

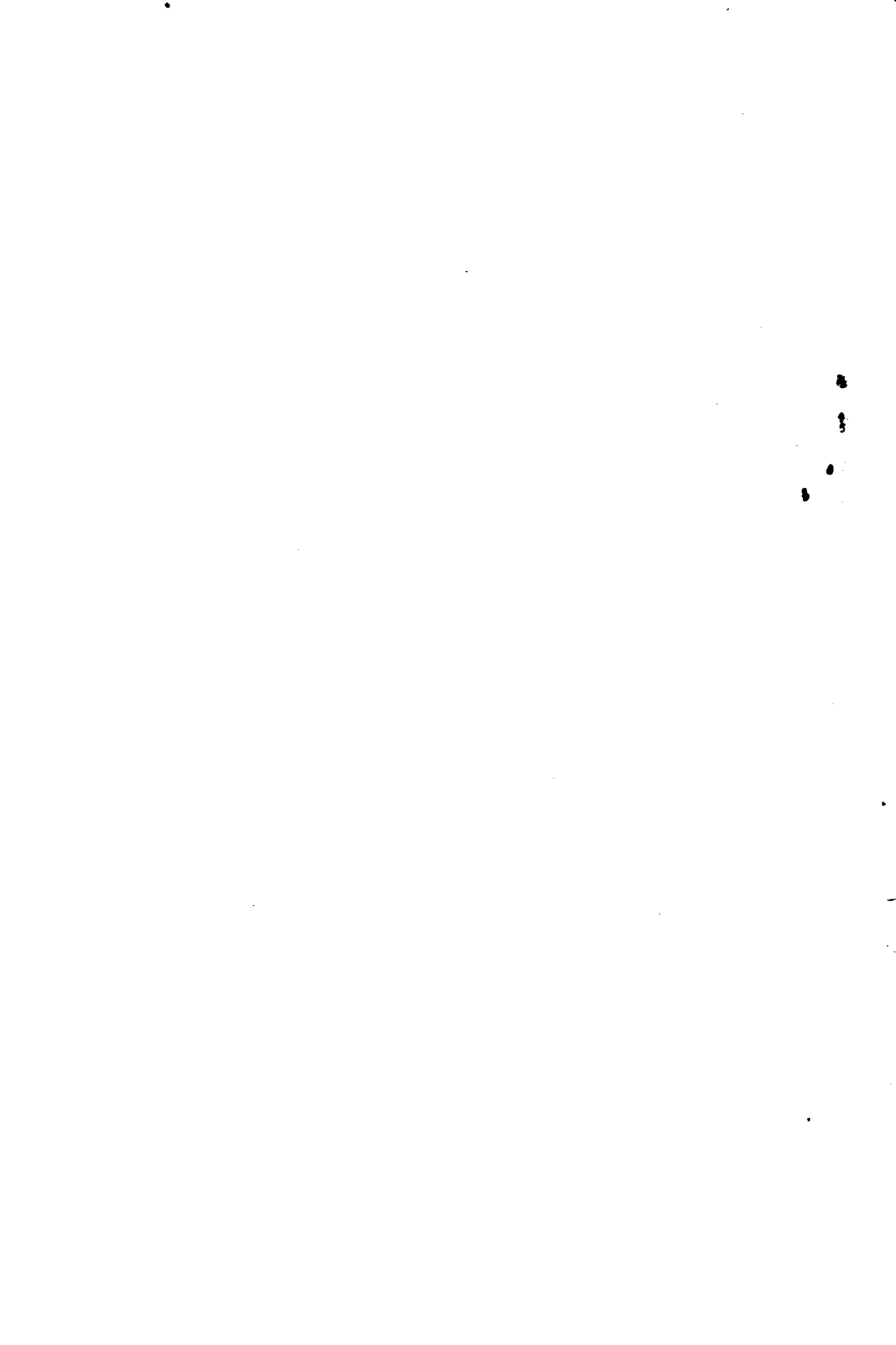


Government of Kerala



**Report on Cost of Cultivation
of Important Crops
in Kerala 1996-97**

**Department of Economics and Statistics
Thiruvananthapuram
2001**



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**REPORT ON COST OF
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Preface

As per 1991 Census, out of 83.01 lakh working population in Kerala more than 39 lakhs depend on agriculture and allied sectors for livelihood and employment. Eventhough this sector has a crucial role in the changing fortunes of our rural economy, the recent trend is not at all praiseworthy. The emerging trend in the cropping pattern of the State is due to various reasons. One important factor is the ever increasing nature of the cost of cultivation of various crops.

Time series data on cost of cultivation of important crops in the State are required for taking effective steps in agricultural front. For fixing support prices for various crops in the event of fall in prices, for studying employment pattern etc. these data are very useful.

This report is based on 17th round of the survey on cost of cultivation of important crops conducted during 1996-97. The crops covered during this round are paddy (three seasons), Coconut, Arecanut, Tapioca, Pepper, Ginger, Turmeric and Nutmeg.

The tabulation and consolidation of data were done in the "Cost of Cultivation Section" and the report has been prepared by Smt. T.Bhavana, Deputy Director under the guidance of the senior officers of this department.

Thiruvananthapuram,
24-3-2001.

A. MEERA SAHIB
DIRECTOR



Report on the cost of cultivation of important crops in Kerala 1996-97

Chapter - 1

General

1.1 Introduction

Agriculture being the primary occupation of the community, maximization of output and profit informing is essential to meet the increased food requirement of the growing population. High yield from the cultivation depends largely on the vagaries of nature and Agro-climatic conditions. The gain or loss of cultivation of a crop is also determined by on the basis of the cost of various inputs used and the value of the main product and the by-products received from it. In order to checkout various schemes in Agricultural sector and for fixing the floor and support prices, proper assessment of the cost of cultivation and value of product is necessary. With this end in view, Government of Kerala in GO (Rt)466/79/Plg dated 27-10-1979 sanctioned a scheme for an annual survey on cost of cultivation of important crops in Kerala. The present report relates to the 17th round of survey conducted during 1996-97.

The crops covered during the period under study are given below.

- | | |
|----------------------|------------|
| 1. Paddy (3 seasons) | 2. Coconut |
| 3. Arecanut | 4. Tapioca |
| 5. Pepper | 6. Ginger |
| 7. Turmeric | |

1.2. Objectives

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

1.3 Staff

(a) Headquarters staff

- | | |
|-----------------------|-------|
| 1. Research Assistant | 1 No. |
| 2. U.D. Compiler | 1 No. |

(b) Field staff

- | | |
|---------------------------|---------|
| 1. U.D. Investigator | 14 Nos. |
| 2. L.D. Investigator (HG) | 28 Nos. |

(4 posts were shifted to the Directorate for the consolidation of the report)

1.4 Period of the Survey

The period of the survey from 1-7-96 to 30-6-97.

1.5 Design of the Survey

The survey covered all the districts of Kerala by selecting 38 taluks, which are important growing centres of different selected crops. From each selected taluks tow investigator zones were selected using simple random sampling method.

Selection of Cultivators

In each selected investigator zone a list of cultivators growing paddy in the previous autumn season will be prepared from the last years Form I Diary of the EARAS. From this list of paddy growing cultivation last Autumn in seasons 5 cultivators will be selected at random for the current years cost of cultivation study in Autumn paddy. Similar procedure is adopted for the selections of cultivations for winter and summer paddy respectively by preparing a list of paddy growing plots in winter and summer of the previous Timely Reporting Survey round in the zone.

In the case of cultivators selected for cost of cultivation study in Autumn paddy possess suitable number of plots with other a specified crop is stipulated area. They may be selected for the cost of cultivation study on other crops like Coconut, Arecanut, Tapioca, etc.

If sufficient number of suitable plots are not available with the cultivators selected for autumn paddy, the required number of plots for crops other than paddy will be selected from the list of wet and dry land plots of the same Investigator zone in the last year. If the selected Investigator zone in the taluk does not provide the required number of plots for these crops another Investigator zone in the taluk will be selected at random for selection of the remaining required number of plots/cultivators for the study as other crops.

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

| | | | |
|-------------|--------|----|---|
| 1. Paddy | Autumn | 10 | 5 holdings each from one investigator zone) |
| | Winter | 10 | -do- |
| | Summer | 10 | -do- |
| 2. Coconut | | 10 | -do- |
| 3. Arecanut | | 10 | -do- |
| 4. Tapioca | | 5 | (Minimum 2 holdings in the Investigator zone) |
| 5. Pepper | | 5 | -do- |
| 6. Ginger | | 5 | -do- |
| 7. Turmeric | | 5 | -do- |
| 8. Nutmeg | | 5 | -do- |

A holding was considered for the study only if it contained at least 25 cents under the crops in the case of paddy, tapioca and minor crops ie. ginger and turmeric. In the case of perennial crops like coconut, arecanut, pepper. The holding should have 25 trees/plant with at least 50% bearing.

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

| Size group | Holding size | |
|------------|-----------------|------------------|
| | Paddy | Other crops |
| 1. Small | < 0.40 ha. | < 0.2 ha. |
| 2. Medium | 0.40 to < 2 ha. | 0.2 to < 0.8 ha. |
| 3. Large | ≥ - 2 ha. | ≥ 0.80 ha. |

Note: < - less than

≥ - Creates than on equal to

1.6 Schedules

Their schedules were designed for the survey

- | | |
|--------------|---|
| Schedule 1 | This schedule is used for listing the plots for selection of holdings and recording the details of the selected holdings. |
| Schedule 2 | This schedule is needed for recording details of the cultivator's households, area of holdings, inventory of agricultural implements, live stocks, etc. |
| Schedule III | In this schedule the cultivation expenses incurred for a crop in each fortnight is reported. |

1.7 Field work

Fieldwork was done by 38 Investigators in 38 selected taluks, one Investigator in each taluk. The investigator visited the selected holdings every fortnight and recorded fortnightly operations in the

Schedule III. The fieldwork was supervised by Taluk Statistical Officer at the Taluk level and by Deputy Director/District Officer at District level.

1.8 Processing and Analysis of Data

The compilation and tabulation were done at District level by the Investigators posted for the survey. The state level consolidation of the data is done at the Directorate and report writing and analysis are done at the Directorate.

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.

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 in working capital
- XII. Other expenses.

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

Cost B Cost 'B1' + Interest on land value

Cost C Cost 'B' + imputed value of family labour

(b) Procedure for imputation of value of owned inputs

In the production process certain inputs from home stock are used in the production process. In order to estimate the cost of cultivation it is necessary to input the value of these inputs. The procedure used for the imputation of value of such home stock inputs is indicated below:

- | | |
|--|--|
| I. Family labour | Imputed on the basis of average wage rate per work hour of hired labour. |
| II. Owned and exchange human labour | The rate of wages per hour for hired human labour is taken for imputing the value of own stock and exchange human labour. |
| III. Owned and exchanges animal labour | The charges paid per hour for hired animal labour is taken for imputing the value of owned and exchanges animal labour. |
| IV. Owned and exchange of machine labour | The hire charges per hour for inactive 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 investigator zone concerned at the time of sowing. |
| VII. Farm produced | Imputed at the rate prevalent in the zone concerned |

| | | |
|-------|-----------------------------|--|
| | manure | |
| VIII. | Interest on fixed capital | Interest on the present value of fixed assets such as land farm, building, implements, machinery, irrigation structure equipments and livestock (only draught animals) at the rate of 10% per annum has been calculated. |
| IX. | Interest in 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.) in incurred during the period of cultivation. |
| X. | Payments of kind | The payments in kind have been evaluated at the market prices prevalent in the locality at the time of payment. Perquisites have been included in the payments in kind calculated at the market prices. |

C. Allocation of joint cost to different crops

Some of the inputs used for the cultivation of one crop are common for many other crops also. For the purpose of computing the cost share of individual crops, the 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 own fixed capital (excluding land) | In proportion to the area under the crop |
| 3. | Interest in land value | Interest in the value of land under the crop |

(d) Procedure for valuation of farm assets

- | | | |
|----|---|---|
| 1. | Own farm buildings (cattle shed, storage sheets etc.) | Valuated at prices prevailing in the locality |
| 2. | Implement and other machinery | Valuated at prevalent market prices |
| 3. | Live stock (only draught animal) | Valuated at prevalent market prices |

In calculating the cost of production of paddy crop in each season the interest in 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. There is a controversy in the assessing the land value. The land value is increasing considerably. If the actual value is taken for calculating the interest in land value, no cultivation is profitable in the State. However, there is always tendency to make report the land value. It is therefore necessary to evolve a method on criteria on the estimate the land value reasonably while calculating the cost of cultivation of crop.

Chapter 2

Results of the Survey

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

The following table gives the total cropped area and the area under paddy crops for three seasons during 1996-97.

Table 1 – Area under paddy during 1996-97

| Total cropped area (in lakh Hectare.) | Area under paddy (in lakh hectare) | | | |
|--|------------------------------------|----------------|----------------|-----------------|
| | Autumn | Winter | Summer | Total |
| 30.21 | 1.64 (5.43) | 2.10 (6.95) | 0.57 (1.89) | 4.31 (14.27) |

Source: Agricultural Statistics of Kerala 1996-97

(Figures in brackets give the percentage of paddy in each seasons to the total cropped area). Out of the three seasons of paddy Autumn (virippu) and Winter (Mundakan) are the most important seasons were paddy procedure yield maximum.

The following table shows the percentage of area under paddy crop in each season to the total gross area under paddy.

Table 2 – Percentage of area under paddy in each season to the gross area under paddy during 1996-97

| Percentage of area under paddy | | | |
|--------------------------------|--------|--------|-------|
| Autumn | Winter | Summer | Total |
| 38.05 | 40.72 | 13.23 | 100 |

From the above table it is seen that 87% of the paddy area in autumn and winter seasons.

The rice production in the State during the year under study stood at 8.71 lakh tonnes and its productivity of three seasons are given below.

Table 3 – Production of rice during the year 1996-97 (in lakh tonnes)

| Season | Production of rice (tonnes) | Percentage |
|--------|-----------------------------|------------|
| Autumn | 332643 | 38.18 |
| Winter | 414338 | 47.55 |
| Summer | 124380 | 14.27 |
| Total | 871361 | 100.00 |

Table 4 – Average productivity of paddy during 1996-97

| Season | Average Productivity (kg/ha) |
|--------|------------------------------|
| Autumn | 3089 |
| Winter | 2999 |
| Summer | 3343 |

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

Out of the total irrigated cropped area. Percentage constitutes under paddy, which is shown below.

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

| Area irrigated | Total cropped area irrigated | Percentage |
|----------------|------------------------------|------------|
| 230087 | 356885 | 64.46 |

(i) Autumn paddy

The total number of holding selected for the cost of cultivation study on autumn paddy were 370. They were scattered in all 38 taluks of the State. The number of holdings selected and the area under the crop in each holding size class viz. small, medium and large are given below.

Table 6 – Area under Autumn paddy during the year 1996-97

| Holding size class | No. of selected holdings | Area under the crop in the sample (Hectare) | Percentage | Area per holding (hectare) |
|--------------------|--------------------------|---|------------|----------------------------|
| Small | 210 | 47.74 | 19.73 | 0.23 |
| Medium | 135 | 113.00 | 46.70 | 0.84 |
| Large | 25 | 81.24 | 33.57 | 3.25 |
| Total | 370 | 241.98 | 100.00 | 0.65 |

The holdings under report had a total operational area of 241.98 Hectare and the average size of holding was 0.65 Hectare.

A. Cost of cultivation

The estimated per hectare cost of autumn paddy cultivation is furnished below.

Table 7 – Cost of cultivation per hectare of paddy (autumn) during 1996-97

| Sl. No | Component of different cost concept | Cost per hectare | Percentage distribution of cost |
|--------|---|------------------|---------------------------------|
| 1 | Hired human labour | 7458 | 58.66 |
| 2 | Animal labour | 525 | 4.13 |
| 3 | Machine labour | 781 | 6.14 |
| 4 | Seed/Seedlings | 784 | 6.17 |
| 5 | Farmyard, manure and chemical fertilizers | 1937 | 15.24 |
| 6 | Plant protection | 139 | 1.09 |
| 7 | Land fax and irrigation cess | 23 | 0.18 |
| 8 | Repair and maintenance charges | 218 | 1.71 |
| 9 | Interest on working capital | 594 | 4.67 |
| 10 | Other expenses | 255 | 2.01 |
| 11 | Cost A (1 to 10) | 12714 | 100.00 |
| 12 | Interest on fixed capital | 665 | |
| 13 | Cost B1 (11+12) | 13379 | |
| 14 | Interest on land value | 21822 | |
| 15 | Cost B (13+14) | 35201 | |
| 16 | Imputed value of household labour | 619 | |
| 17 | Cost C (15+16) | 35820 | |

The share of hired human labour during the year 1996-97 to the total cost 'A' in autumn paddy cultivation was 59%. Animal labour and machine labour constituted to 4% and 6% respectively. Human labour cost, which is the major component of the paddy cultivation, consists of hired human

labour, exchange labour and family labour. Among there irrespective of the size group of holdings hired human labour formed a major portion.

The following table illustrate the percentage of hired human labour hours engaged in Autumn Paddy cultivation to the total labour hours.

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

| Size | Holding size class | | | |
|--------|--------------------|--------|-------|----------|
| | Small | Medium | Large | All size |
| Male | 25 | 20 | 21 | 21 |
| Female | 65 | 71 | 77 | 71 |
| Total | 90 | 91 | 98 | 92 |

As usual the proportion of hired human labour to total human labour input steadily increases with the increase the size of holdings. It is seen that cultivators belonging to large size class are seen to depend for more than 98% of the requirements on hired labour. The cost of hired human labour per hectare works out to Rs.7458/-

Seed and seedlings is an important input of paddy cultivation per hectare or estimated from the survey is 6% of the total cost 'A'. For paddy cultivation home produced manure, chemical fertilizers are used, the cost of which was Rs.1937/- per hectare during this round. When compared to the previous year, the combined cost of organic manure and chemical fertilizers per hectare is seen decreased irrespective of the size of holdings.

It was noted that the per hectare cost forwards plant protection measures is on decreasing trend while the cost per hectare in 1995-96 was Rs.153/per hectare it was Rs.139/- in 1996-97. The percentage share of land tax and irrigation cess is nominal ie below 1%. Expenditure on repair and maintenance of implements varies from year to year and from size class to size class. It is worked out to Rs.218/- during 1996-97. It seems to be increasing as size class increasing. Interest on working capital was Rs.594/- per hectare and other expenses was Rs.255/- during 1996-97.

Cost 'B1'

Cost 'B1' is estimated by adding the interest in fixed capital (excluding land) to cost 'A'. The estimated interest on fixed capital for 1996-97 is Rs.665/- and cost 'B1' is Rs.13379/-

When compared to the previous year interest on land value increased from Rs.16391 to Rs.21822 during this year. The size class variation is seen minimum in large size class and maximum in small size class.

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 imputed value of household labour to cost 'B'. The estimated interest on land value was Rs.21822 and imputed value of household labour was Rs.619 during the year 1996-97. Cost B is estimated to be Rs.35201 and Cost 'C' is Rs.35820 per hectare. The following table illustrates a comparison with the previous years cost and the year under study.

Table 9 – Cost of cultivation of Autumn paddy in Rs./hectare for 1995-96 and 1996-97

| Concept of cost | Year | Holding size class | | | |
|-----------------|---------|--------------------|--------|-------|----------|
| | | Small | Medium | Large | All size |
| Cost A | 1995-96 | 13406 | 11501 | 10946 | 11512 |
| | 1996-97 | 115917 | 12280 | 11509 | 12714 |
| Cost B | 1995-96 | 30486 | 30739 | 25648 | 28501 |
| | 1996-97 | 40111 | 35016 | 32592 | 35201 |
| Cost C | 1995-96 | 31481 | 31298 | 25878 | 29006 |
| | 1996-97 | 41214 | 35797 | 32701 | 35820 |

Compared to the previous year the cost 'A' has increased to 10% during 1996-97. The percentage increase of cost 'B' and cost 'C' are being to 24% and 23% respectively.

B. Output

Value of product and by product of autumn paddy cultivation for the year 1996-97 is given on the following table.

Table 10 – Value of product and by product per hectare (in Rs.) during 1996-97

| Product and by product | Holding size class | | | |
|------------------------|--------------------|--------|-------|----------|
| | Small | Medium | Large | All size |
| Paddy | 13793 | 12522 | 11107 | 12298 |
| Straw | 3329 | 2229 | 1182 | 2094 |
| Total | 17122 | 14751 | 12289 | 14392 |

During the year 1996-97 the per hectare value of output is estimated to Rs.14392 which is more than the value of output for 1995-96. It is worthy to note that the paid out cost of cultivation is also showed almost similar scale of increase. The value of product from 1990-91 is given in the following table. The table shows that the value of product has been steadily increasing except for the year 1994-95.

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

| | | | | | | |
|---------|---------|---------|---------|---------|---------|---------|
| 1990-91 | 1991-92 | 1992-93 | 1993-94 | 1994-95 | 1995-96 | 1996-97 |
| 7259 | 8139 | 10090 | 9417 | 9024 | 12121 | 14392 |

C. Cost of production of paddy per Qtl. during autumn season in Rs.

The cost of production of paddy per qtl. Is estimated by dividing the cost of cultivation per hectare (after deducting the value of product per hectare from the cost of cultivation per hectare) by the quantity of paddy produced per hectare.

Table 12 – Cost of production of paddy per qtl. During Autumn season (in Rs.)

| Concept of cost | Holding size class | | | |
|-----------------|--------------------|--------|-------|-----------|
| | Small | Medium | Large | All sizes |
| Cost 'A' | 530 | 467 | 429 | 465 |
| Cost 'B' | 1551 | 1522 | 1304 | 1451 |
| Cost 'C' | 1598 | 1558 | 1308 | 1478 |

When cost 'A' is considered the cost of production of paddy per qtl of Rs.465 during the period under report. The following table illustrates the comparison of cost of production of autumn paddy the previous year.

Table 13 – cost of production per qtl. of autumn paddy during 1995-96 and 1996-97 (in Rs.)

| Concept of cost | 1995-96 | 1996-97 | Percentage of increase/decrease |
|-----------------|---------|---------|---------------------------------|
| Cost 'A' | 409 | 465 | 14 |
| Cost 'B' | 1116 | 1451 | 30 |
| Cost 'C' | 1138 | 1478 | 30 |

11. Winter paddy

The study on cost of cultivation of winter paddy was conducted in 380 holdings. The sample area under winter paddy in small, medium and large size class of holdings are given below.

Table 14 – Area under winter paddy during 1996-97

| Holding size class | No. of selected holdings | Area under the crop in the sample (Hectare) | Percentage | Area per holding (hectare) |
|--------------------|--------------------------|---|------------|----------------------------|
| Small | 201 | 52.87 | 20.04 | 0.26 |
| Medium | 137 | 102.32 | 38.79 | 0.75 |
| Large | 42 | 108.62 | 41.17 | 2.59 |
| Total | 380 | 263.81 | 100.00 | 0.69 |

The total operated area of the selected holdings is 263.81 hectare. The average size of holdings is 0.69 hectare.

A. Cost of cultivation

The cost of different items per hectare of cost 'A' (percentage distribution) is given below.

Table 15 – Cost of cultivation per hectare of paddy (winter) during the year 1996-97

| Sl. No | Component of different cost concept | Cost per hectare | Percentage distribution of cost 'A' |
|--------|--|------------------|-------------------------------------|
| 1 | Hired human labour | 7896 | 56.79 |
| 2 | Animal labour | 571 | 4.11 |
| 3 | Machine labour | 955 | 6.87 |
| 4 | Seed/seedlings | 853 | 6.14 |
| 5 | Farm yard, manure & chemical fertilizers | 2121 | 15.26 |
| 6 | Plant protection | 206 | 1.48 |
| 7 | Land tax and irrigation cess | 52 | 0.37 |
| 8 | Repair and maintenance charges | 187 | 1.35 |
| 9 | Interest on working capital | 651 | 4.68 |
| 10 | Other expenses | 411 | 2.97 |
| 11 | Cost 'A' (1 to 10) | 13903 | 100.00 |
| 12 | Interest on fixed capital | 655 | |
| 13 | Cost B1 (11+12) | 14558 | |
| 14 | Interest on land value | 18019 | |
| 15 | Cost 'B' (13+14) | 32577 | |
| 16 | Imputed value of household labour | 617 | |
| 17 | Cost 'C' (15+16) | 33194 | |

The per hectare cost towards hired human labour in winter paddy cultivation comes to Rs.7896 in 1996-97. It accounts to 57% of the total cost A.

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

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

| Sex | Holding size class | | | |
|--------|--------------------|--------|-------|----------|
| | Small | Medium | Large | All size |
| Male | 26 | 22 | 15 | 20 |
| Female | 62 | 70 | 83 | 74 |
| Total | 88 | 92 | 98 | 94 |

Out of the total human labour hours employed in winter paddy cultivation 94% is accounted by hired labour. Female hired labour is more than that of male labour hours. The ploughing and machine operated part of the work are attended by man and almost all other type of activities are being attended by women labourers and more over this will be also reduce the cost by way of wages.

The cost of animal labour is higher in the case of small size cultivators where as the machine labour cost is higher in the case of large cultivators. The cost of seed/seedlings is Rs.853 per hectare which is 6% of the total cost A. Farmyard manure and Chemical Fertilizers which is an important item of paddy cultivation accounts to 15%. The cost of plant protection measures is estimated at Rs.206 per hectare. The percentage share towards land tax and irrigation cess is negligible. The expenditure on

repair and maintenance of implements accounts for 1%. Interest on working capital is computed at Rs.651.

Cost B1 and Cost B

Cost B1 is estimated by adding the interest on fixed capital (excluding land) to cost 'A'. It is found to be Rs.14558/-.

Cost 'B' is estimated to be Rs.32577/-. When compared to the previous round interest on land value has increased during this round.

Cost C

Cost C is estimated by adding the imputed value of household labour to cost 'B'. It is seen as Rs.33194/-

The estimated cost of winter paddy per hectare under three major concepts of cost is given below.

Table 17 – Cost of cultivation of winter paddy (Rs./Hectare)

| Concept of cost | Holding size class | | | |
|-----------------|--------------------|--------|-------|----------|
| | Small | Medium | Large | All size |
| Cost A | 14523 | 13894 | 13765 | 13903 |
| Cost B | 42171 | 32824 | 27811 | 32577 |
| Cost C | 43399 | 33554 | 28023 | 33194 |

Cost of cultivation of winter paddy 1995-96 and 1996-97 are given below.

Table 18 – Cost of cultivation of winter paddy (Rs./hectare) for 1995-96 and 1996-97

| Concept of cost | Year | Holding size class | | | |
|-----------------|---------|--------------------|--------|-------|----------|
| | | Small | Medium | Large | All size |
| Cost A | 1995-96 | 14379 | 13535 | 10507 | 12198 |
| | 1996-97 | 14523 | 13894 | 13765 | 13903 |
| Cost B | 1995-96 | 31409 | 28536 | 21370 | 25483 |
| | 1996-97 | 42171 | 32824 | 27811 | 32577 |
| Cost C | 1995-96 | 32438 | 29239 | 22263 | 26329 |
| | 1996-97 | 43399 | 33554 | 28023 | 33194 |

B – Output

The estimated value of paddy and straw obtained from winter paddy cultivation is given below.

Table 19 – Value of output (Rs./Hectare)

| Product and by product | Holding size class | | | |
|------------------------|--------------------|--------|-------|----------|
| | Small | Medium | Large | All size |
| Paddy | 13346 | 14870 | 15293 | 14739 |
| Straw | 4850 | 4595 | 2997 | 3988 |
| Total | 18196 | 19465 | 18290 | 18727 |

C. Cost of production of paddy per qtl.

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

Table 20 – Cost of production of winter paddy (Rs./Hectare)

| Concept of cost | Holding size class | | | |
|-----------------|--------------------|--------|-------|----------|
| | Small | Medium | Large | All size |
| Cost A | 451 | 382 | 420 | 408 |
| Cost B | 1740 | 1160 | 969 | 1177 |
| Cost C | 1797 | 1190 | 978 | 1203 |

The cost of production of winter paddy per qtl. for 1995-96 and 1996-97 are presented below for comparison.

Table 21 – Cost of production of winter paddy per/ctl. (Rs) 1995-96 and 1996-97

| Concept of cost | Year | | Percentage of increase |
|-----------------|---------|---------|------------------------|
| | 1995-96 | 1996-97 | |
| Cost A | 325 | 408 | 26 |
| Cost B | 817 | 1177 | 44 |
| Cost C | 848 | 1203 | 42 |

When compared to the previous years cost of production of winter paddy per qtl. relating to cost A, B and C showed an increasing trend.

(iii) Summer paddy (punja)

The number of holdings selected for the study on cost of cultivation of summer paddy was 325 during 1996-97. The details of the holdings are given below.

Table 22 - Area under summer paddy 1996-97

| Holding size class | No. of selected holdings | Area under the crop in the sample (Hectare) | Percentage | Area per holding |
|--------------------|--------------------------|---|------------|------------------|
| Small | 192 | 43.68 | 22.98 | 0.23 |
| Medium | 104 | 75.48 | 39.71 | 0.73 |
| Large | 29 | 70.93 | 37.31 | 2.45 |
| Total | 325 | 190.09 | 100.00 | 0.58 |

The holdings selected during the period under report have a total operational area of 190.09 hectare. The average size of holdings was 0.58 hectare.

A. Cost of cultivation

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

Table 23 - Cost of cultivation per hectare of summer paddy for the year 1996-97

| Sl. No | Component of different cost concept | Cost per hectare | Percentage distribution of cost 'A' |
|--------|--|------------------|-------------------------------------|
| 1 | Hired human labour | 8656 | 51.41 |
| 2 | Animal labour | 632 | 3.75 |
| 3 | Machine labour | 951 | 5.65 |
| 4 | Seed/seedlings | 1029 | 6.11 |
| 5 | Farm yard, manure & chemical fertilizers | 3157 | 18.75 |
| 6 | Plant protection | 603 | 3.58 |
| 7 | Land tax and irrigation cess | 121 | 0.72 |
| 8 | Repair and maintenance charges | 217 | 1.29 |
| 9 | Interest on working capital | 786 | 4.67 |
| 10 | Other expenses | 686 | 4.07 |
| 11 | Cost 'A' (1 to 10) | 16838 | 100.00 |
| 12 | Interest on fixed capital | 752 | |
| 13 | Cost B1 (11+12) | 17590 | |
| 14 | Interest on land value | 13585 | |
| 15 | Cost 'B' (13+14) | 31175 | |
| 16 | Imputed value of household labour | 787 | |
| 17 | Cost 'C' (15+16) | 31962 | |

From the above table it seen that about 61% of the total cost 'A' constitutes to labour cost. When compared to the previous year hired human labour cost in large size class showed a decreasing trend.

The percentage of hired human labour hours engaged in the summer paddy cultivation during the year 1996-97 is given below.

Percentage of hired human labour hours engaged in summer paddy cultivation

| Holding size class | Male | Female | Total |
|--------------------|------|--------|-------|
| Small | 23 | 61 | 84 |
| Medium | 22 | 71 | 93 |
| Large | 20 | 77 | 97 |
| All size | 22 | 71 | 93 |

During this round about 93% of the total human labour hours is hired human labour. The cost of seed/seedlings per hectare is found to be Rs.1029/- during this year. It is seen that 19% of the total cost 'A' accounts to Farm yard manure and chemical fertilizers. The expenditure towards plant protection measures estimated to 4% of the total cost 'A'. Only a small percentage is expended for land tax and irrigation cess. The estimated expenditure per hectare as repair and maintenance charges of implements and machinery is found to be Rs.217 during the period under report. About 5% of the cost 'A' account for interest on working capital.

Cost 'B1" and cost 'B'

Cost B1 is obtained by adding the interest on fixed capital (excluding land) to cost 'A'. The interest on fixed capital is estimated to Rs.752 and cost B1 is found to be Rs.17590 for summer paddy cultivation. As usual the imputed value of household labour is maximum in the small size class and minimum in large size class. The interest on land value is found to be Rs.13585 during this year and cost 'B' is estimated to be Rs.31175 cost 'C' showed an increasing trend from Rs.28025 to Rs.31962 during this year.

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

Cost of cultivation of summer paddy Rs/Hectare for the year 1995-96 and 1996-97

| Concepts of cost | Holding size class | | | | |
|------------------|--------------------|-------|--------|-------|-----------|
| | Year | Small | Medium | Large | All sizes |
| Cost 'A' | 1995-96 | 14967 | 14316 | 14478 | 15193 |
| | 1996-97 | 17760 | 16141 | 16650 | 16838 |
| Cost 'B' | 1995-96 | 34589 | 26646 | 23100 | 27315 |
| | 1996-97 | 37367 | 32569 | 25239 | 31175 |
| Cost 'C' | 1995-96 | 36175 | 27160 | 23556 | 28025 |
| | 1996-97 | 39175 | 33300 | 25456 | 31962 |

When compared to the previous years the cost "A" has increased to 11% cost 'B' and cost 'C' by 14% each.

B. Output

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

Value of product and by product per hector for 1996-97

| Product by product | Holding size class | | | |
|--------------------|--------------------|--------|-------|----------|
| | Small | Medium | Large | All size |
| Paddy | 16577 | 15914 | 19744 | 17495 |
| straw | 4181 | 3393 | 2050 | 3073 |
| Total | 20758 | 19307 | 21794 | 21568 |

C. Cost of production of paddy per quintal

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

Cost of production of summer paddy per quintal

A comparison between the cost of production during the year 1995-96 and 1996-97 is given in the following table.

Cost of production of paddy per quantity during the year 1995-96 and 96-97

| Concept of cost | 1995-96 | 1996-97 |
|-----------------|---------|---------|
| Cost 'A' | 342 | 435 |
| Cost 'B' | 699 | 888 |
| Cost 'C' | 720 | 912 |

2.2 Coconut

Coconut is an important tree crop of the state which is cultivated in 9.02 lakhs hector during the year 1996-97. The total area under coconut and the average yield per hector during the period under report is given below

Area and average yield of coconut 1996-97

| Area under coconut (hector) | % to total cropped area | Average yields per hector (No. of nuts) |
|-----------------------------|-------------------------|---|
| 902104 | 29.86 | 5849 |

From the above table it is seen that the percentage of area under coconut cultivation to total cropped area is 30% and the average yield per hector is 5849 numbers.

For the survey on cost of cultivation 380 numbers of coconut holdings were selected for the year 1996-97. The details of these holdings according to the size class viz small medium and large are given below;

No. of holdings and area under coconut

| Holding size class | No. of holdings | Area under coconut in the sample (hector) | Percentage | Area per holdings (Ha) |
|--------------------|-----------------|---|------------|------------------------|
| Small | 107 | 16.80 | 5.91 | 0.16 |
| Medium | 180 | 79.50 | 27.95 | 0.44 |
| Large | 93 | 188.12 | 66.14 | 2.02 |
| All size | 380 | 284.42 | 100.00 | 0.75 |

The selected holdings had a total area of 284.42 hectare of operational area during the year 1996-97. The average size of holdings was 0.75 hectare.

Number of bearing trees in the selected plots

Out of the total coconut trees in the selected plots 77% was found to be bearing and the remaining non-bearing. The number of bearing and non-bearing trees per hectare for the year 1996-97 is given below

No. of bearing and non bearing trees per hectare

| Type of trees | No. of trees per hectare | Percentage |
|---------------|--------------------------|------------|
| Bearing | 121 | 76.58 |
| Non-bearing | 37 | 23.42 |
| Total | 158 | 100.00 |

A. Cost of cultivation

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

Cost 'A' consists of cash and other kind expenses and is worked out to Rs.11142/- per hectare during 1996-97. The estimated cost under different items of expenditure per hectare and percentage distribution of these items to total cost 'A' are given in the following table.

Cost of cultivation per hector of coconut during the year 1996-97

| Sl. No | Components of different cost concepts | Cost per hector (Rs.) | % distribution of cost 'A' |
|--------|---|-----------------------|----------------------------|
| 1 | Hired human labours | 5707 | 51.22 |
| 2 | Animal labour | 39 | 0.35 |
| 3 | Mechanic labour | 91 | 0.82 |
| 4 | Seed/seedlings | 8 | 0.07 |
| 5 | Farmyard, manure and chemical fertilizers | 3213 | 28.84 |
| 6 | Plant protection | 11 | 0.10 |
| 7 | Land tax and irrigation cess | 35 | 0.31 |
| 8 | Repair and maintenance charges | 228 | 2.05 |
| 9 | Interest on working capital | 953 | 8.55 |
| 10 | Other expenses | 857 | 7.69 |
| 11 | Cost 'A'(1 to 10) | 11142 | 100.00 |
| 12 | Interest on fixed capital | 1292 | |
| 13 | Cost 'B'(11+12) | 12434 | |
| 14 | Interest on land value | 128410 | |
| 15 | Cost 'B'(13+14) | 140844 | |
| 16 | Imputed value of H.H.labour | 538 | |
| 17 | Cost C(15+16) | 141382 | |

Labour cost is the major component of cost 'A' which includes hired human labours animal labour and machine labour. It works out to Rs.5837/-. The percentage distribution of hired human labour participation in coconut cultivation to the total labour hours is given below for males and females separately.

Percentage distribution of hired human labour hours to the total human labour hours

| Sex | Holding size class | | | |
|--------|--------------------|--------|-------|----------|
| | Small | Medium | Large | All size |
| Male | 64 | 73 | 78 | 75 |
| Female | 7 | 11 | 14 | 13 |
| Total | 71 | 84 | 92 | 88 |

When compared to the paddy cultivation female participation is lowest in coconut cultivation. About 88% of the total human labour hours has been shared by hired human labour. For planting new seed/seedlings only Rs.8% is spent.

Application of farm yard, manure and chemical fertilizers constitute a major share ie 29% of the total cost 'A'. Cost towards plant protection, land tax and irrigation cess accounts only a nominal percentage. Repair and maintenance charges is 2% of the total cost 'A' per hector interest on working capital is estimated to Rs. 953/-

Cost 'B1' and Cost 'B'

Cost B1 is estimated by adding the interest in fixed capital (excluding land) to cost 'A'. It is found to be Rs. 12434/-

Interest on land value is increased from Rs.115228/- to Rs. 128410/- during this round.

Cost 'C'

Cost 'C' is estimated by adding the imputed value of house hold labours to cost 'B'. It is estimated to be Rs.141382/-

Cost of cultivation of coconut per hecter during 1995-96 and 1996-97

| Cost per hecter (inRs) | | | |
|------------------------|---------|---------|-------------------------|
| Concept of cost | 1995-96 | 1996-97 | % increase/ decrease |
| Cost 'A' | 10760 | 11142 | 4 |
| Cost 'B' | 127163 | 140844 | 11 |
| Cost 'C' | 127761 | 141382 | 11 |

B. Value of product

The total value of output per hecter is seen Rs.25781/- during 1996-97

Value of output /hector

| Out put | Value (Rs.) |
|------------|-------------|
| Product | 23941 |
| By product | 1840 |
| Total | 25781 |

2.3 Arecanut

In Kerala Arecanut palm grows under different climate and soil conditions. The total area under aracanut cultivation during 1996-97 was 76066 hectare. The details of arecanut cultivation is given in the following tables

Area and average yield of Arecanut

| Total cropped area (in Ha) | Area under Arecanut (In ha) | Average yiled per hector (Tons) | % of area under Arecanut to total cropped area |
|-------------------------------|--------------------------------|------------------------------------|---|
| 3021224 | 76066 | 113 | 2.52 |

From the above table it is seen that 3% of the total cropped are is under arecanut cultivation

Selected holdings

For the cost of cultivation of arecanut 380 holdings were selected during 1996-97. The details of these holdings in ecah size class is as follows.

Area under Arecanut during 1996-97

| Holding size class | No. of selected holdings | Area under the crop in the sample(ha) | Percentage) | Area per holding (Ha) |
|-----------------------|-----------------------------|---|-------------|--------------------------|
| Small | 296 | 15.78 | 26.44 | 0.05 |
| Medium | 64 | 22.50 | 37.71 | 0.35 |
| Large | 20 | 21.39 | 35.85 | 1.07 |
| Total | 380 | 59.67 | 100.00 | 0.16 |

The total operational area of the selected holdings studied for the period under report was 59.67 hectare. The average size of holdings was 0.16 hectare.

A Cost of cultivation

The estimated cost of cultivation of arecanut under different cost concepts are given below:

Cost of cultivation per hectore of Arecanut during the year 1996-97

| Sl. No | Components of different cost concepts | Cost per hectore (Rs.) | % distribution of cost 'A' |
|--------|---|------------------------|----------------------------|
| 1 | Hired human labours | 9054 | 49.34 |
| 2 | Animal labour | - | - |
| 3 | Mechanic labour | 406 | 2.22 |
| 4 | Seed/seedlings | 14 | 0.08 |
| 5 | Farmyard, manure and chemical fertilizers | 5939 | 32.40 |
| 6 | Plant protection | 248 | 1.35 |
| 7 | Land tax and irrigation cess | 34 | 0.18 |
| 8 | Repair and maintenance charges | 91 | 0.50 |
| 9 | Interest on working capital | 1655 | 9.03 |
| 10 | Other expenses | 889 | 4.85 |
| 11 | Cost 'A'(1 to 10) | 18330 | 100.00 |
| 12 | Interest on fixed capital | 1398 | |
| 13 | Cost 'B'(11+12) | 19728 | |
| 14 | Interest on land value | 107773 | |
| 15 | Cost 'B'(13+14) | 127501 | |
| 16 | Imputed value of H.H.labour | 1545 | |
| 17 | Cost C(15+16) | 129046 | |

Labour cost accounts to a major component of cost 'A' in arecanut cultivation as in other crops. The per hectore cost estimated under this items is Rs.9054/- during 1996-97. The percentage of hired human labour hours engaged in arecanut cultivation to total labour hours is given below for male and female respectively .Percentage distribution of hired human labour hours

| Sex | Holding size class | | | |
|--------|--------------------|--------|-------|----------|
| | Small | Medium | Large | All size |
| Male | 58 | 62 | 70 | 64 |
| Female | 10 | 15 | 20 | 16 |
| Total | 68 | 77 | 90 | 80 |

The proportion of hired human labour hours to total human labour hours is higher in large size class and lowest in small size class. Cultivation belonging to large size of holdings depends 90% of their requirement of labour in hired human labour.

The per hectore expenditure incurred towards the cost of seed/seedlings for plantation is Rs.14/- . The cost towards farmyard manure on chemical fertilizers accounts to 32% of the total cost 'A'. The item of plant protection measures is Rs.248/- per hectore. Only a small percentage of total cost 'A' is accounted towards irrigation cess and land tax

The estimated expenditure on repair and maintenance charges of implements machinery and buildings workout to Rs.91/- Interest on working capital and other expenses constitutes to 9% and 5% respectively.

Cost B1 and Cost B

Cost B1 is estimated by adding the interest on fixed capital to cost 'A'. It workout to Rs. 19728/- during 1996-97

As in other crops interest on land value f account cultivation also decreases as size class increases it is seen that Rs.107773/- per hectore.

Cost B is estimated by adding the interest on land value to cost B1 and it is worked out to Rs. 127501/-

When compared to other crops the per hectore cost of imputed value of H.H labour is higher in arecanut cultivation

Cost 'C'

Cost 'C' is estimated by adding the inputed value of H.H. labour to cost 'B'. It is estimated as Rs.129046/- during 1996-97.

B. Value of output

The value of output per hectore from arecanut cultivation is found to be Rs.45954/- during 1996-97

2.4 Tapioca

Tapioca, is yet another food item of Keralaties extensively cultivated in the state. The total area under tapioca cultivation and the average yield per hectore for the year 1996-97 are given in the following table.

Area and average yield of Tapioca during 1996-97

| Total cropped area (ha) | Area under tapioca (ha) | Average yiled per Ha (tones) | % of area under tapioca to cropped area |
|-------------------------|-------------------------|------------------------------|---|
| 3021224 | 120387 | 22.35 | 4.43 |

About 4% of the total cropped area was under tapioca cultivation during the period 1996-97. The yield per hectore of Tapioca was22.35 tones.

Selected holdings

During 1996-97 for the estimation of the cost of cultivation of tapioca. 175 holdings were selected. The details of these holdings in each size class is given in the following table.

Area and number of holdings selected

| size class | Area under the crop in the sample (ha) | % to total area of the selected holdings | No. of selected holdings | Area per holding |
|------------|--|--|--------------------------|------------------|
| Small | 13.59 | 25.56 | 103 | 0.13 |
| Medium | 20.73 | 38.99 | 58 | 0.36 |
| Large | 18.85 | 35.45 | 14 | 1.35 |
| Total | 53.17 | 100.00 | 175 | 0.30 |

The selected holdings had a total operational area of 53.17 hectare. The average size of holdings is 0.30 hectare.

Cost of cultivation of Tapioca

As in other crops the cost of cultivation of tapioca is also estimated under

three different concepts of cost (viz cost 'A' and cost 'B' cost 'C') the estimated cost of different items per hectare and their percentage distribution to the total cost 'A' is given in the following table

Cost of cultivation per hectare of Tapioca during the year 1996-97

| Sl. No | Components of different cost concepts | Cost per hectare (Rs.) | % distribution of cost 'A' |
|--------|---|------------------------|----------------------------|
| 1 | Hired human labours | 8989 | 54.39 |
| 2 | Animal labour | 77 | 0.47 |
| 3 | Mechanic labour | 339 | 2.05 |
| 4 | Seed/seedlings | 627 | 3.79 |
| 5 | Farmyard, manure and chemical fertilizers | 3881 | 23.49 |
| 6 | Plant protection | 7 | 0.04 |
| 7 | Land tax and irrigation cess | 26 | 0.16 |
| 8 | Repair and maintenance charges | 143 | 0.86 |
| 9 | Interest on working capital | 1487 | 9.00 |
| 10 | Other expenses | 951 | 5.75 |
| 11 | Cost 'A'(1 to 10) | 16527 | 100 |
| 12 | Interest on fixed capital | 1273 | |
| 13 | Cost 'B'(11+12) | 17800 | |
| 14 | Interest on land value | 76570 | |
| 15 | Cost 'B'(13+14) | 94370 | |
| 16 | Imputed value of H.H.labour | 1596 | |
| 17 | Cost C(15+16) | 95966 | |

From the above table it is seen that labour cost is an important component of cost 'A'. It account to 57% when compared to paddy cultivation the proportion of labour cost to total cost 'A' is lower in the case of tapioca cultivation. The percentage of hired human labour hours engaged in Tapioca cultivation to the total labour hours is given below for male and females sperately for each size class holdings.

Percentage distribution of hired human labour hours

| Holding size class | | | | |
|--------------------|-------|--------|-------|----------|
| Sex | Small | Medium | Large | All size |
| Male | 60 | 70 | 71 | 67 |
| Female | 12 | 15 | 23 | 17 |
| Total | 72 | 85 | 94 | 84 |

The above table shows that the proportion of hired human labour to total human labour inputs steadily increase with the increases in the size of holdings

The cost towards seed/seedlings accounts to 4% of the total cost 'A'. Farmyard, manure and chemical fertilizers constitutes to 23%. In tapioca cultivation cost towards plant protection measures and land tax and irrigation cess accounts to below 10% of each. The expenditure increased for repair and maintenance changes 1% of the total cost 'A'. The interest on working capital is estimated at Rs.1487/- per hectare. The other expenses comes to Rs/951 Hectare.

An interest calculated for fixed capital and it comes to Rs.1273/- during the period under review. Cost B1 and cost 'B' showed an increasing trend during this year. Cost 'C' is estimated to Rs.95966/- per hectare

Estimated cost of cultivation

| | |
|----------|-------|
| Cost 'A' | 16527 |
| Cost 'B' | 94370 |
| Cost 'C' | 95966 |

The following table illustrated the comparison between the cost of cultivation of tapioca during the year 1995-96 and 1996-97.

Cost of Tapioca cultivation per hectare during the year 1995-96 and 1996-97

| Concept of cost | Cost per hectare (Rs.) | | Percentage increase in the cost of cultivation |
|-----------------|------------------------|---------|--|
| | 1995-96 | 1996-97 | |
| Cost 'A' | 13684 | 16527 | 21 |
| Cost 'B' | 113598 | 94370 | (-)17 |
| Cost 'C' | 115122 | 95966 | (-)17 |

The calculation of cost 'B' for tapioca is unscientific. While the paid cost (cost 'A') per hectare was only Rs.16527/-. The interest on land value(cost B) was Rs.94370/- it is 6 times more than the cost 'A'. So it is better to dispense with the cost in the computation of cost of cultivation of Tapioca

Output

The per hectare value of tapioca during 1996-97 is found to be Rs.31371/-

2.5 Pepper

Pepper is an important foreign exchange earner is largely produced from Kerala. The total area under pepper and average yield per hectare during the year 1996-97 are given in the following table

Area and Average yield of pepper

| Area under pepper (ha) | Average yield of pepper kg/ha | % of area under pepper to the total cropped area |
|------------------------|-------------------------------|--|
| 182887 | 309 | 6.05 |

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

Selected holdings

During this round 190 holdings were selected for studying the cost of cultivation of pepper during the year 1996-97. The details are given below;

Area under pepper in the sample

| Holding size class | No. of selected holdings | Total area under the crop (ha) | % to the total area of selected holdings | Area per holdings |
|--------------------|--------------------------|--------------------------------|--|-------------------|
| Small | 151 | 8.58 | 36.29 | 0.07 |
| Medium | 37 | 12.41 | 52.50 | 0.34 |
| Large | 2 | 2.65 | 11.21 | 1.33 |
| All size | 190 | 23.64 | 100.00 | 0.12 |

The operational area under the crop in the selected holdings is 23.64 hectare. The average size of holding is 0.12 hectare.

A. Cost of cultivation of pepper

The per hectare cost increased under different components are given in the following table;

Cost of cultivation per hectore of pepper during the year 1996-97

| Sl. No | Components of different cost concepts | Cost per hectore (Rs.) | % distribution of cost 'A' |
|--------|---|------------------------|----------------------------|
| 1 | Hired human labours | 5481 | 56.58 |
| 2 | Animal labour | - | - |
| 3 | Mechanic labour | 162 | 1.67 |
| 4 | Seed/seedlings | 48 | 0.50 |
| 5 | Farmyard, manure and chemical fertilizers | 2492 | 25.73 |
| 6 | Plant protection | 68 | 0.70 |
| 7 | Land tax and irrigation cess | 30 | 0.31 |
| 8 | Repair and maintenance charges | 156 | 1.31 |
| 9 | Interest on working capital | 864 | 8.92 |
| 10 | Other expenses | 386 | 3.98 |
| 11 | Cost 'A'(1 to 10) | 9687 | 100.00 |
| 12 | Interest on fixed capital | 1712 | |
| 13 | Cost 'B'(11+12) | 11395 | |
| 14 | Interest on land value | 94484 | |
| 15 | Cost 'B'(13+14) | 105883 | |
| 16 | Imputed value of H.H.labour | 1374 | |
| 17 | Cost C(15+16) | 107257 | |

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

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

| Sex | Holding size class | | | |
|--------|--------------------|--------|-------|----------|
| | Small | Medium | Large | All size |
| Male | 57 | 72 | 98 | 67 |
| Female | 10 | 9 | - | 9 |
| Total | 67 | 81 | 98 | 76 |

The percentage share of hired human labour hours to total human hours increased as size class increased. About 76% of total human labour hours constituted for hired human labour and the remaining towards house hold human labour hours. Female hired human labour is low in the case of pepper cultivation

For planting new plants Rs.48/- is spent. About 26% of the total cost 'A' is accounted for farmyard manure and chemical fertilizers. Plant protection measures accounts nearly 1% of the total cost 'A'. Land tax and irrigation cess, repair and maintenance charges etc constitutes 0.31 and 1.61% respectively. The per hectore cost towards interest in working capital is Rs.864/- and other expenses is Rs.386/

Cost 'B1'

Cost B1 is estimated by adding the interest on fixed capital excluding land to cost 'A' and it is Rs. 11399/- during 1996-97. Interest on land value showed on increasing trend, which is worked out Rs.94484/-

Cost 'B' and 'C'

Cost 'B' is estimated by adding the interest on land value to cost 'B1' and cost C is estimated by adding the imputed value of household labour to cost 'B' During this round cost 'B' is Rs105883 and cost 'C' is Rs107257/- The imputed value of HH labour is Rs. 1374/-

Value of output

The value of output is found to be Rs.38991/- per hectare. During the year 1996-97

2.6 Ginger

Ginger cultivation occupies an important place in the recent cropping pattern of the state. The are under this crop and its average yield per hectare of ginger is given below in the following table

Area and Average yield of ginger

| Total cropped area (Ha) | Area under ginger (ha) | Average yield (ha) | % of area under ginger to total cropped area |
|-------------------------|------------------------|--------------------|--|
| 3021224 | 13199 | 351 | 0.44 |

The total area under ginger cultivation during the year 1996-97 was 13199 hectare. The average yield per ha was 351 qfi. The percentage area of ginger cultivation to the total cropped area comes to 0.44%

Selected holdings

The number of holdings selected for cost of cultivation study on ginger given as follows.

Number of holdings under ginger cultivation

| Holding size class | No. of selected holdings | Area under ginger (Ha) | %to total area | Area per holdings (ha) |
|--------------------|--------------------------|------------------------|----------------|------------------------|
| Small | 137 | 12.60 | 40.40 | 0.09 |
| Medium | 35 | 11.30 | 36.23 | 0.321 |
| Large | 5 | 7.29 | 23.37 | 1.46 |
| All size | 177 | 31.19 | 100.00 | 0.18 |

The total number of holdings selected for ginger cultivation during the year 1996-97 was 177.

It covered an area of 31.19 hectare. The average area per holding was 0.18 hectare.

A. Cost of cultivation

The per hectore cost of cultivation details of ginger under different component of costs are given as follows

Cost of cultivation of per hectore of ginger during the year 1996-97

| Sl. No | Components of different cost concepts | Cost per hectore (Rs.) | % distribution of cost 'A' |
|--------|---|------------------------|----------------------------|
| 1 | Hired human labours | 17595 | 36.04 |
| 2 | Animal labour | 68 | 0.14 |
| 3 | Mechanic labour | 128 | 0.26 |
| 4 | Seed/seedlings | 14135 | 28.96 |
| 5 | Farmyard, manure and chemical fertilizers | 9985 | 20.45 |
| 6 | Plant protection | 655 | 1.34 |
| 7 | Land tax and irrigation cess | 58 | 0.12 |
| 8 | Repair and maintenance charges | 33 | 0.08 |
| 9 | Interest on working capital | 4430 | 9.07 |
| 10 | Other expenses | 1729 | 3.54 |
| 11 | Cost 'A'(1 to 10) | 48816 | 100.00 |
| 12 | Interest on fixed capital | 559 | |
| 13 | Cost 'B'(11+12) | 49375 | |
| 14 | Interest on land value | 63232 | |
| 15 | Cost 'B'(13+14) | 112607 | |
| 16 | Imputed value of H.H.labour | 4276 | |
| 17 | Cost C(15+16) | 116883 | |

The per ha cost of hired human labour towards ginger cultivation constituted about 36% of the total cost 'A'. Animal labour and machine labour are used nominally ie 0.14 and 0.26 respectively. Seed and seedlings is an important input of ginger cultivation accounts 29% of the total cost 'A'. Farm yard, manure and chemical fertilizers is comes to 20% of the total cost 'A'. Cost increased under plant

protection, land tax and irrigation cess, repair and maintenance charges accounts to 1%, 0.12 and 0.08 respectively. Expenditure on working capital shared to 9% of the total cost 'A'

Percentage of Hired human labour hours engaged in ginger cultivation

| Holding size class | Male | Female | Total |
|--------------------|------|--------|-------|
| Small | 58 | 16 | 74 |
| Medium | 54 | 23 | 77 |
| Large | 67 | 26 | 93 |
| All size | 60 | 22 | 82 |

From the above tables about 82% of the total human labour hours is hired human labour. The female hired labour is low in ginger cultivation

Cost B1 and Cost B and Cost C

Cost B1 is obtained by adding the interest on fixed capital (excluding land) to cost 'A' and it is seen as Rs. 49375/-. Interest on land value is maximum in small size class and minimum in large size class. Cost B is estimated as Rs. 112607/- during the year 1996-97. The participation of H.H. labour is maximum in small size class and minimum in large size class. Cost 'C' is estimated as Rs. 116883/-

The estimated per ha cost of cultivation of ginger during the year 1996-97 is given below

Cost of cultivation of ginger Rs. /he for the year 1996-97

| Holding size class | | | | |
|--------------------|--------|--------|-------|----------|
| Concept of cost | Small | Medium | Large | All size |
| Cost 'A' | 37351 | 47069 | 73171 | 48816 |
| Cost 'B' | 116256 | 124288 | 84386 | 112607 |
| Cost 'C' | 122525 | 127745 | 86483 | 116883 |

Output

The value of output is seen as R.71974/- per ha for ginger cultivation. The details for the different holding size class are given as follows

Value of product and by product per ha for the year 1996-97

| Holding size class | | | | |
|------------------------|-------|--------|--------|----------|
| Product and by product | Small | Medium | Large | All size |
| Product | 57898 | 68676 | 101323 | 71974 |
| By product | - | - | - | - |
| Total | 57898 | 68676 | 101323 | 71974 |

2.7 Turmeric

Turmeric is another important minor crops in the state. The total area under turmeric cultivation and average yield per ha for the year 1996-97 is given in the following table.

Area and average yield of turmeric during the year 1996-97

| Total cropped area (ha) | Area under Turmeric (Hectare.) | Average yield per hectare.(qty) | % of area under Turmeric cultivation |
|-------------------------|--------------------------------|---------------------------------|--------------------------------------|
| 3021224 | 4053 | 242 | 0.13 |

About 0.13% of the total cropped area was under turmeric cultivation during the year 1996-97. The yield per ha of turmeric was 242 quintal.

Selected holdings

During the year 1996-97, 50 holdings were selected for the estimation of cost of cultivation of turmeric.

The details of these holdings in each size class are given in the following tables.

Area and number of holdings

| Size class | Area under Crop in the sample (ha) | No. of selected holdings | % of total area of selected holdings | Area per holdings |
|------------|------------------------------------|--------------------------|--------------------------------------|-------------------|
| Small | 2.55 | 40 | 31.76 | 0.06 |
| Medium | 1.53 | 6 | 19.05 | 0.26 |
| Large | 3.95 | 4 | 49.19 | 0.99 |
| All size | 8.03 | 50 | 100.00 | 0.16 |

The selected holding has a total area of 8.03 hectare. The average size of holdings is 0.16 hectare.

cost of cultivation of Turmeric

The cost of cultivation of turmeric is also estimated under different cost concepts of cost viz. cost 'A' 'B' and cost 'C'. The estimated cost of different items per ha and their percentage of distribution to the total cost 'A' is given in the following table.

Cost of cultivation per hectare of turmeric during the year 1996-97

| Sl.No | Components of different cost concepts | Cost per ha (Rs.) | % distribution of cost 'A' |
|-------|---|-------------------|----------------------------|
| 1 | Hired human labours | 10989 | 44.55 |
| 2 | Animal labour | 20 | 0.08 |
| 3 | Mechanic labour | 265 | 1.07 |
| 4 | Seed/seedlings | 5248 | 21.28 |
| 5 | Farmyard, manure and chemical fertilizers | 4940 | 20.03 |
| 6 | Plant protection | 138 | 0.56 |
| 7 | Land tax and irrigation cess | 25 | 0.10 |
| 8 | Repair and maintenance charges | 10 | 0.04 |
| 9 | Interest on working capital | 2239 | 9.08 |
| 10 | Other expenses | 791 | 3.21 |
| 11 | Cost 'A'(1 to 10) | 24665 | 100.00 |
| 12 | Interest on fixed capital | 452 | |
| 13 | Cost 'B'(11+12) | 25117 | |
| 14 | Interest on land value | 83646 | |
| 15 | Cost 'B'(13+14) | 108763 | |
| 16 | Imputed value of H.H.labour | 2123 | |
| 17 | Cost C(15+16) | 110886 | |

From the above table it is seen that labour cost is the major component of cost 'A' which is to be 46%. Seed and seedling is another important output of Turmeric cultivation that comes to 21%. Farm yard manure and a chemical fertilizer accounts to 20%. The cost towards plant protection accounts to below 1% of the total cost 'A'. Land tax and irrigation cess is only nominal. The expenditure towards interest on working capital shares to 9% of the total cost 'A'

The percentage of hired human labour hours engaged in the turmeric cultivation during the year 1996-97 is given below.

Percentage of hired human labour hours engaged in Turmeric cultivation 1996-97

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

From the above table it is seen that about 89% of the total human labour hours is hired human labour. The composition of work participation rate is also differ from that of paddy cultivation

Cost 'B1' and cost 'B'

Cost 'B1' is obtained by adding the interest in fixed capital (excluding land) to cost 'A' and it seen that to Rs.25117/- Interest on land value is maximum in medium class and minimum in large size class. Considering the cost 'B' it is estimated as Rs.108763/-. The participation of household labour is maximum small size class and minimum in large size class and cost 'C' is Rs. 110886/-

The estimated per ha cost of cultivation of turmeric during the year 1996-9is given below

Cost of cultivation of Turmeric for the year 1996-97

| Concept of cost | Holding size class (Rs./He) | | | |
|-----------------|-----------------------------|--------|-------|----------|
| | Small | Medium | Large | All size |
| Cost 'A' | 21614 | 40469 | 20546 | 24665 |
| Cost 'B' | 135920 | 158902 | 72461 | 108763 |
| Cost 'C' | 141465 | 160261 | 72671 | 110886 |

Output

The value of output is seen as Rs.36314/- per ha for turmeric cultivation. The details of different holdings size class are given as follows

Value of product and by product per ha during the year 1996-97

| Product/by product | Holding size class | | | |
|--------------------|--------------------|--------|-------|----------|
| | Small | Medium | Large | All size |
| Product | 34157 | 52484 | 35215 | 36314 |
| By product | - | - | - | - |
| Total | 34157 | 52484 | 35215 | 36314 |

2.8 Nutmeg

Nutmeg cultivation occupies an important places in the recent cropping pattern of the state. The area under this crop and is average yield per ha is given in the following table.

Area Average yield of Nutmeg

| Total cropped area (in he) | Area under nut meg | Average yield per ha. | % area under nutmeg |
|----------------------------|--------------------|-----------------------|---------------------|
| 3021224 | 5741 | 25 | 0.19 |

The total area under nutmeg cultivation during 1996-97 was 5741 ha and average yield per ha was 25 kg. The percentage if area under nutmeg cultivation to the total cropped area comes to 0.19%

Selected holdings

The number of selected holdings for the study is given below

No. of holdings under nutmeg cultivation

| Holding size class | No. of selected holdings. | Area under nut mug (ha) | Percentage of total area | Area per holdings |
|--------------------|---------------------------|-------------------------|--------------------------|-------------------|
| Small | 32 | 2.36 | 26.76 | 0.07 |
| Medium | 10 | 3.40 | 38.55 | 0.34 |
| Large | 3 | 3.06 | 34.69 | 1.02 |
| Total | 45 | 8.82 | 100.00 | 0.20 |

The total number of holdings selected for nutmeg cultivation during the year 1996-97 were 45. These holdings cover an area of 8.82 hectare. The average area per holdings was 0.20 hectare.

A. Cost of cultivation

The per ha cost of cultivation details under different component of cost are as follows:

Cost of cultivation per hectore of Nutmeg during the year 1996-97

| Sl. No | Components of different cost concepts | Cost per hectore (Rs.) | % distribution of cost 'A' |
|--------|---|------------------------|----------------------------|
| 1 | Hired human labours | 6603 | 38.48 |
| 2 | Animal labour | - | - |
| 3 | Mechanic labour | 401 | 2.34 |
| 4 | Seed/seedlings | - | - |
| 5 | Farmyard, manure and chemical fertilizers | 7942 | 46.28 |
| 6 | Plant protection | 53 | 0.31 |
| 7 | Land tax and irrigation cess | 146 | 0.85 |
| 8 | Repair and maintenance charges | 1 | 0.01 |
| 9 | Interest on working capital | 1907 | 11.11 |
| 10 | Other expenses | 107 | 0.62 |
| 11 | Cost 'A'(1 to 10) | 17160 | 100.00 |
| 12 | Interest on fixed capital | 967 | |
| 13 | Cost 'B'(11+12) | 18127 | |
| 14 | Interest on land value | 70889 | |
| 15 | Cost 'B'(13+14) | 89016 | |
| 16 | Imputed value of H.H.labour | 2519 | |
| 17 | Cost C(15+16) | 91535 | |

The per hectore cost hired human labour towards Nutmeg cultivation constituted about 38% of the total cost 'A'. Animal labour is not seen in the Nutmeg cultivation. Machine labours constitute to 2% of the total cost 'A'. Farmyard manure and chemical fertilizers is yet another inputs that comes to 46%. Plant protection land tax and irrigation cess are accounts below 1% of the total cost 'A'. Expenditure towards working capital is 11%

The percentage of hired human labour hours engaged in the Nutmeg cultivation during the year 1996-97 is given below:

Percentage of hired human labour hours engaged in Nutmeg cultivation

| Holding size class | Male | Female | Total |
|--------------------|-------|--------|-------|
| Small | 47.46 | 6.08 | 53.54 |
| Medium | 17.79 | 3.84 | 21.63 |
| Large | 55.15 | 42.50 | 97.65 |
| All size | 42.82 | 22.29 | 65.11 |

From the above table it is seen that about 65% of the total human labour is hired human labour. The composition of work participation rate is also different from that of paddy cultivation

Cost 'B1' and cost 'B' and cost 'C'

Cost B1 is obtained by adding the interest on fixed capital (excluding land) to cost 'A' and it is seen as Rs.18127/- Interest on land value is maximum in large size class and minimum in small size class. Considering the above cost 'B1' is estimated as Rs.89016/- during 1996-97. The participation of household labour is Rs.2519/- and cost 'C' is comes to be as 91535/- during this round.

The estimated per hectore cost of cultivation of Nutmeg during the year 1996-97 is given below

Cost of cultivation of Nutmeg Rs.ha for 1996-97

| Holding of size class | | | | |
|-----------------------|-------|--------|-------|----------|
| Concept of cost | Small | Medium | Large | All size |
| Cost 'A' | 24157 | 10618 | 18780 | 17160 |
| Cost 'B' | 90260 | 77985 | 94294 | 89016 |
| Cost 'C' | 93399 | 82088 | 94562 | 91535 |

B. Output

The value of output is seen as Rs.48015/- per ha for nutmeg cultivation. The details for the different holding size class are given as follows.

Value of product and by product per hectore for 1996-97

| Holding size class | | | | |
|--------------------|-------|--------|-------|----------|
| Product/by product | Small | Medium | Large | All size |
| Product | 24532 | 21793 | 46748 | 31184 |
| By product | 13254 | 14276 | 22428 | 16831 |
| Total | 37786 | 36069 | 69176 | 48015 |

Chapter 3

Summary of findings

The data furnished in this report are collected through the cost of cultivation. Survey 1996-97. The crop covered in this report are paddy (Autumn, Winter and summer), coconut, Arecanut, tapioca, ginger turmeric and nutmeg

The summary of findings are shown below:

1. Autumn paddy

the per hector cost of cultivation when considered to cost 'A' during the year 1996-97 is Rs.12714/- compared to the previous year the cost 'A' has increased by 10%. The percentage increase of cost 'B' and cost 'C' is being 24% and 23% respectively.

2. Winter paddy

The estimated per hector cost of cultivation winter paddy of cost 'A' is rs.13903/- hired human labour constitute 57% of the total cost 'A'. Cost 'B' and cost 'C' during 1996-97 is estimated to be Rs.32577 and Rs. 33194/- respectively.

3. Summer paddy

The component of cost 'A' relating to the summer paddy cultivation is Rs.16838/- when compared to the previous year the cost 'A' has increased to 11% cost 'B' and cost 'C' has increased by 14% each.

4. Coconut

The per hector cost of cultivation of coconut is Rs.11142/- towards cost 'A'. Cost 'B' is Rs.140844/- and cost 'C' is Rs.141382/-. Hired human labour constitute to 51% to the total cost 'A'.

5. Aracanut

The component of cost 'A' relating the aracanut cultivation is Rs. 18330/-. The value of output per ha from Aracanut cultivation is found to be Rs.45954/- during the year 1996-97

6. Tapioca

the cash and kind expenses increased for tapioca cultivation is Rs. 16527/- out of this hired human labour cost shares 54%. The per ha value of output of tapioca during the year 1996-97 is to be Rs. 31371/-

7. Pepper

During this round 190 holdings were selected for studying the cost of cultivation of pepper during this year 1996-97. Cost 'A' per hector comes to Rs.9687/-. The percentage share of hired human labour cost is 57%. The value of pepper is found to be Rs.38991/- per hector during the year under review

8. Ginger

The total number of holdings selected for ginger cultivation were 177. The per hector cost of ginger cultivation is Rs.48816/- (cost A)

The value of output is seen to be as Rs.719741/- per hector.

9. Turmeric

For the study of turmeric cultivation 50 holdings were selected during the year 1996-97. The per hector cost of Turmeric cultivation is Rs.24665/-. The value of output per hector is found to be Rs.36314/-

10. Nutmeg

For the study of Nutmeg cultivation 45 holdings were selected during the year 1996-97. The per hector cost of cultivation of Nutmeg is Rs.17160/-. The value of output is found to be as Rs.48015/- per hector.

Appendix - 1

Cost of cultivation per hectore - Autumn Paddy 1996-97

| Sl. No | Component of different cost of concept | Holding size class | | | |
|--------|---|--------------------|--------|-------|----------|
| | | Small | Medium | Large | All size |
| 1 | Hired human labour | 8846 | 7120 | 7112 | 7458 |
| 2 | Animal labour | 1368 | 461 | 119 | 525 |
| 3 | Machine labour | 850 | 888 | 593 | 781 |
| 4 | Seed/seedlings | 931 | 730 | 771 | 784 |
| 5 | Farm yard manure and chemical fertilizers | 2596 | 1883 | 1725 | 1937 |
| 6 | Plant protection | 143 | 113 | 172 | 139 |
| 7 | Land tax and irrigation cess | 23 | 19 | 30 | 23 |
| 8 | Repair and maintenance charges | 258 | 222 | 156 | 218 |
| 9 | Interest on working capital | 745 | 573 | 539 | 594 |
| 10 | Other expenses | 157 | 271 | 292 | 255 |
| 11 | Cost A (1 to 10) | 15917 | 12280 | 11509 | 12714 |
| 12 | Interest on fixed capital | 685 | 834 | 363 | 665 |
| 13 | Cost B1(11+12) | 11602 | 13114 | 11872 | 13379 |
| 14 | Interest on land value | 23509 | 21902 | 20720 | 21822 |
| 15 | Cost B (13+14) | 40111 | 35016 | 32592 | 35201 |
| 16 | Imputed value of house hold labour | 1103 | 781 | 109 | 619 |
| 17 | Cost C (15+16) | 41214 | 35797 | 32701 | 35820 |

Appendix -2

Cost of cultivation per hectare - Winter paddy - 1996-97 (in Rs.)

| Sl. No. | Component of different cost of concept | Holding size class | | | |
|---------|---|--------------------|--------|-------|----------|
| | | Small | Medium | Large | All size |
| 1 | Hired human labour | 7928 | 8001 | 7782 | 7896 |
| 2 | Animal labour | 1147 | 758 | 311 | 571 |
| 3 | Machine labour | 766 | 873 | 1120 | 955 |
| 4 | Seed/seedlings | 862 | 855 | 855 | 853 |
| 5 | Farm yard manure and chemical fertilizers | 2438 | 2060 | 2012 | 2121 |
| 6 | Plant protection | 168 | 193 | 237 | 206 |
| 7 | Land tax and irrigation cess | 25 | 24 | 92 | 52 |
| 8 | Repair and maintenance charges | 280 | 171 | 114 | 187 |
| 9 | Interest on working capital | 677 | 652 | 646 | 651 |
| 10 | Other expenses | 232 | 307 | 596 | 411 |
| 11 | Cost A (1 to 10) | 14523 | 13894 | 13765 | 13903 |
| 12 | Interest on fixed capital | 692 | 661 | 612 | 655 |
| 13 | Cost B1(11+12) | 15215 | 14555 | 14377 | 14558 |
| 14 | Interest on land value | 26956 | 18269 | 13434 | 18019 |
| 15 | Cost B (13+14) | 42171 | 32824 | 27811 | 32577 |
| 16 | Imputed value of house hold labour | 1228 | 730 | 212 | 617 |
| 17 | Cost C (15+16) | 43399 | 33554 | 28023 | 33194 |

Appendix - 3

Cost of cultivation per hectare - Summer paddy 96-97 (in Rs.)

| Sl. No. | Component of different cost of concept | Holding size class | | | |
|---------|---|--------------------|--------|-------|----------|
| | | Small | Medium | Large | All size |
| 1 | Hired human labour | 9170 | 8128 | 8903 | 8656 |
| 2 | Animal labour | 953 | 704 | 359 | 632 |
| 3 | Machine labour | 913 | 1125 | 790 | 951 |
| 4 | Seed/seedlings | 983 | 969 | 1094 | 1029 |
| 5 | Farm yard manure and chemical fertilizers | 3706 | 884 | 3111 | 3157 |
| 6 | Plant protection | 430 | 480 | 790 | 603 |
| 7 | Land tax and irrigation cess | 258 | 174 | 109 | 121 |
| 8 | Repair and maintenance charges | 360 | 218 | 102 | 217 |
| 9 | Interest on working capital | 816 | 750 | 783 | 786 |
| 10 | Other expenses | 171 | 709 | 609 | 686 |
| 11 | Cost A (1 to 10) | 17760 | 16141 | 16650 | 16838 |
| 12 | Interest on fixed capital | 835 | 867 | 438 | 752 |
| 13 | Cost B(11+12) | 18595 | 17008 | 17088 | 17590 |
| 14 | Interest on land value | 18772 | 15561 | 8151 | 13585 |
| 15 | Cost B (13+14) | 37367 | 32569 | 25239 | 31175 |
| 16 | Imputed value of house hold labour | 1808 | 731 | 217 | 787 |
| 17 | Cost C (15+16) | 39175 | 33300 | 25456 | 31962 |

Appendix - 4

Cost of cultivation per hectare - Coconut 1996-97

| Sl. No. | Component of different cost of concept | Holding size class | | | |
|---------|---|--------------------|--------|--------|----------|
| | | Small | Medium | Large | All size |
| 1 | Hired human labour | 7047 | 6409 | 5290 | 5707 |
| 2 | Animal labour | 27 | 23 | 46 | 39 |
| 3 | Machine labour | 40 | 73 | 103 | 91 |
| 4 | Seed/seedlings | 13 | 7 | 6 | 8 |
| 5 | Farm yard manure and chemical fertilizers | 4678 | 4153 | 2684 | 3213 |
| 6 | Plant protection | 23 | 30 | 2 | 11 |
| 7 | Land tax and irrigation cess | 33 | 33 | 36 | 35 |
| 8 | Repair and maintenance charges | 551 | 294 | 72 | 228 |
| 9 | Interest on working capital | 1253 | 1123 | 892 | 953 |
| 10 | Other expenses | 704 | 535 | 400 | 857 |
| 11 | Cost A (1 to 10) | 14369 | 12680 | 9531 | 11142 |
| 12 | Interest on fixed capital | 1524 | 1362 | 1160 | 1292 |
| 13 | Cost B(11+12) | 15893 | 14042 | 10691 | 12434 |
| 14 | Interest on land value | 152152 | 149188 | 117594 | 128410 |
| 15 | Cost B (13+14) | 168045 | 163230 | 128285 | 140844 |
| 16 | Imputed value of house hold labour | 2048 | 842 | 275 | 538 |
| 17 | Cost C (15+16) | 170093 | 164072 | 128560 | 141382 |

Appendix - 5

Cost of cultivation per hectare - Arecanut 1996-97

| Sl. No. | Component of different cost of concept | Holding size class | | | |
|---------|---|--------------------|--------|--------|----------|
| | | Small | Medium | Large | All size |
| 1 | Hired human labour | 6392 | 10040 | 9615 | 9054 |
| 2 | Animal labour | - | - | - | - |
| 3 | Machine labour | 173 | 343 | 630 | 406 |
| 4 | Seed/seedlings | 21 | 22 | - | 14 |
| 5 | Farm yard manure and chemical fertilizers | 4390 | 7209 | 5744 | 5939 |
| 6 | Plant protection | 57 | 449 | 176 | 248 |
| 7 | Land tax and irrigation cess | 31 | 37 | 33 | 34 |
| 8 | Repair and maintenance charges | 77 | 112 | 130 | 91 |
| 9 | Interest on working capital | 1184 | 1878 | 1730 | 1655 |
| 10 | Other expenses | 804 | 714 | 1137 | 889 |
| 11 | Cost A (1 to 10) | 13129 | 20804 | 19195 | 18330 |
| 12 | Interest on fixed capital | 1049 | 1868 | 2417 | 1398 |
| 13 | Cost BI(11+12) | 14178 | 22672 | 21612 | 19728 |
| 14 | Interest on land value | 134539 | 99867 | 96342 | 107773 |
| 15 | Cost B (13+14) | 148717 | 122539 | 117954 | 127501 |
| 16 | Imputed value of house hold labour | 2189 | 1982 | 611 | 1545 |
| 17 | Cost C (15+16) | 150906 | 124521 | 118565 | 129046 |

Appendix - 6

Cost of cultivation per hectare - Tapioca -1996-97 (in Rs.)

| Sl. No. | Component of different cost of concept | Holding size class | | | |
|---------|---|--------------------|--------|-------|----------|
| | | Small | Medium | Large | All size |
| 1 | Hired human labour | 8723 | 8500 | 9719 | 8989 |
| 2 | Animal labour | 21 | 52 | 146 | 77 |
| 3 | Machine labour | 50 | 91 | 990 | 339 |
| 4 | Seed/seedlings | 629 | 577 | 682 | 627 |
| 5 | Farm yard manure and chemical fertilizers | 3271 | 3602 | 4323 | 3881 |
| 6 | Plant protection | 12 | 11 | - | 7 |
| 7 | Land tax and irrigation cess | 22 | 21 | 35 | 26 |
| 8 | Repair and maintenance charges | 233 | 87 | 44 | 143 |
| 9 | Interest on working capital | 1292 | 1337 | 1779 | 1487 |
| 10 | Other expenses | 217 | 540 | 1932 | 951 |
| 11 | Cost A (1 to 10) | 14470 | 14818 | 19650 | 16527 |
| 12 | Interest on fixed capital | 1220 | 1429 | 1098 | 1273 |
| 13 | Cost BI(11+12) | 15690 | 16247 | 20748 | 17800 |
| 14 | Interest on land value | 78793 | 78546 | 72618 | 76570 |
| 15 | Cost B (13+14) | 94483 | 94793 | 93366 | 94370 |
| 16 | Imputed value of house hold labour | 3089 | 1441 | 690 | 1596 |
| 17 | Cost C (15+16) | 97572 | 96234 | 94056 | 95966 |

Appendix -7

Cost of cultivation per hectore - Pepper 1996-97

| Sl. No. | Component of different cost of concept | Holding size class | | | |
|---------|---|--------------------|--------|-------|----------|
| | | Small | Medium | Large | All size |
| 1 | Hired human labour | 6262 | 4930 | 5557 | 5481 |
| 2 | Animal labour | - | - | - | - |
| 3 | Machine labour | 132 | 217 | - | 162 |
| 4 | Seed/seedlings | 85 | 32 | - | 48 |
| 5 | Farm yard manure and chemical fertilizers | 2889 | 2367 | 1791 | 2492 |
| 6 | Plant protection | 35 | 106 | - | 68 |
| 7 | Land tax and irrigation cess | 32 | 28 | 35 | 30 |
| 8 | Repair and maintenance charges | 207 | 63 | 24 | 156 |
| 9 | Interest on working capital | 977 | 801 | 795 | 864 |
| 10 | Other expenses | 362 | 356 | 601 | 386 |
| 11 | Cost A (1 to 10) | 10981 | 8900 | 8803 | 9687 |
| 12 | Interest on fixed capital | 1685 | 1758 | 1820 | 1712 |
| 13 | Cost B1 (11+12) | 12666 | 10658 | 10623 | 11399 |
| 14 | Interest on land value | 143547 | 71085 | 45566 | 94484 |
| 15 | Cost B (13+14) | 156213 | 81743 | 56189 | 105883 |
| 16 | Imputed value of house hold labour | 2530 | 843 | 120 | 1374 |
| 17 | Cost C (15+16) | 158743 | 82586 | 56309 | 107257 |

Appendix - 8

Cost of cultivation per hectare of Ginger 1996-97 (in Rs.)

| Sl. No | Component of different cost of concept | Holding size class | | | |
|--------|---|--------------------|--------|-------|----------|
| | | Small | Medium | Large | All size |
| 1 | Hired human labour | 13086 | 16758 | 26664 | 17595 |
| 2 | Animal labour | 96 | 82 | - | 68 |
| 3 | Machine labour | 45 | 204 | 154 | 128 |
| 4 | Seed/seedlings | 10421 | 13110 | 22126 | 14135 |
| 5 | Farm yard manure and chemical fertilizers | 8751 | 11050 | 12111 | 9985 |
| 6 | Plant protection | 294 | 278 | 1861 | 655 |
| 7 | Land tax and irrigation cess | 46 | 22 | 134 | 58 |
| 8 | Repair and maintenance charges | 36 | 21 | 84 | 33 |
| 9 | Interest on working capital | 3388 | 4275 | 6632 | 4430 |
| 10 | Other expenses | 1188 | 1269 | 3405 | 1729 |
| 11 | Cost A (1 to 10) | 37351 | 47069 | 73171 | 48846 |
| 12 | Interest on fixed capital | 606 | 402 | 1129 | 559 |
| 13 | Cost B1(11+12) | 37957 | 47471 | 68331 | 49375 |
| 14 | Interest on land value | 78299 | 76817 | 16055 | 63232 |
| 15 | Cost B (13+14) | 116256 | 124288 | 84386 | 112607 |
| 16 | Imputed value of house hold labour | 6269 | 3457 | 2097 | 4276 |
| 17 | Cost C (15+16) | 122525 | 127745 | 86483 | 116883 |

Appendix- 9

Cost of cultivation per hectare of Turmeric 1996-97

| Sl. No. | Component of different cost of concept | Holding size class | | | |
|---------|---|--------------------|--------|-------|----------|
| | | Small | Medium | Large | All size |
| 1 | Hired human labour | 6015 | 19261 | 10995 | 10989 |
| 2 | Animal labour | 27 | - | 23 | 20 |
| 3 | Machine labour | - | - | 539 | 265 |
| 4 | Seed/seedlings | 7699 | 6667 | 3113 | 5248 |
| 5 | Farm yard manure and chemical fertilizers | 5466 | 10585 | 2428 | 4940 |
| 6 | Plant protection | 104 | 23 | 205 | 138 |
| 7 | Land tax and irrigation cess | 24 | 35 | 23 | 25 |
| 8 | Repair and maintenance charges | 14 | 11 | - | 10 |
| 9 | Interest on working capital | 1961 | 3675 | 1866 | 2239 |
| 10 | Other expenses | 304 | 212 | 1354 | 791 |
| 11 | Cost A (1 to 10) | 21614 | 40469 | 20546 | 24665 |
| 12 | Interest on fixed capital | 303 | 73 | 1185 | 452 |
| 13 | Cost B1(11+12) | 21917 | 40542 | 21731 | 25117 |
| 14 | Interest on land value | 114003 | 118360 | 50730 | 83646 |
| 15 | Cost B (13+14) | 135920 | 158902 | 72461 | 108763 |
| 16 | Imputed value of house hold labour | 554520 | 1359 | 210 | 2123 |
| 17 | Cost C (15+16) | 141465 | 160261 | 72671 | 110886 |

Appendix - 10

Cost of cultivation per hectare - Nutmeg 1996-97

| Sl. No. | Component of different cost of concept | Small | Medium | Large | All size |
|---------|---|-------|--------|-------|----------|
| 1 | Hired human labour | 6903 | 3081 | 10276 | 6603 |
| 2 | Animal labour | - | - | - | - |
| 3 | Machine labour | 720 | 528 | 11 | 401 |
| 4 | Seed/seedlings | - | - | - | - |
| 5 | Farm yard manure and chemical fertilizers | 13786 | 5863 | 5725 | 287942 |
| 6 | Plant protection | 53 | 82 | 20 | 53 |
| 7 | Land tax and irrigation cess | 250 | 12 | - | 146 |
| 8 | Repair and maintenance charges | - | - | 2 | 1 |
| 9 | Interest on working capital | 2173 | 964 | 2746 | 1907 |
| 10 | Other expenses | 272 | 88 | - | 107 |
| 11 | Cost A (1 to 10) | 24157 | 10618 | 18780 | 17160 |
| 12 | Interest on fixed capital | 895 | 677 | 1414 | 967 |
| 13 | Cost B1(11+12) | 25052 | 11295 | 20194 | 18127 |
| 14 | Interest on land value | 65208 | 66690 | 74100 | 70889 |
| 15 | Cost B (13+14) | 90260 | 77985 | 94294 | 89016 |
| 16 | Imputed value of house hold labour | 3139 | 4103 | 268 | 2519 |
| 17 | Cost C (15+16) | 93399 | 82088 | 94562 | 91535 |



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