

PREFACE

1998-99

The very existence of farming depends upon agricultural prices. To safeguard agricultural production maintenance of price level to a minimum level is necessary. Recently agricultural prices exhibited a falling trend. The average cost of production for a commodity forms the primary basis of Government price policy in India. Hence the time series data on cost of cultivation of important crops in the State are required for fixing support prices in the event of fall in prices. With this end in view Government of Kerala in G.O. (Rt.) 466/79/Plg. Dated: 27.10.1979 sanctioned a scheme for an annual survey on cost of cultivation of important crops in Kerala.

This report relates to the 19th round of the survey conducted during 1998-99. The crops covered during this round are Paddy (3 seasons), Coconut, Banana, Tapioca, Pepper, Pineapple and Turmeric.

The tabulation and consolidation of data were done in the Cost of Cultivation and the report was prepared by Dr.T.Bhavana, Deputy Director under the guidance of Sri. B. Mohanakumaran Nair, Joint Director. Suggestions for improvement are solicited.

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REPORT ON COST OF CULTIVATION OF IMPORTANT CROPS IN KERALA 1998-99

CHAPTER - I

GENERAL

The growth of agricultural sector depends to a great extent on the welfare of the farmer. This primarily necessitates optimum utilisation of factors of production and thereby increasing productivity and income of the cultivator. Cost incurred by the farmer determines to a great extent the profitability of cultivation. In other words the gain or loss of cultivation of a crop is determined on the basis of the cost of various inputs used and the value of the main product and the by-products received from it. Most of the crops in the State now is under a crisis. In order to chalkout various schemes in agricultural sector and for fixing the floor and support prices proper assessment of the cost of cultivation and value of product is necessary. With this end in view Government of Kerala in G.O.(Rt)466/Plg. Dated:27.10.1979 sanctioned a scheme for an annual survey on cost of cultivation of important crops in Kerala. The present report relates to the 19th round of survey conducted during 1998-99.

The crops covered during the period under study is given below:-

- I. Paddy (3 Seasons)
- II. Coconut
- III. Banana
- IV. Tapioca
- V. Pepper
- VI. Pineapple
- VII. Turmeric

1.2 Objectives:

This survey is mainly intended for estimating the cost of cultivation per hectare of important crops and for comparing the costs under different concepts, over a period.

1.3 Staff:

(a) Head quarters Staff:

Sl. No.	Designation of post	No.of post
1	Research Assistant	1
2	U.D. Compiler	1

(b) Field Staff:

Sl. No.	Designation of post	No.of post
1	U.D. Investigator	14
2	L.D. Investigator	28
	4 posts were shifted to Directorate for consolidation of the report	

1.4 Period of the Survey:

The period of the survey was from 1.7.1998 to 30.6.1999.

1.5 Design of the Survey:

The survey covered all the districts of Kerala. 38 Taluks which are important growing centres of the different selected crops were selected for the study. From each selected taluks two Investigator zones were selected using simple random sampling method.

Selection of Cultivators

In each selected Investigator zone a list of cultivators growing paddy during the previous autumn season is being prepared from the last year's form I Diary of the EARAS. From this list of paddy growing cultivators, 5 cultivators are being selected at random for the current year's cost of cultivation study on Autumn paddy. Similar procedure is adopted for the selection of cultivators for winter and summer paddy respectively by preparing the list of paddy growing plots in winter and summer of the previous EARAS Survey.

In case the cultivators selected for cost of cultivation study on Autumn paddy possess suitable number of plots for other specified crops in stipulated area they are selected for the cost of cultivation study for other crops like Coconut, Arecanut, Tapioca, etc.

Where sufficient number of suitable plots were not available with the cultivators selected for autumn paddy the required number of plots for crops other than paddy are selected from the previous years list of wet and dry land plots of the same Investigator zone. If the selected Investigator zone in a Taluk does not provide the required number of plots for these crops another Investigator zone in the Taluk is selected at random for selection of the remaining required number of plots/cultivators for the study on other crops.

The number of holdings selected for each crops in a Taluk was as follows:

1	Paddy - Autumn	10	(5 holdings each from one Investigator zone)
	Winter	10	-do-
	Summer	10	-do-
2	Coconut	10	-do-
3	Arecanut	10	-do-
4	Tapioca	5	(Minimum 2 holdings in an Investigator zone)
5	Pepper	5	-do-

A holding was considered suitable for the study only if it contained at least 25 cents under the crop in the case of paddy, tapioca. In the case of perennial crops like coconut, arecanut and pepper the holdings should have a minimum of 25 trees/plants with at least 50% bearing.

All the selected holdings for a particular crop were grouped into 3 size groups as given below:

Size group	Holding size	
	Paddy	Other Crops
1. Small	<0.40 hectare	<0.2 hectare
2. Medium	0.40 to < 2 hectare	0.20 to < 0.80 hectare
3. Large	≥ 2 hectares	≥ 0.80 hectare

Note: < - less than ≥ Greater than or equal to

1.6 Schedules:

Three schedules were designed for the survey.

- Schedule - I : This schedule is used for listing the plots for selection of holdings and recording the details of the selected holdings.
- Schedule - II : This schedule is used for recording details of the cultivators, households, area of holdings, inventory of agricultural implements, livestock, etc.
- Schedule - III : In this schedule the cultivation expenses incurred for a crop in each fortnight is reported

1.7 Field Work:

One Investigator is posted in each Taluk and the fieldwork is carried out by him for all the crops. The Investigators visited the selected holdings every fortnight and recorded fortnightly operations in Schedule III.

The field work was supervised by Taluk Statistical Officer at the Taluk level and by Deputy Director/District Officer at the District level.

1.8 Processing and Analysis of Data:

The District level compilation and tabulation were done at the district by the Investigators posted for the survey. The State level consolidation, analysis and report writing of the data were done at the Directorate.

1.9 Method of Estimation of Cost:

(a) Concept of cost

Different cost concepts, Cost 'A', Cost 'B1' and Cost 'B' and Cost 'C' have been followed in the analysis as shown below:

Cost 'A'

Cost 'A' consists of cash and kind expenses (paid out costs) actually incurred by the cultivators. This includes:-

- i) Hired human labour
- ii) Animal labour
- iii) Machine labour
- iv) Seed (Seedlings)
- v) Farmyard manure
- vi) Chemical fertilisers
- vii) Plant protection
- viii) Land tax
- ix) Irrigation cess
- x) Repair and maintenance changes of implements machinery and buildings.
- xi) Interest on working capital
- xii) Other expenses.

Cost 'B1' : Cost 'A' + Interest on fixed assets (excluding land)

Cost 'B' : Cost 'B1' + Interest on land value

Cost 'C' : Cost 'B' + Imputed value of family labour

(b) Procedure for Imputation of value of owned inputs

In the production process certain inputs from homestock are used. While estimating the cost of cultivation it is necessary to impute value for these inputs. The procedure used for the imputation of value of such home stock inputs is indicated below:

- i) Family labour : Imputed on the basis of average wage rate per work hour of hired labour
- ii) Owned and exchange human labour : The rate of wages per hour for hired human labour is taken for imputing the value of own stock and exchange human labour.
- iii) Owned and exchange animal labour : The charge paid per hour for hired animal labour is taken for imputing the value of owned and exchange animal labour.
- iv) Owned and exchange machine labour : The hire charges per hour for machine labour has been taken
- v) Implements : Repair and maintenance charges of implements.
- vi) Owned seed : Farm produced (house grown) seed has been imputed at the prices prevalent in the Investigator zone concerned at the time of sowing
- vii) Farm produced manure : Imputed at the rate prevalent in the zone concerned
- viii) Interest on fixed capital : Interest on the present value of fixed assets such as land, farm, building, implements, machinery, irrigation structure, equipments and livestock (only drought animals) at the rate of 10% per annum has been calculated.
- ix) Interest on working capital : Interest has been charged at the rate of 10% per annum on the working capital, cash and kind expenses excluding items in respect of which payments are generally made after harvest (i.e. rent, land tax, etc. incurred during the period of cultivation.
- x) Payments of kind : The payments in kind have been evaluated at the market prices prevalent in the locality at the time of payment. Perquisites have been excluded in the payments in kind calculated at the market prices.

(c) Allocation of Joint Costs to different crops

Some of the inputs used for the cultivation of one crop are common for many other crops also. For the purpose of computing the cost share of individual crops, the costs of such inputs is apportioned in the following manner:-

- i) Repair and maintenance charges of implements : In proportion to the area under the crop
- ii) Interest on own fixed capital (excluding land) : In proportion to the area under the crop
- iii) Interest on land value : Interest on the value of land under the crop

(d) Procedure for valuation of farm assets

- i) Own farm buildings (cattle sheds, storage sheds, etc.) : Valuated at prices prevailing in the locality.
- ii) Implements and other machinery : Valuated at prevalent market prices
- iii) Livestock (only drought animals) : Valuated at prevalent market prices

In calculating the cost of production of paddy crop in each season the interest on land value at the rate of 10% per annum for the period of 6 months is taken into account. The land value is estimated at the current market rate in the different areas.

CHAPTER – II

RESULTS OF THE SURVEY

Paddy is cultivated in the State in three seasons viz. Autumn (Virippu), Winter (Mundakan) and Summer (Punja).

The following table gives the total cropped area and the area under the paddy for the 3 seasons during 1998-99.

Table – I -Area under paddy during 1998-99

Total Cropped Area (in lakh hectare)	Area under paddy (in lakh hectare)			Total
	Autumn	Winter	Summer	
29.17	1.20 (4.12)	1.75 (5.99)	0.58 (1.99)	3.53 (12.10)

Source:- Agricultural Statistics of Kerala 1998-99. (Figures in brackets give the percentage of paddy in each season to the total cropped area).

Area coverage is large in winter and Autumn seasons which shows the seasonal predominance of the cultivation of this crop.

While considering the percentage distribution of area under paddy crop in each season to the total gross area under paddy it can be seen that about 50% is in winter which shows the highest share among three seasons.

Table: 2 – Percentage of area under paddy in each season to the gross area under paddy during 1998-99.

Percentage of area under paddy			Total
Autumn	Winter	Summer	
33.99	49.58	16.43	100

The rice production of the State during the year under study was 7.27 lakh tonnes and its productivity for three seasons are given below:

Table: 3. Production of Rice during 1998-99 (in lakh tonnes)

Season	Production of rice (lakh tonnes)	Percentage
Autumn	2.36	32.46
Winter	3.46	47.59
Summer	1.45	19.95
Total	7.27	100.00

Table: 4 – Average productivity of paddy during 1998-99

Season	Average Productivity (Kg/hectare)
Autumn	1962
Winter	1981
Summer	2511

The productivity of summer paddy is higher than that of other seasons.

Out of the total irrigated-cropped area 46.79% constitutes under paddy, which is shown below:

Table – 5: Percentage of area irrigated under Paddy (area in hectare)

Area irrigated	Total cropped area irrigated	Percentage
196927	420844	46.79

(1) Autumn Paddy

The total number of holdings selected for the cost study of Autumn Paddy cultivation were 376. They were scattered in all the 38 selected Taluks of the State. The number of holdings selected and the area under the crop in each holding size class viz. Small, medium and large are given below:

Table – 6: Area under Autumn Paddy during 1998-99

Holding size class	No. of selected holdings	Area under the crop in the sample (Ha.)	Percentage	Area per Holding (Ha.)
Small	217	47.70	22.03	0.22
Medium	124	81.60	37.68	0.66
Large	29	87.25	40.29	3.01
Total	370	216.55	100.00	0.56

The holdings under report had a total operational area of 216.55 hectare and the average size of holding was 0.56 hectare.

A. Cost of Cultivation

The estimated per hectare cost of Autumn paddy cultivation is furnished below:

Table -7 Cost of Cultivation her hectare of Paddy (autumn) during 1998-99

Sl. No	Component of different cost concept	Cost per hectare (in Rs.)	Percentage distribution of cost
1	Hired human labour	10071	58.17
2	Animal labour	530	3.06
3	Machine labour	1134	6.55
4	Seed (Seedlings)	1008	5.82
5	Farmyard manure and chemical fertilizers	2621	15.14
6	Plant protection	265	1.53
7	Land tax and Irrigation cess	28	0.16
8	Repair and maintenance charges of Implements, Machinery and building	459	2.65
9	Interest on Working Capital	801	4.63
10	Other expenses	396	2.29
11	Total cost 'A' (1-10)	17313	100.00
12	Interest on fixed capital	1066	-
13	Cost 'B1' (11 + 12)	18379	-
14	Interest on Land value	16807	-
15	Cost 'B' (13 + 14)	35186	-
16	Imputed value of household labour	1087	-
17	Cost 'C' (15 + 16)	36273	-

The share of hired human labour during 1998-99 to the total cost 'A' in Autumn, paddy cultivation was 58% Animal labour and machine labour constituted 3% and 7% respectively. Among the various forms of labour, heired human labour constituted major share irrespective of the size group of the holdings. This share is seems to be high in large size class and small in medium size class.

The following table reveals the percentage of hired labour hours engaged in autumn paddy cultivation to the total labour hours.

Table – 8: Percentage of hired human labour hours to total human labour hours.

Sex	Holding size class			All sizes
	Small	Medium	Large	
Male	23.54	17.46	17.12	18.87
Female	62.84	74.36	76.75	72.24
Total	86.38	91.82	93.87	91.11

The preparation of hired labour to total human labour input seems to be an increasing trend as the size of holding increases. It implies that cultivators belonging to large class are seen to depend for more than 93% of their requirements on hired labour. The cost of hired human labour per hectare works out to Rs.10071.

Seed/seedlings an important input of paddy cultivation, per hectare as estimated from the survey is 6% of the total cost 'A'. For paddy cultivation both home produced manure and chemical fertilizers are used, the cost of which was Rs.2621 per hectare during this round.

Plant protection cost seems to be increased as size class increased. The percentage share of land tax and irrigation cess is nominal i.e. below 1%. Expenditure on repair and maintenance of implements and machinery varies from year to year and from size class to size class. It is worked out to be Rs.459. Interest on working capital was Rs.801 per hectare and other expenses was Rs.396 during 1998-99.

Cost 'B1'

Cost 'B1' is estimated by adding the interest on fixed capital (excluding land) to cost 'A'. The estimated interest on fixed capital for 1998-99 was Rs.1066 and cost 'B1' is Rs.18379. Interest on land value is also estimated for cost cultivation. It is worked out to be Rs.16807/- during the year.

Cost 'B' and Cost 'C'

Cost 'B' is estimated by adding the interest on land value to cost 'B1' and Cost 'C' is estimated by adding the imputed value of house hold human labour to cost 'B'. Cost 'B' is estimated as Rs.35186 and cost 'C' is Rs.36273 per hectare.

The following table illustrates a comparison with the previous years costs and the year under study.

Table – 9: Cost of Cultivation of (Autumn) Paddy in Rs./hectare for 1997-98 and 1998-99.

Concept of cost	Holding size class				
	Year	Small	Medium	Large	All sizes
Cost 'A'	1997-98	17379	14862	13749	15079
	1998-99	18859	18125	15785	17313
Cost 'B'	1997-98	41154	34483	28540	34443
	1998-99	47762	35657	27857	35186
Cost 'C'	1997-98	42763	35124	28916	35220
	1998-99	49656	36804	28447	36273

Compared to the previous year cost 'A' has increased by 15% during 1998-99. The percentage in cost 'B' 2% decrease is, noted. While cost C increased by 3%.

B. Out put

The value of the product and by- product of Autumn paddy cultivation for the year 1998-99 is given in the following table.

Table – 10: Value of product and by-product per hectare (in Rs.) during 1998-99

Produce by product	Holding size class			All sizes
	Small	Medium	Large	
Paddy	14184	16085	15268	15337
Straw	3566	2956	1317	2430
Total	17750	19041	16585	17767

During the year 1998-99 the per hectare value of output is estimated at Rs.17767 which is more than the value of out put for 1997-98. Following table shows the trend of value of product received from paddy cultivation.

Table – 11 – Value of product / Hectare (in Rs.)

Year	Value of product
1980-81	2262
1981-82	3446
1982-83	3937
1983 - 84	5012
1984 - 85	4368
1985 -86	4801
1986 -87	4618
1987 -88	5189
1988 -89	5254
1989-90	6690
1990 -91	7259
1991 -92	8139
1992 -93	10090
1993 -94	9417
1994 -95	9024
1995 -96	12121
1996 -97	14392
1997 -98	16077
1998 -99	17767

C. Cost of Production of Paddy per quintal

Cost of production of paddy per quintal is estimated by dividing the cost of cultivation per hectare (after deducting the value of by-product per hectare from the cost of cultivation per hectare) by the quantity of paddy produced per hectare.

Table – 12: Cost of Production Paddy per quintal during Autumn Season (in Rs.)

Concept of cost	Holding size class			
	Small	Medium	Large	All sizes
Cost 'A'	637	562	556	572
Cost 'B'	1842	1211	1021	1260
Cost 'C'	1920	1254	1063	1302

When Cost 'A' is considered the cost of production of paddy per quintal is Rs.572 during the period under report. The following table illustrates the comparison of cost of production of autumn paddy with the previous year.

Table – 13: Cost of Production per Quintal of Autumn Paddy during 1997-98 and 1998-99 (in Rs.)

	1997-98	1998-99	% increase/ decrease
Cost 'A'	544	572	5
Cost 'B'	1386	1260	(-)9
Cost 'C'	1420	1302	(-)8

II. WINTER PADDY

Cost of cultivation study on Winter Paddy cultivation was conducted in 380 holdings in the state. Details of the study area is as follows:

Table 14 – Area under Winter Paddy during 1998-99

Holding size class	No. of selected holdings	Area under the crop in the sample (Ha.)	Percentage	Area for Holding (Ha.)
Small	202	46.13	18.90	0.22
Medium	140	103.85	42.56	0.74
Large	38	94.05	38.54	2.48
Total	380	244.03	100.00	0.64

The total operated area of the selected holdings is 244.03 hectares. The average size of a sample holding is 0.64 hectare.

A. COST OF CULTIVATION

The cost of different items per hectare of cost 'A' (percentage distribution) is given below and details are given in Appendix.

Sl. No	Component of different cost concept	Cost per hectare (in Rs.)	Percentage distribution of cost
1	Hired human labour	9354	56.54
2	Animal labour	661	4.00
3	Machine labour	1331	8.04
4	Seed (Seedlings)	998	6.03
5	Farmyard manure and chemical fertilizers	2266	13.70
6	Plant protection	344	2.08
7	Land tax and Irrigation cess	50	0.30
8	Repair and maintenance charges of Implements, Machinery and building	285	01.72
9	Interest on Working Capital	772	4.67
10	Other expenses	484	2.92
11	Total cost 'A' (1-10)	16545 ✓	100.00
12	Interest on fixed capital	2156	-
13	Cost 'B1' (11 + 12)	18701	-
14	Interest on Land value	16746	-
15	Cost 'B' (13 + 14)	35447 ✓	-
16	Imputed value of household labour	903	-
17	Cost 'C' (15 + 16)	36350 ✓	-

The per hectare cost towards hired human labour in Winter Paddy cultivation comes to Rs.9354 in 1998-99. It accounts to 57% of the total cost 'A'.

The percentage of hired human of labour hours to the total human labour hours is given below:

Table – 16: percentage of hired human labour hours to total human labour hours

Sex	Small	Holding size class		All sizes
		Medium	Large	
Male	16.14	19.79	19.03	18.52
Female	62.89	70.50	77.74	73.82
Total	79.03	90.29	96.77	92.34

Out of the total human labour hours employed in Winter Paddy Cultivation 92% is accounted by hired labour. Female hired labour is more than that of the male labour hours. The cost of animal labour is higher in the case of small cultivators where as the machine labour cost is higher in the case of medium and large cultivators. The cost of seed/seedlings is Rs.998/- per hectare which is 6% of the total cost 'A'. Farmyard manure and chemical fertilizers which is an important item of paddy cultivation accounts to 14%. The cost of pesticides and insecticides is estimated at Rs.344/ per hectare. The percentage share towards land tax and irrigation cess is nominal. The expenditure on repair and maintenance of implements accounts for nearly 1%. Interest on working capital is computed at Rs.772.

Cost 'B1' and Cost 'B'

Cost 'B1' is estimated by adding the interest on fixed capital (excluding land) to cost 'A'. It is found to be Rs.18701.

Cost 'B' is estimated to be Rs.35447. Interest on land value is estimated as Rs.16746.

Cost 'C'

Cost 'C' is estimated by adding the imputed value of household labour to cost 'B'. It is seen as Rs.36350.

The estimated cost for the Winter Paddy per hectare under three major concepts of costs are given below:

Table – 17: Cost of Cultivation of Winter Paddy (Rs/ha)

Concept of cost	Holding size class			
	Small	Medium	Large	All sizes
Cost 'A'	19280	16539	15578	16545
Cost 'B'	45017	38655	27820	35447
Cost 'C'	46937	39703	28064	36350

Cost of cultivation of Winter Paddy for 1997-98 and 1998-99 are given below:

Table – 18 – Cost of Cultivation of Winter Paddy (Rs./ha. For 1997-98 and 1998-99)

Concept of cost	Year	Holding size class			
		Small	Medium	Large	All sizes
Cost 'A'	1997-98	17530	14983	13811	15078
	1998-99	19280	16539	15578	16545
Cost 'B'	1997-98	39442	35005	26618	32959
	1998-99	45017	38655	27820	35447
Cost 'C'	1997-98	41109	35660	26949	33702
	1998-99	46937	39703	28064	36350

B. Out Put

The estimates of value of paddy and straw obtained from Winter Paddy Cultivation is given below:

Table – 19: Value of Out put (Rs./ha.)

Product and By product	Holding size class			All sizes
	Small	Medium	Large	
Paddy	14930	16427	17949	16731
Straw	6342	4755	3114	4423
Total	21272	21182	21063	21154

C. Cost of Production of Paddy per Quintal

Cost of producing one quintal of paddy is worked out by dividing the cost of cultivation per hectare (after deducting the value of by-product per hectare from the cost of cultivation per hectare) by the yield per hectare.

Table – 20: Cost of Production of Winter Paddy (Rs./ha.)

Concept of cost	Holding size class			
	Small	Medium	Large	All sizes
Cost 'A'	521	478	447	467
Cost 'B'	1558	1376	886	1196
Cost 'C'	1636	1419	894	1231

The cost of production of Winter Paddy per quintal for 1997-98 and 1998-99 are presented below for comparison.

Table – 21 : Cost of production of Winter Paddy per quintal (in Rs.) for 1997-98 and 1998-99

Concept of cost	Year	Holding size class			
		Small	Medium	Large	All sizes
Cost 'A'	1997-98	513	464	433	469
	1998-99	521	478	447	467
Cost 'B'	1997-98	1466	1374	945	1246
	1998-99	1558	1376	886	1196
Cost 'C'	1997-98	1539	1404	958	1278
	1998-99	1636	1419	894	1231

III. Summer (Punja) Paddy

The number of holdings selected for the study on cost of cultivation of summer paddy was 317 during 1998-99. The details of these holdings is given below:

Table – 22 : Area under Summer Paddy during 1998-99

Holding size class	No. of selected holdings	Area under the crop in the sample (Ha.)	Percentage	Area per Holding (Ha.)
Small	167	34.51	15.79	0.21
Medium	122	109.28	50.02	0.89
Large	28	74.71	34.19	2.67
Total	317	218.50	100.00	0.69

The holdings selected during the period under report have a total operational area of 218.50 hectares.

A. Cost of Cultivation

The cost of cultivation per hectare of summer paddy is given in the following table.

Table – 23: Cost of cultivation per hectare of Summer Paddy for the year 1998-99

Sl. No	Component of different cost concept	Cost per hectare (in Rs.)	Percentage distribution of Cost 'A'
1	Hired human labour	11853	57.29
2	Animal labour	678	3.28
3	Machine labour	1295	6.26
4	Seed (Seedlings)	897	4.34
5	Farmyard manure and chemical fertilizers	3584	17.32
6	Plant protection	461	2.22
7	Land tax and Irrigation cess	170	0.82
8	Repair and maintenance charges of Implements, Machinery and building	391	1.89
9	Interest on Working Capital	959	4.63
10	Other expenses	403	1.95
11	Total cost 'A' (1-10)	20691	100.00
12	Interest on fixed capital	947	-
13	Cost 'B1' (11 + 12)	21638	-
14	Interest on Land value	21519	-
15	Cost 'B' (13 + 14)	43157	-
16	Imputed value of household labour	965	-
17	Cost 'C' (15 + 16)	44122	-

From the above table it is seen that 57% of the total cost 'A' constitutes to hired human labour. Size class distribution shows that it high in large cultivators. The percentage of hired human labour hours engaged in the cultivation of summer paddy during 1998-99 is given below:

Table – 24: Percentage of hired human labour hours engaged in Summer Paddy cultivation.

Holding size class	Male	Female	Total
Small	25.95	55.39	85.34
Medium	17.74	74.51	92.25
Large	19.69	74.43	94.12
All size	20.09	70.51	90.60

The percentage share of hired human labour hours engaged in summer paddy cultivation is 91% during this round. The cost of seed/seedlings per hectare is Rs.897. Farmyard manure and chemical fertilizers accounts to 17%. The expenditure towards plant protection measures is estimated to 2% of the total cost 'A'. Only a small percentage is expended for land tax and irrigation cess. The estimated expenditure per hectare on repaid and maintenance charges of implements and machinery is found to be Rs.391. About 5% of the Cost 'A' account for interest on working capital.

Cost 'B1' and Cost 'B'

Cost 'B1' is obtained by adding the interest on fixed capital (excluding land) to Cost 'A'. The interest on fixed capital is estimated to Rs.947 and Cost 'B1' is found to be Rs.21638 for summer paddy cultivation. It is seen that the imputed value of household labour is maximum in the case of small size class and minimum in the case of large size class. The interest on land value to be Rs.21519/- and Cost 'B' is estimated to be Rs.43157 Cost 'C' showed an increasing trend among small cultivators when compared to other two categories. It is estimated as Rs.53066/-

The comparison of the various concepts of cost with previous year is given in the following table.

Table - 25: Cost of cultivation on summer paddy Rs./hectare for 1997-98 and 1998-99.

Concept of cost	Holding size class				
	Year	Small	Medium	Large	All sizes
Cost 'A'	1997-98	17946	17233	17189	17358
	1998-99	17769	19811	28721	20691
Cost 'B'	1997-98	39986	30818	27037	31338
	1998-99	50345	43445	44924	43157
Cost 'C'	1997-98	41797	31423	27345	32245
	1998-99	53066	43841	45241	44122

When compared to the previous year the Cost 'A' has increased to 19%, Cost 'B' by 38% and Cost 'C' by 37%.

B. Out Put

The estimated value of paddy and straw obtained from summer paddy cultivation is given below:

✓ Value of product and by-product per hectare for 1998-99

Produce/ by-product	Holding size class			All sizes
	Small	Medium	Large	
Paddy	16499	16381	19927	17612
Straw	4977	2871	2234	2986
Total	21476	19252	22161	✓ 20598

C. Cost of production of paddy per quintal

Cost of producing one quintal of paddy is get by dividing the cost of cultivation per hectare (after deducting the value of by product per hectare from the cost of /cultivation per hectare) by the yield per hectare.

Cost of production of summer paddy per quintal

Concept of cost	Holding size class			
	Small	Medium	Large	All sizes
Cost 'A'	512	737	981	708
Cost 'B'	1815	1764	1581	1607
Cost 'C'	1924	1781	1593	1645

A comparison between the cost of production during 1997-98 and 1998-99 is given in the following table:

Cost of production of paddy per quintal during 1997-98 and 1998-99

Concept of cost	1997-98	1998-99
Cost 'A'	598	708
Cost 'B'	1180	1607
Cost 'C'	1218	1645

2.2 COCONUT

Recently coconut cultivation in the state has entered a transitional stage. It had a golden post in its history. Kera was considered as a "Kalpavriksham" in them state. The name of the state itself derived from the predominance of this crop in the state. It is in this context that the importance of analysis of the cost of cultivation data.

The cultivation of a particular crop is determined by the cultivators mainly on the basis of the gain or loss obtained from that particular crop. It is again based on the basis of cost of various inputs used and the value of the main product and the by-products received from it.

Coconut, an important perennial crop of the state which is cultivated in 8.82 lakh hectares during 1998-99. The total area under coconut and the average yield per hectare during the period under report is given below:

AREA AND AVERAGE YIELD OF COCONUT 1998-99

Area under coconut (Ha)	Percentage total cropped	Average yield per hectare
	Area	(No. of nuts)
882288	30.24	5817

From the above table it is seen that the percentage of area under coconut cultivation to total cropped area is 30% and the average yield per hectare is 5817 numbers.

During the year under study 370 numbers of coconut holdings were selected. The details of these holdings according to size class viz. Small, medium and large are given below:

NUMBER OF HOLDINGS AND AREA UNDER COCONUT

Holding size class	No. of holdings	Area under coconut in the sample (Ha.)	Percentage	Area per Holding (Ha.)
Small	94	14.73	6.80	0.16
Medium	184	78.92	36.43	0.43
Large	92	123.00	56.77	1.34
Total	370	216.65	100.00	0.59

The total area of the selected holdings is 216.65 hectares during 1998-99. The average size of holding was 0.59 hectare.

NUMBER OF BEARING TREES IN THE SELECTED HOLDINGS

Out of the total coconut trees in the selected plots, 73% was found to be bearing and the remaining non-bearing. The details are given below:

NUMBER OF BEARING AND NON-BEEARING TREES PER HECTARE

Type of trees	No. of trees	Percentage
Bearing	174	73.42
Non-bearing	63	26.58
Total	237	100.00

Cost of Cultivation:

The cost of cultivation of coconut is estimated under the four different concepts of cost (viz. Cost, 'A', 'B1', 'B' and 'C').

Cost 'A' consists of cash and other kind expenses and is worked out to Rs.15565 per hectare during 1998-99. The estimated cost under different items of expenditure per hectare and the percentage distribution of these items to total cost 'A' are given in the following table.

COST CULTIVATION PER HECTARE OF COCONUT DURING 1998-99

Sl. No	Component of different cost concept	Cost per hectare (in Rs.)	Percentage distribution of cost
1	Hired human labour	7823	50.26
2	Animal labour	20	0.13
3	Machine labour	225	1.45
4	Seed (Seedlings)	29	0.19
5	Farmyard manure and chemical fertilizers	5039	32.37
6	Plant protection	88	0.56
7	Land tax and Irrigation cess	55	0.35
8	Repair and maintenance charges	205	1.32
9	Other expenses	690	4.43
10	Interest on Working Capital	1391	8.94
11	Total cost 'A' (1-10)	15565	100.00
12	Interest on fixed capital	1757	-
13	Cost 'B1' (11 + 12)	17322	-
14	Interest on Land value	150812	-
15	Cost 'B' (13 + 14)	168134	-
16	Imputed value of household labour	1161	-
17	Cost 'C' (15 + 16)	169295	-

In coconut cultivation also labour cost is the major component of cost 'A' which includes Hired human labour, animal labour and machine labour. It works out to Rs.8068/-. The percentage distribution of hired human labour participation in coconut cultivation to the total labour hours is given below for males and females separately.

PERCENTAGE DISTRIBUTION OF HIRED HUMAN LABOUR HOURS TO THE TOTAL HUMAN LABOUR HOURS

Sex	Small	Holding size class		All sizes
		Medium	Large	
Male	55.14	69.67	71.30	69.38
Female	8.16	10.66	17.15	14.06
Total	63.30	80.33	88.45	83.44

When compared to the paddy cultivation female participation is lowest in coconut cultivation. About 84% of the total human labour hours has been shared by hired human labour. For planting new seed/seedlings only Rs.29 is spent during the year under review. Application of farmyard manure and chemical fertilizers constitutes a major share i.e. 32% of the total cost 'A' cost towards plant protection, land tax and irrigation cess accounts only a nominal percentage. Repair and maintenance charges shares to nearly 2% of the total cost 'A' per hectare interest on working capital is estimated to Rs.1391.

Cost 'B1' and Cost 'B'

Cost 'B1' is estimated by adding the interest on fixed capital (excluding land) to cost 'A'. It is found to be Rs.17322.

Interest on land value is estimated as Rs.150812 during this round.

Cost 'C'

Cost 'C' is estimated by adding the imputed value of house hold labour to cost 'B'. It is estimated to be Rs.169295/-

COST OF CULTIVATION OF COCONUT PER HECTARE

DURING 1997-98 AND 1998-99

Concept of Cost	Cost per hectare		Percentage increase
	1997-98	1998-99	
Cost 'A'	13861	15565	12.29
Cost 'B'	170720	168134	1.51
Cost 'C'	171572	169295	1.32

B. Value of Product

The total value of output per hectare is seen as Rs.32916 during the 1998-99.

✓ VALUE OF OUTPUT/HECTARE

Output	Value (in Rs.)
Product	30317
By-product	2599
Total	✓ 32916

COST OF PRODUCTION OF ONE COCONUT IN KERALA

There are differences in gains from development in the various crops in the state. It is related to the weightage of crops whose gross value increased per hectare by changes in yield and price. The cost of cultivation data collected through the survey during 1998-99 reveals the following points to the cultivation of this crop.

According to the cost of cultivation study conducted in the state during 1998-99 an average small cultivator incurs Rs.4.54 for producing one coconut in the state. At the same time he gets only Rs.4.80/- as price. That is the profit is only 26 paise per coconut. By considering the value of by-products this may be increased to 52 paise. In the case of medium and large cultivators it is Rs.4.66 and Rs.4.47 respectively as production cost. Prices received per coconut is Rs.4.98 and Rs.4.97 respectively. While considering by-products profit for medium cultivators is 0.32 paise and to large cultivator it is 0.50 paise.

An over all review shows that for an average cultivator the production cost of one coconut is Rs.4.47 and the prices received is Rs.5.16 respectively constituting a profit of only 69 paise per coconut.

2.3 Banana

The total area and the average yield per hectare of banana for the year 1998-99 and given below:

Table: Area and Average Yield of Banana during 1998-99

Total Cropped Area (in lakh hectare)	Area under banana (ha.)	Average yield per ha. (tonnes)	% of area under banana to total cropped area
2916505	30521	12.67	1.04

During 1998-99 Only 1% of the total cropped area was under banana cultivation. The yield per hectare of banana was 12.67 tonnes.

The total number of holdings selected for the cost study of Banana Cultivation were 174. They were scattered in all the 38 selected taluks of the state. The number of holdings selected and the area under the crops in each holding size class viz. Small, medium and large are given below:

Table: Area under Banana Cultivation during 1998-99

Holding size class	No. of holdings	Area under the crops in the sample (Ha.)	Percentage	Area per holding (Ha.)
Small	125	10.76	36.69	0.08
Medium	44	13.82	47.14	0.31
Large	5	4.74	16.17	0.94
Total	174	29.32	100.00	0.17

The holdings under report had a total operational area of 29.32 hectare and the average size of holding was 0.17 hectare.

A. Cost of Cultivation

The estimated per hectare cost of banana cultivation is furnished below:

Table: Cost of Cultivation per hectare of Banana Cultivation during 1998-99

Sl. No	Component of different cost concept	Cost per hectare (in Rs.)	Percentage distribution of cost
1	Hired human labour	25515	28.70
2	Animal labour	-	-
3	Machine labour	-	-
4	Seed (Seedlings)	5592	6.29
5	Farmyard manure and chemical fertilizers	37104	41.74
6	Plant protection	1261	1.42
7	Land tax and Irrigation cess	986	1.11
8	Repair and maintenance charges of implements, machinery and building	436	0.49
9	Other expenses	10043	11.30
10	Interest on Working Capital	7952	8.95
11	Total cost 'A' (1-10)	88889	100.00
12	Interest on fixed capital	1386	-
13	Cost 'B1' (11 + 12)	90275	-
14	Interest on Land value	57568	-
15	Cost 'B' (13 + 14)	147843	-
16	Imputed value of household labour	8186	-
17	Cost 'C' (15 + 16)	156029	-

From the above table it can be seen that the share of hired human labour during 1998-99 to the total cost 'A' in banana cultivation was 29%. Human labour cost which is the major component of this cultivation seems to be low in large size class when compared to other two categories.

The percentage of hired human labour hours engaged in banana cultivation to the total labour hours is given below:

Table: Percentage Distribution of hired human labour hours

Sex	Holding size class			All sizes
	Small	Medium	Large	
Male	54.26	60.84	59.49	58.26
Female	9.59	8.87	22.00	10.51
Total	63.85	69.71	81.49	68.77

The above table reveals that the proportion of hired human labour to total human labour input steadily increases with the increase in the size of holdings.

The cost towards seedlings/seed account to 6% and 42% is spent for farmyard manure and chemical fertilizers. In banana cultivation the cost towards plant protection measures and land tax irrigation cess accounts to below 1% each. The expenditure incurred for repair and maintenance charges comes to 1% of the total cost 'A'. The interest on working capital is estimated at Rs.7952 per hectare. The miscellaneous expenses comes to 11% of the total cost 'A'.

Cost 'B1'

Cost 'B1' is estimated by adding the interest on fixed capital (including land) to cost 'A'. It is Rs.90275 during this year. Interest on landvalue showed a fluctuating trend which is worked out to Rs.57568/-.

Cost 'B' and Cost 'C'

Cost 'B' is estimated by adding the interest on land value to cost 'B1' and cost 'C' is estimated by adding the imputed value of house hold labour to Cost B. During this round Cost 'B' is Rs.147843 and Cost 'C' is Rs.156029. The imputed value of house hold labour is Rs.8186 per hectare.

B. Value of Output

The value of output is found to be Rs.112736 per hectare during 1998-99

2.4 Tapioca

Tapioca, the staple food item of Keralites cultivated in the state in 129910 hectare during 1998-99. Details are given below:

Table: Area and Average Yield of Banana during 1998-99

Total Cropped Area (in lakh hectare)	Area under Tapioca (ha.)	Average yield per ha. (tonnes)	% of area under Tapioca to total cropped area
2916505	112774	23322	3.87

About 5% of the total cropped area was under tapioca cultivation during the period 1998-99. The yield per hectare of tapioca was 23322 Kg.

Selected holdings

During 1998-99 for the estimation of the cost of cultivation of tapioca 190 holdings were selected. The details of these holdings in each size class is given in the following table:

Size class	Area under the crops in the sample (Ha.)	Percentage of total area of the selected holdings	No. of selected holdings	Area per holding (Ha.)
Small	13.40	29.69	127	0.11
Medium	15.69	34.77	49	0.32
Large	16.04	35.54	14	1.15
Total	45.13	100.00	190	0.24

The selected holdings has a total operational area of 45.13 hectares. The average size of holdings is 0.24 hectare.

A. Cost of Cultivation of Tapioca

The estimated cost of different items per Hectare and their percentage distribution to the total cost A is given in the following table.

Cost of Cultivation per hectare of Tapioca during 1998-99

Sl. No	Component of different cost concept	Cost per hectare (in Rs.)	Percentage distribution of Cost A
1	Hired human labour	10814	58.15
2	Animal labour	38	0.20
3	Machine labour	321	1.73
4	Seed (Seedlings)	835	4.49
5	Farmyard manure and chemical fertilizers	4215	22.66
6	Plant protection	18	0.10
7	Land tax and Irrigation cess	53	0.29
8	Repair and maintenance charges	112	0.60
9	Other expenses	515	2.77
10	Interest on Working Capital	1676	9.01
11	Total cost 'A' (1-10)	18597	100.00
12	Interest on fixed capital	1841	-
13	Cost 'B1' (11 + 12)	20438	-
14	Interest on Land value	119419	-
15	Cost 'B' (13 + 14)	139857	-
16	Imputed value of household labour	4117	-
17	Cost 'C' (15 + 16)	143974	-

In tapioca cultivation hired human labour cost account to 58 per cent during this year. The percentage of hired human labour hours engaged in tapioca cultivation to the total labour hours is given below for males and females separating for each size group of holdings.

Table: Percentage Distribution of hired human labour hours

Sex	Holding size class			
	Small	Medium	Large	All sizes
Male	58.69	48.49	79.00	60.73
Female	10.57	26.81	7.18	16.05
Total	69.26	75.30	86.18	76.78

The above table reveals that the proportion of hired human labour to total human labour input steadily increases with the increase in the size of holdings.

The cost towards seedling/seed account to 5% and 23% is spent for farmyard manure and chemical fertilizers. In Tapioca Cultivation the cost towards plant protection measures and land tax and irrigation cess amount to be nearly 1% each. The expenditure incurred for repair and maintenance charges comes to 1% of the total cost 'A'. The interest on working capital is estimated at Rs.1676 per hectare. The miscellaneous expenses come to Rs.515.

Interest on fixed capital comes to Rs.1841 during the period under review. Cost 'B1' and Cost 'B' accounts to be as Rs.20438 and Rs.139857 respectively. Cost 'C' is estimated to be Rs.143974.

Estimated cost of cultivation

Concept of cost	Cost per hectare (Rs.)
Cost 'A'	18597
Cost 'B'	139857
Cost 'C'	143974

B. Out put

The per hectare value of output of Tapioca during 1998-99 us found to be Rs.33120.

2.5 PEPPER

Pepper an important foreign exchange earner of the state cultivated in an area of 182384 hectares during 1998-99. The total area under papper and the average yield per hectare during 1998-99 are given in the following table.

Area under Pepper (in hectare)	Average yield of pepper (Kg/Hect.)	Percentage of area under pepper to the total cropped area.
182384	376	6.25

It is seen that 6% of the gross area under crops in the state is under pepper cultivation.

Selected holdings

During this round 184 holdings were selected for studying the cost of cultivation of pepper. The details are given below:

Holding size class	No. of selected holdings	Total area under the crop (Ha.)	Percentage to total selected holdings	Area per Holding A
Small	148	9.76	38.58	0.07
Medium	31	10.69	42.25	0.34
Large	5	4.85	19.17	0.97
All sizes	184	25.30	100.00	0.14

The operational area under the crop in the selected holding is 25.30 hectare.

A. Cost of Cultivation of Pepper

The per hectare cost incurred under different component are given in the following table.

Cost of Cultivation per hectare of Pepper during 1998-99

Sl. No	Component of different cost concept	Cost per hectare (in Rs.)	Percentage distribution of Cost A
1	Hired human labour	8807	56.90
2	Animal labour	-	-
3	Machine labour	79	0.50
4	Seed /Seedlings	102	0.66
5	Farmyard manure and chemical fertilizers	4496	29.05
6	Plant protection	73	0.47
7	Land tax and Irrigation cess	38	0.25
8	Repair and maintenance charges	238	1.54
9	Other expenses	263	1.70
10	Interest on Working Capital	1382	8.93
11	Total cost 'A' (1-10)	15478	100.00
12	Interest on fixed capital	1543	-
13	Cost 'B1' (11 + 12)	17021	-
14	Interest on Land value	224029	-
15	Cost 'B' (13 + 14)	241050	-
16	Inputed value of household labour	2738	-
17	Cost 'C' (15 + 16)	243788	-

Hired human labour cost, a major component of cost under pepper cultivation accounts to 57% of the total Cost 'A' during this round. The percentage of hired human labour hours engaged in pepper cultivation to the total labour hours is given below:

Percentage Distribution of hired human labour hours to total human labour hours

Sex	Holding size class			
	Small	Medium	Large	All sizes
Male	50.36	69.73	76.84	62.15
Female	7.92	11.86	8.46	9.69
Total	58.28	81.59	85.30	71.84

The percentage share of hired human labour hours to total human hours increased as size class increased. About 72% of the total human labour hours constituted for hired human labour and the remaining towards household and exchange human labour hours. Female hired human labour is low in the case of pepper cultivation.

For planting new plants Rs.102 is spent. About 30% of the total cost 'A' is accounted for farm yard manure and chemical fertilizers. Plant protection cost yet another important item shares only 0.47%. Land tax and irrigation cess, repair and maintenance charges etc. constitutes to 0.25 and 1.54% respectively. The per hectare cost towards interest on working capital is Rs.1382 and to other expenses is Rs.263.

Cost 'B1'

Cost 'B1' is estimated by adding the interest on fixed capital (excluding land) to Cost 'A'. It is Rs.17021 during 1998-99. Interest on land value is estimated as Rs.224029.

Cost 'B' and Cost 'C'

Cost 'B' is estimated by adding the interest on land value to Cost 'B1' and Cost 'C' is estimated by adding the imputed value of household labour to Cost 'B'. During this round Cost 'B' is Rs.241050 and Cost 'C' is Rs.243788. The imputed value of household labour is Rs.2738 per hectare.

B. Value of Output

The value of pepper is found to be Rs.47918 per hectare during 1998-99.

2.6 PINEAPPLE

Pineapple which is a minor crop of the State provides income and employment base to large number of households of the state recently. The area under this crops and its production is given in the following table:

Area and Production of Pineapple

Total Cropped Area (in lakh hectare)	Area under Pineapple (ha.)	Production (tonnes)	% of area under Pineapple to total cropped area
29.17	8963	73707	0.30

The total area under pineapple cultivation during 1998-99 was 8963 hectares. The production was 73707 tonnes. The percentage of area under pineapple cultivation to the total cropped area comes to nearly 0.3%.

Selected holdings

Details of holdings selected for cost study is given below:

No. of holdings under Pineapple cultivation

Holding size class	No. of selected holdings	Total area under pineapple (Ha.)	Percentage to total area	Area per Holding
Small	73	5.63	10.42	0.07
Medium	40	20.35	37.65	0.50
Large	17	28.07	51.93	1.65
All sizes	130	54.05	100.00	0.41

The total number of holdings selected for pineapple cultivation during 1998-99 were 130. These holdings cover an area of 54.05 hectares. The average area per holding was 0.41 hectares.

A. Cost of Cultivation

The per hectare cost of cultivation details under different components of cost are as follows:

Cost of Cultivation per hectare of Pineapple during the year 1998-99

Sl. No	Component of different cost concept	Cost per hectare (in Rs.)	Percentage distribution of Cost A
1	Hired human labour	9973	32.21
2	Animal labour	-	-
3	Machine labour	-	-
4	Seed (Seedlings)	6645	21.47
5	Farmyard manure and chemical fertilizers	8557	27.64
6	Plant protection	399	1.29
7	Land tax and Irrigation cess	36	0.12
8	Repair and maintenance charges	45	0.15
9	Other expenses	2743	8.86
10	Interest on Working Capital	2557	8.26
11	Total cost 'A' (1-10)	30955	100.00
12	Interest on fixed capital	906	-
13	Cost 'B1' (11 + 12)	31861	-
14	Interest on Land value	127779	-
15	Cost 'B' (13 + 14)	159640	-
16	Inputed value of household labour	2114	-
17	Cost 'C' (15 + 16)	161754	-

The per hectare cost towards pineapple cultivation constituted 32% of the total cost A. Animal labour and machine labour is not seen in pineapple cultivation. Per hectare cost of seed/seedlings accounts to 21%. Farmyard manure and chemical fertilizer amounts to 28%. Plant protection, land tax and irrigation cess. Repair and maintenance charges etc. accounts to only 1% and below 1% each. Expenditure towards interest on working capital shares to 8% of the total cost 'A'.

The percentage of hired human labour hours engaged in the pineapple cultivation during 1998-99 is given below:

Percentage of hired human labour hours engaged in Pineapple Cultivation

Holding size class	Male	Female	Total
Small	52.62	8.39	61.01
Medium	43.08	26.46	69.54
Large	57.83	31.97	89.80
All size	55.28	28.91	84.19

From the above table it is seen that 84% of the total human labour hours is hired human labour.

Cost B1, Cost B and Cost C.

Cost 'B1' is obtained by adding the interest on fixed capital (excluding land) to cost 'A' and it is seen as Rs.31861. Cost 'B' and Cost 'C' are estimated as Rs.159640 and Rs.161754/- respectively. Cost of Cultivation of Pineapple during 1998-99 is given below:

Cost of Cultivation of Pineapple Rs. /ha. for 1998-99

Concept of cost	Holding size class			
	Small	Medium	Large	All sizes
Cost 'A'	20753	28374	28432	30955
Cost 'B'	231828	177912	125541	159640
Cost 'C'	237999	179719	126824	161754

B. Output

The value of output from per hectare pineapple cultivation is seen as Rs.48445/-

Value of Product and by-product per hectare for 1998-99

Product/ by-product	Holding size class			
	Small	Medium	Large	All sizes
Pineapple	56736	55470	36985	46003
Kannu	3720	2026	2486	2442
Total	60456	57496	39471	48445

2.7 TURMERIC

During the year 1998-99 turmeric was selected as a minor crop for the cost of cultivation study. The total area under turmeric cultivation and the average yield per hectare during 1998-99 is given in the following table:

Area and Average yield of Turmeric

Total Cropped Area (in lakh hectare)	Area under Turmeric (ha.)	% of area under Pineapple to total cropped area
29.17	3706	0.13

Selected Holdings

For the cost study of turmeric a total of 140 holdings were selected. The details of these holdings in each size class (viz. Small, medium, large) of holdings are given below

Area under Turmeric in the sample

Holding size class	No. of selected holdings	Total area under crop in the sample (Ha.)	Percentage	Area per Holding (Ha.)
Small	129	7.97	62.20	0.06
Medium	9	3.22	25.15	0.36
Large	2	1.62	12.65	0.81
All sizes	140	12.81	100.00	0.09

The average area per sample holding under study is 0.09 hectare.

A. Cost of Cultivation

The estimated cost of cultivation of different items for hectare of Turmeric is given below:

Cost of Cultivation per Hectare for Turmeric during the year 1998-'99

Sl. No	Component of different cost concept	Cost per hectare (in Rs.)	Percentage distribution of Cost 'A'
1	Hired human labour	10254	34.50
2	Animal labour	137	0.46
3	Machine labour	221	0.74
4	Seed (Seedlings)	6924	23.30
5	Farmyard manure and chemical fertilizers	6046	20.34
6	Plant protection	2416	8.13
7	Land tax and Irrigation cess	71	0.24
8	Repair and maintenance charges	92	0.32
9	Other expenses	869	2.92
10	Interest on Working Capital	2688	9.05
✓ 11	Total cost 'A' (1-10)	✓ 29718	100.00
12	Interest on fixed capital	1005	-
13	Cost 'B1' (11 + 12)	30723	-
14	Interest on Land value	109560	-
15	Cost 'B' (13 + 14)	140283 ✓	-
16	Inputed value of household labour	5234	-
17	Cost 'C' (15 + 16)	45517 145517 ✓	-

From the above table it is seen that total Cost 'A' of cultivation of turmeric per hectare works out to Rs.29718/-. The percentage share towards farm yard manure and chemical fertilizers accounts to 20%. Hired human labour cost is found to be 35% of the Cost 'A'. Machine cost shares to 0.74%. Plant protection measures cost is Rs.2416/- per hectare. Land tax and irrigation cess accounted for only a small percentage i.e. 0.24%. For seed/seedlings 23% of the Cost 'A' is accounted. The percentage share for repair and maintenance of implements and machinery comes to about 0.32%. The per hectare expenditure on interest on working capital is estimated as Rs.2688/-. The expenditure which are not mentioned in the above items are included under 'others' and it works out to Rs.869/- during the year.

Cost 'B1' : Cost 'B1' is estimated by adding the interest on fixed capital (excluding land) to Cost 'A'. It works out to Rs.30723/- during 1998-99. Interest on land value is estimated as Rs.109560/-

Cost 'B' and Cost 'C'

Cost 'B' is estimated by adding the interest on land value to Cost 'B1' and Cost 'C' is estimated by adding the imputed value of household human labour to Cost 'B' is found to be Rs.140283/- and Cost 'C' is Rs.145617/-

Percentage distribution of hired human labour hours and household labour hours to

Total human labour hours.

Sex	Holding size class			
	Small	Medium	Large	All sizes
Male	48.16	66.73	63.42	61.32
Female	24.84	29.57	35.19	27.64
Total	73.00	96.30	98.61	88.96

It is seen that 89% of the total human labour hours accounted for hired human labour and the remaining towards household human labour hours.

B. Output

The value of the product and by-product of Turmeric cultivation is as follows:

Value of Product and By-product per hectare (in Rs.) during 1998-99

Product/ by-product	Holding size class			
	Small	Medium	Large	All sizes
Product	47758	29208	67592	✓ 45603

The value of output per hectare is found to be Rs.45603/-

CHAPTER – III

Summary of Findings

The data furnished in this report are collected through the cost of cultivation survey 1998-99. The crops covered in this report are Paddy (Autumn, Winter and Summer), Coconut, Tapioca, Banana, Pepper, Turmeric. The summary of findings are discussed below:

1. Autumn Paddy

The per hectare cost of cultivation when considered to Cost 'A' during 1998-99 is Rs.17313/- compared to the previous year the Cost 'A' has increased to 15% during this year. The percentage increase of Cost 'B' decreased by 2% Cost 'C' increased by 3%. For producing one quintal of paddy during this season Rs.572/- is needed.

2. Winter Paddy

The estimated per hectare cost of cultivation of winter paddy is Rs.16545/- during the period under review when cost 'A' is considered. It showed an increase of 9% when compared to the previous year. During winter season the production cost of paddy per quintal is Rs.467/-

3. Summer Paddy

The component of Cost 'A' relating to the summer paddy cultivation is Rs.20691/- when compared to the previous year it increased to 19%. Production cost of one quintal of paddy during summer season is worth of Rs.708/-

4. Coconut

While considering the cost component of 'A' the per hectare cost of cultivation of coconut is Rs.15565/- production cost of one coconut in the State is Rs.4.47/- and the prices received is Rs.5.16 respectively constituting a profit of only 69 paise per coconut.

5. Banana

The per hectare cost for banana cultivation is estimated as Rs.88889 and the value of output is Rs.112736 during 1998-99.

6. Tapioca

The cash and other kind expenses incurred for Tapioca cultivation is Rs.18597 (Cost A). The per hectare value of output of tapioca is found to be Rs.33120/-

7. Pepper

During this round the per hectare cost of cultivation of pepper is seen as Rs. (Cost A) 15478/- The value of pepper is found to be Rs.47918/- per hectare.

8. Pineapple

The total number of holdings selected for pineapple cultivation were 130. The per hectare cost of cultivation of pineapple is Rs.30955/- and the value of output is Rs.48445/- during 1998-99.

9. Turmeric

Turmeric included under this study as a minor crop, per hectare cost of cultivation of this crop is Rs.29718 and the value of output is Rs.45603/-

APPENDIX – I

Cost of Cultivation per hectare of paddy (Autumn) during the year 1998-99
(in Rs.)

Sl. No	Component of different cost concept	Holding size class			
		Small	Medium	Large	All sizes
1	2	3	4	5	6
1	Hired human labour	10995	10416	9242	10071
2	Animal labour	1207	613	83	53
3	Machine labour	1296	1333	926	1134
4	Seed / Seedlings	1015	1054	959	1008
5	Farmyard manure and chemical fertilizers	2817	2906	2248	2621
6	Plant protection	187	254	317	265
7	Land tax and Irrigation cess	29	35	21	28
8	Repair and maintenance charges	239	395	646	459
9	Other expenses	189	276	623	396
10	Interest on Working Capital	885	843	720	801
11	Total cost 'A' (1-10)	18859	18125	15785	17313
12	Interest on fixed capital	1164	996	1041	1066
13	Cost 'B1' (11 + 12)	20023	19121	16826	18379
14	Interest on Land value	27739	16536	11031	16807
15	Cost 'B' (13 + 14)	47762	35657	27857	35186
16	Inputed value of household labour	1894	1147	590	1087
17	Cost 'C' (15 + 16)	49656	36804	28447	36273

APPENDIX – II

Cost of Cultivation per hectare of paddy (Winter) during the year 1998-99 (in Rs.)

Sl. No	Component of different cost concept	Holding size class			
		Small	Medium	Large	All sizes
1	2	3	4	5	6
1	Hired human labour	10380	9559	8996	9354
2	Animal labour	1136	685	401	661
3	Machine labour	1425	1308	1310	1331
4	Seed / Seedlings	1213	923	974	998
5	Farmyard manure and chemical fertilizers	2897	2379	1831	2266
6	Plant protection	385	279	396	344
7	Land tax and Irrigation cess	81	54	30	50
8	Repair and maintenance charges	531	210	226	285
9	Other expenses	343	367	684	484
10	Interest on Working Capital	889	775	730	772
11	Total cost 'A' (1-10)	19280	16539	15578	16545
12	Interest on fixed capital	4630	2318	1006	2156
13	Cost 'B1' (11 + 12)	23910	18857	16584	18701
14	Interest on Land value	21107	19798	11236	16746
15	Cost 'B' (13 + 14)	45017	38655	27820	35447
16	Inputed value of household labour	1920	1048	244	903
17	Cost 'C' (15 + 16)	46937	39703	28064	36350

APPENDIX – III

Cost of Cultivation per hectare of paddy (Summer) during the year 1998-99(in Rs.)

Sl. No	Component of different cost concept	Holding size class			
		Small	Medium	Large	All sizes
1	2	3	4	5	6
1	Hired human labour	9887	11469	19920	11853
2	Animal labour	798	738	542	678
3	Machine labour	1216	1271	1366	1295
4	Seed / Seedlings	1022	846	912	897
5	Farmyard manure and chemical fertilizers	2705	3723	2348	3584
6	Plant protection	355	334	696	461
7	Land tax and Irrigation cess	100	150	232	170
8	Repair and maintenance charges	480	173	730	391
9	Other expenses	387	236	653	403
10	Interest on Working Capital	819	931	1322	959
11	Total cost 'A' (1-10)	17769	19811	28721	20691
12	Interest on fixed capital	1164	793	984	947
13	Cost 'B1' (11 + 12)	18933	20604	29705	21638
14	Interest on Land value	31412	22841	15219	21519
15	Cost 'B' (13 + 14)	50345	43445	44924	43157
16	Inputed value of household labour	2721	396	317	965
17	Cost 'C' (15 + 16)	53066	43841	45241	44122

APPENDIX – IV

Cost of Cultivation per hectare of Coconut during the year 1998-99 (in Rs.)

Sl. No	Component of different cost concept	Holding size class			
		Small	Medium	Large	All sizes
1	2	3	4	5	6
1	Hired human labour	8227	8023	8464	7823
2	Animal labour	48	6	26	20
3	Machine labour	51	114	327	225
4	Seed /Seedlings	36	58	10	29
5	Farmyard manure and chemical fertilizers	5107	4678	5263	5039
6	Plant protection	34	28	133	88
7	Land tax and Irrigation cess	71	83	52	55
8	Repair and maintenance charges	127	278	155	205
9	Other expenses	778	554	767	690
10	Interest on Working Capital	1428	1346	1499	1391
11	Total cost 'A' (1-10)	15909	15168	16696	15565
12	Interest on fixed capital	2058	1806	1624	1757
13	Cost 'B1' (11 + 12)	17967	16974	18320	17322
14	Interest on Land value	153164	162870	142795	150812
15	Cost 'B' (13 + 14)	171131	179844	161115	168134
16	Imputed value of household labour	3402	1337	780	1161
17	Cost 'C' (15 + 16)	174533	181181	161895	169295

APPENDIX – V

Cost of Cultivation per hectare of Banana during the year 1998-99 (in Rs.)

Sl. No	Component of different cost concept	Holding size class			
		Small	Medium	Large	All sizes
1	2	3	4	5	6
1	Hired human labour	25157	27337	20876	25515
2	Animal labour	-	-	-	-
3	Machine labour	-	-	-	-
4	Seed /Seedlings	6179	5079	5739	5592
5	Farmyard manure and chemical fertilizers	17673	17996	21134	37104
6	Plant protection	1162	1314	1332	1261
7	Land tax and Irrigation cess	845	1411	59	986
8	Repair and maintenance charges	703	102	3	436
9	Other expenses	6435	11587	14033	10043
10	Interest on Working Capital	5661	6331	6311	7952
11	Total cost 'A' (1-10)	63815	71157	69487	88889
12	Interest on fixed capital	1371	1316	2881	1386
13	Cost 'B1' (11 + 12)	65186	72473	72368	90275
14	Interest on Land value	60838	63823	31886	57568
15	Cost 'B' (13 + 14)	126024	136296	104254	147843
16	Imputed value of household labour	11199	7347	3770	8186
17	Cost 'C' (15 + 16)	137223	143643	108024	156029

APPENDIX – VI

Cost of Cultivation per hectare of Tapioca during the year 1998-99 (in Rs.)

Sl. No	Component of different cost concept	Holding size class			
		Small	Medium	Large	All sizes
1	2	3	4	5	6
1	Hired human labour	10003	11119	11193	10814
2	Animal labour	41	74	-	38
3	Machine labour	56	318	545	321
4	Seed /Seedlings	1060	747	735	835
5	Farmyard manure and chemical fertilizers	4429	4072	4176	4215
6	Plant protection	28	8	19	18
7	Land tax and Irrigation cess	77	47	37	53
8	Repair and maintenance charges	127	160	15	112
9	Other expenses	332	463	718	515
10	Interest on Working Capital	1595	1680	1739	1676
11	Total cost 'A' (1-10)	17748	18688	19177	18597
12	Interest on fixed capital	1927	2076	955	1841
13	Cost 'B1' (11 + 12)	19675	20764	20132	20438
14	Interest on Land value	170180	88941	106826	119419
15	Cost 'B' (13 + 14)	189855	109705	126958	139857
16	Imputed value of household labour	4422	3667	1394	4117
17	Cost 'C' (15 + 16)	194277	113372	128352	143974

APPENDIX – VII

Cost of Cultivation per hectare of Pepper during the year 1998-99 (in Rs.)

Sl. No	Component of different cost concept	Holding size class			
		Small	Medium	Large	All sizes
1	2	3	4	5	6
1	Hired human labour	8586	9864	6923	8807
2	Animal labour	-	-	-	-
3	Machine labour	150	28	52	79
4	Seed /Seedlings	83	119	107	102
5	Farmyard manure and chemical fertilizers	4469	4696	4107	4496
6	Plant protection	109	214	199	73
7	Land tax and Irrigation cess	73	128	34	38
8	Repair and maintenance charges	111	574	48	238
9	Other expenses	241	275	285	263
10	Interest on Working Capital	1364	1520	1167	1382
11	Total cost 'A' (1-10)	15186	17418	12922	15478
12	Interest on fixed capital	1320	1992	463	1543
13	Cost 'B1' (11 + 12)	16506	19410	13385	17021
14	Interest on Land value	249773	165616	300974	224029
15	Cost 'B' (13 + 14)	266279	185026	314359	241050
16	Imputed value of household labour	4588	1796	1092	2738
17	Cost 'C' (15 + 16)	270867	186822	315451	243788