

DES. 5800

GOVERNMENT OF KERALA

REPORT ON COST OF CULTIVATION OF IMPORTANT
CROPS IN KERALA
FOR
1986-87

DEPARTMENT OF ECONOMICS AND STATISTICS

REPORT ON TRIVANDRUM

CROPS IN KERALA

FOR

1986-87

GOVERNMENT OF KERALA

PRINTED AND BOUND AT THE GOVERNMENT PRESS, TRIVANDRUM



The first part of the report
 deals with the general
 conditions of the country
 and the progress of the
 various departments
 during the year.
 It is followed by a
 detailed account of the
 work done in each
 department, and a
 summary of the results
 achieved.
 The report concludes
 with a list of the
 names of the
 officers and
 employees who
 have been
 engaged in the
 work during the
 year.

P R E F A C E

This report is based on the seventh round of the survey on cost of cultivation of important crops in Kerala, which was conducted during 1986-87. The crops studied during this round were Paddy (3 seasons) coconut, tapioca and banana.

The tabulation of data was done at the district level and the consolidation was done at headquarters. The report was prepared ^{by} Smt. J. Vijayamma, Research Officer under the supervision of the Joint Director, Survey and Design.

Trivandrum,
21-10-1988.

K. BALAKRISHNAN NAIR
DIRECTOR

1885

The Commission of the ...
and the ...
The Commission of the ...
and the ...
The Commission of the ...
and the ...

...

...

C O N T E N T S

Chapter 1	-	General
Chapter 2	-	Results of the survey
2.1	-	Paddy
		(1) Autumn Paddy
		(ii) Winter Paddy
		(iii) Summer Paddy
2.2	-	Coconut
2.3	-	Tapioca
2.4	-	Banana
Chapter 3	-	Summary of findings
Appendix 1-9	-	Detailed Tables

Report on the cost of cultivation of important
crops in Kerala during 1986-87

Chapter I - GENERAL

1.1 Introduction

Government of Kerala accorded sanction for conducting annual surveys on cost of cultivation of important crops in the state from 1980-81 onwards, in order to fill up the data gap in the cost aspect in administering various agricultural development schemes. The present report relates to the seventh round of the survey, conducted during 1986-87.

The following crops were covered in the study.

- (i) Paddy (3 seasons)
- (ii) Coconut
- (iii) Tapioca
- (iv) Banana

1.2 Objectives

The main objectives of the survey are:

- (i) to estimate the cost of cultivation per hectre of different crops selected.
- (ii) to compare the costs under different concepts, over a period.

1.3 Staff

The following staff were engaged in the survey

<u>Category</u>	<u>Number</u>
<u>Field</u> : U.D. Investigators	- 14
L.D. Investigators	- 28
<u>Head Office</u> : Research Assistant	- 1
U.D. Compiler	- 1

1.4 Period of the survey

The period of the survey was the Agricultural year 1986-87 (1-7-1986 to 30-6-87).

1.5 Design of the survey

The methodology, design of the survey, taluks selected etc. were the same as that followed in the previous round. The present survey was conducted in the same ³⁸taluks, which ~~was~~ important growing centres of the crops under study. First two villages chosen for TRS 1985-86 in each taluk were selected for the study. The sample holding consisted of a key plot together with all the other plots

Contd....

(both wet & dry), possessed by the same cultivator within the taluk. The frame for the selection of key plots consisted of the plots selected for crop cutting experiments for the respective crops during 1985-86. The selection of key plots was done using simple random sampling method.

The number of holdings selected for each crop in a taluk was as follows.

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

In the case of Autumn/Winter paddy, if the required number of key plots (5) was not available in a village, the remaining number of plots were selected from the respective list of wet land plots in the village.

In the case of summer paddy, if sufficient number of holdings was not available in the selected villages, the balance was selected from other T.R.S. villages of 1985-86. If the holdings selected for Autumn Paddy (wet land) contained area under the other three crops also, fresh selection was not attempted to for these crops. In such cases the holdings selected for paddy were taken for these crops also. If sufficient number of holdings were not obtained for coconut, from the selected paddy holdings, the balance was selected from the plots selected for crop cutting experiment (85-86) on coconut. In the case of banana, the balance was selected purposively either from within the sample villages or 1985-86 TRS villages.

A holding would be considered for the study only if it contains at least 25 cents under the crop in the case of paddy and tapioca and 10 cents in the case of Banana. For coconut, 25 trees (bearing & non-bearing together) were necessary in the holdings for consideration.

The holding size group of a crop was determined on the basis of the area under the crop under study in the holding as shown below.

<u>Size group</u>	<u>Holding size</u>	
	<u>Paddy</u>	<u>Other crops</u>
1. Small	< 0.40 hectare	< 0.2 hectare
2. Medium	0.40 to < 2 hectare	0.20 to < 0.80 hectare
3. Large	≥ 2 hectare	≥ 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 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.

1.7 Field work

Field work was done by 38 investigators posted at the rate of one investigator in each taluk. 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 Analysis

The compilation and tabulation were done at the district level by the investigators posted for the survey. Five compilers were posted in the headquarters for the consolidation of the data at the state level. Report was also prepared at the headquarters.

1.9 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.

Contd....

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 fertilizers
- (vii) Plant protection
- (viii) Land tax
- (ix) Irrigation cess
- (x) Repair and maintenance charges of implements machinery and buildings
- (xi) Interest on working capital
- (xii) Other expenses

Cost 'B'

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

Cost 'B'

Cost 'B' + 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 from home stock are used in the production process. While computing the cost of cultivation it is necessary to impute the value of these inputs. The procedure used for the imputation of values 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 owned and exchange human labour.
- (iii) Owned and exchange animal labour - The rate of charges 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 (home grown) seed has been imputed at the prices prevalent in the village concerned at the time of sowing.

- (vii) Farm produced manure - Imputed at the rates prevalent in the Villages concerned.
- (viii) Interest on owned fixed capital - Interest on the present value of fixed assets such as land, farm, building, implements, machinery, irrigation structure, equipment and livestock (only draught 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 (ie. rent land tax etc) incurred during the period of cultivation.
- (x) Payments in kind - The payment in kind have been evaluated at the market prices prevalent in the villages at the time of payment. 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.

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

(d) Procedure for evaluation of farm assets

- (i) Own farm buildings (cattlesheds, storage shed etc.) - Evaluated at prices prevailing in the villages
- (ii) Implements and other machinery - Evaluated at 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 crops selected for this round of study were paddy (autumn, winter and summer) coconut, tapioca and banana.

They are discussed hereunder

2.1 Paddy

Paddy is cultivated during the three seasons autumn, winter and summer. The total area under paddy in 1986-87 was 6.64 lakh hectares and rice production is estimated at 11.34 lakh tonnes.

The area under paddy during the three seasons are given below:

Table 1. Area under paddy during the year 1986-87

(in lakh hectare)

Season	Area	Percentage to total cropped area
1	2	3
Autumn	2.87	10.00
Winter	2.97	10.35
Summer	0.80	2.79
Total	6.64	23.14

(Source: TRS estimate for the year 1986-87)

The gross area under paddy was 23% of the total cropped area as seen from the table.

Table 2. Percentage of area under paddy in each season to the total area under paddy during 1986-87

Season	Percentage
1	2
Autumn	43.22
Winter	44.73
Summer	12.05
Total	100.00

43% of the gross area under paddy comes under autumn, 45% under winter and 12% under summer. The rice production is seen to be 11.34 lakh tonnes during the period under study.

Contd...

The production of rice during the three seasons is given below:

Table 3. Production of rice (in lakh tonnes) during 1986-87

Season 1	Production of rice 2	Percentage 3
Autumn	4.68	41.27
Winter	4.97	43.83
Summer	1.69	14.90
Total	11.34	100.00

Source: TRS estimates (figures in brackets give the percentage of production of rice in each season to the total production of rice).

The average yield rate of paddy per hectare in each season is given in the following table:

Table 4 Average yield of paddy 1986-87

Season 1	Average yield (tonne/ha) 2
Autumn	2.5
Winter	2.6
Summer	3.2

The average yield rate of summer paddy is normally the highest.

Area Irrigated

Area Irrigated

About 70% of the total irrigated cropped area is under paddy as can be seen from the table below:

Table 5 Irrigated paddy area during 1986-87

(lakh ha)

Paddy irrigated 1	Irrigated Total cropped area 2	Percentage 3
2.98	4.26	69.95

(1) Autumn (virippu) Paddy

As in the case of the previous rounds in this round also 10 holdings were selected from each taluk. Total number of holdings in all the ¹⁰ samples taken for survey is 370. Distribution of sample holdings according to size class of holding is presented in the following table.

Table 6. Area under Autumn Paddy during 1986-87

Holding size class	No. of selected holdings	Area under the crop in the sample (hectare)	Percentage	Area per holding (ha)
1	2	3	4	5
Small	227	48.42	26.29	0.21
Medium	134	93.00	50.50	0.69
Large	9	42.74	23.21	4.75
Total	370	184.16	100.00	0.50

The average area per sample holding under study is 0.50 hectare.

A. Cost of cultivation

The cost of cultivation is worked out on the basis of the concepts given in the previous paragraphs. The estimated cost of cultivation of different items per hectare of autumn paddy is given below:

Table 7 Cost of cultivation per hectare of Paddy (Autumn) during the year 1986-87

Sl. No.	Components of cost	Holding size class			All sizes
		Small	Medium	Large	
1	Hired Human Labour	3166 (52.90)	2590 (51.27)	1755 (43.46)	2527 (50.48)
2	Animal Labour	585 (9.77)	512 (10.13)	194 (4.80)	428 (8.55)
3	Machine Labour	190 (3.17)	244 (4.83)	241 (5.97)	229 (4.58)
4	Seed/Seedlings	404 (6.75)	358 (7.09)	274 (6.79)	351 (7.01)
5	Farm yard manure & chemical fertilizers	1138 (19.02)	932 (18.45)	1020 (25.25)	1007 (20.12)
6	Plant protection	63 (1.05)	39 (0.77)	83 (2.06)	55 (1.09)
7	Land tax & Irrigation cess	6 (0.10)	6 (0.12)	10 (0.25)	6 (0.12)
8	Repair & Maintenance charge of implements machinery & building	100 (1.67)	86 (1.70)	92 (2.28)	87 (1.74)
9	Interest on working capital	280 (4.68)	236 (4.67)	191 (4.73)	238 (4.75)
10	Other expenses	53 (0.89)	49 (0.97)	178 (4.41)	78 (1.56)
11	Cost 'A' (1 to 10)	5985 (100.00)	5052 (100.00)	4038 (100.00)	5006 (100.00)
12	Interest on fixed capital	297	277	187	233
13	Cost 'B' 1 (11 + 12)	6282	5329	4225	5239
14	Interest on land value	6399	6457	2728	5961
15	Cost 'B' (13+14)	12681	11786	6953	11200
16	Imputed value of household labour	441	300	88	288
17	Cost 'C' (15+16)	13122	12086	7041	11488

(Figures in brackets give the percentage to total cost 'A')

Total Cost 'A' of cultivation of Autumn paddy per hectare works out to Rs.5006/- From the table it is seen that about 50% of the total cost 'A' is towards hired human labour. 9% goes for animal labour and 5% towards machine labour. The percentage of hired human labour hours to total human labour hours engaged in Autumn paddy, cultivation is furnished in the following table.

Table 8 Percentage 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	28.10	34.28	16.34	29.17
Female	59.23	56.16	60.27	61.39
Total	37.33	90.44	36.61	90.56

About 91% of total human labour hours relates to hired human labour.

About 7% of the cost 'A' is accounted for seed/seedlings and 20% is for Farm yard manure and chemical Fertilizers. Only a small percentage of cost 'A' is spent towards plant protection and a negligible amount towards land tax and irrigation cess. The interest on working capital is about 5% of the total Cost 'A' and the expenditure towards other expenses is only about 2%.

Cost B1

Cost 'B1' is estimated by adding the interest on Fixed Capital (excluding land) to Cost 'A'. It works out to Rs.5239 for 1986-87 as against Rs.4602/- in 1985-86.

The interest on land value is found to be Rs.5961/- during the period and it is seen that the interest on land value is minimum in the case of large cultivators. The same trend was seen in the previous rounds also.

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'. Cost 'B' is found out to be Rs.11200/- and Cost 'C' as Rs.11488/- The imputed value of household human labour is Rs.288/- per hect. The estimates of cost under three major concepts relating to the year under study and to the previous year are given below.

Table 9 Cost of Cultivation of (autumn) paddy Rs./hect.
for 1985-86 and 1986-87

Concept of cost	Year	Holding size class			
		Small	Medium	Large	All sizes
1	2	3	4	5	6
Cost 'A'	1985-86	5050	3819	4882	4290
	1986-87	5985	5052	4038	5006
Cost 'B'	1985-86	11886	9741	7781	10118
	1986-87	12681	11786	6953	11200
Cost 'C'	1985-86	12220	9893	7870	10317
	1986-87	13122	12086	7041	11488

Compared to the previous year, the cost of cultivation has increased during 1986-87 and the percentage of increase being 17%, 11% and 11% in the case of Cost 'A', Cost 'B' and Cost 'C' respectively.

B. Output

The values of product and by product per hectare for the period under report are seen to be Rs.4618/- and Rs.1260/- respectively. The total value of product and by-product for each size class is given in the following table.

Table 10 Value of product and by-product per hect
(in Rs.) during 1986-87

Product/ by-product	Holding size class			
	Small	Medium	Large	All sizes
1	2	3	5	6
Paddy	4842	4635	4329	4618
Straw	2181	1165	425	1260
Total	7023	5800	4754	5878

During 1986-87, the value of product and by-product has decreased as size class increases.

It can be seen that the value of product has shown an increasing trend from 1980-81 to 1983-84 and from 1984-85 onwards there is alternate increasing and decreasing trend which is shown in the following table.

Table 11 Value of product and by product/hect (in Rs.)

Year	Value of product
1	2
1980-81	2662
1981-82	3446
1982-83	3937
1983-84	5012
1984-85	4368
1985-86	4801
1986-87	4618

C. Cost of production of paddy per quintal

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

Table 12 Cost of production of paddy per quintal during Autumn season (in Rs)

Concept of cost	Holding size class			
	Small	Medium	Large	All sizes
1	2	3	4	5
Cost 'A'	187	183	172	179
Cost 'B'	516	499	311	474
Cost 'C'	538	513	315	488

The cost of production of paddy per qtl. during the period under report is Rs.179/- when cost 'A' is considered. It is seen that the cost is higher in the case of small holding size class. The cost of production per quintal when compared to the corresponding figures for 1985-86, the Cost 'A' is increased by 15%, Cost 'B' by 10% and Cost 'C' by 11%. The percentage increase for 86-87 is shown below.

Table 13 Cost of production per quintal of Autumn paddy 1985-86 and 1986-87 (cost in Rs)

Concept of cost	1985-86	1986-87	Percentage increase
1	2	3	4
Cost 'A'	156	179	14.74
Cost 'B'	430	474	10.23
Cost 'C'	439	488	11.16

(ii) Winter (Mundakan) Paddy

For the present round of the study 380 holdings were selected for winter paddy. The holdings selected have an area of 213.33 hect. The number and area of the selected holdings for winter crop paddy are furnished in the following table.

Table 14 Area and number of holdings selected during 1986-87

Concept of cost	1985-86	1986-87	Percentage increase	
Holding size class	No. of holdings	Area under the crop (Hect.)	% to total area	Area per holding (hect.)
1	2	3	4	5
Small	212	48.59	22.78	0.23
Medium	155	112.06	52.53	0.72
Large	13	52.68	24.69	4.05
All sizes	380	213.33	100.00	0.56

The average area per holding is found to be 0.56 hect. 23% of the area are under the small size class, 52% under medium size class and 25% under large size class.

A. Cost of Cultivation

The cost of cultivation per hectare of winter paddy during 1986-87 is given below.

Table 15 Cost of Cultivation per hectare of winter paddy
1986-87

Sl.No.	Components of Cost	Holding size class			
		Small	Medium	Large	All sizes
1	2	3	4	5	6
1	Hired human labour	3415 (9.38)	2802 (52.59)	2615 (45.36)	2896 (52.36)
2	Animal labour	534 (7.72)	479 (8.97)	194 (3.36)	421 (7.18)
3	Machine labour	215 (3.10)	235 (5.35)	501 (8.88)	322 (4.59)
4	Seed/Seedlings	637 (6.32)	305 (6.85)	324 (6.65)	326 (6.56)
5	Farm Yard Manure and Chemical Fertilizers	1117 (16.15)	944 (17.72)	831 (14.45)	957 (16.31)
6	Plant Protection	68 (0.98)	60 (1.13)	271 (4.69)	114 (1.95)
7	Land tax & Irrigation cess	9 (0.13)	11 (0.21)	24 (0.42)	1 (0.25)
8	Repair & Maintenance charge of implements, Machinery & buildings	774 (11.19)	61 (1.14)	174 (3.02)	317 (5.40)
9	Interest on working capital	239 (1.18)	250 (4.69)	265 (4.59)	264 (4.49)
10	Other expenses	58 (0.85)	72 (1.35)	506 (8.78)	176 (2.99)
11	Total Cost 'A' (1-10)	6916 (100.00)	5328 (100.00)	5771 (100.00)	5867 (100.00)
12	Interest on fixed Capital (excluding land)	278	314	536	334
13	Cost 'B1' (11 + 12)	7194	5642	6307	6201
14	Interest on Land value	6749	5134	2360	4817
15	Cost 'B' (13 + 14)	13943	10776	8667	11018
16	Imputed value of household labour	509	306	89	299
17	Cost 'C' (15 + 16)	14452	11082	8756	11317

(Figures in brackets give the percentage to total Cost 'A')

The expenditure incurred towards hired human labour for winter paddy is Rs.2896/- per hectare. 49% of the total cost 'A' comes under this item. The percentage of hired human labour hours engaged in the paddy (winter) cultivation to the total labour

hours is given in the following table.

Table 16 Percentage distribution of hired human labour hours to total labour hours

Sex	Holding Size class			All sizes
	Small	Medium	Large	
1	2	3	4	5
Male	29.06	28.12	19.84	26.64
Female	58.34	61.48	77.53	63.99
Total	87.40	89.60	97.37	90.63

91% of the total labour hours is accounted for hired human labour. The percentage of hired female labour hours is higher as in the case of Autumn paddy cultivation.

The Cost towards animal labour per hect. is Rs.421/- and machine labour is Rs.322/- per hect. 57% of the total cost 'A' accounts for hired human and animal labour cost and 5.5% for machine labour 7% of the total cost 'A' is spent for seed/seedlings 16% of the total cost 'A' is spent towards Farm yard Manure and Chemical Fertilizers. Nearly 2% is spent towards plant protection and 5% towards repair and maintenance charges of implements, machinery and building. Interest on working capital is estimated to be Rs.264/- which is 5% of the total Cost 'A' and 3% of the total cost 'A' and 3% of the total cost 'A' comes under other expenses.

The interest on fixed capital excluding land is Rs.334/- and Cost 'B1' is found to be Rs.6201/- per hect. Interest on land value works out to Rs.4817/- and Cost 'B' comes to Rs.11018/- per hectare. The imputed value of family labour is Rs.299/- It is maximum in the case of small cultivators and minimum in the case of large cultivators. The estimated cost for the cultivation of Winter paddy per hectare under the three major concepts of Cost are given below.

Table 17 Cost of Cultivation under three major concepts of cost (Rs./hect.)

Concept of cost	Holding size class			
	Small	Medium	Large	All sizes
1	2	3	4	5
Cost 'A'	6916	5328	5771	5867
Cost 'B'	13943	10776	8667	11018
Cost 'C'	14452	11082	8756	11317

When compared with the corresponding costs for the previous round, it is seen that the Cost 'A' has increased during the current round, while cost 'B' and Cost 'C' showed a decreasing trend. The percentage of increase in Cost 'A' being 11%

Table 18 Cost of Cultivation of Winter paddy Rs./hect. for 1985-86 and 1986-87

Concept of Cost	Year	Holding size class			
		Small	Medium	Large	All sizes
1	2	3	4	5	6
Cost 'A'	1985-86	6147	5118	4824	5289
	1986-87	6916	5328	5771	5867
Cost 'B'	1985-86	11942	11720	9786	11467
	1986-87	13243	10776	8667	11018
Cost 'C'	1985-86	12487	11936	9873	11750
	1986-87	14452	11082	8756	11317

B. Output

The value of output per hectare is seen to be Rs.7387/-

Table 19 Value of output

Product/by product	Holding size class			
	Small	Medium	Large	All size classes
1	2	3	4	5
Paddy	5557	5535	6247	5715
Straw	2077	1853	913	1672
Total	7634	7388	7160	7387

C. Cost of production of paddy per quintal

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

Table 20 Cost of production of winter paddy per quintal Rs.

Concept of cost	Holding size class			
	Small	Medium	Large	All sizes
1	2	3	4	5
Cost 'A'	210	158	174	175
Cost 'B'	516	406	277	389
Cost 'C'	538	420	280	402

The cost of production of winter paddy is higher in the case of small size holdings and lower in the case of large holdings.

The cost of production of Winter paddy per quintal for 1985-86 and that for 1986-87 are presented below for comparison.

Table 21 Cost of production of Winter paddy per quintal (in Rs.) for 1985-86 and 1986-87

Concept of cost	Holding size class							
	Small		Medium		Large		All size classes	
	1985-86	'86-87	'85-86	86-87	85-86	86-87	85-86	86-87
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Cost 'A'	157	210	184	158	149	174	168	175
Cost 'B'	368	516	510	406	343	277	438	389
Cost 'C'	387	538	521	420	347	280	451	402

It is found that the cost 'B' & Cost 'C' are lower in the case of medium and large size holdings for 86-87 than 85-86. The Cost 'A' is higher for small and large size classes. In the case of Medium size class cost for 86-87 is lower than 85-'86.

(iii) Summer (Punja) Paddy

For summer paddy 346 holdings were selected during 1986-87 for studying the cost of cultivation. The area under cultivation being 164.28 hectare. The average area per holding is given in the following table.

Table 22 Area under Summer paddy

Holding size class	No. of selected holdings	Area under paddy in hectare	% to total area under paddy	Area per holding (ha)
1	2	3	4	5
Small	232	48.49	29.52	0.21
Medium	102	75.96	46.24	0.74
Large	12	39.83	24.24	3.32
Total	346	164.28	100.00	0.47

The average area per sample holding is found to be 0.47 hectare.

From the 346 holdings studied, the total Cost 'A' per hectare that is cash and kind expense is found to be Rs.5848/- The cost of cultivation per hectare is given in Table 23.

Table 23 Cost of cultivation per hect. of Summer paddy for the year 1986-87

Sl. No.	Components of cost	Holding size class			
		Small	Medium	Large	All
1	2	3	4	5	6
1	Hired human labour	2755 (46.99)	2754 (50.04)	3313 (50.91)	2890 (49.42)
2	Animal labour	586 (9.99)	387 (7.03)	149 (2.29)	388 (6.63)
3	Machine labour	322 (5.49)	299 (5.43)	310 (4.74)	309 (5.28)
4	Seed/Seedling	395 (6.74)	400 (7.26)	435 (6.69)	407 (6.96)
5	Farm Yard Manure and Chemical Fertilizers	1058 (18.04)	918 (16.68)	957 (14.71)	970 (16.59)
6	Plant protection	138 (2.35)	146 (2.65)	437 (6.74)	214 (3.66)
7	Land tax and Irrigation cess	38 (0.65)	41 (0.75)	44 (0.68)	41 (0.70)
8	Repair & Maintenance charges	158 (2.69)	152 (2.76)	215 (3.30)	162 (2.77)
9	Other expenses	143 (2.44)	154 (2.80)	349 (5.36)	198 (3.39)
10	Interest on working capital	270 (4.62)	253 (4.60)	298 (4.58)	269 (4.60)
11	Total Cost 'A'	5863 (100.00)	5504 (100.00)	6507 (100.00)	5848 (100.00)

Table 23 (contd.)

1	2	3	4	5	6
12	Interest on Fixed Capital	330	442	251	369
13	Cost 'B'1	6193	5946	6758	6217
14	Interest on land value	7474	4964	2147	5022
15	Cost 'B'	13667	10910	8905	11239
16	Imputed value of household labour	831	336	57	415
17	Cost 'C'	14498	11246	8962	11654

(Figures in brackets give the percentage to total cost 'A')

The human, animal and machine labour cost per hectare is Rs.3587/- which constitutes 61% of the total Cost 'A'. Out of this, hired human labour cost constituted 49%, animal labour cost nearly 7% and machine labour 5%. The percentage of hired human labour hours engaged in the cultivation of summer paddy during 1986-87 is given below.

Table 24 Percentage of hired human labour hours engaged in summer paddy cultivation

1	2	3	4
2	Male	Female	Total
1	2	3	4
Small	27.27	51.08	78.35
Medium	26.02	64.07	90.09
Large	18.55	79.83	98.38
All	24.57	63.82	88.39

About 88% of the total human labour hours is hired human labour.

7% of the total cost 'A' is for seed/seedlings, 17% of the total cost 'A' constitutes the cost of Farm Yard Manure and Chemical Fertilizers Rs.214 (4%) is spent towards plant protection. The expenditure per hectare of land tax and irrigation cess is found to be Rs.7/- and Rs.34/- respectively. The interest on working capital is estimated to be Rs.269/- (5%) per hectare.

The interest on fixed capital (excluding land) is estimated to be Rs.369/- per hectare.

Cost 'B1' and Cost 'B'

Cost 'B1' is obtained by adding the interest on fixed capital (excluding land) to cost 'A' and is seen to be Rs.6217/- The interest

on land value during the period is maximum in the case of small holding size class and minimum in the case of large holding size class. Cost 'B' is seen to be Rs.11239/- per hectare during 1986-87. The imputed value of household labour works out to Rs.415/-per hectare for summer paddy. The imputed value of household labour is maximum in the case of small size class and minimum in the case of large size class i.e. small size class engaged themselves in the cultivation practices than the cultivators belonging to large size class. When compared to the previous years, the cost 'A' has been increasing from year to year. The animal labour has decreased as size class increases. Machine labour is less in the case of small and medium size holdings than animal labour, while machine labour is higher than animal labour in the case of large size holdings. This goes to show that the large holding size class are interested in using machines for cultivation.

Cost 'B1' is found to be higher in the case of large size holdings. The interest on land value per hectare is found to be Rs.7474/- and Rs.2147/- respectively in the case of small holdings size class and large holdings size classes. Cost 'B' is higher in the case of cultivators belonging to small holding size class and it is lower in the case of large size classes. When the cost of cultivation is compared with the previous year, the cost 'A' has increased by 2%, Cost 'B' and Cost 'C' by 10%.

Table 25 Cost of Cultivation of Summer paddy Rs/hect. for 1985-86 and 1986-87

Concept of Cost	Year	Holding size class			
		Small	Medium	Large	All sizes
1	2	3	4	5	6
Cost 'A'	1985-86	5838	5851	4902	5752
	1986-87	5863	5504	6507	5848
Cost 'B'	1985-86	10897	9839	9969	10205
	1986-87	13667	10910	8905	11239
Cost 'C'	1985-86	11767	10138	10023	10532
	1986-87	14498	11246	8962	11654

B. Output

The value of output is seen to be Rs.8099 per hectare for the Summer paddy. The details for the different holding size classes

are given as follows:

Table 26 Value of product and by-product per hectare
1986-87

Product/ by-product	Holding size class			
	Small	Medium	Large	All size classes
1	2	3	4	5
Paddy	5481	6169	8179	6453
Straw	2093	1845	723	1646
Total	7574	8014	8902	8099

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 27 Cost of production of Summer paddy per quintal

Concept of cost	Holding size class			
	Small	Medium	Large	All sizes
1	2	3	4	5
Cost 'A'	161	144	154	151
Cost 'B'	494	357	217	345
Cost 'C'	529	370	216	360

As in the case of Autumn paddy and winter paddy, the cost of production of paddy/ctl. is higher in small size class holdings in the case of Summer paddy also. A comparison between the cost of production of paddy^{per}/ctl. during 1986-87 and 1985-86 is given in the following table.

Table 28 Cost of production of paddy/ctl. during 1985-86 & 1986-87

Concept of Cost	1985-86	1986-87	Percentage of increase
1	2	3	4
Cost 'A'	138	151	9.42
Cost 'B'	289	345	19.37
Cost 'C'	303	360	18.81

The percentage of increase is seen to be 9% and 19% respectively under Cost 'A', Cost 'B' and Cost 'C'

2.2 Coconut

During the agricultural year 1986-87 about 7.06 lakh hectare is under coconut cultivation i.e. about 25% of the total cropped area in the state is under coconut. The area and the average yield per hectare is given in the following table.

Table 29 Area and average yield of coconut 1986-87

Area under coconut (Hect.)	Percentage to total cropped area	Average yield per hect. (No. of nuts)
1	2	3
706107	24.60	4492

(Sources T.R.S. estimates 86-87)

When compared to the previous years the average yield per hectare of coconut is decreasing from 1985-86 onwards. The sharp decrease in average yield is due to the drought which was affected much during 1986-87.

Selected holdings

380 holdings were selected during 1986-87 for the study on cost of cultivation of coconut. The area under coconut (size class wise) is given below.

Table 30 No. of holdings and area under coconut

Holding size class	No. of holdings	Area under coconut in the sample (hect.)	Percentage	Area per holding (ha)
1	2	3	4	5
Small	101	14.45	7.99	0.14
Medium	236	101.91	56.38	0.43
Large	43	64.41	35.63	1.50
All sizes	380	180.77	100.00	0.48

The average area per sample holding is 0.48 hectare.

Number of bearing trees in the selected holdings

In the selected holdings the average number of bearing trees per hectare is found to be 140 and non-bearing trees 85.

Table 31 Number of bearing & Non-bearing trees per hectare

Type of trees	No. of trees per hectare	Percentage
Bearing	140	62
Non-bearing	85	38
Total	225	100

62% of the total number of trees in the selected holdings is bearing and the rest is non-bearing.

A. Cost of cultivation

As in the case of paddy cost of cultivation of coconut is also estimated under the three different concepts of cost.

(i) Cost 'A'. The cash and kind expenses incurred by the cultivator is found to be Rs.3153/- during 1986-87 as against Rs.3337/- in the previous round. Rs.1619/- per hectare is spent for human, animal and machine labour. One half of the total cost 'A' is spent as labour cost.

contd.....

Table 32- Cost of cultivation (coconut 1986-87) per hectare

Sl. No.	Components of different cost concepts	Holding size class			
		Small	Medium	Large	All
1	2	3	4	5	6
1.	Hired human labour	1829 (42.17)	1577 (47.52)	1441 (51.64)	1549 (49.13)
2.	Animal labour	- (0.39)	13 (0.39)	24 (0.86)	16 (0.51)
3.	Machine labour	179 (4.14)	59 (1.78)	19 (0.68)	54 (1.71)
4.	Seed/Seedlings	50 (1.15)	13 (0.39)	11 (0.39)	16 (0.51)
5.	Farm yard manure and chemical fertilizers	1422 (32.78)	1114 (33.56)	728 (26.08)	952 (30.19)
6.	Plant protection	17 (0.39)	6 (0.18)	5 (0.18)	6 (0.19)
7.	Land Tax and Irrigation cess	51 (1.17)	22 (0.66)	12 (0.42)	20 (0.63)
8.	Repair & Maintenance charges of implements machinery & buildings	61 (1.42)	70 (2.11)	106 (3.80)	77 (2.44)
9.	Interest on working capital	384 (8.85)	293 (8.83)	243 (8.71)	278 (8.82)
10.	Other expenses	344 (7.93)	152 (4.58)	202 (7.24)	185 (5.87)
11.	Total cost 'A'	4337 (100)	3319 (100)	2791 (100)	3153 (100)
12.	Interest on fixed capital	504	508	514	504
13.	Cost 'B1'	4841	3827	3305	3657
14.	Interest on land value	38154	37834	38870	38229
15.	Cost 'B'	42995	41661	42175	41886
16.	Imputed value of household labour	607	281	128	249
17.	Cost 'C'	43602	41942	42303	42135

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

Table 33 - Percentage distribution of hired human labour hours to the total human labour hours.

Sex	Holding size class			
	Small 2	Medium 3	Large 4	All sizes 5
Male	60.39	74.24	78.52	73.97
Female	5.75	6.49	11.23	7.86
Total	66.14	80.73	89.75	81.83

82% of the total human labour hours has been contributed by hired human labour Rs.16/- per hect. is spent towards seed/seedlings for new plantation. The cost for farm yard manure and chemical fertilizers per hect. is Rs.952/- ie. 30% of the total cost 'A' is spent for farmyard manure and chemical fertilizers Rs.6/- is spent for plant protection per hectare. The expenditure towards land tax and irrigation cess is found to be Rs.7/- and Rs.13/- per hect. The charges towards repair and maintenance of implements, machinery, buildings etc. is Rs.77/- per hect. Interest on working capital is estimated to be Rs.278/- per hect. The other expenses were found to be Rs.185/- per hect. The interest on fixed capital is estimated to be Rs.504/- per hect. (excluding land value).

(ii) Cost 'B1' & Cost 'B'

Cost 'B1' is estimated by adding the interest on fixed capital (excluding land) to cost 'A'. It is found to be Rs.3657/- per hectare.

Cost 'B' is estimated to be Rs.41886/- Imputed value of household labour is Rs.249/- hect. When compared with the previous round, the interest on land value has increased during the period under report.

(iii) Cost 'C'

As in the case of paddy, the family labour is seen to be higher in small holding size class and lower in large holding size class. Cost 'C' is estimated as Rs.42135/- per hect.

Table 34 Cost of cultivation of coconut per hectare during 1985-86 & 1986-87

Concept of cost 1	Cost per hectare		Percentage of increase in cost of cultivation 4
	1985-86 2	1986-87 3	
Cost 'A'	3337	3153	-5.50
Cost 'B'	39777	41886	5.30
Cost 'C'	40018	42135	5.30

B. Value of product

The total value of output per hectare is seen to be Rs. 10207/- during 1986-87.

Table 35 Value of output per hectare

Output	Value (Rs.)
Product	9595
By-product	672
Total	10207

2.3. Tapioca

Tapioca is cultivated throughout the state since it is one of the main food items of the people of Kerala.

But the area under tapioca cultivation is seen decreasing. During 1986-87 the area under the crop was 1.93 lakh hectare as against 2.03 lakh hectare during 1985-86.

Table 36. The area and average yield of Tapioca during 86-87

Area under Tapioca lakh hectare 1	Average yield per hectare (tonnes) 2	Percentage of area under tapioca to total cropped area 3
1.93	17.07	6.72

7% of the total cropped area is under tapioca during 86-87.

175 holdings were selected for studying the cost of cultivation of Tapioca in Kerala. The number of holdings and the area are given below:-

contd..../-

Table 37 Area and number of holdings selected

Size class 1	No. of holdings selected 2	Area under Tapioca in the sample (hectare) 3	Percentage to total area 4	Area per holding (hectare) 5
Small	107	13.30	34.56	0.12
Medium	65	21.33	55.43	0.33
Large	3	3.85	10.01	1.23
All sizes	175	38.48	100.00	0.22

The average area per sample holding is 0.22 hectare. The total area of the holdings selected for studying the cost of cultivation was 38.48 hectare.

A. Cost of Cultivation

The Cost 'A' ^{is} estimated to be Rs.4180/- per hectare. The human, animal and machine labour cost is seen to be Rs.2298 which is 55% of the total cost 'A'.

Table 38. Cost of cultivation per hectare of Tapioca for the year 1986-87

Sl. No.	Components of Cost 2	Size class			
		Small 3	Medium 4	Large 5	All si 6
1	Hired human labour	2084 (49.14)	2421 (55.91)	1938 (55.10)	2261 (54.09)
2	Animal labour	18 (0.42)	11 (0.25)	..	16 (0.38)
3	Machine labour	39 (0.92)	14 (0.32)	..	21 (0.50)
4	Seed & seedlings	362 (8.54)	303 (7.00)	125 (3.46)	264 (6.31)
5	Farmyard Manure & chemical fertilizers	1002 (23.63)	958 (22.12)	187 (5.18)	216 (21.44)
6	Plant protection	26 (0.61)	99 (2.29)	829 (22.98)	155 (3.71)
7	Land tax & Irrigation cess	22 (0.52)	16 (0.37)	6 (0.17)	18 (0.43)
8	Repair & Maintenance charges of implements machinery & buildings	86 (2.03)	51 (1.18)	12 (0.33)	83 (1.63)
9	Interest on working capital	376 (8.87)	388 (8.96)	326 (9.04)	372 (8.30)
10	Other expenses	226 (5.32)	69 (1.60)	125 (3.74)	109 (2.61)

contd.../-

1	2	3	4	5	6
11. Cost 'A'		4241 (100.00)	4330 (100.00)	3608 (100.00)	4180 (100.00)
12. Interest on fixed capital(excluding land value)		484	554	81	502
13. Cost 'B1'		4725	4884	3689	4682
14. Interest on land value		37781	27046	19481	29999
15. Cost 'B'		42506	31930	23170	34631
16. Imputed value of household labour		1346	679	450	832
17. 'Cost 'C'		43852	32609	23620	35563

The percentage of hired human labour hours engaged in tapioca cultivation is given below:

Table 59. Percentage distribution of hired human labour hours

Sex 1	Holding size class			All sizes 5
	Small 2	Medium 3	Large 4	
Male	50.80	68.05	69.33	60.42
Female	9.06	9.45	12.30	9.66
Total	59.86	77.50	81.71	70.08

70% of the total human labour hours relates to hired human labour. 6% of the total cost 'A' is spent towards seed/seedlings and Rs.896/- for farm yard manure and chemical fertilizers. Rs.155/- is spent for plant protection Rs.18/- is spent for land tax and irrigation cess. The repair and maintenance charges on implements and machinery per hect. is Rs.68/-. The interest on working capital is Rs.372/- and other expenses is Rs.109/- respectively. The interest on fixed capital(excluding land value) is Rs.502/- per hect. Cost 'B1' is estimated to be Rs.4682/-. The interest on land value is estimated to be Rs.29999/- per hect and cost 'B' is estimated to be Rs.34681/ per hectre respectively. The imputed value of household labour is Rs.832/- per hect.

Cost 'C' is estimated to be Rs.35563/- per hect. The estimated cost of tapioca cultivation under different cost concepts are shown below:

Table 40. Estimated Cost of Tapioca Cultivation

Concept of cost 1	Cost per hect.(Rs.) 2
Cost 'A'	4180
Cost 'B'	34681
Cost 'C'	35563

In the study of cost of cultivation of important crops, tapioca was not included in 1985-86. Hence the costs under different components in 1986-87 are compared with the corresponding costs during 1984-85 and furnished below:

Table. 41 Estimated cost of tapioca cultivation under various cost concepts.

Concept of Cost 1	Cost per hect. Rs.		Percentage increase in cost of cultivation. 4
	1984-85 2	1986-87 3	
Cost 'A'	3386	4180	23.45
Cost 'B'	27953	34681	24.07
Cost 'C'	28746	35563	23.71

During the two years, the cost of tapioca cultivation has increased by 24%.

B. Output

The value of output per hect. is found to be Rs.8246/-

2.4 Banana

Banana is cultivated throughout the state of Kerala. During 1986-87, the area under the crop was 18724 hect.

Table 42. Area and average yield of Banana

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

170 holdings were selected for the study of cost of cultivation of Banana during 1986-87. The number of holdings selected and the area under the crop are given below.

Table 43. Number of holdings selected and area under the crop

Size class	Number of holdings	Area under the crop	Percentage to total area	Average area per holding (hect.)
1	2	3	4	5
Small	145	11.90	55.77	0.08
Medium	24	8.43	39.50	0.35
Large	1	1.01	4.73	1.01
All sizes	170	21.34	100.00	0.13

The average area per holding is found to be 0.13 hect. 56% of the total area of the crop is under small holdings size 39% of the total area under the crop belongs to medium household size class. Among the 170 holdings selected only one holding having an area of 1.01 hect, belongs to large holding size.

A. cost of cultivation

The cost 'A' is estimated to be Rs.22645 per hectare taking into consideration of the cash and kind expenses. The hired human labour cost is found to be Rs.5139/-per hect.which constitutes 23% of the total cost 'A'

contd.....

Table. 44. Cost of cultivation per hectare of Banana during 1986-87.

Sl. No.	Component of different cost concepts	Small 3	Medium 4	Large 5	All sizes 6
1.	Hired human labour	4863 (22.05)	5309 (23.84)	6978 (22.87)	5139 (22.69)
2.	Animal labour	19 (0.08)	33 (0.15)	-	24 (0.11)
3.	Machine labour	668 (3.03)	845 (3.79)	-	706 (3.12)
4.	Seed/Seedlings	2493 (11.31)	3393 (15.24)	3960 (12.98)	2918 (12.89)
5.	Farmyard manure and Chemical fertilizers	8782 (39.82)	6543 (29.38)	12439 (40.76)	8165 (36.06)
6.	Plant protection	232 (1.05)	298 (1.34)	-	246 (1.08)
7.	Land Tax & Irrigation Cess	55 (0.25)	11 (0.05)	5 (0.02)	35 (0.15)
8.	Repair and maintenance charge of impliments, machinery and building	93 (0.42)	91 (0.41)	-	91 (0.40)
9.	Interest on working capital	1991 (9.03)	2015 (9.05)	2774 (9.09)	2047 (9.04)
10.	Other expenses	2857 (12.96)	3731 (16.75)	4358 (14.28)	3274 (14.46)
11.	Total Cost 'A'	22053 (100.00)	22269 (100.00)	30514 (100.00)	22645 (100.00)
12.	Interest on Fixed Capital	557	775	241	604
13.	Cost 'B1'	22610	23044	30756	23249
14.	Interest on land value	25860	20738	37129	24370
15.	Cost 'B'	48470	43782	67885	47619
16.	Imputed value of household labour	5283	1415	1703	3586
17.	Cost 'C'	53753	45197	69588	51205

contd.....

The percentage of hired human labour hours engaged in Banana cultivation is given below.

Table 45. Percentage 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	45	69	71	53
Female	5	9	11	6
Total	50	78	82	59

The percentage of hired human labour hours engaged in banana cultivation is 59% of the total human labour hours. About 13% of the total cost 'A' is spent towards Seed/Seedlings. 36% of the total cost 'A' is spent towards Farm Yard Manure and Chemical Fertilizers. 1% is for plant protection. The interest on working capital is 9% of the total cost 'A'. 14% of the total cost 'A' is for other expenses. The interest on fixed capital excluding land is estimated to be Rs.604 per hectare.

B. Cost 'B1' Cost 'B' and Cost 'C'

Cost 'B1' is estimated to be Rs.23249 per hectare and cost 'B' is estimated to be Rs.47619/- per hectare . The imputed value of household labour is Rs.3585 per hect. Cost 'C' is found to be Rs.51205 per hect. When compared to the previous year, Cost 'A', Cost 'B1', Cost 'B' and Cost 'C' has decreased during the current round. The interest on land value has also decreased slightly during this round.

Table.46. Cost of cultivation per hect. of Banana during 1985-86 and 1986-87.

Concept of cost	1985-86	1986-87	Percentage of increase
1	2	3	4
Cost 'A'	22397	22645	1.10
Cost 'B'	49757	47619	-4.3
Cost 'C'	53057	51205	-3.5

C. Value of product

The value of product per hect. is found to be Rs.39214/- during 1986-87.

contd.....

CHAPTER 3- SUMMARY OF FINDINGS

Costs of cultivation of important crops viz. Paddy (Autumn, Winter and Summer) Coconut, Tapioca and Banana are worked out by analysing the data collected through the survey 1986-87.

1. Autumn Paddy

The cost of cultivation per hectare of Autumn Paddy ie. Cost 'A' during 1986-87 is worked out to be Rs.5006/- 65% of the cost 'A' relates to the cost of hired human and machine labour and about 20% relates to the cost of farm yard manure and chemical fertilizers.

(ii) Winter Paddy

The cash and kind expenses (Cost 'A') incurred by the cultivators is found to be Rs.5867/- 62% of the total Cost 'A' accounts for hired human, animal and machine labour cost and 16% towards farmyard manure and chemical fertilizers.

(iii) Summer Paddy

Cost 'A' relating to summer paddy is Rs.5848/- 61% of the Cost 'A' relates to the cost of hired human, animal and machine labour and about 17% relates the cost of chemical fertilizers and farmyard manure.

(iv) Coconut

The cost 'A' per hectare of coconut cultivation is Rs.3153- 51% of Cost 'A' comes under hired human, animal and machine labour cost and about 30% comes under farmyard manure and chemical fertilizers.

(v) Tapioca

The cost 'A' relating to the cultivation of Tapioca is found to be Rs.4180/- per hectare 56% of the Cost 'A' comes under hired human, animal and machine labour cost and 21% relates to the cost of farmyard manure and chemical fertilizers.

(vii) Banana

The cost of cultivation per hectare of banana during 1986-87 is Rs.22645/. About 23% of the total Cost 'A' accounts towards the hired human animal and machine labour cost and 36% towards farmyard manure and chemical fertilizers.

-34-
Appendix-1

Cost of Cultivation per hectare of Paddy(Autumn) during the year 1986-87.

Sl. No.	Components of different cost concepts.	Holding size class			All size
		Small	Medium	Large	
1	2	3	4	5	6
1.	Hired human labour	3166	2590	1755	2527
2.	Animal labour	385	512	194	428
3.	Machine labour	190	244	241	229
4.	Seed and Seedlings	404	358	274	351
5.	Farmyard manure and chemical fertilizers	1138	932	1020	1007
6.	Plant protection	63	39	83	55
7.	Land tax & irrigation cess	6	6	10	6
8.	Repair & Maintenance charges of implement, machinery, and buildings	100	86	92	87
9.	Interest on working capital	280	236	191	238
10.	Other expenses	53	49	178	78
11.	Cost 'A'	5985	5052	4038	5006
12.	Interest on fixed capital(excluding land)	297	277	187	233
13.	Cost 'B1'	6282	5329	4225	5239
14.	Interest on land value	6399	6457	2728	5961
15.	Cost 'B'	12681	11786	6953	11200
16.	Imputed value of household labour	441	300	88	288
17.	Cost 'C'	13122	12086	7041	11488

Appendix-2

Percentage Distribution of Cost 'A' per hectare of Autumn Paddy during the year 1986-87.

Sl. No.	Components of different cost concepts	Holding size class			All sizes
		Small	Medium	Large	
1	2	3	4	5	6
1.	Hired human labour	52.90	51.27	43.46	50.48
2.	Animal labour	9.77	10.13	4.80	8.55
3.	Machine labour	3.17	4.83	5.97	4.58
4.	Seed/Seedlings	6.75	7.03	6.79	7.01
5.	Farmyard manure & Chemical fertilizers	19.02	18.45	25.25	20.12
6.	Plant protection	1.05	0.77	2.06	1.09
7.	Land tax & Irrigation cess	0.10	0.12	0.25	0.12
8.	Repair and maintenance charges of implements machinery and building	1.67	1.70	2.28	1.74
9.	Interest on working capital	4.68	4.67	4.73	4.75
10.	Other expenses	0.89	0.97	4.41	1.56
11.	Cost 'A'	100.00	100.00	100.00	100.00

contd.....

Appendix-3

Cost of Cultivation per hectare of Winter Paddy for the year
1986-87

Sl. No.	Components of different cost concepts	Size class			All sizes
		Small	Medium	Large	
1	2	3	4	5	6
1.	Hired human labour	3415	2802	2618	2896
2.	Animal labour	534	478	194	421
3.	Machine labour	215	285	501	322
4.	Seed/Seedlings	437	365	384	386
5.	Farmyard manure and chemical fertilizers	1117	944	834	957
6.	Plant protection	68	60	271	114
7.	Land tax and irrigation cess	9	11	24	14
8.	Repairs & maintenance-charges of implements, machinery & buildings	774	61	174	317
9.	Interest on working capital	289	250	265	264
10.	Other expenses	58	72	506	176
11.	Total Cost 'A'	6916	5328	5771	5867
12.	Interest on fixed capital (excluding land)	278	314	536	334
13.	Cost 'B'	7194	5642	6307	6201
14.	Interest on land value	6749	5134	2360	4817
15.	Cost 'B'	13943	10776	8667	11018
16.	Imputed value of household labour	509	306	89	299
17.	Cost 'C'	14952	11082	8756	11317

Appendix 4

Percentage Distribution of components of Cost 'A' of Winter Paddy 1986-87.

Sl. No.	Components of different cost concepts	Size class			All sizes
		Small	Medium	Large	
1.	Hired human labour	49.38	52.59	45.36	49.36
2.	Animal labour	7.72	8.97	3.36	7.18
3.	Machine labour	3.10	5.35	3.68	5.49
4.	Seed/Seedlings	6.72	6.85	6.65	6.58
5.	Farmyard manure and chemical fertilizers	16.15	17.72	14.45	16.31
6.	Plant protection	0.98	1.13	4.69	1.95
7.	Land tax & irrigation cess.	0.13	0.21	0.42	0.25
8.	Repair & maintenance charges of implements, machinery & buildings	11.19	1.14	3.02	5.40
9.	Interest on working capital	4.18	4.69	4.59	4.49
10.	Other expenses	0.85	1.35	8.78	2.99
11.	Total cost 'A'	100.00	100.00	100.00	100.00

contd.....

Appendix-5

Cost of cultivation per hectare of summer paddy for the year
1986-87

Sl. No.	Components of different cost concepts	Size class			All sizes
		Small	Medium	Large	
1	2	3	4	5	6
1.	Hired human labour	2755	2754	3313	2890
2.	Animal labour	586	387	149	388
3.	Machine labour	322	299	310	309
4.	Seed/Seedlings	395	400	435	407
5.	Forward measure & chemical fertilizers	1058	913	957	970
6.	Plant protection	138	146	437	214
7.	Land tax & irrigation cess	33	41	44	41
8.	Repair & Maintenance charge of implements, machinery & buildings	158	152	215	162
9.	Other expenses	143	154	349	198
10.	Interest on working capital	270	253	298	269
11.	Total Cost 'A'	5863	5904	6507	5848
12.	Interest on fixed capital (excluding land)	330	442	254	369
13.	Cost 'B1'	6193	5946	6758	6217
14.	Interest on land value	7474	4964	2147	5022
15.	Cost 'B'	13667	10910	8905	11239
16.	Imputed value of household Labour	331	336	57	415
17.	Cost 'C'	14198	11246	8962	11654

Appendix-6

Percentage Distribution of components of Cost 'A' of Summer Paddy for the year 1986-87

Sl. No.	Components of different cost concepts	Size class			All size
		Small	Medium	Large	
1	2	3	4	5	6
1	Hired human labour	46.99	50.04	50.91	49.42
2	Animal labour	9.99	8.03	12.22	6.63
3	Machine labour	5.49	5.43	4.74	5.28
4	Seed/Seedlings	6.74	7.26	6.62	6.96
5	Farmyard manure and chemical fertilizers	18.04	16.68	14.71	16.59
6	Plant protection	2.35	2.65	6.74	3.66
7	Land tax & Irrigation cess.	00.65	00.75	00.68	00.70
8	Repair and maintenance charges of implements, machinery & buildings	2.69	2.76	3.30	2.77
9	Other expenses	2.44	2.80	5.36	3.39
10	Interest on working capital	4.62	4.60	4.58	4.60
11	Total Cost 'A'	100.00	100.00	100.00	100.00

contd.....

Cost of cultivation per hectare ^{of} Coconut-1986-87

Sl. No.	Components of different cost concept	All	Size class		
			Medium	Large	All. sizes
1	2	3	4	5	6
1.	Hired human labour	1800	1577	1441	1549
2.	Animal labour	.	13	24	16
3.	Machine labour	79	59	19	54
4.	Seed/Seedlings	50	13	11	10
5.	Farmyard manure & chemical fertilizer	1422	1114	728	950
6.	Plant protection	17	6	5	0
7.	Land tax & Irrigation cess.	51	22	12	20
8.	Repair & maintenance charges	61	70	106	77
9.	Interest on working capital	384	293	213	276
10.	Other expenses	344	152	202	185
11.	Total Cost 'A'	4337	3319	2791	3153
12.	Interest on fixed capital	504	508	514	504
13.	Cost 'B1'	4841	3827	3305	3657
14.	Interest on land value	38154	37834	38870	38229
15.	Cost 'B'	42995	41661	42175	41886
16.	Imputed value of household labour	607	281	128	249
17.	Cost 'C'	43602	41942	42303	42135

contd.....

Appendix-8

of Cultivation per hectare of 'Tapioca' for the year 1986-87

Sl. No.	Component of different cost concepts	Size class			All sizes
		Small	Medium	large	
1	2	3	4	5	6
1.	Hired Human labour	2084	2421	1988	2261
2.	Animal labour	18	11	-	16
3.	Machine labour	39	14	-	21
4.	Seed/Seedlings	362	303	125	264
5.	Farmyard manure and chemical fertilizers	1002	958	187	896
6.	Plant protection	26	99	829	155
7.	Land tax and irrigation cess	22	16	6	18
8.	Repair & maintenance charges of impliments machinery and buildings	86	51	12	68
9.	Interest on working capital	376	388	326	372
10.	Other expenses	226	69	135	109
11.	Cost 'A'	4241	4330	3608	4180
12.	Interest on fixed capital (excluding land value)	484	554	81	502
13.	Cost 'B1'	4725	4884	3689	4682
14.	Interest on land value	37781	27046	19481	29999
15.	Cost 'B'	42506	51930	23170	34681
16.	Imputed value of household labour	1346	679	450	882
17.	Cost 'C'	43852	32609	23620	35563

contd.....

Appendix-9

Cost of cultivation per hectare of Banana during 1986-87.

Sl. No.	Component of different cost concepts	Small 3	Medium 4	Large 5	All sizes 6
1.	Hired human labour	4863	5309	6978	5139
2.	Animal labour	19	33	-	24
3.	Machine labour	668	815	-	706
4.	Seed/Seedlings	2493	3393	3960	2918
5.	Farmyard manure and chemical fertilizers	8782	6543	12439	8165
6.	Plant protection	232	298	-	246
7.	Land tax and irrigation cess	55	11	5	35
8.	Repair and maintenance charge of implements, machinery and building	33	91	-	91
9.	Interest on working capital	1991	2015	2774	2047
10.	Other expenses	2857	3731	4358	3274
11.	Total cost 'A'	22053	22269	30514	22645
12.	Interest on fixed capital	557	775	241	604
13.	Cost 'A'	22610	23044	30756	23249
14.	Interest on land value	25860	20738	37129	24370
15.	Cost 'B'	48470	43782	67885	47619
16.	Imputed value of household labour	5283	1415	1703	3586
17.	Cost 'C'	53753	45197	69588	51205