GOVERNMENT OF KERALA

SEASON AND CROP REPORT OF KERALA - 1985-86

DEPARTMENT OF ECONOMICS AND STATISTICS
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PREFACE

'Season and Crop Report of Kerala' is one of the important publications of the department of Economics and Statistics, Government of Kerala. This is the 27th issue in the series. This report deals with the various aspects of the agricultural economy of the State for the year 1985-86. The data relating to land use, area under crops and production of crops furnished in this report are based on the results of the sample survey under the scheme EARAS.

This report is prepared by Sri T. V. Isaac, Research Officer under the immediate supervision and guidance of Sri K. Achuthan, Joint Director.

Suggestions for the improvement of future issues of this report are welcome.

Trivandrum,
28th December, 1987.

K. BALAKRISHNAN NAIR,
Director

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1.1. General Characteristics of the State

Location.—Kerala State was formed on first November 1956 by amalgamating the erstwhile Travancore—Cochin State excluding the Tamil speaking southern portions, the entire Malabar region and the Malayalam speaking portion of the South Canara district of Karnataka which were portions of the composite Madras State prior to the reorganisation of States on linquistic basis.

The State lies at the South West corner of the Indian Peninsula between 8° 18′ and 12° 48′ north latitudes and 74° 52′ and 77° 22′ east longitudes. It is bounded by Karnataka State on the north, Tamilnadu on the east and south the Arabian Sea on the west. The western ghats comprising the high altitude mountain tracts act as a boundary wall on the eastern side. The State is blessed with a long coastal line of 580 km. in length. The width of this narrow strip of land called Kerala varies from 130 km. in the middle to 32 km. in the extremities. The geographical area of the State is only 38863 sq. km. which is only 1.18% of the total area of the Indian union.

1.2. Topography

The Topography of the State is a peculiar one. From the forest clad high altitude mountains terrains of the Sahya Mountains, the land mass undulates to the golden shores of the Arabian Sea presenting a series of hills and valleys. Because of this nature of the terrain and heavy rainfall numerous rivers and rivulets flow West wards until they empty into the Arabian Sea. The land on the West Coast is more or less flat and is adorned by numerous lakes and lagoons. Because of these diverse characteristics of the land and consequent changes in plant growth the State is well marked into three distinct regions viz., the high land, midland and the low land. The high land is classified as the region that lies 250 feet above mean sea level comprising an area of about 18653 sq. km. The midland region lies between 25′ and 250 feet above mean sea level with an area of 16231 sq. km. The low land lies up to 25′ above mean sea level on the west coast and comprises an area of 3979 sq. km. Many prestigeous varieties of trees like sandal wood, rose wood, teak, mahagani etc. grow in the high land. Numerous other varieties of hard and soft wood trees also grow in this region. Most of the reserve forests of the State are located here. The highest peak in South India viz., the 'Anamudi' is situated on the border of the State. The periyar lake from which the river Periyar originates is also located here. The rainfall is very high

in this region compared to other regions. This region is highly suitable for the cultivation of plantation crops like Tea, Coffee, Cardamom and Rubber.

The midland region is famous for its diverse crops. While paddy is grown in the valleys coconut arecanut, tapioca, pepper, rubber, cashewnut etc., are grown on the slopes of the hills.

The lowland region is monopolised by paddy and coconut. Fishing is a major avocation of the people of this region.

1.3. Administrative regions

For administrative purposes, the State is divided into 14 districts viz., Trivandrum, Quilon, Pathanamthitta, Alleppey, Kottayam, Idukki, Ernakulam, Trichur, Palghat, Malappuram, Kozhikode, Wayanad, Cannanore and Kasaragode. Each district is divided into taluks and villages. Village is the primary unit of administration. At present there are 61 taluks and 1362 villages in the State.

The Geographical area of the State is 38863 sq. km. The district-wise distribution of the State according to professional survey is given in table 1.3.1 below.

TABLE 1.3.1

District-wise distribution of area of the State

Sl.No.	*Name of District*	*Area (in sq. km)*	*Percentage to total*
1.	Trivandrum	2192	5.69
2	Quilon	2579	6.64
3.	Pathanamthitta	2731	7.03
4.	Alleppey	1256	3.23
5.	Kottayam	2204	5.67
6.	Idukki	4998	12.86
7.	Ernakulam	2408	6.20
8.	Trichur	3032	7.80
9.	Palghat	4480	11.53
10.	Malappuram	3548	9.13
11.	Kozhikode	2345	6.03
12.	Wayanad	2132	5.49
13.	Cannanore	2997	7.71
14.	Kasaragode	1961	5.04
	STATE	38863	100

1.4. Local self Government

Panchayats in the rural areas and Municipalities and Corporations in the urban areas are the units of local self Government in the State. There are at present 1001 Panchayats, 46 Municipalities and 3 Corporations in the State. These institutions are run by the elected representatives of the local people.

1.5. Development Divisions

The State is delimited into 151 C. D. Blocks for allround development of the rural areas. The important programmes implemented by these blocks at present are the Integrated Rural Development Programme (IRDP) Training of youth for self Employment Programme (TRYSEM). National Rural Employment Programme (NREP) and the Rural Landless Employment Guarantee Programme (RLEGP). Besides these, various schemes under the poverty amelioration programme better known as 20 point programmes are also implemented in these blocks.

1.6. Climate

The State is blessed with a salubrious climate. The climate is of tropical rain forests. Since the State is a narrow strip of land that lies between high attitude mountains and the sea extreme climates are not experienced in the State.

1.7. Rainfall

The State receives copious rains from the South, West and the North East monsoon winds blowing over the State. The South West Monsoon starts from the beginning of June and extends upto September. The North East Monsoon spell is from October to December. Isolated off seasonal showers do also occur during the remaining months of the year. 90% of the total rainfall is received during these two rainy seasons. About 66% of the total rainfall is received from the South West Monsoon alone. The average normal rainfall compiled from the data for 50 years from (1901-1980) is 3017.6 mm. within a range (district average) of 2001.6 mm. and 3796 mm. A notable feature of the distribution of the rainfall is that it progressively increases from South to North and from West to East. The actual rainfall for the years 1984-85 and 1985-86 are presented in the following table.

TABLE 1.7.1

District-wise distribution of Average Annual Rainfall

Sl.No.	*District*	*Average rainfall*	
		1984-85	1985-86
1.	Trivandrum	1057.2	880.7
2.	Quilon	1959.6	912.8

Sl. No.	District	Average rainfall	
		1984-85	1985-86
3.	Pathanamthitta	2242.3	1478.6
4.	Alleppey	2598.0	1331.5
5.	Kottayam	3403.8	1884.7
6.	Idukki	4143.5	1097.2
7.	Ernakulam	2801.6	1543.6
8.	Trichur	3495.5	1541.3
9.	Palghat	2244.4	1199.6
10.	Malappuram	1233.4	N.R
11.	Kozhikode	2904.9	1473.7
12.	Wayanad	2481.9	1220.6
13.	Cannanore	3632.7	2203.0
14.	Kasaragode	2952.9	1911.4
	STATE	2779.00	1652.2

It may be noted that the rainfall for the District of Malappuram for the year 1985-86 has not been reported eventhough there was rain during the year in the district. Similarly the rainfall for the months of June 1985 was not reported in respect of Trivandrum, Quilon and Kottayam districts. However total rainfall was less than normal and last year's total in almost all districts of the State. Though the on set of the South West Monsoon was delayed by a couple of weeks subsequent heavy rains caused great damages to crops and the North East Monsoon was week during 1985-86. Draught conditions prevailed throughout the State during the latter half of the year.

1.8. Temperature

The average temperature of the State varies between 21°C and 33°C. But the temperatures recorded at Palghat and Punalur had always been higher than those recorded at other places during summer. This is because the hot summer winds blowing over the Decan Plateau escapes into these places through the gaps at Palghat and Aryancavu respectively in the Sahya Mountains. Of late due to denudation of forests the temperature rises upto 39°C occasionally in these places.

1.9. Soil

The different types of soils found in various parts of the State are classified as follows:—

(1) The hilly and forest soil seen all along the eastern part of the State.

(2) The sandy soil seen in the coastal belt.

(3) The laterite soil seen in the midland.

(4) The black soil seen in patches on the eastern boarder of Palghat District.

(5) The peat or kari soil seen in Alleppey.

(6) The alluvial soil seen along the Southern and Eastern Parts of Vembanad Lake and in small patches in Trivandrum Districts.

(7) The red soil found on the eastern tip of Trivandrum District.

1.10. Minerals

The State is not rich in mineral wealth. Basic minerals like coal, iron ore, etc., and petroleum are conspicuous by their absence. Consequently the State is industrially backward among the Indian States. But rare mineral sands like ilmenite, rutile, monozite, zircon and Silliminite are mined from the coastal line. Minor minerals like white quartz sand, fire clay, ball clay, lime shell and china clay are also mined in the State.

1.11. Crops and Crop Seasons

The major crops grown in the State are food crops like paddy, pulses, tubers and tapioca, fruits like plantain, banana, mango, jack and cashew, spices like pepper, ginger, cardamom and arecanut, oil seeds like coconut, groundnut and gingelly and plantation crops like tea, coffee, rubber and cocoa.

The periods of sowing of various crops are mainly in the rainy seasons. Autumn, Winter and Summer are the seasons for paddy, the staple food of the people of Kerala. But most of the seasonal crops (rainfed) are sown well before the South West Monsoon sets in the State. A table showing the period of sowing, harvesting and marketting of important crops are appended to the tables part of this report.

Unlike other prats of India perennial crops dominate the agricultural sector of the State. Intensive mixed cropping of perennials and seasonals on the dry land is the general pattern of cultivation of the people of Kerala.

1.12. Population

The population of the State recorded a phenominal four fold growth fruits the turn of the century upto 1981. The population of the State according to 1981 census was 254.54 lakhs as against 213.7 lakhs during 1971. The decadal variation in population during 1971-81 period was 19.2% as against 26.2% for the decade 1961-71. About 51% of the population during 1981 was females. The reason for the huge desparity in sex ratio in favour of females is attributed to the out migration of males to other parts of India and other countries seeking employment. The pressure of popula-

tion is very high in the State and the density of population during 1981 was 695 per sq. km. which was more than three fold of the all India average of 216. The average size of a Kerala house hold was 5.8 as against the all India average of 5.6. According to the sample registration results the birth and death rates were 23.5 and 6.6 respectively during 1983. Both the vital rates have come down appreciably during the last dacade. The infant mortality rate was 39.9 per thousand live births during 1983. The mean age at marriage was 27.2 years for meals and 21 years for females. The rate of married couples per thousand population was 145 as against 169 for the country as a whole. The dependancy rate i.e., the number of persons in the age group 0-14 and 60 and above per thousand persons in the age group of 15-59 was 741 in Kerala as against 854 for India as a whole in 1981. About 70% of the people were literates as against 36% for the country as a whole. About 81% of the people live in villages as against 77% for the country as a whole. The district-wise distribution of population and density of population are furnished in tables 1.12.1 below.

TABLE 1.12.1

District-wise distribution of population—1981

	District	Population in lakhs	Percentage to total	Density of population per Sq. KM
1.	Trivandrum	25.96	10.20	1188
2.	Quilon	22.76	8.94	903
3.	Pathanamthitta	11.59	4.55	431
4.	Alleppey	17.29	6.79	1270
5.	Kottayam	16.97	6.66	773
6.	Idukki	9.72	3.82	189
7.	Ernakulam	25.35	9.96	1077
8.	Trichur	24.40	9.59	815
9.	Palghat	20.44	8.03	466
10.	Malappuram	24.03	9.44	662
11.	Kozhikode	22.45	8.82	962
12.	Wayanad	5.54	2.18	261
13.	Cannanore	19.31	7.59	644
14.	Kasaragode	8.73	3.43	445
	STATE	254.54	100.00	655

1.13. Housing and House-holds

The 1981 census revealed that there were 42.97 lakhs of occupied residential houses in Kerala with a density of 111 houses per sq. km. as against 34.19 lakhs houses with a density of 88 houses per sq. km. in 1971. Out of this 83% was in urban area. These houses included

substandard and other semi permanent thatched huts which were estimated at 10 lakhs or 24% of the total residential houses. Out of this 6 lakhs houses were in dilapidated conditions and required urgent replacement. It was also estimated that there was a shortage of about 1.85 lakhs houses. Thus the shortage of houses during 1981 was estimated at 7.5 lakhs. There were 44.23 lakhs house holds in 1981 with an average family size of 5.75. The corresponding figures for 1971 was 35.43 lakhs and 6.03 respectively. There were 103 households per hundred occupied houses in 1981 as against 104 during 1971. The rural urban break-up of the same during 1981 was 102 and 106 respectively.

1.14. Employment

Out of the total population of 254.54 lakhs during 1981 only 77.1 lakhs or 31% were classified as workers. Out of his 9.80 lakhs were classified as marginal workers. Main workers constituted only 26.68% of the total population. The distribution of workers according to workers and non workers are furnished in table. 1.14.1.

TABLE 1.14.1

Sex-wise distribution of population according to workers and non workers 1981 (in 000)

Category	Males	%	Females	%	Total	%
Total population	12528	100.00	12926	100.00	254.54	100.00
Total workers	5624	44.89	2147	16.61	7771	30.53
Main workers	5141	41.04	1650	12.76	6791	26.68
Marginal workers	483	3.85	497	3.84	980	3.85
Non-workers	6904	55.11	10779	83.39	17683	69.47

The work participation rate or the percentage of workers to total population was 30.53 according to 1981 census. The percentage of female workers to total workers were 27.63. While the work participation rate of males was 44.89% it was 16.61% in respect of females. Marginal workers constituted 12.61% of the total workers. The distribution of main workers according to various sectors is given in table 1.14.2.

TABLE 1.14.2

Sector-wise classification of main workers—1981 (in 000)

Sector	Males	%	Females	%	Total	%
Primary	2587	50.32	908	55.03	3495	51.47
Secondary	447	18.42	349	21.15	1296	19.08
Tertiary	1607	41.26	393	23.82	2000	29.45
Total	5141	100.00	1650	100.00	6791	100.00

TABLE 1.14.3

Percentage distribution of working population in Kerala—District-wise 1981

District	Agricultural workers			Household Industrial workers	Other Workers	Total main workers	Percentage of workers to total population
	Cultivators	Agricultural labourers	Total				
1. Trivandrum	8.69	33.36	42.05	4.00	53.95	100.00	27.09
2. Quilon	16.43	24.91	41.34	3.75	54.91	100.00	24.08
3. Pathanamthitta	27.88	27.87	55.75	1.76	42.49	100.00	25.81
4. Alleppey	7.90	25.64	33.54	10.31	56.15	100.00	26.60
5. Kottayam	17.75	25.06	42.81	3.76	53.43	100.00	27.22
6. Idukki	22.48	25.73	48.21	0.85	50.94	100.00	34.57
7. Ernakulam	10.42	18.30	28.72	3.37	67.91	100.00	27.99
8. Trichur	9.35	25.65	35.00	5.27	59.73	100.00	26.60
9. Palghat	14.42	44.95	59.37	3.46	37.17	100.00	32.66
10. Malappuram	13.11	37.23	50.34	2.84	46.82	100.00	21.76
11. Kozhikode	5.56	14.49	20.05	2.80	77.15	100.00	21.87
12. Wayanad	21.16	39.62	60.78	0.98	38.24	100.00	33.59
13. Cannanore	12.22	27.27	39.49	2.09	58.42	100.00	25.43
14. Kasaragode	14.02	27.50	41.52	1.68	56.80	100.00	30.24
STATE	13.07	28.23	41.30	3.69	55.01	100.00	26.68

From the above table it may be seen that about 52% of the employment was in the agriculture and allied activities, 19% in the secondary (manufacturing) sector and 29% in the services sector. The district-wise distribution of various categories of workers and their percentages are presented in table 1.14.3 below.

Table 1.14.3.—Shows that 41% of main workers was engaged in agriculture either as cultivator or as agricultural labourer. The percentage of agricultural labourers to total main workers of the district was highest in Palghat district with 45% and the same was lowest in respect of Kozhikode district with only 14%. The percentage of cultivators to total main workers was also lowest in respect of Kozhikode district with 5.56% while it was highest in respect of Pathanamthitta district with 27.88%. Agricultural workers in the districts of Wayanad, Palghat, Pathanamthitta and Malappuram were more than 50% of the total workers of the respective districts. The work participation rate was highest in the plantation district of Idukki and the lowest was in Malappuram district just below Kozhikode district.

1.15. State Income

The net domestic product of Kerala during 1985-86 at current prices was estimated at (quick estimates) Rs. 6322 crores as against Rs. 5637 crores during the previous year. The percentage growth in the net domestic product at current prices during the year was over 12% as against 11.4% during the previous year. The net domestic product at 1970-71 prices was estimated at Rs. 1698 crores as against Rs. 1650 crores during the previous year with an increase of 3%.

The sector-wise distribution of net domestic product for the years 1984-85 and 1985-86 are furnished below.

TABLE 1.15.1

Sector-wise distribution of State domestic product—1984-85 and 1985-86

Sector	Net domestic product (Rs. lakhs				%	
	1984-85 (P)		1985-86 (Q)		Growth	
	Current	Constant	Current	Constant	Current	Constant
Primary	2357 (41.81)	652 (39.52)	2653 (41.96)	662 (38.99)	12.55	1.53
Secondary	1093 (19.39)	296 (17.94)	1191 (18.84)	304 (17.90)	8.92	2.86
Tertiary	2187 (38.80)	702 (42.54)	2478 (39.20)	732 (43.11)	13.31	4.28
Total	5637 (100.00)	1650 (100.00)	6322 (100.00)	1698 (100.00)	12.15	2.91

P. Provisional Q. Quick estimate

1.16. Communications

Transport and communication facilities are essential pre-requisites for rapid economic growth, proximity of roads to villages facilitates the quick transportation of marketable surpluses to cities. Intensive and extensive cultivation takes place to create more and more marketable surplus. Increased marketing facility will bring increased profits to farmers. It is at this funchire where the transport and communication facilities become crucial to agricultural sector. The total road length of the State is estimated at 1.09 lakhs km. This works out to 218 km. per 100 sq. km. of area and 394 km. per lakh population in 1984-85. The Panchayats maintain about 75% of the total road length most of these roads are not all weather motorable surfaced roads. The number of motor vehicles registered in the State stood at 3.19 lakhs in 1984-85 with 821 vehicles per 100 sq. km. of area and 1164 vehicles per lakh population. The total rail length is estimated at 916 km. of which 803 km. were broad guage and the rest was metre guage.

The two ends of the State from South to North are connected by a broad guage line. The section between Cochin and Valayar is a double lined one. The metre guage section runs between Quilon and Chencottah. The density of rail length in Kerala is low with only 23.6 km. per thousand sq. km. of area. At present the capital city of Trivandrum is connected with major cities of the country by direct trains. This has ceased the inter State movement of people to a certain extent. But Kerala is mainly dependent on road transport for the movement of goods. Consequently the intensity of traffic on roads is very high in the State. This leads to the quick disintegration of the surface of roads. The incidence of road accidents is very high. Maximum number of road accidents were reported from Kerala among the States of Indian Union during 1985. The back waters, the rivers and the interlinking canals from Trivandrum to Badagara and from Valapattanam to Kasaragode provide simple scope for the development of a cheap inland water transport system for the low land and lower midland regions of the State. The filling up of the gap between Badagara and Valapattanam is an important step in this direction. The Quilon-Cochin section of the West Coast canal has been declared as a national waterway. It is estimated that one horse power moves 150 kg. on road 500 kg. on rail and 4000 kg. in water. Inland water transport is quite cheap as it costs only 17 paise for one tonne per kilometre while the same would cost a few rupees by rail or road. Source Coastal Transport facilities are also ample with a major part at Cochin, four intermediate ports at Vizhinjam, Neendakara, Alleppey and Baypore and Nine minor ports at Trivandrum, Quilon, Kodungallor, Ponnani, Badagara, Tellicherry, Cannanore, Azheekkal and Kasaragod within a distance of 580 km. At present there are two Acres dromes and third one at Calicut is under construction. International flights to the gulf countries, Male and Colombo are operated from Trivandrum. Domestic flights to Madras, Bangalore, Bombay and Delhi are being operated from these air ports. The development of Trivandrum Air Port into international standards is very essential for the rapid development of the State especially in Tourism. As regards communication facilities there is one post-office for every 8.18 sq. kms. of area and 5843 people. The State has a well Knit system of Telephone facilities connecting all the districts with STD facilities. There are 6.85 telephones for every thousand population and 428 phones per every sq. km. of area International direct trunk dialing facilities are available from Trivandrum and Cochin and it will be available at Kozhikode in the near future.

1.17. Agricultural Sector

Agriculture is the main occupation of the people of Kerala. According to 1981 census 28.06 lakhs of people were engaged in

farming operations either as cultivator or as agricultural labourer. This works out to 41% of the total main workers. Agricultural labourers remained as the single largest class of workers with 28.24% of the total work force. Since the availability of land is limited the pressure of population on land is very high, large scale fragmentation of holdings takes place year after year. The size of operational holdings was too small to be economical. The details of operational holdings as available from the 1980-81 agricultural census are furnished below.

TABLE 1.17.01

Distribution of operational holdings according to size 1980-81

Size class (hect.)	No. of operational holdings		Area of operational holdings (hec.)		Average size
	Total	%	Total	%	
0.02—0.99	3369400	88.15	745840	41.42	0.22
1.0—1.99	289805	7.58	398254	22.12	1.37
2.00—3.99	123622	3.23	331419	18.40	2.68
4.0—9.99	35827	0.94	195279	10.85	5.45
10.00 & above	3652	0.10	129960	7.22	35.59
Total	3822306	100.00	1800743	100.00	0.47

Besides the above there were 358625 holders with an area of 4578 hectares in the size class of below 0.02 hectares.

From the above table it may be seen that there were 38.22 lakhs of holders with an average size of only 0.47 hect. Out of this 88% were marginal holders with 42% of the total area operated with an average size of only 0.22 hectare. About 96% of the holders belonged to the size of only 0.31 hectare. Only 4% of the total holdings belonged to the size class of above 2 hectares with 36% of the area operated and with an average size of only 4.02 hectares. Small holdings between 1 and 2 hectares constituted only 7.5% with about 22% of the total area operated and with an average size of 1.37 hectares.

The district-wise percentage distribution of holdings are furnished in table 1.17.02 below. The table shows that marginal holdings were lowest in the hill districts of Wayanad followed by Idukki and the same was highest in Trivandrum District.

The District-wise distribution of gross cropped area operated by a Farmer and Agricultural labourer is furnished in table 1.7.0.3

TABLE 1.17.2.2

Percentage distribution of operational holdings according to size 1980-81

Sl. No.	Name of District	No. of operational holdings in size classes of					Total
		0.02-0.99 ha.	1.00-3.99 ha.	2.00-3.99 ha.	4.00-9.99 ha.	10.00 and above	
1.	Trivandrum	96.20	2.99	0.68	0.10	0.03	100.00
2.	Quilon	94.79	4.07	0.98	0.14	0.02	100.00
3.	Alleppey	93.33	4.90	1.44	0.31	0.02	100.00
4.	Kottayam	82.77	10.89	4.85	1.39	0.10	100.00
5.	Idukki	67.00	19.80	8.78	3.56	0.86	100.00
6.	Ernakulam	89.51	7.06	2.85	0.52	0.06	100.00
7.	Trichur	91.72	6.24	1.74	0.29	0.01	100.00
8.	Palghat	80.92	10.82	6.14	2.02	0.10	100.00
9.	Malappuram	87.67	7.51	3.41	1.25	0.16	100.00
10.	Kozhikode	88.99	6.88	3.16	0.91	0.06	100.00
11.	Wayanad	62.39	18.44	13.28	5.43	0.46	100.00
12.	Cannanore	82.12	11.22	5.21	1.36	0.09	100.00
	State	88.15	7.58	3.23	0.94	0.10	100.00

TABLE 1.17.02

District-wise distribution of cultivators and agricultural labourers and gross area operated 1981

Sl. No.	District	Cultivators	Agricultural labourers	Total Agricultural workers	Gross cropped area	Gross cropped area operated by a/an		
						Cultivator	Agricultural labourer	Agricultural worker
1.	Trivandrum	61141	234668	295809	230947	3.78	0.98	0.78
2.	Quilon	138891	175655	314546	296936	2.14	1.68	0.94
3.	Alleppey	66606	162464	229070	222105	3.33	1.37	0.97
4.	Kottayam	82003	115786	197789	231853	2.83	2.00	1.17
5.	Idukki	75561	86589	162150	169289	2.24	1.96	1.04
6.	Ernakulam	73915	129848	203763	257886	3.49	1.99	1.27
7.	Trichur	60657	166408	227065	239895	3.95	1.44	1.06
8.	Palghat	96274	300071	396345	334255	3.47	1.11	0.84
9.	Malappuram	68561	194693	263254	249390	3.64	1.27	0.95
10.	Kozhikode	27315	71120	98435	190039	6.96	2.67	1.93
11.	Wayanad	39331	73608	112939	152110	3.87	2.07	1.35
12.	Cannanore	96977	206452	303429	330532	3.41	1.60	1.09
	State	887232	1917362	2804594	2905257	3.27	1.52	1.04

The above table shows that the average gross cropped area operated by a cultivator and an agricultural labourer were 3.27 hectares and 1.52 hectares respectively. The gross cropped area operated by a farmer was highest in Kozhikode with 6.97 hectares and the same was lowest in Quilon district with only 2.14 hectares. This will give a mistaken notice that the farmers in the Kozhikode district were better off than their counter parts in other districts. But this is not supported by the figures furnished in table 1.17.0.2. This leads us to infer that many holders of operational holdings in Kozhikode have their main activity other than Agriculture. The area operated by an agricultural labourer was highest in Kozhikode district and the same was lowest in Trivandrum just below Palghat. It may be noted that perennial crops dominated the district where the area operated by the agricultural labourer was high and labour intensive seasonal crops like paddy dominated the district where the area operated by the agricultural labourer was low.

Intensive mixed cropping of perennials and seasonals in dry lands is the pattern of cultivation of the farmers of Kerala. The major crops cultivated on wet lands are paddy, sugarcane, banana and sesamum. Vegitables are also cultivated on these lands. The cropping pattern is gradually changing in favour of perennial crops in preference to seasonal crops. Acute food scarcity during the second world war period prompted the farmers to convert dry land into paddy fields wherever national springs were available. But during the past decade a reverse trend was noticed. Comparative stability in prices and availability of rice, high input costs, increased demand of land for non-agricultural uses uncertainties in climate owing to declining rainfall conditions are attributed to be the reasons for this trend. Cultivation of cash crops finds favour with farmers and absentee landlords because it is less labour intensive, require less attention when nature, not easily susceptible to vagaries of weather like seasonal crops and fetch attractive prices compared to paddy. But now cultivation of banana by raising beds on wet land is gaining popularity without going for actual conversion of these fields into garden lands owing to attractive returns. Large Scale mining of clay from paddy fields for brick manufacture is another cause for concern.

Use of improved inputs in agriculture

Improved seed.—Use of hybrid seeds, improved implements, chemical fertilizers, plant protection chemicals, augmentation of irrigation facilities and other improved techniques in cultivation have been adopted to maximise the productivity of various crops like paddy, coconut, pepper, tapioca etc. Of these paddy, the staple food of the people of the state got the foremost attention of government popularisation of the high yielding variety seeds of paddy was

an important programme of the Government. The details of area brought under high yielding varieties of paddy cultivation from the year 1980-81 to 1985-86 are furnished in table 1.17.1.1 below.

TABLE 1.17.1.1

Area under high yielding varieties of paddy 1980-81 to 1985-86 (in 000 ha)

Year	Season								
	Autumn			Winter			Summer		
	Total area	Area under HYV	%	Total area	Area under HYV	%	Total area	Area under HYV	%
1980-81	349	136	39.0	354	92	26.0	98	51	52.0
1981-82	347	139	40.0	356	74	20.8	104	47	45.2
1982-83	343	113	32.9	352	52	14.7	84	31	36.9
1983-84	328	102	31.1	323	62	19.2	88	48	54.5
1984-85	319	112	35.2	327	64	19.6	85	44	51.8
1985-86	280	84	30.0	313	41	13.1	85	39	45.9

The above table shows that the area under high yielding varieties was decreasing year after year except for 1984-85 for Autumn crop. The year 1982-83 was an year of exceptional drought and the south-west monsoon was late in 1983-84. The high yielding varieties require large quantity of water to absorb chemical fertilizers. During 1985-86 also rainfall conditions were erratic. A delayed monsoon in the beginning and drought conditions during the rabi season have affected paddy crops during the year. Thus it may be seen that unstable rainfall conditions usually influence the decision of the farmers whether to opt for the high yielding varieties or not. But it is also a fact that many cultivators were changing to local varieties after adopting the high yielding varieties for various reasons. It is also seen that high yielding varieties of seeds are more commonly used in Summer and Autumn seasons than in the Winter season. Availability of water in many fields during the latter half of Winter season may be the deciding factor for opting high yielding varieties during Winter. In Summer season major portions of high yielding varieties are raised in single cropped paddy fields of

Kuttanad and the kole lands of Trichur district. The yield rate of high yielding varieties and local varieties of paddy for the last six years are furnished below.

TABLE 1.17.1.2.

Comparative yield rates of high yielding & local varieties of paddy 1980-86 yield rates

Year	Autumn			Winter			Summer		
	HYV	Local	% difference over local variety	HYV	Local	% difference	HYV	Local	% difference over local variety
1980-81	3151	1941	62.3	2887	2196	31.5	3105	2190	41.8
1981-82	3160	1963	61.0	2928	2411	21.44	3260	2485	31.2
1982-83	3425	2150	59.3	3155	2322	35.9	3263	2754	18.5
1983-84	2964	2170	36.6	3093	2287	35.2	3330	2356	41.3
1984-85	3168	2331	35.5	2924	2415	21.1	3364	2585	30.1
1985-86	2856	2368	20.6	3216	2475	29.9	4015	2682	49.7
Average	3119	2154	44.8	3034	2351	29.1	3389	2509	35.1

The table 1.17.1.2 reveals that the defference on yield rates between high yielding varieties and the local variety was decreasing year after year. From 62.3% in 1980-81 it was a mere 20.6% during 1985-86, for Autumn crop. But during winter season the average difference in yield rates between the varieties are less marked than the average yield rates for Autumn and Summer crops. Here the difference in yield rates between years does not show any wild fluctuations except during 1982-83 for Summer crop and 1981-82 and 1984-85 for Winter crop. 1982-83 was drought year while during other years mentioned above there were bumper crops. The average difference for all the three seasons together would be 36%.

The main disadvantages of high yielding varieties are susceptibility to deseases, low quality of rice and hence low price and less yield rate of straw and consequent less return on straw and high cost of cultivation and diminishing high yielding quality of seeds generation after generation. The economics of raising high

yielding variety has to be worked out afresh against better quality local seeds especially because the rain fall conditions are changing for the worse year after year.

1.17.2. *Consumption of fertilizers.*—Application of manures both organic and unorganic on a big way is very important to sustain fertility of soil and to be cost productivity. But it has been observed that there have been a decreasing trend in the application of organic manures in many places. Consumption of chemical fertilizers is not high either. The per hectares consumption of chemical fertilizers was the lowest in Kerala in the southern region. Small size of holdings is the major reason for the low rate of consumption. Besides flooding of fields when the intensity of rain fall is high and lack of adequate rain water where there is deficient rain may be another reasons for this phenomenon. The cost of cultivation is also another factor for this trend. Effective water management in paddy fields has to be resorted for the application of chemical fertilizers in a big way. Storing of flood water in a big way during heavy rains and supplying them to needy places when there is scarcity of rain is the only answer to this problem. The details of consumption of plant nutrients are furnished below.

TABLE 1.17.2.1

Consumption of NPK in Kerala 1985-86

	Consumption of			
	Nitrogen	Phosphate	Potash	Total
Trivandrum	3167	2029	2276	7472
Quilon	3138	1886	2846	7870
Pathanamthitta	3556	2825	2620	9001
Alleppey	4084	2107	4080	10271
Kottayam	8847	5146	4829	18822
Idukki	1409	1517	2593	5319
Ernakulam	5604	3515	4661	13780
Trichur	4562	2321	4722	11605
Palghat	10912	3622	4317	18851
Malappuram	4056	2375	3470	9901
Kozhikode	2774	1897	3634	8305
Wayanad	2696	2009	2502	7207
Cannanore	2625	1920	3356	7901
Kasargod	1833	1243	1749	4825
STATE	54263	34412	47655	141330

TABLE 1.17.2.2

District-wise consumption of NPK per hectare of gross cropped area in Kerala

District	1984-85				1985-86			
	Nitro-gen	Phos-phate	Potash	Total	Nitro-gen	Phos-phate	Potash	Total
Trivandrum	12.50	7.54	7.71	27.75	14.52	9.31	10.44	34.27
Quilon	16.92	12.31	12.39	41.62	14.04	8.44	12.74	35.22
Pathanamthitta	..	..	..	..	31.93	25.36	23.53	80.82
Alleppey	31.31	15.39	22.57	69.27	26.17	13.50	30.95	65.82
Kottayam	30.02	21.25	20.33	79.60	37.09	21.58	20.25	78.22
Idukki	8.13	6.90	8.40	23.43	7.17	7.72	13.19	28.08
Ernakulam	20.30	13.36	12.44	46.10	22.67	14.22	18.85	55.74
Trichur	20.21	10.53	16.75	47.49	20.83	10.60	21.56	52.99
Palghat	33.00	10.92	11.54	55.46	34.53	11.46	13.66	59.65
Malappuram	15.09	8.81	11.85	36.65	17.24	10.10	14.75	45.09
Kozhikode	15.10	11.20	13.54	39.92	13.57	9.28	17.78	40.64
Wayanad	15.75	11.07	10.76	37.50	18.54	13.82	17.21	49.57
Cannanore	11.64	7.96	10.26	29.86	12.41	9.08	15.87	37.36
Kasaragod	..	..	..	..	12.95	8.77	12.35	34.07
STATE	20.05	11.36	12.99	44.41	120.69	12.01	16.64	49.34

The above table shows that the consumption of chemical fertilizers highest in Palghat and Kottayam districts and lowest in Idukki District. The per hectare consumption of chemical fertilizers for the years 1984-85 and 1985-86 are furnished in table 1.17.2.2.

The above table reveals that Pathanamthitta district stands first in the consumption of chemical fertilizers followed by Kottayam while Idukki district recorded lowest per hectare consumption during 1985-86. Wide-spread application of chemical fertilizers is resorted to only in respect of paddy and the limited area under paddy in Idukki district and favourable soil conditions may be the reasons for the low consumption of chemical fertilizers in this district.

The Fertilizer Association of India experts have calculated that every rupee invested in fertilizer has generated a gross financial return of Rs. 143.43 during 1984-85.

In addition to chemical fertilizers organic manures are also essential ingredients for plant growth. No precise data on application of organic manures are available. There were 35 lakhs of cattle and buffaloes, 20 lakhs of goats and sheeps in the state according to 1982 live stock census. It is estimated that about 44 lakh tonnes of wet dung is produced annually by these animals. It is also estimated that about 96% of the wet dung is used as manures every year.

LAND UTILIZATION

The estimation of area under various land uses is done on the basis of a sample survey under the scheme EARAS. In 1985-86 the survey covered 262 villages with a 20% sample size. The various classes of utilisations and their definitions adopted for the survey are given below.

(i) Forests.—All actual forest areas on lands classified or administered as forests under legal enactments dealing with forests whether state owned or private.

(ii) Land put to non-agricultural uses.—Ara occupied by buildings, roads, courtyards, play-grounds, railways, rivers, canals and other lands put to non-agricultural uses.

(iii) Barren and uncultivable land.—Land like mountains, deserts etc., and land which cannot be brought under cultivation unless at a high cost.

(iv) Permanent pastures and grazing land.—All grazing land whether they are permanent pastures or not.

(v) Miscellaneous tree crops.—All cultivable land which is not included in the net area Sown, but is put under some agricultural uses like lands under thatching grass, bamboo bushes etc.

(vi) Cultivable Waste.—All land available for cultivation, but not taken up for cultivation or abandoned after a few years of cultivation for one or other reasons. Land once cultivated but not cultivated for five years in succession is also included in this category.

(vii) Current fallow.—These are crop areas which are kept fallow during the current year.

(viii) Fallow other than current fallow.—All lands which were taken up for cultivation, but are temporarily out of cultivation for a period of not less than one year and not more than five years.

(ix) *Net area sown.*—This represents the area sown with crops by counting the area sown more than once in the same year only once.

(x) Total cropped area.—This is the area obtained by counting as many times as has been sown in a single year.

The land utilization particulars of the state for the year 1985-86 are furnished in table 11.1 of summary tables and 12.3 of the detailed tables. The total area of the state referred to in the various tables below is based on the area under village papers which slightly differ from that under professional survey.

The district-wise details of area under various land uses are discussed in the following paragraphs:—

2.1 *Forest.*—The district-wise details of area under forests are given in table 2.1.1.

TABLE 2.1.1

District-wise distribution of area under forests 1985-86

Sl. No.	District	Area under forests	% to Total	% to total area of the district
1	Trivandrum	49861	4.61	22.78
2	Quilon	81438	7.53	32.34
3	Pathanamthitta	155214	14.33	57.75
4	Alleppey	..	..	..
5	Kottayam	8141	0.75	3.70
6	Idukki	260907	24.12	50.67
7	Ernakulam	8163	0.75	3.45
8	Trichur	103419	9.56	34.61
9	Palghat	136257	12.60	31.04
10	Malappuram	103417	9.56	35.90
11	Kozhikode	41386	3.83	17.74
12	Wayanad	78787	7.29	38.88
13	Cannanore	48734	4.51	16.42
14	Kasargod	5625	0.52	2.87
	STATE	1081509	100.00	27.84

The area under forests from 27.84% of the total geographical area of the state. Though the percentage of area under forests to

total area under the category was highest in Idukki, the percentage of area under forests to the geographical area of the district was highest in respect of Pathanamthitta district. In Idukki and Pathanamthitta more than 50% of the total area of the district was covered by forest.

2.2 Land put to non-agricultural uses

The area put under non-agricultural uses during the year 1985-86 was estimated at 2.78 lakh hectares against 2.80 lakh hectares during the previous year. The decrease in the area under this category may be attributed to the changes in the villages selected for the survey. The total area under this category formed 7.17% of the geographical area of the state. The district-wise distribution of area under non-agricultural uses during the year 1985-86 is furnished in table 2.2.1.

TABLE 2.2.1

District-wise distribution of area under non-agricultural uses 1985-86

District	Area under non-agricultural uses	% to Total	% to geographical area of the dist.
Trivandrum	17815	6.39	8.15
Quilon	23554	8.45	9.35
Pathanamthitta	9168	3.29	3.41
Alleppey	26540	9.53	19.51
Kottayam	20169	7.24	9.19
Idukki	13969	5.01	2.71
Ernakulam	34628	12.43	14.72
Trichur	22653	8.13	7.57
Palghat	30223	10.85	6.89
Malappuram	19638	7.05	5.41
Kozhikode	17795	6.39	7.63
Wayanad	5724	2.06	2.69
Cannanore	22365	8.03	7.54
Kasargod	14360	5.15	7.32
STATE	278601	100.00	7.17

From the above table it may be seen that though the percentage of area under non-agricultural uses to total area was highest in

respect of Ernakulam the percentage of the same to the geographical area of the district was highest in respect of Alleppey district. In this connection it may be noted that Alleppey is a thickly populated district with numerous rivers, and backwaters.

2.3 Barren and uncultivable land

The area under barren and uncultivable land was estimated at 83107 hectares as against 86000 hectares during the previous year. The district-wise distribution of barren and uncultivable land is furnished in the table 2.3.1 below:

TABLE 2.3.1.

District-wise distribution of barren and uncultivable land 1985-86

District	Area under Barren uncultivable land	% to Total	% to geographical area
Trivandrum	2438	2.93	1.12
Quilon	882	1.06	0.35
Pathanamthitta	948	1.14	0.35
Alleppey	467	0.56	0.34
Kottayam	2124	2.56	0.97
Idukki	19215	23.12	3.73
Ernakulam	2433	2.93	1.03
Trichur	2261	2.72	0.76
Palghat	13295	16.00	3.03
Malappuram	7845	9.44	2.16
Kozhikode	1944	2.34	0.83
Wayanad	2078	2.50	0.98
Cannanore	14113	16.98	4.76
Kasargod	13064	15.72	6.66
STATE	83107	100.00	2.14

The above table shows that about 2% of the geographical area of the state was covered by barren and uncultivable land. The percentage of area under this category to the total was highest in Idukki while the percentage to the geographical area of the district

was highest in Kasargod district. Both these percentages were the lowest in Alleppey District.

2.4 Permanent pastures and grazing land

The area estimated under permanent pastures and grazing land during the year 1985-86 was estimated at 4223 hectares as against 4158 hectares during the previous year. This forms only 0.1% of the geographical area of the state. The area under this category was highest in Idukki district with 2082 hectares or about 50% of the total.

2.5 Land under miscellaneous tree crops

The land under miscellaneous tree crops for the year 1985-86 was estimated at about 50228 hectares during 1985-86 as against 51309 hectares during the previous year. The total area under this category formed only 1.2% of the geographical area of the State. The area under this category was highest in Idukki with 14320 hectares and lowest in Alleppey district with only 134 hectares.

2.6 Cultivable Waste land

The area under cultivable waste land during the year 1985-86 was estimated at 1.26 lakh hectares as against 1.30 lakh hectares during the previous year. Cultivable waste formed 3.2% of the geographical area of the State. Out of this about 28% was in Idukki district alone. The district-wise distribution of area under cultivable waste land is given in table 2.6.1.

TABLE 2.6.1

District-wise distribution of area under cultivable waste 1985-86

District	Area under cultivable waste (Ha)	%to total	% to geographical area
Trivandrum	2378	1.89	1.08
Quilon	801	0.64	0.32
Pathanamthitta	512	0.41	0.19
Alleppey	2091	1.67	1.54
Kottayam	1259	1.00	0.57
Idukki	35270	28.90	6.85
Ernakulam	5315	4.23	2.26
Trichur	5503	4.38	1.84
Palghat	24698	19.67	5.63
Malappuram	14463	11.52	3.98
Kozhikode	2949	2.35	1.26
Wayanad	4841	3.86	2.28
Cannanore	6464	5.15	2.18
Kasargod	19015	15.14	9.70
STATE	125559	100.00	3.23

The area under cultivable waste was highest in Idukki district during 1985-86 with 35270 hectares or 28% of the total area under this category and the lowest area was estimated for Pathanamthitta District.

2.7. Fallow other than current fallow

The area under fallow other than current fallow was estimated at 28038 hectares during 1985-86 as against 27221 hectares during the previous year which formed 0.7% of the geographical area of the state. The area under this category was highest in Malappuram district with 4343 hectares and the same was lowest in Pathanamthitta district with 531 hectares.

2.8. Current fallow

The area under current fallow during the year 1985-86 was estimated at 43247 hectares as against 41658 hectares during the previous year. The highest area under this category was in Malappuram district with 8876 hectares or 20.5% of the total. Land under current fallow formed 1% of the geographical area of the State.

The district-wise distribution of current fallow is given in table 2.8.1 below:—

TABLE 2.8.1

District-wise distribution of current fallow 1985-86

District	Area under current fallow (Ha.)	Percentage do to total	Percentage to geographical area of the district
Trivandrum	1364	3.15	0.62
Quilon	1153	2.67	0.46
Pathanamthitta	1112	2.57	0.82
Alleppey	2570	5.80	1.85
Kottayam	2702	6.25	1.23
Idukki	1983	4.59	0.39
Ernakulam	2808	6.49	1.19
Trichur	4891	11.31	1.63
Palghat	5436	12.57	1.24
Malappuram	8876	20.52	2.44
Kozhikode	2451	5.67	1.05
Wayanad	1852	4.28	0.87
Cannanore	4167	9.64	1.40
Kasaragode	1942	4.49	0.99
STATE	43247	100.00	1.11

was highest in Kasargod district. Both these percentages were the lowest in Alleppey District.

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The area estimated under permanent pastures and grazing land during the year 1985-86 was estimated at 4223 hectares as against 4158 hectares during the previous year. This forms only 0.1% of the geographical area of the state. The area under this category was highest in Idukki district with 2082 hectares or about 50% of the total.

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Palghat	24698	19.67	5.63
Malappuram	14463	11.52	3.98
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Wayanad	4841	3.86	2.28
Cannanore	6464	5.15	2.18
Kasargod	19015	15.14	9.70
STATE	125559	100.00	3.23

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Alleppey	2570	5.80	1.85
Kottayam	2702	6.25	1.23
Idukki	1983	4.59	0.39
Ernakulam	2808	6.49	1.19
Trichur	4891	11.31	1.63
Palghat	5436	12.57	1.24
Malappuram	8876	20.52	2.44
Kozhikode	2451	5.67	1.05
Wayanad	1852	4.28	0.87
Cannanore	4167	9.64	1.40
Kasaragode	1942	4.49	0.99
STATE	43247	100.00	1.11

2.9. **Net area sown**

The net area sown during the year 1985-86 was estimated at 21.91 lakh hectares as against 21.84 lakhs hectares during the previous year. The net area sown covered 56.39% of the geographical area of the State. The district-wise distribution of net area sown is furnished in table 2.9.1 below:—

TABLE 2.9.1

District-wise distribution of net area sown 1985-86

District	Net area sown (hectare in lakhs)	Percentage to total	Percentage to the area of the District
Trivandrum	1.43	6.53	65.42
Quilon	1.43	6.52	56.70
Pathanamthitta	1.01	4.61	37.62
Alleppey	1.03	4.70	75.72
Kottayam	1.83	8.33	83.15
Idukki	1.66	7.58	32.23
Ernakulam	1.78	8.14	75.83
Trichur	1.56	7.11	52.06
Palghat	2.16	9.86	49.22
Malappuram	2.01	9.19	55.41
Kozhikode	1.62	7.42	69.63
Wayanad	1.14	5.21	53.73
Cannanore	1.90	8.65	63.85
Kasaragode	1.35	6.15	68.68
STATE	21.91	100.00	56.39

From the above table, it may be seen that the net area sown was highest in Palghat district and the same was lowest in Pathanamthitta district. But the percentage of net area sown to the geographical area of the district was highest in respect of Kottayam district with 83% and the same was lowest in respect of Idukki district with only 32% as against a State average of 56%.

2.10. **Area sown more than once**

The area sown more than once during the year 1985-86 was estimated at 6.76 lakhs hectares against 6.90 lakh hectares during the previous year. In this connection, it may be noted that there

was increase in the area of current fallow during the year. The area sown more than once constituted 30.72% of the net area sown and 17.3% of the geographical area. The district-wise distribution of area sown more than once is furnished in table 2.10.1 below:—

TABLE 2.10.1

District-wise distribution of area sown more than once 1985-86

District	Area sown more than once (Hectare in '000)	Percentage to total	Percentage to net area sown
Trivandrum	75	11.14	53.18
Quilon	81	11.99	56.50
Pathanamthitta	10	1.52	10.15
Alleppey	53	7.88	51.48
Kottayam	56	8.31	30.64
Idukki	30	4.55	18.45
Ernakulam	69	10.21	38.53
Trichur	63	9.37	40.48
Palghat	100	14.85	46.26
Malappuram	34	5.04	16.85
Kozhikode	42	6.22	25.78
Wayanad	31	4.63	27.30
Cannanore	22	3.26	11.58
Kasaragode	7	1.03	5.14
STATE	673	100.00	30.72

From the above table, it may be seen that the area sown more than once was highest in Palghat district and the same was lowest in Kasaragode district. But the percentage of area sown more than once to net area sown was highest in respect of Quilon district with about 57%. Area sown more than once normally associates with wet lands where water is available during all the three crop seasons.

2.11. Total cropped area

The total cropped area of the State for the year 1985-86 was estimated at 28.64 lakh hectares as against 28.75 lakh hectares during 1984-85 and 28.62 lakh hectares during 1982-83. The total cropped area formed 131% of the net area sown and 73.71% of the

geographical area of the State. The district-wise distribution of total cropped area is furnished in table 2.11.1. below:—

TABLE 21.1.1

District-wise distribution of total cropped area

District	Total cropped area (Lakh Ha.)	Percentage to total	Percentage of geographical area	Intensity of cropping
Trivandrum	2.18	7.61	99.73	152
Quilon	2.23	7.80	88.74	156
Pathanamthitta	1.11	3.89	41.44	110
Alleppey	1.56	5.45	114.70	151
Kottayam	2.39	8.33	108.63	131
Idukki	1.97	6.86	38.17	116
Ernakulam	2.47	8.63	105.04	139
Trichur	2.19	7.65	73.14	140
Palghat	3.16	11.03	79.98	146
Malappuram	2.35	8.21	64.75	117
Kozhikode	2.04	7.14	87.58	126
Wayanad	1.45	5.08	68.39	127
Cannanore	2.11	7.38	71.24	112
Kasaragode	1.42	4.94	72.21	105
STATE	28.64	100.00	73.71	131

The total cropped area was highest in Palghat district with 3.16 lakh hectares or 11% of the total cropped area. But the percentage of total cropped area to the geographical area was highest in Alleppey district. The percentage of total cropped area to net area sown or the intensity of cropping was highest in Quilon district with 156 and the same was lowest in respect of Kasaragode district with only 105 as against a State average of 131. The intensity of cropping was less than the State average in the districts of Pathanamthitta and Idukki in Travancore-Cochin area and the whole of Malabar Region except Palghat district.

3.0 AREA UNDER CROPS

3.1. Classification of area under seasonal annual and Perennial crops.

Crops may be classifid as seasonal, annual or perennial according to the duration of each crop. Accordingly, crops which have a duration of one season (less than six months) are called seasonal crops, crops with a duration of one year is called annual crops and the crops which have a duration of more than one year are called perennial crops. The district-wise distribution of area under crops classified into seasonal, annual and perennial is furnished in table 3.1.1 below:—

TABLE 3.1.1

District-wise distribution of area under seasonal, annual and perennial crops 1985-86

Sl. No.	District	Total cropped area (He)	Seasonal crops			Annual crops			Perennial crops		
			Area (He)	Percentage to total	Percentage to total cropped area	Area (He)	Percentage to total	Percentage to total cropped area	Area (He)	Percentage to total	Percentage to total cropped area
1.	Trivandrum	218011	83119	8.23	38.13	6591	9.88	3.02	128301	7.18	58.85
2.	Quilon	223471	79173	7.84	35.43	4654	6.98	2.08	139644	7.81	62.49
3.	Pathanamthitta	111361	33257	3.29	29.86	4535	6.80	4.07	73569	4.12	66.07
4.	Alleppey	156034	78563	7.78	50.35	3836	5.75	2.46	73635	4.12	47.19
5.	Kottayam	238506	61134	6.05	25.63	5717	8.57	2.40	171655	9.60	71.97
6.	Idukki	196587	23664	2.34	12.04	4642	6.96	2.36	168281	9.92	85.60
7.	Ernakulam	247175	106878	10.58	43.24	6168	9.24	2.50	134129	7.50	54.26
8.	Trichur	218981	108000	10.69	49.32	5580	8.36	2.55	105401	5.90	48.13
9.	Palghat	315992	204945	20.29	64.84	7055	10.58	2.23	103992	5.82	32.91
10.	Malappuram	235195	89463	8.86	38.04	5596	8.39	2.38	140136	7.84	59.58
11.	Kozhikode	204345	27569	2.73	13.49	4100	6.14	2.01	172676	9.66	84.50
12.	Wayanad	145377	38126	3.78	26.23	1915	2.87	1.32	105336	5.89	72.45
13.	Cannanore	211442	43265	4.28	20.46	4367	6.55	2.06	163810	9.17	77.48
14.	Kasaragode	141626	32909	3.26	23.24	1951	2.93	1.38	106766	5.97	75.38
	State	2864103	1010065	100.00	35.27	66707	100.00	2.33	1787331	100.00	62.60

Out of a total cropped area of 28.64 lakh hectares during 1985-86 about 35% of area was covered by a seasonal crops as against 38% during the previous year. The percentage of area under perennial crops have gone up from 60% during 1984-85 to 62% during the current year.

The area under seasonal crops were highest in Palghat with about 65% of the cropped area of the district and the same was lowest in respect of Idukki district with only 12%. Besides Palghat, Alleppey district has area under seasonal crops more than 50% of the gross cropped area of the district.

3.2. Classification of area according to food and non-food crops

The crops may be divided into food and non-food crops according to its use. The details of area under various crops classified into food and non-food crops are given in table 11.4 of summary tables and 12.5 of detailed tables.

3.2.1. *Food crops.*—The area under food crops during the year 1985-86 was estimated at 16.06 lakh hectares as against 16.51 lakh hectares during the previous year. It formed about 56% of the gross cropped area as against 51% during the previous year and showed a decreasing trend over the years. The district-wise distribution of area under food crops is given in table 3.2.1.0.

TABLE 3.2.1.0

District-wise distribution of area under food crops

Sl.No.	District	Area under food crops (hectares in lakhs)	Percentage to total	Percentage to total cropped area
1.	Trivandrum	1.25	7.80	57.45
2.	Quilon	1.11	6.92	49.77
3.	Pathanamthitta	0.52	3.22	46.40
4.	Alelppey	0.96	5.99	61.71
5.	Kottayam	0.94	5.88	39.58
6.	Idukki	1.12	6.95	56.81
7.	Ernakulam	1.39	8.66	56.25
8.	Trichur	1.43	8.92	65.41
9.	Palghat	2.42	15.05	76.49
10.	Malappuram	1.40	8.74	59.69
11.	Kozhikode	0.72	4.51	35.45
12.	Wayanad	0.68	4.25	46.98
13.	Cannanore	1.24	7.74	58.81
14.	Kasaragode	0.86	5.37	60.91
	State	16.06	100.00	56.08

The above table shows that the area under food crops was highest in Palghat district while it was lowest in Pathanamthitta district. The percentage of area under crops to gross cropped area of the district was highest in respect of Palghat district with 76% while it was lowest in respect of Kozhikode district with only 35%. For Quilon, Pathanamthitta, Kottayam and Idukki districts this percentage was less than 50% as against 56% for the State as a whole.

The salient features of area under different food crops are discussed below:—

3.2.2 (a) Paddy.—Paddy was the most important of the seasonal crops cultivated in the State with about 24% of the gross cropped area of the State. Being a seasonal crops, it is cultivated during the three seasons of Autumn, Winter and Summer. The season-wise distribution of area under paddy is given in table 3.2.2.1. below:—

TABLE 3.2.2.1

Season-wise distribution of area under paddy

Seasons	Area under paddy (Ha in lakhs)					
	1983-84	%	1984-85	%	1985-86	%
Autumn	3.28	44.29	3.18	43.62	2.80	41.24
Winter	3.24	43.85	3.27	44.74	3.13	46.21
Summer	0.88	11.86	0.85	11.64	0.85	12.55
All Seasons	7.40	100.00	7.30	100.00	6.78	100.00

The above table shows a declining trend in the area under paddy over the years. Season-wise area under Autumn crops shows a consistantly declining trend while the area under winter and summer shows a mixed trend. The percentage of area under winter crop has shown an increasing trend except for the year under report. Now a days paddy fields are being converted into garden lands or brought under other crops like banana and most often single cropped lands which are cultivated only during Autumn are subjected to the pressure of conversion. Lack of timely and adequate rain is another

reason for the decrease in area under paddy. The district-wise distribution of area under paddy during the year 1985-86 is furnished in table 3.2.2.2 below:—

TABLE 3.2.2.2

District-wise distribution of area under paddy 1985-86

Sl.No.	District	Area under paddy (He)	Percentage to total	Percentage of gross cropped area of the District
1.	Trivandrum	26352	3.88	12.09
2.	Quilon	34794	5.13	15.58
3.	Pathanamthitta	14498	2.14	13.22
4.	Alleppey	56045	8.26	35.91
5.	Kottayam	31884	4.70	13.37
6.	Idukki	8251	1.22	4.20
7.	Ernakulam	84804	12.50	34.32
8.	Trichur	95215	14.04	43.48
9.	Palghat	160855	23.72	50.91
10.	Malappuram	65462	9.65	27.34
11.	Kozhikode	18750	2.76	9.17
12.	Wayanad	30767	4.54	21.16
13.	Cannanore	28268	4.17	13.37
14.	Kasaragode	22336	3.29	15.77
	STATE	678287	100.00	23.64

Paddy occupied 6.78 lakh hectares of area during the year 1985-86 as against 6.73 lakhs hectares during the previous year. Out of this about, 24% of the area was in Palghat district alone and more than 50% of the gross cropped area of Palghat district was covered by paddy alone. The area under paddy both in terms of the percentage of total area and as percentage to the gross cropped area of the district was lowest in Idukki district.

3.2.3. *Other cereals and millets.*—Jowar, ragi, chama, etc. are the other cereals and millets cultivated in the State. The total area under these crops was estimated at 4981 hectares during 1985-86 and formed merely 0.17 percent of the gross cropped area of the State. The area under other cereals and millets show a declining trend.

3.2.4. Pulses.—The area under puls during the year 1985-86 was estimated at 28396 hectares as against 28715 hectares and 30268 hectares during the year 1983-84. The area under pulses was below 1% of the gross cropped area of the State. Palghat is the major pulses growing district of the State.

3.2.5. Sugarcane.—The area brought under sugarcane cultivation during the year 1985-86 was estimated at 7816 hectares as against 7839 hectares during the previous year. Palghat, Idukki, Pathanamthitta and Alleppey are the major sugarcane growing districts of the State.

3.2.6. Pepper.—The area under pepper during the year 1985-86 was estimated at 1.21 lakh hectares as against 1.06 lakh hectares during the previous year. This shows that the pepper cultivation is picking up after the disastrous 1982-83 drought when a large number of pepper standards withered away. Idukki, Cannanore, Kozhikode, Wayanad and Kottayam are the major pepper growing districts of the State.

3.2.7. Ginger.—The total area under ginger during the year 1985-86 was estimated at 15681 hectares as against 14537 hectares during the previous year. Wayanad, Kottayam and Ernakulam are the major sugar growing districts of the State. The area under ginger formed only 0.6% of the gross cropped area of the State.

3.2.8. Turmeric.—Turmeric is cultivated throughout the State on a limited scale. Ernakulam and Kottayam are the major turmeric growing districts of the State. The area under turmeric during the year 1985-86 was estimated at 3164 hectares as against 2885 hectares during the previous year.

3.2.9. Cardamom.—Cardamom is mainly grown in the slopes of the westernghats. Idukki district accounts for about 84% of the total area under this crops. The area under cardamom during the year 1985-86 was estimated at 60628 hectares, as against 58769 hectares during the previous year. Cardamom accounted for about 2% of the gross cropped area of the State.

3.2.10. Arecanut.—The area under arecanut during the year 1985-86 was estimated at 58691 hectares as against 56778 hectares during the pervious year. Kasaragode and Malappuram are the major arecanut growing districts of the State. About 2% of the gross cropped area of the State was covered by arecanut.

3.2.11. Tamarind.—Tamarind covered about 11078 hectares of area during 1985-86 which formed only 0.4% of the gross cropped area of the State. Palghat is the major tamarind growing district of the State.

3.2.12. Mango.—The area under mango during the year 1985-86 was estimated at 59290 hectares as against 59984 hectares during the previous year. Trivandrum and Kozhikode are the two major mango growing districts of the State though this crop is extensively grown throughout the State.

3.2.13. Jack.—The area under jack during the year 1985-86 was estimated at 57265 hectares as against 58052 hectares during the previous year. Trivandrum, Calicut and Waynad are the major jack growing districts of the State. The area under jack constituted 2% of the gross cropped area of the State.

3.2.14. Banana.—The area brought under banana during the year 1985-86 was estimated at 16500 hectares as against 16123 hectares during the previous year. Malappuram is the major banana growing district of the State.

3.2.15. **Other plantain.**—Other plantains were cultivated throughout the State on a fairly large scale; about 1.3% of the gross cropped area of the State was covered by other plantain during 1985-86. During this period, it was estimated that about 36502 hectares of area was brought under other plantain. The area under plantain was highest in Trivandrum district during the year under report.

3.2.16.—Pineapple.—Pineapple is cultivated throughout the State on a limited scale. The area under pineapple during the year 1985-86 was estinated at 4779 hectares as against 4836 hectares during the previous year.

3.2.17. Cashewnut.—The area under cashewnut during the year 1985-86 was estimated at 1.38 lakh hectares as against 1.37 lakh hectares during the pervious year and 1.42 lakh hectares during 1983-84. Cannanore and Kasaragode districts together commanded about 49% of the total area under cashewnut. Cashewnut accounts for about 4.8% of the gross cropped area of the State. Palghat and Trichur are the other major cashew growing districts of the State.

3.2.18. Tapioca.—Tapioca is cultivated during the three seasons viz., autumn, winter and summer. Winter crop is the major one

having 63% of the total area under this crop. Trivandrum and Quilon districts accounted for about 43% of the total area under tapioca in the State. This crop covered about 2.03 lakh hectares of area during 1985-86 as against 2.17 lakh hectares during the previous year. The area under tapioca is decreasing year after year and it formed only 7% of the gross cropped area of the State.

3.3. Non-food crops.—The area under non-food crops during the year 1985-86 was estimated at 12.58 lakh hectares as against 12.24 lakh hectares during the previous year and 11.7 lakh hectares during 1983-84. It is noticed that the area under non-food crops was steadily increasing year after year during the past decade and it covered about 44% of the total cropped area of the State. The salient features of area under important non-food crops are summarised in the following paragraphs.

3.3.1. Groundnut.—Groundnut is cultivated mainly in Palghat district where the soil is suitable for this crop. The area under groundnut during the year 1985-86 was estimated at 11010 hectares as against 11824 hectares during the previous year.

3.3.2. Sesamum.—The area under sesamum during 1985-86 was estimated at 14285 hectares as against 14448 hectares during the previous year. Alleppey is the major sesamum growing district with about 3% of the gross cropped area of the district.

3.3.3. Coconut.—Coconut is the most important crop cultivated in the State. The area under coconut surpassed the area under paddy during the year 1985-86. The area under coconut during the year under report was estimated at 7.05 lakh hectares as against 6.87 lakh hectares during the previous year. The area under coconut was highest in Kozhikode with about 15.8% of the total area under this crop and 55% of the gross cropped area of the district. The area under coconut was lowest in Waynad district where the climate is not suitable for this crop as in the planes.

3.3.4. Cotten.—Cotten is cultivated only in Palght district of the State and the area under this crop during the year 1985-86 was estimated at 5963 hectares as against 6326 hectares during the previous year. This shows a decline in the area under cotton during the year.

3.3.5. Tobacco.—Tobacco was cultivated only in Kasaragode district of the State and the area under this crop was estimated at 498 hectares during the year 1985-86 as against 833 hectares during the previous year. The area under tobacco witnessed a trend of wide fluctuation during the past few years.

3.3.6. Tea.—Tea is mostly cultivated on the slopes of Western Ghats. The area under tea during the year 1985-86 was estimated at 34760 hectares as against 34976 hectares during the previous year. Out of this 68% of the area was in Idukki district alone. About 1% of the gross cropped area of the State was covered by tea during the year under report.

3.3.7. Coffee.—Coffee is grown all over the State though high-ranges are particularly suited for this crop. The area under coffee during the year 1985-86 was estimated at 65641 hectares as against 64009 hectares during the previous year. About 85% of the total area under coffee was in Wayanad with 38% of this gross cropped area of the district. Coffee covered about 2% of the gross cropped area of the State.

3.3.8. Rubber.—Rubber is a rapidly expanding cash crop cultivated in the State. The area under rubber during the year 1985-86 was estimated at 3.3. lakh hectares as against 3.12 lakh hectares during the previous year. Out of this 83644 hectares or 25% was in Kottayam district alone. Area under rubber formed 35% of the gross cropped area of Kottayam district and 11.5% of the gross cropped area of the State. It has third rank in terms of area among the crops of the State after coconut and paddy.

3.3.9. Cocoa.—Though cocoa is a plantation crop there is no big cocoa plantation as such in the State. This crop is cultivated as an inter-crop to coconut, arecanut, etc. Kottayam was the major cocoa growing district of the State with 2% of the gross cropped area of the district and 9% of the total area under cocoa. Cocoa accounted for an area of 16887 hectares during 1985-86 as against 17860 hectares during the previous year.

4.0. IRRIGATION

Irrigation is an essential input for cultivation especially for crops like paddy which require high amount of water to grow. Because of the nature of the terrain and heavy rainfall, Kerala is blessed with 41 west flowing and 3 east flowing rivers. These rivers provide east potential for irrigation and power generation. It is estimated that 6 lakh hectares (Net) or 14 lakh hectares (gross) could be brought under irrigation in Kerala through major and medium irrigation. According to T.R.S. estimates 2.96 lakh hectares (net) and 3.99 lakh hectares (Gross) have been brought under irrigation during 1985-86. Frequent floods and occasional drought conditions often affect the crops adversely. Because of heavy rainfall, flood control was the main concern of the farmers rather than irrigation in the past. Though construction of dams and power generation are much easier channeling of these water for irrigation to needy places is a costly affair due to the undulating nature

of the terrain. Consequently construction of irrigation facilities have not taken much head way in Kerala and a vast potential remains untapped. With the commissioning of various power generation and irrigation schemes flood control have been achieved to a considerable level. A declining trend in rainfall is noticed during the past few years. In 1983-84 there were 13 on-going major irrigation projects and 5 ongoing medium irrigation projects in Kerala. Besides these minor irrigation schemes and flood control schemes are also being taken up and implemented. There were 1.46 lakhs of irrigation pump sets electrically operated in the State at the end of 1985-86. The net area brought under irrigation during 1985-86 formed 13.53% of the net area sown and the gross area irrigated covered about 13.92% of the gross cropped area. The details of area irrigated under various sources are furnished in table 4.1 below:—

TABLE 4.1

Source-wise area under irrigation (Ha.)

Sl. No.	*Source of Irrigation*	*Area Irrigated*			
		1984-85		1985-86	
		Total	*Percentage*	*Total*	*Percentage*
1.	Government Canals	94339	34.85	96646	32.61
2.	Private Canals	3809	1.41	4004	1.35
3.	Government tanks and Wells	4297	1.59	4822	1.63
4.	Private tanks and Wells	67233	24.84	76708	25.89
5.	Minor & Lift Irrigation	32628	12.05	30948	10.44
6.	Other sources	68392	25.26	83209	28.08
	TOTAL:	270698	100.00	296337	100.00

From the above table, it may be seen that total area brought under irrigation during 1985-86 was 2.96 lakh hectares as against 2.71 lakh hectares during the previous year. Government canals continued to be the major source of irrigation during 1985-86 with 32.6% of the total area irrigated though there was a decrease in area irrigated by this source during this period

over the previous year. Similarly the area brought under lift irrigation also showed a decrease during 1985-86 over the previous year. The area brought under private tanks and wells have increased by about 2% over the previous year. The deficiency of water in the canals owing to drought conditions might have been made up by farmers by digging more tanks and wells during this period. The details of crop-wise area irrigated (gross) are furnished in table 4.2.

TABLE 4.2

Crop-wise area under irrigation

Sl.No.	*Name of crop*	*Area Irrigated*			
		1984-85		1985-86	
		Total	*Percentage*	*Total*	*Percentage*
1.	Paddy	312860	73.94	282534	70.78
2.	Coconut	70107	16.57	73133	18.32
3.	Arecanut	13200	3.12	14500	3.63
4.	Vegetables	655	0.15	5022	1.26
5.	Banana	5718	1.35	6951	1.74
6.	Tubers	4519	1.07	735	0.18
7.	Spices and other condiments	1002	0.24	1038	0.26
8.	Cloves & nutmeg	649	0.15	767	0.19
9.	Betel leaves	543	0.13	582	0.15
10.	Sugarcane	1066	0.25	1287	0.33
11.	Others	12834	3.33	12599	3.16
	TOTAL:	423153	100.00	399152	100.00

There was a sharp decline in the gross area irrigated during 1985-86 over the previous year. This was mainly due to decrease in area brought under paddy in the absence of timely rain. About 71% of the gross area irrigated was covered by paddy as against 73% during the previous year. Other major crops with considerable irrigation was coconut with 18% and arecanut with 4% of gross irrigated area. The district-wise details of area brought under irrigation both source-wise and crop-wise are furnished in table 12.3 and 12.4 respectively of detailed tables.

5. WEATHER AND CROP CONDITION

The weather in the state is controlled by the South west and north east monsoon winds. Under the influence of these winds heavy rains occur in Kerala. Cultivation by irrigation coversed limited area in the State. In times of rain little irrigation is necessary and in a prolonged dry spell cultivation will be difficult as the water sources would get dried up unlike the rivers in North India which are replenished by the melting of Snow in summer. In such situations cultivation is a gamble with the monsoons. Therefore the only remedy to save agriculture from the recurring floods and droughts is to store the flood water to ward of the III effects of excess water and use it in times of water scarcity. Weather changes occur in Kerala in a cyclical fashion and the period of the cycle is four to five years. Normally there will be heavy rain fall during the months of June, July and October every year.

5.1. Trivandrum

The main crops grown in the district are paddy, coconut, tapioca, rubber, plantain, pepper etc. The weather condition was generally satisfactory during Autumn crop of paddy. But drought conditions prevailed during the latter part of winter season and onwards. Neyyattinkara is the only taluk where irrigation facilities are available in the district. Most of the cultivators preferred local varieties of paddy to high yielding varieties. Fertilizers and pesticides were widely used by farmers. The yield rate of paddy during autumn and winter were bright in the district. Summer paddy is grown only in isolated pockets where natural springs are available. The yield rate was generally poor. There were attacks of pests and diseases. However the overall yield rate has increased by about 7% during the year. Tapioca is a major crop in this district. But the area under this crop is decreasing year by year and rubber cultivation is claiming its place. Conversion of paddy fields into garden lands was continuing in this district during the year under report.

5.2. Quilon

Paddy, coconut, tapioca, pepper, banana, rubber and cashew are the important crops cultivated in the district. The amount of rain fall received during the year was below normal. Lack of sufficient rain during the first half of the kharif season and excess rain fall during the second half have adversely affected paddy and other seasonal crops. Consequently production and productivity of paddy were less than that of the previous year. The weather condition during the rabi season was bright, so that the production could be increased over three per cent and productivity increased by 11% in this district. The weather and crop condition for the perennial crops were satisfactory during the year.

5.3. Pathanamthitta

Paddy, Coconut, Rubber, Tapioca, Pepper, Plantain, Sugarcane etc. are the important crops cultivated in this district. Rain fall conditions were satisfactory during the year. But heavy rain lashed the taluks of Mallappelly, Tiruvalla and Kozhencherry taluks soon after the sowing of Autumn crop. Consequently there were wide spread damages to paddy and other seasonal crops in these taluks during this season and production and productivity of paddy in these taluks were less than those of the previous year. Winter crop of paddy was normal in all the taluks. Summer crop was not a success due to insufficient rains. There was no increase in area under sugarcane due to widespread diseases and low price level. The tendancy among the farmers to convert paddy fields into garden lands and house sites was on the increase. The cultivation of rubber is also going up year after year. The weather condition was not satisfactory for the crops like pepper and Banana. But perennial crops faired better during the year.

5.4. Alleppey

Paddy, coconut, tapioca, rubber, tubers, sesamun and pepper are the important crops cultivated in the district. Widespread rain and devastating floods occured during June have resulted in severe crop lesses. Local varieties of seeds were mostly used for the Mundakan crop in this district. The north east monsoon which was active during that period was favourable to the crops. Natural calamities were absent during this season. Consequently the Mundakan crop was a normal one. The Punja crop is not cultivated in Shertallai and parts of Karthigappally and Ambalapuzha taluks. In Kuttanad and most parts of Ambalapuzha taluk punja crop is the dominant crop. High yielding varieties of seeds are commonly used for punja crop. Due to timely application of pesticides pest attack was able to be contained. This has boosted the productivity of paddy. But total production of paddy was down by over 20% mainly due to decrease in area. The weather and crop condition were favourable to perennial crops in this district.

5.5. Kottayam

The major crops cultivated in this district are paddy, rubber, coconut, tapioca, pepper, cocoa, plantain and ginger. The year 1985-86 began with wide spread having rains in the district. Heavy loss to autumn paddy in parts of Changanacherry, Kottayam and Vaikom taluks were reported. Similarly storm and rain did much havoc to rubber plantations in the eastern parts of the district. Banana, Plantain and Tapioca are the other major crops affected by storm and flood. But during the second half of the year near drought conditions prevailed in several parts of the district. Consequently production and productivity of paddy fell by about 13%. The yield rate in respect of cash crops during the year was normal.

5.6. Idukki

Major crops grown in the districts are rubber, tea, cardamom, coconut, pepper, tapioca, paddy and coffee. The south west monsoon started in this district with fury. This had resulted in the flooding of periyar river and its tributaries in the district. Land slips occured in many parts of the high ranges, causing heavy damages to crops like tea, coffee, cardamon and pepper. However the Kharif paddy was normal in most places except Devicolam. There was a slight fall in the production of paddy during the year. The tendency to convert paddy fields into garden lands among the farmers of the plains has spread to the high ranges by raising cardamom and pepper in the wet lands of the district. The weather condition was satisfactory for all crops of the rabi season in the district. The weather and crop conditions were normal in respect of perennial crops during the year.

5.7. Ernakulam

Paddy, coconut, rubber, tapioca, pepper and arecanut are the major crops cultivated in the district. The south west monsoon arrived rather late this district with heavy rain, flood and consequent crop damages in Cochin, Parur and Kothamangalam taluks. But the claimatic conditions were favourable to Autumn crop of paddy in other parts of the district. The weather condition was normal to winter crops in almost all parts of the district. But during summer season drought conditions existed in certain parts of the district. Rain fall at the time of flowering in Kunnathunad taluk and certain other parts of the district affected productivity to some extent. The overall production of paddy fell by 4% although the overall productivity of paddy improved slightly by half per cent. The weather and crop condition in respect of perennial crops were normal in the district.

5.8. Trichur

Paddy, coconut, rubber, cashew, arecanut, tapioca, banana and rubber are the important crops cultivated in the district. During autumn there was heavy rain, flood and consequent damages to crops in all the taluks of the district. It was estimated that about 20% of the paddy was lost due to natural calamities during autumn season. But the productivity was high during the season. The winter paddy was normal. People preferred local varieties of seeds to high yielding varieties due to various reasons. During summer season near drought conditions prevailed during most parts of the district. Still the overall production of paddy rose only 3% and that of productivity by 11%. The drought conditions existed during the latter half of the year did not reflect on the current years productivity of perennial crops.

5.9. Palghat

The main crops cultivated in the districts are paddy, coconut, rubber, tapioca, cashewnut, pulses, cotton and groundnut. Irrigation facilities are fairly widespread in the district. The tendency of raising other crops on lands traditionally cultivated by paddy was increasingly evident during the year in the district. The late arrival of monsoon has delayed the agricultural operations in the district and there was about 20% decrease in the area brought under paddy. Heavy rain and floods affected the crops during autumn in Ottappalam taluk. Winter crop in the district in mainly dependent on irrigation water besides shows received during north east monsoon season. But rain fall during the season was deficient and sufficient water was not available in irrigation canals either consequently there was about 20% decrease, in area under winter paddy also. High yielding varities of seeds are widely used for this crop in this district. The summer crop of paddy was also not a success due to drought conditions. The overall production of paddy came down by about 12% and productivity fell by about 10%. The drought conditions prevailed during the second half of the year have adversely affected crops like banana, coconut, rubber and pepper. Young plants of the above crops withered away in many places due to drought, Attappadi area suffered badly where the monsoons failed. The weather and crop condition were not favourable to all crops during the latter part of the year.

5.10. Malappuram

The main crops cultivated in this district are paddy, coconut, cashew, rubber, tapioca and arecanut. Though the total rainfall in the district during the year was normal, its distribution was not favourable to crops. Heay rainfall during Autumn and drought conditions during the latter half of the rabi season affected all most all crops. Some cultivators were hesistant to the use of high yielding varieties of seeds because of its susceptibility to pest attack. Wide spread pest attack occurred during the year were able to be contained by the timely use of pesticides. The overall production of paddy during the year fell by about 7% compared to that of the previous year though productivity has improved by about 3%. This was due to decrease in area brought under paddy. The weather condition was not quite favourable to most of the crops during the year.

5.11. Kozhikode

The important crops cultivated in the district were coconut, paddy, rubber, pepper, betelnut etc. - In the Kharif season there were heavy rains accompanied by gale. A large number of banana plants were destroyed due to the storm. Due to heavy rain and floods there were crop losses to paddy also. Continuous heavy rain and over cast sky at the beginning of the year made the conditions favourable to the attack of Mahali to arecanut and pollu to the pepper and there was considerable crop losses in respect of he above crops. Drought conditions existed during the second half of the year

had adversely affected the perennial crops like coconut and arecanut. Though the total production of rice decreased by about 6% the per hectare yield rate of paddy has improved by about 7% during the year. However the overall weather condition was not favourable to most of the crops.

5.12. Wayanad

The important crops coultivated in the district are coffee, paddy, pepper, cardamom, tea, rubber, coconut and tapioca. The wetaher condition was satisfactory to most of the crops during the year. There were excess rainfall during June and drought conditions during the latter part of the year. Though there was slight decrease in productivity of paddy the total production of paddy during the year has increased during the year. Due to drought conditions tea production suffered badly though most other crops fared far better than those of the previous year.

5.13. Cannanore

The major crops cultivated in the district are paddy, coconut, cashew, pepper, arecanut, rubber and tapioca. The south was monsoon arrived late and it adversely affected agricultural operations at the begining of the year. But when it arrived it lashed the district with fury with the accompany of storm. Drought conditions existed in the latter half of the year. But the overall wet condition was favourable to seasonal crops and there was substantial increase in production and productivity of paddy in the district. The production and productivity of perennial crops were also better in the district during the year.

5.14. Kasaragode

The important crops cultivated in the district are paddy, arecanut, coconut, cashew, pepper etc. The weather and crop conditions were satisfactory for all crops in the Kasaragode taluk. Absence of timely rain have affected the agricultural operations in Hosdurg taluk. Though the rainfall was deficient during the latter part of the year it has not affected the pereninal crops. In fact the productivity of cash crops like coconut, arecanut, pepper and cashew nut were better than that of the previous year.

On the whole the year was not favourable to most of the crops in many parts of the state. Absence of timely rain have adversely affected the area brought under paddy as many farmers were forced to keep their lands fallow. This has adversely affected the total production of rice in the state. Heavy rain and flood during the beginning of the year and drought conditions during the latter half of the year have adversely affected the crops varying degrees. Though the drought condition did not affect the current years production of its impact will be felt on the productivity of the perennial crops during the next year.

6.0. PRODUCTION OF IMPORTANT CROPS

The details of production of important crops in the state are given in table 11.5 of summary tables and 12.9 of the detailed tables. The salient features of the production of important crops are discussed below:

6.1. Rice

The total production of rice during the year 1985-86 was estimated at 11.7 lakhs tonnes as against 12.56 lakh tonnes during the previous year. The district-wise distribution of production of rice during the year 1984-85 and 1985-86 are furnished below:

TABLE 6.1.1

District-wise productin of rice 1984-85 and 1985-86

District	*Production of rice*		%	*Yield per hectare*		%
	1984-85	1985-86	*difference*	1984-85	1985-86	*difference*
Trivandrum	45319	47106	+3.9	1677	1788	+6.6
Quilon	58929	60835	+3.2	1569	1748	+11.4
Pathanamthitta	35920	27715	—22.9	2058	1911	—7.2
Alleppey	140514	111971	—20.3	1909	1998	—4.6
Kottayam	66572	58104	—12.8	2081	1822	—12.5
Idukki	17401	16845	—3.2	2053	2041	—.6
Ernakulam	149199	142756	—4.2	1673	1683	+.6
Trichur	147381	151936	+3.1	1437	1595	+11.0
Palghat	350420	306980	—12.4	2107	1908	—9.5
Malappuram	100712	93056	—7.7	1376	1421	+3.3
Kozhikode	23898	22394	—6.3	1120	1194	+6.6
Wayanad	53489	54800	+2.3	1804	1781	—1.3
Cannanore	66098	43102	+18.9	1269	1525	+20.2
Kasargode	..	35451	..	..	1587	..
State	1255902	1173051	—6.4	1720	1729	+.5

From the above table it may be seen the production of rice during the year 1985-86 has decreased by about 6% over the previous year. But the average productivity has gone up by half per cent over the previous year. Hence decrease in area under paddy

was the main reason for the short fall in production. The quantity of rice produced was highest in Palghat District with 26% of the total production. The yield per hectare of paddy was highest in Idukki with 2041 kg. per hectare and the lowest was in Calicut district. Though the overall productivity has slightly increased, yield rates have decreased in many districts which usually show very high yield rates. The yield rate in Ernakulam, Trichur, Malappuram, Kozhikode, Cannanore and Kasaragode was less than the state average.

The season-wise production of rice and yield per hectare for the years 1984-85 and 1985-86 are furnished in table 6.1.2. below:

TABLE 6.1.2

Season-wise distribution of rice 1984-85 and 1985-86

Season	*Production of rice (tonnes)*		*% change over the previous year*	*Yield per hectare*		*% change*
	1984-85	1985-86		1984-85	1985-86	
Autumn	5.49	4.62	—15.8	1723	1650	—4.2
Winter	5.40	5.27	—2.4	1652	1683	+1.9
Summer	1.67	1.84	+10.2	1966	1965	—0.05
All seasons	12.55	11.73	—6.4	1720	1729	+0.5

The decline in area and productivity of paddy during the year pushed down paddy production by about 6%. Late arrival of monsoon and excess rainfall conditions during Autumn are the reason for the short-fall in production. But increase in productivity during winter has offset the overall decrease in productivity. Still the productivity during summer season continued to be the highest during the year under report also.

6.2. Pulses

The production of pulses during the year 1985-86 was estimated at 20475 tonnes as against 20384 tonnes during the previous year. Palghat district produced about 32% of the total production of pulses.

6.3. Sugarcane (gur)

The quantity of gur produced during the year 1985-86 was estimated at 42560 tonnes as against 42754 tonnes during the previous year. Palghat was the major gur producing district of the State.

6.4. Black pepper

The production of black pepper during the year 1985-86 was estimated at 33121 tonnes as against 17350 tonnes during the previous year. Favourable weather conditions during the current year was the reason for this increase in production. The quantity of pepper produced was highest in Wayanad district with 6523 tonnes.

6.5. Dry ginger

The production of dry ginger during the year 1985-86 was estimated at 44466 tonnes as against 41245 tonnes during the previous year. The increase in area was the reason for the increased production.

6.6. Turmeric (Cured)

The quantity of turmeric produced during the year was estimated at 6201 tonnes as against 5786 tonnes during the previous year. The increase in production of cured turmeric was due to the increased area brought under turmeric cultivation.

6.7. Cardamom

The estimates of production of processed cardamom stood at 3340 tonnes as against 2850 tonnes during the previous year. Increase in area under cardamom was the main reason for increased out put of cardamom.

6.8. Betel nut

The estimated production of betel nut during the year 1985-86 was 10664 million nuts as against 9269 million nuts during the previous year. The increase in production was due to the increase in area. The production of arecanut was highest in Kasargode district during the year.

6.9. Banana

The production of banana was estimated at 2.16 lakhs tonnes as against 1.9 lakhs tonnes during the previous year. The increase in production was mainly due to increase in area.

6.10. Other plantain

The production of other plantain during the year 1985-86 was estimated at 1.45 lakhs tonnes as against 1.42 lakhs tonnes during the previous year. The quantity of production of other plantain was highest in Trivandrum district during the year under report.

6.11. Cashewnut

The production of cashewnut during the year 1985-86 was estimated at 80203 tonnes as against 72294 tonnes during the previous year. Cannanore and Kasargode are the major cashewnut growing districts of the state. Increase in area and improvement in weather conditions during the year are the reasons for improvement in the production of cashewnut.

6.12. Tapioca

The production of tapioca during the year 1985-86 was estimated at 32.77 lakh tonnes as against 36.94 lakh tonnes during the previous year. The decrease in rainfall, area and productivity were the main reason for the decrease in production of tapioca. The quantity of tapioca produced was highest at Trivandrum with 23% of total production. The district-wise distribution of production of tapioca is furnished below:

TABLE 6.12.1

District-wise distribution of production of Tapioca

District	*Production of tapioca (lakh tonnes)*	*% to total*	*Yield rate per hectare (tonnes)*
Trivandrum	7.69	23.47	15.08
Quilon	4.87	14.86	13.68
Pathanamthitta	2.95	9.00	21.75
Alleppey	1.92	5.86	17.30
Kottayam	3.91	11.93	19.78
Idukki	1.78	5.43	19.30
Ernakulam	1.91	5.83	18.65
Trichur	0.65	1.98	11.83
Palghat	1.59	4.85	13.28
Malappuram	1.97	6.02	13.25
Kozhikode	0.39	1.19	11.35
Wayanad	0.49	1.49	20.40
Cannanore	1.78	5.43	20.41
Kasargode	0.87	2.65	15.75
State	32.77	100.00	16.15

Though production of tapioca was highest in Trivandrum district productivity was highest in Pathanamthitta. Total production and productivity was lowest in Kozhikode. Total production has decreased by 11% and overall productivity by 5% during the year when compared to that of the previous year.

6.13. Groundnut

The production of groundnut during the year 1985-86 was estimated at 6001 tonnes as against 11768 tonnes during the previous year. The decrease in area under groundnut was the main reason for the decrease in production. About 99% of the total produces was from Palghat district alone.

6.14. Sesamum

The production of sesamum during the year 1985-86 was estimated at 3702 tonnes against 3632 tonnes during the previous year. About 23% of the total production of sesamum was from Alleppey district.

6.15. Coconut

The production of coconut during the year 1984-85 was estimated at 3377 million nuts as against 3453 million nuts during the previous year. Kozhikode was the major coconut producing district of the State.

6.16. Cotton

The quantity of cotton produced during the year 1985-86 was estimated at 9624 bales of 170 kg. as against 10010 bales during the previous year. Cotton is produced only in Palghat district.

6.17. Tobacco

The total production of tobacco during the year 1985-86 was estimated at 935 tonnes as against 981 tonnes during the previous year. Decrease in area under cultivation of tobacco was the main reason for the decrease in production. Tobacco is a monopoly produce of Kasaragode district.

6.18. Tea

The production of tea during the year 1985-86 was estimated at 52628 tonnes as against 55329 tonnes during the previous year. Decrease in area under tea was the main reason for the decrease in production.

6.19. Rubber

The production of rubber during the year 1985-86 was estimated at 1.85 lakh tonnes against the previous years' estimate of 1.89 lakh tonnes. Kottayam was the major rubber producing district of the State with a 27% share in production.

6.20. Cocoa

The production of cocoa during the year 1985-86 was estimated at 6090 tonnes as against 4536 tonnes during the previous year.

7. SOWING, HARVESTING AND PEAK MARKETING PERIODS

The information on sowing, harvesting and peak marketing seasons on important crops are furnished in Table 11.8 of summary tables.

8. FARM PRICE OF CERTAIN COMMODITIES

The average farm price of certain important agricultural produces during the year 1985-86 are given in table 11.6 of summary tables and 12.11 of the detailed tables.

9. AGRICULTURAL WAGES

District-wise details of agricultural wages classified into skilled (carpenter and Mason) and unskilled for field labour (men and women) separately for the year 1985-86 are furnished in table 12.12 of the detailed tables.

10. LIVE STOCK, POULTRY AND AGRICULTURAL IMPLEMENTS

The details of livestock, poultry and agricultural implements as available from quinquennial, census 1982 are furnished in table 11.7 of summary tables and 12.13 of detailed tables.

11.0 SUMMARY TABLES

TABLE 11.1

Classification of area according to utilisation

Sl. No.	Head of classification	Area (Hect.)		Percentage to total	
		1984-85	1985-86	1984-85	1985-86
1	Total area according to village papers	3885497	3885497	100.00	100.00
2	Forest	1081509	1081509	27.84	27.84
3	Land put to non-agricultural uses	279703	278601	7.20	7.17
4	Barren and cultivable land	85688	83107	2.20	2.14
5	Permanent pastures and grazing lands	4518	4223	0.11	0.11
6	Land under miscellaneous tree crops	51039	50228	1.31	1.29
7	Cultivable waste land	130098	125559	3.35	3.23
8	Current fallow	41658	43247	1.07	1.11
9	Other fallow	27221	28038	0.70	0.72
10	Net area sown	2184428	2190985	56.22	56.39
11	Total cropped area	2874643	2866552	73.98	73.77
12	Area sown more than once	690220	675567	19.76	17.39
13	Cultivated area	2253302	2262270	57.99	58.22
14	Cultivable area	2434439	2438057	62.65	62.75

TABLE 11.2

Net area under irrigation by source

Source	Area irrigated		Percentage to total	
	1983-84	1984-85	1983-84	1984-85
Government canals	100445	94339	37.83	34.85
Private canals	3574	3809	1.35	1.41
Government tanks and wells	5945	4297	2.23	1.59
Private tanks and wells	60847	67233	22.91	24.84
Minor and Lift irrigation	33937	32628	12.78	12.05
Other sources	60788	68392	22.89	25.26
Total	265536	270698	100.00	100.00
Percentage of area (net) irrigated to net area sown	12.18	12.39	..	..

TABLE 11.3

Crop-wise area (gross) under irrigation

Name of crop irrigated	Area irrigated		Percentage to total	
	1984-85	1983-84	1984-85	1983-84
Paddy	312860	286932	73.94	72.54
Vegetables	655	4513	0.15	1.14
Tubers	4519	570	1.07	0.14
Coconut	70107	67887	16.57	17.16
Arecanut	13200	13657	3.12	3.45
Cloves, nutmeg and cinnamon	649	756	0.15	0.19
Other condiments and spices	1002	1113	0.24	0.28
Banana	5718	5601	1.35	1.42
Betel leaves	543	676	0.13	0.17
Sugarcane	1066	693	0.25	0.18
Others	12834	13146	3.03	3.33
Total	423153	395544	100.00	100.00
Percentage of area (gross) irrigated to total cropped area	19.37	18.14	..	..

TABLE 11.4

Area under crops in Kerala 1984-85 and 1985-86

Class of crops	Name of crop	Area (Ha.)		Percentage difference
		1984-8	1985-86	
(1)	(2)	(3)	(4)	(5)
Cereals and Millets	1. Paddy	730379	678281	—7.1
	2. Jowar	1822	1498	—17.8
	3. Ragi	1200	1182	—1.5
	4. Other cereals and millets	2460	2301	—6.5
	5. Total cereals and millets	735861	683262	—7.2

(1)	(2)	(3)	(4)	(5)
Pulses	6. Pulses including tur	28715	28396	—1.1
Sugar crops	7. Sugarcane	7839	7816	—0.3
	8. Palmirah	11706	11826	—1.0
	9. Total sugar crops	19545	19642	+0.5
Spices and condiments	10. Pepper	105835	121565	+14.9
	11. Chillies	1001	1031	+3.0
	12. Ginger	14537	15671	+7.8
	13. Turmeric	2885	3164	+9.7
	14. Cardamom	58769	60628	+3.2
	15. Arecanut (betel nut)	56778	58691	+3.4
	16. Other condiments and spices	3495	4402	+25.95
	17. Total spices and condiments	255401	265152	+3.8
Fresh fruits	18. Mango	59984	57265	—4.5
	19. Jack	58052	59290	+2.1
	20. Banana	16123	16500	+2.5
	21. Other plantains	35294	36502	+3.4
	22. Pineapple	4836	4779	—1.2
	23. Other fruits	21311	20816	—2.3
	24. Cashewnut	136863	137747	+0.6
	25. Total fruits	332463	332899	+0.1
Vegetables	26. Tubers	30471	31256	+2.6
	27. Sweet potato	4635	4821	+4.0
	28. Tapioca	216742	202919	—6.4
	29. Other vegetables	26961	26783	—0.7
	30. Total vegetables	278807	265779	—4.7
Other food crops	31. Tamarind	11101	11078	—0.2
Oil seeds	32. Coconut	687483	704682	2.5
	33. Sesamum	14448	14285	—1.1

(1)	(2)	(3)	(4)	(5)
	34. Groundnut	11824	11010	—6.9
	35. Other oil seeds	1793	2669	+48.9
	36. Total oil seeds	715548	732646	+2.4
Fibres	37. Cotton	6326	5963	—5.7
Drugs & Narcotics	38. Tobacco	533	498	—6.6
Plantation crops:	39. Tea	34976	34760	—0.6
	40. Coffee	64009	65641	+2.5
	41. Cocoa	17860	16887	—5.5
	42. Rubber	311976	330315	+5.9
	43. Total drugs, Narcotics & Plantation crops	428821	447603	+4.4
Other non-food crops	44. Fodder grass	1989	2003	0.7
	45. Green manure crops	8599	9164	+6.6
	46. Lemongrass	7762	6461	—16.8
	47. Betel leaves	1046	1110	+6.1
	48. Other non-food crops	53225	54896	+3.1
	49. Total non-food crops	1223849	1260344	+3.0
	50. Total cropped area	2874643	2866552	—0.3
	51. Area sown more than once	690220	675567	—2.1
	52. Net area sown	2184423	2190985	+3.0

TABLE 11.5

Production of important crops 1984-85 & 1985-86

Sl. No.	Name of Crop	Unit	Quantity produced		Percentage
			1984-85	1985-86	difference
(1)	(2)	(3)	(4)	(5)	(6)
1	Rice	Tonnes	1255902	1173051	—6.6
2	Jowar	"	925	753	—8.6
3	Ragi	"	1000	980	—2.0
4	Other cereals	"	1809	1758	—2.8

	(1)	(2)	(3)	(4)	(5)
5	Pulses	Tonnes	20384	20475	+0.4
6	Sugarcane (gur)	,,	42754	42560	—0.5
7	Black pepper	,,	17350	33121	+90.9
8	Dry chillies	,,	913	984	+7.7
9	Dry ginger	,,	41245	44466	+7.8
10	Cured turmeric	,,	5186	6201	+19.6
11	Processed cardamom	,,	2850	3340	+17.1
12	Arecanut (betel nut)	Million nut	9269	10664	+15.1
13	Nutmeg	Tonnes	..	4880	..
14	Tamarind	,,	23548	23348	—0.7
15	Jack	1000 Nos.	228439	222473	—2.6
16	Mango	Tonnes	193327	189975	—1.7
17	Banana	,,	189564	215696	+13.8
18	Other plantain	,,	141628	145430	+2.7
19	Pineapple	,,	59828	59773	—0.1
20	Pappaya	,,	42713	43268	+1.2
21	Cashewnut	,,	72294	80203	+10.9
22	Drumstick	,,	12702	12414	+2.3
23	Sweet Potato	,,	38779	40710	+4.9
24	Tapioca	,,	3694270	3276877	—11.3
25	Groundnut	,,	11768	6001	—49.1
26	Sesamum	,,	3632	3702	+1.9
27	Coconut	Million nuts	3453	3377	—2.2
28	Cotton	Bales of 170 Kg.	10010	9624	—3.9
29	Tobacco	Tonnes	981	935	—4.7
30	Lemongrass Oil	,,	351	318	—9.4
31	Tea	,,	56329	52628	—6.6
32	Coffee	,,	..	23550	..
33	Rubber	,,	188900	184700	—2.3
34	Cocoa	,,	4536	6090	+34

TABLE 11.6

Average farm (harvest) price of certain agricultural commodities 1984-85 and 1985-86

Sl. No.	Commodity	Units	Average farm price 1984-85	Average farm price 1985-86	Percentage change
1	Paddy	Qtl.	209.17	241.09	15.3
2	Coconut	100/Nos.	267.62	146.91	—45.1
3	Arecanut	"	12.52	11.19	—10.6
4	Tapioca	Qtl.	60.84	89.19	+46.6
5	Cashewnut	"	904.34	1059.53	+17.2
6	Banana	100/Nos.	56.56	63.00	+6.1
7	Pepper	Qtl.	2890.11	3998.50	+38.35
8	Ginger	"	2171.69	926.55	—57.3
9	Sugarcane	M.T.	198.80	212.92	+8.1

TABLE 11.7

Number of Livestock, Poultry & Agricultural Machinery

Sl. No.	(1)	(2)	(3)	Census (1977)	Census (1982)
(1)	(2)	(3)	(4)	(5)	(6)
1	Cattle	Males over 3 years	(a) Breeding	3462	10699
			(b) Working	353672	233048
			(c) Others	13980	22226
			Total	371114	265973
		Females over 3 years	(a) Breeding:		
			(1) in Milk	705040	864272
			(2) Dry	585474	561476
			(3) Not calved	74794	83483
			(b) Working	2569	..
			(c) Others	3103	3384
			Total	1370980	1512615
			Youngstock	1253965	1318187
			Total Cattle	3006059	3096775

(1)	(2)	(3)	(4)	(5)	(6)
2	Buffaloes	Males over 3 years	(a) Breeding	1777	3282
			(b) Working	210199	166088
			(c) Others	6798	13431
			Total	218774	182801
		Females over 3 years	(a) Breedings:		
			(1) in Milk	86698	82730
			(2) Dry	55646	48878
			(3) Not calved	9013	5710
			(b) Working	5039	..
			(c) Others	1196	1473
			Total	157592	138791
			Young stock	78034	86992
			Total Buffaloes	454400	408584
3	Goat		(a) One year & above	956695	11654338
			(b) Below one year	726602	838357
			Total	1683297	2003795
4	Sheep		(a) One year & above	..	3610
			(b) Below one year	..	3449
			Total	2543	7059
5	Horses & Ponies		(a) 3 years & above	..	46
			(b) Below 3 years	..	26
			Total	90	72
6	Mules			Nil	323
7	Donkeys			266	370
8	Camels			--	4
9	Pigs			172375	127147
	Others (Elephant)			..	451
	Total Livestock			5319033	5644580
			Dogs	..	1156438
			Others	..	434677
	Total livestock including dogs and others			5319033	7235695
10	Poultry		(a) Fowls	12956186	14519039
			(b) Ducks	429569	530354
			(c) Others	3095	34017
11	Ploughs		(a) Wooden	316976	228566
			(b) Iron (steel)	69191	47385
12	Carts			20525	8245
13	Sugarcane crushes		(a) Power	459	3925
			(b) Bullocks	863	95
14	Oil Engines			28759	24475
15	Electric pumps			25973	74456
16	Tractors			783	1335

TABLE 11.8

Showing harvesting and Peak marketing seasons of principal crops in Kerala

Sl. No.	Name of Crop	Season	Period of Sowing		Period of flowering		Period of harvesting		Peak marketing period	
(1)	(2)	(3)	(4)		(5)		(6)		(7)	
1	Rice	Autumn	April	—July	July	—October	August	—October	September	—November
		Winter	August	—November	October	—January	November	—January	December	—March
		Summer	October	—December	January	—March	March	—May	March	—June
			January	—March	March	—May	April	—June	April	—July
2	Ragi	I crop	April	—July	August	—September	September	—November	September	—November
		II crop	September	—October	October	—November	December	—January	December	—January
		III crop	May	—June	September	—October	October	—November	October	—November
			December		January	—February	February			
3	Small Millets	Autumn	April	—July	July	—November	September	—November	December	—January
		Summer	January	—February		—March		—April		—May
4	Red-gram	Autumn	May	—August	June	—September	August	—October	August	—October
		Winter	August	—November	September	—November	October	—January	December	—January
		Summer	February	—March		—May		—May		—June
5	Horse-gram	Autumn	February	—April	March	—April	April	—June	May	—June
		Winter	September	—November	October	—November	November	—January	November	—February
		Summer	December	—February	January	—April		—April		—April
6	Green	Autumn	June	—August	August	—September	August	—September	September	—December
		Winter		—October		—November	November	—December	November	—December
		Summer	September	—October	October	—November	November	—December	December	—January
7	Black gram	Winter	March	—June	July	—August	June	—September	September	—October
		Summer	September	—October	October	—November	November	—December	December	—January
8	Other	Autumn	April	—July	July	—August	July	—October	July	—November
		Winter	September	—December	October	—December	November	—February	December	—March
		Summer	December	—March	January	—April	February	—June		—April

(1)	(2)	(3)	(4)		(5)		(6)		(7)	
9	Sugar-cane	Autumn	October	—February			October	—December	November	—December
		Winter	November	—March			December	—February	January	—February
		Summer	June	—October	September	—October	October	—January		—January
10	Ginger	Autumn	March	—July						
		Winter	March	—June			November	—February	December	—February
							December	—February	December	—March
11	Pepper	Winter	June	—August	July	—October				
		Summer		—July	July	—September	November	—February	November	—March
							January	—April	March	—May
12	Cotton	Winter	June	—October	November	—December	December	—March	February	—March
13	Sesa-mum	Autumn	April	—August	July	—September	August	—October	July	—October
		Winter	August	—October	October	—December	December	—April	December	—February
		Summer	December	—February	February	—April	March	—May	March	—May
14	Sweet Potato	Autumn	April	—July			September	—November	November	—February
		Winter	October	—November			January	—February	February	—March
		Summer	December	—March			March	—June	April	—June
15	Turmeric		April	—July			November	—February	November	—March
16	Lemon-grass		May	—June			July	—November	July	—November
							January	—February	January	—February
							April	—May	April	—May
17	Tapioca	Autumn	July	—October			July	—August	July	—September
		Winter	March	—May			November	—March	December	—February
		Summer	June	—October			March	—July	March	July
			October	—November			April	—May		
18	Mango					—December	April	—May	April	—May
19	Arecanut					—June		—September		—September
20	Tubers	Autumn	February	—March			July	—September	August	—September
		Winter	March	—April			November	—January	December	—January
21	Banana	Autumn	August	—September	April	—May	July	—August	July	—August
		Winter	December	—January	August	—October	November	—January	December	—January
22	Tobacco	Winter	November	—December			March	—April	May	—June

12.0 DETAILED TABLES

TABLE 12.1

Normal Rainfall (mm.)

District	July	August	September	October	November	December	January	February	March	April	May	June	Total
Trivandrum	257.4	204.5	168.9	280.2	210.2	70.1	24.2	18.0	48.1	118.1	213.9	391.1	2001.6
Quilon	449.5	318.1	226.1	344.9	242.9	63.4	24.1	32.1	83.6	166.9	260.3	547.9	2760.2
Alleppey	552.3	370.3	272.7	330.2	219.4	64.1	25.9	29.3	59.0	133.5	291.5	663.8	5012.0
Kottayam	657.1	447.5	296.5	583.8	244.7	73.6	28.8	30.3	85.4	176.9	324.4	713.3	3462.6
Idukki	655.1	432.9	262.7	304.4	195.8	68.8	31.1	24.1	44.6	111.7	200.9	550.7	2898.8
Ernakulam	785.3	518.0	293.9	359.7	212.6	54.2	16.8	22.4	51.6	129.5	308.4	796.1	3548.5
Trichur	761.4	458.6	250.3	307.5	158.3	30.3	9.3	8.8	28.6	86.6	274.3	303.4	3177.4
Palghat	649.9	363.0	169.6	257.2	140.9	29.7	9.8	9.3	27.0	79.6	158.4	503.4	2397.7
Malappuram	787.0	405.0	198.8	290.0	163.8	30.9	6.7	6.5	19.3	78.7	211.9	702.4	2900.1
Kozhikode	1117.4	599.2	262.4	290.2	163.7	34.2	10.4	7.6	20.0	92.4	264.0	944.5	3796.0
Cannanore	1063.5	584.8	239.4	218.0	106.0	22.8	5.3	4.8	11.1	58.6	200.6	923.0	3437.9
STATE	684.4	422.6	242.0	306.9	190.9	51.2	18.5	10.3	46.4	115.6	245.0	672.8	3017.6

TABLE 12.2

District-wise Average Monthly Rainfall for the year 1985-86

Districts	July	August	September	October	November	December	January	February	March	April	May	June	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Trivandrum	87.4	30.6	58.4	95.1	120.2	23.0	1.7	16.3	3.7	137.3	100.6	206.4	880.7
Quilon	194.0	19.0	138.9	136.0	..	35.0	0	40.7	0	93.0	112.2	144.0	912.8
Pathanamthitta	286.6	198.3	186.3	247.2	132.5	69.7	1.0	63.5	0	186.5	107.0	x	1478.6
Alleppey	320.2	83.7	156.8	128.2	335.8	58.0	..	0.2	8.7	112.8	127.1	x	1331.5
Kottayam	472.2	228.0	188.8	161.3	114.0	65.1	0.9	18.9	5.3	66.3	121.0	442.9	1884.7
Idukki	205.1	155.0	102.9	191.1	80.5	117.4	15.9	26.3	10.8	56.2	136.0	x	1097.2
Ernakulam	442.2	321.4	127.2	205.1	95.1	63.3	3.4	43.6	36.5	64.7	141.1	x	1543.6
Trichur	480.9	447.2	107.6	252.8	79.5	173.5	0	0	0	..	x	x	1541.3
Palghat	441.2	282.5	218.0	121.0	8.0	69.2	4.4	0	1.7	14.1	39.5	x	1199.6
Malappuram	x	x	x	x	..	..	0	0	0	x	x	x	x
Kozhikode	610.1	260.6	79.8	184.7	17.5	30.9	0.6	0	1.41	13.2	274.9	x	1473.7
Waynad	362.0	544.1	126.0	86.2	72.9	..	0	0	5.8	23.6	x	x	1220.6
Cannanore	895.0	570.0	171.0	322.0	47.0	14.0	30.0	0	0	x	154.0	x	2203.0
Kasargode	716.4	670.9	58.3	351.5	50.7	10.9	0	0	0	15.9	36.8	x	1911.4
STATE	424.1	293.2	132.3	190.9	82.6	52.3	4.1	15.0	5.3	65.3	122.7	264.4	1652.2

x Not reported
.. Nil
0 Negligable

TABLE 12.3.1

Net Area Irrigated (Source-wise) 1984-85

District	Government Canal	Private Canal	Government tanks	Private kanks	Government wells	Private wells	Minor and Lift Irrigation	Other sources	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Trivandrum	5388	11	1015	369	19	547	1216	1554	10059
Quilon	297	62	82	125	11	396	273	2683	3929
Pathanamthitta	39	..	9	38	37	97	584	1875	2679
Alleppey	2178	3	55	12210	21	1397	3593	2997	22459
Kottayam	977	222	344	347	12	372	50	3436	6219
Idukki	574	27	63	44	7	54	424	1966	3164
Ernakulam	16658	86	612	2207	265	5138	10471	8863	44300
Trichur	18354	516	697	5134	392	8809	7066	9364	50332
Palghat	45771	285	231	6614	16	5678	1708	5745	66048
Malappuram	659	512	86	2910	17	5032	5300	10499	25015
Kozhikode	3268	112	80	176	7	571	978	1200	6392
Wayanad	58	533	9	62	10	44	39	7331	8086
Cannanore	118	1440	102	4447	98	4475	457	10879	22016
TOTAL	94339	3809	3385	34623	912	32610	32628	68392	270698

TABLE 12.3.2

Gross Area under Irrigation (Crop-wise) 1984-85

District	Paddy	Tubers	Vegetable	Cocoa-nut	Areca-nut	Cloves & Nutmeg	Other Spices & Condi-ments	Banana	Betal leaves	Sugar-cane	Others	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Trivandrum	7916	28	166	863	4	11	3	342	97	3	921	10354
Quilon	4233	13	232	125	1	6	2	38	97	3	488	5238
Pathanamthitta	6640	..	18	11	..	..	..	12	5	3	..	6689
Alleppey	4583	296	741	16352	45	49	64	179	23	80	646	23058
Kottayam	10840	..	165	13	..	97	9	76	21	..	1146	12367
Idukki	2983	6	9	..	1	12	4	3	..	104	42	3164
Ernakulam	68870	11	62	7556	548	355	36	579	11	..	1822	79850
Trichur	58039	20	257	28105	2246	68	173	698	19	..	1048	90673
Palghat	84585	10	469	3228	1170	11	279	619	9	850	1978	93208
Malappuram	29905	194	963	3230	2386	..	81	1183	224	1	816	38983
Kozhikode	3734	25	143	137	32	2	5	899	19	..	2160	7156
Waynad	14999	2	65	34	9	..	..	22	..	..	69	15200
Cannanore	15333	50	1229	10453	6758	38	346	1068	18	22	1698	37213
Total	312860	655	4519	70107	13200	649	1002	5718	543	1066	12834	423153

TABLE 12.4.1

Net Area Irrigated (source wise) 1985-86

(Area in hectare)

District	Govt. Canal	Private Canal	Govt. tanks	Private tanks	Govt. wells	Private wells	Minor lift irrigation	Other Sources	Total
Trivandrum	5170	318	984	286	19	518	1255	1406	9956
Quilon	299	93	82	95	32	427	279	2844	4151
Pathanamthitta	447	..	9	39	37	129	401	2309	3371
Alleppey	2250	6	78	13228	31	1194	3484	3441	23712
Kottayam	1062	96	347	347	21	306	511	3549	6239
Idukki	578	51	69	31	10	53	223	2382	3397
Ernakulam	17607	84	609	2220	499	6412	11225	7495	46151
Trichur	19155	474	821	7854	387	10180	6025	13005	57901
Palghat	46917	280	271	3704	11	5919	1535	6639	67276
Malappuram	569	485	96	3235	18	5420	4418	12755	26996
Kozhikode	2153	115	79	157	45	486	1014	1097	5146
Wayanad	58	201	7	52	8	50	33	8456	8865
Cannanore	124	1538	101	435	98	762	138	6962	10158
Kasaragode	257	263	44	6582	9	4587	407	10869	23018
State	96646	4004	3597	40265	1225	36443	30948	83209	296337

TABLE 12.4.2

Gross Area under Irrigation (crop-wise) 1985-86

District	Paddy	Tubers	Vege-tables	Coco-nut	Are-canut	Cloves & nutmeg	Other spices & condi-ments	Banana	Betal leaves	Sugar-cane	Others	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Trivandrum	8280	28	467	844	3	45	2	461	83	5	1355	11573
Quilon	3881	6	260	155	1	7	..	52	89	2	245	4698
Pathanamthitta	4930	1	151	36	..	1	5	79	9	50	3	5265
Alleppey	5815	387	771	16767	37	62	58	178	24	67	584	24750
Kottayam	12906	25	257	12	..	117	31	80	11	..	1156	14595
Idukki	4240	6	9	18	2	15	5	3	..	77	31	4406
Ernakulam	60942	6	95	9820	679	396	36	947	10	3	1872	74806
Trichur	58438	18	237	27427	2686	76	316	1156	19	..	1044	91417
Palghat	71179	5	496	3103	1334	18	277	766	6	1069	2120	80373
Malappuram	20170	180	1069	3982	2497	5	44	1176	300	2	817	30242
Kozhikode	2280	20	165	254	33	2	9	1173	18	..	2162	6116
Wayanad	13430	3	65	52	7	..	..	45	..	..	69	13671
Cannanore	7564	48	246	1451	338	23	255	835	13	12	1026	11811
Kasaragod	8479	2	738	9212	6883	..	..	..	..	..	115	25429
State	282534	735	5026	73133	14500	767	1038	6951	582	1287	12599	399152

TABLE 12.5

Classification of area according to Land Utilisation 1985-86

Sl. No.	District	Geographical area	Forest	Land put to non agricultural uses	Barren and uncultivable land	Permanent pastures & grazing land	Land under miscellaneous tree crops	Cultivable waste	Fallow other than current fallow	Current fallow	Net area sown	Area sown more than once	Total cropped area
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	Trivandrum	218600	49861	17815	2438	31	222	2378	1474	1364	143017	74994	218011
2	Quilon	251838	81438	23554	882	26	284	801	905	1153	142795	80676	223471
3	Pathanamthitta	268750	155214	9168	948	6	158	512	531	1112	101101	10260	111361
4	Alleppey	136058	..	26540	467	10	134	2091	1287	2510	103019	53015	156034
5	Kottayam	219550	8141	20169	2124	47	280	1259	2255	2702	182573	55933	238506
6	Idukki	514962	260907	13969	19215	2082	14320	35270	1245	1983	165971	30616	196587
7	Ernakulam	235319	8163	34628	2433	156	1114	5315	2312	2808	178430	68745	247175
8	Trichur	299390	103619	22653	2261	136	1361	5503	3087	4891	155879	63102	218981
9	Palghat	438980	136257	30223	13295	237	8581	24698	4204	5436	216049	102392	318441
10	Malappuram	363230	103417	19638	7845	320	3054	14463	4343	8876	201274	33921	235195
11	Kozhikode	233330	41386	17795	1944	111	2849	2949	1376	2451	162469	41876	204345
12	Wayanad	212560	78787	5724	2078	144	3419	4841	1512	1852	114203	31174	145377
13	Cannanore	296797	48734	22365	14113	530	8575	6464	2348	4167	18950	21941	211442
14	Kasargode	196133	5625	14360	13064	387	5877	19015	1159	1942	134704	6922	141626
	State	3885497	1081509	278601	83107	4223	50228	125559	28038	43247	4190985	675567	2866552

TABLE 12.6

Classification of area according to land utilization percentage distribution 1985-86

Sl. No.	District	Geographical area	Forest	Land put to non-agricultural uses	Barren & uncultivable land	Permanent pastures and grazing land	Land under miscellaneous tree crops	Cultivable waste land	Fallow other than current fallow	Current fallow	Net area sown	Area sown more than once	Total cropped area
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	Trivandrum	100.00	22.81	8.15	1.12	0.01	0.10	1.09	0.67	0.62	65.42	34.31	99.73
2.	Quilon	100.00	32.34	9.35	0.35	0.01	0.11	0.32	0.36	0.46	56.70	32.04	88.74
3	Pathanamthitta	100.00	57.75	3.41	0.35	0.00	0.06	0.19	0.20	0.42	37.62	3.82	41.44
4	Alleppey	100.00	..	19.50	0.34	0.01	0.10	1.54	0.95	1.85	75.72	38.98	114.70
5	Kottayam	100.00	3.71	9.19	0.97	0.02	0.13	0.57	1.03	1.23	83.15	25.48	108.63
6	Idukki	100.00	50.67	2.71	3.73	0.40	2.78	6.85	0.24	0.39	32.23	5.95	38.17
7	Ernakulam	100.00	3.47	14.71	1.03	0.06	0.47	2.26	0.98	1.19	75.83	29.21	105.04
8.	Trichur	100.00	34.61	7.57	0.76	0.05	0.45	1.84	1.03	1.63	52.06	21.08	73.14
9	Palghat	100.00	31.04	6.88	3.03	0.05	1.95	5.63	0.96	1.24	49.22	22.77	71.98
10	Malappuram	100.00	28.47	5.41	2.16	0.09	0.84	3.98	1.20	2.44	55.41	9.34	64.75
11	Kozhikode	100.00	17.74	7.63	0.83	0.05	1.22	1.26	0.59	1.05	69.63	17.95	87.58
12	Wayanad	100.00	37.07	2.69	0.98	0.07	1.61	2.28	0.70	0.87	63.73	14.57	68.37
13	Cannanore	100.00	16.42	7.54	4.75	0.18	2.89	2.18	0.79	1.40	63.85	7.39	71.24
14	Kasargode	100.00	2.87	7.32	6.66	0.20	2.99	9.70	0.59	0.99	68.68	3.53	72.21
	State	100.00	27.84	7.17	2.14	0.11	1.29	3.23	0.72	1.11	56.39	17.32	73.71

TABLE 12.7

Area Under Crops 1985-86

(in hect.)

	Cereals and Millets								Pulses including				Total food-grains
	Rice				Jower	Ragi	Other cereals	Total cereals and millets	Autum	Winter	Summer	Total	
	Autumn	Winter	Summer	Total									
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Trivandrum	12875	13167	310	26352	2	15	5	26374	149	540	2067	2756	29130
Quilon	16667	17920	207	34794	..	5	2	34801	918	425	342	1685	36486
Pathanamthitta	5090	6507	2901	14498	..	2	..	14500	32	115	163	310	14810
Alleppey	13531	17075	25439	56045	..	6	2	56053	59	215	361	635	56688
Kottayam	10384	15240	6260	31884	..	3	2	31889	207	199	1769	2175	34064
Idukki	3431	4447	373	8251	44	229	114	8638	140	240	750	1130	9768
Ernakulam	34420	35483	14901	84804	4	3	68	84879	514	280	623	1417	86296
Trichur	32362	45671	17182	95215	9	28	39	95291	1748	275	379	2402	97693
Palghat	84957	73950	1948	160855	1384	851	1947	165037	2947	4785	985	8717	173754
Malappuram	28581	32089	4792	65462	6	10	33	65511	429	184	542	1155	66666
Kozhikode	5504	10893	2353	18750	..	14	8	18772	240	361	546	1147	19919
Wayanad	7	24648	6112	30767	7	6	9	30789	5	19	301	325	31114
Cannanore	18410	9188	670	28268	31	5	27	28331	37	2598	761	3396	31727
Kasaragod	13480	7145	1711	22336	11	5	45	22397	68	540	538	1146	23543
State	279699	313423	85159	678281	1498	1182	2301	683262	7493	10776	10127	28396	711658

TABLE (*Contd.*)

(*in hect.*)

District	Sugar crops			Spices and condiments										
	Sugar cane	Palmyrah	Total	Pepper	Chillies	Ginger	Turmeric	Cardamum*	Betal nuts	Tamarind	Cloves	Nutmeg	Cinnamon	Total
(1)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)
Trivandrum	17	546	563	5065	..	210	32	164	2966	1704	123	80	15	10359
Quilon	211	27	238	7886	1	978	62	103	2843	706	89	80	16	12764
Pathanamthitta	1380	35	1415	4681	..	516	21	45	1459	216	48	112	6	7104
Alleppey	1386	16	1402	3642	..	212	20	..	2305	253	22	131	23	6608
Kottayam	244	434	678	11705	1	2664	717	23	2186	447	334	480	47	18604
Idukki	1596	200	1796	21417	..	1736	231	51617	2658	179	87	158	33	78116
Ernakulam	44	325	369	6307	..	2431	674	..	5483	768	103	1092	39	16897
Trichur	6	885	891	3739	2	132	154	..	6165	1416	30	266	35	11939
Palghat	2861	7339	10200	1736	184	489	296	3180	2067	2822	9	55	170	11008
Malappuram	8	1240	1248	4091	70	370	88	188	8879	1173	9	83	16	14967
Kozhikode	4	347	351	12808	33	1556	284	290	5328	640	10	44	58	21051
Wayanad	15	221	236	12231	2	3050	218	4258	1366	124	9	7	18	21283
Cannanore	25	112	137	16981	178	770	211	760	6294	439	5	150	159	25947
Kasaragod	19	99	118	9276	560	557	156	..	8692	191	2	109	40	19583
State	7816	11826	19642	121565	1031	15671	3164	60628	58691	11078	880	2847	675	276230

* Commodity Board figures

TABLE (*Contd.*)

(*in hect.*)

District	Fresh fruits							Dry fruits		Total fruit trees
	Jack	Mango	Banana other plantain	Pineapple	Pappaya	Others	Total	Cashew-nut		
(1)	(29)	(30)	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)
Trivandrum	7029	7122	808	5249	368	633	1080	22289	6387	28676
Quilon	4560	4503	1406	2479	461	536	344	14289	6876	21165
Pathanamthitta	2436	1658	959	1919	199	344	362	7877	2428	10305
Alleppey	2225	4007	646	1542	211	629	552	9812	3980	13792
Kottayam	4258	3613	1690	3221	493	727	743	14745	1465	16210
Idukki	2579	1660	275	2377	387	637	897	8812	1171	9983
Ernakulam	3018	4673	2130	3340	563	1041	632	15397	3624	19021
Trichur	3554	4450	1327	3853	322	1437	518	15461	7790	23251
Palghat	3822	5412	1574	2409	204	521	1925	15867	12140	28007
Malappuram	4472	5573	2586	2359	235	1302	605	17132	19255	36387
Kozhikode	6625	6595	1083	2746	232	1110	773	19164	4155	23319
Wayanad	5462	2728	566	1206	125	118	853	11058	863	11921
Cannanore	5371	5516	1188	2240	898	527	1016	16756	39216	55972
Kasargod	1854	1780	262	1562	81	218	736	6493	28397	34890
State	57265	59290	16500	36502	4779	9780	11036	195152	137747	332899

TABLE (*Contd.*)

District	Vegetables									Total food crops
	Drum stick	Tubers	Sweet potato	Tapioca				Other vegetables	Total vegetables	
				Autumn	Winter	Summer	Total			
(1)	(39)	(40)	(41)	(42)	(43)	(44)	(45)	(46)	(47)	(48)
Trivandrum	2798	2002	119	22099	22213	6698	51010	589	56518	125246
Quilon	1078	3613	40	12430	22648	536	35614	222	40567	111220
Pathanamthitta	351	3714	6	1119	11933	514	13566	403	18040	51674
Alleppey	610	5210	52	2013	8137	952	11102	813	17787	96277
Kottayam	1225	2846	24	1273	17978	490	19741	1016	24852	94408
Idukki	324	1392	131	1011	8133	93	9237	932	12016	111679
Ernakulam	1066	2692	64	2764	6760	692	10216	2404	16442	139025
Trichur	672	2031	139	1588	3675	252	5515	1116	9473	143247
Palghat	732	1892	1748	5876	5453	631	11960	2397	18729	241698
Malappuram	908	2101	1318	5768	7810	1285	14863	1928	21118	140386
Kozhikode	2097	1880	65	1728	1319	414	3461	306	7809	72449
Wayanad	119	910	17	890	1112	393	2395	303	3744	68298
Cannanore	353	564	212	1063	7106	550	8719	707	10555	124338
Kasaragode	200	409	886	672	4408	440	5520	1114	8129	86263
State	12533	31256	4821	60294	128685	13940	202919	14250	265779	1606208

TABLE (*Contd.*)

(*in hectares*)

District	Non food crops									Total
	Oil seed crops					Fibre	Drugs & narcotics			
	Ground nut	Sesa-mum	Coconut	Others	Total	Cotton	Betal leaves	Tobacco	Lemon grass	
(1)	(49)	(50)	(51)	(52)	(53)	(54)	(55)	(56)	(57)	(58)
Trivandrum	9	18	73094	209	73330	..	149	..	48	197
Quilon	..	2157	68769	938	71864	..	97	..	27	124
Pathanamthitta	..	221	27521	26	27768	..	78	..	15	93
Alleppey	1	4465	48702	105	53273	..	51	..	5	56
Kottayam	..	61	49033	115	49209	..	69	..	48	117
Idukki	..	237	17585	68	17890	..	7	..	1819	1826
Ernakulam	..	2101	59632	187	61920	..	91	..	433	524
Trichur	..	1218	60366	154	61738	..	72	..	50	122
Palghat	10934	1291	26349	562	39136	5963	7	..	262	269
Malappuram	20	2039	63230	55	65344	..	408	..	77	485
Kozhikode	..	65	111473	69	111607	..	35	..	633	668
Wayanad	..	117	3565	53	3735	..	3	..	1634	1637
Cannanore	6	171	60386	66	60629	..	16	..	818	834
Kasaragod	40	124	34977	62	35203	..	27	498	592	1117
State	11010	14285	704682	2669	732646	5963	1110	498	6461	8069

TABLE (*Contd.*)

(*in hectares*)

District	Plantation crops					Fodder crops	Green manure crops	Other nonfood crops	Total nonfood crops	Total cropped area
	*Tea	*Coffee	Rubber	Cocoa	Total					
(1)	(59)	(60)	(61)	(62)	(63)	(64)	65)	(66)	(67)	(68)
Trivandrum	1071	50	14721	851	16693	253	317	1975	92765	218011
Quilon	600	380	36033	966	37979	253	599	1432	112251	223471
Pathanamthitta	775	..	28343	1145	30263	137	485	941	59687	111361
Alleppey	..	23	3768	1544	5335	144	196	753	59757	156034
Kottayam	2009	1171	83644	5211	92035	339	273	2125	144098	238506
Idukki	23640	5770	31063	1920	62393	338	229	2232	84908	196587
Ernakulam	2	274	37769	1695	39740	105	222	5639	108150	247175
Trichur	447	32	9493	742	10714	83	376	2701	75734	218981
Palghat	665	2292	14769	209	17935	84	1056	12300	76743	318441
Malappuram	174	..	20401	430	21005	22	2651	5302	94809	239195
Kozhikode	..	..	15445	823	16268	43	837	2473	131896	204345
Wayanad	5377	55649	4782	294	66102	76	385	5144	77079	145377
Cannanore	..	..	16884	617	17501	102	892	7146	87104	211442
Kasaragod	..	..	13200	440	13640	24	646	4733	55363	141626
State	34760	65641	330315	16887	447603	2003	9164	54896	1260344	2866552

*Commodity board figures

TABLE 12.8

District wise area under crops expressed as percentage to total cropped area of the district 1985-86

Sl. No.	District	Total cropped area	Total food crops	Total non-food crops	Net area sown	Area sown more than once	Cereals & millets			Pluses	Total food grain
							Rice	Other cereals & millets	Total		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1	Trivandrum	100.00	57.45	42.55	65.60	34.40	12.09	0.01	12.10	1.26	13.36
2	Quilon	100.00	49.77	50.23	63.90	36.10	15.58	..	15.57	0.75	16.33
3	Pathanamthitta	100.00	46.40	53.60	90.78	9.21	13.02	..	13.02	0.28	13.30
4	Alleppey	100.00	61.71	38.29	66.02	33.98	35.91	0.01	35.92	0.41	36.33
5	Kottayam	100.00	39.58	60.42	76.55	23.45	13.37	..	13.97	0.91	14.28
6	Idukki	100.00	56.81	43.19	84.43	15.57	4.20	0.19	4.39	0.58	4.97
7	Ernakulam	100.00	56.25	43.75	72.19	27.81	34.32	0.02	34.34	0.57	34.91
8	Trichur	100.00	65.41	34.59	71.18	28.82	43.48	0.02	43.50	1.10	44.60
9	Palghat	100.00	76.49	23.51	68.37	31.63	50.51	1.32	51.83	2.73	51.56
10	Malappuram	100.00	59.69	40.31	85.58	14.42	27.84	0.02	27.86	0.49	28.35
11	Kozhikode	100.00	35.45	64.55	79.51	20.49	9.17	0.01	9.18	0.57	9.75
12	Wayanad	100.00	46.98	53.02	78.56	21.44	21.16	0.02	21.18	0.22	21.40
13	Cannanore	100.00	58.81	41.19	89.62	10.38	13.37	0.03	13.40	1.61	15.01
14	Kasargod	100.00	60.91	39.09	95.11	4.89	15.77	0.04	15.81	0.81	16.62
	State	100.00	56.08	43.92	76.54	23.50	23.66	0.18	23.84	0.99	24.83

TABLE 12.8 (*Contd.*)

Sl. No.	Sugar crops			Spices and condiment							Fresh Fruits		
	Sugar cane	Others	Total	Pepper	Ginger	Turmeric	Cardamom	Betel nut	Tamarind	Others	Total	Jack	Mango	Banana
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
1	0.01	0.25	0.26	2.32	0.10	0.02	0.08	1.35	0.78	0.10	4.75	3.23	3.27	0.37
2	0.09	0.02	0.11	3.53	0.43	0.02	0.05	1.27	0.32	0.09	5.71	2.04	2.01	0.63
3	1.24	0.03	1.27	4.21	0.02	0.04	1.31	0.19	0.04	0.57	6.38	2.19	1.49	0.86
4	0.89	0.01	0.90	2.33	0.15	0.01	..	1.48	0.18	0.10	4.25	1.43	2.57	0.41
5	0.10	0.18	0.28	4.91	1.12	0.30	0.01	0.92	0.19	0.35	7.80	1.79	1.51	0.71
6	0.81	0.10	0.91	10.89	0.88	0.12	26.27	1.35	0.09	0.14	39.74	1.31	0.84	0.14
7	0.02	0.13	0.15	2.55	0.98	0.27	..	2.22	0.31	0.50	6.84	1.22	1.89	0.86
8	..	0.41	0.41	1.71	0.06	0.07	..	2.81	0.65	0.15	5.45	1.63	2.03	0.62
9	0.90	2.30	3.20	0.55	0.15	0.09	1.00	0.65	0.89	0.13	3.46	1.20	1.70	0.44
10	..	0.53	0.53	1.74	0.15	0.04	0.08	3.78	0.50	0.07	6.36	1.90	2.37	1.10
11	..	0.17	0.17	6.27	0.76	0.14	0.14	2.61	0.31	0.07	10.30	3.25	3.23	0.53
12	0.01	0.15	0.16	8.40	2.10	0.15	2.93	0.94	0.09	0.03	14.64	3.76	1.88	.39
13	0.02	0.05	0.07	8.03	0.36	0.10	0.36	2.98	0.21	0.23	12.27	2.54	2.61	0.56
14	0.01	0.08	0.08	6.55	0.39	0.10	..	6.14	0.14	0.51	13.83	1.31	1.26	0.19
State	0.27	0.41	0.68	4.24	0.55	0.11	2.12	2.05	0.39	0.18	9.64	2.00	2.06	0.58

Table 12.8 (*Contd.*)

Sl. No.	Fresh fruits				Dry fruits		Total fruits	Vegetables					Total vegetables	Total food crops
	Other plantain	Pine apple	Pappaya	Other	Total	Cashew		Drumstick	Tubers	Sweet-potato	Tapioca	Other vegetables		
(1)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39)	(40)
1	2.41	0.17	0.29	0.49	10.23	2.93	13.16	1.28	0.92	0.05	23.40	0.27	25.92	57.45
2	1.11	0.21	0.24	0.15	6.39	3.08	9.47	0.48	1.62	0.02	15.94	0.10	18.15	49.77
3	1.72	0.18	0.30	0.33	7.07	2.18	9.25	0.31	3.34	..	12.19	0.36	16.20	46.40
4	0.99	0.14	0.40	0.35	6.29	2.55	8.84	0.39	3.34	0.03	7.11	0.52	11.39	61.71
5	1.35	0.21	0.31	0.31	6.18	0.62	6.80	0.51	1.19	0.01	8.28	0.44	10.42	39.58
6	1.21	0.20	0.32	0.46	4.48	0.60	5.08	0.16	0.71	0.07	4.70	0.47	6.11	56.81
7	1.35	0.23	0.42	0.26	6.23	1.47	7.70	0.43	1.09	0.03	4.13	0.87	6.65	56.25
8	1.76	0.12	0.66	0.24	7.06	3.56	10.62	0.49	0.93	0.06	2.52	0.51	4.33	65.41
9	0.75	0.06	0.16	0.61	4.98	3.82	8.80	0.23	0.60	0.55	3.75	0.75	5.88	75.90
10	1.00	0.10	0.55	0.26	7.28	8.19	15.47	0.39	0.88	0.56	6.31	0.82	8.98	59.69
11	1.34	0.11	0.54	0.38	9.39	2.03	11.41	1.03	0.92	0.03	1.69	0.15	3.82	35.45
12	0.83	0.09	0.08	0.58	7.61	0.59	8.20	0.08	0.63	0.01	1.65	0.21	2.58	46.98
13	1.06	0.43	0.25	0.48	7.93	18.54	26.47	0.17	0.27	0.10	4.12	0.33	4.99	58.81
14	1.10	0.06	0.15	0.52	4.59	20.05	24.64	0.14	0.28	0.63	3.90	0.79	5.74	60.91
State	1.27	0.17	0.34	0.39	6.81	4.80	11.61	0.44	1.09	0.17	7.07	0.50	9.27	56.03

Table 12.8 *(Contd.)*

Sl. No.	Oil seeds					Fibres cotton	Drugs & narcotics			
	Groundnut	Sesamum	Coconut	Others	Total		Betel leaves	Tabacco	Lemon grass	Total
(1)	(41)	(42)	(43)	(44)	(45)	(46)	(47)	(48)	(49)	(50)
1	..	0.01	33.53	0.10	33.64	..	0.07	..	0.02	0.09
2	..	0.97	30.77	0.42	32.16	..	0.05	..	0.01	0.06
3	..	0.20	24.71	0.02	24.93	..	0.07	..	0.01	0.08
4	..	2.86	31.21	0.07	34.14	..	0.03	..	..	0.03
5	..	0.03	20.56	0.05	20.64	..	0.03	..	0.02	0.05
6	..	0.12	8.95	0.03	9.10	..	..	..	0.93	0.93
7	..	0.84	24.13	0.08	25.05	..	0.03	..	0.18	0.21
8	..	0.56	27.57	0.07	28.20	..	0.03	..	0.03	0.06
9	3.43	0.41	8.27	0.18	12.29	1.87	..	..	0.08	0.08
10	0.01	0.87	26.88	0.02	27.78	..	0.17	..	0.04	0.21
11	..	0.03	54.55	0.03	54.62	..	0.02	..	0.31	0.33
12	..	0.08	2.45	0.04	2.57	..	..	..	1.12	1.12
13	..	0.08	28.56	0.03	28.67	..	0.01	..	0.38	0.39
14	0.03	0.09	24.70	0.04	24.86	..	0.02	0.35	0.42	0.79
State	0.38	0.50	24.58	0.09	25.56	0.21	0.04	0.02	0.22	0.28

Sl. No.	Plantation Crops			Cocoa	Total	Fodder-crop	Green manure crop	Other non food crop	Total non food crop	Total cropped area
	Tea	Coffee	Rubber							
(1)	(51)	(52)	(53)	(54)	(55)	(56)	(57)	(58)	(59)	(60)
1	0.49	0.02	6.76	0.39	7.66	0.12	0.14	0.92	42.55	100.00
2	0.27	0.17	16.12	0.43	16.99	0.11	0.27	0.64	59.23	100.00
3	0.70	..	25.45	1.08	27.18	0.72	0.44	0.85	53.60	100.00
4	..	0.02	2.42	0.98	3.42	0.09	0.13	0.48	38.29	100.00
5	0.84	0.49	35.07	2.19	38.59	0.14	0.11	0.89	60.42	100.00
6	12.03	2.94	15.80	0.98	31.75	0.17	0.12	1.14	43.19	100.00
7	..	0.11	15.28	0.69	16.08	0.04	0.09	2.28	43.75	100.00
8	0.20	0.02	4.33	0.34	4.89	0.04	0.17	1.23	34.59	100.00
9	0.21	0.72	4.64	0.07	5.64	0.03	0.33	3.86	24.10	100.00
10	0.07	..	8.68	0.18	8.93	0.01	1.13	2.25	40.31	100.00
11	0.09	..	9.98	0.21	10.28	0.01	1.30	2.60	64.55	100.00
12	3.70	38.28	3.29	0.20	45.47	0.05	0.27	3.54	53.02	100.00
13	..	..	7.99	0.29	8.28	0.05	0.42	3.38	41.19	100.00
14	..	..	9.32	0.31	9.63	0.01	0.46	3.34	39.09	100.00
State	1.21	2.29	11.52	0.59	15.61	0.07	0.32	1.92	43.97	100.00

TABLE 12.9

Production of Important Crops 1985-86

[In tonnes]

District	Rice				Jower	Ragi	Other cereals	Pulses	Sugarcane (gur)	Black pepper	Dry chillies	Dry ginger	Cured Turmeric
	Autumn	Winter	Summer	Total									
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Trivandrum	26965	19806	335	47106	..	12	3	631	78	1567	..	853	21
Quilon	31024	29551	260	60835	..	4	1	1396	1217	2979	1	2744	105
Pathanamthitta	7248	12231	8236	27715	..	2	..	240	8116	1524	..	1346	76
Alleppey	13261	29388	69322	111971	..	3	2	549	7992	648	..	680	37
Kottayam	12831	27201	18072	58104	..	2	1	1907	1450	1074	1	6407	2048
Idukki	6872	9267	706	16845	19	193	122	934	8349	4837	..	4997	563
Ernakulam	59352	59785	23619	142756	2	3	43	1015	253	1083	..	8024	779
Trichur	41482	76281	34173	151936	3	23	25	1715	35	566	2	215	259
Palghat	170701	133622	2657	306980	705	699	1483	6567	14700	486	195	1188	571
Malappuram	35796	47384	9876	93056	2	9	21	857	42	1401	62	728	149
Kozhikode	6005	13499	2890	22394	..	14	5	873	21	2905	29	2217	342
Wayanad	6	44077	10717	54800	3	6	6	248	78	6523	2	11208	638
Cannanore	28413	14096	593	43102	14	4	17	2649	130	5237	167	2239	446
Kasaragod	22036	10793	2622	35451	5	4	29	894	99	2291	525	1620	167
State	461992	526981	184078	1173051	753	980	1758	20475	42560	33121	984	44466	6201

Table 12.9 (*Contd.*)

(In tonnes)

District	Ground nut	Betal nuts million nuts	Tamarind	Mango	Jack nos'000	Banana	Other plantain	Pinapple	Tapioca	Sweet potato	Pappaya	Drum stick
(1)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)
Trivandrum	5	363	4319	6452	28469	9623	19997	4665	769231	603	3571	3361
Quilon	..	426	1461	13981	47781	16715	11098	5410	487200	193	466	1072
Pathanamthitta	..	340	301	4427	19023	12828	8188	2194	295061	36	2289	301
Alleppey	1	262	182	8959	8766	9651	4713	2177	192065	321	3282	438
Kottayam	..	302	504	4606	13970	29085	16355	5324	390477	192	4936	474
Idukki	..	319	223	2742	8499	3708	9565	4456	178274	1059	1274	340
Ernakulam	..	1303	1042	12229	13747	26851	17083	6204	190528	502	4318	842
Trichur	..	1180	2946	19628	14689	16017	8469	2681	65242	1090	6170	1195
Palghat	5959	335	7359	39421	15203	20349	11566	2485	158829	13996	3866	734
Malappuram	11	1408	2087	23947	8121	29967	7045	2511	196935	11262	7946	952
Kozhikode	..	1117	1545	21276	16890	14484	10238	3129	39282	362	544	1978
Waynad	..	226	299	3196	8774	8142	6418	1686	48858	138	918	128
Cannanore	22	1353	753	22009	13783	14938	8693	15457	177955	2115	2609	382
Kasargod	3	1730	327	7102	4758	3338	6062	1394	86940	8841	1079	217
State	6001	10664	23348	189975	222473	215696	145430	59773	3276877	40710	43268	12414

District	Sesamum	coconut (million nuts)	Cotton (bales of 170 kg.)	Nutmeg	Tobacco	Lemon grass oil	*Tea	*Coffee	*Rubber	*Cocoa	Processed cardamom	Raw cashew nut
(1)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)	(26)	(37)	(38)
Trivandrum	6	340	..	80	..	3	915	21	8475	168	5	2464
Quilon	748	272	..	53	..	2	200	160	19817	102	4	4455
Pathanamthitta	..	166	..	102	..	1	259	..	15041	615	..	951
Alleppey	857	277	..	50	..	1	..	10	2722	929	..	706
Kottayam	12	217	..	678	..	3	386	445	50271	1791	..	164
Idukki	75	71	..	223	..	126	39514	2440	14711	771	2665	231
Ernakulam	464	338	..	2885	..	50	..	166	19419	888	..	1931
Trichur	330	369	..	150	..	2	1387	14	6412	107	..	2774
Palghat	214	108	9624	32	..	47	1402	969	7150	45	370	5444
Malappuram	744	255	..	140	..	2	..	..	11419	156	2	6122
Kozhikode	24	603	..	15	..	11	..	..	12212	168	4	1869
Wayanad	52	5	..	10	..	28	8565	19325	1635	42	240	187
Cannanore	83	281	..	308	..	24	..	..	8652	265	50	26925
Kasargod	16	81	..	154	935	18	..	..	6764	46	..	23960
State	3702	3377	9624	4880	935	318	52628	23550	184700	6090	3340	86203

* Commodity Board Figures

TABLE 12.10

District wise distribution of operational holdings according to size 1980-81

Sl. No.	District	No of operational holdings by size classes (ha.) 0.02-0.99	%	1-00-1-99	%	2.00-3.99	%	4.00 to 9.99	%	10.00 & above	%	Total	%
1	Trivandrum	370249	10.99	11487	3.96	2632	2.13	401	1.12	104	2.85	384873	10.07
2	Quilon	441046	13.09	18921	6.53	4566	3.69	664	1.85	90	2.46	465287	12.17
3	Alleppey	361463	10.73	18963	6.54	5556	4.49	1211	3.88	88	2.41	387281	10.13
4	Kottayam	208110	6.18	27380	9.45	12202	9.87	3493	9.75	259	7.09	251444	6.58
5	Idukki	82623	2.46	24419	8.43	10832	8.76	4390	12.25	1063	29.11	123327	3.23
6	Ernakulam	325277	9.65	25641	8.85	10362	8.38	1903	5.31	228	6.24	363411	9.50
7	Trichur	325525	9.66	22160	7.65	6185	5.00	1030	2.88	46	1.26	354946	9.29
8	Palghat	225532	6.69	30180	10.41	17100	13.83	5643	15.75	266	7.28	278721	7.29
9	Malappuram	306720	9.10	26269	9.06	11913	9.64	4382	12.23	572	15.66	349856	9.15
10	Kozhikode	357690	10.62	27662	9.55	12697	10.27	3640	10.16	258	7.07	401947	10.52
11	Wayanad	42939	1.27	12694	4.38	9143	7.40	3736	10.43	317	8.68	68829	1.80
12	Cannanore	322226	9.56	44029	15.19	20434	16.53	5334	14.89	361	9.89	392384	10.27
	State	3369400	10.00	289805	100.00	123622	100.00	35827	100.00	3652	100.00	3822306	100.00

TABLE 12.11

Average farm prices of certain commodities—1985-86

District	Average farm prices 1985-86								
	Paddy Qtl.	Coconut 100 Nos.	Arecanut 100 Nos.	Tapioca Qtl.	Cashewnut Qtl.	Banana 100 Nos.	Pepper Qtl.	Ginger Qtl.	Sugarcane M.T.
Trivandrum	309.61	133.02	15.03	83.02	1014.58	71.39	3906.25	814.38	..
Quilon	237.69	152.60	11.77	80.56	1098.17	67.68	4007.98	754.64	..
Pathanamthitta	239.20	140.29	10.31	83.12	1015.56	68.17	4032.58	1018.94	..
Alleppey	243.47	153.55	11.18	103.13	1029.00	69.48	3913.64	..	..
Kottayam	235.90	147.98	9.93	96.97	1043.40	67.08	4020.17	1009.05	..
Idukki	237.96	160.40	9.26	86.39	1004.17	61.91	4010.33	1006.75	..
Ernakulam	252.02	163.56	12.85	88.34	1055.83	57.30	4018.46	1077.92	..
Trichur	217.43	161.88	15.72	87.48	1187.46	69.42	4081.48	808.33	..
Palghat	232.59	146.44	11.74	64.57	1111.25	59.27	3958.66	1081.84	212.92
Malappuram	232.04	142.49	10.68	91.43	1123.34	69.74	3945.31	887.92	..
Kozhikode	247.20	129.86	8.42	106.56	1134.10	56.71	4008.89	920.31	..
Wayanad	212.33	..	7.83	82.96	829.17	53.69	4062.08 3998.49	965.49	..
Cannanore	236.72	130.83	10.72	104.90	1127.92	47.18	4014.79	773.02	..
State	241.09	146.91	11.19	89.19	1059.53	63.00	3998.50	926.55	212.92

TABLE - 12.12

Agricultural wages 1985'86—Skilled Labour (1) Carpenter

Districts	July	August	September	October	November	December	January	February	March	April	May	June
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Trivandrum	35.00	35.00	37.50	37.50	37.50	37.50	37.50	37.50	37.50	40.00	40.00	40.00
Quilon	42.50	42.50	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00
Pathanamthitta	..	..	..	..	..	..	..	..	..	..	..	..
Alleppey	42.50	42.50	42.50	42.50	45.00	45.00	45.00	45.00	45.00	45.00	47.50	50.00
Kottayam	43.00	43.00	43.00	43.00	43.00	43.00	43.00	44.00	44.00	44.00	44.00	46.50
Idukki	..	..	..	..	..	..	..	..	..	..	..	..
Ernakulam	42.50	42.50	42.50	42.50	42.50	45.00	45.00	45.00	45.00	45.00	45.00	47.50
Trichur	47.50	47.50	47.50	47.50	47.50	47.50	47.50	47.50	47.50	47.50	50.00	50.00
Palghat	31.00	31.00	31.00	31.00	31.00	31.00	36.25	36.25	36.25	36.25	36.25	36.25
Malappuram	40.75	40.75	40.75	40.75	43.25	43.25	43.25	44.50	44.50	44.50	47.00	47.00
Kozhikode	42.50	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00
Wayanad	..	..	..	..	..	..	..	..	..	..	..	..
Cannanore	44.00	44.00	44.00	44.00	44.00	44.00	44.00	44.00	44.00	44.00	44.00	44.00
State	41.12	41.37	41.87	41.87	42.37	42.62	43.13	43.37	43.37	43.62	44.37	45.12

TABLE 12.12 (*Contd.*)

Skilled Labour (2) Mason 1985-86

District	July	August	Septem-ber	October	Novem-ber	Decem-ber	January	Februa-ary	March	April	May	June
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Trivandrum	35.00	35.00	37.50	37.50	37.50	37.50	37.50	37.50	37.50	40.00	40.00	40.00
Quilon	42.50	42.50	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00
Pathanamthitta	..	..	..	..	..	..	..	..	..	..	..	..
Alleppey	42.50	42.50	42.50	42.50	42.50	42.50	45.00	45.00	45.00	45.00	47.50	47.50
Kottayam	43.00	44.00	43.00	43.00	43.00	43.00	43.00	44.00	44.00	44.00	44.00	46.50
Idukky	..	..	..	..	..	..	..	..	..	..	..	..
Ernakulam	42.50	42.50	42.50	42.50	42.50	45.00	45.00	45.00	45.00	45.00	45.00	47.50
Trichur	47.50	47.50	47.50	47.50	47.50	47.50	47.50	47.50	47.50	47.50	50.00	50.00
Palghat	31.00	31.00	31.00	31.00	31.00	31.00	36.25	36.25	36.25	36.25	36.25	36.25
Malappuram	40.75	40.75	40.75	40.75	43.25	43.25	43.25	44.50	44.50	44.50	47.00	47.00
Kozhikode	42.50	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00
Wayanad	..	..	..	..	..	..	..	..	..	..	..	..
Cannanore	44.00	44.00	44.00	44.00	44.00	44.00	44.00	44.00	44.00	44.00	44.00	44.00
State	41.12	41.47	41.88	41.88	42.13	42.38	43.15	43.38	43.38	43.63	44.38	44.88

TABLE 12.12—*(Contd.)*

Unskilled—Paddy Field Labour (A) Men

District	July	August	September	October	November	December	January	February	March	April	May	June
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Trivandrum	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00
Quilon	22.50	22.50	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00
Pathanamthitta	..	..	..	..	..	..	..	..	..	..	..	..
Alleppey	22.00	22.00	23.50	23.50	23.50	22.00	25.00	25.00	27.50	27.50	27.50	27.50
Kottayam	21.00	21.00	21.00	22.00	22.00	22.00	22.00	22.25	22.25	22.25	22.25	22.25
Idukki	..	..	..	..	..	..	..	..	..	..	..	..
Ernakulam	26.50	26.50	26.50	26.50	26.50	26.50	26.50	26.50	26.50	26.50	26.50	26.50
Trichur	28.25	28.25	28.25	28.25	28.25	28.25	28.25	28.25	28.25	28.25	31.00	31.00
Palghat	15.75	15.75	15.75	15.75	15.75	15.75	18.50	18.50	18.50	18.50	18.50	18.50
Malappuram	26.50	26.50	26.50	26.50	26.50	26.50	26.50	27.50	27.50	27.50	27.50	29.50
Kozhikode	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00
Wayanad	..	..	..	..	..	..	..	..	..	..	..	..
Cannanore	39.00	39.00	39.00	39.00	39.00	39.00	39.00	39.00	39.00	40.00	40.00	40.00
State	24.90	24.90	25.30	25.40	25.40	25.30	26.08	26.20	27.29	26.55	26.83	27.03

TABLE 12.12—(*Concld.*)

Unskilled—Paddy Field Labour (B) Women

District	July	August	September	October	November	December	January	February	March	April	May	June
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Trivandrum	..	..	25.00	19.00	19.00	19.00	19.00	19.00	19.00	19.00	19.00	19.00
Quilon	15.00	15.00	15.00	15.00	15.50	15.50	15.50	15.50	15.50	15.50	16.00	16.00
Pathanamthitta	..	..	..	..	..	..	..	..	..	..	..	..
Alleppey	12.00	12.00	12.00	13.00	14.00	14.00	14.00	14.00	14.00	14.00	14.50	14.50
Kottayam	14.00	13.00	12.75	12.75	12.75	12.75	13.25	13.25	13.25	13.25	13.25	13.25
Idukki	..	..	..	..	..	..	..	..	..	..	..	..
Ernakulam	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	16.50
Trichur	16.50	16.50	16.50	16.50	16.50	16.50	17.00	17.00	17.00	17.00	17.00	17.00
Palghat	10.75	10.75	10.75	10.75	10.75	10.75	12.00	12.00	12.00	12.00	12.00	12.00
Malappuram	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
Kozhikode	16.50	16.50	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.50	17.50
Wayanad	..	..	..	..	..	..	..	..	..	..	..	..
Cannanore	16.00	16.00	16.00	17.25	17.25	17.25	17.25	17.25	17.25	17.25	17.25	17.25
State	14.00	14.00	15.40	15.00	15.00	15.00	15.50	15.00	15.00	15.00	15.60	15.70

TABLE 12.13

Number of Livestock, Poultry and Agricultural Machinery and Implements in Kerala 1982 Cattle

District	Male over three years				Female over three years						
	Breeding	Working	Others	Total	In milk	Breeding Not Calved		Working	Total	Young stock	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Trivandrum	735	7367	1078	9180	71569	30033	4290	191	106083	82238	197051
Quilon	967	19229	1904	22100	114691	87113	11273	423	213500	183694	419294
Alleppey	382	4411	930	5723	96207	69161	9927	542	175837	137665	319225
Kottayam	763	4070	795	5628	84100	61737	8074	211	154122	123603	283353
Idukki	782	6965	789	8536	48684	33633	3844	112	86273	71219	166028
Ernakulam	911	29262	1594	31767	88076	48211	46341	334	142962	129638	304367
Trichur	870	19821	2680	23371	67359	33720	4875	368	106322	103962	233656
Palghat	839	46844	2465	50148	68878	42710	3883	125	115596	108069	273813
Malappuram	1153	35355	2999	39507	47455	28028	4074	312	79869	73988	193704
Kozhikode	956	10320	1570	12846	56978	41644	10032	100	108754	84968	212568
Wayanad	685	17704	1278	19667	24632	18037	2748	440	45857	43440	108964
Cannanore	1656	34701	4144	37500	95643	67449	14122	226	177440	169703	384643
State	10699	233148	22226	265973	864272	561476	83483	3384	1512615	1318187	3096775

TABLE 12.13—(*Contd.*)

District	Male over three years				Female over three years						
	Breeding	Working	Others	Total	Breeding	No. calved	Working	Others	In milk	Total	Young stock	Total
(1)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)
Trivandrum	291	5843	736	6870	4952	495	..	105	10700	16252	8316	31438
Quilon	299	6922	605	7826	3826	466	..	77	5583	9952	6303	24081
Alleppey	93	3213	528	3834	1509	112	..	35	2238	3894	1955	9693
Kottayam	119	1467	296	1882	1495	149	..	14	2563	4221	1828	7931
Idukki	173	2148	328	2649	2695	224	..	49	4448	7916	4128	14193
Ernakulam	153	13825	851	14829	2039	167	..	32	6089	8327	4116	27272
Trichur	482	17024	1478	18984	6112	799	..	100	11996	19097	16250	54331
Palghat	369	63840	2110	66319	9194	693	..	280	11802	21969	14066	102354
Malappuram	435	28688	1929	31052	6821	1154	..	332	11221	19528	13848	64428
Kozhikode	85	8716	124	925	1422	172	..	23	2778	4395	1880	7200
Wayanad	291	14331	1023	15645	3004	476	..	291	4200	7971	5026	28642
Cannanore	492	8071	3423	11986	5809	803	..	45	9112	18769	9276	37031
State	3282	166088	13431	182801	48878	5710	..	1473	82730	138791	86992	40854

TABLE 12.13—(*Contd.*)

District	Sheep			Goats			Horses and ponies		
	One year and above	Below one year	Total	One year and above	Below one year	Total	3 years and above	Below three years	Total
(1)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)
Trivandrum	387	333	720	106048	79777	185825	18	1	19
Quilon	826	480	1306	137394	98341	235735	..	1	1
Alleppey	384	280	664	80073	58335	138408	..	3	3
Kottayam	221	258	479	97479	61867	159346	3	..	3
Idukki	424	338	762	58836	40305	99141	12	10	22
Ernakulam	127	126	253	103830	76524	180354	..	1	1
Trichur	152	330	482	104528	81842	186370	3	..	4
alghat	680	610	1290	113467	81198	194665	4	8	12
Malappuram	250	373	623	132188	92425	224613	1	2	3
Kozhikode	17	60	77	90413	63617	154030	2	..	2
Wayanad	39	92	131	31670	25312	56982	1	..	1
Cannanore	103	169	272	109512	78814	188326	1	..	1
State	3610	3449	7059	1165438	838357	2003795	46	26	72

TABLE 12.13—(*Contd.*)

District	Elephant	Camels	Mules	Donkeys	Pigs	Dogs	Others	Total Livestock including Dogs
	(34)	(35)	(36)	(37)	(38)	(39)	(40)	(41)
Trivandrum	4	..	..	2	8724	156160	20217	600610
Quilon	49	3	..	..	1026	168794	26454	876743
Alleppey	38	..	..	..	584	98277	60295	627177
Kottayam	97	..	..	3	41239	90820	61063	644334
Idukki	26	..	322	106	34201	87318	43412	445531
Ernakulam	66	..	..	6	15335	113768	79639	721061
Trichur	74	..	..	1	2118	65644	16811	559490
Palghat	9	..	..	122	982	98398	5365	677010
Malappuram	24	..	..	5	183	46626	19805	549674
Kozhikode	24	..	..	..	1279	72292	31926	479398
Wayanad	28	..	..	125	4248	53247	13409	265777
Cannanore	12	1	1	..	17228	105095	56281	788891
State	451	4	323	370	127147	1156439	434677	7235696

TABLE 12.13—*(Concld.)*

Districts	Poultry				Plugh		Sugarcane crushers		
	Fowls	Ducks	Others	Total	Wooden	Steel	Carts	Power	Bullocks
(1)	(42)	(43)	(44)	(45)	(46)	(47)	(48)	(49)	(50)
Trivandrum	1414548	13697	3243	1431488	5462	5093	170	30	4
Quilon	1479058	30701	1762	1511521	11501	13117	658	26	5
Alleppey	1378143	20600	3796	1587940	7385	4234	217	140	22
Kottayam	1134613	67803	4802	1207218	4342	695	165	285	19
Idukki	554221	8336	1798	564355	5523	1684	39	63	16
Ernakulam	1489939	126003	8210	1624152	29662	4055	263	940	5
Trichur	1494043	37030	2365	1533438	16080	3729	782	1589	3
Palghat	1285688	10035	1421	1297144	65279	4649	5718	359	9
Malappuram	1657291	13643	2626	1673560	33225	3029	81	170	2
Kozhikode	1041574	7497	1678	1050749	4952	808	11	28	..
Wayanad	360887	2611	922	364420	14801	4347	70	67	1
Cannanore	1229034	6997	1394	1237425	30354	1945	71	228	9
State	14519039	330354	34017	15083410	228566	47385	8245	3925	95

13. APPENDICES

13.1. Working class consumer price index numbers

The consumer price index numbers for the State are being compiled in respect of 15 selected centres with the base 1970=100. The indices for the centres of the State for the years 1984-85 and 1985-86 are furnished below:—

TABLE 13.1.1

Consumer Price Index Numbers for various Centres

(Yearly average consumer)

Centres	Price index numbers		Change in 1985-86 over 1984-85
	1984-85	1985-86	
1. Trivandrum	319	332	4.07
2. Quilon	327	337	3.06
3. Punalur	307	318	3.58
4. Alleppey	308	320	3.89
5. Kottayam	318	333	4.72
6. Mundakayam	297	307	3.37
7. Munnar	301	321	6.64
8. Ernakulam	301	311	3.32
9. Chalakudy	309	328	6.12
10. Trichur	313	327	4.47
11. Palghat	310	328	5.81
12. Malappuram	315	327	3.81
13. Kozhikode	311	328	5.47
14. Meppadi	317	333	5.50
15. Cannanore	309	323	4.53

From the above table, it may be seen that the consumer price indices during the year 1985-86 was highest in Quilon and the same was the lowest in Mundakayam. The highest change in the indices was noticed at Munnar with about 7% and the lowest change was noticed in Quilon with 3%. This shows that though the indices were highest the price increase of essential articles in Quilon during the year was less marked when compared to previous years. The change in indices at all the centres during unit year 1985-86 has less than that of the previous two years.

The monthly consumer price index numbers for the above 15 centres have been furnished in table 13.1.2.

The monthly consumer price index numbers for the year 1985-86 estimated for the 10 centres for the old series using the linking factor has been furnished in table 13.1.3 for the purpose of comparison.

TABLE 13.1.2

(Base 1970=100)

Statement showing the consumer price index number from July 1985 to June 1986

Centre	July	August	September	October	November	December	January	February	March	April	May	June	Average
Trivandrum	324	324	321	322	324	327	332	338	340	341	343	349	332
Quilon	334	334	330	328	328	331	336	340	342	345	349	355	337
Punalur	311	313	312	311	311	312	315	321	324	327	331	336	318
Alleppey	314	314	311	313	315	318	321	325	325	326	330	336	320
Kottayam	326	326	324	324	326	329	334	340	340	341	343	347	333
Mundakayam	303	304	300	298	300	301	304	310	313	316	319	323	307
Munnar	309	310	311	313	314	316	320	326	326	331	335	339	321
Ernakulam	308	308	305	303	303	305	308	314	316	318	322	328	311
Chalakudy	318	318	319	321	323	325	328	332	333	336	340	346	328
Trichur	322	323	319	319	321	323	326	331	333	335	338	344	327
Palghat	314	314	309	307	307	308	312	317	318	321	324	328	314
Malappuram	322	322	318	316	318	321	325	331	334	337	341	348	327
Kozhikode	323	324	320	319	321	324	327	332	334	335	338	344	328
Meppady	324	324	325	327	328	330	334	339	340	341	344	349	333
Cannanore	316	316	314	315	316	317	320	326	329	332	336	342	323

TABLE 13.1.3

Old series

Statement of Consumer Price Index Numbers for the Agricultural Year 1985-86

Centre	July	August	September	October	November	December	January	February	March	April	May	June	Average
Trivandrum	2812	2812	2786	2795	2812	2838	2882	2934	2951	2960	2977	3029	2882
Quilon	2852	2852	2818	2801	2801	2827	2869	2904	2921	2946	2950	3032	2883
Punalur	2606	2623	2615	2606	2606	2615	2640	2690	2715	2740	2774	2816	2670
Alleppey	2678	2678	2653	2670	2687	2713	2738	2772	2772	2781	2815	2866	2735
Kottayam	2853	2853	2835	2835	2853	2879	2923	2975	2975	2984	3001	3036	2916
Ernakulam	2720	2720	2693	2675	2675	2693	2720	2773	2790	2808	2843	2896	2750
Trichur	2821	2829	2794	2794	2812	2829	2856	2900	2917	2935	2961	3013	2871
Chalakudy	2792	2792	2801	2818	2836	2854	2880	2915	2924	2950	2985	3038	2882
Munnar	2472	2480	2488	2504	2512	2528	2560	2508	2624	2648	2680	2712	2568
Kozhikode	3078	3088	3050	3040	3059	3088	3116	3164	3183	3193	3221	3278	3129

Base for all centres except Kozhikode 1939=100
For Kozhikode base 1935=100

13.2 Parity Index

The index of parity measures the variation in the economic prosperity of the farmer in relation to changing farm prices, farm cultivation of cost and the domestic expenditure as compared to the position in the base period. This is defined as a ratio of the index of the prices received and the index of prices paid by farmers expressed as a percentage.

Index of prices received by the farmer.—This index is a measure of relative changes in receipts of a farmer from the important agricultural products as a result of changes in farm prices. The changes are measured based on the prices prevailed in the base year (1952-53). The weighted average of the price relative of the current farm prices to those of the base year is defined as the index of prices received. For the construction of the index the following crops are considered:

1. Paddy	2. Coconut	3. Arecanut
4. Cashewnut	5. Tapioca	6. Ginger
7 Pepper	8. Banana	9. Sugarcane

The Index number of prices paid by the farmer.—The index number of prices paid by the farmer is a measure of the relative change in the expenditure incurred by the farmer for farm cultivation and domestic expenditure as a result of changes in wages, rates, cost of implements, cost of manure, cost of maintenance of live stock, and prices of consumer goods as compared to the situation in the base year.

The index of parity between prices received and the prices paid by the farmer during each month of the year 1984-85 and 1985-86 are furnished in table 13.2.1.

TABLE 13.2.1

Index Numbers of Parity (Base 1952-53=100)

Month	*Year*	
	1984-85	1985-86
(1)	(2)	(3)
July	110	87
August	101	83
September	100	82
October	101	83
November	99	83
December	98	82
January	98	83
February	92	85
March	93	88
April	93	93
May	88	95
June	86	92
Average	97	86

The index of parity which stood at 110 points during July 1984 has declined to 82 points by December 1985. The index of parity showed signs of recovery from thereon and reached 92 points mark by the end of June 1986.

Increase in harvest prices in the absence of a bumber harvest like that of the previous year and the absence of sharp fluctuation in the price of essential commodities helped to push up the index by 10 points over that of the position obtained during December 1985.

13.3 Quarterly average prices of some important commodities

The trends in the quarterly average retail prices of 12 important commodities at the district headquarters towns during the year 1985-86 are discussed below:—

1. *Coconut/dozen.*—The prices of coconut per dozen fluctuated between 16/40 in Trivandrum during the second quarter and Rs. 35.35 in Ernakulam during the third quarter of the year. The prices of Coconut showed a decrease during the second quarter in most of the centres and began to increase during the third quarter onwards. This trend in prices may be attributed to a fall in production when compared to that of the previous year.

2. *Coconut oil/litre.*—The price of coconut oil also showed the same trend that of coconut during the year. The price of coconut oil ranged between Rs. 15.95/during the second quirter at Alleppey and Rs. 21.25 during the last quarter at Wayanad.

3. *Rice—FP (Coarse)/Kg.*—The price of coarse rice distributed through the fair price shops varied between Rs. 1.85 at Wayanad during the last two quarters and Rs. 2.57 at Malappuram during the third quarter.

4. *Black gram/Kg.*—The price of this commodity fluctuated between the Rs. 5.90 at Quilon during the last quarter and Rs. 7.95 during the first quarter at Ernakulam.

5. *Gingelly Oil/litre.*—The price of gingelly oil generally moved in the same direction as that of coconut oil within a price range of Rs. 15.56 in Alleppey during the second quarter and Rs. 21.00 at Cannanore during the first quarter.

6. *Tapioca/Kg.*—The price of tapioca varied between 0.95 Kg. during the first quarter at Wayanad and Rs. 1.80 at Idukky during the third quarter. The price of this commodity was steady at Cannanore at Rs. 1.50 per Kg. throughout the quarters.

7. *Sugar—F. P./Kg.*—The price of sugar distributed through the fair price shops was fixed at Rs. 4.40 during the first and second quarters at all centres and Rs. 4.80 during the third and fourth quarters..

8. *Chillies dry/Kg.*—The price of chillies showed a declining trend from quarter to quarter during the year. The highest price of Rs. 23.67 for the commodity was quoted from Trivandrum during the first quarter and the lowest price of Rs. 10.62 was quoted from Quilon during the last quarter.

9. *Coffee Powder/Kg.*—The price of Coffee powder showed an increasing trend over the quarters. The price of this commodity varied between 17.71/Kg. during the first two quarters at Idukki and Rs. 33.00 at Alleppey and Kozhikode during the third quarter. The price of this commodity was comparably low at Idukki during all the quarters of the year under report.

10. *Tea/Kg.*—The price of tea varied between Rs. 21.75 per Kg. during the third quarter at Idukki and Rs. 44.34/Kg. at Quilon during the second quarter. But the price of this commodity ruled at Idukki was comparatively low.

11. *Tobacco.—Vadakkan/Kg.*—There were vide fluctuations in price of this commodity from centre to centre. It fluctuated between Rs. 14.00/Kg. at Trivandrum and Alleppey during the third quarter and Rs. 35/Kg. at Wayanad during the same period.

12. *Tobacco—Jaffna/Kg.*—This price of this commodity fluctuated between Rs. 10.71/Kg. at Quilon during the third quarter and Rs. 35/Kg. during the second quarter at Wayanad.

13.4. Export of Agricultural Commodities through the ports of Kerala.

The quantity and value of agricultural commodities exported to foreign countries through the ports of Kerala are furnished in table 13.4.1

There was a sharp increase of about 339% in value of goods exported during the year 1985-86 over the previous year. However there was a fall in the quantity exported except for Cashewnut shell oil, ginger and Lemongrass oil during the year.

TABLE 13.3.1

Quarterly average retail prices at District Headquarters for 1985-86

Commodity	*TVM*	*QLN*	*PTA*	*ALPY*	*KTM*	*IDKY*	*EKM*	*TCR*	*PLT*	*MLPM*	*KZD*	*WYD*	*CNR*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Coconut/ dozen													
I	18.76	18.61	..	19.75	20.42	27.80	35.25	22.23	17.67	20.98	17.16	25.35	19.50
II	16.40	18.07	...	19.60	21.40	25.30	23.31	29.35	18.07	17.50	17.52	21.00	18.30
III	20.01	22.49	..	20.60	23.53	28.55	21.88	22.05	17.87	18.70	20.31	20.88	18.00
IV	22.56	24.41	..	23.77	24.66	28.00	24.38	26.33	21.42	22.38	22.48	25.60	22.00
Coconut Oil (Ltr.) I	18.37	11.47	..	17.00	17.04	17.80	18.94	17.47	17.56	17.93	18.51	19.96	20.17
II	17.00	16.05	..	15.95	21.23	16.83	..	16.32	16.09	16.27	16.76	18.04	17.11
III	17.17	15.67	..	15.65	15.85	16.55	..	16.19	15.87	16.36	16.48	17.78	16.55
IV	19.73	18.82	..	18.90	18.94	19.19	20.88	19.38	19.35	19.61	19.42	21.25	19.88
Rice/Kg. (F.P.) I	..	2.27	..	2.27	2.28	2.33	2.28	2.26	2.35	2.27	2.27	..	..
II	..	2.36	..	2.33	2.36	2.39	2.34	2.38	..	2.33	2.33	2.31	..
III	..	2.45	..	2.50	2.45	2.51	2.44	2.44	..	2.57	2.46	1.85	..
IV	..	2.51	..	2.50	2.51	2.56	2.51	2.50	..	2.50	2.51	1.85	..

Blackgram/ Kg.	I	6.67	6.78	..	6.48	7.46	6.79	7.95	6.94	6.63	6.65	7.82	6.36	6.96
	II	6.83	6.85	..	6.45	7.42	7.50	7.83	7.04	6.79	6.62	7.82	6.36	6.81
	III	6.86	7.15	..	6.44	7.42	7.76	7.91	7.72	6.76	7.29	7.82	6.36	6.69
	IV	6.49	5.90	..	6.00	7.38	7.57	7.68	6.99	6.61	7.00	7.80	7.58	6.55
Coffee Podwer/Kg.	I	29.00	27.42	..	30.00	24.71	17.71	28.77	28.02	26.01	27.65	29.27	..	29.00
	II	30.87	27.50	..	31.22	25.27	17.71	29.97	28.34	27.05	29.05	31.15	..	30.07
	III	32.10	30.34	..	32.67	26.37	17.89	31.11	29.56	28.17	30.40	32.62	..	32.70
	IV	32.10	31.09	..	33.00	28.81	19.83	31.92	31.96	32.50	31.00	33.00	..	32.96

Table: 13.3.1 (*Contd.*)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Tea/Kg.													
I	41.50	44.25	..	..	30.21	..	41.52	41.43	41.52	41.48	34.84	..	38.98
II	39.59	44.34	..	22.67	31.21	23.83	40.60	39.52	38.71	40.07	38.88	..	37.91
III	37.40	43.30	..	22.49	27.49	21.75	39.60	38.97	37.46	39.51	39.71	..	36.97
IV	37.40	39.37	..	20.40	27.82	22.47	39.12	39.12	37.69	39.59	40.85	..	36.99
Tobacco/Kg. (Vadakkan)													
I	15.00	14.00	..	18.67	18.88	18.00	17.67	18.51	19.92	24.42	30.34	38.33	28.75
II	14.67	14.00	..	16.41	18.37	18.00	17.67	17.89	20.00	22.42	29.50	39.38	29.57
III	14.00	14.00	..	15.58	17.57	17.92	17.44	17.87	20.00	20.91	28.48	34.67	28.00
IV	14.00	13.75	..	14.00	17.04	18.00	17.03	17.88	20.00	21.23	26.90	35.00	26.68
Tobacco/Kg. (Jaffna) I	13.00	15.92	..	..	19.22	18.00	19.00	20.00	20.00	20.75	..	33.33	..
II	13.00	14.46	..	..	18.45	18.00	19.00	20.00	20.00	20.80	..	35.00	..
III	13.17	12.24	..	..	14.40	17.96	18.78	17.19	..	19.63	..	30.00	..
IV	13.00	10.71	..	..	14.50	18.00	18.33	17.63	..	19.83	..	30.00	..
Gingelly Oil/litre I	17.06	17.93	..	15.65	16.50	19.40	18.64	16.93	16.17	17.16	16.86	19.13	21.00
II	17.64	17.22	..	15.56	16.70	18.27	..	16.75	15.66	16.81	17.57	19.15	19.99
III	18.59	17.51	..	16.28	17.17	19.04	..	17.85	17.15	16.56	16.93	18.87	18.56
IV	20.13	18.63	..	17.49	18.10	19.52	19.57	18.09	17.13	18.38	17.76	18.46	19.44

Tapioca (Raw/Kg.)	I	1.00	1.10	..	1.14	1.22	1.25	1.07	0.98	0.96	1.07	1.25	0.95	1.50
	II	1.16	1.26	..	1.23	1.38	1.70	1.26	1.13	1.08	1.11	1.41	1.22	1.50
	III	1.34	1.19	..	1.29	1.41	1.80	1.40	1.35	1.01	1.32	1.55	1.39	1.50
	IV	1.25	1.28	..	1.27	1.45	1.68	1.36	1.37	1.00	1.37	1.55	1.47	1.50
Sugar (F.P.) Kg.	I	4.40	4.40	..	4.40	4.40	4.40	4.40	4.40	4.40	4.40	4.40	4.40	4.40
	II	4.53	4.53	..	4.53	4.53	4.53	4.53	4.53	4.53	4.53	4.53	4.53	4.53
	III	4.80	4.80	4.80	4.80	4.80	4.80	4.80	4.80	4.80	4.80	4.80	4.80	4.80
	IV	4.80	4.80	4.80	4.80	4.80	4.80	4.80	4.80	4.80	4.80	4.80	4.80	4.80
Chillies (dry)	I	23.67	18.34	..	20.34	20.79	18.24	20.72	21.10	20.42	19.47	21.14	21.52	23.53
	II	20.64	15.71	..	17.32	18.62	18.85	18.50	17.56	17.33	17.48	18.50	20.08	18.64
	III	15.04	13.54	..	14.45	16.59	15.70	14.57	13.59	14.49	14.86	14.41	15.53	13.95
	IV	12.85	10.62	..	11.64	13.44	13.72	11.48	11.25	12.00	13.15	11.44	14.40	11.08

TABLE 13.4.1

Foreign Export from the ports of Kerala 1985-86

Sl. No.	Commodity	Unit	1985-86		1984-85	
			Quantity	Value (Rs. lakhs)	Quantity	Value (Rs. lakhs)
1	Cardamom	Tonnes	677.87	1033.39	510.80	998.35
2	Cashew kernel	,,	29864.27	21142.55	24298.54	12773.98
3	Cashew shell oil	,,	1297.15	69.69	2007.63	107.13
4	Coffee	,,	34868.18	11806.96	22446.53	7520.90
5	Coir & Coir products	,,	25587.75	3519.56	18493.93	2131.57
6	Ginger	,,	4255.59	616.51	4988.74	1088.03
7	Lemongrass oil	,,	9.02	11.75	158.21	180.57
8	Marine products	,,	28723.56	13940.86	21178.66	10224.80
9	Oil cake	,,	..	..	..	.
10	Pepper	,,	48610.23	23311.69	11136.71	3541.26
11	Rubber manufacture	,,	264.30	144.42	234.66	218.22
12	Tea	,,	22907.72	5462.03	28705.96	9619.12
13	Wood and Timber	,,	..	542.57	..	425.99
14	Sundries (Miscellaneous item)	,,	..	9249.65	..	9348.05
	Total	,,	197065.64	90851.63	..	58177.16

13.5. Notes on certain crops in Kerala

1. *Tea.*—Tea is the most important plantation crop cultivated in the country. India is a major producer as well as exporter of tea in the world.

Climate.—Tea requires a hot moist climate with temperature varying from 55°F to 95°F and an annual rainfall ranging from 250 to 325 cms. Tea is normally cultivated at altitudes ranging from 900 to 1500 metres above mean sea level.

Soil.—The soil best suited for the cultivation of tea is light soil of good depth through which water percolates freely.

Planting.—After clearing the land of forest growth and providing space for roads, drains and building the planting is done. The spacing of plants depends on the layout of the land used for cultivation. They are usually planted in square, rectangular or triangular patterns and spaced to cover the ground almost completely and without over crowding when matured. Normally about 75000 tea seedlings are planted in a hectare of land. 'Hedge planting' (ie. with spacing 150 x 60 cm) is also practised in new estates. Before planting pits of 22 cm square and 45 cm deep are taken and filled with soil rich in organic compounds for better growth.

Planting is done in June or July depending upon South-west monsoon. Water is essential for the young plants for the first two or three months after planting. Young plants raised in nurseries are preferred to seeds. Usually tea seedlings with 6 to 18 months are transplanted without damaging the tape roots into the space assigned for each plant.

Pruning.—When the plants are about two years old and 1 to 2 metres high they are pruned to stimulate lateral growth and to develop them into a thick bush.

Plucking.—The young and freshly sprouted leaves with two leaves and a bud are plucked. Plucking is done throughout the year in several rounds. The period of one round varies according to the altitude of the land. In high ranges the plucking round cover a period of fourteen days whereas in the plains the period is limited to seven or eight days.

Manure.—The important manure used are mixtures of nitrogen, phosphorous and potash. In some estates ammonium sulphate is widly used.

Yield.—The average yield of a good estate is about 1125 kg. of prepared tea per hectare.

Diseases.—There are many kinds of diseases and pest attacks on the tea bush. Tea mosquito, red spider and thrips are the important pests attacking the plant.

Life of the plant.—The average life of a tea plant varies from sixty to eighty years. But it will depend upon various factors such as soil erosion, climatic conditions etc.

Tea processing.—The raw leaves plucked from the tea garden has to undergo a series of processes before it can be marketed. The raw leaves are spread on a wire nets or hassian cloth racks for a period of eighteen hours for eliminating moisture. The next stage is called rolling. A rolling machine specially made for this purpose, with pressure adjustments is used to twist the leaves for breaking the leaf cells so that the leaf juices ooze out. Then the rolled leaves are taken from the roll breakers and put in a fermentation room. Fermentation is a process of oxidation where the leaves undergo a chemical change. The green colour of tea leaves changes into raddish hue of copper. The next process is known as drying. Hot air from the drier furnace is forced into the chamber where the leaves are dried.

The last two processes are grading and packing. There are two important classification of grades. They are leaf grades and broken grades. The former group is divided into orange Pekoe souchong, broken orange pekoe, broken pekoe. Broken souchong Fannings and dust are the important broken grades. They are then packed category wise for sale.

Besides the black tea, green tea is also manufactured in India in a small quantity. In this process the raw leaf is subjected to heat treatment by steaming or roasting. The green leaf after the heat treatment is rolled and dried, the process being repeated till the desired degree of dryness is reached.

2. *Coffee*

Coffee is another plantation crop. There are two species of coffee grain in India namely Arabica and Robusta. Robusta, flowering at low level and has more power of resistance against extreme climate, pests and diseases. It is easily distinguishable from Arabica by the size of its leaves and appearance of the berries.

Climate.—Coffee is a tropical plant. It is successfully cultivated in places where the altitude ranges from 450 metres to 1800 metres above mean sea level. The most suitable altitude is between 750 M to 1400 M above mean sea level. It needs a well distributed annual rainfall of about 150 to 200 cm. and a distinct rainly and dry season with a minimum average temperature of 70° F. A good dry spell from about December to March with a few intermitttant showers in March and April and a heavy rainfall in July and August constitute ideal conditions for the growth of coffee plant.

Soil..—Coffee requires sandy soils or clay loam soils with good subsoil drainage system.

Planting.—Coffee is grown from seeds usually. It is also propogated from cuttings from mature trees or shoots. Propagation from seeds is usually done in January or February on well prepared nursery beds. It is essential that the nursery beds must have shades to protect the tender shoots. These seedlings are to be transplanted after four to six months from the nursery, when the plants are 50 cm. high. The spacing between each plant is normally about 3 metres. The plants are manured well and watered frequently.

In the second method of propagation lower branches of the trees are bent down under the earth for at least four months so as to enable new roots to sprout down from these branches. Shade trees are provided in coffee plantation for the protection of plants from the intensity of the sun and for soil conservation.

Pruning.—The plants are pruned to stimulate lateral growth and for easyplucking of berries.

Manuring.—The important manure used for the coffee plants are Superphosphate, amonium sulphate, copper sulphate and urea.

Plucking.—Normally coffee plants begin to bear fruits within five to seven years after planting. The Colour of the berries is green at first. The colour slowly changes to golden and then to deep red. These red berries are plucked by hand. Several plucking are necessary before crop is completely harvested.

Under good climatic conditions a coffee plant yields about 250 gram to 900 grams of green coffee in a season. Good yield may be obtained from a plant for a period of 20 to 30 years. Excessive rain or absence of rain in the blossoming season will adversely affect yield.

Diseases.—The following diseases are prevelent in coffee estates. They are (1) coffee stem borey (2) shot hole bore, (3), leaf disease (4) Root rot (5) dieback (6) chloroisis and (7) green bug.

Curing.—There are two processes by which raw coffee is cured. They are known as dry and wash method.

By the first method the coffee cherries are washed and spread out on the cement floor in the open air for drying. When they are completely dried they are allowed to run through fanning and halling machines.

The second process known as wash process is entirely different. The cherries are put in the pulping machine which breaks them. The pulpy skin of the cherries are automatically removed. Then these cherries are put into big tanks for about twenty four hours. Jelly like substance known as Honey will be formed by fermentation. This honey is removed by washing when the cherries are completely dried they are put through hulling and polishing machines. The coffee prepared by the wet method is called parchment. For preparing parchment coffee only ripe berries can utilised.

Berries at different stages of maturity have to be converted into cherries. Then they are graded and packed. The important grades are arabica cherry, arbica parchment, roubsta cherry and roubsta parchment.

3. *Rubber*

Rubber is the most important of plantation crops cultivated in Kerala. Natural rubber is an important raw material for industrial purpose. Synthetic rubber made out of petroleum products is a near substitute for natural rubber. Due to high increase in prices of petroleum products the competition from synthetic rubber has since receded and natural rubber is in great demand. Consequently rubber cultivation has extended to Andaman islands and Tripura besides Tamilnadu and Karnataka.

Climate.—Rubber usually growns in the tropical belt lying within 15° and 10°S of the equator and usually at an altitude of 300 metres above mean sea level. A warm and humid climate is suitable for the cultivation of rubber. The annual rainfall should be between 200 to 300 cm. and should be well distributed.

Soil.—A stiff alluvial soil which is neither too steep nor too swampy is suited for the cultivation of rubber.

Planting.—Young plants or seedling are planted in pits of about 45x45 cm. The planting season is from May to September. Usually 375 to 500 seedlings are planted in a hectare.

Tapping.—Tapping of rubber will begin after seven or eighth years after planting. The period of tapping is normally from September to January.

Diseases.—There are two serious leaf diseases of rubber prevailing in India. They are 'Odium hevea' and Phytophotsa meadi which cause secondary leaf fall. These disease affect the growth of the tree and the yield of the tree.

Another disease known as the Brown Baste is prevalent in the trees which are used for frequent tapping. The symptom of the disease is the cessation of latex production by the trees in the affected portions of the bark.

Processing.—The latex brought by the tappers are first or all freed from impurities such as sand bark etc. by straining at the coagulating shed constructed specially for the purpose. In the case of crape rubber, coagulation is done by using acetic said. For changing latex into sheet rubber the latex after being bulked and diluted is put into shallow pans. For removing water and for getting a definite shape the Coagulam is pressed by hand. Then the sheets are allowed to pass two or three times between smooth rollers. The sheets are again passed through another machine for providing the trade mark of the estate. These sheets are washed and placed in specially constructed houses known as smoke houses and hot air with temperature 115° to 120°F is allowed to circulate in the room. This is done for 15 days. The colour of the sheet will change from white to black. There are three important types of rubber, smoked sheet, latex crape and scrape rubber. Of these most importance one is the smoked steets.

4. *Cardamom*

Cardamom is valuable spice taken from the plant Ellellaria cardamom. Cardomom possess as aromatic odour and it is commonly used for flavouring and medicines. India cardamom is a better spice than those grown in other parts of the world. Kerala has a virtual monopoly in Cardamom production in India.

Climate.—The climate suitable for the cultivation of cardomom is a warm and humid atmosphere with a temperature ranging between 50 to 95 F. It is cultivated in the shades of huge forest trees. Cardamom plant requires a fairly well distributed annual rainfall of 150 to 200 cm. The best altitude for cardamom planting is between 750 M to 1500 metres above MSL.

Soil.—Cardamom is cultivated usually in high ranges which has a rairly deep and rich loam soil and a place sheltered from strong winds and too much sunlight.

Planting.—During February-March the forest land chosen for planting cardomom is cleared. While clearing the big trees providing shade are not cut as they are to be used as shade trees for the plantation. Small pits of 60 cm. squares 30 cm. deep are dug. With a space varying from 2 to 3 metres. With so much spacing one hectare of land can provide 7750 pits. During the months of June when the south west monsoon sets in the seeds are sown. Cardamom seedings are raised in specialised nurseries. The plants raised from seeds are usually free from any kind of diseases. When these plant seedlings attain one year of growth they are transplanted. Usually two seedlings are planted in one pit. In August-September the stagnant water is allowed to drain off.

Plucking.—The crop begins to yield from third year onwards and annually thereafter. The harvest will begin in the month of August of the third year of growth and lasts for nine months. The first are gathered at intervals of 30 to 40 days. The yield attains a normal stage by the fifth year.

Life.—The average life of a plant is nine years.

Manure.—The important manure used are well-rotten cattle manure fish meal and leaves of phillanthress embbica. A mixture of caster cake, bonemeal and pottasium cholorate is considered to be a balanced manure.

Diseases.—The main discease affecting cardamom plants is mosoviser marble disease or katte disease. The symptom of the disease is the motting or curling of the leaves and degeneration of the clumps. The remedy is roguing of affected plants. Another is from Thrips, a pest. Dusting the plants with gammaxine is the remedy.

Processing.—The capsules of the cardamom are dried in the sun or is specially built dry houses by artificial heat. Usually three to four days are taken for drying cardamom in sunlight while only forty eight hours are needed for artificial drying. The sundried produce retains the muciluginous coating on the seeds and possess a characterists sweet aroma. The dried capsules are then cleaned. The final product of green cardamom (dry) is 20 to 28% of the green produce.

Some times bleaching is done by exposing to sulphur fumes. This changes the colour of the skin of the capsule to white and helps to preserve it for longer periods.

Then they are graded. The important grades are (1) green cardamom, (2) white or bleached cardamom and (3) seeds. The quality of the cardamom varies according to the quality of the soil and seeds.

5. **Pepper**

Kerala is famous for her pepper form time immemorial and is the chief producer of pepper in India. Dried berries of pepper vines called black pepper is an important spice. It issued both for cooaing and for medical preparations.

Climate.—Pepper being a rain fed crop grows best in tropical regions where there is an average rainfall of 200 cm. The lower and upper limits of temperature in which the crop flourishes are 50 F and 140 F. It grows in places with altitude less than 900 metres.

Soil.—The soils suited for the cultivation of pepper are clay loam, red loam or sandy loam, the first being most suitable.

Planting.—The crop is propagated by means of cutting. It is a climber and requires some support for growing. Jack mango, and murkku wood trees are commonly used as supports for the wines. On a plantation basis they are planted at a distance of 3 metres apart. The vine is rarely allowed to grow beyond a height of 6 metres lest the plucking of pepper berries become difficult.

Plucking and processing.—The vines begin to bear fruits after three years of planting. Flowering period is from June to July. The harvesting period is from December to March. When ripe the colour of the berries is orange. The berries are allowed to dry in the sun in mats for a week till the colour becomes black. Some times the skin of the berries is removed before drying. This kind of pepper is known as white pepper and is produced only in limited quantities.

Yield.—The yield mainly depend upon fertility of soil and the locality. The yield at the first harvest would be poor. Normal yield is expected from the seventh year onwards. Usually 750 to 1000 standards are planted in a hectare. When cultivated on plantation basis, the average yield varies from 200 to 900 grams of dired produce.

Life.—The life of the plant range from 25 to 30 years normally. But it has been found that some vines live even upto 70 years.

Manure.—The best manures to be used for the pepper gardens are powdered bean cake, fish guano and dired prawns.

Diseases.—One of the major diseases that affects pepper is 'pollu' by which the pepper berries are rendered hollow. Root wilt is another disease which destroys the plant.

Processing.—The dried berries are graded and packed. The pepper is generally packed on double gunny bags. Pepper is exported mainly to U.S.A., U.K. and USSR.

6. Ginger

The three important ginger growing regions are India, Jamaica and Siera Leone. Indian ginger which contains more fibres is inferior to those grown in other countries.

Climate.—Ginger requires heavy rainfall. It requires a warm humid climate and considerable shade.

Soil.—The soils suitable for ginger cultivation are well drained sandy clay loam, red loam or laterate soils.

Planting.—Planting usually begins by the end of May or beginning of June before the commencement of heavy rains. Ginger rhizomes (under ground) are planted. Planting is done on platform, like beds raised for the purpose. Small pieces of rhizomes are sowed on these beds in pits at a distance of about 15 to 25 cm apart. After sowing the pits are covered with well decayed cowdung and beds are covered with leaves with a view to protect the young shoots from the onslought of the rain and as an inducement for better growth. The crop takes nine to ten months at attain maturity. In July-August weeding and manuring are done.

Manuring.—Usually cattle manure and geen manure are used.

Harvesting.—The harvesting is done by digging out the rhizomes.

Yield.—The yield is generally eight to ten times of the seed used. The average yield of ginger in Kerala is about 1135 kg. per hectare.

Pests and diseases.—Ginger is usually affected by a disease known as soft rot. The colour of the green plants are changed into

pale yellow and the yield goes down. Use of mercuric chloride (5%) for the treatment of the rhizomes stored as seeds is advocated as a preventive measure. Another serious disease is varmiculana. This disease affects the plants with yellowish and brownish spots on leaves and the plants gradually dry up. Spraying of Bodleaux mixture is advised for such cases.

Processing.—First the green rhizomes are cleared of from earth and roots. After that the outer skin of the green rhizome are removed. Then they are soaked in water and kept over night. In the morning they are cleaned well. Then these rhizomes are dried in hot sun for a week. They are again cleaned. The ginger is known as the rough or unbleached ginger. There is another variety of ginger known as lime ginger or bleached ginger. For the processing of this type of ginger the green ginger is put on shallow cisterns and they are cleared by water repeatedly when they are finally cleared they are put in solutions containing milk of lime for some time after which they are dried in the sun. The process of dripping in lime and drying will be continued a number of times until the rhizomes get a uniform coating of lime.

Then they are graded. There are three important export grades B.C., and D.B, quality ginger will have three fingers. The other two grades (C. & D.) have two fingers and one finger respectively. B. & C. grades are exported to foreign countries and D grade is consumed internally in India.

Indian ginger is exported mainly to Gulf States and U. K.

7. Lemongrass

Lemongrass oil which an essential ingredient for the preparation of soap and cosmetic is extracted by distrilling the leaves of the grass 'Cymbopogon flexrosus, stapf'. The important lemongrass growing countries are Sri Lanka, Java, West Indies, Malaya, Guatemala and India virtually hold a monipoly in the world market. In India Kerala is the most important producer of lemongrass oil. The major lemongrass growing areas of the State are Kuruppampadi, Odakkali, Thodupuzha, Muvattupuzha, Wynad and Taliparamba etc.

Climates.—It grow on fetile hill slopes. The grass grows vigorously when the monsoon starts.

Soil.—Lemon grass flourishes in hard laterite soils.

Planting:—Fertile hill slopes with hard laterite soil are selected for the cultivation of lemongrass. During February, March the site selected is first cleared of all undergrowth of vagetation by burning them. In April, May the land is ploughed and is prepared into long narroweds. The seeds are broadcas on these narrow beds. Usually 17 to 2 3lbs. of seeds are, sown in one hectare of land. The crop is also raised by transplanting seedling raised in nurseries. The cost of cultivation of this crop is very low. Much care is not needed during the period.

The harvesting has to be done before the flowering season of the crop. In all, five cuts can be taken in a year at an interval of 30 to 45 days. Usually the harvesting season ends by December.

Life of period.—The life ot the plant lemongrass is 5 to 8 years.

Yield.—During the first year the yield is low and it is maximum during the second year and thereafter it is more or less steady for the next three years at a lower rate.

Distilling.—In Kerala we are adopting an old method of distilling the lemongrass oil. The apparatus consists of a copper boiler, condenser (coil) receiver and wooden tube.

The raw grass and waster are put in the boiler specially made for this purpose. The shape of the boiler is a retort apparatus. Then the boiler is heated with firewood. After some time a mixture of water vapour and essential oil escapes through the copper spiral connected to the retort. This copper spiral is allowed to cool down by immersing it in a wooden bucket full of water. The wooden bucket has an opening near the bottom to let off the water as it becomes hot while distilling. The essential onl and water is collected in the receiver tube. The specific gravity of the oil is lower than water. At 30°C specific gravity is 0.878. So naturally the lemongrass oil floats at the top of the receiver tube. Then it is separated from water.

Lemongrass oil is stored in steel container. It is exported to USA and UK.

TABLE 13.6

Classification of Soil

District	*Type of soil*	*Details of distribution*
Trivandrum	1. Fairly rich brown-Loam of laterite origin	Middle Part of the district
	2. Sandy loam	Western coastal region
	3. Richest darkbrown loam of granite origin	Eastdrn hilly part of the district,
Quilon	1. Sandy loam	Karunagapally and part of Quilon taluk
	2. Laterite soil	Kottarakkara, and parts of Kunnathur and Pathanapuram Taluks.
	3. Hill & Forest soil	Part of Pathanapuram Taluk
Pathanamthitta	1. Laterite soil	Pathanamthitta, Mallappally, Ranny and parts of Thiruvalla Taluks.
	2. Hill & Forest soil	Parts of Pathanam thitta and Ranny Taluks.
Alleppey	1. Sandy loam	Karthigappally and Mavelikkara, Taluks
	2. Sandy soil	Sherthallai and Ambalapuzha taluks
	3. Clay and loam with much of acidity	Kuttanad.
	4. Laterite soil	Chengannur and part of Mavelikara.
Kottayam	1. Laterite soil	Parts of Meenachil, Kanjirappally and Changanacherry and Kottayam taluks.
	2. Alluvial soil	Parts of Changanacherry and Kottayam taluks.
Idukki	1. Laterite soil	Peermade and Thodupuzha Taluks
	2. Aluvial soil	Devicolam and Udumbanchola Taluks

Ernakulam	1. Laterite	Moovattupuzha and part of Kunnathunadu
	2 Sandy loam	Parur, Cochin and Kanayannur taluks.
	3. Alluvial	Parts of Alwaye and Kunnathunadu
Trichur	1. Sandy loan	Parts of Mukundapuram, Trichur and Chowghat Taluks.
	2. Laterite	Western portion of Talappally and Eastern part of Trichur.
	3. Granite	Northern part of Thalappally.
	4. Clay	Back water area in Chowghat and Part of Mukundapuram.
Palghat	1. Sandy soil	River side area
	2. Laterite	Parts of Ottappalam, Alathur, Mannarghat and Palghat taluks
	3. Black soil	North Eastern portion of Chittoor Taluk.
Malappuram	1. Sandy soil	Coastal areas of the district
	2. Laterite	Major parts of the district barring coastal areas.
Kozhikode	1. Laterite	Major parts of the district barring coastal areas.
	2. Sandy	Coastal areas.
Wayanad	1. Laterite	Most parts of the district
Cannanore	1. Laterite	Major parts of the district barring coastal areas.
	2. Sandy	Coastal areas.

TABLE 13.7

Conversion ratio between the naw materials and the processed product

Rice:	Rice (cleaned) production 2/3 of paddy processed.	
Cotton:	Cotton lint production-1/3 of kapas processed.	
	Cotton seed production -2/3 of Kapas processed.	
Groundnut:	Kernel to nuts in shell	70 per cent.
	Oil to nuts in shell	28 „
	Oil to kernels crushed	40 „
	Cake to kernels crushed	60 „
Sesamum:	Oil to seed crushed	40 „
	Cake to seeds crushed	60 „
Caster seeds:	Oil to seeds crushed	37 „
	Cake to seeds crushed	63 „
Coconuts:	Copra to nuts one ton copra	6775 nuts
	Oil to copra crushed	62 per cent.
	Cake to copra crushed	38 „
Neem seed	Oil to kernel crushed	45 to 50 per cent
	Cake to kernels crushed	50 to 55 „
Sugar:	Gur from cane crushed	10 per cent
	Crystal sugar from gur refined	62.40 „
	Crystal Sugar from cane crushed	9.97 „
	Khandassari sugar from gur refined	37.5 „
	Molasses from cane crushed	3.5 „
Cashewnuts:	Cashew Kernels	25 per cent of Cashew nut.
	Butter from mixed milk	6.3 per cent
	Ghee from mixed milk	5.3 „

TABLE 13.8

Average Analysis of Important Fertilizers

Sl. No.	Name of fertilizer	Nitrogen (N.per cent)	Phosphate (P_2 05)	Potash (K_2)
(1)	(2)	(3)	(4)	(5)
1	Amonium Sulphate Nitrate	26.00	..	..
2	Amonium Sulphate	20.50	..	..
3	Amonium Nitrate	33.50	..	..
4	Amonium Phosphate	16.00	20.00	..
5	Nitrate of Soda	16.50	..	..
6	Calcium Nitrate	15.30	..	..
7	Calcium Amonium Nitrate	20.50	..	..
8.	Calcium Cynamide	20.00	..	..
9.	Urea	46.00	..	..
10	Super Phosphate Single	..	18.00	..
11	Super Phosphate-Double	..	35.00	..
12	Super phosphate	..	45.00	..
13	Rock phosphate	..	28.30	..
14	Hyper phosphate	..	27.30	..
15	Sulphate of Potash	..	..	48.00
16	Muriate of Potash	..	..	50.00
17	Groundnut Cake	7.00	1.50	1.30
18	Cater cake	4.30	2.00	1.00
19	Mustard cake	4.50	1.50	..
20	Muhua cake	2.50	0.80	1.80
21	Neem cake	5.20	1.00	1.40
22	Gingelly cake	6.20	2.00	1.20
23	Coconut cake	3.00	1.90	1.80
24	Poultry Manur	1.2–1.5	..	..
25	SheepManure	0.8–6	..	..
26	Horse Manure	0.8–6	..	..
27	Farm Yard manure	0.40	0.30	0.20
28	Fresh Cow Dung	1.57	0.25	0.18
29	Compost	0.50	0.25	0.50
30	Bone Meal	3.50	21.00	..
31	Fish Meal	4.10	3.00	0.30
32	Blood (Dries)	11.50	1.50	0.60
33	Meat Meal	11.00	..	0.60
34	White fish meal	10.00	10.00	1.00

TABLE 13.9

Insect pests affecting paddy crops, thei r distribution and some practical methods of control

Sl. No.	Name of post	Nature of damage	Control measure
1	Rice swarming Caterpillar (Spodoptera mauritia)	Defoliation plants reduced to stumps-nurseryand early growing stages attacked.	Spray D.D.T. at 1.5 Kg. a. i. per hectare or endrin at 250 gm. a.i.per hectare.
2	Rice stem borer (Schoenabius in cestulus)	Caterpillar bores into stem causing Head hearts and white ear heads'	Set light traps in the field to catch and destroy moths. Collect egg masses from nursery plant and destroy them.
		All stages of plant susceptible to attack	Spray endrin or parathion at 250 gm. a.i. per hectare at intervals of 15-20 days starting from 15th day after sowing and upto flowering.
3	Rice bug (Leptocorisa acuta)	Sucks 'milk' of tender-grains leaving them chaffy	Bust B.H.C. or spray endrin or parathion at dosses given above.
4	Rice Hispa Dicladispa (Hispa armigera)	Adults feed on the green matter of leaves and grubs mine of the leaves	Spray D.D.T. endrin or parathion at above dosses.
5	Rice case worm (Nymphua depunctalis)	Caterpillar in lead case defoliates	do.
6	Paddy gall fly (Diptera)	The maggot bores into central shoot and cause the formation of elongated hollow gall called silver shoot.	Spray endrin or parathion at 250 gm. a.i. per hectare 4 times at weekly intervals from 15th day after transplantation set up light traps.

Sl. No.	Name of post	Nature of damage	Control measure
7	Paddy mealy bug	Dives within leaf sheaths in colonies sucking sap causing stunting of crop	Spray paration at 250 gm. a.i. per hectare phospha midor (Dimecro 100%) solun at 100ml. per hectare or Dimothocate (Regor at 312 mil. per hectare.
8	Paddy leaf hoppers and Jassids	Cause-weakening of crop by desapping in colonies	Dust B.H.C.
9	Paddy leaf roller Gnaphalocrocis medinalis.	Catterpillar folds leaves and feeds on green matter. Attacked field show white patches.	Dust B.H.C. or spray D.D.T. at doses given above.

TABLE: 13.10

List of Raingauge Stations in Kerala

Trivandrum

1. Ponmudi
2. Varkala
3. Attingal
4. Nedumangad
5. Trivandrum (b)
6. Neyyattinkara
7. Parassala
8. Trivandrum (Aerodrome)
9. Vellayani (A.N.)

Quilon

1. Kottarakkara
2. Punalur
3. Karunagappally
4. Ariankavu
5. Quilon
6. Paravur
7. Kulathupuzha
8. Nilamel

Pathanamthitta

1. Konni
2. Adoor
3. Thiruvalla
4. Pathanamthitta

Alleppey

1. Arukutty
2. Sherthalai
3. Alleppey (b)
4. Ambalapuzha
5. Chengannur
6. Haripad
7. Mavelikkara
8. Kayamkulam

Kottayam

1. Vaikom
2. Palai
3. Ettumannoor
4. Kanjirappally
5. Kottayam
6. Changanacherry
7. Kottayam(Agromet)
8. Kumarakom

Idukki

1. Chinnar
2. Marayur
3. Munnar
4. Devicolam
5. Kumily
6. Peermade (Taluk)
7. Peermade (residency)
8. Vandanmedu
9. Veloor

Ernakulam

1. Malayattur
2. Parur
3. Perumbavoor
4. Alwaye
5. Neriyamangalam
6. Muvattupuzha
7. Cochin (b)
8. Ernakulam
9. Piravom

Trichur

1. Crangannoore
2. Mukundapuram
3. Trichur
4. Thalappilly
5. Ollukkara
6. Peechi
7. Chalakudy
8. Potta
9. Muttathur
10. Thumbrumpozhi

Palghat

1. Alathur
2. Palghat
3. Parali
4. Ottappalam
5. Cherplasserry
6. Mannarghat
7. Chittur
8. Pattambi

Malappuram

1. Perinthalmanna
2. Ponnani
3. Manjeri
4. Nilambur
5. Thirurangadi

Kozhikode

1. Kozhikode
2. Quilandy
3. Badagara
4. Muthanga
5. Kuppady
6. Kuttiyadi(Dam)
7. Kuttiyadi (P.H.)

Wynad

2. Vythiri
2. Mananthoddy
3. Peria
4. Chedloth

Cannanore

1. Thaliparamba
2. Cannanore
3. Tellicherry
4. Irikkur
5. Payyannur
6. Mahe

Kasargode

1. Hosdurg
2. Kasargode
3. Kasargode (Agromet)

TABLE 13.11

Glossary of English, Botanical and Malayalam names of crops

Sl. No.	*English Name*	*Malayalam Name*	*Botanical Name*
(1)	(2)	(3)	(4)
		Cereals	
1	Paddy	Nellu	Oryza Sativa
2	Ragi	Koovaraku	Eleusine Coracana
3	Jowar	Cholam	Sorghum Valgare
4	Bajra	Kambu	Ponnistum Typhodem
5	Kodamillet	Varagu	Paspalum Scrobiculatum
6	Chama	Chama	Panicum Miliarc
7	Wheat	Gothambu	Triticum Vulgare
8	Barley	Barley	Hordeum Vulgare
9	Maize	Mokke Cholam	Zea mays
		Pulses	
1	Blackgram	Uzhunnu	Phascolus mungo
2	Greengram	Cherupayar	Phascolus Aureus
3	Horsegram	Muthira	Dolichos Biflorus
4	Redgram	Thuvara	Cajanus Cajan
5	Cowpea	Perumpayar	Vinna Sinensis
		Sugar	
1	Sugarcane	Karimbu	Sacharum Officinarum
2	Palmyrah	Karimpana	Borassus Flabellifar
		Cond Iments and spices	
1	Chilly	Mulagu	Capsium Sapp
2	Turmeric	Manjal	Cureuma lenga
3	Cardamom	Elom	Elatteria Cardamom
4	Coriander	Kothamalli	Coriandrum Sativum
5	Mustard	Kadugu	Brassica sapp
6	Pepper	Kurumulagu	Pipper Nigrum
7	Cumin	Jeerakam	Ciminumoymium
8	Garlic	Veluthully	Allium Sativum
9	Long pepper	Thippilli	Piperlongum
10	Ginger	Inchi	Zingiber Officinale
11	Nutmeg	Jathi	Myristica Fragrans
12	Cinnamom	Karuvappatta	Cinnamomum Zoylanica
13	Clove	Grampu	Eugnnia Caryophyllate
14	Cinchona	Cinchona	Cinchona Officinalis
15	Arecanut	Adacka	Areca Catechu

(1)	(2)	(3)	(4)
		Fruits	
1	Banana	Vazha	Musa Paradisiaca
2	Plantain	Vazha	Mussepientium
3	Bread fruit	Seemaplavu	Artocarpusincisa
4	Bullocks heart	Malamunthiri	Anonarecticulate
5	Cashew	Kasumavu	Anacardium Occidental
6	Grape vine	Munthiri	Vitis Vinifere
7	Custardapple	Seetha Pazham	Anona Squamosa
8	Guava	Pera	Paidium Guajava
9	Jujube	Elantha	Aiz rphus Jujuba
10	Jack fruit	Plavu	Artocarpus Integriofolia
11	Lemon	Naranga	Citrus Lemon
12	Lime	Naranga	Citrus Aurantifollia
13	Mango	Mavu	Mangifera indica
14	Papaya	Pappaka	Carica Pappaya
15	Pineapple	Kaithachakka	Ananas Sativa
16	Pemogramate	Mathalam	Punica Crantaum
17	Sapota	Sapota	Achras Achras Sapota
18	Pemello	Bamplimes	Citrus Mahima
19	Orange	Orange	Citrus retaulate
20	Mangosteen	Mangosteen	Garcimia Mangesiteens
		Vegetables	
1	Tapioca	Maracheeni	Manihot Utilissima
2	Elephantear	Chembu	Celocasiantiquorum
3	Elephantfoot	Chena	Amorphophallus
4	Potato	Urulakizhangu	Solanumtuberosum
5	Sweet Potato	Cheenikizhangu	Impomoca batatas
6	Radish	Mullangi	Raphanus sativus
7	Yam	Kachil	Dioscarea Sapp
8	Turnip	Seema Mullangi	Brassica Campsstria
9	Carrot	Carrot	Daucus Carrot
10	Bed Pumpkin	Vellarimathan	Gucurbita Maxime
11	Brinjal	Vazhuthana	Solanum Malengena
12	Tomato	Thakkali	Lydcoperseum esculentum
13	Amaranthus	Cheera	Amaranthus Spp
14	Lady's finger	Venda	Abelamschus essulenlus
15	Bitter gourd	Pavakka	Mamordica Charantia
16	Bottle gourd	Churakka	Lagenaria Siceraria
17	Snake gourd	Padavalanga	Trichosanthese angunia
18	Ridge gourd	Peechanga	Luffaacutangulata

3+4