

An Economic Analysis of Coconut Production in Tiptur Taluk of Tumkur District, Karnataka (Mysore)

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A detailed cost analysis of 107 coconut groves in Tiptur taluk of Tumkur district during 1970-71 revealed the cost of establishing one acre of grove upto bearing age as Rs. 1,512.71. The average cost of production per acre was Rs. 643.13 of which, the direct costs accounted for 46.74 per cent and the indirect cost 53.26 per cent. The gross cost per 1000 nuts inclusive of marketing charge was Rs. 364.95. The net income from an acre of coconut groves was Rs. 712.89 and that from a production of 1000 nuts was Rs. 364.29. Marketing as ball copra was more remunerative to the growers.

Coconut is an important cash-cum-food crop and occupies a unique place in the economy of coastal belts of southern states in India. Of the total world area of 4.15 million hectares and annual production of 23,006.8 million nuts of coconut, India accounts for 0.645 million hectares (16.5%) and 46,000 million nuts (19.9%). The export of coconut products fetches a foreign exchange earning of Rs. 15 crores annually. In India, it is believed that nearly ten million people depend directly or indirectly for their livelihood on coconut culture industry.

India, though ranked third in importance in the coconut map of the world, the production still fell short of the internal requirement by about 25 per cent. The production of coconuts centered mainly around Kerala, Tamil Nadu and Karnataka states with a percentage of

69.45, 15.10 and 8.41 in the order respectively. The Karnataka state with an area of about 119 thousand hectare accounted for 11.40 per cent of total area under coconut in India. The annual production in the State is of the order of 485 million nuts. The crop is mainly concentrated in the districts of Tumkur, Hassan, Chikkamagalore, and South Karnataka with an area of 32,863 ha., 26,509 ha., 11,933 ha., and 13,915 ha., respectively. The state Government has taken special efforts to extend the area and also productivity of the crop. It has been estimated that there lies a potentiality of increasing the area under the crop to an extent of 80,000 ha. in the State. The Agricultural Re-finance Corporation is actively associated with development of coconut gardens. In this context an economic analysis of cost and return in coconut cultivation gains significance. The present study attem-

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pts to analyse the production and costs of coconut in Tiptur taluk of Karnataka State and to determine the costs necessary to establish an acre of coconut garden and the costs required to maintain and operate an acre of a coconut grove in commercial production.

MATERIAL AND METHODS

The present study was undertaken in Tiptur taluk of Tumkur district in the Karnataka State during the year 1971 covering the production period 1970-71. The cultivation of coconut was benefited by both south-west and north-east monsoons and the average annual rainfall was 514.10 mm. Coconut was mainly grown under rainfed condition.

A sample of 80 coconut growers was drawn by three stage stratified random sampling with *hoblies* (revenue firkas) as first stage, villages as secondary stage and the coconut farms as ultimate unit of study. The coconut growers in ten sample villages drawn from two sample *hoblies* were arranged in ascending order according to the area grown under coconut and two size groups of groves were fixed the small size consisting of less than three acres and the large size group was selected from among the ten villages, distributed in proportion to the total number of growers in the respective size group in each of the villages. The eighty sample growers possessed 107 groves-71 under small size and 36 under large size. The data were collected for each grove separately and finally analysed under the two size groups.

RESULTS AND DISCUSSION

The size of the sample coconut farms varied from 0.33 acres to 15.00

acres, nearly 66.35 per cent of them being less than three acres. The value of land per acre varied from Rs. 2,500 to 8,000. The investment made on coconut groves was classified into cost of establishment upto bearing age and maintenance and operation cost thereafter. The life of the coconut plantations was assumed as 80 years for the purpose of annual apportionment of cost of establishment in computing the cost of production.

Cost of Establishment: The total establishment costs upto bearing age of the grove included expenses on preparatory cultivation, seedlings and planting, protection of young palms, watering charges, manures and manuring, tillage practices and other cultural operations. The average cost to establish one acre coconut plantation upto bearing age amounted to Rs. 1512.71. There was no significant difference in the cost between the two size groups of farmers. The operation-wise distribution of these costs is furnished in Table I.

The expenses on seedlings and planting and manuring consisted of 42.48 per cent while protection and provision of shade accounted for 14.90 per cent. Watering was done in the absence of rainfall upto three years and addition of new soil was done to improve the water holding capacity of the land. The average establishment costs upto bearing period per plant was worked out to be Rs. 39.79.

Maintenance and operational costs: The annual current expenditure incurred on the bearing coconut grove was included under this group of costs.

TABLE I. Average cost to establish and maintain one acre and per plant of coconut plantation upto bearing period

Particulars of operation	Cost per acre (Rs.)	Percentage	Average cost per plant (Rs.)
Preparatory cultivation	21.11	1.40	0.55
Seedlings and planting	319.72	21.14	8.41
Fencing of young palms	54.84	3.63	1.44
Watering charges	157.77	10.43	4.15
Cultivation and after care	53.20	3.51	1.40
Manuring of young palms	322.86	21.34	8.50
Protection of garden with tall fence	170.43	11.27	4.48
Tillage practices	200.07	13.22	5.26
Addition of new soils	212.71	14.06	5.60
Total	1512.71	100.00	39.79

The direct costs included cost of cultivation, proportionate share of total cost of maintenance of livestock and dead-stock in the farm and land revenue. The indirect costs consisted of annual share of establishment cost, interest charges on fixed capital, interest on working expenses and depreciation charges. The details of cost of production as computed for one acre and also for 1000 coconuts are presented in Table II.

Cost of production per acre: The average total cost of production per acre of coconut was Rs. 623.62 in the case of small farms and Rs. 656.05 in large farms. Of this, the percentage of direct costs was 49.33 in small farms and 43.74 in large farms. The small farms were found to incur comparatively higher expenditure per acre on application of tank silt, farmyard manure and maintenance of livestock and dead-stock. The large farms spent relatively more on

watch and ward including harvest charges which was attended to by permanent labourers. The proportion of indirect costs was higher in large farms as compared to small farms. This was due to higher incidence of overhead charges such as interest on land value and depreciation. However, the differences in total cost of production among the two size groups of farms was statistically not significant. The average total cost for all farms worked out to Rs. 639.84 per acre of which, the direct costs accounted for 46.46 per cent and indirect costs 53.54 per cent.

Cost per 1000 nuts: About 66 farmers in the sample harvested 6-8 times per year while 14 farmers harvested 8-12 times and six farmers for less than 6 times. The total cost of production per 1000 nuts was Rs. 358.97 in small farms and Rs. 309.94 in large farms. The lesser cost in large size

TABLE II. Average cost of production in different size groups of coconut groves

Particulars of cost items	Small farms		Large farms	
	Cost per acre	Cost per 1000 nuts	Cost per acre	Cost per 1000 nuts
A. Direct costs				
Tillage practices	38.62	22.32 (6.22)	35.57	16.76 (5.40)
Green manuring	2.06	1.18 (0.33)	2.40	1.16 (0.37)
Addition of new soils	77.03	44.19 (12.31)	57.44	27.14 (8.76)
Farmyard manure & Sheep penning	76.00	43.60 (12.15)	54.68	25.88 (1.52)
Maintenance of fence	8.37	4.83 (1.35)	10.08	4.71 (8.35)
Watch and ward & harvesting	31.23	18.04 (5.02)	69.32	32.84 (10.60)
Land revenue	8.13	4.70 (1.31)	9.35	4.28 (1.38)
Total cost of cultivation (1 through 7)	241.44 (38.71)	138.86 (38.68)	238.84 (36.42)	112.77 (36.38)
Share of cost of maintenance of livestock and dead stock	66.23	37.98 (10.59)	48.01	22.69 (7.32)
Total direct cost (8 + 9)	307.67 (49.33)	176.84 (49.28)	286.85 (43.74)	135.46 (43.70)
B. Indirect costs				
Annual share of cost of establishment of grove	18.93	10.94 (3.05)	16.16	7.63 (2.46)
Share of interest on fixed capital	38.20	22.07 (6.15)	27.24	12.74 (4.15)
Interest on working expenses	19.70	11.30 (3.15)	18.16	8.58 (2.77)
Interest on value of land	199.56	115.13 (32.09)	240.76	113.79 (36.75)
Depreciation charges	39.56	22.69 (6.32)	66.88	31.61 (10.20)
Total indirect cost (11 through 15)	315.95 (50.67)	182.13 (50.76)	369.20 (56.59)	174.48 (56.28)
C. Total cost of production (A + B)	623.62 (100)	358.97 (100)	656.05 (100)	309.94 (100)

(Figures in parentheses indicate percentages)

TABLE III. Expenditure and income from Coconut farms

Particulars	Per acre	(Amount in Rupees) Per 1000 nuts
Total cost of production	630.84	334.45
Marketing charges	56.18	29.54
Total expenses	696.02	363.99
Income from livestock (Proportionate share to coconut grove)	119.55	64.99
Income from coconut & ball copra	1292.65	664.25
Total income	1412.20	729.24
Net income	716.18	365.25

group could be attributed to the spread of the cost over relatively higher amount of production. The production of nuts in small farms was 93,700 and in large farms 4,83,740. The average yield per acre was 1737 nuts and 2117 nuts in the small and large farms respectively, with an over all average yield of 1927 nuts per acre in the sample farms. The average total cost per 1000 nuts for all farms was Rs. 334.45; of this, the direct costs were 46.69 per cent and the indirect cost 53.31 per cent.

Farm profit: An assessment of the net return from an acre and from 1000 coconuts is furnished in Table III.

The net income of sample farms largely depended upon the quality of coconuts, the form in which marketing was done such as ball copra or coconut the price and market conditions. Sale as ball copra was found to be more remunerative but it required a waiting period of 10 to 11 months, which many of the small growers could ill afford.

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