

# **Cost and Returns Analysis of Turmeric Production in Kodumudi Block of Erode District from Tamil Nadu, India**

## **Abstract**

Turmeric is mostly produced, consumed and exported by India. As the third most produced spice in the nation and turmeric makes up around 14 per cent of all spices produced in India. Turmeric is grown on 186.0 thousand hectares in India, with a total production of 943.0 thousand tonnes and a yield of 5.1 tonnes per hectare in the 2015–16 growing season. There is a lack of information regarding turmeric cultivation costs, returns and production. The production of turmeric is mostly concentrated in the southern states of Andhra Pradesh and Tamil Nadu. So, the current study was focused on the cost and returns analysis of turmeric production in Kodumudi block of Erode district. A total of 120 sample respondents was selected based on the multistage purposive cum random sampling by using pre tested interview schedule. It was calculated that growing turmeric would cost Rs 1,46,151.41 per acre. The gross profit per acre realized was Rs 2,60,347.50. Per hectare, the net profit was Rs 1,14,196.09. This study revealed that the government should create the awareness about the various turmeric production technologies among the sample farmers by conducting extension activities.

**Keywords: Turmeric, Production, Cost, Returns**

## **1. Introduction**

Turmeric is tropical perennial plant with natural populations in India and Indonesia and widespread cultivation. Bangladesh, Pakistan, Sri Lanka, Taiwan, China, Myanmar and Indonesia are the major producers in Asia. Jamaica, Haiti, Costa Rica, Peru, and Brazil are among the Caribbean and Latin American nations that produce turmeric. More than 75-80 per cent of the world's turmeric production produced by India (Thiripurasundari *et al.*, 2014). China provides for roughly 8 per cent of the global turmeric production, followed by Myanmar with 4 per cent, Nigeria and Bangladesh with 3 per cent (APEDA, 2015-16). In India, Andhra Pradesh, Tamil Nadu, Orissa, West Bengal, Maharashtra, Karnataka and Kerala are the major states on the cultivation of turmeric (Patilet *al.*, 2009). There are no reliable sources with exact

production figures for turmeric worldwide. The production of turmeric is mostly concentrated in the southern states of Andhra Pradesh and Tamil Nadu, which account for about 80 per cent of the nation's entire yield (Indiastat, 2015-16). In Tamil Nadu, Erode district is one of the main growth regions for turmeric in terms of both area and productivity which accounts for 24.80 per cent of the state's total area and produced 34.2 per cent of it, with a productivity rate of 5.64 tonnes per hectare during the year 2014-15 (Horticulture statistics at a glance, 2015-16). The area and per acre output of turmeric cannot be increased due to several physical, technological, financial and institutional constraints. So, this study mainly estimated costs and returns of growing turmeric in the selected study area was the study's main goal.

## **2. Methodology**

### **2.1 Sources of data**

Erode district was purposefully chosen for the initial stage of the study from Tamil Nadu based on the area coverage by turmeric. In the second stage, 120 sample farmers selected in the Kodumudi block for the current investigation based on the area covered by turmeric to acquire the data by using an interview schedule that had been well planned.

### **2.2 Tools of analysis**

#### **2.2.1 Cost analysis**

Various cost components were assessed in order to evaluate the profitability and economic viability of turmeric farming. These cost concepts' specifics are provided as follows (Mridu, 2017):

**Cost A<sub>1</sub>:** It consists of all actual costs that the owner operator incurred throughout production, both in cash and in kind. Costs for hired labour, fertilizer and manure costs, plant protection chemical costs, irrigation costs, interest on working capital, land revenue, and depreciation of fixed capital are all included.

**Cost A<sub>2</sub>:** Cost A<sub>1</sub> plus rent paid for leased in land.

**Cost B:** Cost A<sub>2</sub> plus the imputed rental value of the land that is owned + interest on fixed capital assets that are owned.

**Cost C:** Cost B + the labour value imputed from the family. The entire cost of cultivation, or cost C, is the gross cost.

#### **2.2.2 Returns**

## Gross income

By calculating the total value of crops valued at their harvest price during the reference period, gross income was determined.

## Net income:

The amount (Cost C) was subtracted from the gross income to calculate the net income.

### 2.2.3 Cost of production per unit

The cost of production per quintal of turmeric was calculated by multiplying the quintal yield of turmeric produced per hectare by the total cost of production per hectare.

## 3.Result and discussion

### 3.1 Cost of production in turmeric cultivation

The cost of producing turmeric was assessed and explained in this part in order to comprehend the economics of its production in the Erode district. The cost of cultivation was determined per hectare. Land preparation, planting supplies, labour (both human and machine), manures, irrigation, plant protection chemicals, growth regulators, land revenue, and interest on working capital are all included in Cost-A. The sample farmers' variable costs for growing turmeric were calculated. Cost-C included the imputed value of family labour while Cost-B included interest on fixed capital, rental value of own land, and the results are shown in Table 1.

**Table 1 Cost and returns of turmeric in the sample farms**

(Rs. /ha)

S.No	Particulars	Cost of Turmeric	Per cent
1.	Land Preparation	11,005.25	7.53
2.	Planting Material	17,480.56	11.96
3.	Human Labour	40,550.00	27.75
4.	Machine Labour	6,480.92	4.44
5.	Manures	21,625.14	14.8
6.	Irrigation	8,420.27	5.76

S.No	Particulars	Cost of Turmeric	Per cent
7.	Plant Protection Chemicals and Growth Regulators	9,045.62	6.19
8.	Land Revenue	2,431.81	1.66
9.	Interest on Working Capital	8,980.00	6.15
<b>Cost A</b>		<b>1,26,019.57</b>	<b>86.23</b>
10.	Interest on Fixed Capital	4,035.74	2.76
11.	Rental value of Own Land	4,100.98	2.8
<b>Cost B</b>		<b>1,34,156.29</b>	<b>91.79</b>
12.	Imputed value of Family Labour	11,995.12	8.2
<b>Cost C</b>		<b>1,46,151.41</b>	<b>100.00</b>
13.	Yield of dried rhizome in qls/ha	33.25	–
14.	Price of turmeric/qls.	7,830	–
15.	<b>Gross returns</b>	2,60,347.5	–
16.	<b>Net returns</b>	1,14,196.09	–
17.	<b>Benefit cost ratio</b>	2.28	–
18.	<b>Cost of production/qls.</b>	<b>4,395.53</b>	–

The overall cost of cultivation per hectare, as shown in Table 1, was Rs. 1,46,151.41. The human labour, manures and planting supplies were most expensive among sample farms on turmeric. Turmeric yields varied among the farmers based on factors including climate, soil texture, cultivation methods, etc. yields from sample turmeric farmers in the study area was Rs. 33.25 quintals per hectare. Turmeric farming produced a gross income and net income were respectively Rs. 2,60,347.50 and Rs. 1,14,196.09 per hectare. The benefit cost ratio was Rs. 2.28 and the cost of production per quantity was Rs. 4395.53.

#### 4. Summary and Conclusion

India dominates the international market in turmeric. In view of the economics of turmeric, the present study concentrated on cost and return analysis in turmeric production. Among the total cost, land revenue, interest on fixed capital and rental value

of own land were the less expensive and human labour, manures and planting material were the more expensive in the turmeric cultivation in the study area. From this study it came to know that the major constraint faced by the sample farmers was high cost of labour, high cost of fertilizer and plant protection chemicals. So, the Agriculture Department of the State Government has to arrange for awareness programmes for increased use of inputs.

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