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GOVERNMENT OF KERALA

**COST OF CULTIVATION OF
IMPORTANT CROPS
IN KERALA 1985-86**

DEPARTMENT OF ECONOMICS & STATISTICS
TRIVANDRUM

1988

GOVERNMENT OF KERALA

REPORT ON
COST OF CULTIVATION OF
IMPORTANT CROPS IN KERALA
FOR 1985-86

DEPARTMENT OF ECONOMICS & STATISTICS
TRIVANDRUM

P R E F A C E

This issue, third in the series relates to the sixth round of the survey (1985-86) on cost of cultivation of important crops in Kerala.

In this round the study was confined to 38 taluks for collection of data regarding cost of cultivation of four crops Paddy (3 seasons), Coconut, Pepper and Banana.

The report was prepared by Smt.J. Vijayamma Research Officer, under the guidance of Smt.K. Leelakumari, Joint Director. Suggestions for improvement are solicited.

*K. Balakrishnan Nair
Director of Economics & Statistics.*

*Trivandrum,
15-2-1988.*

PRELIMINARY

This paper deals with the results of the study
concerning the survey of the cost of education
of dependent children in Nevada.

In this study the study was limited to
25 families for collection of data regarding cost of
education of four state funds (Nevada, Colorado,
Oregon and Idaho).

The report was prepared by Mrs. J. W. Johnson
Research Officer, under the guidance of Mrs. A. L.
Barnhart, Joint Director, suggestions for improve-
ment are solicited.

J. W. Johnson, Joint
Director of Research & Statistics

Irvington,
12-2-1933

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Report on the Cost of Cultivation of Important crops in Kerala during the year 1985-86

Chapter 1 - GENERAL

1.1 Introduction

One of the strategies of India's Five Year Plans is to give due importance in developing the agricultural economy. Some of the main objectives in this sector aimed at, in the various Five Year Plans are the following:

- (i) to extend irrigation facilities.
- (ii) to provide improved seeds, fertilizers and other inputs.
- (iii) to bring organisational and institutional changes through land reforms, agricultural extension, community development programmes, etc.
- (iv) to improve agricultural production.
- (v) to utilise manpower resources of the country side, local resources, etc.

In pursuance of these strategies various programmes like IADP, IRDP, SFDA etc. were implemented. A realistic assessment of the cost of cultivation and value of product is necessary for formulation and implementation of schemes in agricultural sector, fixation of floor and support prices etc. Keeping this in view the Government of Kerala accorded sanction for conducting annual surveys on cost of cultivation of important crops in the State. The first report in this regard relating to the years 1980-81, 1981-82, 1982-83 and the second one relating to the years 1983-84 and 1984-85 have been published. The present report, third in the series, relates to the 3rd round (1985-86) of the survey. During the survey data on cost of cultivation of the following crops were collected.

- i. Paddy (three seasons)
- ii. Coconut
- iii. Pepper and
- iv. Banana.

1.2 Staff

The following staff were engaged for the survey.

<u>Category</u>	<u>No.</u>
<u>Field:</u> U. D. Investigator	14
L. D. Investigator	28
<u>Office:</u> Research Assistant	1
U. D. Compiler	1

1.3 Period of the survey

The period of the sixth round of the survey was the agricultural year 1985-86 (1st July 1985 - 30th June 1986).

1.4 Design of the survey

The sixth round of the survey was confined to 38 taluks as against 53 taluks in the previous round. These taluks which are important growing centres of the different crops under study were selected purposively. In each selected taluk, the first two villages chosen for Timely Reporting Survey 1984-85 were taken up for the study. The number of holdings selected for each crop in a taluk was as follows:

- | | |
|---------------------|-----------------------------------|
| 1. Paddy (wet land) | - Autumn 10 (5 each in a village) |
| | - Winter 10 " |
| | - Summer 10 " |
| 2. Coconut | - 10 (5 each in a village) |
| 3. Pepper | - 5 (minimum 2 in a village) |
| 4. Banana | - 5 (minimum 2 in a village) |

A sample holding consisted of a key plot together with all the other plots (both wet and dry) possessed by the same cultivator within the taluk. A key plot was selected by simple random sampling method from the frame of survey sub numbers of the plots selected for the crop cutting experiments of the respective crops during 1984-85.

If the holdings selected for paddy contained area under coconut, pepper and banana, fresh selection was not attempted for those crops.

In the case of autumn/winter paddy if the required number of key plots (5) was not available in the selected villages, the remaining number of plots were selected from the list of wet land plots for 1984-85. In the case of summer paddy, if the sufficient number of holdings was not available in the selected villages the balance was selected from other Timely Reporting Survey (TRS) villages for 1984-85. If the required number of holdings was not obtained for coconut and pepper from the selected paddy holdings the balance was selected from the plots selected for the crop cutting experiments 1984-85 on coconut and pepper. In the case of banana the balance was selected purposively. A holding was considered for the study of a particular crop only if it contained at least 25 cents or 25 trees/plants of the crop. The size group of a holding was determined on the basis of the area cultivated. The holdings selected were grouped into small, medium and large holdings according to the criteria presented below:

<u>Size group</u>	<u>holding size</u>	
	<u>Paddy</u>	<u>Other crops</u>
Small	< 0.40 hectare	< 0.20 hectare
Medium	0.40 to < 2 hectare	0.20 to < 0.80 hectare
Large	≥ 2 hectare	≥ 0.80 hectare

Note: < less than

≥ greater than or equal to

1.5 Schedules

Three schedules were designed for the survey.

Schedule I - This schedule was used for listing the plots for selection of holdings and recording the details of the selected holdings.

Schedule II - This schedule was used for recording details of the cultivators, households and details like area of holdings, inventory of agricultural implements, livestock etc.

Schedule III - This schedule was meant for recording cultivation cost, every fortnight.

1.6 Field work

Field work was done by 38 investigators posted at the rate of one in each taluk. The investigators visited the selected holdings every fortnight and recorded fortnightly operations in schedule III. The field work was supervised by the Statistical Inspectors at the taluk level and by the Deputy Director/District Officer at the district level.

1.7 Analysis

The compilation and tabulation were done at the district level. Five compilers were posted in the head office for consolidation. Analysis and preparation of the report were done in the head office.

1.8 Method of estimation of cost

(a) Concept of cost:

Different cost concepts, cost 'A', cost 'B1', 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 | viii. Land tax |
| ii. Animal labour | ix. Irrigation cess |
| iii. Machine labour | x. Repair and maintenance charges of implements, machinery and buildings. |
| iv. Seed/seedlings | xi. Interest on working capital |
| v. Farm yard manure | xii. Other expenses |
| vi. Chemical fertilizers | |
| vii. Plant protection | |

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 values of owned inputs

Some of the inputs used in the production process come from home stock. In computing the cost of cultivation, it is necessary to impute the value of these home stock. The procedure used for the imputation of values for such inputs is indicated below:

- 1) Family labour - Imputed on the basis of average wage rate per work hour of hired labour.
- 2) Owned and exchange human labour - The rate of wages per hour for hired human labour is taken for imputing the value of owned and exchange human labour.
- 3) Owned and exchange animal labour - The rate of remuneration per hour for hired animal labour is taken for imputing the value of owned and exchange animal labour.
- 4) Owned and exchange machine labour - The hire charges per hour for machine labour has been taken.
- 5) Implements - Repair and maintenance charges of implements.
- 6) Owned seed - Farm produced (home grown) seed has been evaluated at the prices prevalent in the village concerned at the time of sowing.
- 7) Farm produced manure - Evaluated at the rates prevalent in the villages concerned.
- 8) Interest on owned fixed capital - Interest on the present value of fixed assets, such as land, farm, building, implements, machinery irrigation structures, equipment and live-stock (only draught animals) at the rate of 10% per annum has been calculated.
- 9) Interest on working capital - Interest has been charged at the rate of 10% per annum on the working capital i.e., 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.
- 10) Payments in kind - The payments in kind have been evaluated at the prices prevalent in the villages at the time of payments. Perquisites have been included in the payments in kind evaluated at market prices.

(c) Allocation of joint costs to different crops

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

- 1) Repair and maintenance charges of implements - In proportion to the area under the crop.
- 2) Interest on owned fixed capital (excluding land) - In proportion to the area under the crop.
- 3) Interest on land value - Interest on the value of land under the crop.

(d) Procedure for evaluation of farm assets

- i. Own farm buildings (cattle sheds, storage sheds etc.) - Evaluated at prices prevailing in the villages.
- ii. Implements and other farm machinery - Evaluated at prevalent market prices.
- iii. Livestock (only draught animals) - Evaluated 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 2 - RESULTS OF THE SURVEY

The cost of cultivation of important crops have been worked out from the data collected through the survey. The crops selected for this round of study are paddy (autumn, winter and summer), coconut, pepper and banana. They are discussed here under:

2.1 Paddy

At the time of analysing the cost of cultivation of paddy it is worthwhile to look into certain related factors like area under paddy, production of paddy, the average yield per hectare, irrigation etc. during the year under study.

Paddy the main food crop of the people of Kerala is cultivated during the three seasons - autumn, winter and summer. The total area under paddy in 1985-86 was 6.78 lakh hectares and rice production estimated at 11.73 lakh tonnes. The area under the paddy crop during the three seasons of the year 1985-86 are given below:

Table 1 - Area under paddy during the year 1985-86
(in lakh hect.)

Season	Area under paddy	Percentage to total cropped area	Percentage to total area under paddy
1	2	3	4
Autumn	2.80	9.76	41.23
Winter	3.13	10.93	46.21
Summer	0.85	2.97	12.56
Total	6.78	23.66	100.00

Source: TRS estimates

The gross area under paddy during 1985-86 is 24% of the total cropped area. Of this, autumn paddy comes to 10%, winter paddy 11% and summer paddy 3%. It is seen that 87% of the gross area under paddy relates to autumn and winter seasons.

The table below gives the production of rice.

Table 2 - Production of rice and average yield/hect. during 1985-86

Item	Season			Total
	Autumn	Winter	Summer	
1	2	3	4	5
Production of Rice (lakh tonnes)	4.62	5.27	1.84	11.73
Percentage to total production	39.39	44.93	15.68	100.00
Average yield per hect. paddy (tonnes/hect.)	2.5	2.6	2.3	

Source: TRS estimates.

Total production of ^{rice} paddy during 1985-86 was 11.73 lakh tonnes. Almost 40% of the total production was in Autumn season, 45% in winter and the remaining in summer season. The average yield per hectare came to 2.5, 2.6 and 2.3 tonnes of paddy per hectare respectively in autumn, winter and summer seasons.

i) Autumn paddy

10 holdings from each taluk were selected for studying the cost of cultivation of autumn paddy. The total number of holdings selected were 370 scattered in all the 38 selected taluks throughout 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 3 - Sample holdings of 1985-86

Holding size class	No. of selected holdings	Area under the crop in the sample (hect.)	Percentage of total area	Area per holding (hect.)
1	2	3	4	5
Small	224	49.79	29.81	0.22
Medium	140	98.84	59.16	0.71
Large	6	18.42	11.03	3.07
All sizes	370	167.05	100.00	0.45

The total operational area of autumn paddy coming under these selected 370 holdings is 167.05 hectares during the period under study. The average area per holding works out to 0.45 hectare.

A. Cost of cultivation

The cost of different items per hectare coming under cost 'A' cost 'B1', cost 'B' and cost 'C' (these concepts are described in paragraph 1.8) for the cultivation of autumn paddy is estimated and furnished below:

Table 4 - Cost of cultivation per hectare of autumn paddy for the year 1985-86

Sl. No.	Components of different costs	holding size class			
		Small	Medium	Large	All sizes
1	2	3	4	5	6
1.	Hired human labour	2749 (54.44)	1592 (41.69)	2849 (58.36)	2076 (48.39)
2.	Animal labour	420 (8.32)	229 (5.99)	178 (3.65)	280 (6.53)
3.	Machine labour	154 (3.05)	186 (4.87)	243 (4.98)	182 (4.24)
4.	Seed/seedlings	373 (7.39)	344 (9.01)	281 (5.76)	344 (8.02)
5.	Farm yard manure & chemical fertilizers	978 (19.36)	863 (22.60)	826 (16.92)	893 (20.81)
6.	Plant protection	43 (0.85)	35 (0.92)	72 (1.47)	41 (0.96)
7.	Land tax and irrigation cess	4 (0.06)	5 (0.13)	2 (0.04)	5 (0.12)
8.	Repair and maintenance of implements, machinery & buildings	65 (1.29)	364 (9.53)	55 (1.13)	230 (5.36)
9.	Interest on working capital	237 (4.69)	164 (4.29)	230 (4.71)	193 (4.50)
10.	Other expenses	27 (0.55)	37 (0.97)	146 (2.98)	46 (1.07)
11.	Total cost 'A' (total of items 1 to 10)	5050 (100.00)	3819 (100.00)	4882 (100.00)	4290 (100.00)

(contd.)

(table 4 contd.)

1	2	3	4	5	6
12.	Interest on fixed capital (excluding land)	256	316	743	312
13.	Cost 'B1' (items 11 + 12)	5306	4135	5625	4602
14.	Interest on land value	6580	5606	2156	5516
15.	Cost 'B' (items 13 + 14)	11886	9741	7781	10118
16.	Imputed value of household labour	334	152	89	199
17.	Cost 'C' (items 15 + 16)	12220	9893	7870	10317

(figures in brackets relate to percentage to total cost 'A')

Cost 'A'

Total cost 'A' of cultivation of autumn paddy per hectare works out to Rs.4290/-. Hired human labour contributes highest percentage of total cost 'A' (48.39%). Cost of hired human labour per hectare is maximum which is estimated as Rs.2849/- for the large size class holdings and minimum for the medium class holdings (Rs.1592/-). The percentage of hired human labour hours to total labour hours engaged in autumn paddy cultivation in respect of males and females is given below:

Table 4(a) - Percentage of hired human labour hours to total human labour hours

Sex	holding size class			All sizes
	Small	Medium	Large	
1	2	3	4	5
Male	37.17	29.67	26.10	32.50
Female	54.42	62.08	70.51	59.79
Total	91.59	91.75	96.61	92.29

The proportion of hired human labour hours is 92% of the total human labour hours. The remaining 8% of human labour hours comes under exchange human labour and family labour hours.

Cost of animal labour works out to Rs.280/- (6.53%) while that of machine labour is Rs.182/- which contributes 4.24% of cost 'A'. It is seen that the contribution of animal labour is highest in small size holdings (8.32%) and lowest in large size holdings (3.65%) while the pattern is vice versa in the case of machine labour. About 20.8% of cost 'A' is on account of farm yard manure and chemical fertilizers while 8.02% is for seed and seedlings. Nearly 1% of cost 'A' is spent for plant protection measures. Expenditure on land tax and irrigation cess comes to Rs.5/- per hectare, the percentage share to total cost being negligible. Almost Rs.230/hect. accounts for repair and maintenance of implements and machinery. Interest on working capital which is estimated at the rate of 10% for a period of 6 months also accounted nearly 5% of cost 'A' (Rs.193/-).

Cost 'B1' and cost 'B'

For estimating the total cost for the cultivation of important crops, the next concept to be considered is cost 'B'. Cost 'B' as already explained, is obtained by adding the imputed value of interest on fixed capital, to cost 'A'. This was the usual method adopted for computing costs till the year 1984-85. This time another concept cost 'B1' is also introduced which is calculated by adding interest on fixed assets excluding land to cost 'A'. The interest on fixed capital excluding land and the interest on value of land coming under the crop are given below:

Table 4(b) - Interest on fixed capital (Rs.)

Item	holding size class			All sizes
	Small	Medium	Large	
1	2	3	4	5
Interest on fixed capital excluding land	256	316	743	312
Interest on land value	6580	5606	2156	5516
Interest on fixed capital including land	6836	5922	2899	5828

Cost 'B1' = cost 'A' + Interest on fixed assets excluding land.

Cost 'B' = cost 'B1' + Interest on land value.

Cost 'B1' and cost 'B' per hectare for the cultivation of autumn paddy are estimated and furnished in the sub-joined table.

Table 4(c) - Cost 'B1' and cost 'B' per hectare of autumn paddy cultivation

Item	holding size class			All sizes
	Small	Medium	Large	
1	2	3	4	5
Cost 'B1'	5306	4135	5625	4602
Cost 'B'	11886	9741	7781	10118

It is interesting to compare the interest on fixed capital with those of previous years. The estimated interest on fixed capital for three periods (at the interval of two years) are presented hereunder:

Table 4(d) - Interest on fixed capital (in Rs.)

Year	holding size class			All sizes
	Small	Medium	Large	
1	2	3	4	5
1981-82	3123	2992	1758	2368
1983-84	4682	4142	3753	4092
1985-86	6836	5922	2899	5828

The interest on fixed capital has risen to Rs.6836/- per hectare in the case of small holdings in 1985-86 from Rs.3123/- in 1981-82. Similar is the case with the medium size holdings. In the case of large size holdings the interest has increased to Rs.3753/- in 1983-84 from Rs.1758/- in 1981-82. while it decreased to Rs.2899/- during the 2 year period 1984 - 1986. This may be due to the fact that increase in land value is much sharper in small size holdings than in large size holdings during 1984-86.

Cost 'C'

Cost 'C' is estimated by adding the imputed value of household human labour to cost 'B'. Imputed value of household labour is highest in small size holdings, Rs.334/- per hectare while it is lowest in large size holdings Rs.89/-. The cost 'C' per hectare for the cultivation of autumn paddy is estimated as Rs.10317/-. For small holdings the cost comes to Rs.12220/- while the corresponding cost for medium size holdings and large size holdings are Rs.9893/- and Rs.7870/- respectively.

The estimates of cost under three major concepts for the years 1981-82, 1983-84 and 1985-86 are given below:

Table 5 - Cost of cultivation of paddy (autumn) (Rs./hect.)

Item	Year	holding size class			All sizes
		Small	Medium	Large	
1	2	3	4	5	6
Cost 'A'	1981-82	3725	3768	3522	3635
	1983-84	4887	4023	4561	4295
	1985-86	5050	3819	4882	4290
Cost 'B'	1981-82	6848	6760	5280	6003
	1983-84	9569	8165	8314	8387
	1985-86	11886	9741	7781	10118
Cost 'C'	1981-82	7326	6938	5368	6169
	1983-84	9873	8341	8372	8562
	1985-86	12220	9893	7870	10317

B. Output

The value of the product and by-product of paddy cultivation viz. paddy and straw during the period under report is given in the following table. The total value of output per hectare is found to be Rs.5784/- during 1985-86. As in the case of the previous years, the value of product (paddy) increases and the value of straw decreases as sizeclass increases as seen from the table.

Table 6 - Value of product and by-product per hectare (in Rs.)

Product/by-product	holding size class			All sizes
	Small	Medium	Large	
1	2	3	4	5
Paddy	4885	4582	5748	4801
Straw	1400	859	528	983
Total	6285	5441	6276	5784

C. Cost of production of paddy per quintal

The cost of production of paddy per quintal is obtained by dividing the cost of cultivation per hectare (after deducting the value of by-product from the cost of cultivation per hectare) by the quantity of paddy produced in one hectare. The table below gives the cost of production of paddy per quintal of autumn season during the year 1985-86.

Table 7 - **Cost of production of paddy per quintal** (in Rs.)

Concept of cost	holding size class			
	Small	Medium	Large	All sizes
1	2	3	4	5
Cost 'A'	174	147	157	156
Cost 'B'	499	440	262	430
Cost 'C'	515	447	265	439

(11) WINTER (MUNDAKAN) PADDY

380 holdings were selected for the study of winter paddy cultivation during the report period. The number of holdings selected and the area under the crop for each size class are given in the following table.

Table 8 - Sample holdings

Holding size class	No. of selected holdings	Total area under the crop (hectare)	Percentage to total area of selected holdings	Area per holding (hectare)
1	2	3	4	5
Small	217	49.03	26.53	0.23
Medium	156	113.13	61.21	0.73
Large	7	22.67	12.26	3.24
All sizes	380	184.83	100.00	0.49

These selected holdings have a total operational area of 184.83 hectare and the average size of a sample holding is 0.49 hectare.

A. Cost of cultivation

The cost of cultivation of different items per hectare coming under Cost 'A', Cost 'B' and Cost 'C' is estimated and furnished below.

Table - 9 Cost of cultivation per hectare of winter paddy for the year 1985-86.

Sl. No.	Components of different costs	Holding size class			All sizes
		Small	Medium	Large	
1	2	3	4	5	6
1.	Hired human labour	3051 (49.63)	2712 (52.99)	2398 (49.71)	2764 (52.26)
2.	Animal labour	847 (13.78)	495 (9.67)	315 (6.52)	505 (9.55)
3.	Machine labour	126 (2.05)	173 (3.38)	418 (8.67)	190 (3.59)

Table 9 continued

1	2	3	4	5	6
4.	Seed/ seedlings	490 (7.97)	393 (7.68)	365 (7.57)	415 (7.85)
5.	Farm yard manure and Che- mical fertilizers	1090 (17.74)	954 (18.64)	846 (17.54)	976 (18.45)
6.	Plant protection	52 (0.85)	54 (1.08)	91 (1.89)	58 (1.10)
7.	Land tax & Irrigation Cess	9 (0.14)	7 (0.14)	2 (0.04)	6 (0.11)
8.	Repair & Main- tenance Charges of Implements, Machinery and Buildings.	100 (1.62)	59 (1.15)	60 (1.24)	68 (1.29)
9.	Interest on working capital	288 (4.69)	231 (4.51)	228 (4.73)	245 (4.83)
10.	Other expenses	94 (1.53)	40 (0.78)	101 (2.09)	62 (1.17)
11.	Total cost Cost 'A'	<u>6147</u> (100.00)	<u>5118</u> (100.00)	<u>4824</u> (100.00)	<u>5289</u> (100.00)
12.	Interest on fixed capital (excluding land)	207	245	336	237
13.	Cost 'B1'	<u>6354</u>	<u>5363</u>	<u>5160</u>	<u>5526</u>
14.	Interest on land value	5588	6357	4626	5941
15.	Cost 'B' (Item 13 + Item 14)	<u>11942</u>	<u>11720</u>	<u>9786</u>	<u>11467</u>
16.	Imputed value of household labour	525	216	92	283
17.	Cost 'C' (Item 15 + Item 16)	<u>12467</u>	<u>11936</u>	<u>9878</u>	<u>11750</u>

Cost 'A'

Cost 'A' is estimated as Rs.5289/- per hectare which is higher than that of autumn paddy. The cost of hired human labour is

found to be Rs.2764/- per hectare which is 52% of the total Cost 'A'.

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

Table 10 - Percentage of hired human labour hours to total human labour hours.

Sex	Holding size class			All sizes
	Small	Medium	Large	
1	2	3	4	5
Male	32.52	26.63	31.10	28.88
Female	53.62	65.71	65.02	61.83
Total	86.14	92.34	96.12	90.71

Almost 91% of the total human labour hours employed is accounted by hired labour. Female hired labour accounted for more than that of the male labour hours.

The cost of animal labour comes to Rs.505/- per hectare accounting for 10% of the total Cost 'A'. The cost of animal labour is higher in the case of small scale cultivators. The cost of animal labour decreases as size class increases.

Nearly 4% of the total Cost 'A' comes under machine labour during the period under study. The cost of seed/seedlings is Rs.415/- per hectare which is 8% of the total Cost 'A'. Only a small percentage of the total Cost 'A' is spent towards plant protection measures.

The expenditure on repair and maintenance of implements and machinery is Rs.68/- per hectare during the period under report. The interest on working capital constitutes 5% of the total Cost 'A'.

Cost 'B1' and Cost 'B'

Cost 'B1' is estimated by adding the interest on fixed capital excluding the land value, to Cost 'A'. Cost 'B' is estimated by adding the interest on land value to Cost 'B1'. The interest on fixed capital excluding land, and the interest on land value are given in the following table.

Table 11 - Interest on fixed Capital, Cost 'B1' & Cost 'B'.

Item	(in Rs.)			
	Holding size class			All sizes
	Small	Medium	Large	
1	2	3	4	5
Cost 'A'	6147	5118	4824	5289
Interest on fixed Capital (excluding land)	207	245	336	237
Cost 'B1'	6354	5363	5160	5526
Interest on land value	5588	6357	4626	5941
Cost 'B'	11942	11720	9786	11467

The following table shows the comparison of the interest on fixed capital for the years 1981-82, 1983-84 and 1985-86.

Table 12 - Interest on fixed capital (1981-82, 1983-84 & 1985-86)

Period	Holding size class			
	Small	Medium	Large	All sizes
	2	3	4	5
1981-82	2802	2960	3240	3049
1983-84	4513	4172	4208	4198
1985-86	5795	6602	4962	6178

The interest on Fixed Capital has increased from Rs.3049/- per hectare in 1981-82 to Rs.6178/- per hectare in 1985-86. This is due to the increase in the value of land.

Cost 'C'

Cost 'C' is estimated by adding the imputed value of household human labour to Cost 'B'. The imputed value of household human labour is worked out to be Rs.283/- per hectare and Cost 'C' comes to Rs.11750/- per hectare. It is Rs.12467/- for small holdings and Rs.9878/- for large holdings.

The estimates of cost under various cost concepts relating to 1981-82, 1983-84 and 1985-86 are furnished below, for comparison.

Table 13 - Cost of cultivation of Winter Paddy

Concept of cost	Year	(Rs./hectare)			
		Holding size class			All sizes
		Small	Medium	Large	
1	2	3	4	5	6
Cost 'A'	1981-82	3751	3718	3971	3822
	1983-84	5360	4023	4859	4381
	1985-86	6147	5118	4824	5289
Cost 'B'	1981-82	6553	6678	7211	6871
	1983-84	9873	8195	9067	8579
	1985-86	11942	11720	9786	11467
Cost 'C'	1981-82	7182	6845	7393	7074
	1983-84	10235	8356	9172	8772
	1985-86	12467	11936	9878	11750

B. Output

The estimated value of product and by-product of winter paddy is furnished below. The total value of paddy and straw is Rs.6531/- per hectare during the period.

Table 14 - Value of product and by-product per hectare.

Product/by-product	(in Rs.)			
	Holding size class			All sizes
	Small	Medium	Large	
1	2	3	4	5
Paddy	6019	4585	5387	5064
Straw	1846	1392	1017	1467
Total	7865	5977	6404	6531

C. Cost of production of paddy per quintal

The cost of production of winter paddy per quintal is given below:-

The cost of producing one quintal of paddy is arrived at by dividing the cost of cultivation per hectare (after deducting value of straw) by the yield of paddy per hectare.

Table 15 - Cost of production of winter paddy per quintal
(in R.) for 1985-86.

Concept of Cost	Holding size class			All sizes
	Small	Medium	Large	
1	2	3	4	5
Cost 'A'	157	184	149	168
Cost 'B'	368	510	343	438
Cost 'C'	387	521	347	451

(iii) SUMMER (PUNJA) PADDY

352 holdings were selected for the study of cost of cultivation of summer paddy during 1985-86.

Table 16 - Area of summer paddy in the sample during 1985-86

Holding size class	No. of holdings selected	Area under the crop in the sample	Percentage to total area selected	Area per holding
1	2	3	4	5
Small	227	44.41	28.40	0.19
Medium	119	90.31	57.75	0.76
Large	6	21.66	13.85	3.61
All sizes	352	156.38	100.00	0.44

The operational area of the holdings selected is 156.38 hectare, the average size of holdings being 0.44 hect.

The estimated cost of different items per hectare of cost 'A', cost 'B' and cost 'C' are presented below.

Table 17A - Cost of cultivation per hectare of summer paddy for the year 1985-86 (Rs.)

Sl. No.	Components of different costs	Holding size class			All sizes
		Small	Medium	Large	
1.	2	3	4	5	6
1.	Hired human labour	2801(47.98)	3111(53.17)	2871(58.57)	2990(51.98)
2.	Animal labour	608(10.41)	330(5.64)	152(3.10)	384(6.68)
3.	Machine labour	242(4.15)	313(5.35)	218(4.45)	280(4.87)
4.	Seed/seedlings	397(6.80)	400(6.84)	500(10.20)	413(7.18)
5.	Farm yard manure & chemical fertilizers	1120(19.18)	984(16.82)	647(13.20)	976(16.97)

(cont..)

(table 17 contd.)

1	2	3	4	5	6
6. Plant protection		155(2.66)	249(4.25)	234(4.77)	220(3.82)
7. Land tax and irrigation cess		16(0.27)	23(0.39)	29(0.59)	21(0.36)
8. Repair & maintenance charges of implements, machinery & buildings		84(1.44)	31(0.53)	5(0.10)	79(1.37)
9. Interest on working capital		273(4.68)	276(4.72)	232(4.73)	269(4.68)
10. Other expenses		142(2.43)	134(2.29)	14(0.29)	120(2.09)
11. Total cost 'A'		<u>5838</u> (100.00)	<u>5851</u> (100.00)	<u>4902</u> (100.00)	<u>5752</u> (100.00)
12. Interest of fixed capital (excluding land)		258	234	150	240
13. Cost 'B1' (items 11 + 12)		<u>6096</u>	<u>6085</u>	<u>5052</u>	<u>5992</u>
14. Interest on land value		4801	3754	4917	4213
15. Cost 'B' (items 13 + 14)		<u>10897</u>	<u>9839</u>	<u>9969</u>	<u>10205</u>
16. Imputed value of household labour		870	299	54	427
17. Cost 'C' (items 15 + 16)		<u>11767</u>	<u>10138</u>	<u>10023</u>	<u>10632</u>

Hired human labour accounts for the major portion of the cost of paddy cultivation. The cost of hired human labour is Rs.2990/- per hectare during 1985-86. The percentage of hired human labour hours engaged in summer paddy cultivation to the total human labour hours is given below.

Table 18 - Percentage distribution of hired human labour hours to the total human labour hours during 1985-86.

Sex	Holding size class			All sizes
	Small	Medium	Large	
1	2	3	4	5
Male	28.27	26.92	33.45	28.06
Female	48.43	64.77	63.95	59.30
Total	76.70	91.69	97.40	87.36

It is seen that hired human labour hours account for 87% of the total human labour hours of summer paddy cultivation during the period under report. The cost of animal labour per hectare is seen to be Rs.384/- which is 7% of the total Cost 'A'. The cost of animal labour decreases as sizeclass increases. The cost of machine labour per hectare is Rs.280/- which worksout to 5% of the total Cost 'A'.

The expenditure on seed/seedlings is Rs.413/- per hectare; 7% of the total Cost 'A' comes under this item. The cost of farm yard manure and chemical fertilizers is seen to be Rs.976/- which is 17% of the total Cost 'A' for the period under report.

The expenditure on plant protection is found to be Rs.220/- which is about 4% of the total Cost 'A'. The amount spent on land tax and Irrigation Cess per hectare is very small. The expenditure on repair and maintenance of implements and machinery is seen to be Rs.79/-. The interest on working capital estimated at the rate of 10% per annum of the working capital for a period of 6 months is Rs.269/- the percentage of the total Cost 'A' being 5%. Rs.120/- that is 2% of the total Cost 'A' is spent for other expenses per hectare. Thus the total Cost 'A' for all the above items for the cultivation of summer paddy works out to Rs.5752/- per hectare.

Cost 'B1' and Cost 'B'

Cost 'B1' is estimated by adding the interest on fixed capital excluding land to Cost 'A'. Cost 'B' is estimated by adding the interest on land value to Cost 'B1'.

The interest on fixed capital excluding land and the interest on land value are furnished below.

Table 19 - Interest on fixed capital, Cost 'B1' & Cost 'B'

Concept of cost	Holding size class				(Rs.)
	Small	Medium	Large	All sizes	
	1	2	3	4	5
Interest on fixed capital excluding land	258	234	150	240	
Cost 'B1'	6096	6085	5052	5992	
Interest on land value	4801	3754	4917	4213	
Cost 'B'	10897	9839	9969	10205	

The interest on fixed capital excluding land is Rs.240/- per hectare. When land value is included, the interest comes to Rs.4213/- per hectare.

It is seen that Cost 'B' is Rs.10205/- per hectare during the period under report.

Cost 'C'

Cost 'C' per hectare is obtained by adding the imputed value of household labour to Cost 'B'.

It is seen that in the case of large scale cultivators, the family labour is less. Household members of small size holdings contribute much of their time for cultivation of paddy by engaging various types of related work.

The estimates of cost for the summer paddy cultivation under various cost concepts are given below.

Table 20 - Estimated cost per hectare for the summer paddy under various cost concepts.

Concept of cost	Holding size class				All sizes
	Small	Medium	Large	All sizes	
	1	2	3	4	5
Cost 'A'	5838	5851	4902	5752	
Cost 'B1'	6096	6085	5052	5992	
Cost 'B'	10897	9839	9969	10205	
Cost 'C'	11767	10138	10023	10632	

The general trend noted is that the cost per hectare decreases as the size class increases.

The estimates of costs relating to 1981-82, 1983-84 and 1985-86 are presented in the following table for comparison.

Table 21 Cost of cultivation of summer paddy

Concept of Cost	Year	Holding size class			All sizes
		Small	Medium	Large	
1	2	3	4	5	6
Cost 'A'	1981-82	3893	4729	4372	4325
	1983-84	5054	5017	5843	5272
	1985-86	5838	5851	4902	5752
Cost 'B'	1981-82	6980	8659	6582	7079
	1983-84	9257	8831	7748	8791
	1985-86	10897	9839	9969	10205
Cost 'C'	1981-82	7854	8986	6635	7385
	1983-84	9693	9062	7829	9036
	1985-86	11767	10138	10023	10632

B. Output

The subjoined table shows the value of paddy and straw obtained from summer paddy cultivation of 1985-86.

Table 22 - Value of product and by-product per hectare (1985-86).

Product /by-product	Holding size class			All sizes
	Small	Medium	Large	
1	2	3	4	5
Paddy	6465	6249	6498	6345
Straw	2115	1505	1412	1665
Total	8580	7754	7910	8010

The total value of product and by-product is found to be Rs.8010/- per hectare during the period under study.

C. Cost of production of paddy per quintal

Cost of producing one quintal of paddy is got 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 23 - Cost of production of summer paddy per quintal

Concept of cost	Holding size class			(Rs.)
	Small	Medium	Large	All sizes
	1	2	3	4
Cost 'A'	126	146	122	138
Cost 'B'	298	279	298	289
Cost 'C'	328	290	300	303

The cost of production of paddy per quintal is higher in medium size class as far as Cost 'A' and Cost 'B' are considered, while the cost is higher in small size class holdings in the case of Cost 'C'. In the case of Cost 'B', the costs are equal in small and large size holdings while it is lesser in medium size holdings.

2.2. COCONUT

In India about 60 percent of coconut is produced in Kerala. About 25% of the total cropped area in the State comes under coconut. The area under coconut and the average yield per hectare are given in the following table.

Table 24 - Area and average yield of coconut - 1985-86.

Area under coconut (Hectare)	Percentage to total cropped area	Average yield per hectare (No. of nuts)
1	2	3
704682	24.58	4792

Source:- Timely Reporting Survey estimates

Compared to 1984-85, the average yield of coconut per hectare has decreased and the percentage of area under coconut has increased.

Selected holdings

The details of the selected holdings of the crop coconut are given below:-

Table 25 - Area under coconut in each size class of the sample.

Holding size class	No. of selected holdings	Area under crop in the sample (hectare)	Percentage to total area	Area per holding (hectare)
1	2	3	4	5
Small	121	17.39	10.61	0.14
Medium	218	91.71	55.97	0.26
Large	41 49	54.76	33.42	0.82
All sizes	380	163.86	100.00	0.43

380 holdings were selected for the study of the cost of cultivation of coconut during the period under report. The area per holding was 0.43 hectare.

Number of bearing trees in the selected plots

The average number of bearing and non bearing trees per hectare in the selected plots were 151 and 79 respectively during the period under report. 66% of the total coconut trees in the selected plots was found to be bearing and the remaining non-bearing.

A. Cost of cultivation

The cost of cultivation of coconut estimated under the different concepts of cost is given below.

Cost A

Labour cost

It is estimated that Rs.1666/- is spent towards the labour cost during 1985-86. It is 50% of the total cost 'A'.

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

Table 26 - Percentage distribution of hired human labour hours to the total human labour hours.

Sex	Holding size class			All sizes
	Small	Medium	Large	
1	2	3	4	5
Male	63.43	74.07	82.78	75.25
Female	4.90	8.80	6.75	7.73
Total	68.33	82.87	89.53	82.98

As in the case of previous years, the percentage of hired human labour hours engaged in coconut cultivation increases with the increase in size class. It is 83% of the total labour hours during 1985-86.

Seed/seedlings

The cost towards seed/seedlings per hectare of selected coconut garden for new plantation is seen to be Rs.14/-. This is normally for under planting or infilling.

Organic Manure

The amount spent towards organic manure is Rs.961/- per

hectare. 29% of the total Cost 'A' accounts for the cost of Organic Manure.

Chemical fertilizers

The expenditure of Chemical fertilizers is found to be Rs.202/- per hectare during 1985-86 which is 6% of the total Cost 'A'.

Plant protection

The cost relating to plant protection is Rs.10/- per hectare which is negligible compared to total Cost 'A'.

Land tax and Irrigation Cess

During 1985-86 the expenditure on land tax and Irrigation Cess comes to Rs.7/- per hectare.

Repair and Maintenance charges of Implements, Machinery and Buildings.

The expenditure under this item 'Repair and Maintenance' is found to be Rs.43/- . About 1% of the total Cost 'A' accounts for this.

Other expenses

Other expenses amounts to Rs.135/- which accounts for 4% of the total Cost 'A'.

Interest on working capital

It is seen that Rs.299/- which is 9% of the total Cost 'A' accounts for the interest on working capital. The components of estimated Cost 'A' are given in the following table.

Table 27 -- Components of Cost 'A' per hectare of coconut cultivation (1985-86).

Sl. No.	Item	Cost per hectare (Rs.)
1	2	3
1.	Labour cost (including hired human labour, animal labour and machine labour)	1666 (49.93)
2.	Seed/seedlings	14 (0.42)

(cont.)

(table 27 contd.)

1	2	3
3.	Farm yard manure	961. (28.80)
4.	Chemical fertilisers	202 (6.05)
5.	Plant protection	10 (0.30)
6.	Land tax and Irrigation Cess	7 (0.21)
7.	Repair and Maintenance Charges of Implements, Machinery & Buildings	43 (1.29)
8.	Interest on working capital	299 (8.96)
9.	Other expenses	135 (4.04)
10.	Total Cost 'A'	3337 (100.00)

(Figures in brackets show the percentage total Cost 'A')

Cost 'B1'

Cost 'B1' is estimated by adding the interest on fixed capital (excluding land) to Cost 'A'. The estimated interest on fixed capital is Rs.532/- per hectare. Cost 'B1' works out to Rs.3869/- per hectare.

Cost 'B'

Cost 'B' is estimated by adding the interest on land value to Cost 'B1' which is given in the following table. Interest on land value is estimated at Rs.35908/-, making the Cost 'B' at Rs.39777/- per hectare.

Cost 'C'

By adding the imputed value of household labour, Cost 'C' is estimated. The following table gives the value of Cost 'C' per hectare.

Table 28 - Estimated value of Cost 'C' per hectare.

(Rs.)		
Sl. No.	Items	Cost per hectare
1	2	3
1.	Cost 'B'	39777
2.	Imputed value of household labour	241
3.	Cost 'C'	40018

The imputed value of household labour per hectare is seen to be Rs.241/- and cost 'C' for the cultivation of coconut per hectare is Rs.40018/-

Comparison of cost under various cost concepts

The estimated costs of cultivation under various cost concepts are given below.

Table 29 - Cost per hectare of coconut cultivation (maintenance) under various cost concepts

Concept of cost	Cost per hectare (Rs.)
1	2
Cost 'A'	3337
Cost 'B1'	3869
Cost 'B'	39777
Cost 'C'	40018

The cost of cultivation of coconut has increased considerably during 1985-86 compared to the previous years. Due to the increase in land value of coconut growing areas, the cost 'B' has also increased considerably.

Comparison of the costs under different concepts for three years 1981-82, 1983-84 and 1985-86 is presented below.

Table 30 - Cost of cultivation of coconut during 1981-86 (in Rs.)

Years	Cost 'A'	Cost 'B'	Cost 'C'
1	2	3	4
1981-82	2849	15291	15514
1983-84	2897	26187	26372
1985-86	3337	39777	40018

The cost of cultivation of coconut per hectare under cost 'A' has risen to Rs.3337/- in 1985-86 from Rs.2849/- in 1981-82. For a period of 4 years the percentage increase of cost 'A' works out to 17%. So also the increase is seen for cost 'B' the percentage increase being 160 and the percentage increase of cost 'C' being 158. The amount under cost 'B' shows such a large increase due to the increase in the interest of land accounted in fixed capital.

B. Output

The value of output of coconut is found to be Rs.8232/- per hectare during 1985-86 as detailed below.

Table 31 - Value of output per hectare

Output	Rs.
1	2
Product	7600
By-product	632
Total	8232

2.3. PEPPER

Pepper is one of the important spices exported from India. More than 90% of the country's production is from Kerala.

The total area under pepper and the average yield per hectare during the year 1985-86 are given in the following table.

Table 32 - Area under and average yield of pepper

Area under pepper (in hect.)	Average yield of pepper in Kg. per hect.	Percentage of area under pepper to the total cropped area
1	2	3
121565	272	4.24

[source : TRS estimates]

4 per cent of the gross area under crops is under pepper cultivation.

Selected holdings:

165 holdings were selected for studying the cost of cultivation of pepper during 1985-86. The area and the number of holdings selected for pepper are given in the following table.

Table 33 - Area under pepper in the sample

Holding size class	No. of selected holdings	Total area under the crop (hect)	Percentage to total area of selected holdings	Area per holding.
1	2	3	4	5
Small	148	7.89	49.34	0.05
Medium	15	5.47	34.21	0.36
Large	2	2.63	16.45	1.32
All sizes	165	15.99	100.00	0.09

The operational area under the crop in the selected holdings is 16 hectare during the period.

A. Cost of cultivation of pepper

The different concepts of cost estimated for the crop pepper are discussed in the following paragraphs. The components of cost 'A' per hect. of pepper cultivation for the year 1985-86 are given in the following table.

Table 34 - Components of cost 'A' per hectare of pepper cultivation

Sl.No.	Items	Cost per hect. during 1985-86
1	2	3
1.	Labour cost excluding household labour	1509 (64.30)
2.	Seed/seedlings	36 (1.53)
3.	Farmyard manure	351 (14.96)
4.	Chemical fertilizers	80 (3.40)
5.	Plant protection	4 (0.17)
6.	Land tax and irrigation cess	4 (0.17)
7.	Repair & maintenance of implements, machineries and buildings	73 (3.11)
8.	Interest on working capital	206 (8.78)
9.	Other expenses	84 (3.58)
10.	Total cost 'A'	2347(100.00)

[figures in brackets give the percentage to total cost 'A']

Cost 'A'

Labour cost:

The expenditure towards the labour cost is estimated as Rs.1444/- during the year 1985-86. ^{hired human}

62 per cent of the cost 'A' accounts for this item. Hired human labour is the major component of labour. The percentage of hired human labour hours engaged in pepper cultivation to the total labour hours is shown hereunder.

Table 35 - Percentage distribution of hired human labour hours to total human labour hours

Sex	holding size class			
	Small	Medium	Large	All sizes
1	2	3	4	5
Male	60.91	39.70	78.62	55.16
Female	1.62	6.27	14.13	3.70
Total	62.53	45.97	92.75	58.86

It is seen that 59% of the total human labour hours accounted 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.

The cost towards seed/seedlings (cuttings) is Rs.36/- per hectare nearly 2% of the total cost 'A'. This amount is spent for new planting in pepper growing plots. Rs.351/- is spent for the cost of farmyard manure which is 15% of the total cost 'A'. Rs.80/- is spent towards the cost of chemical fertilizers which is 3% of the total cost 'A'. The expenditure towards plant protection is found to be Rs.4/- per hectare. The expenditure towards land revenue and irrigation cess is Rs.4/- which is only a negligible per cent of the total cost 'A'. The cost towards repair and maintenance charges

of implements and machinery contributes 3% of the total cost 'A' (Rs.73/- per hect.) Rs.206 is seen as the interest on working capital. 9% of the total cost 'A' constitutes towards this item. 4% of the total cost 'A' ie.Rs.84 is spent towards 'other expenses'.

Cost 'B1'

The following table gives cost 'B1' which is estimated by adding the interest on fixed capital to cost 'A'.

Table 36 - Estimated cost 'B1' per hect (Rs.)

Sl.No.	Items	Cost per/hect.1985-86
1	2	3
1.	Cost 'A'	2347
2.	Interest on fixed capital excluding land	564
3.	Cost 'B1'	2911

Cost 'B'

Cost 'B' is obtained by adding interest on fixed capital to cost 'B1'.

Table 37 - Estimated cost 'B' per hectare

Sl.No.	Items	Cost per hect.(Rs.)
1	2	3
1.	Cost B1	2911
2.	Interest on land value	54826
3.	Cost 'B'	57737

Cost 'B' for the cultivation of pepper per hectare comes to Rs. 57737/-

Cost 'C'

When the imputed value of household labour is added to cost 'B', we get cost 'C'. The following table gives the cost 'C' per hectare.

Table 38 - Estimated cost 'C' per hectare (Rs.)

Sl.No.	Items	Cost per hect.(1985-86)
1	2	3
1.	Cost 'B'	57737
2.	Imputed value of household human labour	648
3.	Cost 'C'	58385

B. Value of output

The value of pepper is found to be Rs.11713/- per hectare during the period under study.

2.4 BANANA

Banana is an important fruit crop of Kerala. The area and average yield of banana during 1985-86 are given below:-

Table 39 - Area and average yield of banana during 1985-86

Area under the crop (hect.)	Average yield per hect.(Kg.)	Percentage of area under crop to total cropped area
1	2	3
16500	13072	0.58

[source : TRS estimates]

Selected holdings

A sample of 175 holdings were selected for studying the cost of cultivation of Banana during 1985-86.

The details of the holdings are given in the following table.

Table 40 - Area and number of holdings selected

Size class	No. of selected holdings	Total area under the crop (hect.)	Percentage to total area of selected holdings	Area per holding
1	2	3	4	5
Small	156	12.88	65.85	0.08
Medium	19	6.68	34.15	0.35
Large	-	-	-	-
All sizes	175	19.56	100.00	0.11

The operational area under the crop coming under the selected holdings is 19.56 hectare, for the year 1985-86. The average size of holding is 0.11 hectare.

A. Cost of cultivation of banana

The cost of cultivation of banana estimated under three different concepts of cost, Cost 'A', cost 'B' and cost 'C' are presented below.

Cost 'A'

Labour cost:- Labour cost for the cultivation of banana per hectare is estimated to be Rs.6187/-. About 28% of the total cost 'A' comes under this item. The major portion of the labour cost is constituted by hired human labour. The percentage of hired human labour hours engaged in banana cultivation to total human labour hours is given in the following table.

Table 41 - Percentage distribution of hired human labour hours to total human labour hours

Sex	holding size class			Total
	Small	Medium	Large	
1	2	3	4	5
Male	49	69	Nil	55
Female	6	5	"	6
Total	55	74	"	61

The proportion of hired human labour increases as size class increases.

Seed/seedlings

The cost of seed/seedlings per hectare is found to be Rs.2787/- that is 12% of the total cost 'A'.

Farm yard manure:- 23 per cent of the total cost 'A' ie., Rs. 5044/- is expended for the application of farm yard manure per hectare.

Chemical fertilisers:- The expenditure in the case of chemical fertilizers is Rs.2998/- which is 13 per cent of the total cost 'A'.

Plant protection:- Only a small per cent of the total cost 'A' accounts towards the cost of pesticides and insecticides. Rs.148/- is spent towards this cost.

Land tax and irrigation cess:- The expenditure incurred towards this item is Rs.14/-per hectare.

Repair and maintenance of implements and machinery:- The cost towards this item is Rs.63/- the percentage to total cost 'A' of which is negligible.

Interest on working capital:- The interest on working capital is Rs.2029/- per hectare, 9% of the total cost 'A' accounts for this item.

Other expenses:- 14 per cent of the total cost 'A' (Rs.3127/-) is spent for other expenses.

The estimated cost under different items per hectare and their corresponding percentage to total cost 'A' are furnished in the following table.

Table 42 - Components of cost 'A' per hectare of banana

Sl.No.	Item	Cost per hect.(1985-86)
1	2	3
1.	Labour cost (excluding household labour)	6187 (27.63)
2.	Seed/seedlings	2787 (12.44)
3.	Farm yard manure	5044 (22.52)
4.	Chemical fertilizers	2998 (13.39)
5.	Plant protection	148 (0.66)
6.	Land tax and irrigation cess	14 (0.06)
7.	Repair and maintenance of implements machinery and buildngs.	63 (0.28)
8.	Interest on working capital	2029 (9.06)
9.	Other expenses	3127 (13.96)
10.	Total cost 'A'	22397(100.00)

[figures in brackets give the percentage to total cost 'A']

Cost 'B1'

Cost 'B1' is estimated by adding the interest on fixed capital (excluding land) to cost 'A' and presented below:-

Table 43 - Estimated value of cost 'B1' per hectare (in Rs.)

Sl.No.	Items	Cost per hect (1985-86)
1	2	3
1.	Cost 'A'	22397
2.	Interest on fixed capital (excluding land)	614
3.	Cost 'B1'	23011

Cost 'B'

The following table shows cost 'B' which is arrived at by adding the imputed value of interest on land value to cost 'B1'.

Table 44 - Estimated value of cost 'B' per hectare (in Rs.)

Sl.No.	Items	cost per hect.(1985-86)
1	2	3
1.	Cost 'B1'	23011
2.	Interest on land value	26746
3.	Cost 'B'	49757

Cost 'C'

The imputed value of household human labour is added to cost 'B' to get cost 'C'.

The cost towards household labour is estimated at the rate of hired human labour. Imputed value of household human labour comes to Rs.3300/- and cost 'C' for the cultivation of banana per hectare is estimated as Rs.53057/- as seen from the following table.

Table 45 - Estimated value of cost 'C' per hectare (Rs.)

Sl.No.	Items	cost per hect.(1985-86)
1	2	3
1.	Cost 'B'	49757
2.	Imputed value of household labour	3300
3.	Cost 'C'	53057

The cost of cultivation of banana under different concepts during 1985-86 are compared with the corresponding costs during the previous two years 1983-84 and 1984-85 and given in the table below.

Table 46 - Cost of banana cultivation under various cost concepts during the years 1985-86 - 1984-85 and 1983-84

Concept of cost	cost per hectare (Rs.)		
	1985-86	1984-85	1983-84
1	2	3	4
Cost 'A'	22397	13503	14675
Cost 'B'	49757	45549	52007
Cost 'C'	53057	47698	53712

A decreasing trend is noted in all the three types of costs in the year 1984-85 from 1983-84. The costs for the year 1985-86 show an increasing trend when compared with those in the year 1984-85. When the figures in 1985-86 are compared to those in 1983-84 it is seen that cost 'A' only shows an increase while cost 'B' and cost 'C' show a declining trend. This may be due to the less demand of land during 1985-86.

B. Value of output

Value of product per hectare is Rs.38815/- as against Rs.24991/- in 1983-84 and Rs.24031 in 1984-85.

CHAPTER 3 - SUMMARY OF FINDINGS

Costs of cultivation of important crops viz. paddy (autumn, winter and summer) coconut, pepper and banana are worked out by analysing the data collected through the survey (1985-86).

(i) Autumn paddy:

Cost 'A' that is cash and kind expenses (paid out costs) actually incurred by the cultivators for the cultivation of autumn paddy during the year 1985-86, works out to Rs.4290/- per hectare. About 60% of the cost accounts for labour cost which includes human labour, animal labour and machine labour. The amount spent for farm yard ^{manure} and chemical fertilizers comes to about 21%.

(ii) Winter paddy:

Cost 'A' for the cultivation of winter paddy is estimated at Rs.5289/- per hectare of which labour cost constitutes about 65%. About 18% of this cost relates to farm yard manure and chemical fertilizers.

(iii) Summer paddy:

In the case of summer paddy, the cost 'A' per hectare comes to Rs.5752/-. Major share of this amount (about 64%) goes to labour cost. Of this, 17%, is spent on the application of farm yard manure and chemical fertilizers.

(iv) Coconut:

Cost 'A' per hectare for the cultivation of coconut works out to be Rs.3337/-. About half of this cost relates to labour and one-third relates to farm yard manure and chemical fertilizers.

(v) Pepper:

For the cultivation of pepper, cost 'A' per hectare comes to Rs.2347/- the labour cost and the cost on farm yard manure and chemical fertilizers being 64% and 18% of cost 'A' respectively.

(vi) Banana:

Cost 'A' in respect of banana is estimated at Rs.22397/-. Labour cost constitutes about 28%. Manuring accounts for 36% of the cost. In the case of banana, the cost for seed and seedlings is also notable which constitutes about 12%.

Appendix - 1 Cost of cultivation per hectare of autumn paddy
for the year 1985-86

Sl. No.	Components of different cost concepts	Small	Medium	Large	All sizes
1	2	3	4	5	6
1.	Hired human labour	2749	1592	2849	2076
2.	Animal labour	420	229	178	280
3.	Machine labour	154	186	243	182
4.	Seed/seedlings	373	344	281	344
5.	Farm yard manure	615	445	202	469
6.	Chemical fertilizers	363	418	624	424
7.	Plant protection	43	35	72	41
8.	Land tax & irrigation cess	4	5	2	5
9.	Repair & maintenance charges of implements, machinery & buildings	65	364	55	230
10.	Interest on working capital	237	164	230	193
11.	Other expenses	27	37	146	46
12.	Total cost 'A'	5050	3819	4882	4290
13.	Interest on fixed capital (excluding land)	256	316	743	312
14.	Cost 'B1'	5306	4135	5625	4602
15.	Interest on land value	6580	5606	2156	5516
16.	Cost 'B'	11886	9741	7781	10118
17.	Imputed value of household labour	334	152	89	199
18.	Cost 'C'	12220	9893	7870	10317

Appendix -2 Percentage distribution of components of cost 'A' of
autumn paddy cultivation for the year 1985-86

Sl.No.	Items	Small	Medium	Large	All sizes
1	2	3	4	5	6
1.	Hired human labour	54.44	41.69	58.36	48.39
2.	Animal labour	8.32	5.99	3.65	6.53
3.	Machine labour	3.05	4.87	4.98	4.24
4.	Seed/seedlings	7.39	9.01	5.76	8.02
5.	Farm yard manure	12.18	11.65	4.14	10.93
6.	Chemical fertilizers	7.18	10.95	12.78	9.88
7.	Plant protection	0.85	0.92	1.47	0.96
8.	Land tax & irrigation cess	0.06	0.13	0.14	0.12
9.	Repair & maintenance charges of implements, machinery & buildings	1.29	9.53	1.13	5.36
10.	Interest on working capital	4.69	4.29	4.71	4.50
11.	Other expenses	0.55	0.97	2.98	1.07
12.	Total cost 'A'	100.00	100.00	100.00	100.00

**Appendix - 3 Cost of cultivation per hectare of winter paddy
for the year 1985-86**

Sl. No.	Components of different cost concepts	Small	Medium	Large	All sizes
1	2	3	4	5	6
1.	Hired human labour	3051	2712	2398	2764
2.	Animal labour	847	495	315	505
3.	Machine labour	126	173	418	190
4.	Seed/seedlings	490	393	365	415
5.	Farm yard manure	639	484	232	494
6.	Chemical fertilizers	451	470	614	482
7.	Plant protection	52	54	91	58
8.	Land tax & irrigation cess	9	7	2	6
9.	Repair & maintenance charges of implements, machinery & buildings	100	59	60	68
10.	Interest on working capital	288	231	228	245
11.	Other expenses	94	40	101	62
12.	Total cost 'A'	6147	5118	4824	5289
13.	Interest on fixed capital (excluding land)	207	245	336	237
14.	Cost 'B1'	6354	5363	5160	5526
15.	Interest on land value	5588	6357	4626	5941
16.	Cost 'B'	11942	11720	9786	11467
17.	Imputed value of household labour	525	216	92	283
18.	Cost 'C'	12467	11936	9878	11750

**Appendix - 4 Percentage distribution of components of cost 'A'
of winter paddy cultivation for the year 1985-86.**

Sl.No.	Items	Small	Medium	Large	All sizes
1	2	3	4	5	6
1.	Hired human labour	49.63	52.99	49.71	52.26
2.	Animal labour	13.78	9.67	6.52	9.55
3.	Machine labour	2.05	3.38	8.67	3.59
4.	Seed/seedlings	7.97	7.68	7.57	7.85
5.	Farm yard manure	10.40	9.46	4.81	9.34
6.	Chemical fertilizers	7.34	9.18	12.73	9.11
7.	Plant protection	0.85	1.06	1.89	1.10
8.	Land tax & irrigation cess	0.14	0.14	0.04	0.11
9.	Repair & maintenance charges of implements, machinery & buildings	1.62	1.15	1.24	1.29
10.	Interest on working capital	4.69	4.51	4.73	4.63
11.	Other expenses	1.53	0.78	2.09	1.17
12.	Total cost 'A'	100.00	100.00	100.00	100.00

**Appendix - 5 Cost of cultivation per hectare of summer paddy
for the year 1985-86**

Sl. No.	Components of different cost concepts	Small	Medium	Large	All sizes
1	2	3	4	5	6
1.	Hired human labour	2801	3111	2871	2990
2.	Animal labour	608	330	152	384
3.	Machine labour	242	313	218	280
4.	Seed/seedlings	397	400	500	413
5.	Farm yard manure	619	283	129	357
6.	Chemical fertilizers	501	701	518	619
7.	Plant protection	155	249	234	220
8.	Land tax & irrigation cess	16	23	29	21
9.	Repair & maintenance charges of implements, machinery & buildings	84	31	5	79
10.	Interest on working capital	273	276	232	269
11.	Other expenses	142	134	14	120
12.	Total cost 'A'	5838	5851	4902	5752
13.	Interest on fixed capital (excluding land)	258	234	150	240
14.	Cost 'B1'	6096	6085	5052	5992
15.	Interest on land value	4801	3754	4917	4213
16.	Cost 'B'	10897	9839	9969	10205
17.	Imputed value of household labour	870	299	54	427
18.	Cost 'C'	11767	10138	10023	10632

**Appendix - 6 Percentage distribution of components of cost 'A' of
summer paddy cultivation for the year 1985-86**

Sl.No.	Items	Small	Medium	Large	All sizes
1	2	3	4	5	6
1.	Hired human labour	47.98	53.17	58.57	51.98
2.	Animal labour	10.41	5.64	3.10	6.68
3.	Machine labour	4.15	5.35	4.45	4.87
4.	Seed/seedlings	6.80	6.84	10.20	7.18
5.	Farm yard manure	10.60	4.84	2.63	6.21
6.	Chemical fertilizers	8.58	11.98	10.57	10.76
7.	Plant protection	2.66	4.25	4.77	3.82
8.	Land tax & irrigation cess	0.27	0.39	0.59	0.36
9.	Repair & maintenance charges of implements, machinery & buildings	1.44	0.53	0.10	1.37
10.	Interest on working capital	4.68	4.72	4.73	4.68
11.	Other expenses	2.43	2.29	0.29	2.09
12.	Total cost 'A'	100.00	100.00	100.00	100.00

Appendix - 7 Cost of cultivation per hectare of coconut for the year 1985-86

Sl. No.	Components of different cost concepts	Small	Medium	Large	All sizes
1	2	3	4	5	6
1.	Hired human labour	1557	1608	1510	1570
2.	Animal labour	23	32	66	42
3.	Machine labour	33	66	40	54
4.	Seed/seedlings	24	19	3	14
5.	Farm yard manure	1104	968	905	961
6.	Chemical fertilizers	345	145	252	202
7.	Plant protection	2	17	-	10
8.	Land tax & irrigation cess	8	5	9	7
9.	Repair & maintenance charges of implements, machinery & buildings	25	53	36	43
10.	Interest on working capital	329	300	287	299
11.	Other expenses	202	150	89	135
12.	Total cost 'A'	3652	3363	3197	3337
13.	Interest on fixed capital (excluding land)	531	543	508	532
14.	Cost 'B1'	4183	3906	3705	3869
15.	Interest on land value	37444	32181	41664	35908
16.	Cost 'B'	41627	36087	45369	39777
17.	Imputed value of household labour	505	262	121	241
18.	Cost 'C'	42132	36349	45490	40018

Appendix - 8 Cost of cultivation per hectare of pepper for the year 1985-86

Sl. No.	Components of different cost concepts	Small	Medium	Large	All sizes
1	2	3	4	5	6
1.	Hired human labour	1889	1219	675	1444
2.	Animal labour	2	-	-	2
3.	Machine labour	48	113	-	63
4.	Seed/seedlings	23	70	-	36
5.	Farm yard manure	490	251	148	351
6.	Chemical fertilizers	32	88	205	80
7.	Plant protection	3	5	-	4
8.	Land tax & irrigation cess	3	5	2	4
9.	Repair & maintenance charges of implements, machinery & buildings	75	70	69	73
10.	Interest on working capital	260	184	103	206
11.	Other expenses	109	89	-	84
12.	Total cost 'A'	2934	2094	1202	2347
13.	Interest on fixed capital (excluding land)	631	495	121	564
14.	Cost 'B1'	3565	2589	1323	2911
15.	Interest on land value	44199	61324	73194	54826
16.	Cost 'B'	47764	63913	74517	57737
17.	Imputed value of household labour	882	584	76	648
18.	Cost 'C'	48646	64497	74693	58385

Appendix - 9 **Cost of cultivation per hectare of banana for the year 1985-86**

Sl. No.	Components of different cost concepts	Small	Medium	Large	All sizes
1	2	3	4	5	6
1.	Hired human labour	5409	6146	-	5661
2.	Animal labour	76	108	-	87
3.	Machine labour	507	308	-	439
4.	Seed/seedlings	2589	3168	-	2787
5.	Farm yard manure	5280	4591	-	5044
6.	Chemical fertilizers	3282	2449	-	2998
7.	Plant protection	120	201	-	148
8.	Land tax & irrigation cess	15	13	-	14
9.	Repair & maintenance charges of implements, machinery & buildings	55	112	-	63
10.	Interest on working capital	2055	1978	-	2029
11.	Other expenses	3292	2807	-	3127
12.	Total cost 'A'	22680	21881	-	22397
13.	Interest on fixed capital (excluding land)	572	847	-	614
14.	Cost 'B1'	23252	22728	-	23011
15.	Interest on land value	22927	34109	-	26746
16.	Cost 'B'	46179	56837	-	49757
17.	Imputed value of household labour	4175	1611	-	3300
18.	Cost 'C'	50354	58448	-	53057

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