6.00	50.00
11.	Housing Scheme in Kasargode	..	2.00	2.00	10.00
	(a) Loans Issued under Loans Rule for the Subsidised Housing Scheme for Plantation Labour	..	10.99	..	..
	(b) Settlement Scheme to Assignees of Kayal Lands	5.00	2.09	..	..
Total		1914.00	1732.26	707.00	8921.00

(1)	(2)	(3)
(b)	Grant for Co-operative Housing Scheme for Economically Weaker Sections	1250.00
	Sub-total	2750.00
2.	Share Capital Contribution to Housing Co-operatives	500.00
3.	Public Borrowing by the Housing Board	1000.00
4.	Integrated subsidised Housing Scheme for Industrial Workers and Economically Weaker Sections	100.00
5.	Housing Scheme for the Employees of State Government and Local Bodies	1435.00
6.	Rental Housing Scheme for the Employees of State Government and Local Bodies	750.00
7.	Special Rental Housing Scheme for Police and Excise	600.00
8.	Low Income Group Housing Scheme	500.00
9.	Middle Income Group Housing Scheme	400.00
10.	Village Housing Project	600.00
11.	Scheme for Making Structural and Environmental Improvements to Existing Houses	150.00
12.	Research in Low Cost Housing and Production of Building Materials	50.00
13.	Colonisation Schemes	26.00
14.	Tribal Area Sub-Plan	50.00
15.	Housing Scheme in Kasargod	10.00
	Grand total	8921.00

## Urban Development

15.491 The need for planned development of urban areas in the context of rapid growth of population can hardly be over-emphasised. Large scale detailed planning and programming of capital outlays for urban expansion and development are essential for the regulated and orderly growth of our cities and towns. In view of the special characteristics of the State it is necessary to take urgent steps to prepare a comprehensive development plan for the whole State, locating the important growth centres. If such a development plan is prepared, evolving long range policies for future urbanisation and taking into consideration the development potentialities of each area it will go a long way in improving the socio-economic conditions of the State. It will also help to correct the unbalanced growth of our cities and towns. For reasons of diversity of economic activities, land use pattern in urban centres is more complex than that in the agro-oriented hinterland. The compulsion to make optimum use of the land in cities and towns for the various cross purposes and to bring about orderliness in land use and the creation of conditions congenial to harmonious and healthy living of the urban community underline the need for planned development of the urban areas.

15.492 During the Fifth Five Year Plan period an outlay of Rs. 7.22 crores was allocated for the various schemes under urban development. During the four years of the Plan period ending 1977-78 an amount of Rs. 5.27 crores (Approximate) was spent. Table I shows the details of the money expended during the Fifth Plan period for the various schemes.

15.493 When we take into account the nature and number of schemes to be undertaken for the balanced development of our cities and towns, the amount spent during the Fifth Plan period would be found to have fallen far short of requirements. Therefore, an amount of Rs. 26.91 crores is proposed for the various schemes under urban development during the Plan periods 1978-83.

### A. Minimum Needs Programme:

#### *Slum clearance/improvement Scheme in the City Areas (Spill-over scheme) (Outlay Rs. 400 lakhs)*

15.494 This scheme is meant for the gradual eradication of slums by providing better housing facilities ensuring environmental hygiene and essential services such as water supply, street lighting and communication facilities. An outlay of Rs. 400 lakhs, at the rate of Rs. 50 lakhs each for the Corporation areas, Rs. 25 lakhs for Grade-I Municipalities, Rs. 15 lakhs for Grade-II and Rs. 10 lakhs for the remaining Municipal areas and urban panchayats, is provided.

#### *Development of blighted spots in major urban centres (New Scheme) (Outlay Rs. 200 lakhs)*

15.495 This scheme envisages detailed studies of the affected areas, planning for their development and also providing financial assistance for implementation of the plans. Most of the major urban centres are faced with problems like over-crowding, narrowness of streets and roads, mixed land uses, substandard buildings and under-utilization of valuable land. Detailed Town Planning schemes for such blighted areas have to be taken up and implemented with top

priority. It is proposed to spend Rs. 200 lakhs towards the cost of this scheme. The proposed amount is to be given as loan assistance to the Development agencies like Development Authorities/Town Planning Trusts, Local Bodies etc.

### B. Spill Over Scheme:

#### 1. *Financial assistance to Municipalities, Corporations etc, for Town Improvement Work:*

##### (a) *Town Improvement Works (Non-remunerative) (Outlay Rs. 250 lakhs)*

15.496 This scheme involves financial assistance to the Local Bodies for non-remunerative works such as construction of roads, culverts, bridges, drains, office buildings, town halls, maternity and child welfare centres, libraries, parks, playgrounds, stadia etc. Loan assistance for non-remunerative schemes is not generally available from the Kerala Urban Development Finance Corporation. During the Fifth Plan period an amount of Rs. 50 lakhs was spent towards the cost of this Scheme. The proposed outlay in the present Plan is Rs. 250 lakhs.

##### (b) *Town Improvement Works (Remunerative) (Outlay Rs. 500 lakhs)*

15.497 The remunerative town improvement works taken up by the Local Bodies are generally development of bus stands, taxi stands, markets, shopping centres, cinema theatres, Public assembly places, godowns, restaurants, rest houses, lodging facilities, commercial offices etc. The capital outlay for such projects would be met by the short term loan assistance provided by Kerala Urban Development Finance Corporation. An outlay of Rs. 500 lakhs is provided as debenture loan for the Corporation for the Sixth Plan.

#### 2. *Regional Planning Units at Trivandrum, Cochin and Calicut (Outlay Rs. 25 lakhs)*

15.498 The provision of Rs. 6.90 lakhs allotted to this scheme during the Fifth Plan was only for meeting expenditure relating to a nucleus staff functioning in the Regional Offices of the Department at Trivandrum, Cochin and Calicut. An amount of Rs. 25 lakhs is proposed for the scheme in the Plan for 1978-83.

#### 3. *District Planning Units (Outlay Rs. 50 lakhs)*

15.499 An outlay of Rs. 50 lakhs is proposed for the continuance of the District Units established during the Fifth Plan period and also for the establishment of new units at Trichur, Cannanore, Alleppey and Kottayam.

#### 4. *Master Plans for Agro-Industrial Centres, Urban areas, Tourist Centres & Other Special Development Areas (Outlay Rs 65 lakhs)*

(a) *Existing Areas*—(i) The existing planning units for the Kovalam-Vizhijnam area and the Kottayam Medical College Area have to be continued during the Plan.

(ii) Preparation of Master Plans for Punalur, Sherthalai and Chalakudy have been included in the budget for 1978-79. Work on the above schemes have to be continued during the Plan period 1978-83. An amount of Rs. 15 lakhs is proposed for the above schemes.

(b) *Master Plans for Municipal Towns/Urban Centres*

Master Plans for the development of all Municipal Towns have to be formulated within the perspective Plan period. So far, Development Plans for 16 urban areas have been prepared. It is proposed to prepare such Plans for 10 more towns during the Plan period. An amount of Rs. 50 lakhs is set apart for these schemes.

5. *Headquarters Unit and Reorganisation of the Headquarters Office (Outlay Rs. 20 lakhs)*

15.500 This Scheme was included in the Fifth Plan but could not be implemented. The scheme was to set up a planning unit in the Headquarters Office of the Department for scrutiny and review of schemes, plan processing, enforcement, implementation and co-ordination at the State level. The committee on Estimates 1976-77 of the State Legislature in their report remarked that there is absolutely no uniformity with regard to the Technical and Administrative staff pattern of the Department. Accordingly, it is suggested that the following divisions be constituted in the Headquarters Office of the Department.

- (i) Planning and Administration Division
- (ii) Research Division
- (iii) Regional Plan Division
- (iv) Local Area Plan Division
- (v) Detailed Plan Division
- (vi) Traffic and Transportation Division
- (vii) Development Plan Implementation Division

15.501 An outlay of Rs. 20 lakhs is earmarked to meet the cost of this scheme.

6. *Research Cell-cum-Data Bank (Outlay Rs. 12 lakhs)*

15.502 This unit is engaged in Research Studies for the preparation of Development Plans and for giving guidance to the sub-offices in the matter of collection and analysis of data. An outlay of Rs. 12 lakhs is set apart for the continuance of the scheme.

7. *Training of Departmental personnel and Apprentices (Outlay Rs. 26 lakhs)*

15.503 This scheme provides for special training to Engineering or Architectural graduates in Town and Country Planning, training by the Department to Engineering or Architect apprentices and inservice training programmes for departmental personnel. An amount of Rs. 26 lakhs is proposed towards the cost of the scheme.

8. *Traffic Operation plans for Major Urban Centres (Outlay Rs. 30 lakhs)*

15.504 A provision of Rs. 15 lakhs is proposed for the preparation of traffic operation plans for the urban centres of Trivandrum, Cochin and Calicut. Also an amount of Rs. 15 lakhs is provided for the traffic operation plans for Quilon, Trichur, Palghat and Cannanore.

9. *Creation of Planning and Development Authorities in Urban Areas (Outlay Rs. 100 lakhs)*

15.505 An amount of Rs. 100 lakhs is proposed for giving financial assistance to the existing Town Planning Trusts, Development Authorities and also for new authorities to be created at Quilon, Alleppey, Kottayam, Trichur, Palghat, Malappuram and Cannanore during the Plan period 1978-83.

10. *Implementation of Development Plans in Urban Areas*

(a) *Preparation of Detailed Development Plans (Outlay Rs. 50 lakhs)*

15.506 This unit in the Headquarters office is engaged in the preparation of Detailed Development Plans as a preliminary to the implementation of master plans. About 200 Detailed Town Planning Schemes covering 8,000 hectares of urban land have to be prepared during the Plan period. An amount of Rs. 50 lakhs is provided for the Scheme.

(b) *Financial Assistance to planning and Development Authorities for Implementation of Development Plans (Outlay Rs. 400 lakhs)*

15.507 An amount of Rs. 400 lakhs is earmarked for giving financial assistance to Planning and Development Authorities for implementation of urban development Plans.

11. *Urban Environmental Improvement Scheme (Outlay Rs. 30 lakhs)*

15.508 This scheme was included in the Fifth Plan but it could not be taken up due to administrative reasons. The most visible consequence of urbanisation and rapid growth is the decadence of urban environment. It is the task of the physical planner to assess and recommend appropriate action for environmental improvement. It is proposed to set up a landscape unit in the Town Planning Department for taking up environmental improvement schemes for preservation, conservation and beautification of special area in selected towns and cities. An outlay of Rs. 30 lakhs is proposed for the purpose.

*C New Schemes*

1. *Preparation of a State spatial Development Plan (Outlay Rs. 20 lakhs)*

15.509 It is necessary to take urgent steps to prepare a comprehensive development plan for the whole State locating the important growth centres in the State. The Estimate Committee of the State Legislature had also recommended the preparation of a State Plan. A provision of Rs. 20 lakhs is made for the scheme.

2. *Urban Development Including Acquisition of Land (Outlay Rs. 200 lakhs)*

15.510 One of the first essential steps in the implementation of any development plan is to secure large extent of land in and around cities and towns in advance and at reasonable prices. This will act as a deterrent to speculation in land prices. Therefore, an outlay of Rs. 200 lakhs is proposed for the acquisition of land and for urban development.

3. *Setting up of a State Town & Country Planning Board (Outlay Rs. 5 lakhs)*

15.511 The new Town and Country Planning Bill contemplates setting up of a high power Town and Country Planning Board at the State level to guide and advise various Planning Authorities in the State and to co-ordinate their activities. An outlay of Rs. 5 lakhs is proposed for the establishment of the scheme.

4. *Creation of Plan Evaluation and Monitoring Cell (Outlay Rs. 5 lakhs)*

15.512 In order to watch over the progress of implementation of the schemes by the Development authorities, Town Planning Trusts/Local Bodies and also to review the plans at intervals, a nucleus cell is proposed at the Headquarters Office of the Department. An outlay of Rs. 5 lakhs is set apart towards the cost of the scheme.

5. *Scheme for the Development of Growth Centres in Malappuram and Idukki Districts (Outlay Rs. 53 lakhs)*

15.513 Research studies for identifying growth centres in two of the backward districts (Malappuram and Idukki) of the State and for appropriate investment for the creation of employment, provision of infrastructural facilities and other amenities will be undertaken during the plan period 1978-83. A lumpsum provision of Rs. 53 lakhs is proposed, out of which Rs. 3 lakhs is meant for studies and the remaining for investment.

6. *Development of a new Town at Idukki (Outlay Rs. 250 lakhs)*

15.514 A draft development plan has already been prepared for Idukki Township which is the Headquarters of Idukki District formed in 1972. The plan visualises the building up of a new hill town to fit in with the surrounding hilly terrain. Details of physical targets

for different sectors of development during the Five Year Plan period are given below:

- (i) Residential development including the construction of quarters for Government employees and development of other housing colonies.
- (ii) Developing a Commercial Complex at the Town Centre, a Market at Cheruthoni, and shopping centres at Painavu, Cheruthoni, Periyar.
- (iii) Construction of public buildings for Collectorate, District Offices, District Hospital, College, etc.
- (iv) Developing area for industrial use and construction of an Industrial Estate.
- (v) Developing facilities for tourists which includes construction of a Guest House, Boat Jetty, Tourist Information Centre, etc.
- (vi) Forming a large botanical garden in Periyar Riverbed, Picnic spots at Painavu, Vellappara, Cheruthoni, etc. and the construction of a Mini Stadium at Vellappara.
- (vii) Construction of new access roads, improving the existing roads, construction of a central bus terminal at Vellappara, bus halting stations, etc.
- (viii) Development of a town water supply system, improvement of drainage system, extension of electricity to the developed areas and providing street lights, etc.

15.515 A provision of Rs. 250 lakhs is proposed to implement the scheme.

15.516 Scheme-wise break up of the total outlay of Rs. 26.91 crores proposed for the Five Year Plan, 1978-83 is given in Table 15.20.

TABLE 15.20

Urban Development—Scheme-wise Outlay

(Rs. in lakhs)

Sl. No.	Scheme	Fifth Plan Outlay 1974-79	1974-78 Expenditure	1978-79 Outlay Budgeted	1978-83 Outlay Proposed
(1)	(2)	(3)	(4)	(5)	(6)
1. <i>Financial assistance to local bodies</i>					
(i)	For remunerative schemes—town improvement works—Public borrowing by KUDFC	522.50	413.00	110.00	500.00
(ii)	For non-remunerative schemes—Town Improvement works	15.00	43.31	10.00	250.00
2. <i>Town and Regional Planning</i>					
(a)	Regional Planning units at Trivandrum, Cochin and Calicut	6.90	4.84	1.50	25.00
(b)	District Planning units	26.00	17.43	6.50	50.00
(c)	Headquarters Unit and Reorganisation of the Headquarters Office	1.50	..	..	20.00
(d)	Master Plan for Agro-Industrial Centres, Urban areas and Tourist Centres	4.50	3.09	2.15	65.00
(e)	Traffic operation Plan for major urban centres	9.00	7.00	3.00	30.00



(1)	(2)	(3)	(4)	(5)	(3)
(f)	Creation of Planning and Development authorities in Urban areas	31.22	15.12	10.50	100.00
(g)	Implementation of Development Plans in Urban areas	41.38	5.07	2.00	450.00
(h)	Urban environmental improvement scheme	..	0.80	0.50	30.00
(i)	Preparation of a State Spatial Development Plan	..	..	..	20.00
(j)	Urban Development, including acquisition of land	..	..	..	200.00
(k)	Setting up of a State Town and Country Planning Board	..	..	..	5.00
(l)	Development of blighted spots in major urban centres	..	..	..	200.00
(m)	Research cell-cum-Data Bank	5.00	3.31	1.00	12.00
3.	<i>Environmental Improvement of slums :</i>	55.00	12.00	6.00	400.00
4.	<i>Other Schemes :</i>				
(a)	Training of Personnel and apprentices	4.00	2.53	0.58	26.00
(b)	Creation of an evaluation and monitoring cell	..	..	..	5.00
(c)	Scheme for the development of growth centres	..	..	..	53.00
(d)	Development of a new town at Idukki	..	..	..	250.00
	Total	722.00	527.50	153.73	2691.00

### Information and Publicity

15.517 The Public Relations Department is performing the dual function of enlightening the public on the various activities of the Government and keeping the Government posted with the views of the Press and the Public. The success of development plans depends mostly on people's co-operation as well as their active-participation. This can be achieved only with the help of a well equipped publicity media. The public Relations Department has to be strengthened suitably to take the maximum advantage of the various voluntary organisations in the State for the effective dissemination of information. The following programmes are proposed under information and publicity.

#### Press Information Service

#### Press Tour (Outlay Rs. 2.75 lakhs)

15.518 A team of journalists will be taken on study tour to any one of the neighbouring States and a team of journalists from other States will be received on reciprocal basis. It is also proposed to organise press tours of accredited journalists to project sites and places of importance. An outlay of Rs. 2.75 lakhs is provided for this purpose.

#### Press Academy (Outlay Rs. 17 lakhs)

15.519 It is proposed to start a Press Academy with headquarters at Ernakulam. Steps are being taken to acquire land for this purpose. Construction of a building with a conference hall, library etc. at a cost of Rs. 10 lakhs is envisaged under this scheme. An amount of Rs. 17 lakhs is provided for implementing this scheme.

#### welfare Fund for Journalists (Outlay Rs. 5 lakhs)

15.520 It is proposed to organise a welfare fund for giving financial assistance to journalists and their dependents in distress. The fund will be created out of contributions from managements of news papers, contributions by Government, proceeds of film award nights, film festivals or similar functions sponsored by Government. An amount of Rs. 5 lakhs is provided as contribution of Government for the welfare fund.

#### Field Publicity

#### Field Publicity Unit (Outlay Rs. 5.50 lakhs)

15.521 A well organised field publicity unit is absolutely necessary to educate the people on the development activities in the State. At present the Department of Public Relations has 11 field publicity units, one in each District. It is proposed to organise an additional field publicity unit exclusively for the backward areas in the districts of Idukki and Kottayam and another unit for the backward areas of the western ghat region in the State. An amount of Rs. 5.50 lakhs is proposed for this item.

#### Strengthening of field publicity organisation (Outlay Rs. 13.75 lakhs)

15.522 Under this scheme it is proposed to start "Rangasalas"—open air theatres in all the District headquarters except Trivandrum district, where already there is an open air theatre, with the active co-operation of local bodies. Each "Rangasala" will consist of an open air auditorium with a cabin for installing the projector a permanent screen and gallery for spectators. A 16 mm projector, with accessories will also be provided. The old vehicle in the District Information

Office, Ernakulam will be replaced by a new one. The cost of the above programmes works out to Rs. 13.75 lakhs.

*Community listening sets (Outlay Rs. 5 lakhs)*

15.523 Radio has proved to be an effective medium of publicity and education. At present a subsidy of Rs. 175 per radio set is being given to the Panchayats. It is proposed to enhance this subsidy to Rs. 250 per set. In distributing radio sets areas where scheduled caste and scheduled tribe population live will be given preference. A provision of Rs. 5.00 lakhs is proposed for this scheme.

*Publicity materials (Outlay Rs. 6.25 lakhs)*

15.524 Besides the departmental journal 'Janapatham' the Department of Public Relations has to print and circulate posters, pamphlets, folders, booklets, leaflets etc. Campaign literature has to be produced on a large scale to educate the people on plan schemes, and other activities of the Government. Desk calendars, wall sheet calendars, handbooks etc. are also proposed to be brought out during the current plan period. A provision of Rs. 6.25 lakhs is proposed for this purpose.

*Exhibitions (Outlay Rs. 7.50 lakhs)*

15.525 The Department has to participate in exhibitions organised during local festivals in different parts of the State. The exhibition unit in the Department is looking after this item of work. A provision of Rs. 7.5 lakhs is made for this scheme.

*Songs and Drama Services*

*Songs and Drama (Outlay Rs. 6.25 lakhs)*

15.526 There is already a programme for the inter-State exchange of cultural troupes under which two cultural troupes will be visiting this State and the Department in turn will send two troupes to other States every year. Necessary provision for meeting the expenditure in this connection is included under this scheme. Also provision has been included for giving State awards for drama in each year. A total amount of Rs. 6.25 lakhs is proposed for these items.

*Photo Services*

*Photo Publicity (Outlay Rs. 10 lakhs)*

15.527 The scope of coverage of the photographic wing is steadily increasing on account of the increase in the tempo of development programmes and Government activities. It is therefore proposed to start photographic units in the two Regional Centres at Ernakulam and Kozhikode.

Purchase of vehicles for the use of the photographers is also envisaged under this scheme. An outlay of Rs. 10 lakhs is contemplated for this scheme.

*Advertising and Visual Publicity*

*Display Advertisements (Outlay Rs. 10 lakhs)*

15.528 More than fifty dailies and about one hundred other periodicals are published from this State. These papers and periodicals can be used as powerful media for publicity by issuing display and campaign advertisements. An amount of Rs. 10 lakhs is provided for the purpose.

*Information Centres*

*Starting of information Centres (Outlay Rs. 4.50 lakhs)*

15.529 The existing information centres at Trivandrum, Quilon, Trichur, Kozhikode, Cannanore and Kottayam have to be strengthened and it is proposed to start new information centres at Ernakulam, Palghat and Malappuram. An outlay of Rs. 4.50 lakhs is proposed for implementing this scheme.

*Films (Outlay Rs. 25 lakhs)*

15.530 The Department is utilising the services of the Film Development Corporation for the production of newsreels and documentaries. It is proposed to produce documentaries independently on the various facts of the life of Kerala and on the lives of eminent personalities of the past generation. A provision of Rs. 25 lakhs is made for this item.

*Publications*

*Publication of Books (Outlay Rs. 2 lakhs)*

15.531 This scheme envisages encouraging eminent authors for writing books on important cultural, social and educational topics and publishing the same as priced publications. The cost of the scheme works out to Rs. 2 lakhs for five years.

*Research & Training in Mass Communications*

*Training in Mass Communication (Outlay Rs. 1.50 lakhs)*

15.532 The staff of the Public Relations Department are being regularly sent to the Institute of Mass Communication, New Delhi for training on principles and practices of Mass Communication. It is also proposed to organise seminars, Workshops, refresher courses, etc. An outlay of Rs. 1.50 lakhs is provided for this purpose.

TABLE 15.21

## Information and Publicity—Scheme-wise Outlay

(Rs. in lakhs)

Sl. No.	Scheme	Fifth Plan Outlay (1974-79)	1974-78 Expenditure	1978-79 Outlay Budgeted	1978-83 Outlay Proposed
(1)	(2)	(3)	(4)	(5)	(6)
1.	<i>Press Information Services :</i>				
	(i) Press Tour	1.00	0.70	0.25	2.75
	(ii) Press Academy	..	..	..	17.00
	(iii) Welfare Fund of Journalists	..	..	..	5.00
2.	<i>Field Publicity :</i>				
	(i) Field Publicity Unit	..	..	..	5.50
	(ii) Strengthening of field publicity organisations	10.00	6.88	2.50	13.75
	(iii) Community listening sets	1.25	0.95	0.50	5.00
	(iv) Publicity materials	3.00	2.23	1.25	6.25
	(v) Exhibitions	3.00	3.39	1.00	7.50
3.	<i>Songs and Drama Services:</i>				
	Songs and Dramas	3.00	1.83	1.25	6.25
4.	<i>Photo Services :</i>				
	Photo Publicity	5.00	2.29	2.00	10.00
5.	<i>Advertising and Visual Publicity :</i>				
	Display advertisements	3.00	2.67	1.00	10.00
6.	<i>Information Centres :</i>				
	Starting of Information Centres	1.00	0.36	0.50	4.50
7.	<i>Films :</i>	10.00	6.55	1.50	25.0
8.	<i>Publications:</i>				
	Publication of Books	..	..	..	2.00
9.	<i>Research and Training in Mass Communications :</i>				
	Training in Mass Communications	0.75	0.27	0.25	1.50
	<b>Total</b>	<b>41.00</b>	<b>28.12</b>	<b>12.00</b>	<b>122.00</b>

**Apprentice Training, Employment, Labour and Labour Welfare**

15.533 The Kerala State Labour Welfare Board was established to formulate and implement suitable schemes for labour welfare. The Board is expected to co-ordinate all the welfare activities. Following are the proposed labour welfare schemes for the 1978-83 Plan.

1. *Development of Directorate (Outlay Rs. 5 lakhs)*

15.534 It is proposed to start a Planning and Research Cell in the Directorate of Industrial Training in order to conduct scientific studies to assess the demand for technically trained hands in various trades which should form the basis for intake of trainees in the respective trades. The provision made is for starting the Planning and Research Cell and for

appointment of additional staff to cope with the extra workload in the department.

2. *General Labour Welfare*(i) *Labour Welfare Fund (Outlay Rs. 20 lakhs)*

15.535 Government have constituted a Labour Welfare Board to provide amenities to workers and their families. Each worker is expected to contribute 50 p. and employer Re. 1 to the fund per annum. The provision made is towards State's contribution to this fund.

(ii) *Scholarship to Children of Labourers (Outlay Rs. 26 lakhs)*

15.536 The scheme envisages grant of scholarship for higher education to the children of labourers. The

children of labourers who secure a minimum of 50% of marks in the qualifying examination are eligible to apply for the grant of scholarship. The details of the scholarship scheme is given below:

(Annual amount and number)

Name of Course	Scholarship amount (Rs.)	No. of Scholarships	Total amount Rs. in lakhs
Pre-Degree	500	50	0.25
B.A./B.Com.	750	100	0.75
B.Sc.	750	100	0.75
<i>Post Graduates:</i>			
Arts	1000	100	1.00
Science	1000	80	0.80
Engineering	1200	40	0.48
Medicine	1200	50	0.60
Agriculture	1200	30	0.36
Veterinary	1200	5	0.06
Total for 1 year			5.05

An outlay of Rs. 25.25 lakhs is made in the Plan for meeting the expenses.

(iii) *Holiday Resorts (Outlay Rs. 80 lakhs)*

15.537 Holiday homes, wherein the labourers can stay for a short period at intervals and restore physical and mental health, are proposed to be started. Four centres will be started during the Plan period, one each at Thekkady, Wynad, Varkala and Munnar, at the rate of Rs. 20 lakhs per centre the total outlay required for the four centres will be Rs. 80 lakhs.

(iv) *Higher Education Facilities for Workmen (Outlay Rs. 2.50 lakhs)*

15.538 Selected young unskilled workers should be provided with stipend for acquiring higher educational qualification so as to enable them to better their career. Stipend at the rate of Rs. 500 per annum will be given to 100 workers every year. The provision made is for meeting the expenditure.

(v) *Trade Union Survey (Outlay Rs. 10 lakhs)*

15.539 A survey is proposed to be conducted to find out the nature and extent of welfare activities, if any, done by the Trade Unions. Trade Unions are to be encouraged to start welfare activities of their own by providing grants. A total provision of Rs. 10 lakhs is made for this.

(vi) *Trade Union Clinics (Outlay Rs. 10 lakhs)*

15.540 It is proposed to start Trade Union Clinics to advise Trade Unions to improve the quality of welfare work done by the workmen. Ten such clinics each costing Rs. 0.50 lakh are proposed to be started during the Plan, period. Further, a scheme for granting of awards to such of these Trade Unions which are doing effective welfare work is proposed to be taken up. An outlay of Rs. 10 lakhs, is provided in the Plan for this purpose.

(vii) *Study Tours and Visits for Workmen. (Outlay Rs. 5 lakhs)*

15.541 Study tours, for workmen to industrial areas outside the State are proposed to be organised. The study tour group may consist of 10-12 members. Annually 100 groups are proposed to be organised. Each group should be provided with a grant amount of Rs. 1,000. The total provision made in the Plan is Rs. 5 lakhs.

(viii) *Libraries for workmen. (Outlay Rs. 5.25 lakhs)*

15.542 Library and reading room facilities are to be provided in the vicinity of industrial areas. It is proposed to provide 70 libraries, including the existing ones. A grant of Rs. 1,500 is proposed to be given to each library. The outlay made is for meeting the expenditure.

(ix) *Community Centres; to promote recreational facilities (Outlay Rs. 25 lakhs)*

15.543 Five Community Centres to promote recreational facilities of workers are proposed to be established. An outlay of Rs. 25 lakhs is made in the Plan for the purpose.

### 3. Education and Training

#### *Industrial Training Institutes I.T.Is.*

15.544 The Department of Industrial Training is in charge of Craftsmen Training and Apprenticeship Training Schemes. The main objective of these training schemes is to ensure a steady supply of skilled multi-level technical personnel to meet the growing demand. At present there are 13 I. T. Is. in the public sector and 40 I.T.Is. in the private sector. Training is imparted in I.T.Is. in 25 trades of which 11 are of one year duration and 14 are of two years duration. The following schemes are proposed to be implemented during the 1978-83 Plan.

(i) *Strengthening of the existing Industrial Training Institutes (Outlay Rs. 90 lakhs)*

Providing machinery for additional units like Electronics, Air conditioning and Refrigeration etc.	Rs. 50 lakhs
Replacement of machinery and tools	Rs. 15 ,,
Additional class rooms and workshops for I.T.Is.	Rs. 25 ,,
Total	Rs. 90 ,,

(ii) *Diversification of Trades (Outlay Rs. 25 lakhs)*

15.545 With the advancement of technology in the industrial field, the needs for specialised types of craftsmen have increased. It is therefore necessary to improve upon the existing training and also to introduce new trades, in the I.T.Is. An outlay of Rs. 25 lakhs is made in the Plan for this purpose.

(iii) *Training of I.T.I. Certificate holders in popular Trades (Outlay Rs. 25 lakhs)*

15.546 The object of the scheme is to give intensive and production-based training to the I. T. I. certificate holders. Such training can be given in popular trades which will provide job opportunities within the country and other developing countries. One Centre will be opened during the Plan period at a cost of Rs. 25 lakhs.

(iv) *Institute for training of staff (Outlay Rs. 15 lakhs)*

15.547 The trades now taught in I. T. Is. required diversification. It is therefore necessary that the existing staff in I.T.Is are given proper training to handle the diversified trades. An Institute for the Training of Staff will be set up during the Plan period. An outlay of Rs. 15 lakhs is made in the Plan for this purpose.

(v) *Scheme for training of Scheduled Caste and Scheduled Tribes (Outlay Rs. 15 lakhs)*

15.548 The object of the scheme is to give intensive training in various skills to scheduled caste and scheduled tribes. There is acute scarcity of skilled persons belonging to this group. It is therefore proposed to introduce intensive courses in the I. T. Is exclusively for SC/ST candidates. The outlay proposed is Rs. 15 lakhs.

(vi) *Evening Courses (Outlay Rs. 10 lakhs)*

15.549 This scheme is to impart theoretical knowledge to adult industrial workers. The scheme will be implemented in important industrial centres. A provision of Rs. 10 lakhs is made in the Plan for implementing the scheme.

(vii) *Advanced Vocational Training Schemes (Outlay Rs. 15 lakhs)*

15.550 The scheme is designed to conduct training programmes to meet the special requirements of a group of industrial establishments. The programme is carried out under the auspices of UNDP/ILO. The first course under the scheme has been started in 1977 at the I. T. I., Kalamassery. Provision of a separate building and adequate equipments are necessary for running the course. A provision of Rs. 15 lakhs is made in the Plan for the purpose.

(viii) *Apprenticeship Training Scheme (Outlay Rs. 50 lakhs)*

15.551 The scheme was implemented in the State in 1963. It is a statutory obligation on the part of the State Government to provide facilities for Related Instruction Classes for the Apprentices. Accordingly 7 Related Instruction Centres have been started in the State. These centres are housed in private buildings. Provision is, therefore, made for construction of permanent buildings and offering other facilities to the existing Centres. Outlay made in the Plan is Rs. 50 lakhs.

(ix) *Development of Directorate of Industrial Training (Outlay Rs. 5 lakhs)*

15.552 The strengthening of the Institutions and creation of new Centres demand appropriate strengthening of the Directorate. A provision of Rs. 5 lakhs is made in the Plan for this purpose.

(x) *Intensified Training Scheme—Job Oriented (Outlay Rs. 5 lakhs)*

15.553 The object of the scheme is to offer short-term intensive training to the I. T. I. and Apprenticeship Certificate Holders to make them proficient to undertake the work independently in their own selected fields of occupation. The provision made is for continuance of the training scheme of artificial limb making and for starting two other schemes one in the trade of Plumber and another for starting a Production-cum-Training Centre.

(xi) *Women I.T.I., Trivandrum. (Outlay Rs. 5 lakhs)*

15.554 The outlay is for construction of buildings, purchase of machinery and equipments and for meeting miscellaneous expenditure.

(xii) *Construction of Staff quarters (Outlay Rs. 7 lakhs)*

15.555 The provision made is for the construction of staff quarters at Trivandrum, Attingal, Calicut and Arecode (Malappuram District.)

(xii) *Starting of new I.T.I.s (Outlay Rs. 10 lakhs)*

15.556 The outlay is for starting new I. T. I.s in the State during 1978-83.

4. *Employment Services*(i) *National Employment Scheme (Outlay Rs. 20 lakhs)*

15.557 It is proposed to introduce certain major changes in the functioning of the Employment Services. In order to achieve a deviation from its urban nature and to extend the service to the rural areas for the benefit of the rural population and to the vulnerable sections like scheduled castes and scheduled tribes it is proposed to start rural centres and special cells for scheduled castes and scheduled tribes. The provision made is for the implementation of the following schemes.

- (i) Opening of Employment Information and Assistance Bureau,
- (ii) Establishment of Town Employment Exchange.
- (iii) Special cell for scheduled castes and scheduled tribes
- (iv) Coaching-cum-guidance centres for scheduled castes and scheduled tribes.
- (v) Strengthening of Employment Market Information.
- (vi) Strengthening of Vocational Guidance etc.

(ii) *Overseas Employment Programme (Outlay Rs. 50 lakhs)*

15.558 The Government have registered a company by name "The Overseas Development and Employment Promotion Consultants Ltd". Under the Indian companies Act. The main objectives of the company are to promote employment in foreign countries, back up industrial ventures abroad, to raise the necessary financial resources from Indians working abroad for projects in India, to promote export of traditional and non-traditional goods from the country, etc. The outlay is for giving financial assistance to the corporation by way of share capital contribution.

(iii) *Institute of Labour and Employment (Outlay Rs. 30 lakhs)*

15.559 It is proposed to start an institute called "The Kerala Institute of Labour and Employment". The objects of the institute are to provide for education training, study and research in labour, employment and related subjects. The institute will have—

- (a) to undertake, and assist in the organisation of training study courses, conferences, seminars and lectures;
- (b) to undertake, aid, promote and co-ordinate research through its own or other agencies including universities and other institutions of standing;
- (c) to analyse specific problems encountered in the planning and implementation of labourer, employment and allied programmes and to suggest suitable remedial measures;
- (d) to prepare, print and publish papers, periodicals and books in furtherance of the objects of the institute;
- (e) to undertake, aid, promote and co-ordinate consultancy and such other activities as may be necessary to achieve the objects of the institute;
- (f) to establish and maintain libraries and information services;
- (g) to collaborate with other institutions, organisations, associations and societies in India or abroad interested in similar objects; and
- (h) to offer fellowships, scholarships, prizes and stipends in furtherance of the objects of the institute;

15.560 The institute will be an autonomous body. The provision is for giving assistance to the institute.

5. *Other Activities :*(i) *Rehabilitation of Sri Lanka Repatriates. (Outlay Central Sector Rs. 355 lakhs, State Sector Rs. 436 lakhs and Financial Institutions Rs. 375 lakhs)*

15.561 Rehabilitation of Repatriates is a National problem and it is morally binding on the part of the State to help in solving this problem. It is expected that the country will have to rehabilitate over 6 lakh Sri Lanka repatriates during the next few years. Details of what the State has done, so far, in the field of rehabilitation of repatriates, are given below:—

- (1) No. of Burma repatriates arrived in this State 3,251 families

- (2) No. of Burma repatriates resettled by granting business loan 1,672 families
- (3) Amount of business loan granted to Burma repatriates Rs. 28,81,325
- (4) Amount of Housing loan granted to Burma repatriates Rs. 7,850
- (5) No. of Burma repatriates given employment 3 persons
- (6) No. of Sri Lanka repatriates arrived in this State 1,140 families
- (7) Amount of business loan granted to Sri Lanka repatriates Rs. 13,26,700
- (8) Amount of housing loan given to Sri Lanka repatriates Rs. 65,350
- (9) No. of Sri Lanka repatriates resettled by granting business loan and resettlement in Rubber Plantation, Punalur
  1. 748 families
  2. 389 business loan
  3. 359 resettlement in Rubber Plantation Scheme, Punalur
  4. 311 Workers as Plantation Workers
  5. 48 repatriates in lower ministerial and lower field posts.
- (10) No. of Sri Lanka repatriates granted housing loan 16
- (11) No. of repatriates assisted in industrial / technical trades up to 1976 38
- (12) No. of repatriate assisted as Day Scholars upto 1976 37
- (13) No. of Uganda repatriates arrived 43
- (14) No. Uganda repatriates granted business loan 1 (Rs. 5,000)

*Proposal for the Plan 1978-83*

15.562 Ever since the formation of the rehabilitation schemes in 1969, they were implemented through the District Collectors, and the entire schemes were financed by the Central Government. But as per the directions from the Planning Commission, a few schemes are included in the State's Five Year Plan (1978-83). However, it is very difficult to implement these schemes within the limited financial resources of the State. Therefore, the schemes are envisaged as a joint effort of the Central and State Governments and the financial provisions, therefore, are shown separately under Central and State sectors.

TABLE 15.22

**Rehabilitation of Sri Lanka Repatriates, Proposals during the Five Year Plan, 1978-83**

Sl. No.	Name of Scheme	Central sector Rs. in lakhs	State sector Rs. in lakhs	Financial institutions Rs. in lakhs	Total Rs. in lakhs
(1)	(2)	(3)	(4)	(5)	(6)
1	Establishment expenditure at the Head Quarters of Rehabilitation	9.00	..	..	9.00
2	Establishment expenditure for the two Regional Centres proposed	3.50	3.50	..	7.00
3	Share participation by the Government of India in the equity capital of Industrial and Agro Industrial Projects in the State	93.75	93.75	187.50	375.00
4	Loans to State Government for joint investment in the equity capital or Industrial and Agro-Industrial Projects in the State	93.75	93.75	187.50	375.00
5	Loans to State Government for grant of Loan assistance to Industrial units	..	100.00	..	100.00
6	Housing Loans to repatriates including those employed in Industrial concern	..	125.00	..	125.00
7	Grants for infrastructural developments in housing colonies	125.00	..	..	125.00
8	Business loans to repatriates	..	15.00	..	15.00
9	Cash doles and maintenance allowance during initial stages	5.00	..	..	5.00
10	Gratuitous relief to repatriates who are old and physically handicapped and destitutes	..	5.00	..	5.00
11	Educational and Training assistance to the students & trainees	25.00	..	..	25.00
	<b>Total</b>	<b>355.00</b>	<b>436.00</b>	<b>375.00</b>	<b>1166.00</b>

(Rs. 11.66 crores)

TABLE 15.23

**Apprentice Training, Employment, Labour and Labour Welfare—Scheme-wise Outlay**

(Rs. in lakhs)

Sl. No.	Name of Scheme	Fifth Plan Outlay	Expenditure 1974-78	Budgeted Outlay for 1978-79	Outlay Proposed for 1978-83
(1)	(2)	(3)	(4)	(5)	(6)
	<i>Labour Welfare</i>				
1	Direction and Administration Development of Directorate	2.00	1.32	1.00	5.00
2	General Labour Welfare				
	(i) Labour Welfare Fund	..	5.00	4.00	20.00
	(ii) Scholarship to children of employees (labourers)	..	..	..	25.25
	(iii) Holiday resorts to labourers	..	..	..	30.00
	(iv) Higher education facilities to workmen	..	..	..	2.50
	(v) Conduct of Trade Union Survey	..	..	..	10.00
	(vi) Trade Union Clinics	..	..	..	10.00
	(vii) Study Tours and visits for workmen	..	..	..	5.00
	(viii) Libraries for workmen	..	..	..	5.25
	(ix) Community Centres to promote recreational facilities	..	..	..	25.00
3	Education and Training				
	(i) Strengthening of I. T. Is.	60.00	42.97	15.00	90.00

(1)	(2)	(3)	(4)	(5)	(6)
(ii)	Deversification of Trades	7.00	3.31	1.50	25.00
(iii)	Training of I.T.I. Certificate holders in popular Trades	..	0.24@	..	25.00
(iv)	Institute for training staff	..	1.00	1.00	15.00
(v)	Scheme for training of (G. T. I. training) Scheduled Castes and Scheduled Tribes	..	0.50	1.00	15.00
(vi)	Evening course	1.00	0.10	0.10	10.00
(vii)	Advanced vocational Training Schemes	19.00	4.00	6.00	15.00
(viii)	Apprenticeship Training Scheme	30.00	19.66	10.00	50.00
(ix)	Development of Directorate of Industrial Training	..	..	..	5.00
(x)	Intensified Training Scheme (job oriented)	5.00	1.25 2.68@	1.00	5.00
(xi)	Women I. T. I. Trivandrum	..	2.00	2.00	5.00
(xii)	Construction of staff quarters	3.00	3.22	1.40	7.00
(xiii)	Starting of new I. T. Is.	..	..	2.00	10.00
4	Employment Services				
(i)	National Employment Schemes	10.00	2.40	3.00	20.00
(ii)	Overseas Employment Promotion	..	9.00	10.00	50.00
(iii)	Institute of Labour and Employment	..	..	1.00	30.00
5	Other activities				
(i)	Rehabilitation of Sri Lanka Repatriates	..	..	..	436.00 355.00A 375.00B
	Total	137.00	98.15 (+)2.92@	60.00	1001.00 (+)355.00A (+)375.00B
	@ Special assistance				
	A Central sector				
	B Aid from financial institutions.				

### Welfare of Scheduled Castes, Scheduled Tribes and Other Backward Classes

#### Welfare of Scheduled Castes and Other Backward Classes

15.563 The scheduled castes constitute 8.3 per cent of the total population of Kerala. During 1971 census there were 17.74 lakh persons belonging to scheduled castes. Their number is estimated to have increased to 21 lakhs now. They are naturally incapable of taking full advantage of the various development schemes implemented under the general sectors owing to their economic, social and educational backwardness. The earlier plans concentrated mainly on educational schemes and, as a result, there has been notable increase in the enrolment of scheduled caste and other backward class students. The percentage of literacy among them according to 1971 census is 40.21, against the general literacy figure of 60.42 in the State as a whole. At present 10 per cent of the posts under public services are reserved for scheduled castes and scheduled tribes. With a view to enhancing their career prospects in public services the Government have provided for special recruitment of scheduled caste and scheduled

tribe candidates direct to gazetted posts and non-gazetted Posts at higher levels in all departments. A special cell is functioning in the Department of Employment to look after the employment interests of scheduled castes and scheduled tribes. The Kerala State Harijan Development Corporation was registered under the Indian Companies Act on 7-12-1972 to undertake the important task of co-ordinating and consolidating the harijan development activities in general and undertaking programmes of economic uplift in particular. Government have given direction to all Heads of Departments and other agencies implementing plan schemes to earmark 10% of the development outlay in each sector for schemes benefiting scheduled castes and scheduled tribes. The eligibility criteria in respect of subsidy-bearing schemes have been relaxed in the case of these sections.

15.564 The Harijan Welfare Department is the agency for implementing development schemes mean exclusively for scheduled castes and other backward classes. The Department has District Welfare Officers and Taluk Welfare Inspectors at field level to implement the schemes. Advisory Committees at the State and



District levels and the Legislative Assembly Committee ensure public participation in the activities of the Department. The Harijans of Kerala are fast progressing towards equal social status with forward communities. Untouchability is not prevalent except in certain pockets in the northern parts of the State. Measures are being taken to root out this social evil totally. Majority of scheduled castes are agricultural labourers, but there are a few people belonging to specific castes who are engaged in traditional and cottage industries. The Harijans have benefited considerably from the various land reform measures implemented in the State. At the beginning of 1977 about 1 lakh Harijan families had benefited by this. There are at present 228 co-operative societies for scheduled castes but the working of most of the societies is not at all satisfactory. In order to overcome the problems regarding inadequacy of working capital faced by these societies, measures will have to be taken to persuade the Reserve Bank of India to change their restrictive policy in providing share capital contribution from Long Term Operation Fund and also to allow refinance facilities to District Co-operative Banks in respect of loans issued to the Harijan Societies.

15.565 However, certain deficiencies have been observed in the planning and implementation of the development programmes in the Harijan Welfare Sector.

- (i) The data base is very weak in the Harijan Welfare Sector.
- (ii) No proper assessment of the impact of the various development programmes implemented so far in the sector has been attempted.
- (iii) Plan funds earmarked for the sector had been insufficient during the preceding plan periods in relation to the sectoral development needs.
- (iv) Benefits that accrued to the Harijans from the General Sector programmes have not been adequate
- (v) Construction works of buildings, wells etc. were usually delayed owing to the absence of timely technical assistance from the public works department.
- (vi) The functionaries of the Harijan Welfare Department lacked training in development administration

15.566 The achievements during the four years of the Fifth Plan have been satisfactory as far as the educational programmes are concerned. The scheme, 'Training in Midwifery' is being successfully continued. Among other achievements, mention may be made of starting 4 cosmopolitan hostels, 15 welfare hostels and 20 nursery schools. The department has tried to increase the employment opportunities for the Harijans by providing training in various trades and small scale industries. The pre-extension training centre functioning at Ernakulam is providing training to undergraduate and graduate Harijans to appear for competitive examinations.

15.567 Though the Harijan Development Corporation was registered in 1972 their development activities gathered momentum only during the Fifth

Plan. Under the housing scheme 2030 houses have been completed and 170 are at various stages of construction. 728 persons have benefited under the scheme of loan for the purchase of agricultural land and 648 persons have been granted loan for running small business/trade/industry. 232 autorikshaws have been supplied on hire-purchase basis and 245 persons have been trained in autorikshaw driving. A match factory at Mala and a carpentry unit in Mahe are being set up. The Corporation is also taking steps to encourage traditional industries of Harijans by advancing loans to societies engaged in such industries. A programme for the construction of 1000 low cost houses with the assistance of the HUDCO is in the final stage of formulation.

*Policy and Strategy for the Plan 1978-83.*

15.568 As the main objectives of the 1978-83 Plan are removal of unemployment, reduction of poverty and provision of basic needs, the backward communities will certainly get maximum benefit from the Plan programmes. The following strategy will be adopted for the achievement of the objectives.

- (i) Steps will be taken to ensure that benefits of the development activities in General Sectors flow to the Harijans in proportion to their population.
- (ii) The special development activities in the Harijan Welfare sector will be continued with added emphasis.

15.569 Plan programmes in the Harijan Welfare sector are essentially to supplement those in the General Sectors. Special importance will be given to those schemes which help to improve the basic needs like education, housing and drinking water. Rural housing programmes will be of particular benefit to the Scheduled Castes. Training programmes implemented by the Harijan Welfare Department will be continued so as to increase the employment opportunities to the Harijans. Assistance will be extended for Scheduled Castes to start self employment units. More employment opportunities are expected to result from the development programmes in Agriculture and allied sectors. The departmental personnel engaged in implementing the Harijan Welfare activities will be given proper training. Delay at all levels in the implementation of the schemes will be avoided. Better co-ordination with other departments implementing general sector Schemes will be achieved so as to utilise fully the proportional funds set apart in the general sector for the benefit of Harijans.

15.570 At present there is no separate unit in the Harijan Welfare Department to collect necessary statistics and to conduct proper evaluation or monitoring of the programmes. Periodic evaluation of the programmes and their impact on the educational, social and economic life of the Scheduled Caste community is an urgent necessity. Steps will be taken for this.

15.571 A brief discussion of the various schemes for the development of Scheduled Castes and other backward classes and Scheduled tribes proposed for the 1978-83. Plan is given below.

*Welfare of Scheduled Castes**I Educational**Continuing Schemes**Scholarships and Stipends (Outlay Rs. 692 lakhs).*

15.572 The scheme is intended for the payment of lumpsum grants and stipends to Scheduled Caste students in the pre-matric classes for the purchase of study materials. The current rates of lumpsum grants vary from Rs. 10 to Rs. 60 per student which will be enhanced taking into account the increase in the cost of books etc.

2. *Boarding Grants (Outlay Rs. 20 lakhs)*

15.573 The scheme is for the payment of boarding grants to Scheduled Caste students residing in subsidised hostels. The present rate of grant is Rs. 55 per month per boarder which will be revised in accordance with the increase in the cost of living. About 3250 students are expected to get assistance from this scheme which will cost Rs. 20 lakhs.

3. *Special Incentives to Talented Students (Outlay Rs. 2 lakhs)*

15.574 The scheme is to encourage the Scheduled Caste students to achieve higher performance level in the public examinations. The rates of grants vary from Rs. 100 to Rs. 150 depending on the course. The eligibility for special incentive grant will be based on the marks obtained in the public examinations by the Harijan students in each district. About 1500 students are expected to avail the benefits of the scheme during the Plan period.

4. *Cosmopolitan Hostel (Outlay Rs. 65 lakhs)*

15.575 At present there are 13 cosmopolitan hostels (10 for boys and 3 for girls) run by the Harijan Welfare Department. Ten new hostels will be started during the next five year period with accommodation facilities for 60 students in each hostel. The outlay also includes provision for the construction of hostel buildings. Services of a Resident Tutor and a part-time Medical officer will be made available to each hostel.

5. *Welfare Hostels (Outlay Rs. 155 lakhs)*

15.576 There are at present 66 Welfare Hostels run by the Harijan Welfare Department. The scheme is continuing from the First Plan onwards and has proved to be very useful. As such 55 new Welfare Hostels are planned to be opened during the next five years with accommodation facilities for 30 students each. The outlay of Rs. 155 lakhs includes provision for the construction of hostel buildings and tuition fees of the students.

6. *Adult Education (Outlay Rs. 5.88 lakhs)*

15.577 District and State level seminars will be conducted under this scheme. Assistance will also be given to voluntary organisations engaged in adult education programmes for the Harijans. Books worth

Rs. 250 will be supplied to each of the 75 selected libraries functioning in the areas of Harijan concentration.

*New Scheme**Supply of Radio Sets to Harijan Colonies/Settlements (Outlay Rs. 5 lakhs)*

15.578 The scheme is intended for the supply of 500 radio-sets to Harijan Colonies/Settlements during 1978-83.

*II. Economic**(a) Continuing Schemes*1. *Subsidy to Technically Trained Persons (Outlay Rs. 10 lakhs)*

15.579 A number of Harijans are being trained by the various training centres run by Harijan Welfare Department. This scheme is intended to assist such trainees to set up independent production service units. About 2000 persons will be benefited by this scheme during the five year period 1978-83.

2. *Financial Assistance to Professionally Trained Persons (Outlay Rs. 2.50 lakhs)*

15.580 The scheme envisages giving financial assistance to professionally trained Harijans to start independent professional units. The benefits of the scheme will be extended to both degree and diploma holders. The upper limit of the assistance will be Rs. 5000 out of which 25 per cent will be treated as grant and the rest as loan. Assistance will be extended to 200 such persons.

3. *Colonisation (Outlay Rs. 118 lakhs)*

15.581 The three schemes, improvement to colonies, settlement of educated unemployed and colonisation for landless labourers which are presently being implemented will be merged to form the "Colonisation" scheme during the Plan period 1978-83. Five new colonies will be established during 1978-83 and all basic needs like housing, water supply, link roads, sanitation etc., will be provided. Integrated area planning will be adopted for developing the colonies. Administrators will be appointed in each of the colonies in the grade of a District Welfare officer to look after the administration of the colonies. Settlers in the colonies will be selected from nearby localities, as far as possible. The setting up of colonies exclusively for Harijans should be discouraged to avoid the isolation of the settlers from other communities. In the selection, preference will be given to landless labourers. In order to avoid the delay in getting suitable lands for establishing the colonies, lands should be made available in time by the Revenue/Forest department. The provision includes the requirements for the improvement works to the existing colonies. Nursery schools will also be started in these Colonies/Settlements.

4. *Employment Bureau (Outlay Rs. 3.50 lakhs)*

15.582 The plan scheme is to start an Employment Unit under the Liaison Wing of the Harijan Welfare

Department to look after the employment interests of Scheduled Castes in liaison with the Department of employment where a special cell is functioning for the purpose. A Junior Employment officer will be appointed in the Unit.

5. *Production Centres (Outlay Rs. 50 lakhs)*

15.583 There are at present 18 production-cum-training centres run by the Harijan Welfare Department. Five new Centres will be opened during the Plan period, at a cost of Rs. 50 lakhs.

(b) *New Schemes*

1. *Supply of Milch Cows (Outlay Rs. 15 lakhs)*

15.584 This Scheme aims at improving the economic condition of selected harijan families by supplying improved breeds of milch cows to them. The scheme will benefit 600 families.

2. *Harijan Co-operatives (Outlay Rs. 100 lakhs)*

15.585 Existing Harijan Co-operative Societies will be revitalised and new harijan societies will be organised. The outlay is to meet the managerial subsidy, share capital contribution, building grant, working capital grant and the pay and allowances of the supervisory staff.

III. *Other Schemes*

(a) *Continuing Schemes*

1. *Training in Midwifery (Outlay Rs. 15 lakhs)*

15.586 An allocation of Rs. 15 lakhs is made in the plan for continuance of the two existing training centres and for establishing two new centres at Trichur and Calicut.

2. *Water Supply (Outlay Rs. 40 lakhs)*

15.587 Drinking water wells will be constructed in areas of Harijan concentration.

3. *Housing (Outlay Rs. 375 lakhs)*

15.588 About 10,000 houses will be constructed during the period 1978-83 at a total cost of Rs. 375 lakhs.

4. *Inter-caste Marriage (Outlay Rs. 22 lakhs)*

15.589 An outlay of Rs. 22 lakhs is earmarked in the plan to assist the inter-caste married couples who are put to much socio-economic hardships.

5. *Eradication of Untouchability (Outlay Rs. 20 lakhs)*

15.590 Under this scheme the Publicity Wing attached to the Harijan Welfare Department will be continued. Publicity on the evils of untouchability will be made by conducting seminars and putting up advertisements in Transport Corporation buses, exhibiting cinema slides, and advertisement through the press. It is also planned to start a periodical publication on the harijan development activities in

the State. Necessary staff will be provided for the purpose. Dramas, art festivals etc. will also be organised under this scheme. An information centre is also planned to be opened in the Harijan Welfare Department. Necessary publicity materials like audio-visual equipments will be purchased. Film documentaries on harijan development activities will be procured and exhibited in the harijan colonies and settlements.

6. *Strengthening of Administrative/Executive Machinery (Outlay Rs. 75 lakhs)*

15.591 Provision of Rs. 75 lakhs is made in the plan for strengthening the administrative/executive machinery of the Harijan Welfare Department.

(b) *New Schemes*

1. *Planning and Statistics Cell (Outlay Rs. 7 lakhs)*

15.592 It is proposed to set up a planning and statistical cell in the Department of Harijan Welfare. An efficient statistical system will be organised to cater to the Planning and administrative needs of the Department. Necessary technical and administrative staff will be appointed in the Directorate and at the District Offices. The outlay also includes provision for the purchase of calculators for the speedy processing of statistical data.

2. *Nursery Schools Cum Feeding Centres (Outlay Rs. 100 lakhs)*

15.593 It is proposed to start 100 nursery school cum feeding centres during the Plan period. The outlay also includes provision for the construction of buildings for 50 nursery schools.

3. *Mahila Samajams (Outlay Rs. 1 lakh)*

15.594 Under this scheme assistance by way of grant @Rs. 2000 will be given to each harijan Mahila samajam in the Harijan Colonies/settlements.

4. *Construction of Compound Walls to Burial Grounds (Outlay Rs. 10 lakhs)*

15.595 A provision of Rs. 10 lakhs is made to construct compound walls for 50 burial grounds.

5. *Construction of Community Halls (Outlay Rs. 12 lakhs)*

15.596 It is proposed to construct 25 community halls in the Harijan Colonies/Settlements. These halls will be utilised for the social activities of the harijana in the locality.

6. *Construction of Buildings for Taluk Welfare Offices (Outlay Rs. 50 lakhs)*

15.597 It is proposed to construct buildings for Taluk Welfare Offices. A provision of Rs. 50 lakhs is made for the construction of 25 buildings for Taluk Welfare Offices.

7. *Harijan Development Corporation (Outlay Rs. 250 lakhs)*

15.598 An amount of Rs. 250 lakhs is set apart to give assistance to Development Corporation for Scheduled Castes and Scheduled Tribes by way of share capital contribution and loan.

*Welfare of Other Backward Classes  
Continuing Schemes*

1. *Educational Concessions (Outlay Rs. 275 lakhs)*

15.599 The scheme is intended to give educational concessions to the students of other Backward classes for pre-matriculation studies.

2. *Boarding Grants (Outlay Rs. 4 lakhs)*

15.600 The scheme is to give grants for students who are residing in subsidised hostels. About 1600 students are expected to be benefited by this scheme.

*Centrally Sponsored Schemes*

(a) *Continuing Schemes.*

1. *Post Matriculation Scholarships (Outlay Rs. 1050 lakhs)*

15.601 The scheme is intended to provide scholarships to scheduled caste students pursuing post matriculation studies.

2. *Girls' Hostels (Outlay Rs. 30 lakhs)*

15.602 The construction of buildings for 15 girls' hostels will be undertaken during 1978-83 at a total cost of Rs. 30 lakhs.

3. *Coaching and Allied Schemes (Outlay Rs. 15 lakhs)*

15.603 The pre-examination training centre functioning at Ernakulam will be continued for imparting training to the Scheduled Caste and Scheduled Tribe students appearing for competitive and selection examinations. Two new training centres will be started at Trivandrum and Kozhikode. Construction of hostel buildings will also be undertaken.

4. *Setting up of Machinery for Eradication of Untouchability (Outlay Rs. 15 lakhs)*

15.604 The scheme envisages setting up of special police squads, appointment of Extension Officers, staging dramas and conducting seminars with a view to eradicate untouchability.

5. *Pre-matric Scholarships to the Children of those engaged in unclean occupations (Outlay Rs. 3 lakhs)*

15.605 Objective of the scheme is the continuance of one welfare hostel already started and starting of two new hostels for the children of those engaged in unclean occupations.

*New Schemes.*

1. *Training in General Nursing (Outlay Rs. 16 lakhs)*

15.606 It is proposed to start two training centres in General Nursing at Kozhikode and Kottayam at a total cost of Rs. 16 lakhs.

2. *Tailoring and Cutting Centres (Outlay Rs. 5 lakhs)*

15.607 Five Training Centres in Cutting and Tailoring will be started for the benefit of harijan girls. On successful completion of the training the

trainees will be provided with sewing machines and other accessories to start self employment.

3. *Advanced Training for Supervisors & Instructors (Outlay Rs. 5 lakhs)*

15.608 The scheme aims at providing advance training for supervisors and instructors of the Training and Production Centres.

4. *Research Study on Scheduled Castes (Outlay Rs. 5 lakhs)*

15.609 This scheme is for undertaking Research studies on the dialect, folklore, folk arts and other cultural aspects of the scheduled castes of Kerala. The study will be undertaken by a competent research fellow to be selected by the University of Calicut in consultation with the Sahitya Akademy, Sangeetha Nataka Akademy and the Lalitha Kala Akademy.

5. *Other Schemes (Outlay Rs. 50 lakhs)*

15.610 An outlay of Rs. 50 lakhs is proposed for the schemes (i) aid to voluntary organisations. (ii) book banks for medical and engineering Students and (iii) new schemes for the development of scheduled castes. New schemes will include special schemes for those Blocks where scheduled castes constitute more than 20 per cent of the population.

*A List of the Centrally Sponsored schemes is given below:*

	(Rs. lakhs)
1. Post-matriculation scholarships	1050
2. Girls' Hostels	30
3. Coaching and allied schemes	15
4. Setting up of machinery for eradication of untouchability	15
5. Pre-matric scholarships to children of those engaged in unclean occupations	3
6. Training in general nursing	16
7. Training in cutting and tailoring	5
8. Advanced training of supervisors and instructors	5
9. Research study on Scheduled Castes	5
10. Aid to voluntary organisations	20
11. Book banks for medical and engineering students	15
12. New Scheme for the development of Scheduled Castes	15
<b>Total</b>	<b>1194</b>

*Welfare of Scheduled Tribes*

15.611 According to 1971 Census there were 2.69 lakh persons belong to Scheduled Tribes in Kerala. The State Government have recently re-classified the Pulayas of Malabar area as Scheduled Castes and as a result the tribal population in the State has declined to 1.93 lakhs. There are altogether 34 tribal communities in Kerala and their socio-economic situation varies from community to community. The percentage of literacy among Scheduled

Tribes according to 1971 census is 25.72 against the general literacy figure of 60.42.

15.612 The tribal welfare Department, constituted on 1-7-1975, is the agency to implement the tribal welfare schemes and to undertake the welfare measures exclusively for tribal people. The Department has five tribal units with headquarters at Manantody, Nilambur, Mannarghat, Thodupuzha and Punalur.

15.613 During the Fifth Plan period Government of India have adopted a new approach to tribal development by which all areas with more than 50 per cent tribal concentration have been clearly identified and Special Plans have been prepared for such areas. In Kerala it has been possible to identify five such sub-plan areas viz. Punalur, Idukki Nilambur, Manantody and Attappady. Eventhough about 65 per cent of the total tribal population in India are brought under sub-plan areas in Kerala it has been possible to cover only 27.5 per cent of the tribal population. The low coverage in Kerala is mainly due to the fact that the tribal people live in hamlets which are scattered and widely dispersed. Also the tribal population turned out to be a minority in certain areas on account of the influx of the settlers from other areas in search of new farming opportunities.

15.614 The main occupation of tribal people is agricultural and related activities. The vocational skills acquired by them are mostly associated with agriculture and handicrafts such as basket making, mat weaving etc. Collection of minor forest produce is their next important occupation. Large extents of tribal land in northern districts have passed into the hands of nontribal settlers. In some cases alienation followed indebtedness. In 1975 Government enacted a law for the prevention of alienation and the restoration of alienated land to the tribal people. By this any transfer of property possessed by a member of Scheduled Tribe to persons other than a tribesman effected on or after 1-1-1960 shall be deemed to be invalid and the former shall be entitled to restoration of possession of the land so transferred.

15.615 In order to improve the facilities for education of the tribal children 74 tribal schools were opened during the previous plan periods. Steps are being taken to open 21 new Government L. P. Schools in tribal areas. Out of the 56 Ashram schools 44 have been converted into hostels. This is in addition to the 14 welfare hostels already existing. The Department is now running 9 Model Welfare Training Centres, 3 production cum training centres and 12 craft centres. Four thousand families have been provided with houses during the plan period. Eighteen ayurvedic dispensaries, three allopathic dispensaries and 5 midwifery centres have been established in remote tribal areas. Three colonies were established in sub-plan areas, one at Vythiri to resettle the bonded labourers and landless tribals and two at Attappady and Idukki respectively for the landless tribal families.

#### *Perspective and Strategy*

15.616 The entire tribal population whether living in areas of tribal concentration or outside will be covered by suitable developmental programmes during the next plan period. The tribal communities will be prepared for continued self reliance so that

they can become equal partners in new productive process and development tasks. Along with the steps to eliminate exploitation, the level of investment in the productive programmes will be concurrently stepped up to a substantial extent. Since the level of advancement varies from community to community and from region to region, separate project reports will be prepared for each tribal hamlet. The strategy evolved for sub plan will continue. The development programmes in the areas outside the sub plan will be implemented with equal importance. For the effective implementation of the Tribal Welfare schemes the Department will be strengthened. In addition to the existing five Regional Tribal Development Offices it is proposed to have four more Tribal Development Offices and forty Tribal Extension Officers with headquarters at areas of tribal concentrations. For the dispersed tribal population, Tribal Guides will be employed.

15.617 The total outlay proposed for 1978-83 for the Tribal Welfare activities will be Rs. 4170.50 lakhs. This includes Rs. 1947.50 lakhs from various schemes of other departments and Rs. 923 lakhs from agencies like Corporations, Financial Institutions etc. which would benefit the tribal people. Thus the outlay proposed to be made directly under Tribal Welfare Department is Rs. 1300 lakhs. The details of the schemes proposed to be taken up during the Plan period are given below:

#### *I. Administration (Outlay Rs. 107 lakhs)*

15.618 The scheme envisages strengthening of the Tribal Welfare Department. The proposal includes construction of staff quarters for all officers who work in remote tribal areas. Out of the Rs. 107 lakhs provided for the schemes Rs. 23.70 lakhs is to meet the non-recurring expenditure.

#### *II. Education*

##### *1. Scholarships and Stipends (Outlay Rs. 3 lakhs)*

15.619 This is a continuing scheme. The outlay proposed is for payment of lump sum grant and stipend to Scheduled Tribe students studying in pre-matric and matric classes for meeting the expenditure towards purchase of books, dress and other school requisites.

##### *2. Boarding Grants (Outlay Rs. 2 lakhs)*

15.620 This is also a continuing scheme. The scheme is intended for the payment of boarding grant to the students admitted in the hostels run by private individuals or voluntary organisations recognised by Government.

##### *3. Special Incentive to Talented Students (Outlay Rs. 0.50 lakhs)*

15.621 The scheme is for the payment of incentive awards to students in Standard IX, X and post matric classes who secure 50 per cent marks in the annual examinations of the previous classes.

##### *4. Balawadies & Creches (Outlay Rs. 60 lakhs)*

15.622 It is considered necessary to set up Balawadies and Creches in the tribal hamlets. Total requirement of

funds for this is expected to be Rs. 140 lakhs out of which Rs. 60 lakhs is provided under the outlay for Tribal Welfare Department.

5. *Hostels (Outlay Rs. 155 lakhs)*

15.623 This is a continuing scheme. During the Plan period 1978-83 it is proposed to construct new buildings for 20 old hostels and to open 30 new hostels. Necessary furniture and equipment will also be supplied to the students.

6. *Grants to Co-operative Societies for Opening New L.P. Schools (Outlay Rs. 30 lakhs)*

15.624 The lower primary schools in the tribal areas will be brought under the control of the co-operative societies in that area. The objective of the scheme is to give grant to the co-operative societies for the construction of building and for the purchase of furniture

7. *Grants-in-aid to Voluntary Organisations (Outlay Rs. 50 lakhs)*

15.625 This is a new scheme for giving assistance to voluntary organisations/institutions for the uplift of tribal people. The total provision for this scheme is Rs. 100 lakhs out of which Rs. 50 lakhs is expected from financial institutions.

8. *Provision of Library, Reading Materials and Radios to Hostels (Outlay Rs. 3 lakhs)*

15.626 Adequate reading materials like periodicals and books should be made available to all hostels. Each hostel will also have to be provided with a radio set. A provision of Rs. 6 lakhs is made for this. Half the cost of the scheme will be met by Tribal Welfare Department and the other half is expected from the funds of Education Department and financial institutions

9. *Special Coaching to Students (Outlay Rs. 15 lakhs)*

15.627 The present system of coaching the students in tribal hostels by appointing only one teacher to handle all subjects is found ineffective. Therefore it is proposed to appoint four teachers, one each for Science and English, Social Studies, Mathematics and Hindi. However, a teacher for Malayalam should also be appointed, if felt necessary. A provision of Rs. 15 lakhs is made for this item.

10. *Grant/Stipends etc. to Students in Tutorial Institutions (Outlay Rs. 10 lakhs)*

15.628 A provision of Rs. 10 lakhs is made to give stipends to tribal students who failed in S. S. L. C examination to attend tutorial institutions and appear again for the examination. The stipend is for the remittance of tuition fees and for meeting the hostel expenses if necessary.

11. *Training in Popular Trades: (Outlay Rs 2 lakhs)*

15.629 Educated tribals will be trained in popular trades for the betterment of employment opportunities. The provision is meant to give assistance to those who take up technical courses like photography, radio engineering, driving etc. which will open up new avenues for

employment. In addition to the provision of Rs. 2.00 lakhs, assistance to the tune of Rs. 3.00 lakhs in cash or kind is expected from other sources.

12. *Adult Education (Outlay Rs. 10 lakhs)*

15.630 A provision of Rs. 20 lakhs is needed for organising cultural centres, arts/sports clubs etc. and to appoint peripatetic teachers. As finance worth Rs. 10 lakhs is expected from other sources the allocation made by the Tribal Welfare Department for the scheme is only Rs. 10 lakhs.

13. *Mini Theatres (Outlay Rs. 17 lakhs)*

15.631 A total outlay of Rs. 40 lakhs is required to construct mini theatres for the benefit of the tribal people. A contribution of Rs. 23 lakhs is expected from institutional sources. Thus the share of the Tribal Welfare Department in the total outlay would be only Rs. 17 lakhs.

14. *Benefit Oriented Camps Training/campaigns (Outlay Rs. 2.50 lakhs)*

15.632 An amount of Rs. 4.50 lakhs is needed for this scheme, out of which Rs. 2 lakhs will be available from other department funds.

15. *Incentive to Parents of Tribal Children (Outlay Rs. 10 lakhs)*

15.633 This is a continuing scheme. The outlay proposed is for the payment of incentive to the parents of tribal children in regular schools, G. R. B. School and Welfare Hostels.

## HI. Economic Development

### 1. Colonisation (Outlay Rs. 50 lakhs)

15.634 Large areas of vested forest lands are reserved for assignment to the tribals. It may not be possible for the individual assignees from among the tribals to organise necessary credit and technical expertise to improve lands assigned to them. Therefore it is proposed to establish 4 new colonies for rehabilitating 400 families. In addition to this, improvements to tribal pockets, isolated colonies and hamlets will be done. The provision is for implementing the schemes such as land development, irrigation, housing, road development, electrification, nursery school, adult education centre, animal husbandry, agriculture, co-operative society and for staff support.

15.635 An amount of Rs. 324.50 lakhs will be met from the funds of other departments and Rs. 43 lakhs is expected as institutional finance. Thus the total outlay on this scheme is Rs. 417.50 lakhs, even though the proposed share of tribal welfare department is only Rs. 50 lakhs.

### 2. Hamlet Development (Outlay Rs. 125.90 lakhs)

15.636 Schemes will be drawn up for the development of hamlets on the basis of the project report for each hamlet. It is estimated that Rs. 792.90 lakhs is required for the development of 50 hamlets. This includes Rs. 423 lakhs from other departments and Rs. 244 lakhs from institutional sources.

15.637 Schemes under soil conservation, irrigation, housing, road development, electrification, co-operation, training in skills, agriculture, animal husbandry and adult education will be implemented under the hamlet development scheme.

3. *Co-operatives (Outlay Rs. 67.00 lakhs)*

15.638 There are at present 54 active Girijan Service Co-operative Societies in the State. Some more have to be organised in areas not covered by the existing ones and the existing societies will have to be strengthened. The strengthening will be in terms of share capital subsidy, working capital, godown facilities, risk fund, subsidy for consumer stores, training of staff etc. Apart from this, 8 new Industrial Co-operative Societies will be organised and assistance in the form of working capital grant, managerial grant and grants for the construction of godowns and offices will be given. The total cost of the scheme is Rs. 301 lakhs but it is expected that Rs. 170 lakhs and Rs. 64 lakhs, respectively will become available from other department and financial institutions. Thus the amount to be provided in the Plan by the tribal welfare department is only Rs. 67 lakhs.

4. *Agriculture and Allied Sectors (Outlay Rs. 114 lakhs)*

15.639 The programmes under this scheme include grant for development of land belonging to isolated tribes and primitive tribes, Minor Irrigation works, subsidy to long term lending for agriculture, Heifer distribution, establishment of insemination centres, Training of CIAS and Dairy Development. A total provision of Rs.700 lakhs is necessary for this scheme out of which Rs. 114 lakhs will be met from the Plan provision of Tribal Welfare Department and the balance from other department funds and from institutional finance.

5. *Cottage Industries (Outlay Rs. 20 lakhs)*

15.640 Traditional occupations of tribal communities like basket making, native umbrella making, potteries etc. will be encouraged through the co-operative societies. The scheme is also intended to give training to tribal people in profitable industrial activities like logging and saw mills, match making plants, wood processing etc. A provision of Rs. 45 lakhs is required for this scheme out of which Rs. 20 lakhs will be met from the Plan provision of the Tribal Welfare Department.

*Other Programmes (Outlay Rs. 11.10 lakhs)*

15.641 The continuing scheme viz., vocational training to most backward tribals, subsidy to technically trained hands, production-cum-training centre and employment to tribal men in Industry will continue as such.

*IV. Welfare Measure (Health, Housing and others)*

1. *Housing (Outlay Rs.100 lakhs)*

15.642 An investment of Rs.250 lakhs is envisaged for the construction of houses, out of which Rs.100 lakhs will be met from the outlay of Tribal Welfare Department.

2. *Drinking Water Supply (Outlay Rs.10 lakhs)*

15.643 This is a continuing scheme. Under this wells will be constructed wherever necessary at a total cost of Rs.10 lakhs.

3. *Aid to Voluntary Organisation (Outlay Rs. 4 lakhs)*

15.644 The scheme is intended for giving assistance to voluntary organisations engaged in the uplift of tribal community.

4. *Mobile Medical Unit (Outlay Rs.5 lakhs)*

15.645 The provision is for establishing three new Mobile Medical Units. Total provision is Rs. 25 lakhs, out of which the Tribal Welfare Department's share is only Rs. 5 lakhs.

5. *Maternity Centres (Outlay Rs.10 lakhs)*

15.646 It is proposed to start new Midwifery Centres. Total provision is Rs. 50 lakhs and the provision from the Department of Tribal Welfare funds is only Rs.10 lakhs.

6. *Bare-foot Doctors (Outlay Rs.1 lakh)*

15.647 For various reasons, modern medicine has not reached the tribal communities in any appreciable measure. Most of them adopt the traditional system. A major effort has to be launched to educate the tribal communities on the advantage of modern medicine and to eradicate prejudice against it. A provision of Rs. 2 lakhs is set apart to train people on modern medicine and to supply essential medicines. As Rs. 1 lakh is expected from the Health Services Department Fund, an outlay of Rs.1 lakh is provided under Tribal Welfare outlay.

7. *Communication (Outlay Rs.5 lakhs)*

15.648 Priority will have to be given for connecting the hamlets with the district and panchayat roads by forming new roads. Culverts and small bridges will be provided wherever necessary. A provision of Rs.100 lakhs is set apart including Rs.95 lakhs from other departments for meeting the immediate needs in building the communications net work.

**Abstract showing the Institutional Finance for the Schemes other than Tribal Sub Plan**

(Rs. in lakhs)

Schemes	Total	Tribal Welfare Department	Other department	Financial Institutions/Corporations S.F.D.A. etc.
I. Administration	107.00	107.00		
II. Education	566.00	370.00	74.00	122.00
III. Economic Development	2336.50	388.00	1247.50	701.00
IV. Health, Housing & others	861.00	135.00	626.00	100.00
	3870.50	1000.00	1947.50	923.00

**Centrally Sponsored Schemes**1. *Post Matriculation Studies (Outlay Rs.35 lakhs)*

15.649 It is expected that 6000 students will be benefited by this scheme.

2. *Girls' Hostels (Outlay Rs.32.60 lakhs)*

15.650 A provision of Rs.32.60 lakhs is proposed for the construction of hostel buildings.

3. *Research and Training (Outlay Rs.54.08 lakhs)*

15.651 An outlay of Rs. 54.08 lakhs is set apart for the continuance of Tribal Research and Training

Centre, Kozhikode and for the constructions of Office building and staff quarters.

4. *Co-operation (Outlay Rs.15 lakhs)*

15.652 This scheme is intended for the payment of working capital grant to Girijan Service Co-operative Societies.

5. *Tribal Sub Plan (Outlay Rs. 550 lakhs)*

15.653 An outlay of Rs.550 lakhs is proposed in addition to the provision of Rs.300 lakhs made under State Plan for the continuance of sub plan programmes.

A list of centrally sponsored schemes is given below:

	(Rs. Lakhs)
1. Post Matriculation Studies	35.00
2. Girls' Hostels	32060
3. Research & Training	54.08
4. Co-operation	15.00
5. Sub-plan	550.00
	686.68

TABLE 15.24

**Welfare of Scheduled Castes and Other Backward Classes--Schemewise Outlay**

(Rs. in lakhs)

Sl. No.	Scheme	Fifth Plan Outlay (1974-79)	1974-78 Expenditure	1978-79 Outlay budgeted	1978-83 Outlay Proposed
(1)	(2)	(3)	(4)	(5)	(6)
<b>A. Scheduled Castes</b>					
<b>I. Education</b>					
1.	Scholarships and stipends	35.00	28.00	8.40	692.00
2.	Boarding grants	4.00	2.19	0.78	20.00
3.	Special incentive to talented students	1.00	0.26	0.12	2.00
4.	Cosmopolitan Hostels	30.00	11.77	6.06	65.00
5.	Welfare Hostels	15.00	9.37	6.90	155.00
6.	Adult Education	1.00	0.06	0.04	5.88
7.	Coaching for competitive examinations	1.00	0.11	0.12	0.12
8.	Supply of Radio sets to Harijan settlements/colonies	..	..	..	5.00
	Sub-total (Education)	87.00	51.76	22.42	945.00
<b>II. Economic Uplift</b>					
1.	Subsidy to technically trained hands	3.00	2.53	0.90	10.00
2.	Financial assistance to professionally qualified persons	1.00	0.14	0.15	2.50
3.	Colonisation (including settlement of educated unemployed and improvement of colonies)	47.00	29.28	19.92	118.00
4.	Employment Bureau	1.00	0.32	0.38	3.50
5.	Production Centres	3.00	3.14	1.59	50.00
6.	Supply of Milch cows	..	..	..	15.00
7.	Harijan Co-operatives	..	..	..	100.00
	Sub-total (Economic Uplift)	55.00	35.41	22.94	299.00
<b>III. Health, Housing and Others</b>					
1.	Training in Midwifery	3.00	4.10	1.80	15.00
2.	Water supply (wells)	3.00	2.19	0.90	40.00
3.	Housing	54.00	88.40	29.00	375.00



(1)	(2)	(3)	(4)	(5)	(6)
4.	Inter-caste marriages	2.00	4.31	2.64	22.00
5.	Eradication of untouchability	5.00	4.05	1.80	20.00
6.	Strengthening of administrative machinery	4.00	2.61	1.50	75.00
7.	Planning and Statistics cell	..	..	..	7.00
8.	Nursery School-cum-Feeding centres	..	..	..	100.00
9.	Mahilamajams	..	..	..	1.00
10.	Compound walls to burial grounds	..	..	..	10.00
11.	Construction of Community Halls	..	..	..	12.00
12.	Construction of buildings to Taluk Welfare Offices	..	..	..	50.00
13.	Thatching grant	..	4.00	..	..
	Sub-total (Health, Housing and Others)	71.00	109.66	37.64	727.00
	Sub-total (A)	213.00	196.83	83.00	1971.00
	<b>B. Harijan Development Corporation</b>	150.00	92.50	75.00	250.00
	<b>C. Other Backward Classes</b>				
1.	Educational concessions	25.00	18.15	5.47	275.00
2.	Boarding grants	2.00	1.53	0.53	4.00
	Sub-total (C)	27.00	19.68	6.00	279.00
	<b>D. Development of Backward Areas</b>	1.00	1.40	..	..
	Total (A+B+C+D)	391.00	310.41	164.00	2500.00
	<b>E. Scheduled Tribes</b>				
	<b>I. Administration</b>	..	..	..	107.00
	Sub-total (I)	..	..	..	107.00
	<b>II. Education</b>				
1.	Scholarships and stipends	5.00	2.41	0.60	3.00
2.	Boarding grants	2.00	1.60	0.40	2.00
3.	Special incentive to talented students	1.00	0.06	0.05	0.50
4.	Balawadies & creches	..	..	..	60.00
5.	Hostels	10.00	10.05	5.70	155.00
6.	Grants to Co-operative Societies	..	..	..	30.00
7.	Grants-in-aid to voluntary organisations	..	..	..	50.00
8.	Providing library, reading materials, radio to hostels	..	..	..	3.00
9.	Special coaching to students	..	..	..	15.00
10.	Grants/stipends etc. to students in tutorial colleges	..	..	..	10.00
11.	Training in popular trades	..	..	..	2.00
12.	Adult education	1.00	0.05	0.10	10.00
13.	Mini theatres	..	..	..	17.00
14.	Benefit oriented camps/training/campaigns	..	..	..	2.50
15.	Incentive to parents of tribal children	12.00	6.40	3.00	10.00
	Sub-total (II)	31.00	20.57	9.85	370.00

(1)	(2)	(3)	(4)	(5)	(6)
<b>III. Economic Development</b>					
1.	Colonisation	..	..	..	50.00
2.	Hamlet Development	25.00	16.00	9.60	125.90
3.	Co-operatives	..	..	..	67.00
4.	Agriculture and Allied Sectors	2.00	1.63	0.40	114.00
5.	Cottage Industries	..	..	..	20.00
6.	Vocational training to most backward tribals	2.00	0.70	0.30	1.00
7.	Subsidy to technically trained hands	1.00	0.32	0.10	0.10
8.	Production-cum-Training Centres	3.00	0.64	0.75	4.00
9.	Employment of Tribal men in Industry	5.00	1.08	1.00	5.00
10.	Dairy farming	5.00	1.50	1.00	1.00
Sub-Total (III)		43.00	21.87	13.15	388.00
<b>IV. Health, Housing and others</b>					
1.	Housing	10.00	18.63	10.00	100.00
2.	Drinking water supply	5.00	1.98	1.50	10.00
3.	Aid to voluntary organisations	..	..	..	4.00
4.	Mobile Medical Units	3.00	1.07	1.50	5.00
5.	Maternity centres	..	..	..	10.00
6.	Bare-foot Doctors	..	..	..	1.00
7.	Communication	..	..	..	5.00
8.	Tribal area Development	2.00	0.10	..	..
Sub-Total (IV)		20.00	21.78	13.00	135.00
<b>V. Tribal-Sub-plan</b>					
Total (E)		..	51.00	91.02	300.00
Grand Total (A+B+C+D+E)		94.00	115.22	127.02	1300.00
		485.00	425.63	291.02	3800.00

### Social Welfare

15.654 The Directive Principles of State Policy, as enshrined in the Constitution, have a bearing on Social Welfare. The Social Welfare Services in the last two decades have sought to serve the development and rehabilitation needs of the weaker sections of society especially the socially and physically handicapped. They include women and children belonging to the vulnerable sections of the community, widows, physically handicapped persons, scheduled caste and scheduled tribe population in general, other backward classes, urban slum-dwellers, etc.

15.655 The Central Welfare Board, set up in 1953 undertook various social welfare programmes like Welfare Extension Projects, Vocational training for adult women, condensed courses of education for adult women, sponsoring the setting up of Working Women's Hostels and giving grants to Mahila Mandals in rural areas. Social defence programmes to prevent juvenile delinquency, beggary

and immoral traffic in women, were introduced a centrally sponsored programmes. Under the socio-economic programme 1080 units were sanctioned providing opportunity to socially maladjusted, economically backward and physically handicapped women. The scheme of scholarship for general and technical education benefited 10,597 physically handicapped persons.

15.656 Special stress was laid on child development and rehabilitation of the physically and mentally handicapped. To meet the widespread nutritional deficiency among children, 'Integrated Child Development Services' (ICDS) programmes, consisting of supplementary nutrition, immunisation, health check-up, referral services, nutrition and health education and informal education were taken up during the V Plan period. The other child welfare programmes are organisation of holiday camps, assistance to foster care homes giving pre-vocational training to the drop-out children in age group 11-14, running of balasevika training centres etc.

15.657 Besides, programmes for social defence, welfare of prisoners, probation services beggary prevention welfare of the physically handicapped, etc. are being implemented.

*Plan Proposals* 1978-83.

1. *Direction and Administration.* (Outlay Rs.10 lakhs)

15.658 The Social Welfare Department is in charge of Welfare Schemes for Women, children physically handicapped, destitutes, orphans and also probation and After Care Services. The administrative machinery of the Department requires strengthening and the departmental personnel have to be given proper training and orientation. It is also proposed to organise an inspection wing and a statistical unit in the office of the Inspector General of Prisons. The outlay is for the implementation of the above programme.

2. *Family and Child Welfare*

A. *Child Welfare*

15.659 Children are to be viewed not merely as objects to be protected by appropriate social policies and welfare services but also as future human resources. Therefore, as part of social welfare services, the children of poor families are to be provided with nutrition health care, pre-school education and welfare services.

(i) *Day Care Centres* (Outlay Rs.27 lakhs)

15.660 Day Care Centres or pre-school centres are meant for children of 3 to 6 years of age. The different kinds of day care centres are Nursery schools Balawadis Kinder Gartens, Montessori schools etc. The majority of these institutions are run by private agencies mostly in urban areas. In addition to providing assistance to these institutions, 100 day care centres are to be started in the selected backward areas like coastal areas, tribal centres slum and similar backward areas. A sum of Rs.27 lakhs is provided for this purpose.

(ii) *Preparation for International Children's Year 1979* (Outlay Rs.0.10 lakhs)

15.661 The provision is for celebrating the International Children's Year falling in 1979 in a befitting manner.

(iii) *Assistance to Voluntary Organisations for Pre-School Education* (Outlay 22 lakhs)

15.662 As stated earlier, most of the pre-school institutions are run by private agencies. As such, they do not satisfy a minimum standard in the matter of accommodation, sanitary conditions, teaching skill etc. In order to encourage the voluntary private agencies to maintain standard institutions with qualified teachers, teaching aids, etc. they will be given financial assistance. A provision of Rs.22 lakhs is made for the scheme.

(iv) *Home for Mentally deficient children* (Outlay Rs.23 lakhs)

15.663 At present there are 2 homes for mentally deficient children, one at Trivandrum and the other at Calicut. Three more homes are to be opened, one

each at Cannanore, Trichur and Alleppey. An amount of Rs.23 lakhs is set apart for establishing these homes.

(V) *Care Home for disabled children* (Outlay Rs.13 lakhs)

15.664 The existing homes are meant for training of mentally deficient children. The children will be sent out of the homes on completion of 18 years of age. But, these outgoing disabled persons need custodial care. For this purpose, 2 care homes are to be opened one for girls and the other for boys at a total cost of Rs.13 lakhs.

(vi) *Integrated child development services* (Outlay Rs. 118.65 lakhs)

15.665 The Integrated Child Development Services Project envisages a package of services like supplementary feeding, immunisation, health check-up, pre-school education etc., Three projects are now functioning, one at Malappuram district and 2 in Trivandrum district. 20 more projects are to be started. A sum of Rs. 118.65 lakhs is provided in the Plan for this purpose.

(vii) *Implementation of Children's Act* (Outlay Rs. 9 lakhs)

15.666 The effective implementation of Kerala Children's Act, will help to solve many of the problems of the socially maladjusted children. It is necessary to start special homes, observation homes and children's home for this purpose. It is, therefore, proposed to establish a special home in each Malappuram and Idukki districts and one Children's home at Cannanore. A sum of Rs. 9 lakhs is provided in the Plan for setting up these institutions.

(viii) *State Board for Children* (Outlay Rs. 2 lakhs)

15.667 The amount is to meet the expenditure on the working of the State Board for children.

(ix) *Starting of Creches/Nursery classes in Jails* (Outlay Rs. 9.80 lakhs)

15.668 Children up to 5 years of age are allowed to stay with women who are sentenced for long terms of imprisonment. There should be separate arrangements in the 3 Central Jails to look after these children who are innocent of the mothers' crime. The provision made is for starting creches/nursery classes in the jails.

(x) *Nutrition*

15.669 There are some programmes of 'nutrition' implemented by the Development Department. The benefits of the schemes are extended to pre-school children and lactating and pregnant women who belong to vulnerable sections of the society. At the beginning of the Plan period 1978-83, there were 5613 feeding centres giving direct benefit to about 5.6 lakh pre-school children and lactating and pregnant women. The feeding centres are run under the auspices of Mahilasamajams. The beneficiaries are selected by a Committee consisting of the B. D. O., Medical Officer, Panchayat President and Mahilasamajam. The Plan scheme for 1978-83 envisages starting of 500 centres annually, giving benefit to 50,000 persons. It is estimated that towards the end of the Plan period 1978-83,

there will be 8113 feeding centres and that the number of beneficiaries will be about 8.1 lakhs.

15.670 The important components of the composite programme are: The establishment of nursery classes, feeding of the children twice daily, health check up and immunisation of the beneficiaries, starting of kitchen gardens, starting of backyard poultry units, starting of community gardens, training of Balawadi teachers' nutrition and health education camps for the mothers of the children and construction of building for Balawadi with the assistance from CARE, State Government and the Mahilasamajams.

(a) *Construction of Balawadies (Outlay Rs. 34 lakhs)*

15.671 The total cost of constructing a Balawadi is estimated to be Rs. 7,500 of which Rs. 4,000 is subscribed by the CARE, Rs. 1,500 is given by the State Government and the balance of Rs. 2,000 is raised by the Mahilasamajams. By 1978-79 the total number of Balawadies is estimated to be 1,600. Under the present plan 500 Balawadies are proposed to be started annually during the four year period, 1979-83. The total number of Balawadies at the end of the Plan period will therefore be 3,600. The provision made is for the State's share of the cost.

(b) *Assistance to Mahilasamajams to give remuneration to Balwadi Teachers (Outlay Rs. 156 lakhs)*

15.672 The number of Balawadies at the end of the Plan period 1978-83 will be 3600 as already stated. The Balawadi teacher is not being paid any remuneration by the Government. It is the Mahilasamajams which are vested with the power of appointing the Balawadi teachers. The present scheme proposes to give a sum of Rs. 100 per month to each Mahilasamajam for meeting the expenditure for running the Balawadi. The provision is for this purpose.

(c) *Handling charges of CARE materials (Outlay Rs. 40 lakhs)*

15.673 The food materials for running the feeding centres are supplied by the CARE. However, the State Government have to meet the cost of transportation of the food materials. The transportation charges to 1978-79 is estimated to be Rs. 6 lakhs. This is expected to increase by Rs. 1 lakh every year. The provision is for meeting the handling charges during the Plan period.

*Women Welfare*

(i) *Promotion of employment opportunities to Women (Outlay Rs. 90 lakhs)*

15.674 The priority areas of Women's Welfare schemes are employment and literacy, especially among rural women belonging to weaker sections. Financial assistance to a maximum of Rs. 5,000 is to be given to registered Women's Organisations with a working capital of Rs. 1,000 for starting programmes through which employment for women at the rate of at least 3 women for every Rs. 1,000 received as assistance is generated. This assistance is to be given to 600 organisations for which an amount of Rs. 30 lakhs is provided in the Plan.

15.675 Rural employment forums of women are to be registered by integrating the various women's organisations like Mahilasamajams, Mahila mandals, Vanithasamajams in the Panchayat, Block, taluk or district levels, to work as a co-ordinating agency for sponsoring women entrepreneurs rendering consultancy service, arranging marketing facilities etc; in respect of women's industrial programme. These forums may undertake works by itself or through the associate members. But, the programmes are to be certified by the Khadi and Village Industries Board or the Industries Department as being capable of giving direct employment to at least 10 women. Such forums should be given financial assistance subject to a maximum of Rs. 10,000. A provision of Rs. 60 lakhs is made to give assistance to 120 such forums annually.

(ii) *Training to Women (Outlay Rs. 60 lakhs)*

15.676 The scheme envisages provision of assistance at the rate of Rs. 100 per month for a period of one year to individual women, whose family income is less than Rs. 1,800 per annum, for undergoing training in vocational and commercial subjects like typewriting, short-hand, accountancy, tailoring, training in radio repairing, air conditioning, computer operator etc. An allocation of Rs. 60 lakhs is made in the Plan to give assistance to 5000 women at the rate of 1000 women per annum.

(iii) *Functional literacy to women (Outlay Rs. 140 lakhs)*

15.677 At present 100 centres of functional literacy classes for adult women are functioning in Malappuram district. 500 centres are to be opened, through out the State. The course combines teaching the art of writing and reading and practical training in simple household crafts. The classes are to be organised to suit the convenience of working women and housewives. Women in the age group of 14-40 alone will be admitted. The programme will be organised through women's organisations and individual women who come forward to undertake the work and register with the Department. There will be 30-40 women at each centre. The duration of the course will be one year. The scheme is expected to benefit 1 lakh women. The outlay made is Rs. 140 lakhs.

(iv) *Grant for self employment to women (Outlay Rs. 25 lakhs)*

15.678 Women who are overaged for public services and whose annual income does not exceed Rs. 1,800 are to be given financial assistance at Rs. 500 for starting small trade or business. 5,000 women are to be given the assistance for which a provision of Rs. 25 lakhs is made.

(v) *Kshema Kendras (Outlay Rs. 25 lakhs)*

15.679 The Kshema Kendras are meant for providing part-time employment to local women and children. A few such Kendras will be started in each District.

3. *Education and Welfare of the Handicapped*

15.680 Programmes are being implemented for the education, training and rehabilitation of four categories of handicapped persons viz., the blind, the deaf, the

orthopaedically handicapped and the mentally retarded.

(1) *Rehabilitation of the handicapped (Outlay Rs. 90 lakhs)*

15.681 The outlay is for the continuance of the two Vocational Training Centres for the handicapped, one at Trivandrum and the other at Calicut and for the starting of four more Vocational Centres one each at Cannanore, Trichur, Alleppey and Kottayam.

(ii) *Home for the handicapped (Outlay Rs. 80 lakhs)*

15.682 Besides the existing two homes of this kind, it is proposed to start two more homes for physically handicapped persons above the age of sixty. It is also proposed to start three homes for accommodating physically handicapped persons of the age group 16—60.

(iii) *Production Centres for the disabled (Outlay Rs. 25 lakhs)*

15.683 Financial assistance is to be given to registered voluntary organisations for reputation for starting production units, workshop, service stations etc. subject to the condition that at least 80 per cent of the employees in all categories, where handicapped could be employed, will be from among the disabled. The maximum assistance payable will be 50 per cent of the estimated cost or Rs. 5,000 whichever is less. However, the organisations should guarantee continuous employment to the disabled without any discrimination. An outlay of Rs. 25 lakhs is proposed for giving assistance to 500 centres.

(iv) *Allowance to families having handicapped children (Outlay Rs. 13 lakhs)*

15.684 Families having handicapped children of age 5—15 years whose annual income does not exceed Rs. 2,400 are to be given grant of Rs. 35 per child per mensem. This will ensure better care for the disabled children, persuade families to disclose the existence of disabled children, enable Government to extend the necessary referral services right in time and encourage the parents to send these children to school. A provision of Rs. 13 lakhs is made for the scheme. 750 children are expected to get the benefit of this scheme from 1979-80 onwards.

(v) *Assistance for orthotic and prosthetic aid (Outlay Rs. 5 lakhs)*

15.685 A scheme for free distribution of prosthetic and orthotic items such as wheel chairs, tricycles, low vision aids, hearing aids and aluminium crutches to the physically disabled is proposed to be implemented. Only persons whose family income does not exceed Rs. 6,000 per annum will be eligible for this assistance. 300 children are expected to get the benefit of this scheme.

(vi) *Incentives to employers for employing handicapped (Outlay Rs. 13.20 lakhs)*

15.686 The scheme is to give wage subsidy to the extent of 50 per cent or Rs. 1,000 whichever is less, of the wages to the Physically disabled, employed in the industrial/commercial establishments in the private sector for the first year of their employment. The condition is that regular and continuous employment with all benefits should be guaranteed to the

disabled even after the cessation of the wage subsidy. A sum of Rs. 13.20 lakhs is set apart for granting the subsidy.

(vii) *Financial assistance to mentally retarded children in private institutions: (Outlay Rs. 5.30 lakhs)*

15.687 The voluntary organisations which start institutions for the care, education and training of the mentally deficient children, usually prescribe a fee for their services. So, financial assistance at the following rates is to be given to the mentally deficient children in the private institutions.

(a) Boarding grant at Rs. 80 per mensem.

(b) Dress allowance at Rs. 60 per annum.

(c) Allowance to purchase school requisites at Rs. 40 per annum.

15.688 The scheme will benefit 125 children annually from 1979-80. The estimated cost of the scheme is Rs. 5.30 lakhs.

(viii) *Assistance to private institutions giving training to handicapped: (Outlay Rs. 10 lakhs)*

15.689 Voluntary organisations which start centres for the rehabilitation of the physically disabled are to be given continuous grant-in-aid so as to enable them to stick on to the field. Approximately Rs. 10,000 per annum is to be given to 25 institutions. The outlay proposed is Rs. 10 lakhs for the four year period, 1979-83.

(ix) *Self employment Programme (Outlay Rs. 24 lakhs)*

15.690 This scheme which was started during 1972-73 is found to be very useful and it is necessary to keep up the momentum by giving ample assistance to the handicapped to seek self employment opportunities. During the next four year period 1,500 handicapped persons are to be assisted at the rate of 375 persons per annum, by giving Rs. 1,600 per person. A provision of Rs. 24 lakhs is made for the scheme.

(x) *Pre-matric scholarship to handicapped (outlay Rs. 25 lakhs)*

15.691 The scheme envisages award of scholarships of Rs. 500 to 200 students studying in standard IX and above, during 1979-89 and to 1200 students every year from 1979-80. An outlay of Rs. 25 lakhs is provided for the plan period.

4. *Correctional services*

(i) *Borstal schools (Outlay Rs. 19 lakhs)*

15.692 The provision is for starting two Borstal Schools, one in Calicut for girls and the other in Ernakulam for boys.

(ii) *Development of Jail Industries (Outlay Rs. 35 lakhs)*

15.693 The provision of Rs. 35 lakhs made is for developing some new industries and agricultural activities in Jails.

### 5. Welfare of Poor and Destitutes:

#### (i) Construction of building for social welfare institutions (Outlay Rs. 25 lakhs)

15.694 At present there are 40 social welfare institutions like Abalamandirs, Rescue homes, After Care homes etc. In order to provide these institutions with permanent departmental buildings on a phased programme construction of 10 buildings at a total cost of Rs. 25 lakhs is contemplated.

#### (ii) Assistance to Destitute Home: (Outlay Rs. 15 lakhs)

15.695 The voluntary organisations running institutions for the care and protection of the aged, infirm, handicapped etc. are to be provided with maintenance grant at the rate of Rs. 1500 per annum to 250 homes every year from 1979. A total amount of Rs. 15 lakhs is earmarked for the purpose.

#### (iii) Starting of small work units in Abalamandirs: (Outlay Rs. 25.20 lakhs)

15.696 The inmates of the 40 social welfare institutions are mostly keeping idle. It is, therefore, necessary to start small work units in these institutions. An amount of Rs. 63,000 is to be provided for one institution. Total provision proposed is Rs. 25.20 lakhs.

#### (iv) Social assistance to Destitutes: (Outlay Rs. 18 lakhs)

15.697 Destitute pension scheme has to be expanded. Monthly pension at the rate of Rs. 50 is proposed to be given to 750 destitutes. A sum of Rs. 18 lakhs is set apart for the scheme for four years from 1979-80.

#### (v) Starting of Industrial units in Balamandirs (Outlay Rs. 15 lakhs)

15.698 The provision is for starting small industrial units in the Balamandirs.

#### (vi) Care and Protection of destitutes and orphan children (Outlay Rs. 45 lakhs)

15.699 Assistance to orphanages and other charitable institutions, for care and protection of orphan and destitute children is envisaged on condition that vocational training facilities are provided to the children. The provision is for giving assistance from 1979-80 onwards at Rs. 10,000 per institution.

### 6. Grant-in-aid to Welfare Institution (Outlay Rs. 17.25 lakhs)

15.700 The amount is for the continuance of the working Women's Hostels at Malappuram and Kottayam and working Men's Hostel at Malappuram and for the starting one Working Women's Hostel each at Calicut and Cannanore.

### 7. Social Defence

15.701 Social defence measures are intended to protect the society from social evils of juvenile delinquency, adult crime, beggary and prostitution.

#### (i) Probation Service (Outlay Rs. 10 lakhs)

15.702 Keeping pace with the increase in the number of cases of juvenile delinquency and crime, the probation service has to be re-oriented and strengthened. The implementation of Child's Act and the proposed Beggar Relief Act will require the services of more probation Officers. The outlay proposed for the scheme is Rs. 10 lakhs.

#### (ii) Assistance for After Care Programme (Outlay Rs. 7 lakhs)

15.703 Probationers with satisfactory record for not less than 5 years are to be given financial assistance for their rehabilitation. A provision of Rs. 7 lakhs is made for the purpose.

#### (iii) Beggar Relief (Outlay Rs. 112 lakhs)

15.704 The Beggar Relief Bill is to be passed and implemented. Three mobile social security squads are to be set up. Further, 3 social security centres are to be opened for the care, protection and rehabilitation of beggars. The centres should be established in rural areas where the beggars will be settled, giving work to the able bodied and protection and care to the infirm and the handicapped.

As an experiment, a model social security centre is to be opened. Beggars with families have to be settled following the commune system. There should be provision for agricultural operations, dairy farming, poultry farming etc. Plan outlay made for the scheme is Rs. 112 lakhs.

### d. Other Schemes

#### (i) Social Service Department

##### Training, Research and Administration (Outlay Rs. 38 lakhs)

15.705 A new Department of Social Service has been created in 1975 and all the Social Welfare Schemes and institutions including the Probation Service have been brought under the new Department. In order to acquaint the officers with the changing values, concepts and methods, periodical training and orientation is necessary. So also the present social set up warrant conduct of research study on social problems. Assistance is to be given to Universities and the recognised institutions for conducting research studies on social problems. Coupled with these activities a tentative programme for decentralisation of administrative powers is quite necessary. The Plan outlay made for the scheme is Rs. 38 lakhs.

#### (ii) Welfare Officers in prison (Outlay Rs. 4 lakhs)

15.706 As per the recommendations of the Central Advisory Board on Correctional Services Welfare Officers have to be appointed in the prisons at the rate of one Officer for every 200 prisoners. Accordingly additional Welfare Officers in prisons are proposed to be appointed. The scheme will cost Rs. 4 lakhs.

#### (iii) Care Home for criminal Lunatics (Outlay Rs. 12.50 lakhs)

15.707 Criminal persons who are also lunatics are at present kept either in the jails or in the criminal

wards of Mental Hospitals. When their mental conditions are improved, they are being released to the care and custody of relatives, friends etc. But there are instances where nobody would claim such criminal lunatics. It is, therefore, necessary to start a Care Home for the care and protection of the criminal lunatics. The cost of the scheme is Rs. 12.50 lakhs.

(iv) *Recreation Centre for the Prisoners (Outlay Rs. 2 lakhs)*

15.708 The outlay is meant for providing recreational facilities to the prisoners in jails.

TABLE 15.25  
Social Welfare—Schemewise Outlay

(Rs. lakhs)

Sl. No.	Name of Scheme	Fifth Plan Outlay 1974-78	Expenditure 1974-78	Budgeted Outlay 1978-79	Proposed Outlay for 1978-83
(1)	(2)	(3)	(4)	(5)	(6)
1.	Direction and Administration, including training	7.00	3.21	1.90	10.00
2.	Family and Child Welfare:				
(A)	<i>Child Welfare</i>				
(i)	Day Care Centres	5.00	2.52	2.15	27.00
(ii)	Preparation for International Children's year, 1979	..	..	0.10	0.10
(iii)	Assistance to Voluntary Organisations for Pre-school Children	..	..	..	22.00
(iv)	Home for Mentally Deficient children	..	..	..	23.00
(v)	Care Home for Disabled Children	..	..	..	13.00
(vi)	Integrated Child Development Services	..	..	..	118.65
(vii)	Implementation of Children's Act	..	..	..	9.00
(viii)	State Board for Children	1.00	0.26	0.10	2.00
(ix)	Creches/Nursery Classes in Jails	0.75	..	0.25	9.80
(x)	Nutrition under Development Department: Composite Programme for Women and Pre-School Children	..	4.00	4.50	..
(a)	Balwadies	3.20	1.50	0.50	34.00
(b)	Remuneration to Balwadi Teachers	..	..	..	156.00
(c)	Handling Charges of CARE Materials	..	..	..	40.00
(B)	<i>Women Welfare:</i>				
(i)	Promotion of Employment Opportunities to Women	..	..	..	90.00
(ii)	Training to Women	..	..	..	60.00
(iii)	Functional Literacy to Women	..	..	..	140.00
(iv)	Grants for Self-Employment to Women	..	..	..	25.00
(v)	Kshema Kendras	2.40	0.31	0.50	25.00
(vi)	Family Guidance and Counselling centres	0.40	0.21	..	..
3.	<i>Education and Welfare of the Handicapped</i>				
(i)	Rehabilitation of the Handicapped	10.00	9.20	2.25	90.00
(ii)	Home for Handicapped	5.00	8.69	2.50	80.00
(iii)	Production Centres for Disabled Under Voluntary Organisations	..	..	..	25.00
(iv)	Allowance to families having handicapped children	..	..	..	13.00
(v)	Assistance for orthotic and Prosthetic aid	..	..	..	5.00

(1)	(2)	(3)	(4)	(5)	(6)
(vi)	Incentives for employers for employing handicapped	..	..	..	13.20
(vii)	Assistance to mentally retarded children in private institutions	..	..	..	5.30
(viii)	Assistance to Private institutions giving training to handicapped	..	..	..	10.00
(ix)	Self-employment programme	..	..	..	24.00
(x)	Pre-matric scholarship to handicapped	..	1.00	1.00	25.00
4.	<i>Correctional Services:</i>				
(i)	Borstal schools	2.50	1.75	2.50	19.00
(ii)	Development of jail industries	1.00	..	..	35.00
5.	<i>Welfare of poor and destitutes:</i>				
(i)	Starting of Industrial units in Abalamandirs	2.00	1.03	0.50	25.20
(ii)	Starting of Industrial units in Balamandirs	2.50	1.01	1.00	15.00
(iii)	Building to Social Welfare Institutions	..	..	..	25.00
(iv)	Assistance to Destitute Homes	..	..	..	15.00
(v)	Social assistance to Destitutes	..	..	..	18.00
(vi)	Care and protection of destitute and orphan children	..	..	..	45.00
6.	<i>Grants-in-aid to Welfare Institutions</i>	2.50	1.51	1.25	17.25
7.	<i>Social Defence</i>				
(i)	Probation Service	6.00	5.13	1.90	10.00
(ii)	Assistance for after care programme	..	..	..	7.00
(iii)	Beggar relief	..	..	..	112.00
8.	<i>Other Schemes</i>				
(i)	Social Service Department: Training, Research and Administration	..	..	..	38.00
(ii)	Care home for criminal lunatics	..	..	..	12.50
(iii)	Welfare officers in Prisons	0.75	0.32	0.10	4.00
(iv)	Recreation Centres for Prisoners	2.00	..	..	2.00
	Total	53.00	41.71	23.00	1495.00

## Nutrition

15.709 Malnutrition is probably the most important single health problem in developing countries. There too, the problem is more severe in the case of children, particularly the children of poor families. In addition to the nutritional programmes like Applied Nutrition Programme, Midday Meals Programme, Special Nutrition Programme, the Department of Social Welfare at the Centre introduced from 1971-72, the Supplementary Nutrition Programme to provide supplementary nutrition to pre-school children, pregnant women and nursing mothers. Further, extra social health programme should be organised with the help of Mobile Child Healy Units (MCHU). It is proposed to set up 6 such units in the Plan period 1978-83 as part of supplementary Nutrition Programme.

### 1. Nutrition Bureau (Outlay Rs. 2 lakhs)

15.710 The provision is for meeting the expenditure on continuance of the Nutrition Bureau during 1978-83.

### 2. Special Nutrition Programme for pre-school children and Pregnant women and Nursing Mothers (Outlay Rs. 447.30 lakhs)

15.711 This programme has already benefited more than 2 lakh children. The amount provided is for extending the benefit to 1.50 lakh children and 1.50 lakh pregnant women and nursing mothers.

### 3. Health based programme for children (Outlay Rs. 150 lakhs)

15.712 According to some empiric studies carried out by DCMR the problem of malnutrition among children is a serious problem which leads to high mortality and morbidity among children. To facilitate tackling this problem it is proposed to strengthen the Nutrition Division in the State Department of Health Services. The activities of the Nutrition Division consist of supervision and evaluation of nutrition programmes in the State, nutrition education, conduct of nutrition surveys, diet surveys and clinical-



and biochemical investigation. Following programmes are proposed for 1978-83.

- (i) Strengthening of the Nutrition Laboratory
- (ii) Organising a Nutrition Museum and a Nutrition Kitchen.

15.713 The outlay made in the Plan is for the continuance of the existing scheme and for taking up of the above items of work.

4. *School mid-day meals programme (Outlay Rs. 160 lakhs)*

15.714 This is a continuing scheme. The scheme envisages giving mid-day meals, free of cost to all poor and needy children studying in L. P. Schools (Std. I to IV) utilising the food materials supplied by CARE organisation. The amount provided is for meeting the handling charges of the food materials.

5. *Applied Nutrition Programme (Outlay Rs. 188 lakhs)*

15.715 The Applied Nutrition Programme is implemented in the State in 89 Blocks of which 58 have completed 5 years of operation. The scheme has benefited about 6 lakhs women and children. The provision made is for the continuance and extension of the programme to 18 more Blocks.

6. *Allowance to Mahilasamajam Conveners (Outlay Rs. 213.35 lakhs)*

15.716 There were 5613 feeding centres at the beginning of the Plan period. Their number is

expected to rise to 8113 by the end of the Plan period. The feeding centres are under the charge of Mahilasamajams. The convener of each Mahilasamajam is responsible for the proper conduct of the feeding centres under the supervision and guidance of Block staff. The convener of each centre has to be paid an allowance of Rs. 50 p. m. The total amount required for this during the Plan period is Rs. 213.35 lakhs.

7. *Creches in unorganised labour sector (Outlay Rs. 18 lakhs)*

15.717 It is proposed to start 100 creches each year from 1979-80 onwards to benefit weaker sections like families in harijan colonies, agricultural labourers coir workers, fishermen and artisans. The creches will be run by the local Mahilasamajams with regular feeding programmes. In each creche there will be 25 children with one Balasevika an one Aya, who will be paid a remuneration of Rs. 100 and Rs. 50 respectively per mensem. An outlay of Rs. 18 lakhs is made in the Plan for implementing the scheme.

8. *Mobile Child Health Units (MCHU) (Outlay Rs. 91.35 lakhs)*

15.718 Mobile Child Health Units are envisaged as extra social health programmes which are a part of supplementary nutrition programme. Six such units are proposed to be started. The outlay made is for meeting the expenditure on these units.

TABLE 15.26

**Nutrition—Schemewise Outly and Expenditure**

(Rs. in lakhs)

Sl. No.	Name of Scheme	Fifth Plan Outlay 1974-79	Expenditure 1974-78	Budgeted Outlay 1978-79	Proposed Outlay for 1978-83
(1)	(2)	(3)	(4)	(5)	(6)
<b>Nutrition</b>					
1.	Direction and Administration:				
(i)	Nutrition Bureau	..	0.20	0.20	2.00
(ii)	Civil Supplies Corporation	..	1.00	..	..
2.	Special Nutrition Programme for pre-school children and pregnant women and Nursing mothers	..	156.91	42.00	447.30
3.	Health based programmes for Children	..	31.30	8.00	150.00
4.	School midday meals programme	..	32.00	10.00	160.00
5.	Applied Nutrition Programme	..	68.21	29.80	188.00
6.	Allowance to Mahilasamajom Conveners	..	..	..	213.35
7.	Creches in unorganised sector	..	..	..	18.00
8.	Starting of 6 MCHUs.	..	..	..	91.35
Total		457.00	289.62	90.00	1270.00

## OTHER PROGRAMMES

**Economic Services**(i) *Planning Machinery*

The State Planning Board is the main agency in the State charged with the responsibility of formulating the State Plans. With the introduction of the Rolling Plan from 1978-79 onwards by the Planning Commission, the State Planning Board is called upon to formulate a medium term plan for a five year period every year. This will necessitate continuous revision of output projections and target fixing of investment programmes every year. In addition to this a new fifteen year perspective plan will also have to be prepared by the Planning Board for charting the longer term course of development of the economy as a whole taking demographic factors also into account. According to the Planning Commission the perspective plan should provide the framework for investment decisions in long gestation projects for which a five year horizon is inadequate. In this context the Planning Commission has stressed the need for strengthening the planning machinery at the state level.

16.2 The following programmes are proposed to be taken up during the plan period 1978-83 under the item "Planning Machinery".

*Strengthening of State Planning Machinery including District Planning Machinery. (Outlay Rs. 60 lakhs)*

16.3 As part of decentralisation of planning process the Planning Commission has advocated the preparation of comprehensive development plans at the District level and in a few cases at the Block level from 1978-79 onwards. The Planning Commission would be issuing shortly detailed guidelines for drawing up model plans at the district level. In the meanwhile steps will have to be taken to set up the district planning machinery. The district planning machinery should consist of a District Planning Officer and a minimum supporting staff of an Agronomist, a Geologist, an Economic Geographer, two Research Officers and one Research Assistant for each taluk in the district. It should have the requisite ministerial staff also. The estimated cost of this scheme works out to about Rs. 60 lakhs for 1978-83.

*Block Level Planning (Outlay Rs. 50 lakhs)*

16.4 The strategy envisaged by the Planning Commission for integrated rural development in the 1978-83 Plan is to involve the voluntary organisations and professional institutions in the formulation and implementation of block plans. It is suggested by the Planning Commission that suitable local voluntary agencies, should be supported to take up planning and implementation of rural development programmes. As a part of this scheme it is proposed to associate voluntary agencies and professional institutions in the State to draw up integrated development plans for 100 Blocks out of 144 Blocks during 1978-83 plan period. A lumpsum provision of Rs. 50 lakhs is allotted for this purpose in the Plan.

*Plan Publicity (Outlay Rs. 15 lakhs)*

16.5 At present plan publicity is done through the Department of Public Relations and other development Departments. The Planning Board has been assisting these Departments by taking part in exhibitions organised by them and by supplying charts and relevant statistics required by them. With the setting up of the District Planning Machinery, the number of organisations and agencies involved in plan formulation and implementation will increase and the plan publicity media will be called upon to play a major role in catering to their requirements. It is therefore necessary to strengthen the publication wing of the State Planning Board. It should be equipped with a cine projector, a few model films which will help to propagate the importance of scientific planning and implementation, a vehicle and other modern facilities required for its efficient functioning. An amount of Rs. 15 lakhs is provided for this purpose.

*Electronic Data Processing Unit in the Planning Board (Outlay Rs. 160 lakhs)*

16.6 In the context of decentralised planning the need for collection, collation and maintenance of time series data on a uniform basis at district, block and panchayat level assumes special significance. The vital information thrown up by the different censuses also need to be maintained in an easily retrievable manner at appropriate levels so that they can form an integral part of the statistical information system. In order to undertake this, the Working Group on Statistics constituted by the Central Statistical Organisation recommended that a computer may be installed in this State exclusively for statistical work. The Planning Commission has suggested that Data Banks should be organised in different States and they should be equipped with computer facility to store the relevant details of the important plan schemes and to continuously watch the progress of implementation of the schemes. With the introduction of district level Planning a large number of competing projects will emanate from the different districts and for a proper assessment of the acceptability of the different projects and arranging them according to priority the Planning Board requires computer facility. A provision of Rs. 160 lakhs is suggested for this purpose.

*Planning Forums (Outlay Rs. 5 lakhs)*

16.7 Planning Forums which now function in many colleges in the State should be encouraged to undertake useful studies and programmes on planning and development. Such studies will have considerable educative value for the students. For this purpose Government will have to provide financial assistance to the Forums. An amount of Rs. 5 lakhs is allocated for this scheme.

*Construction of Building for the State Planning Board (Outlay Rs. 25 lakhs)*

16.8 At present the State Planning Board is housed in rented buildings. For the efficient functioning of

this office sufficient space and better amenities are required. A provision of Rs. 25 lakhs is set apart in the Plan for the construction of a building for the State Planning Board.

(ii) *Monitoring and Evaluation*

*Strengthening of Evaluation Machinery in the Planning Board*  
(Outlay Rs. 12 lakhs)

16.9 The important role evaluation plays in the planning process through improved techniques of evaluation has now been well recognised. According to the Planning Commission the evaluation studies should give information not only on what the projects have achieved in terms of growth but also how the projects have achieved their employment targets and improved the income distribution for the reduction of poverty. Also it has been suggested that more efforts should be directed towards concurrent evaluation of projects of an experimental nature so that Government could quickly come to a definite conclusion on their merits. While concurrent evaluation will succeed in highlighting and helping in correcting the gaps between the plan targets and actuals, it may not reveal the basic conceptual, organisational and other weaknesses in the programme itself. In some cases evaluation has to be done after the programme is over or its major part has been implemented to see whether the benefits both quantitatively and qualitatively have been achieved as planned. At present there is an Evaluation Unit functioning in the State Planning Board with a counterpart in the Bureau of Economics and Statistics. This unit needs strengthening. The total cost for the implementation of this scheme is Rs. 12 lakhs for the period 1978-83.

*Strengthening of Central Planning and Monitoring Unit*  
(Outlay Rs. 10 lakhs)

16.10 The monitoring functions for plan programmes are now being performed by the Central Planning and Monitoring Cell in the Department of Planning and Economic Affairs. With the introduction of Rolling Plan concept there will be an annual review of the performance of the different sectoral programmes. On the basis of the review necessary adjustments and corrections in the targets set earlier will have to be attempted. In this context the function of the Monitoring Cell in the Secretariat assumes great importance. Monitoring involves watching the progress of the schemes against the time and resource schedules during the implementation stage. It should be carried out through periodical reports and identification of shortfalls and lagging areas. There is therefore a strong case for strengthening the Monitoring Cell in the Secretariat. A streamlining of the work in the unit is essential so that its functions of monitoring the progress of plan schemes under the different sectors could be done efficiently. The plan schemes under the three major sectors, viz. agriculture, industries and social services, will have to be given individual attention and watched separately. A provision of Rs. 10 lakhs is made for this scheme in the Plan.

*Manpower Planning Unit (Outlay Rs. 15 lakhs)*

16.11 The Manpower Planning Unit of the State Bureau of Economics and Statistics with its staff in various Departments is engaged in the study of the supply of and demand for various categories of Manpower. In the context of chronic unemployment in the

State, especially in the case of educated persons, the need for proper manpower planning needs no emphasis. It is proposed to carry out special studies in the supply of and demand for manpower in general and educated manpower in particular. The outlay of Rs. 15 lakhs provided in the plan is for continuance of the Unit in the Bureau and for strengthening the units in the different Departments.

(iii) *Secretariat*

*District Development Councils (Outlay Rs. 10 lakhs)*

16.12 The District Development Councils function as the coordinating and advisory agency on matters relating to regional planning and development. The Councils also provide a forum for voicing the reactions of the people and articulating local needs. The Councils will be playing a major role in the preparation of district plans. A provision of Rs. 10 lakhs is earmarked under this item to meet the expenditure towards travelling allowance of the members of the Councils.

*Publication of District Plans (Outlay Rs. 5 lakhs)*

16.13 Annual District Plans prepared on the basis of annual plan budgets are published every year in all the districts. An outlay of Rs. 5 lakhs is provided for the publication of District Plan documents during the Plan period.

*Institute of Public Administration including Construction of Building (Outlay Rs. 200 lakhs)*

16.14 The Kerala Institute of Public Administration, a central organisation is functioning at Trivandrum for imparting pre-entry, initial-refresher, functional and specialised training for different grades of officers to enable them to perform their work more efficiently and to prepare them for greater responsibilities by increasing their professional competence. As the training requirement is quite extensive, it is proposed to decentralise the activities of the Institute by establishing two Regional Centres, one at Calicut and another at Cochin. It is also proposed to set up a Research Unit in the Institute, for preparing case studies and other training materials, for editing a news bulletin and for attending to other connected items of work. In addition to the training programmes now conducted by the Institute, courses in Administrative Management, Administrative Organisation and Methods, Cost Reduction, Operations Research etc. are proposed to be started. Steps have already been taken for the construction of building for administrative block, lecture halls, hostel and staff quarters. An amount of Rs. 2 crores has been provided under the plan for meeting the expenditure for the continuance of the Central Institute, appointment of additional staff, establishment of regional centres and construction of buildings.

*Implementation of Official Language (Outlay Rs. 20 lakhs)*

16.15 Malayalam has been declared as an official language and it is proposed to extend its use at all levels by 1982. The provision of Rs. 20 lakhs made in the plan is for meeting the expenditure towards publishing a magazine, conducting seminars, discussions etc. and preparation of glossaries.

*Project Cell in the Secretariat (Outlay Rs. 30 lakhs)*

16.16 It is proposed to set up a Project Cell in the Secretariat to co-ordinate the activities of the Project

Cells in the Development Departments to scrutinise the project reports prepared in the various Departments and to undertake important project studies. An amount of Rs. 30 lakhs is provided for this purpose.

*Construction of an Additional Block in the Secretariat Building (Outlay Rs. 50 lakhs)*

16.17 It is proposed to construct an additional block in the Secretariat Building. An amount of Rs. 50 lakhs is provided for this purpose.

(iv) *Economic Advice and Statistics*

16.18 The demand on the statistical system in the country, which has to provide empirical data for analysis and policy making, has been increasing steadily over the plan periods and as a result there has been considerable improvement in the coverage and quality of statistics compiled by various organisations such as Central Statistical Organisation, National Sample Survey Organisation, Labour Bureau and State Statistical Bureaux. The Bureau of Economics and Statistics is the main agency in Kerala responsible for compiling economic and statistical information on the different aspects of the State's economy. During the Fifth Five Year Plan period the Bureau could implement some of the core schemes earlier recommended by the Statistics and Survey Division of the Planning Commission. The important studies taken up by the Bureau during this period include Economic Census of Establishments, small scale and village industries survey, unemployment survey and Timely Reporting Scheme.

16.19 Even though significant progress has been made in developing the State statistical system there are still deficiencies in the availability of data on a wide range of subjects. The seriousness of such data gaps becomes apparent when attempts are made to formulate development programmes at the Panchayat, Block and District levels. The position regarding the statistical requirements of the 1978-83 Plan has been reviewed by the Third Conference of Central and State Statistical Organisations. The conference has recommended that besides attaching priority to spillover commitments of the Fifth Plan, the thrust of development during the period 1978-83 should be towards the improvement of data base at the lower levels, improvement of social statistics and strengthening of economic analysis units in the Central and State Statistical Organisations.

16.20 The total plan provision for schemes under the purview of the Bureau of Economics and Statistics in 1978-83 Plan has been placed at Rs. 126.50 lakhs. A brief write up of the different schemes proposed to be taken up during the period is given below:

*Strengthening the Bureau of Economics and Statistics (Outlay Rs. 50 lakhs)*

16.21 With the added importance envisaged for the decentralisation of planning process during the 1978-83 Plan period, the statistical system in the State has to be re-oriented to provide the requisite Block level statistics for the different sectors of the economy. Therefore, the Bureau of Economics and Statistics would have to plan their statistical studies with a view to providing firm and dependable statistics at the Block level. This calls for a reorganisation of the statistical machinery of the Bureau at the field level. Under this

scheme a full-fledged Block Statistical Office will be opened in each of the 144 Blocks in the State. The present Taluk Statistical Offices will be abolished and the Statistical Inspectors will be posted to the Blocks. Thus 87 additional posts of Statistical Inspectors will be needed. The Junior Statistical Inspectors and Investigators in the Blocks will be attached to the respective Block Statistical Offices.

16.22 As a part of decentralisation of tabulation work the District Statistical Offices will be equipped for taking up tabulation and compilation work. Each District Statistical Office will be placed in charge of a Deputy Director. Sufficient number of additional technical staff consisting of Research Officers, Research Assistants and compilers now working in the headquarters office will be allotted to the District Offices. The additional posts that will have to be created under this scheme are eleven Deputy Directors. The total outlay for implementing the above scheme is estimated to be of the order of Rs. 50 lakhs.

*Preparation of a Department Code for the Bureau of Economics and Statistics (Outlay Rs. 1 lakh)*

16.23 The Bureau of Economics and Statistics which is now employing more than two thousand persons does not have a Department Code dealing with the tasks assigned to the different division heads, district level officers, statistical staff working in other Departments in the State, Manpower Officers posted in other offices and other staff. A special unit may be created in the Bureau for one year for the preparation of the Department Code. The duties and responsibilities of each category of staff in the Bureau, their delegation of powers, timeliness of the periodical reports published by the Bureau etc., are some of the items which are to be studied in depth by this Unit. An amount of Rs. 1 lakh is provided for this purpose.

*Crop Cutting Surveys and Cost of Cultivation Surveys (Outlay Rs. 8 lakhs)*

16.24 The quantity of production of different crops is estimated by using the area under the crops obtained from the Timely Reporting Scheme and yield rates of the crops. To estimate the yield rates of crops scientifically it is necessary to organise crop-cutting experiments with adequate sample size. At present regular crop-cutting surveys are conducted only in respect of paddy and tapioca. In the case of major crops like coconut, arecanut and banana and also for the export oriented agricultural commodities like pepper and ginger, conventional estimates of the yield rates are being used. This has created problems in realistically estimating the tax potential in the State or export potential with regard to these items. In order to improve the quality of estimates it is necessary to introduce regular crop-cutting surveys for the important crops viz., coconut, arecanut, pepper, banana and ginger. Areas where each crop is concentrated will be considered for selecting the sample for crop cutting experiments.

16.25 For the computation of State income, agricultural output figures are available on a continual basis. But input costs of agriculture are estimated from ad hoc studies conducted by National Sample Survey Organisation. Regular surveys on cost of production are needed, for the purpose of having a better estimate of value added and for identifying

input structure. Regional variations have also to be studied. All the five major crops, namely, coconut, arecanut, pepper, ginger and banana along with paddy may be taken up for studying the cost of cultivation. It is suggested that for carrying out both items of work in an area (cropcutting experiments and cost of cultivation survey) the services of a full time Investigator may be utilised. Altogether 20 Investigators are to be posted for these two items of work. The total financial requirements for the above two schemes during the plan period is Rs. 8 lakhs.

*Survey on Goods Traffic Through Check Posts (Outlay Rs. 3.50 lakhs)*

16.26 A survey on inter-state movement of goods to collect data regarding the quantity and value of goods transported into the State and taken outside the State by road transport was undertaken by the Bureau during the year 1975-76. A similar survey will be conducted in 1980-81. The survey will be organised in all the border check posts in the State. Before the commencement of the Survey steps will have to be taken to see that all the major border check posts in the State are provided with necessary staff and adequate facilities such as weigh bridge, cross bars, electricity and telephone connections. As in the last round of the survey 4 Junior Statistical Inspectors may be posted from the Bureau in each of the border check posts for collection of statistical details. The Junior Statistical Inspectors will have to work round the clock by shifts and obtain the required details by interviewing the vehicle operators and scrutinising the declaration forms furnished by them at check posts. The survey will be continued for one year. The outlay of Rs. 3.50 lakhs proposed is for the conduct of the survey.

*Survey on Distributive Trade (Outlay Rs. 4.50 lakhs).*

16.27 The trade sector contributes nearly 10 per cent to the total State income. At present the calculations of income originating from the trade sector are based on inadequate data. No study on distributive trade has so far been carried out in this State. It is proposed to take up a survey on distributive trade during 1979-80 in order to fill this gap in trade statistics.

16.28 In designing the survey, proper representation has to be given in the sample to wholesale trade, retail trade and unregistered trading establishments. The list of establishments prepared for the economic census will be used as the frame for the selection of the sample. The information in respect of the type of establishment, fixed capital, working capital, sources of finance, total turnover, input structure, trade margin, sources of purchase etc., will be collected. The duration of the survey will be one year. One Investigator may be posted in each taluk for attending to this survey. A Working Group set up by the Central Statistical Organisation, Government of India, is engaged in preparing the technical details of the scheme. The CSO will be communicating the recommendations of the Group shortly. The total expenditure on this scheme will be Rs. 4.50 lakhs.

*Household Consumption Survey (Outlay Rs. 4.80 lakhs)*

16.29 The Standing Committee for directing and reviewing improvements to data base for Planning

and Policy Making constituted by the Planning Commission has recommended that special sample surveys be conducted to collect data on consumer expenditure. The State Bureau of Economics and Statistics has carried out consumer expenditure surveys only as a part of the different enquiries of the National Sample Survey. The sample size used was so inadequate that it could not furnish estimates for the different districts or taluks. As the estimates of 'population below poverty line' are built up on the basis of the data collected through consumer expenditure studies it is essential that a comprehensive survey covering all taluks in the State should be taken up immediately so that taluk-wise consumer expenditure estimates can be built up. Two rounds of the survey will be conducted during the Five Year Plan period 1978-83.

16.30 In addition to the information relating to the expenditure on consumer items such as cereals, pulses, oil, milk and milk-products, meat, fish, egg, clothing, footwear, housing etc., household details such as household industry, employment, income etc., will also be obtained.

16.31 Total cost of the scheme for one year will work out to Rs. 2.40 lakhs. A provision of Rs. 4.80 lakhs is required for carrying out two rounds of the survey.

*Strengthening of Statistical Machinery for State Income (Outlay Rs. 5 lakhs)*

16.32 In the context of planning for development, the computation of regional income has assumed great importance. The per capita income is the most effective yardstick which can measure the economic development of the State. If the inferences made are to be meaningful the estimates have to be brought within permissible limits of error.

16.33 In addition to the large volume of data regularly collected by the State Bureau of the Economics and Statistics the computation of State Income and district income calls for information on a variety of items which necessitates ad hoc surveys, and type studies. At present there is no staff in the field exclusively catering to the needs of the State Income Unit. It is, therefore, suggested that one Investigator may be posted in each district to attend to the requirements of the State Income Unit. A supervisor's post may be created so that the work of the Investigators can be effectively supervised. For implementing this scheme a provision of Rs. 5 lakhs is provided in the Plan.

*Purchase of Jeeps for District Statistical Offices (Outlay Rs. 8 lakhs)*

16.34 The State Bureau of Economics and Statistics is engaged in regular collection of statistics through field enquiries. Besides the surveys which are conducted on a regular basis like TRS, crop cutting surveys, NSS, Demographic Surveys, etc., the Bureau is collecting daily price data from all the important market centres in the State. The items of field work requiring close supervision and guidance at the district level will increase with the opening of Block Statistical Offices. For facilitating frequent inspections and increasing the overall efficiency of the field operations, it is suggested that the District Statistical Officers may be provided with jeeps. The cost of providing one jeep to each

district along with a provision for recurring expenditure will work out to Rs. 8 lakhs. This amount is allotted in the Plan for 1978-83.

*Training of Statistical Personnel (Outlay Rs. 10 lakhs)*

16.35 In order to maintain an efficient statistical system it is necessary to organise periodic training for the Statistical personnel employed in the Bureau and other Departments in the State. In order to meet the training requirements the Working Group on "Training of Statistical Personnel" set up by the Central Statistical Organisation in 1976 has recommended that the States of Kerala, Karnataka, Andhra Pradesh, Tamil Nadu and Pondicherry may form one group and they may co-operate in organising training programmes. In organising regular training programmes, according to the Working Group, every State should have a separate Training Unit with a nucleus faculty consisting of one Joint Director, one Assistant Director and two Research Officers. This unit will have to organise annual Inservice Training Courses for the benefit of the statistical staff. Provision has to be made for payment of salaries to the staff, payment of honorarium to guest lecturers, maintenance allowance to trainees, equipments for practicals, library facilities etc. A provision of Rs. 10 lakhs is made for training programmes in the Plan.

*Mechanical Tabulation Unit (Outlay Rs. 10 lakhs)*

16.36 The outlay proposed is for the purchase of cards and for meeting the maintenance expenditure of the machines installed in the Bureau of Economics and Statistics.

*Construction of Index of Industrial Production (Outlay Rs. 7.50 lakhs)*

16.37 The object of the scheme is to compute and publish a quarterly index of industrial production for

the different districts in the State. The Plan provision of Rs. 7.50 lakhs is for continuing the existing staff for the period 1978-83.

*Survey of Wage Structure in the Sectors of Construction and Trade (Outlay Rs. 3.50 lakhs)*

16.38 The provision is for continuing the existing staff attending to the collection of data on wage levels of workers in the sectors of construction, trade, etc.

*Unemployment Survey of Kerala (Outlay Rs. 3 lakhs)*

16.39 An unemployment survey was conducted by the State Bureau of Economics and Statistics during 1977-78. The analysis of the data collected will be completed during 1979-80. The provision proposed is for meeting the expenses on staff under the scheme.

*Survey to study the Impact of Land Reforms in Kerala (Outlay Rs. 2.50 lakhs)*

16.40 It is proposed to conduct a Land Reforms Survey to collect comprehensive data on all aspects of land reform measures introduced in the State. The outlay proposed is for meeting the expenditure for the conduct of the Survey.

*Strengthening of Prices Unit (Outlay Rs. 5 lakhs)*

16.41 The outlay proposed is for strengthening the field machinery and the analysis division of the Prices Unit of the State Bureau of Economics and Statistics.

16.42 The Plan outlays, on schemes proposed under 'Economic Services' are presented in Table 16.1.

TABLE 16.1

**Economic Services—Scheme-wise Outlays**

(Rs. in lakhs)

Sl. No.	Scheme	Fifth Plan Outlay (1974-79)	1974-78 Expenditure	1978-79 Outlay budgeted	1978-83 Outlay Proposed
(1)	(2)	(3)	(4)	(5)	(6)
<i>(i) Planning Machinery</i>					
1.	Strengthening of State Planning Machinery including District Planning Machinery	35.00	11.66	4.00	60.00
2.	Block Level Planning	..	..	..	50.00
3.	Plan Publicity	2.00	1.30	0.50	15.00
4.	Electronic Data Processing Unit	..	..	..	160.00
5.	Planning Forums	2.00	1.96	..	5.00
6.	Construction of Building for the State Planning Board	..	..	..	25.00
SUB TOTAL (i)		39.00	14.92	4.50	315.00

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(1)	(2)	(3)	(4)	(5)	(6)
<i>(ii) Monitoring and Evaluation</i>					
1. Strengthening of Evaluation Machinery in the Planning Board		10.00	2.62	2.00	12.00
2. Strengthening of the Monitoring Unit		12.00	12.93	2.70	10.00
3. Manpower Planning Unit		3.00	6.55	1.65	13.00
SUB TOTAL (ii)		25.00	22.10	6.35	37.00
<i>(iii) Secretariat</i>					
1. District Development Councils		10.00	6.08	2.00	10.00
2. Publication of District Plans		1.00	0.24	0.15	5.00
3. Organisation of Research in Development activities		4.00	..	..	..
4. Institute of Public Administration including Construction of building		..	12.65	20.00	200.00
5. Implementation of official language		..	..	1.00	20.00
6. Project cell in the Secretariat		..	1.00	—	30.00
7. Construction of Secretariat Building		..	..	..	50.00
SUB TOTAL (iii)		15.00	20.52	23.15	313.00
<i>(iv) Economic Advice and Statistics</i>					
1. Scheme for Strengthening the Bureau of Economics and Statistics		..	..	..	50.00
2. Preparation of a Departmental Code for Bureau of Economics and Statistics		..	..	..	1.00
3. Crop Cutting Surveys on Principal Crops	}	—	..	..	8.00
4. Cost of Cultivation Surveys on Important Crops		..	..	..	3.50
5. Surveys on Goods Traffic Through Check Posts		..	..	..	4.50
6. Survey on Distributive Trade		..	..	..	5.00
7. Household Consumption Survey		..	..	..	5.00
8. Strengthening of Statistical Machinery for State Income		5.00	2.32	1.83	5.00
9. Purchase of Jeeps for District Statistical Offices		8.00	..	..	8.00
10. Training of Statistical Personnel		4.00	0.72	0.50	10.00
11. Mechanical Tabulation Unit		12.00	2.26	1.00	10.00
12. Construction of Index of Industrial Production		5.00	3.10	1.45	7.50
13. Survey of wage structure in the sectors of construction, trade etc.		..	2.06	0.70	3.50
14. Unemployment Survey of Kerala		5.00	2.34	2.00	3.00
15. Survey to study the impact of land reforms in Kerala		..	..	2.57	2.50
16. Strengthening of prices unit		..	..	0.52	5.00
17. State-wide fertility survey		4.00	..	..	..
18. Setting up of a printing press in the Bureau		10.00	..	..	..
19. Annual follow up survey of sterilised persons and IUCD acceptors		7.00	..	..	..
20. A study on the condom users in Kerala		0.85	..	..	..
21. Special demographic survey on the tribal population of Kerala		0.15	..	..	..
22. Scheme for improving the model registration survey on the causes of death		3.00	..	..	..
23. Scheme for improving the quality of sample registration		6.00	..	..	..
24. Advance action for Sixth Plan		..	2.00	0.43	..
SUB-TOTAL (iv)		70.00	14.80	11.00	126.50
GRAND TOTAL—ECONOMIC SERVICES (i to iv)		149.00	72.34	45.00	793.50

## General Services

### (i) Stationery and Printing

#### *Expansion and Development of Government Presses (Outlay Rs. 1225 lakhs)*

16.43 The printing of forms and registers and other publications of the different Government Departments is being done at present in the Government Presses. Steps have already been taken to start a modern Government Press at Mannanthala in Trivandrum for undertaking the printing of forms and registers. When the new press starts functioning the Central Press at Trivandrum will be able to execute the other printing works of Government without delay. It is also necessary to install an offset printing press. The construction of buildings for the Government Presses at Ernakulam and Kottayam and the purchase and installation of machinery required for the Government Presses at Cannanore and Trivandrum are envisaged under this scheme. Funds are also required for payment of stipend to unemployed diploma holders who undergo training in the Government Presses. An outlay of Rs. 1225 lakhs is proposed in the 1978-83 Plan for the augmentation of printing facilities in the State.

#### *Kerala Books and Publications Society (Outlay Rs. 150 lakhs)*

16.44 The State Government have constituted the Kerala Books and Publications Society with the object of running and managing the Text Book Presses established at Thrikkakara with GDR collaboration. Under the terms of agreement entered into between the Government of Kerala and the G.D.R. Company, M/s. Unitechna, the latter has agreed to supply and install the machinery and equipments. The buildings for the press have been completed and the foreign company has supplied the machines. The outlay of

Rs. 150 lakhs provided in the Plan is for making payment for machines and for meeting other items of expenditure in connection with the setting up of the press.

### (ii) Public Building Construction

#### *Public Building construction Programme (Outlay Rs. 2217 lakhs)*

16.45 Public Building Construction Programme includes building construction activities of all Government Departments which do not have separate plan proposals. At present, various offices of Government are housed in rented buildings which do not have adequate facilities to accommodate the Staff. Moreover, huge amounts are paid every year as rent by the Government. In addition, some of the Government offices are functioning in buildings which require urgent reconstruction. As a result of the increased tempo of developmental activities, many of the Departments are expanding. These Departments also need additional accommodation. All these factors point to the need for a scientific and systematic programme of public building construction in the State.

16.46 During the Fifth Plan period about 1201 Building Projects were taken up for execution in the various Government Departments. While the total cost of these building projects undertaken during the Fifth Plan period worked out to about Rs. 7207 lakhs, the actual expenditure incurred for the implementation of the projects was only about Rs. 3877 lakhs. This shows that only part of the anticipated building programme could be taken up during the plan period. Of the total number of 1201 building projects, only 588 could be completed by the end of March 1978 (See Table 16.2.)

TABLE 16.2

#### **Building construction target and achievement during the Fifth Plan period**

Type of Building Projects	Number of Projects	Estimated Cost (Rs. in lakhs)	Expenditure (Rs. in lakhs)	Number of Projects completed	Number of Spillover works
(1)	(2)	(3)	(4)	(5)	(6)
Residential Buildings	202	1605.2003	1004.2667	125	77
Industrial Buildings	8	31.1680	33.0000	8	..
Commercial Buildings	83	1906.4242	787.6183	73	10.
Institutional Buildings	764	2737.3744	1652.8346	353	411
Other Buildings	144	926.4755	419.6996	29	115
Total	1201	7206.6424	3897.4192	588	613

16.47 Special emphasis has to be laid on the economic aspects of construction in order to maximise the output for a given quantum of resources. Research and Development should be made use of in devising material combinations and techniques of construction which can help to bring down cost. Use of controlled concrete results in economy in cement. Cheaper building materials like soil cement blocks, secondary species of seasoned and treated timber, lime-pozzolana mixture, etc., could be safely used for low cost construction. The specifications required for each type of

construction should be standardised and deviation should not be allowed normally.

16.48 Out of the total outlay of Rs. 2217 lakhs proposed for Public Buildings Construction in 1978-83 an amount of Rs. 1180 lakhs is set apart for Public Works Department. An amount of Rs. 700 lakhs is earmarked for Rural Development Board since it is carrying out a number of building works for development of rural areas. The department-wise outlay proposed for the plan period is provided in Table 16.3.A short account of the schemes is given below:



*State Legislature (Outlay Rs. 37 lakhs)*

16.49 An amount of Rs. 37 lakhs (Rs. 22 lakhs for constructing Assembly Annexe and Rs. 15 lakhs for providing amenities for M.L.As.) is provided in the Plan.

*Judiciary (Outlay Rs. 70 lakhs)*

16.50 A new building is to be constructed for the High Court at a cost of Rs. 20 lakhs. All High Court Judges have to be provided with residential quarters. A sum of Rs. 30 lakhs is provided for the purpose. A provision of Rs. 20 lakhs is also made for constructing buildings for the subordinate courts.

*Revenue Board (Outlay Rs. 160 lakhs)*

16.51 A provision of Rs. 160 lakhs is earmarked for the construction of 500 Village Offices, 15 Taluk Offices and 3 R.D.O's Offices.

*Registration (Outlay Rs. 50 lakhs)*

16.52 An outlay of Rs. 50 lakhs is provided for the construction of 62 Grade-I Offices, 32 Grade-II Offices and 4 Grade-III Offices for the Registration Department.

*Sales-Tax (Outlay Rs. 120 lakhs)*

16.53 A total sum of Rs. 120 lakhs is set apart for the Department, out of which Rs. 90 lakhs will be for constructing 30 check-posts (with Office-cum-quarters, weigh bridges etc.) and Rs. 30 lakhs for Departmental Offices.

*State Excise (Outlay Rs. 35 lakhs)*

16.54 A total outlay of Rs. 35 lakhs is proposed for the State Excise Department. Out of this outlay Rs. 14 lakhs will be for constructing offices at Quilon and Alleppey and Rs. 21 lakhs for office buildings at other District Headquarters.

*Treasury (Outlay Rs. 55 lakhs)*

16.55 An amount of Rs. 55 lakhs is set apart for the construction of new buildings for Treasuries.

*Police Stations and Offices (Outlay Rs. 200 lakhs)*

16.56 It is proposed to construct buildings for 60 Police Stations, 3 District Police Offices, 20 Circle Inspector's Offices and 4 other offices. The total amount allotted in the Plan for this purpose is Rs. 200 lakhs.

*Public Service Commission (Outlay Rs. 15 lakhs)*

16.57 An outlay of Rs. 15 lakhs is included in the Plan for the construction of a new Headquarters Block for the Public Service Commission.

*Jail (Outlay Rs. 60 lakhs)*

16.58 The present Central Jail is proposed to be moved out of Trivandrum. A provision of Rs. 60 lakhs is made to meet the cost of construction works needed for this.

*Public Works Department (Outlay Rs. 1180 lakhs)*

16.59 The State Public Works Department undertakes construction work for various Departments. The work now taken up in hand in 1978-79 is estimated to cost Rs. 1300 lakhs. Deducting the cost of works already done, a provision of Rs. 1180 lakhs is required to complete the works taken up by the P.W.D. The Plan provision of Rs. 1180 lakhs is intended for completing these works.

*Fire Forces (Outlay Rs. 200 lakhs)*

16.60 The requirements of the Fire Force Department are worked out at Rs. 292 lakhs for executing 23 works. A provision of Rs. 200 lakhs is made in the Plan for the execution of 16 works.

*Electrical Inspectorate (Outlay Rs. 20 lakhs)*

16.61 A provision of Rs. 20 lakhs is made for the construction of Head Office and Regional Office Buildings for the Electrical Inspectorate.

*Labour Courts (Outlay Rs. 15 lakhs)*

16.62 An amount of Rs. 15 lakhs is provided in the Plan for the construction of Buildings for the Labour Courts.

TABLE 16.3

**Public building construction**  
Proposals for the Five Year Plan (1978-83)

Sl. No.	Department	Outlay (Rs. in lakhs)
1	State Legislature	37
2	Judiciary	70
3	Revenue Board	160
4	Registration	50
5	Sales Tax	120
6	State Excise	35
7	Treasury	55
8	Police Station & Offices	200
9	Public Service Commission	15
10	Jail	60
11	Public Works Department	1180
12	Fire Forces	200
13	Electrical Inspectorate	20
14	Labour Courts	15
Total		2217

16.63 An efficient organisational set up is essential for the effective implementation of Public building construction programme. At present building programmes are handed by various agencies like P.W.D., Housing Board, Rural Development Board, Kerala State Construction Corporation, Universities etc. For proper implementation and achieving economy and speed, adoption of a uniform procedure in the design and construction is essential. This can be achieved by drawing specialists from a specialised agency like P.W.D. In the P. W. D. itself an exclusive wing for 'Building construction' could be set up. Design could be prepared in the Central Design Cell utilising latest techniques. A Research and Development Wing could continually up-date the process of design and construction, in line with latest trends in the field in the advanced countries of the world.

16.64 There should be an Advisory Committee to specify the requirements and scrutinise plans prepared for major projects. Such an assessment by a Committee which should include experts could achieve economy and better utilisation of space.

16.65 Invitation of competitive designs for major projects would introduce an element of competition. This will normally result in better and more economical designs.

16.66 Most of the works are now executed through contractors. This often results in delays, higher cost, poor quality, etc. These defects could be overcome by taking up more works for direct execution. The formation of Kerala State Construction Corporation is a welcome step in this direction. There is scope for more such autonomous bodies to take up smaller works.

16.67 Training of artisans and supervisory personnel is quite important. There should be a regular programme of in service training for technical personnel at different levels so as to expose them to the latest techniques of design and construction. Refresher courses should also be regularly conducted under the auspices of Engineering Colleges, Institute of Public Administration etc.

16.68 Adoption of management techniques like PERT, CPM, etc. would be advantageous for large

projects in order to identify bottlenecks and to watch progress. Regular training of personnel in these methods is also essential.

16.69 Institutional finance for large projects could be arranged through autonomous bodies like Kerala State Construction Corporation, Kerala State Housing Board, etc. Repayments could be made by Government by regular budget provision spread over a period of years.

*Construction Corporation of Kerala (Outlay Rs. 100 lakhs)*

16.70 The State Government have established a Construction Corporation to undertake construction works within and outside the State with an authorised capital of Rs. 1 crore. Execution of public works through contractors has caused delays in completion of the works, higher costs, poor quality etc. One of the main objectives in setting up the Corporation is to avoid private contractors at least in major projects. Further it is proposed to channelise institutional finance through the Corporation for taking up major projects in the State. An amount of Rs. 1 crore is provided in the plan for the payment of share capital contribution and for meeting other related expenditure.

TABLE 16.4

**General Services—Scheme-wise Outlay**

		(Rs. in lakhs)			
Sl. No.	Scheme	Fifth Plan outlay (1974-79)	1974-78 Expenditure	1978-79 Outlay budgeted	1978-83 Outlay proposed
(1)	(2)	(3)	(4)	(5)	(6)
<i>(i) Development of Government Presses:</i>					
1.	Expansion and Development of Government Presses	260.00	109.36	30.00	1225.00
2.	Kerala Books & Publication Society		151.00	50.00	150.00
	Sub Total		260.00	260.36	80.00
<i>(ii) Public Building Construction:</i>					
1.	Public Building Construction Programme	236.00	318.65	175.00	2217.00
2.	Construction Corporation of Kerala	60.00	35.50	15.00	100.00
3.	Conversion of Government Engineering Workshop into a Company	..	..	5.00	25.00
	Sub Total	296.00	354.15	195.00	2342.00
	Grand Total	556.00	614.51	275.00	3717.00

*Conversion of the Government Engineering Workshop into a Company (Outlay Rs. 25 lakhs)*

16.71 At present the Government Engineering Workshop, Trivandrum, is functioning under the P.W.D. In order to improve the efficiency of the Workshop and run it on commercial lines, it is proposed to convert it as a public limited company. The company will be

having a carpentry shop, an automobile building unit, a forging unit etc. An amount of Rs. 25 lakhs is provided in the plan for payment of share capital contribution to the proposed company.

16.72 The plan outlay of schemes coming under 'General Services' is presented in Table 16.4.

PRINTED BY THE S. G. P. AT THE GOVERNMENT PRESS,  
TRIVANDRUM, 1978.