



Government of Kerala

*Report On
Cost of Cultivation of
Important Crops in Kerala
2010-11*

Department of Economics & Statistics
Thiruvananthapuram
2011



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PREFACE

The growth trend in the agricultural sector has not been consistent in Kerala. Food crops in general have shown a decreasing trend in area and production. The contribution of agriculture to State Income has been on the decline. For formulating proper price policies and for achieving economic efficiency of the crop production sector, studies on Cost of Cultivation of Important Crops in Kerala is essential. With this end in view, this Department conducts annual study on Cost of Cultivation of Important Crops in Kerala.

This report is based on the field study on Cost of Cultivation of Important Crops conducted during the year 2010-11. The crops covered during this year are Paddy (3 seasons), Coconut, Arecanut, Pepper, Banana, Tapioca, Ginger and Turmeric.

The report was prepared by Sri.Suresh Kumar N, Deputy Director, Sri. M Jayachandran Nair, Research Assistant, and Sri. Dinku S Statistical Assistant Grade II in the Cost of cultivation section with the guidance of Smt. K. Sathiabhama , Additional Director. Suggestions for improvement are solicited.

12-11-2012
Thiruvananthapuram,

V.Ramachandran
Director

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Chapter I

GENERAL

1.1 Introduction

Government of Kerala accorded sanction for conducting annual survey of cost of cultivation of important crops in the State from 1980-81 onwards vide G.O.(Rt) 466/79/plg dated 27/10/1979. The present report relates to the 31th round of survey conducted during the agricultural year 2010-11. The Department of Economics and Statistics is conducting cost of cultivation survey annually.

The crops covered under the round are given below:-

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

1.2 Objectives

The main objective of this survey was to estimate the cost of cultivation per hectare of important crops in Kerala and to compare the cost under different concepts, over a period.

1.3. Period of the Survey

The period of the survey was the Agricultural Year (July to June) 2010-11

1.4. Design of the Survey

The survey covered all the districts of Kerala by selecting 38 Taluks. From each selected Taluk, two investigator zones were selected using circular systematic sampling method.

Selection of cultivators

In selected Investigator zones, a list of cultivators growing paddy in the previous autumn season is prepared from the last year's Form I Diary connected with the EARAS works. From this, a list of 5 cultivators who are likely to be engaged in paddy cultivation during the current year are selected at random for cost of cultivation study for the autumn paddy. Similar procedure is adopted for the selection of cultivators for winter and summer paddy.

In case the cultivators selected for cost of cultivation study on Autumn Paddy possess suitable number of plots of other specified crops in stipulated area/numbers those will also be selected for the cost of cultivation study on other crops like Coconut, Pepper, Arecanut, Banana, Tapioca etc.

If sufficient numbers of suitable plots of other crops are not available with the cultivators selected for the study of Autumn Paddy, the required number of plots growing 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 a Taluk does not provide the required number of plots for these crops, another Investigator zone in the same Taluk will be selected at random for selection of the remaining (required) number of plots/cultivators for the study on other crops.

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

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

A holding is considered for the study only if it contained at least 25 cents under the crops in the case of paddy and 10 cents for tapioca, banana, ginger and turmeric. In the case of perennial crops like coconut, arecanut and pepper the holdings should have 25 trees/plants of which a minimum of 50% should be bearing trees/plants.

The holding size group (small, medium and large) of a crop is 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 |
| Small | < 0.40 hectare | <0.2 hectare |
| Medium | 0.40 to < 2 hectare | 0.20 to < 0.80 hectare |
| Large | ≥ 2 hectare | ≥ 0.80 hectare |

1.5 Schedules

Five schedules were designed for the survey

| | |
|-------------|---|
| Schedule -1 | Selected Investigator zone |
| Schedule -2 | Summary of Form I Diary |
| Schedule –3 | List of selected cultivators |
| Schedule –4 | General Particulars |
| Schedule –5 | In this schedule, the cultivation expenses incurred for a crop in each fortnight is reported. |

1.6 Field work

Fieldwork was done in 38 selected Taluks. One Investigator is posted in each Taluk for this purpose. The investigators visited the selected holdings/cultivators every fortnight and recorded fortnightly details of agricultural operations in schedule 5. The fieldwork was supervised by Taluk Statistical Officer/Statistical Inspector at the Taluk level and Deputy Director/ District officer /other district level Officer at the District level.

1.7 Processing and Analysis of Data

The compilation and tabulation were done at district level. The state level consolidation of the data, the report writing and analysis are done at the Directorate of Economics and Statistics.

1.8 Method of Estimation of Cost

(a) Concepts 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 expenses incurred for

- i. Hired human labour
- ii. Animal labour
- iii. Machine labour
- iv. Seed/ seed lings
- v. Farm yard Manure and Chemical fertilizers
- vi. Plant protection
- vii. Land tax and Irrigation Cess
- viii. Repair and maintenance charges of implements, machinery and buildings
- ix. Interest on working capital
- x. 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 values of owned inputs

In the production process, certain inputs from home stocks are used. In order to estimate the cost of cultivation, it is necessary to impute the value of these inputs. The procedures used for the imputation of values of such home stock inputs are indicated below:

| | | |
|-----|---|--|
| I | Family labour | Imputed on the basis of average wage rate per work hour of hired labour. |
| | Owned and Exchange human labour | The rate of wages per hour for hired human labour is taken for imputing the value of own stock and exchange human labour |
| Iii | Owned and Exchange animal labour | The charges paid per hour for hired animal labour is taken for imputing the value of owned and exchange animal labour. |
| Iv | Owned and Exchange machine labour | The hire charges per hour for machine labour has been taken |
| V | Implements | Repair and maintenance charges of implements |
| Vi | Owned seed | Farm produced (house grown) seed has been imputed at the prices prevalent in the investigator zone concerned at the time of sowing |
| Vii | Farm produced manure | Imputed at the rate prevalent in the zone concerned. |

| | | |
|------|-----------------------------|---|
| Viii | Interest on fixed capital | Interest on the present value of fixed assets such as land, farm, building, implements, machinery, irrigation structure, equipments and livestock (only 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 (i.e. rent, land tax etc) incurred during the period of cultivation |
| X | Payments of kind | The payments in kind have been evaluated at the market prices prevalent in the locality at the time of payment. Perquisites have been included in the payments in kind calculated at the market prices. |

(c) Allocation of joint costs to different crops

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

| | | |
|-----|--|--|
| I | Repair and maintenance charges of implements | In proportion to the area under the crop |
| Ii | Interest on fixed capital (excluding land) | In proportion to the area under the crop |
| Iii | Interest on land value | Interest on the value of land under the crop |

(d) Procedure for valuation of farm assets

| | | |
|-----|---|---|
| I | Own farm buildings (cattle sheds, storage shed etc) | Valuated at prices prevailing in the locality |
| Ii | Implements and other machinery | Valuated at prevalent market prices |
| Iii | Livestock (only draught animals) | Valuated at prevalent market prices |

In calculating the cost of production of paddy crop in each season the interest on land value at the rate of 10% per annum for the period of 6 months is taken in to account. The land value is estimated at the current market rate in the different areas. There is a controversy in the assessment of land value. The land value is increasing considerably. If the actual value is taken for calculating the interest on land value, no cultivation is profitable in the State. However, there is always a tendency to under report the land value. It is therefore necessary to evolve a method or criteria to estimate the land value reasonably while calculating the cost of cultivation of crops.

CHAPTER 2

RESULTS OF THE SURVEY

The crops selected for this round of study were Paddy (autumn, winter and summer) Coconut, Tapioca , Banana, Pepper, Arecanut, Ginger and Turmeric. The cost of cultivation of crops are calculated under three different cost concepts viz Cost 'A', Cost 'B', and Cost 'C' respectively.

2.1.1 Paddy- Autumn

For this study details of holding selected and area coverage are given below. The data collected from 342 holding by covering 224 hectares of land.

Table 1 - Area and number of holdings under autumn paddy during 2010-11

| Holding size class | No of selected holdings | Area under the crop in the sample (ha) | Percentage Area | Average Area per holding (ha) |
|--------------------|-------------------------|--|-----------------|-------------------------------|
| Small | 190 | 43.90 | 19.60 | 0.23 |
| Medium | 128 | 96.80 | 43.21 | 0.76 |
| Large | 24 | 83.30 | 37.19 | 3.47 |
| Total | 342 | 224.00 | 100.00 | 0.65 |

From the above table it can be seen that average area per holding was 0.65 hectare

Cost of cultivation

When Cost A is considered about 52 percent of cost constitutes to hired human labour, Machine labour cost shares 17.49 and farmyard manure and chemical fertilizers accounts to 9.34% .

Table 2- Cost of Cultivation per hectare of paddy (autumn) during 2010-11

(Per Hectare in Rs.)

| Sl No | Components | Holding size Class | | | |
|-------|--------------------|--------------------|--------|-------|----------|
| | | Small | Medium | Large | All Size |
| 1 | Hired human labour | 19541 | 15912 | 16461 | 16833 |
| 2 | Animal labour | 879 | 261 | 0 | 286 |

| | | | | | |
|----|--|---------------|--------------|--------------|--------------|
| 3 | Machine labour | 4300 | 4787 | 7245 | 5601 |
| 4 | Seed / seedlings | 1379 | 1416 | 773 | 1170 |
| 5 | Farmyard manure and chemical fertilizers | 4307 | 3535 | 1653 | 2991 |
| 6 | Plant protection | 451 | 408 | 756 | 546 |
| 7 | Land tax and irrigation cess | 85 | 94 | 238 | 145 |
| 8 | Repair and maintenance charges of implements, machinery and building | 1373 | 904 | 488 | 843 |
| 9 | Interest on working capital | 1674 | 1428 | 1431 | 1478 |
| 10 | Other expenses | 2620 | 2245 | 1722 | 2126 |
| 11 | Total cost 'A' (1-10) | 36609 | 30990 | 30767 | 32019 |
| 12 | Interest on fixed capital | 2791 | 2097 | 861 | 1777 |
| 13 | Cost 'B1' (11+12) | 39400 | 33087 | 31628 | 33796 |
| 14 | Interest on land value | 79187 | 61309 | 43040 | 58081 |
| 15 | Cost 'B' (13+14) | 118587 | 94396 | 74668 | 91877 |
| 16 | Imputed value of household labour | 4703 | 3185 | 1500 | 2861 |
| 17 | Cost 'C' (15+16) | 123290 | 97581 | 76168 | 94738 |

Percentage Distribution of "COST A" per hectare of Autumn Paddy during 2010-11

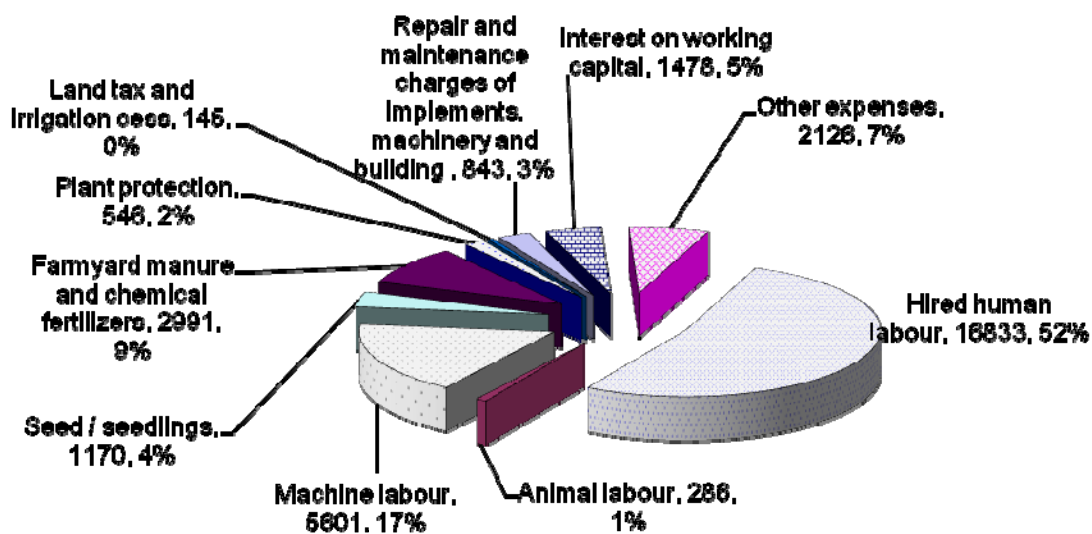


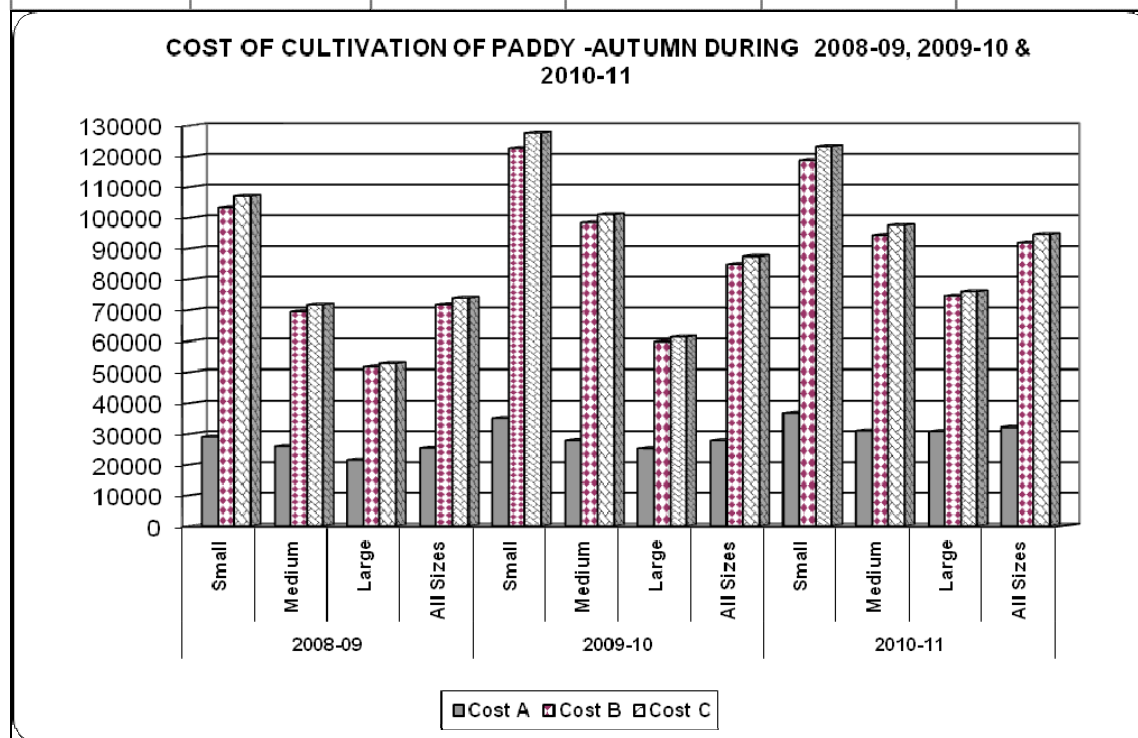
Table 3: Percentage of Hired human labour hours to total human labour hours

| Sex | Holding size class | | | |
|--------------|--------------------|--------|-------|-----------|
| | Small | Medium | Large | All Sizes |
| Male | 25.12 | 39.71 | 25.69 | 32.35 |
| Female | 53.18 | 46.30 | 64.82 | 53.32 |
| Total | 78.30 | 86.01 | 90.51 | 85.67 |

In Autumn paddy cultivation 53.32% of total labour hours shares to female participation.

Table: 4 Cost of production of Autumn paddy per hectare(in Rs.) 2008-09 , 2009-2010 and 2010-11

| Concept of cost | Year | Holding size class | | | |
|-----------------|----------------|--------------------|--------------|--------------|--------------|
| | | Small | Medium | Large | All Sizes |
| Cost 'A' | 2008-09 | 28979 | 25793 | 21506 | 25223 |
| | 2009-10 | 34866 | 27791 | 25062 | 27747 |
| | 2010-11 | 36609 | 30990 | 30767 | 32019 |
| Cost 'B' | 2008-09 | 103396 | 69453 | 51577 | 71760 |
| | 2009-10 | 122654 | 98418 | 59745 | 84957 |
| | 2010-11 | 118587 | 94396 | 74668 | 91877 |
| Cost 'C' | 2008-09 | 106969 | 71708 | 52701 | 73973 |
| | 2009-10 | 127472 | 101092 | 61299 | 87485 |
| | 2010-11 | 123290 | 97581 | 76168 | 94738 |



Cost of Production of paddy per quintal

Cost of production of paddy per quintal is estimated by dividing the cost of cultivation per hectare (after deducting the value of by-product per hectare from the cost of cultivation per hectare) by the quantity of paddy produced per hectare. The survey results show that during 2010-11 for producing one quintal of paddy Rs.970/- has been expended by the farmer when Cost 'A' is considered. Details are given below:

Table: 5 Per Quintal Cost(In Rs.) of Production of Autumn paddy during 2008-09, 2009-10 &2010-11

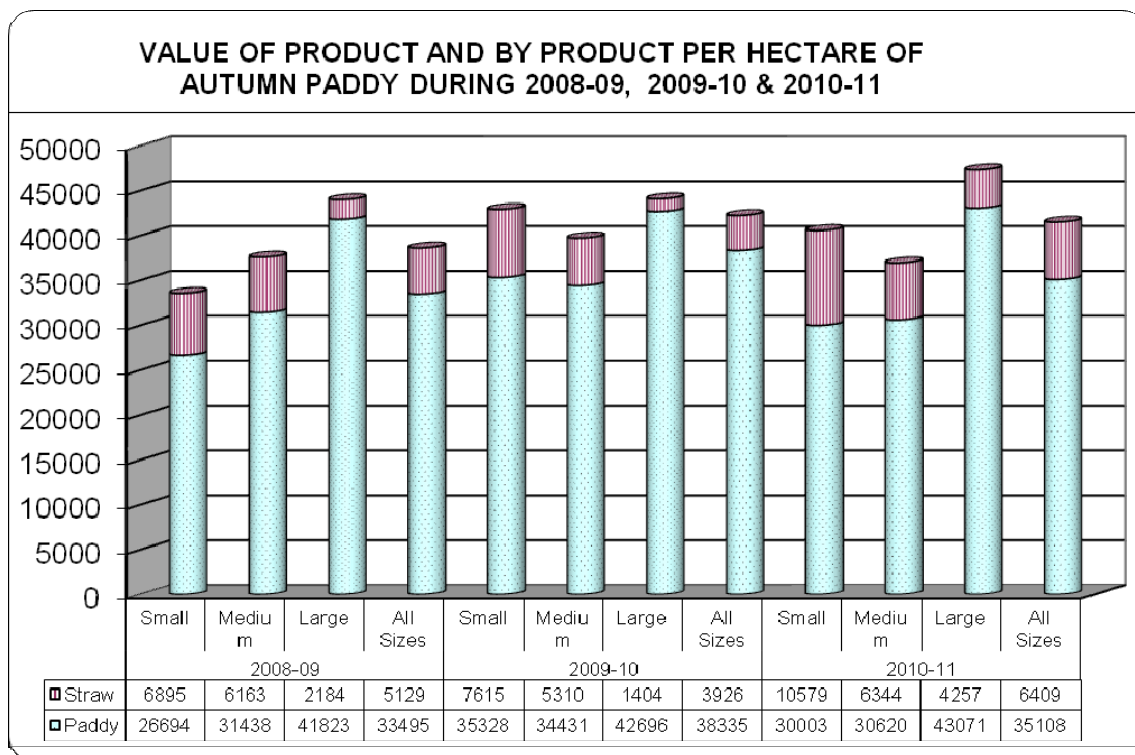
| Concept of cost | Year | Holding size class | | | |
|-----------------|----------------|--------------------|-------------|-------------|-------------|
| | | Small | Medium | Large | All Sizes |
| Cost 'A' | 2008-09 | 917 | 788 | 541 | 729 |
| | 2009-10 | 987 | 887 | 660 | 796 |
| | 2010-11 | 1053 | 1091 | 819 | 970 |
| Cost 'B' | 2008-09 | 3274 | 2121 | 1301 | 2076 |
| | 2009-10 | 3477 | 3145 | 1574 | 2432 |
| | 2010-11 | 3413 | 3327 | 1987 | 2782 |
| Cost 'C' | 2008-09 | 3387 | 2190 | 1329 | 2140 |
| | 2009-10 | 3614 | 3230 | 1615 | 2504 |
| | 2010-11 | 3548 | 3439 | 2027 | 2869 |

Output

The details of product and by-product of Autumn Paddy cultivation are given below.

Table: 6 Value of product and by-product per hectare of Autumn paddy during 2008-09, 2009-10 & 2010-11

| Year | Product/ By product | Holding size class | | | |
|---------|------------------------|--------------------|--------------|--------------|--------------|
| | | Small | Medium | Large | All size |
| 2008-09 | Paddy | 26694 | 31438 | 41823 | 33495 |
| | Straw | 6895 | 6163 | 2184 | 5129 |
| | Total | 33589 | 37600 | 44007 | 38624 |
| 2009-10 | Paddy | 35328 | 34431 | 42696 | 38335 |
| | Straw | 7615 | 5310 | 1404 | 3926 |
| | Total | 42943 | 39741 | 44100 | 42262 |
| 2010-11 | Paddy | 30003 | 30620 | 43071 | 35108 |
| | Straw | 10579 | 6344 | 4257 | 6409 |
| | Total | 40581 | 36964 | 47329 | 41517 |



2.1.2 Paddy-Winter

During 2010-11 Cost of cultivation study on winter paddy was conducted in 376 holdings by covering 267.70 hectare of land. Details of these holdings are given below:

Table 7 – Area and number of holdings under winter paddy during 2010-11

| Holding size class | No of selected holdings | Area under the crop in the sample (ha) | Percentage Area | Area per holding (ha) |
|--------------------|-------------------------|--|-----------------|-----------------------|
| Small | 189 | 41.50 | 15.50 | 0.22 |
| Medium | 142 | 101.50 | 37.92 | 0.71 |
| Large | 45 | 124.70 | 46.58 | 2.77 |
| Total | 376 | 267.70 | 100.00 | 0.71 |

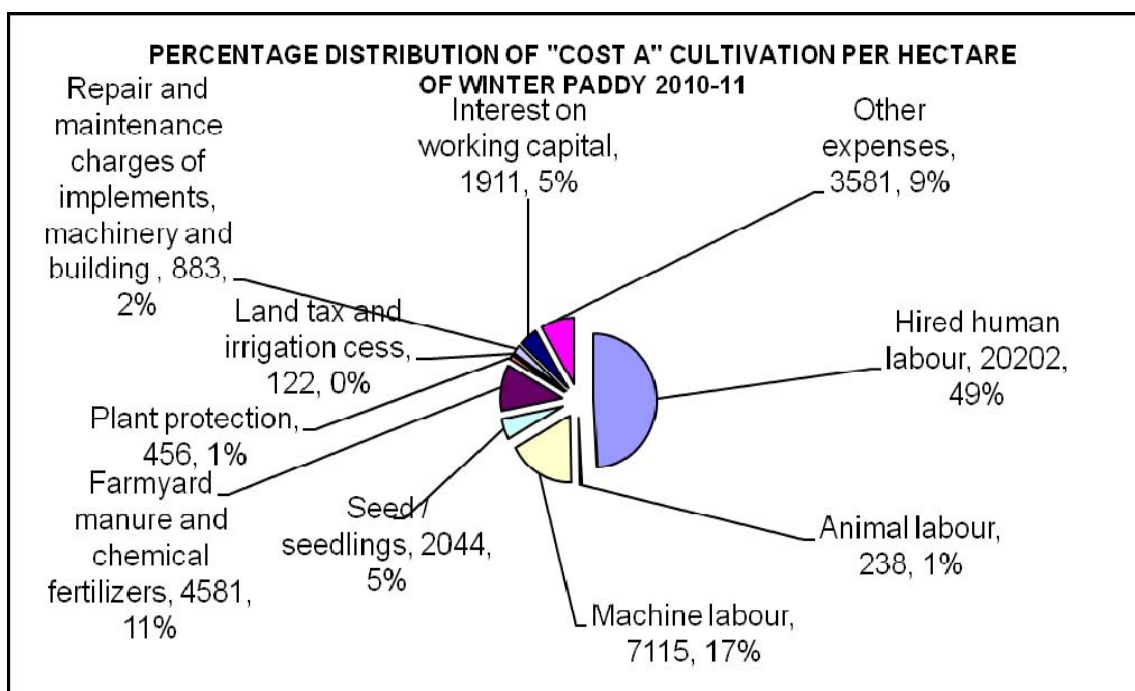
For the study on winter paddy cultivation during 2010-11, an area of 267.70 hectares was included. The average size of the holding was .71 hectares.

Cost of Cultivation

In Cost A, the major share of the cost component was hired human labour. It constitutes 49.11% per cent. Another two major items were machine labour and farmyard manure and chemical fertilizers. It shows to 17.30% and 11.14% respectively. Interest on working capital accounts was 5%. By considering the various cost component of winter paddy cultivation it can be seen that per hectare cost calculated as Rs.41133/-

Table 8 – Cost of cultivation per hectare of winter paddy during the year 2010-11

| Sl No | Components | (Per Hectare in Rs.) Holding size Class | | | |
|-----------|--|--|---------------|---------------|---------------|
| | | Small | Medium | Large | All Size |
| 1 | Hired human labour | 22904 | 17952 | 21122 | 20202 |
| 2 | Animal labour | 430 | 233 | 176 | 238 |
| 3 | Machine labour | 4538 | 4604 | 10029 | 7115 |
| 4 | Seed / seedlings | 1871 | 1661 | 2414 | 2044 |
| 5 | Farmyard manure and chemical fertilizers | 4893 | 3590 | 5284 | 4581 |
| 6 | Plant protection | 461 | 318 | 567 | 456 |
| 7 | Land tax and irrigation Cess | 94 | 91 | 157 | 122 |
| 8 | Repair and maintenance charges of implements, machinery and building | 1709 | 731 | 726 | 883 |
| 9 | Interest on working capital | 1856 | 1522 | 2246 | 1911 |
| 10 | Other expenses | 2018 | 2078 | 5332 | 3581 |
| 11 | Total Cost 'A' (1-10) | 40774 | 32780 | 48053 | 41133 |
| 12 | Interest on fixed capital | 2980 | 1777 | 596 | 1417 |
| 13 | Cost 'B1' (11+12) | 43754 | 34557 | 48649 | 42550 |
| 14 | Interest on land value | 82023 | 80763 | 79012 | 80147 |
| 15 | Cost 'B' (13+14) | 125777 | 115320 | 127661 | 122697 |
| 16 | Imputed value of household labour | 5322 | 3751 | 1874 | 3125 |
| 17 | Cost 'C' (15+16) | 131099 | 119071 | 129535 | 125822 |



Sex wise work participation in hired human labours for winter paddy cultivation reveals that 46.96% of work shared by Female whereas 33.91% shared by male workers.

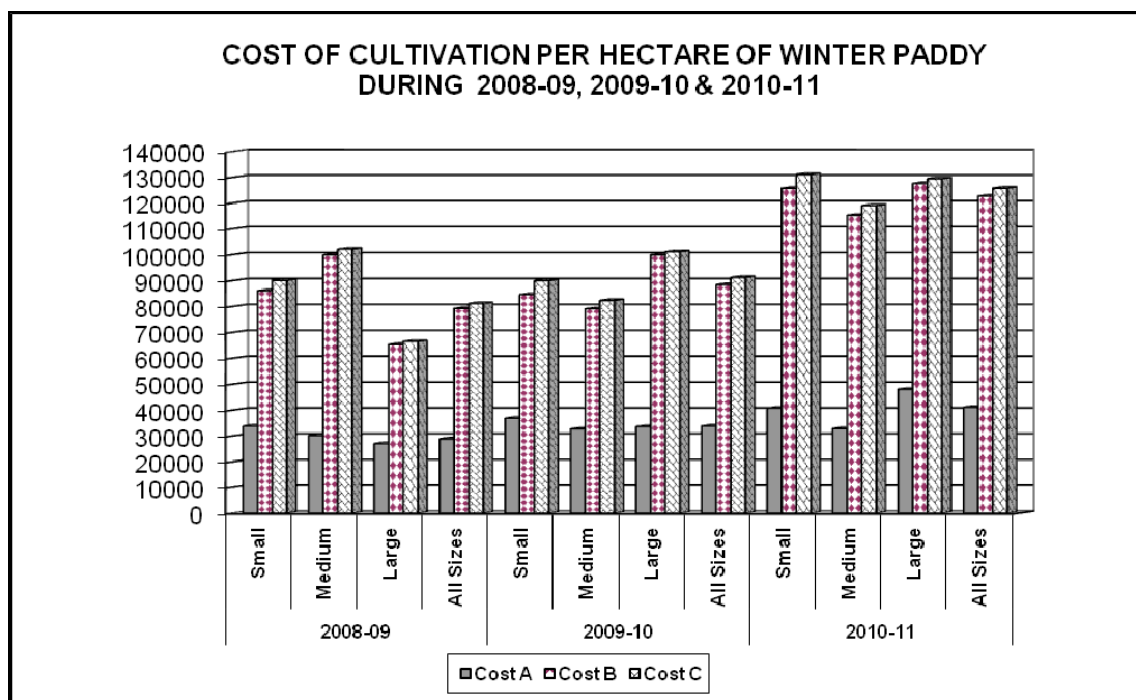
The following table reveals the percentage of hired human labours hours to total human labour hours.

Table 9 – Percentage of hired human labours to total human labour hours

| Sex | Holding size class | | | |
|--------------|--------------------|--------|-------|-----------|
| | Small | Medium | Large | All Sizes |
| Male | 31.24 | 35.22 | 33.17 | 33.91 |
| Female | 47.68 | 45.03 | 50.35 | 46.96 |
| Total | 78.92 | 80.25 | 83.52 | 80.87 |

Table: 10 Cost of Cultivation per hectare (in Rs) of winter paddy during 2008-09, 2009-10 & 2010-11

| Concept of cost | Year | Holding Size class | | | |
|-----------------|----------------|--------------------|---------------|---------------|---------------|
| | | Small | Medium | Large | All size |
| Cost 'A' | 2008-09 | 33757 | 30156 | 26997 | 28883 |
| | 2009-10 | 36802 | 32670 | 33550 | 33778 |
| | 2010-11 | 40774 | 32780 | 48053 | 41133 |
| Cost 'B' | 2008-09 | 86136 | 99927 | 65332 | 79294 |
| | 2009-10 | 84656 | 79112 | 99927 | 88468 |
| | 2010-11 | 125777 | 115320 | 127661 | 122697 |
| Cost 'C' | 2008-09 | 90154 | 102132 | 66511 | 81167 |
| | 2009-10 | 89985 | 82380 | 101146 | 91291 |
| | 2010-11 | 131099 | 119071 | 129535 | 125822 |



Cost of production of winter paddy

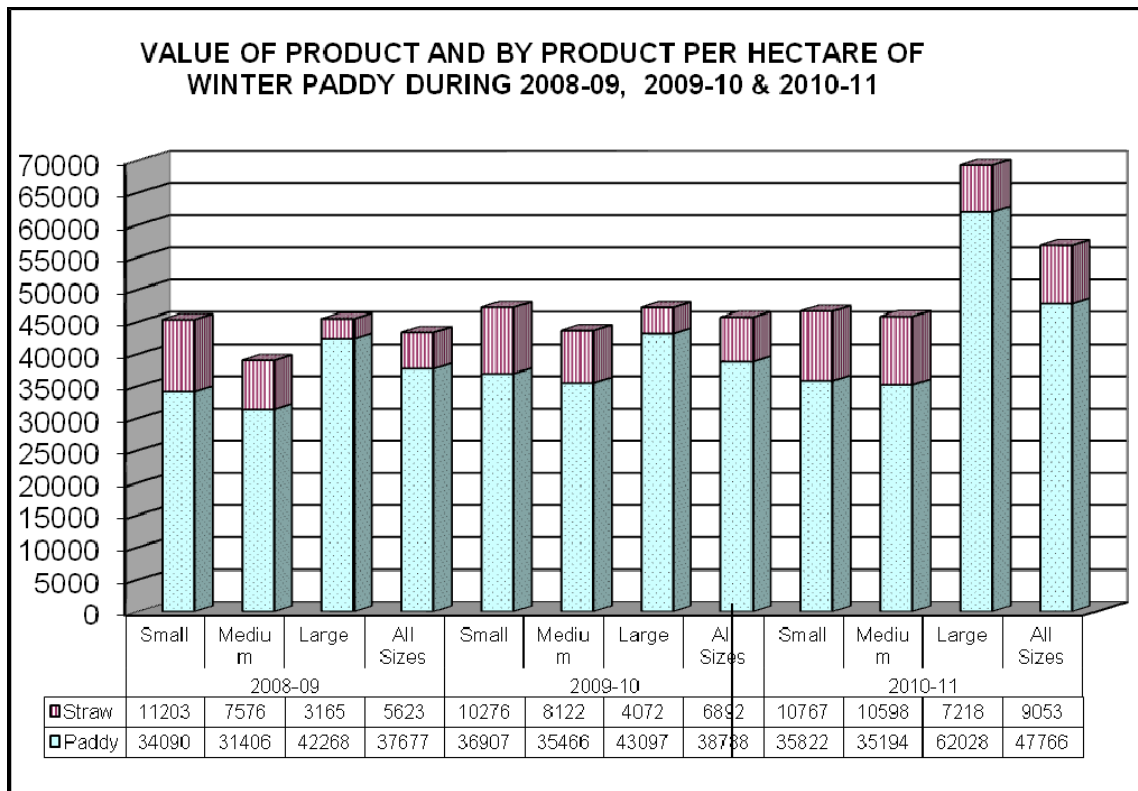
Table: 11 Per Quintal Cost(in Rs.) of production of winter paddy during 2008-09,2009-10&2010-11

| Concept of cost | Year | Holding size class | | | |
|-----------------|----------------|--------------------|-------------|-------------|-------------|
| | | Small | Medium | Large | All Sizes |
| Cost 'A' | 2008-09 | 935 | 930 | 728 | 816 |
| | 2009-10 | 1072 | 997 | 886 | 962 |
| | 2010-11 | 1287 | 1040 | 1048 | 1077 |
| Cost 'B' | 2008-09 | 2385 | 3077 | 1764 | 2240 |
| | 2009-10 | 2465 | 2415 | 2639 | 2520 |
| | 2010-11 | 3968 | 3660 | 2785 | 3212 |
| Cost 'C' | 2008-09 | 2496 | 3145 | 1796 | 2293 |
| | 2009-10 | 2620 | 2515 | 2671 | 2600 |
| | 2010-11 | 4136 | 3779 | 2826 | 3294 |

Output

Table: 12 - Value of output (Rs/ha)

| Year | Product/ By product | Holding size class | | | |
|---------|------------------------|--------------------|--------------|--------------|--------------|
| | | Small | Medium | Large | All size |
| 2008-09 | Paddy | 34090 | 31406 | 42268 | 37677 |
| | Straw | 11203 | 7576 | 3165 | 5623 |
| | Total | 45293 | 38982 | 45433 | 43300 |
| 2009-10 | Paddy | 36907 | 35466 | 43097 | 38788 |
| | Straw | 10276 | 8122 | 4072 | 6892 |
| | Total | 47183 | 43588 | 47169 | 45680 |
| 2010-11 | Paddy | 35822 | 35194 | 62028 | 47766 |
| | Straw | 10767 | 10598 | 7218 | 9053 |
| | Total | 46589 | 45792 | 69246 | 56819 |



2.1.3 Paddy - Summer (Punja)

For the cost of cultivation study on summer paddy during 2010-11 the total number of holdings selected was 353. Number of holdings selected in large holding size is 50. The details of these holdings are presented below:

Table 13 : Area under Summer Paddy during 2010-11

| Holding size class | No of selected holdings | Area under the crop in the sample (ha) | Percentage | Area per holding (ha) |
|--------------------|-------------------------|--|---------------|-----------------------|
| Small | 181 | 38.50 | 13.29 | 0.21 |
| Medium | 122 | 91.20 | 31.48 | 0.75 |
| Large | 50 | 160.00 | 55.23 | 3.20 |
| All Size | 353 | 289.70 | 100.00 | 0.82 |

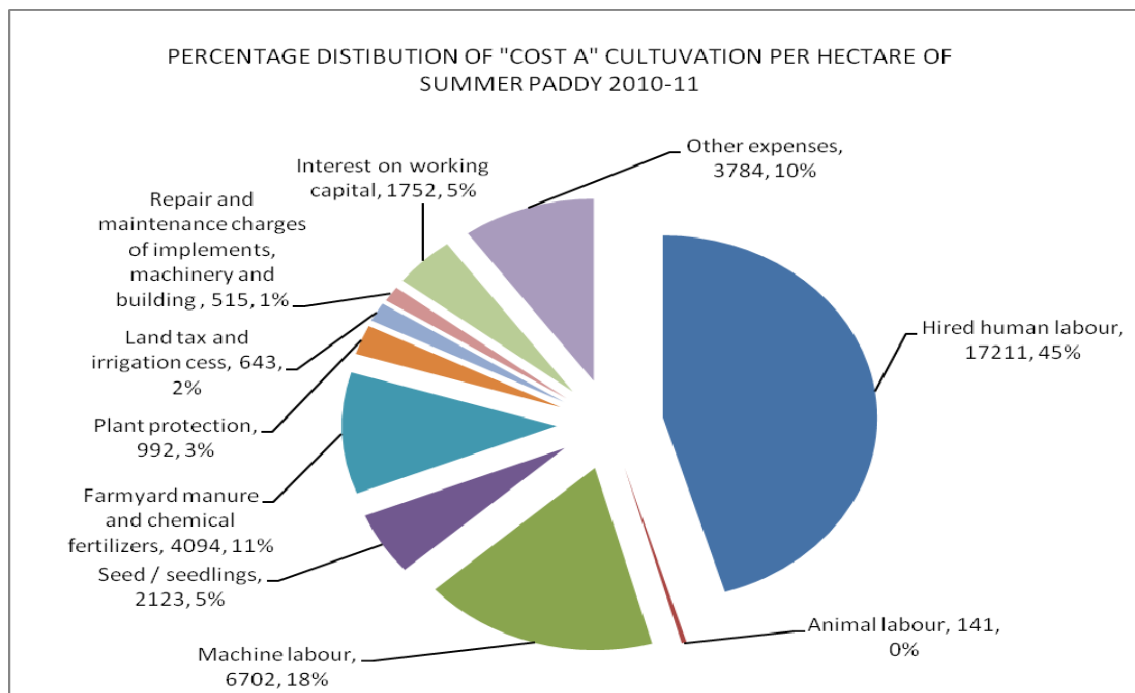
The above table reveals that the total area under cultivation in the selected sample holdings covers to 289.70 hectares and the average size of a holding is 0.82 hectare.

Cost of Cultivation

Cost of cultivation of summer paddy per hectare is estimated as Rs. **37957/-** when cost 'A' is considered. Component wise holding size class details are presented below:

Table 14: Cost of Cultivation per hectare of paddy -summer during 2010-11

| Sl No | Components | (Per Hectare in Rs.) Holding size Class | | | |
|-----------|--|--|--------------|--------------|--------------|
| | | Small | Medium | Large | All Size |
| 1 | Hired human labour | 22836 | 13858 | 17750 | 17211 |
| 2 | Animal labour | 332 | 202 | 59 | 141 |
| 3 | Machine labour | 5483 | 6294 | 7233 | 6702 |
| 4 | Seed / seedlings | 1608 | 1673 | 2505 | 2123 |
| 5 | Farmyard manure and chemical fertilizers | 5136 | 3777 | 4021 | 4094 |
| 6 | Plant protection | 546 | 811 | 1203 | 992 |
| 7 | Land tax and irrigation Cess | 356 | 390 | 858 | 643 |
| 8 | Repair and maintenance charges of implements, machinery and building | 1415 | 669 | 208 | 515 |
| 9 | Interest on working capital | 1930 | 1457 | 1878 | 1752 |
| 10 | Other expenses | 2650 | 2518 | 4783 | 3784 |
| 11 | Total Cost 'A' (1-10) | 42292 | 31649 | 40498 | 37957 |
| 12 | Interest on fixed capital | 4699 | 1712 | 219 | 1291 |
| 13 | Cost 'B1' (11+12) | 46991 | 33361 | 40717 | 39248 |
| 14 | Interest on land value | 75022 | 55514 | 36146 | 47464 |
| 15 | Cost 'B' (13+14) | 122013 | 88875 | 76863 | 86712 |
| 16 | Imputed value of household labour | 6622 | 3477 | 1375 | 2742 |
| 17 | Cost 'C' (15+16) | 128635 | 92352 | 78238 | 89454 |



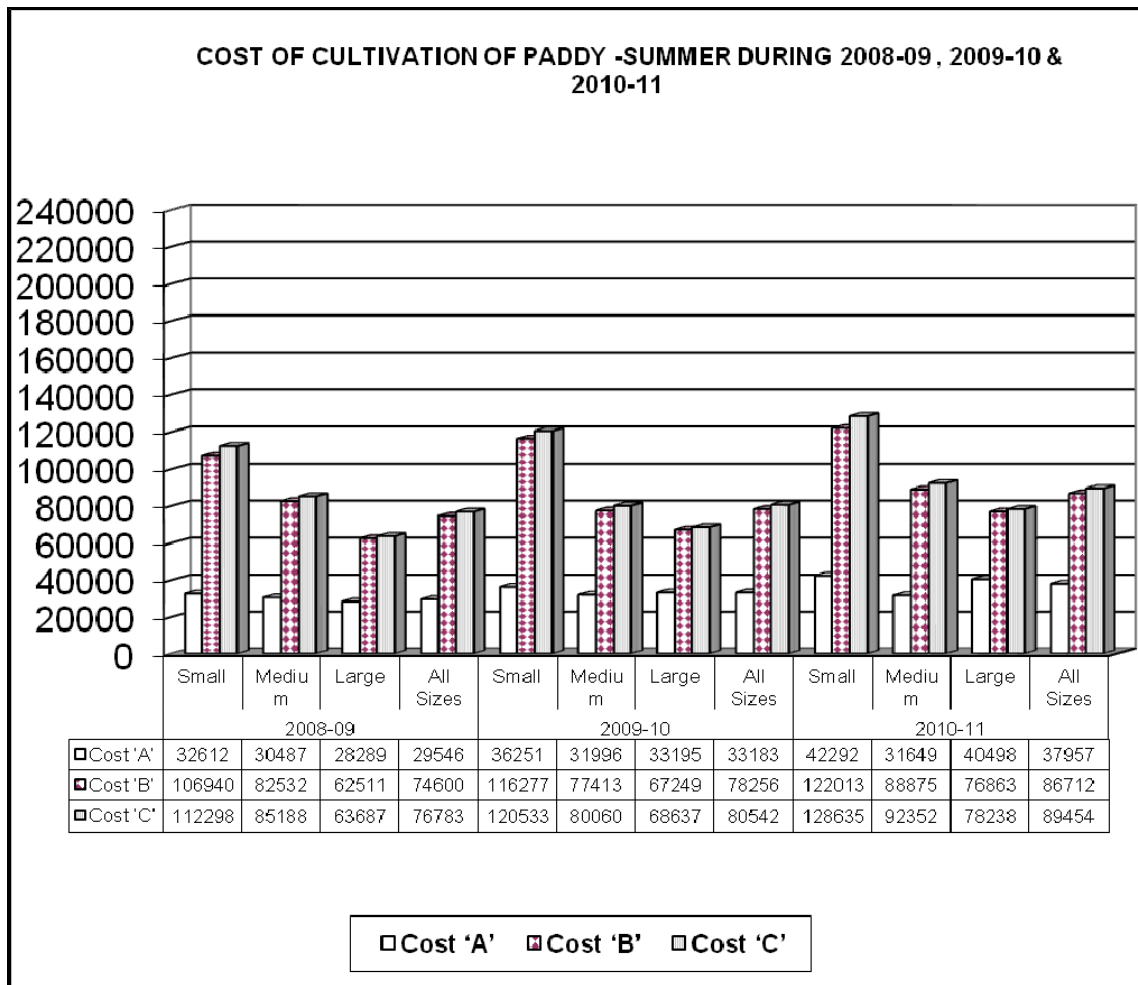
In summer paddy cultivation female labour participation accounted as 61.03% of the total labour hours. Details are given below:

Table 15: Percentage of hired human labour hours engaged in summer paddy

| Sex | Holding size class | | | |
|--------------|--------------------|--------------|--------------|--------------|
| | Small | Medium | Large | All Sizes |
| Male | 23.37 | 24.55 | 25.43 | 24.68 |
| Female | 54.28 | 59.31 | 65.81 | 61.03 |
| Total | 77.65 | 83.86 | 91.24 | 85.71 |

Table: 16 Cost of Cultivation per hectare(in Rs.) of Summer paddy during, 2008-09 , 2009-10 & 2010-11

| Concept of cost | Year | Holding Size class | | | |
|-----------------|---------|--------------------|--------------|--------------|--------------|
| | | Small | Medium | Large | All size |
| Cost 'A' | 2008-09 | 32612 | 30487 | 28289 | 29546 |
| | 2009-10 | 36251 | 31996 | 33195 | 33183 |
| | 2010-11 | 42292 | 31649 | 40498 | 37957 |
| Cost 'B' | 2008-09 | 106940 | 82532 | 62511 | 74600 |
| | 2009-10 | 116277 | 77413 | 67249 | 78256 |
| | 2010-11 | 122013 | 88875 | 76863 | 86712 |
| Cost 'C' | 2008-09 | 112298 | 85188 | 63687 | 76783 |
| | 2009-10 | 120533 | 80060 | 68637 | 80542 |
| | 2010-11 | 128635 | 92352 | 78238 | 89454 |



Output

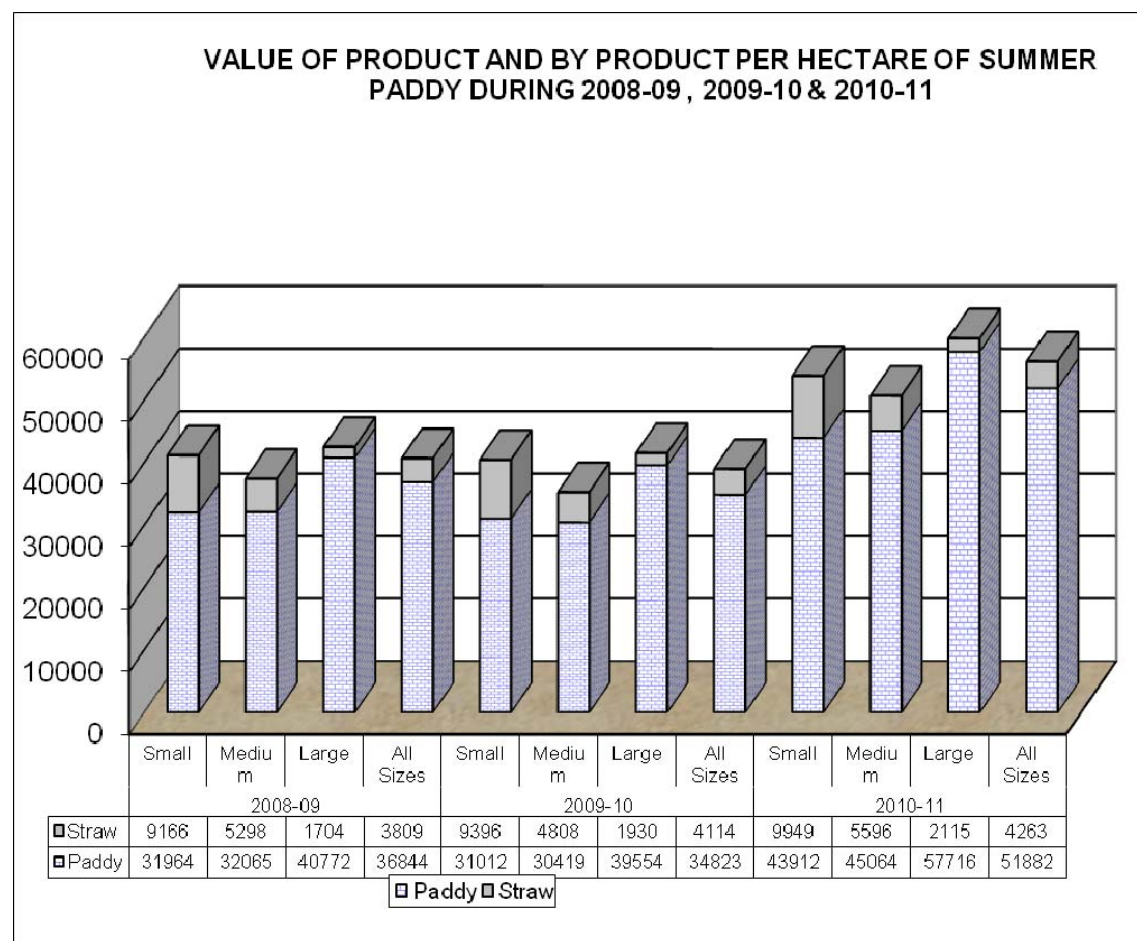
**Table: 17 Per Quintal Cost of production of paddy-Summer during 2008-09
2009-10& 2010-11**

| Concept of cost | Year | Holding size class | | | |
|-----------------|----------------|--------------------|-------------|-------------|-------------|
| | | Small | Medium | Large | All Sizes |
| Cost 'A' | 2008-09 | 1029 | 767 | 701 | 756 |
| | 2009-10 | 1103 | 931 | 816 | 892 |
| | 2010-11 | 1124 | 923 | 985 | 986 |
| Cost 'B' | 2008-09 | 3372 | 2076 | 1548 | 1909 |
| | 2009-10 | 3537 | 2253 | 1652 | 2105 |
| | 2010-11 | 3244 | 2593 | 1870 | 2254 |
| Cost 'C' | 2008-09 | 3541 | 2143 | 1577 | 1965 |
| | 2009-10 | 3666 | 2330 | 1686 | 2167 |
| | 2010-11 | 3420 | 2694 | 1903 | 2325 |

Above tables reveal that for producing one quintal of paddy in summer season an amount of Rs.986/- is required when cost 'A' is considered. Per hectare value of product paddy is calculated as **Rs.51882/-** and the value of by-product viz. straw is estimated as **Rs.4263/-**

Table 18: Value of Out put (Rs./ha)

| Year | Product/ By product | Holding size class | | | |
|---------|------------------------|--------------------|--------------|--------------|--------------|
| | | Small | Medium | Large | All size |
| 2008-09 | Paddy | 31964 | 32065 | 40772 | 36844 |
| | Straw | 9166 | 5298 | 1704 | 3809 |
| | Total | 41130 | 37363 | 42475 | 40652 |
| 2009-10 | Paddy | 31012 | 30419 | 39554 | 34823 |
| | Straw | 9396 | 4808 | 1930 | 4114 |
| | Total | 40408 | 35227 | 41484 | 38937 |
| 2010-11 | Paddy | 43912 | 45064 | 57716 | 51882 |
| | Straw | 9949 | 5596 | 2115 | 4263 |
| | Total | 53861 | 50660 | 59831 | 56146 |



2.2 Coconut

Coconut is grown in over 93 countries. Kerala's share in area as well as production of coconut in the country has been declining years after years. Still the State is known as "**Kera Nadu**" and it provides livelihood to over 3.5 million families in Kerala. As such data regarding the Cost of Cultivation of Coconut is significant. Details of the study conducted during 2010-11 are presented below.

Table 19: Number of Holdings and Area under coconut

| Holding size class | No of selected holdings | Area under the coconut in the sample (ha) | Percentage | Area per holding (ha) |
|--------------------|-------------------------|---|---------------|-----------------------|
| Small | 115 | 16.50 | 9.12 | 0.14 |
| Medium | 186 | 66.40 | 36.69 | 0.36 |
| Large | 79 | 98.10 | 54.20 | 1.24 |
| Total | 380 | 181.00 | 100.00 | 0.48 |

Cost of Cultivation

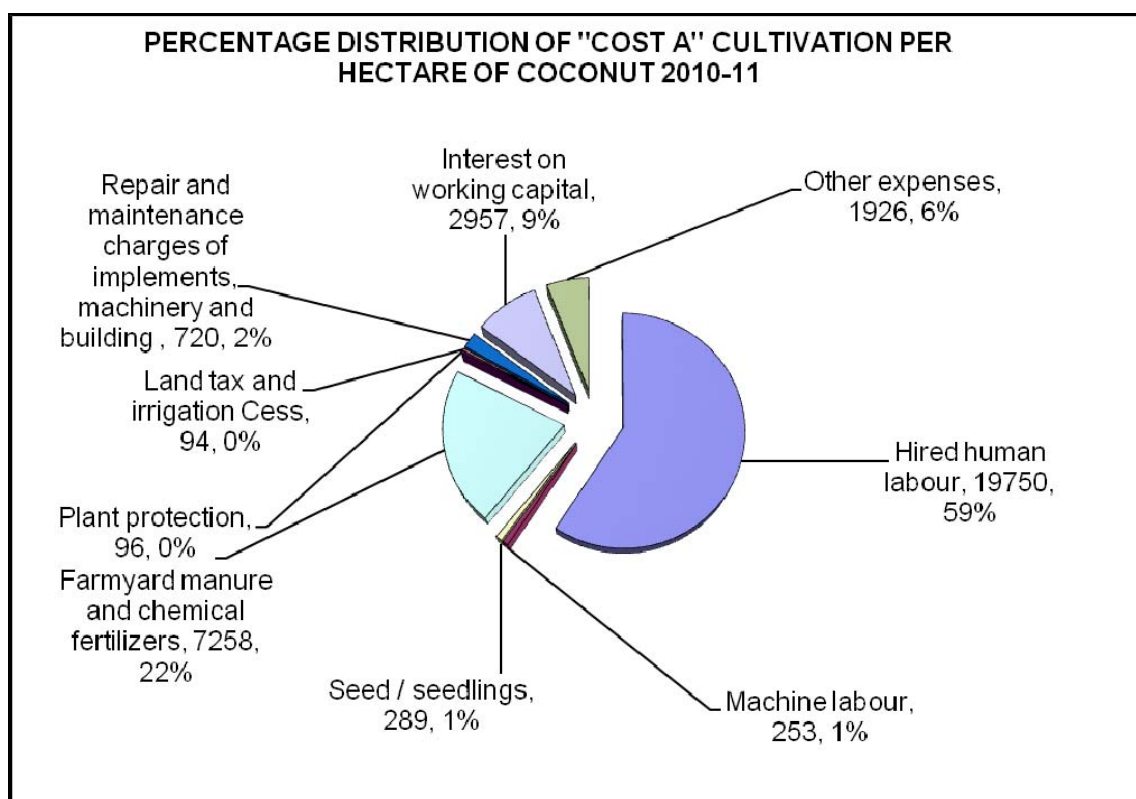
The cultivation practices and expenditure patterns of coconut tree is entirely different when compared to paddy. Details are given below.

Table 20: Cost of Cultivation of Coconut during the year 2010-11

(Per Hectare in Rs.)

| Sl No | Components | Holding size Class | | | |
|-------|--|--------------------|--------|-------|----------|
| | | Small | Medium | Large | All Size |
| 1 | Hired human labour | 19677 | 22105 | 18159 | 19750 |
| 2 | Animal labour | 0 | 0 | 0 | 0 |
| 3 | Machine labour | 142 | 264 | 264 | 253 |
| 4 | Seed / seedlings | 109 | 142 | 420 | 289 |
| 5 | Farmyard manure and chemical fertilizers | 7282 | 7722 | 6937 | 7258 |
| 6 | Plant protection | 162 | 101 | 80 | 96 |
| 7 | Land tax and irrigation Cess | 162 | 104 | 75 | 94 |
| 8 | Repair and maintenance charges of implements, machinery and building | 1874 | 819 | 451 | 720 |

| | | | | | |
|-----------|-----------------------------------|---------------|---------------|---------------|---------------|
| 9 | Interest on working capital | 3046 | 3241 | 2748 | 2957 |
| 10 | Other expenses | 3086 | 2078 | 1620 | 1926 |
| 11 | Total Cost 'A' (1-10) | 35540 | 36576 | 30754 | 33343 |
| 12 | Interest on fixed capital | 10337 | 6413 | 2063 | 4437 |
| 13 | Cost 'B1' (11+12) | 45877 | 42989 | 32817 | 37780 |
| 14 | Interest on land value | 707060 | 584494 | 408152 | 500959 |
| 15 | Cost 'B' (13+14) | 752937 | 627483 | 440969 | 538739 |
| 16 | Imputed value of household labour | 7272 | 4391 | 2303 | 3536 |
| 17 | Cost 'C' (15+16) | 760209 | 631874 | 443272 | 542275 |



The above data reveals that the major two inputs are hired human labour and farmyard manure and chemical fertilizers. Both of these items are accounted as 59% and 22% respectively.

The following table reveals percentage distribution of hired human labour hours to the total human labour hours.

Table 21: Percentage distribution of hired human labour hours to the total human labour hours

| Sex | Holding Size Class | | | |
|--------------|--------------------|--------------|-------------|--------------|
| | Small | Medium | Large | All Sizes |
| Male | 62.16 | 70.31 | 91.32 | 84.97 |
| Female | 7.92 | 8.45 | 3.60 | 4.91 |
| Total | 70.09 | 78.76 | 94.9 | 89.88 |

Table 22: Cost of Cultivation per hectare(in Rs.) of Coconut during 2008-09, 2009-10 & 2010-11

| Concept of cost | Year | Holding Size class | | | |
|-----------------|---------|--------------------|---------------|---------------|---------------|
| | | Small | Medium | Large | All size |
| Cost 'A' | 2008-09 | 27684 | 27458 | 23408 | 25393 |
| | 2009-10 | 31124 | 33302 | 28080 | 30406 |
| | 2010-11 | 35540 | 36576 | 30754 | 33343 |
| Cost 'B' | 2008-09 | 518878 | 505199 | 411108 | 458097 |
| | 2009-10 | 698566 | 552707 | 414247 | 493230 |
| | 2010-11 | 752937 | 627483 | 440969 | 538739 |
| Cost 'C' | 2008-09 | 524046 | 508492 | 413363 | 461046 |
| | 2009-10 | 704973 | 556905 | 416002 | 496348 |
| | 2010-11 | 760209 | 631874 | 443272 | 542275 |

Value of output

Table 23: Value of Out put / Hectare(in Rs.)

| Product/By-product | Holding Size Class | | | |
|--------------------|--------------------|--------------|--------------|--------------|
| | Small | Medium | Large | All Sizes |
| Product | 68500 | 60474 | 62796 | 62480 |
| By-Product | 4412 | 1947 | 1554 | 1967 |
| Total | 72912 | 62421 | 64350 | 64447 |

The table shows the value of output is Rs. 64447/- per hectare.

2.3 Arecanut

Arecanut, a traditional crop of the state is also facing certain problems especially in this area. Details of the area covered under this study are as follows:

Table. 24 Area and Number of holdings under Arecanut cultivation.

| Holding size class | No of selected holdings | Area under the crop in the sample (ha) | Percentage | Area per holding (ha) |
|--------------------|-------------------------|--|---------------|-----------------------|
| Small | 285 | 15.30 | 24.92 | 0.05 |
| Medium | 67 | 18.90 | 30.78 | 0.28 |
| Large | 27 | 27.20 | 44.30 | 1.01 |
| All size | 379 | 61.40 | 100.00 | 0.16 |

For this study 379 holdings were selected. It had an operational area of 61.40 hectare. The average size per holding was 0.16 hectare.

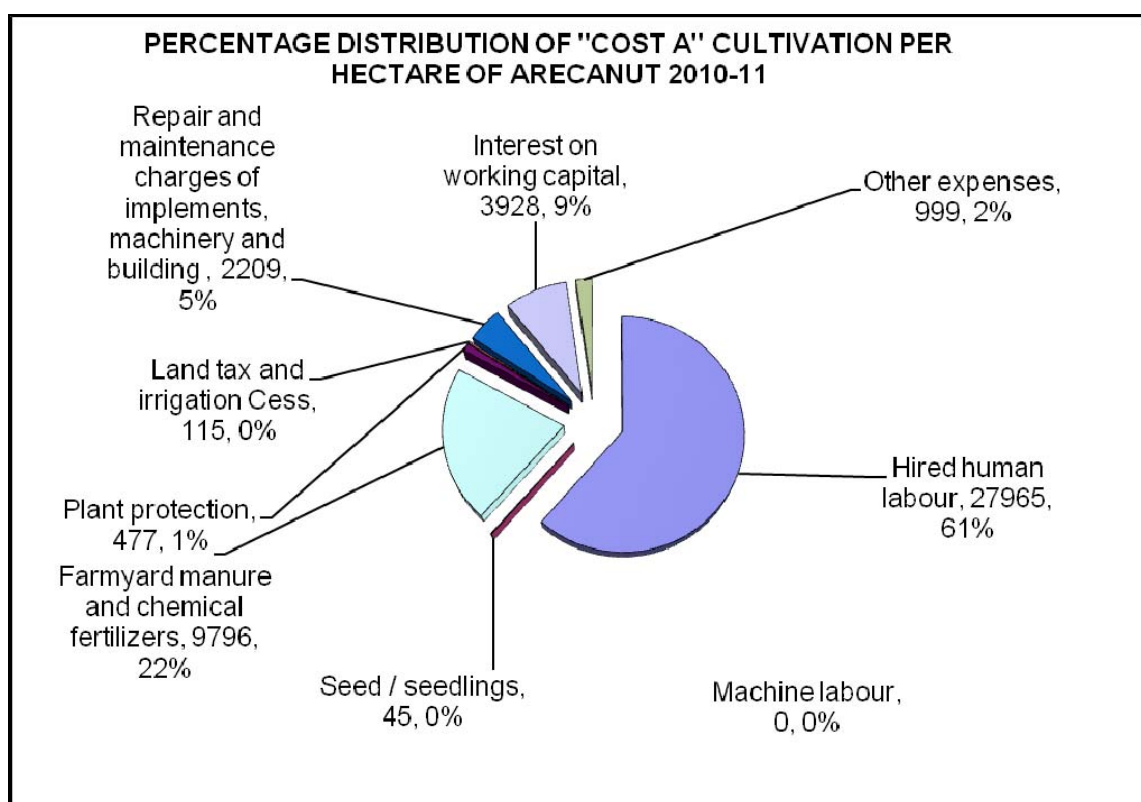
Cost of Cultivation

The different cost components of Arecanut cultivation is given below: Per hectare cost C expenses is worked out as Rs. 536497/-

Table 25: Cost of Cultivation per hectare of Arecanut during the year 2010-11

| Sl No | Components | (Per Hectare in Rs.) Holding size Class | | | |
|-------|--|--|--------|-------|----------|
| | | Small | Medium | Large | All Size |
| 1 | Hired human labour | 24199 | 26822 | 30953 | 27965 |
| 2 | Animal labour | 0 | 0 | 0 | 0 |
| 3 | Machine labour | 0 | 0 | 0 | 0 |
| 4 | Seed / seedlings | 44 | 37 | 51 | 45 |
| 5 | Farmyard manure and chemical fertilizers | 10909 | 11172 | 8178 | 9796 |
| 6 | Plant protection | 319 | 669 | 433 | 477 |
| 7 | Land tax and irrigation Cess | 115 | 63 | 152 | 115 |
| 8 | Repair and maintenance charges of implements, machinery and building | 3916 | 1766 | 1532 | 2209 |

| | | | | | |
|----|-----------------------------------|---------------|---------------|---------------|---------------|
| 9 | Interest on working capital | 3672 | 3968 | 4048 | 3928 |
| 10 | Other expenses | 1250 | 984 | 863 | 999 |
| 11 | Total Cost 'A' (1-10) | 44424 | 45481 | 46210 | 45534 |
| 12 | Interest on fixed capital | 24686 | 13985 | 6873 | 13584 |
| 13 | Cost 'B1' (11+12) | 69110 | 59466 | 53083 | 59118 |
| 14 | Interest on land value | 598504 | 459931 | 409806 | 473100 |
| 15 | Cost 'B' (13+14) | 667614 | 519397 | 462889 | 532218 |
| 16 | Imputed value of household labour | 8093 | 5198 | 1419 | 4279 |
| 17 | Cost 'C' (15+16) | 675707 | 524595 | 464308 | 536497 |



When Cost A is considering, 61% comes under hired human labour and followed by 22% in Farmyard manure and chemical fertilizers.

The following table illustrates the work participation of arecanut cultivation. It shows that 71 per cent of the total labour hours has been shared by human labour.

Table 26: Percentage distribution of hired human labour hours to total human Labour hours

| Sex | Holding size class | | | |
|--------------|--------------------|--------------|--------------|--------------|
| | Small | Medium | Large | All Sizes |
| Male | 48.16 | 49.79 | 60.81 | 53.74 |
| Female | 4.85 | 18.80 | 22.31 | 16.89 |
| Total | 53.02 | 68.59 | 83.12 | 70.63 |

Table 27: Cost of Cultivation per hectare(in Rs.) of Arecanut during 2008-09 , 2009-09 & 2010-11

| Concept of cost | Year | Holding Size class | | | |
|-----------------|---------|--------------------|---------------|---------------|---------------|
| | | Small | Medium | Large | All size |
| Cost 'A' | 2008-09 | 27931 | 33246 | 38108 | 33447 |
| | 2009-10 | 34655 | 38396 | 35063 | 36019 |
| | 2010-11 | 44424 | 45481 | 46210 | 45534 |
| Cost 'B' | 2008-09 | 483350 | 333950 | 291349 | 359272 |
| | 2009-10 | 637147 | 421330 | 354153 | 436137 |
| | 2010-11 | 667614 | 519397 | 462889 | 532218 |
| Cost 'C' | 2008-09 | 488530 | 340549 | 294314 | 364301 |
| | 2009-10 | 644948 | 426911 | 355287 | 440100 |
| | 2010-11 | 675707 | 524595 | 464308 | 536497 |

Value of Out put

Table 28: Value of Out put / Hectare(in Rs.)

The estimated value of output per hectare is Rs.104805/-

| Holding Size Class | | | |
|--------------------|--------|-------|-----------|
| Small | Medium | Large | All Sizes |
| 101429 | 123393 | 93610 | 104805 |

2.4 Tapioca

Area under the crop in this study was 38.40 hectare which covers 185 holdings. Number of holding in large holding size class is very less. Holding size class wise details are given below.

Table 29: Area and Number of Holdings Selected

| Size class | No of selected holdings | Area under the crop in the sample (ha) | Percentage to total area of Selected holdings | Area per holding (ha) |
|-----------------|-------------------------|--|---|-----------------------|
| Small | 118 | 8.80 | 22.92 | 0.07 |
| Medium | 52 | 16.20 | 42.19 | 0.31 |
| Large | 15 | 13.40 | 34.90 | 0.89 |
| All Size | 185 | 38.40 | 100.00 | 0.21 |

The average size of a selected holding is 0.21 hectare and number of holding selected for the survey is 185.

Cost of Cultivation

When Cost A is considered per hectare cost of cultivation of tapioca is worked out Rs. **48474/-**. In this hired labour cost constituted **64%** where as farmyard manure and chemical fertilizers shares **14%** of the Cost A.

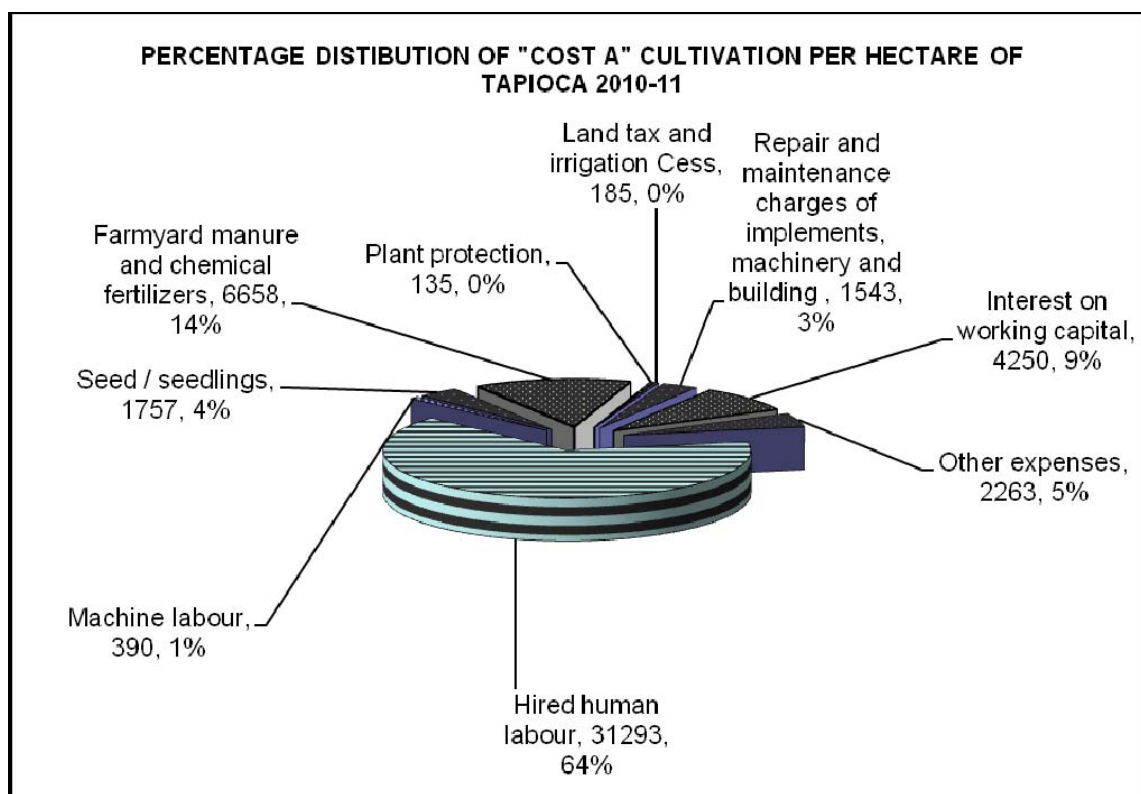
The cost of cultivation of Tapioca under different concepts is given below.

Table 30: The Cost of cultivation per hectare of tapioca during the year 2010-11

(Per Hectare in Rs.)

| Sl No | Components | Holding size Class | | | |
|-------|--|--------------------|--------|-------|----------|
| | | Small | Medium | Large | All Size |
| 1 | Hired human labour | 33060 | 32242 | 28915 | 31293 |
| 2 | Animal labour | 0 | 0 | 0 | 0 |
| 3 | Machine labour | 93 | 113 | 935 | 390 |
| 4 | Seed / seedlings | 2929 | 1457 | 1319 | 1757 |
| 5 | Farmyard manure and chemical fertilizers | 9377 | 7123 | 4217 | 6658 |

| | | | | | |
|-----------|--|---------------|---------------|---------------|---------------|
| 6 | Plant protection | 105 | 97 | 202 | 135 |
| 7 | Land tax and irrigation Cess | 496 | 142 | 25 | 185 |
| 8 | Repair and maintenance charges of implements, machinery and building | 2069 | 994 | 1856 | 1543 |
| 9 | Interest on working capital | 4903 | 4350 | 3678 | 4250 |
| 10 | Other expenses | 3462 | 2464 | 1193 | 2263 |
| 11 | Total Cost 'A' (1-10) | 56494 | 48982 | 42340 | 48474 |
| 12 | Interest on fixed capital | 11126 | 2026 | 4531 | 5032 |
| 13 | Cost 'B1' (11+12) | 67620 | 51008 | 46871 | 53506 |
| 14 | Interest on land value | 533751 | 455635 | 183656 | 380752 |
| 15 | Cost 'B' (13+14) | 601371 | 506643 | 230527 | 434258 |
| 16 | Imputed value of household labour | 18758 | 9682 | 4664 | 10101 |
| 17 | Cost 'C' (15+16) | 620129 | 516325 | 235191 | 444359 |



The following table shows the percentage distribution of hired human labour hours engaged in tapioca cultivation.

Table 31: Percentage distribution of hired human labour hours

| Sex | Holding Size Class | | | |
|--------------|--------------------|--------------|--------------|--------------|
| | Small | Medium | Large | All Sizes |
| Male | 52.83 | 65.31 | 72.43 | 63.72 |
| Female | 6.63 | 7.57 | 11.12 | 8.39 |
| Total | 59.46 | 72.88 | 83.55 | 72.11 |

In tapioca cultivation 72% of the total human labour hours has been shared by hired human labour.

Table 32: Cost of Cultivation per hectare (In Rs.) of Tapioca during 2008-09, 2009-10 & 2010-11

A comparative statement for 2008-09 ,2009-10 and 2010-11 for cost of cultivation of different concept is given below.

| Concept of cost | Year | Holding Size class | | | |
|-----------------|----------------|--------------------|---------------|---------------|---------------|
| | | Small | Medium | Large | All size |
| Cost 'A' | 2008-09 | 35276 | 38567 | 41993 | 38426 |
| | 2009-10 | 48984 | 45062 | 36377 | 43087 |
| | 2010-11 | 56494 | 48982 | 42340 | 48474 |
| Cost 'B' | 2008-09 | 360878 | 338834 | 281160 | 332643 |
| | 2009-10 | 531611 | 497556 | 390174 | 469308 |
| | 2010-11 | 601371 | 506643 | 230527 | 434258 |
| Cost 'C' | 2008-09 | 369826 | 345176 | 283970 | 338928 |
| | 2009-10 | 544439 | 503461 | 395505 | 476851 |
| | 2010-11 | 620129 | 516325 | 235191 | 444359 |

Value of Out put

Table 33: Value of Out put / Hectare(In Rs.)

| Holding Size Class | | | |
|--------------------|--------|--------|-----------|
| Small | Medium | Large | All Sizes |
| 172487 | 136878 | 113936 | 137407 |

The value of output for all holding size is comparable. Value of output from tapioca is estimated Rs.137407/- per hectare.

2.5 Banana

In the cost of cultivation study on banana 190 holdings were selected by covering an area 49.20 hectares. Details of these holdings are given below.

Table 34: Area and Number of holdings selected

| Size class | No of selected holdings | Area under the crop in the sample (ha) | Percentage to Total area | Area per holding (ha) |
|-----------------|-------------------------|--|--------------------------|-----------------------|
| Small | 116 | 7.90 | 16.06 | 0.07 |
| Medium | 60 | 20.60 | 41.87 | 0.34 |
| Large | 14 | 20.70 | 42.07 | 1.48 |
| All Size | 190 | 49.20 | 100.00 | 0.26 |

Cost of Cultivation

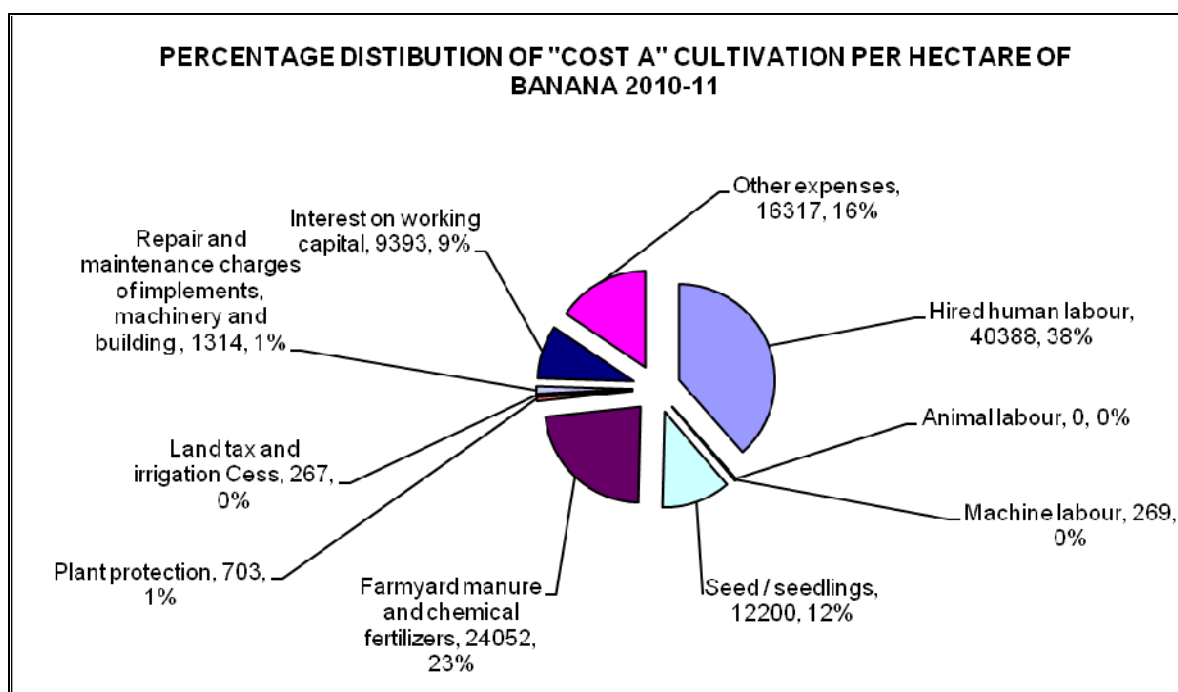
As in the case of other crops, cost of cultivation of banana is also calculated at different cost, concepts such as cost 'A', Cost 'B1', 'Cost 'B' and Cost 'C'. When Cost A is considered, cost of cultivation is Rs.104903/-

Table 35: The Cost of cultivation per hectare of Banana during the year 2010-11

(Per Hectare in Rs.)

| Sl No | Components | Holding size Class | | | |
|-------|--|--------------------|--------|-------|----------|
| | | Small | Medium | Large | All Size |
| 1 | Hired human labour | 54987 | 42669 | 31977 | 40388 |
| 2 | Animal labour | 0 | 0 | 0 | 0 |
| 3 | Machine labour | 594 | 400 | 0 | 269 |
| 4 | Seed / seedlings | 14383 | 12292 | 11197 | 12200 |
| 5 | Farmyard manure and chemical fertilizers | 30821 | 21332 | 23999 | 24052 |
| 6 | Plant protection | 853 | 514 | 833 | 703 |
| 7 | Land tax and irrigation Cess | 158 | 175 | 407 | 267 |
| 8 | Repair and maintenance charges of implements, machinery and building | 3143 | 1009 | 862 | 1314 |

| | | | | | |
|-----------|-----------------------------------|---------------|---------------|---------------|---------------|
| 9 | Interest on working capital | 11826 | 9264 | 8510 | 9393 |
| 10 | Other expenses | 16619 | 15433 | 17092 | 16317 |
| 11 | Total Cost 'A' (1-10) | 133384 | 103088 | 94877 | 104903 |
| 12 | Interest on fixed capital | 20493 | 4804 | 1467 | 6120 |
| 13 | Cost 'B1' (11+12) | 153877 | 107892 | 96344 | 111023 |
| 14 | Interest on land value | 442615 | 397140 | 221242 | 332713 |
| 15 | Cost 'B' (13+14) | 596492 | 505032 | 317586 | 443736 |
| 16 | Imputed value of household labour | 29403 | 18910 | 11078 | 17491 |
| 17 | Cost 'C' (15+16) | 625895 | 523942 | 328664 | 461227 |



In this hired human labour cost accounted as 38 per cent where as farmyard manure and chemical fertilizers cost as 23 per cent respectively of the total Cost 'A'. Seed/seedling cost constitutes to 12 % of the total cost 'A'.

In Banana cultivation male participation rate is higher than that of female. The percentage distribution of these facts are as follows:

Table: 36 Percentage distributions of hired human labour hours to the total human labour hours

| Sex | Holding Size Class | | | |
|--------------|--------------------|--------------|--------------|--------------|
| | Small | Medium | Large | All Sizes |
| Male | 56.51 | 61.44 | 49.78 | 55.93 |
| Female | 8.18 | 6.42 | 28.38 | 15.09 |
| Total | 64.69 | 67.86 | 78.16 | 71.02 |

Table 37: Cost of Cultivation per hectare(In Rs.) of Banana during 2008-09, 2009-10 & 2010-11

A comparative statement for 2008-09, 2009-10 and 2010-11 for cost of cultivation of different concept is given below.

| Concept of cost | Year | Holding Size class | | | |
|-----------------|---------|--------------------|---------------|---------------|---------------|
| | | Small | Medium | Large | All size |
| Cost 'A' | 2008-09 | 92249 | 89400 | 70015 | 84296 |
| | 2009-10 | 118841 | 104755 | 99430 | 106032 |
| | 2010-11 | 133384 | 103088 | 94877 | 104903 |
| Cost 'B' | 2008-09 | 431850 | 344093 | 339907 | 364157 |
| | 2009-10 | 413605 | 393309 | 438473 | 410948 |
| | 2010-11 | 596492 | 505032 | 317586 | 443736 |
| Cost 'C' | 2008-09 | 449373 | 354494 | 345874 | 374963 |
| | 2009-10 | 436806 | 407145 | 449228 | 425771 |
| | 2010-11 | 625895 | 523942 | 328664 | 461227 |

Value of out put

Table 38: Value of Out put / Hectare(In Rs.)

| Holding Size Class | | | |
|--------------------|--------|--------|-----------|
| Small | Medium | Large | All Sizes |
| 290716 | 275221 | 264643 | 273531 |

During 2010-11 per hectare value of output from banana cultivation is estimated as **Rs. 273531/-**

2.6 Pepper

The monopoly of the state still continues in area and production of pepper. Details of the holdings selected for the study is given below:

Table 39 - Area and number of holdings selected during 2010-11

| Holding size class | No of selected holdings | Area under the crop in the sample (ha) | Percentage | Area per holding (ha) |
|--------------------|-------------------------|--|---------------|-----------------------|
| Small | 146 | 7.70 | 30.08 | 0.05 |
| Medium | 38 | 11.70 | 45.70 | 0.31 |
| Large | 6 | 6.20 | 24.22 | 1.03 |
| Total | 190 | 25.60 | 100.00 | 0.13 |

Cost of cultivation

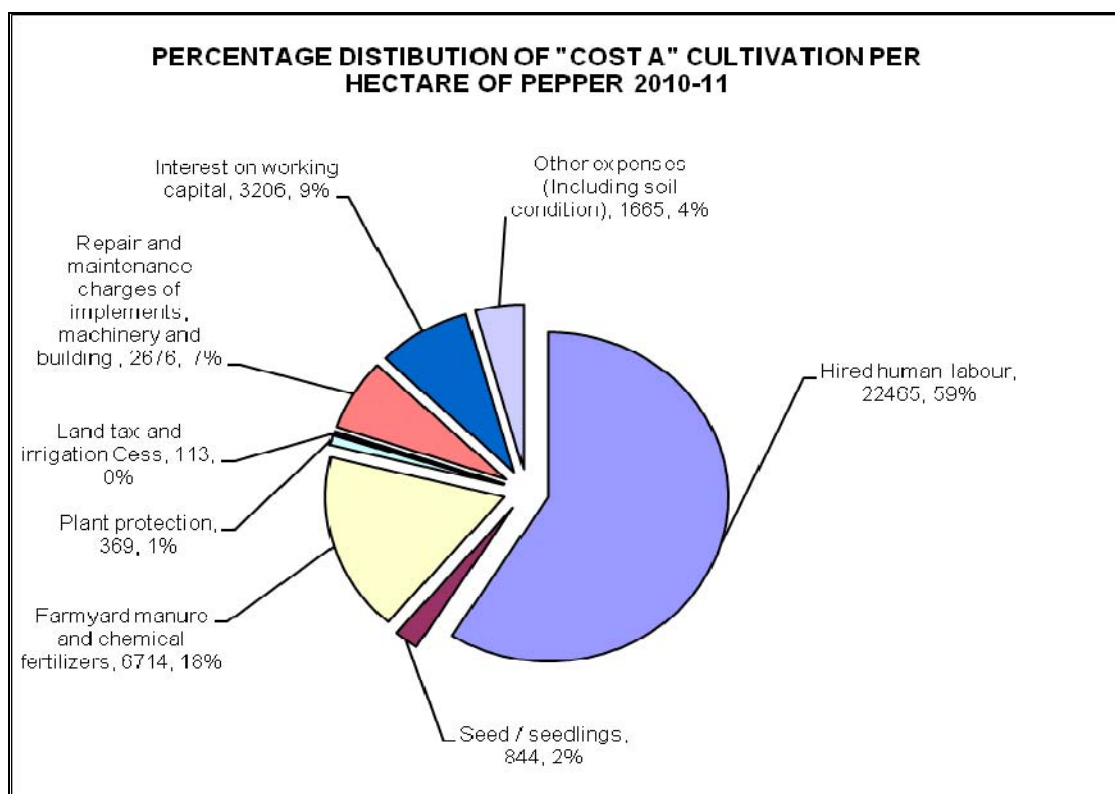
The cultivation cost incurred for pepper is entirely different when compared to the cost of paddy and other seasonal crops. Labour cost and fertilizer cost are the two major items of expenses for pepper cultivation. Item wise expenses incurred under pepper cultivation is as follows:

Table 40: Cost of Cultivation of Pepper during the year 2010-11

(Per Hectare in Rs.)

| Sl No | Components | Holding size Class | | | |
|-----------|--|--------------------|--------------|--------------|--------------|
| | | Small | Medium | Large | All Size |
| 1 | Hired human labour | 24340 | 19902 | 24962 | 22465 |
| 2 | Animal labour | 0 | 0 | 0 | 0 |
| 3 | Machine labour | 0 | 0 | 0 | 0 |
| 4 | Seed / seedlings | 1633 | 739 | 19 | 844 |
| 5 | Farmyard manure and chemical fertilizers | 7336 | 6719 | 5891 | 6714 |
| 6 | Plant protection | 134 | 23 | 1343 | 369 |
| 7 | Land tax and irrigation Cess | 87 | 87 | 198 | 113 |
| 8 | Repair and maintenance charges of implements, machinery and building | 3961 | 2250 | 1827 | 2676 |
| 9 | Interest on working capital | 3545 | 2912 | 3329 | 3206 |
| 10 | Other expenses (Including soil condition) | 2004 | 1740 | 1078 | 1665 |
| 11 | Total Cost 'A' (1 to 10) | 43040 | 34372 | 38647 | 38052 |

| | | | | | |
|----|-----------------------------------|---------------|---------------|---------------|---------------|
| 12 | Interest on fixed capital | 13605 | 13216 | 9051 | 12352 |
| 13 | Cost 'B1' (11+12) | 56645 | 47588 | 47698 | 50404 |
| 14 | Interest on land value | 535772 | 315495 | 295827 | 378719 |
| 15 | Cost 'B' (13+14) | 592417 | 363083 | 343525 | 429123 |
| 16 | Imputed value of household labour | 11526 | 8398 | 4974 | 8553 |
| 17 | Cost 'C' (15+16) | 603943 | 371481 | 348499 | 437676 |



The survey results reveal that out of the total hired human labour hours engaged in pepper cultivation 59% is shared by hired human labour. Details are given below:

Table 41: Percentage of hired human labour hours engaged in pepper cultivation

| Sex | Holding size class | | | |
|--------------|--------------------|--------------|--------------|--------------|
| | Small | Medium | Large | All Sizes |
| Male | 59.02 | 63.42 | 64.81 | 62.40 |
| Female | 7.17 | 6.83 | 16.36 | 9.27 |
| Total | 66.19 | 70.25 | 81.17 | 71.67 |

**Table 42: Cost of Cultivation per hectare(In Rs.) of Pepper during
2008-09 , 2009-2010 & 2010-11**

A comparative statement for 2008-09 ,2009-10 & 2010-11 for cost of cultivation of different concept is given below.

| Concept of cost | Year | Holding Size class | | | |
|-----------------|----------------|--------------------|---------------|---------------|---------------|
| | | Small | Medium | Large | All size |
| Cost 'A' | 2008-09 | 26834 | 23327 | 19227 | 23744 |
| | 2009-10 | 35514 | 26010 | 36813 | 31861 |
| | 2010-11 | 43040 | 34372 | 38647 | 38052 |
| Cost 'B' | 2008-09 | 561886 | 333119 | 238732 | 400341 |
| | 2009-10 | 574668 | 326768 | 213966 | 397245 |
| | 2010-11 | 592417 | 363083 | 343525 | 429123 |
| Cost 'C' | 2008-09 | 571048 | 336720 | 239676 | 405492 |
| | 2009-10 | 584395 | 332765 | 214920 | 403606 |
| | 2010-11 | 603943 | 371481 | 348499 | 437676 |

Value of out put

Table 43: Value of Out put / Hectare(In Rs.)

| Holding Size Class | | | |
|--------------------|--------|-------|-----------|
| Small | Medium | Large | All Sizes |
| 86895 | 70477 | 56381 | 72206 |

During 2008-09 per hectare value of output from pepper cultivation is estimated as
Rs.56234/--

During 2009-10 per hectare value of output from pepper cultivation is estimated as
Rs.71711/-

During 2010-11 it is estimated that Rs. 72206/- has been received as value of output from per hectare pepper cultivation.

2.7 Ginger

For the cost of cultivation study during 2010-11, 181 holdings were selected. Details are given below:

Table 44: Area and number of holdings under Ginger cultivation 2010-11

| Holding size class | No of selected holdings | Area under the crop in the sample (ha) | Percentage to total Area | Average area per holding (ha) |
|--------------------|-------------------------|--|--------------------------|-------------------------------|
| Small | 148 | 7.00 | 27.89 | 0.05 |
| Medium | 30 | 8.20 | 32.67 | 0.27 |
| Large | 3 | 9.90 | 39.44 | 3.30 |
| All sizes | 181 | 25.10 | 100.00 | 0.14 |

Cost of cultivation

Among the various inputs of ginger cultivation labour cost, seed/seedling, fertilizer, etc. are the most important. Details of these various inputs are presented below:

Table 45 Cost of Cultivation per hectare of Ginger during the year 2010-11

| Sl No | Components | (Per Hectare in Rs) | | | |
|-------|--|---------------------|--------|-------|----------|
| | | Holding size Class | | | |
| | | Small | Medium | Large | All Size |
| 1 | Hired human labour | 49920 | 35419 | 31891 | 38333 |
| 2 | Animal labour | 0 | 0 | 0 | 0 |
| 3 | Machine labour | 1500 | 2645 | 4612 | 3053 |
| 4 | Seed / seedlings | 31884 | 26538 | 26455 | 28072 |
| 5 | Farmyard manure and chemical fertilizers | 20776 | 22082 | 24854 | 22747 |
| 6 | Plant protection | 705 | 531 | 1916 | 1105 |
| 7 | Land tax and irrigation cess | 91 | 67 | 13 | 54 |
| 8 | Repair and maintenance charges of implements, machinery and building | 2927 | 1254 | 706 | 1537 |
| 9 | Interest on working capital | 10838 | 9387 | 10014 | 10048 |

| | | | | | |
|-----------|-----------------------------------|---------------|---------------|---------------|---------------|
| 10 | Other expenses | 3590 | 6651 | 10408 | 7174 |
| 11 | Total Cost 'A' (1-10) | 122231 | 104574 | 110869 | 112123 |
| 12 | Interest on fixed capital | 23857 | 9720 | 1397 | 10715 |
| 13 | Cost 'B1' (11+12) | 146088 | 114294 | 112266 | 122838 |
| 14 | Interest on land value | 424161 | 271635 | 249621 | 307988 |
| 15 | Cost 'B' (13+14) | 570249 | 385929 | 361887 | 430826 |
| 16 | Imputed value of household labour | 19495 | 12096 | 7564 | 12551 |
| 17 | Cost 'C' (15+16) | 589744 | 398025 | 369451 | 443377 |

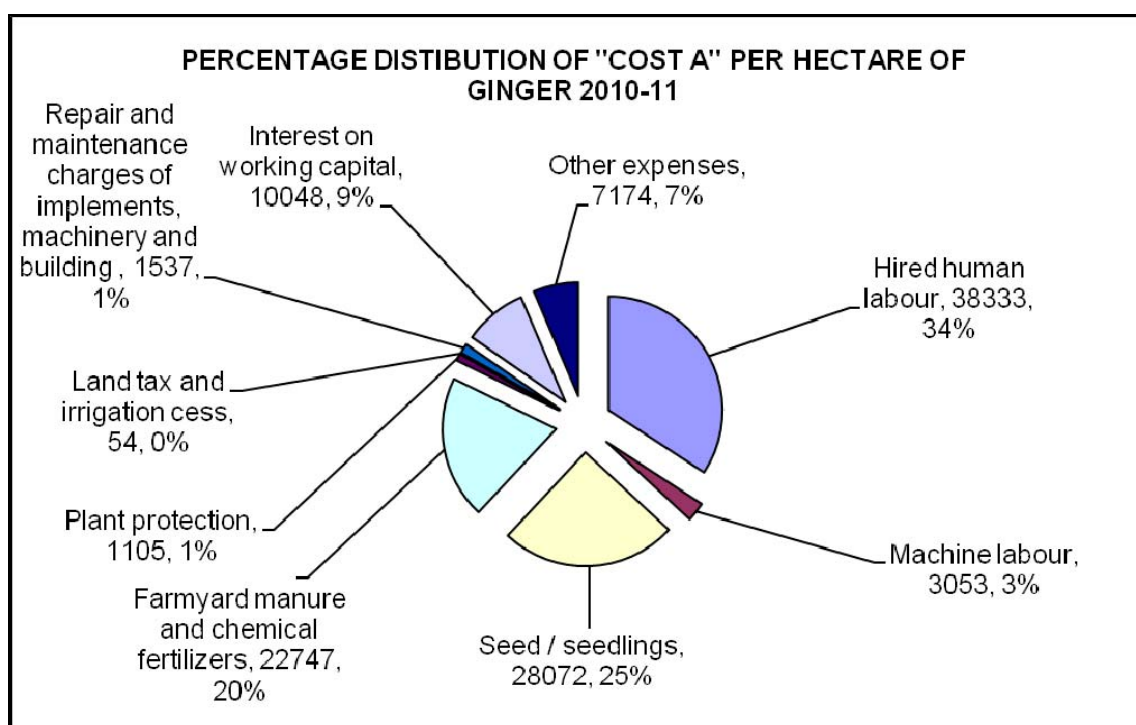


Table 46: Percentage of hired human labour hours to total human labour hours

| Sex | Holding size class | | | |
|--------------|--------------------|--------------|--------------|--------------|
| | Small | Medium | Large | All Sizes |
| Male | 39.81 | 30.13 | 39.65 | 36.74 |
| Female | 18.86 | 37.90 | 36.38 | 29.88 |
| Total | 58.67 | 68.03 | 76.03 | 66.62 |

Table 47: Cost of Cultivation per hectare(In Rs.) of Ginger during 2008-09 , 2009-10 & 2 010-11

A comparative statement for **2008-09 , 2009-10 & 2010-11** for cost of cultivation of different concept is given below.

| Concept of cost | Year | Holding Size class | | | |
|-----------------|----------------|--------------------|---------------|---------------|---------------|
| | | Small | Medium | Large | All size |
| Cost 'A' | 2008-09 | 78116 | 79779 | 105430 | 85580 |
| | 2009-10 | 110578 | 117564 | 125619 | 119547 |
| | 2010-11 | 122231 | 104574 | 110869 | 112123 |
| Cost 'B' | 2008-09 | 409226 | 276116 | 192188 | 298087 |
| | 2009-10 | 545546 | 422333 | 340404 | 416423 |
| | 2010-11 | 570249 | 385929 | 361887 | 430826 |
| Cost 'C' | 2008-09 | 422860 | 283494 | 196521 | 306720 |
| | 2009-10 | 564484 | 434713 | 345614 | 426530 |
| | 2010-11 | 589744 | 398025 | 369451 | 443377 |

Value of Out put

Table 48: Value of Out put / Hectare(In Rs.)

| Holding Size Class | | | |
|--------------------|--------|--------|-----------|
| Small | Medium | Large | All Sizes |
| 218131 | 220638 | 208938 | 215483 |

The per hectare value of output received from Ginger cultivation is seen as Rs.215483/- during 2010-11

2.8 Turmeric

Details of the holdings selected for the cost of cultivation study during 2010-11 are given below:

Table 49: Area and Number of holdings selected for Turmeric cultivation 2010-11

| Holding size class | No of selected holdings | Area under the crop in the sample (ha) | Percentage to total area | Average area per holding (ha) |
|--------------------|-------------------------|--|--------------------------|-------------------------------|
| Small | 120 | 6.30 | 55.26 | 0.05 |
| Medium | 12 | 2.90 | 25.44 | 0.24 |
| Large | 3 | 2.20 | 19.30 | 0.73 |
| All size | 135 | 11.40 | 100.00 | 0.08 |

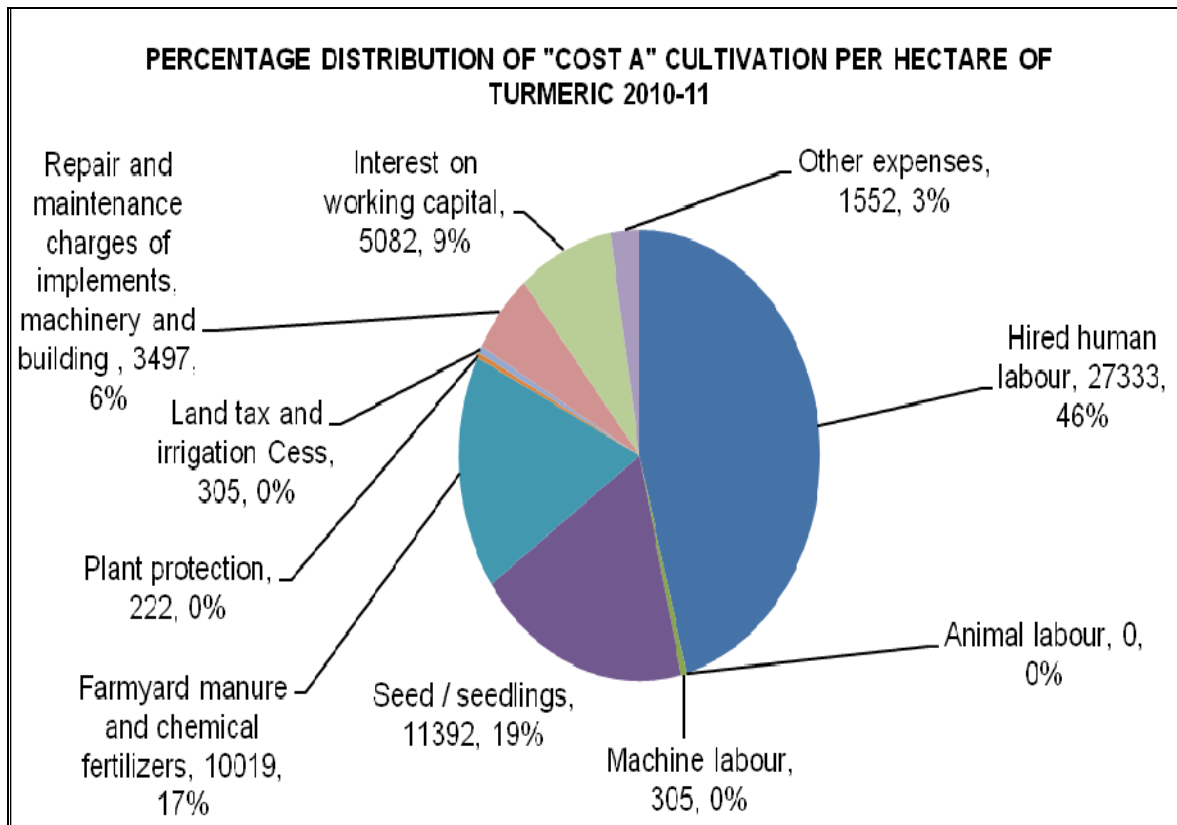
Cost of cultivation

The cash and other kind expenses incurred under Turmeric cultivation is estimated as Rs.59707/- for one hectare. Details of these items are given below:

Table 50: Cost of Cultivation of Turmeric during the year 2010-11

(Per Hectare in Rs.)

| Sl No | Components | Holding size Class | | | |
|-----------|--|--------------------|---------------|---------------|---------------|
| | | Small | Medium | Large | All Size |
| 1 | Hired human labour | 24147 | 29625 | 34023 | 27333 |
| 2 | Animal labour | 0 | 0 | 0 | 0 |
| 3 | Machine labour | 100 | 995 | 0 | 305 |
| 4 | Seed / seedlings | 10896 | 11906 | 12220 | 11392 |
| 5 | Farmyard manure and chemical fertilizers | 11556 | 9021 | 6649 | 10019 |
| 6 | Plant protection | 248 | 328 | 0 | 222 |
| 7 | Land tax and irrigation Cess | 152 | 879 | 0 | 305 |
| 8 | Repair and maintenance charges of implements, machinery and building | 2981 | 6997 | 346 | 3497 |
| 9 | Interest on working capital | 4891 | 5289 | 5389 | 5082 |
| 10 | Other expenses | 1966 | 1016 | 1002 | 1552 |
| 11 | Total Cost 'A' (1-10) | 56937 | 66056 | 59629 | 59707 |
| 12 | Interest on fixed capital | 10718 | 8238 | 1039 | 8317 |
| 13 | Cost 'B1' (11+12) | 67655 | 74294 | 60668 | 68024 |
| 14 | Interest on land value | 447553 | 354066 | 287984 | 394837 |
| 15 | Cost 'B' (13+14) | 515208 | 428360 | 348652 | 462861 |
| 16 | Imputed value of household labour | 25353 | 10770 | 11987 | 19252 |
| 17 | Cost 'C' (15+16) | 540561 | 439130 | 360639 | 482113 |



The following table illustrates the percentage distribution of hired human labour hours to the total human labour hours engaged in turmeric cultivation.

Table 51: Percentage distribution of Hired human labour hours to the total human hours

| Sex | Holding size class | | | |
|--------------|--------------------|--------------|--------------|--------------|
| | Small | Medium | Large | All Sizes |
| Male | 23.45 | 40.51 | 26.02 | 29.23 |
| Female | 15.66 | 39.96 | 24.89 | 24.75 |
| Total | 39.11 | 80.47 | 50.91 | 53.98 |

Table 52: Cost of Cultivation per hectare (In Rs.) of Turmeric during 2008-09 , 2009-10 & 2010-11

A comparative statement for 2008-09 ,2009-10 & 2010-11 for cost of cultivation of different concept is given below.

| Concept of cost | Year | Holding Size class | | | |
|-----------------|---------|--------------------|---------------|---------------|---------------|
| | | Small | Medium | Large | All size |
| Cost 'A' | 2008-09 | 44080 | 36909 | 34008 | 41409 |
| | 2009-10 | 54292 | 66871 | 58971 | 60062 |
| | 2010-11 | 56937 | 66056 | 59629 | 59707 |
| Cost 'B' | 2008-09 | 438660 | 285075 | 58928 | 368866 |
| | 2009-10 | 543306 | 690397 | 133842 | 555786 |
| | 2010-11 | 515208 | 428360 | 348652 | 462861 |
| Cost 'C' | 2008-09 | 452393 | 291898 | 60367 | 379828 |
| | 2009-10 | 558412 | 695705 | 164730 | 568699 |
| | 2010-11 | 540561 | 439130 | 360639 | 482113 |

Output

The per hectare value of output received from turmeric cultivation is estimated as Rs.100837/- during the year 2010-11.

Table 53: Value of Out put / Hectare(In Rs.)

| Holding Size Class | | | |
|--------------------|--------|-------|-----------|
| Small | Medium | Large | All Sizes |
| 102894 | 99587 | 96203 | 100837 |