

# AN ANALYSIS OF COSTS OF PRODUCTION, OF THE COIR UNITS IN TAMILNADU WITH SPECIAL REFERENCE TO TIRUNELVELI DISTRICT

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**ABSTRACT** - Knowledge on the production practices followed by the units of the study area in the extraction of coir fibre is of vital importance as it helps to understand the various costs involved in its manufacture. The size of the unit, the type of coir fibre manufactured and the method of decorticating adopted are the major influencing factors in the cost of the production of fibre. For the purpose in this article the cost of production, of the coir units in Tirunelveli district was analysed. The analysis has focused on fixed and variable costs, of coir manufacturers.

**Key words :** extraction, manufacture, production, Cost of production

## INTRODUCTION

India is the largest coir producer in the world accounting for more than 80 per cent of the total world production of coir fibre. The coir sector in India is very diverse and it involves households, co-operatives, NGOs, manufacturers and exporters. This is the best example of producing beautiful artifacts, handicrafts and utility products from coconut husks which is otherwise a waste. The coir industry employs more than seven lakh persons of whom a majority are from rural areas belonging to the economically weaker sections of society. The production process of coir starts from the extraction of coir fibre involving a lengthy process of either retting or unretting of coconut husk. Thus, the process of the extraction of the fibre is done through two methods viz., the traditional methods (retting) and the mechanical method (unretting). Analyzing cost and returns, returns to scale and problems relating to production in the coir units helps to assess the production efficiency of both the micro and the small size units and thereby indicates efficiency and profitability on their scale of operations. Specifically, the study would be of much help in convincing the manufacturers of the units to move into the second phase of production as all the units of the area.

## Materials and methods

### PRODUCTION COST

Production cost refers to the cost incurred by a manufacturer when he is involved in the process of manufacturing coir. Production costs include a variety of expenses including, labour, raw materials, consumable manufacturing supplies and general overhead. Additionally, any taxes levied by the government or royalties owed by natural resource extracting companies are also considered production costs. The production cost is divided into two broad categories, namely variable cost and fixed cost.

### VARIABLE COST

A variable cost varies in direct proportion with production of output. Variable costs are those costs that vary depending on a company's production volume; they rise as production increases and fall as production decreases. In the present study the following are the major variable costs.

#### Cost of Labour

The wages paid to both male and female workers. The prevailing wage rate in the study area was Rs.200 per man and Rs.150 for women for each shift of 8 hours work.

#### Cost of Raw Material

The husk is the raw material for coir industry. The price of husks (with loading and unloading) ranges from Rs.500 to Rs.750 per lot of 1000 numbers. During the monsoon rainy period, the price of husk will be high and during the rest of the year the price will be low.

#### Cost of Unretting

The dry husk is first soaked and then it is beaten with the help of the decorticator machine. The dry husk is normally soaked after it is beaten by that machine. The dry husk so beaten is soaked by pouring water for a minimum of 10 days. The water cost is incurred for unretting of husk.

#### Cost of Power

In the coir industry all operations like unretting of husks, defibring of fibre, separation of fibre and pith, drying and bundling of coir fibre, are all carried out with the help of electricity.

#### Cost of Machine Running

The amount spent on fuel, oil and lubricants, spare and parts, consumables and packing material are included in this cost.

**Cost of Pith Disposal**

The amount spent on diesel and oil for transporting the disposal of coir pith on owned tractor which is calculated at the purchase price.

**Interest on Working Capital**

In the present study the interest on the working capital was taken into account. It was charged at the rate of 13.5 per cent per annum, which was the ongoing interest rate charged by the commercial banks during the period of survey.

**FIXED COST**

A fixed cost is a cost that does not change with an increase or decrease in the amount of goods or services produced or sold. Fixed costs are expenses that have to be paid by a company, independent of any business activity. The following are the major fixed cost in the study area.

**Office and Administrative expenses**

It includes expenses on telephone charges, stationary purchased, lighting expenses and property tax.

**Depreciation on Building and Machinery**

By diminishing balance method, the depreciation amount on assets was calculated. As per the rates presented under section 32 of the Income Tax 1961, it was worked out.

**Interest on Long Term Borrowing**

Interest on long term borrowings was calculated at the rate of 9.30 per cent, which is usually charged by commercial banks.

**Result and Discussion****Fixed and variable costs of production**

To compare the total cost between the micro and small units, the analysis of fixed and variable cost were necessary. The following Table 1 represents information on item wise fixed and variable cost per 100 bundles of coir fibre.

**COST OF PRODUCTION FOR COIR FIBRE****(Per 100 Bundles)**

Sl. No	Cost Component	Micro Units		Small Units	
		Amount in Rs.	Percentage	Amount in Rs.	Percentage
	<b>VARIABLE COST</b>				
1	Cost of Labour	10538.45	42.73	9281.41	38.57
2	Cost of Material (Husk)	5088.35	20.63	4468.61	18.56
3	Cost of Unretting	639.47	2.59	617.32	2.56
4	Cost of Power	3288.93	13.34	3797.43	15.78
5	Cost of Machine running	1223.47	4.96	888.61	3.69
6	Cost of Pith Disposal	579.65	2.35	639.85	2.66
7	Interest on Working Capital	1062.41	4.31	1087.14	4.52
	Total Variable Cost (1 to 7)	22420.73	90.91	20780.37	86.35
	<b>FIXED COST</b>				
8	Office and administrative	224.55	0.91	474.60	1.97
9	Depreciation on Building & Machinery	1339.47	5.43	1790.88	7.44
10	Interest on long-term Borrowings	676.91	2.75	1018.62	4.24
	Total Fixed Cost (8 to 10)	2240.93	9.09	3284.10	13.65
11	<b>TOTAL COST</b> (Variable Cost + Fixed Cost = 1 to 10)	24661.66	100.00	24064.47	100

Source: Primary Data

The Table revealed that the total cost of production for 100 bundles of coir fibre of micro units was Rs.24661.66 and for small units it was Rs.24064.47. It is also understood from the table that the total variable cost for micro units was Rs.22420.73 (90.91 per cent) and for small units it was RS.20780.37 (86.35 per cent). The fixed cost for micro units was Rs.2240.93 (9.09 per cent) and for small units it was Rs.3284.10 (13.65 per cent).

In the case of micro units, the item-wise analysis of variable costs showed that the cost of labour has accounted for maximum percentage of 42.73 per cent in the total cost. It is followed by the material cost which accounted for 20.63 per cent. The cost of power accounted for 13.34 per cent, followed by the other costs like cost of machine running (4.96 per cent), interest on working capital (4.31 per cent), cost of unretting (2.59 per cent) and the cost of pith disposal (2.035 per cent) in the total cost.

Regarding small units, the item-wise analysis of variable cost showed that the cost of labour constituted for 38.57 per cent in the total cost. The cost of material which accounted for 18.56 per cent and the cost of power constitute for 15.78 per cent.

It is followed by the other costs, like interest on working capital (4.52 per cent), cost of machine running (3.69 per cent), cost of pith disposal (2.66 per cent) and cost of unretting (2.56 per cent) in the total cost.

As far as item-wise fixed costs of the micro units were concerned, depreciation on building and machinery accounted for 5.43 per cent, followed by interest on long term borrowing (2.75 per cent) and office and administrative accounted for 0.91 per cent in the total cost. Similarly the same picture prevailed in the fixed costs of the small units, depreciation on building and machinery constituted for 7.44 per cent, followed by interest on long term borrowing (4.24 per cent) and office administrative cost constituted for 1.97 per cent in the total cost.

The table also explains that the cost of labour has highest share in variable cost both in micro and small units. Similarly, among the various variable costs, the pith disposal has the lowest share in both units. In fixed costs, depreciation on building and machinery has maximum share both in micro and small units. The share of costs of labour, cost of material, unretting and machine running have lower value in small size units than in micro size units, because of economics of large scale production. The status survey of coir industry in Orissa classifies the workers into regular and casual workers. The regular workers work for about 7 hours, while the casual workers work for 8 to 9 hours depending upon the production demand of the unit ( Coir Board, Kochi, 2002).Sundaesan observed that for the estimation of the cost of production, the wages paid to workers could be taken as the rate prevalent in the locality where the coir unit was located.P. K. Balakrishnan, observed that for estimating the cost of production of fibre, the price of husk is determined for a lot of 1000 numbers by market forces in each locality.

The share of costs of power, pith disposal and interest on working capital have higher value in small units than that of in the micro units, as the effect of huge extraction of coir fibre by small units. As far as the fixed costs, all items in the small units have higher values when compared to value in micro units, because the small units generally borrowed heavy funds from outside sources they invested major funds in fixed assets. The following Table 2 depicts the cost of production per 100 bundles of coir fibre.

Narasimhan et al (2004) reported that 65 percent of total expenditure on black gram was due to variable costs and concluded that the total cost per hectare increased with increase in farm size, whereas returns showed inverse relationship with the farm size.

Cahal and Kataria (2005) reported that the total operational cost for hybrid varieties of maize Human and animal labour cost constituted more than one third of the operational cost.

**TABLE 2**  
**COST OF PRODUCTION PER 100 BUNDLES OF COIR FIBRE**

Size of the Unit	Variable Cost		Fixed Cost		Total Cost	
	Amount in Rs.	Percentage	Amount in Rs.	Percentage	Amount in Rs.	Percentage
Micro	22420.73	90.91	2240.93	9.09	24661.66	100.00
Small	20780.37	86.35	3284.10	13.65	24064.47	100.00
Overall	43201.10	88.66	5525.03	11.34	48726.13	100.00

**Source:** Primary Data

The Table 2 disclosed the cost of production of coir fibre per 100 bundles for the micro and small coir units in the study area by taking the major costs, namely the variable costs and fixed costs. The total cost for the micro units was Rs.24661.66 whereas for the small units the total cost was Rs. 24064.47.

In the case of micro units the variable cost accounted for Rs.22420.73 (90.91 per cent) and the fixed cost accounted for Rs.2240.93 (9.09 per cent). Regarding the small units the variable cost constituted for Rs.20780.37 (86.35 per cent) and the fixed cost constituted for Rs.3284.10 (13.65 per cent). In the overall category, the variable cost and fixed cost stood at Rs.43201.10 (88.66 per cent) and Rs.5525.03 (11.34 per cent).

The table 2 also explains that the variable cost was less and the fixed cost was more in the small size units. But, it was vice versa in the case of micro units. Hence, it could be understood that in the total cost of production, the small coir units have a considerable edge over the micro level coir units, because of the advantage of its size.

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