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## Economics of tender coconut marketing: A case study in Hubli-Dharwad municipal corporation, Karnataka

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#### Abstract

Coconut is a horticultural plant with monocotyledon palm, belonged to the order Arecaceae and the family Palmae. It is an oil seed palm. Among the major coconut producing countries, India ranked third in area and first in production during 2019. During 2019-20, regarding the coconut, Karnataka ranked second in area and third in production. In India more than one crore population were dependent on the coconut sector through cultivation, processing and trading activities. Despite its importance and economic contribution, coconut growers suffer from problems like low & fluctuating prices and low profitability. This study was aimed to find out the important marketing channels involved in the tender coconut marketing in the study area. The price spread was calculated for the marketing channels identified. Three important marketing channels were found in the study area. Among them, channel-I involving the preharvest contractor was preferred by majority of the respondents and channel-III was limited to the produce grown in universities or institutions. The price spread observed in three channels was ₹ 20, ₹ 18 and ₹ 15 respectively per nut. Highest producers' share in the consumers' rupee was obtained in channel-III and was found to be more efficient according to the shepherd's value.

**Keywords:** Tender coconut, marketing channels, price spread, producers' share in consumers' rupee, shepherd's method, coconut marketing

#### Introduction

Coconut (*Cocos nucifera* Linn.), a traditional plantation crop which has been existed in India since a very long period, dating back to 3,000 years. Coconut tree appropriately referred as 'The tree of life' and as 'Kalpavruksha', because each and every part of it is used for mankind. The coconut fruit is considered as the 'Lakshmi phal' the fruit of wealth.

It is a unique horticultural perennial plant with a monocotyledon palm and belonged to the order Arecaceae and the family Palmae. It is classified into the oil seed palm and has originated from Sri Lanka. The coconut has occupied a significant place in Indian traditional medicine, the Ayurveda. It was mentioned in many ancient Indian literatures. It has been an integral part of religious offerings, celebrations and auspicious occasions since early ages. Still there is a striking place for coconut in this modern world as it is ceremonially integrated with man's day to day life especially in the Hindu religion.

It is a tropical tree and grows mainly in coastal areas It has been cultivating in more than ninety countries of the world. During 2019, it was grown in about 12.56 million hectares of land with a production of about 67,698 million tonnes of coconuts worldwide. About 76.84 per cent of total cultivated area under coconut and 78.70 per cent of coconut production in the world was contributed by the countries like Philippines, Indonesia, India and Sri Lanka (Coconut Development Board, 2022)

In terms of total world's coconut area and production, India contributed about 17.10 per cent and 31.44 per cent respectively in 2019. Among the major coconut producing countries, India ranked third in area (2.15 million hectares) followed by Philippines (3.65 million hectares) and Indonesia (3.41 million hectares). In production, India ranked first with 21,288 million tonnes of nuts. (Coconut Development Board, 2022).

In India, coconut cultivation has been seen in almost all the states having coastal area but mainly concentrated in four Southern states viz., Andhra Pradesh, Tamil Nadu, Kerala and Karnataka which contributed about 88.97 per cent in total area and 89.66 per cent in total production. A total area of 2.17 million hectares in India was under coconut cultivation and the total production was 20,308.70 million nuts with a productivity ranging to 9,345 nuts per hectare during 2019-20 (Coconut Development Board). During 2019-20, regarding the coconut, Karnataka ranked second in area (6,24,030 ha) followed by Kerala (7,60,780 ha)

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whereas in production Karnataka stood third (4300 million nuts) followed by Kerala (6980 million nuts) and Tamil Nadu (5,373 million nuts) (Coconut Development Board).

In Karnataka, coconut was grown mainly in the districts of Tumkuru, Hassan, Mandya, Mysuru, Chikmagalur and Davangere. Major suppliers of tender coconut in India were Maddur in Karnataka and Pollachi in Tamil Nadu. Maddur APMC was considered as largest tender coconut market in Asia and the nuts were popular for their high-water content and sweetness (Deccan Herald dated 11<sup>th</sup> November, 2017).

Coconut is considered as an important plantation crop in India, both from the point of economic contribution and as livelihood source for millions of people. In India more than one crore population were dependent on the coconut sector through cultivation, processing and trading activities. In 2016-17 coconut contribution to the nation's Gross Domestic Product (GDP) was about ₹ 27,900 crores (Business Standard, dated 29<sup>th</sup> January, 2018).

All parts of coconut tree like nuts, leaves, spathe, husk, seed, trunk and even the inflorescence is used for one or other purpose. It is used as a source of food, beverage, oil, fibre, medicines, clothing, utensils, toys and recreational items. The coconut is consumed in its various forms like tender nut for water and mature nut both as fresh and dried forms for cooking. The by products like the coconut cake, shell, husk are used to make various products like coir, fibre, charcoal, activated carbon, geotextiles and coir pith which are having multiple uses. These products constitute raw materials for the industrial sector, thus contributing to the country's national income.

Despite its importance and economic contribution, coconut growers suffer from problems like low & fluctuating prices and low profitability. The findings of the present study might be helpful for the producers for getting better income. The study of marketing structure exposes the bottlenecks, if any in the present system. Thus, the policy makers could focus on improving the marketing environment and infrastructure.

**Materials and Methods**

The study was conducted in Hubli- Dharwad Municipal Corporation. Twenty two sample respondents were selected randomly from both Hubli and Dharwad. The sample respondents were included two wholesalers and twenty retailers. Thirty farmers were selected from the study area and from other parts of the state who contributed to the Hubli-Dharwad market. Thus, the total sample respondents constituted for the study was seventy four. The data for the study was collected during the months of January and February of the year 2020

S. No	Respondents	Hubli	Dharwad
1	Wholesalers	2	2
2	Retailers	20	20
4	Farmers	15	15
5	Total	37	37
Total Sample Size = 74			

The primary data concerning to the marketing cost, marketing margins, marketing channels was obtained from the randomly selected sample market intermediaries by personal interview method using pre-tested and well-structured schedules designed for the purpose. Shepherd's method was employed for calculating the marketing efficiency of the different channels observed in the study area. The functional form of

Shepherd's method is as follows

$$\text{Marketing efficiency} = \frac{\text{Consumer's price}}{\text{Marketing cost} + \text{marketing margin}}$$

Higher the shepherd's value, higher the efficiency of the marketing channel.

**Terms and concepts used**

**Price spread**

The difference between the price paid by the consumer and price received by the producer is price spread. This price spread includes the marketing cost and the marketing margin.

$$\text{Price spread} = \text{consumer's purchasing price} - \text{farmer's net price received}$$

**Marketing cost**

The cost incurred by the seller to sell the produce. It may be loading & unloading, transportation and all other costs.

$$\text{Total marketing cost} = \text{cost of the producer in marketing and storage} + \text{marketing cost of all the middlemen.}$$

**Marketing margin**

It is the difference between the price at which a product is purchased and the price at which the same product is sold.

$$\text{Marketing margin} = \text{selling price} - \text{purchasing price}$$

**Gross income**

It is the total income obtained from selling the produce.

$$\text{Gross income} = \text{total quantity sold} * \text{selling price per units}$$

**Net income**

The income realised after deducting the marketing cost is net income.

$$\text{Net income} = \text{gross income} - \text{total marketing costs}$$

**Producer's share in consumer's rupee**

This refers to the farmer's net price expressed as percentage of the consumer's price of tender coconut.

$$\text{Producer's share in consumer's rupee} = \frac{\text{Farmer's net price}}{\text{Consumer's purchasing price}} * 100$$

**Marketing channel**

It consists of the intermediaries that perform the various marketing functions in sequences as the produce moves from the producers to the ultimate consumer.

**Market intermediaries**

These are individuals/agencies that specialize in performing various marketing functions involved in the purchase and sale of tender coconut from producers to consumers.

**Retailer**

He is a person, who purchases the tender coconuts at small quantity and sell to final consumers.

**Contract retailer**

He is a person having direct/indirect contact with the

producers and acquires the produce through annual tenders for selling directly to the consumers.

### Results and discussion

Various channels involved in the marketing of tender coconut in Hubli-Dharwad Municipal Corporation were identified. The important channels were as follows:

- I. Producer - pre harvest contractor - wholesaler - retailer - consumer
- II. Producer - APMC trader - wholesaler - retailer - consumer
- III. Producer - retailer - consumer

In the study area, it was observed that the producer respondents mainly cultivated the coconut for mature nuts only. In case of any urgent financial needs, the respondents harvested tender nuts and sold them in market. One of the reasons quoted for this behaviour was lack of storage facilities. The respondents prefer tender nuts sale only under financial crisis. They simply contact the preharvest contractor as they provide the liquidity immediately. The producers give only the information on number of trees and collects the amount according to it. All other activities such as harvesting and transportation were looked upon by the preharvest contractor and pays pre-determined amount per nut to the farmer. This reduces the work load on the farmer and simultaneously ends up with less returns. The producers just handovers the entire production to the preharvest contractor and accepts the whatever amount they give. It was important to note that the majority of the farmers were selling the produce to the preharvest contractor (55%) as most of them were not aware of the marketing aspects.

Some of the producers were selling the produce through APMC, where mutual understanding between the producer and the APMC trader occurs with respect to the price. Then the producer sells all his produce at the mutually agreed price. Then from APMC the produce goes to the wholesaler and then to the retailers. This was the second most important channel in the study area, preferred by 37.50 per cent of the producers.

Most of the colleges and Universities present in the study area were maintaining the coconut farms. The produce from these institutions was sold to the persons on tender basis annually. This was the least preferred channel (7.50% of the producers) except for the institutions. These institutions after completion of the tender process handovers the produce to the retailers. These contract retailers hire labour for harvesting of the nuts and sell directly to the consumers.

In case of selling the produce to the preharvest contractor, the producers have no marketing cost as all the activities including harvesting was looked upon by the contractor himself. For each tender coconut, the preharvest contractor paid ₹ 8 to 10 to the producer on an average. Thus, the average net income of the farmers opting for the channel- I was ₹ 8,000 to 10,000 for 1000 nuts.

In case of opting for APMC trader for sale, the marketing cost incurred by the producer was about ₹ 1,964 for 1000 nuts out of which harvesting alone accounts for 50 per cent (₹ 984) and was shown in Table 1. Average harvesting cost was around ₹ 1 per nut. The remaining was incurred on the loading and unloading (22.14%) and on transportation (23.90%). The loading and unloading cost depends on the number of nuts and transportation cost depends on the distance. The average transportation cost was around ₹ 3 per

Km per 1000 nuts. The average distance travelled by the producers was found to be 150 km to reach the nearest APMC. The average gross income of the producer was ₹ 12,000 per 1000 nuts. The average net income of ₹ 10,036 was earned by the producers on marketing of 1000 tender coconuts through channel- II.

Table 2 indicated the average marketing cost and returns of the preharvest contractor, the important intermediary in the marketing of tender coconut in study area. It was found that the average total marketing cost incurred for 1000 nuts was ₹ 13,270 out of which ₹ 10,000 (75.36 %) alone was incurred on the purchase of nuts from farmers. For harvesting of the nuts, the amount incurred was about ₹ 1,100 per 1000 nuts (8.29%). The rent constituted the 7.54 per cent of the total marketing cost. The transportation and loading & unloading constituted about 3.99 per cent and 3.84 per cent respectively in the total marketing cost. The average gross earned by the preharvest contractor income was about ₹ 15,000 for 1000 nuts with a net income of ₹ 1,730.

**Table 1:** Average marketing cost and returns of the tender coconut producer (₹ per 1000 nuts)

S. No	Particulars	Amount (₹)	Percentage (%)
1	Harvesting	984	50.10
2	Loading & unloading	435	22.14
3	Transportation	470	23.90
4	Damage losses	33	1.68
5	Miscellaneous	42	2.13
6	Total marketing cost	1,964	100
7	Sale price per nut	12	-
8	Gross income	12,000	-
9	Net income	10,036	-

**Table 2:** Average marketing cost and returns of the tender coconut preharvest contractor (₹ per 1000 nuts)

S. No	Particulars	Amount (₹)	Percentage (%)
1	Harvesting	1,100	8.29
2	Loading and unloading	510	3.84
3	Transportation	530	3.99
4	Rent	1,000	7.54
5	Purchase price	10,000	75.36
6	Miscellaneous	130	0.98
7	Total marketing cost	13,270	100.00
8	Sale price per nut	15	-
9	Gross income	15,000	-
10	Net returns	1,730	-

The average marketing cost and the returns of the APMC trader was given in the Table 3. The total marketing cost incurred by the APMC trader was ₹ 14,666 on 1000 nuts. About 81.82 per cent of the total marketing cost was incurred on the purchase of the nuts. About 11.29 per cent of the total marketing cost was incurred on the transportation. The other costs incurred in the marketing were licence fee, market fee, loading & unloading and miscellaneous. The APMC trader has to bear the licence fee and the market fee. Hence incurs relatively more cost than pre harvest contractor. The average gross income of the APMC trader was about ₹ 15,000 with a net income of ₹ 333 per 1000 nuts.

The average marketing cost and returns of the wholesaler on the tender coconut marketing was showed in the Table 4. The total marketing cost incurred in the Channel-I and Channel-II by the tender coconut wholesaler was ₹ 20,710 per 1000 nuts. The cost incurred for the purchase of the nuts was about 72.43 per cent of total marketing cost. The rent constituted the 9.66

per cent of the total marketing cost. For transportation of the nuts, the amount incurred was about ₹ 1,630 (7.87%) followed by the cess of about ₹ 1,450 (7%). The wholesalers has to pay about 1% of the value of the produce as a cess. The loading and unloading constituted about 1.26 per cent of the total marketing cost. The average gross income per 1000 nuts of the wholesaler was stood at ₹ 25,000 with a net income of ₹ 4,290.

The average marketing cost and returns of the tender coconut retailer was presented in the Table 5. The total marketing cost incurred by the retailer was about ₹ 25,650 on 1000 nuts. Much of the amount was spent on the purchase of the nuts which constituted about 97.47 per cent. Other categories were maintenance, rent and wastage clearance which constituted about 1.21 per cent, 0.70 per cent and 0.62 per cent respectively. Most of the retailers were paying the rent to the municipal corporation. Hence, the rent was minimal of ₹ 10 to ₹ 20 per day. Majority of the retailers were purchasing the nuts for every alternate day according to the requirement. Thus, reducing the maintenance cost. The gross income of the retailer was ₹ 30,000 with a net income of ₹ 4,350 for 1000

nuts.

The study area was dominated by many Universities and colleges. Hence the tender coconut cultivation was observed in many college farms. The marketing of the nuts which were grown in the college farms was done by the retailers who place their annual tender with the colleges. The present study also focussed on these special players in the study area and were called them as contract retailers. The average marketing cost and returns of these contract retailers were showed in the Table 6. The total marketing cost per 1000 nuts observed was ₹ 27,133 out of which 55.28 per cent was incurred on the purchase of nuts. About 30.71 per cent of the marketing cost was incurred on the tender purchase. The harvesting of the nuts accounted about 7.37 per cent of the total marketing cost and cost on transportation was 3.71 per cent. The loading and unloading accounted for 1.85 per cent of the total marketing cost. The contract retailers invest around ₹ 1 lakh on the tender placed under the institutions annually. Then contract retailers only can purchase the produce throughout the year from that institution.

**Table 3:** Average marketing cost and returns of the APMC trader on tender coconut (₹ per 1000 nuts)

S. No	Particulars	Amount (₹)	Percentage (%)
1	Purchasing price	12,000	81.82
2	License fee	0.25	0.01
3	Market fee	95	0.64
4	Grading	44	0.30
5	Loading & unloading	240	1.63
6	Transportation	1,656	11.29
7	Damage losses	255	1.74
8	Miscellaneous	376	2.56
9	Total marketing cost	14,666.25	100
10	Sale price per nut	15	-
11	Gross income	15,000	-
12	Net income	333.75	-

**Table 4:** Average marketing cost and returns of the tender coconut wholesaler (₹ per 1000 nuts)

S. No	Particulars	Amount (₹)	Percentage (%)
1	Purchase price	15,000	72.43
2	Transportation	1,630	7.87
3	Loading and unloading	260	1.26
4	Rent	2,000	9.66
5	Cess	1,450	7.00
6	Miscellaneous	220	1.06
7	Damage losses	150	0.72
8	Total marketing cost	20,710	100.00
9	Sale price per nut	25	-
10	Gross income	25,000	-
11	Net income	4,290	-

**Table 5:** Average marketing cost and returns of the tender coconut retailer (₹ per 1000 nuts)

S. No	Particulars	Amount (₹)	Percentage (%)
1	Purchase price	25,000	97.47
2	Rent	180	0.70
3	Wastage clearance	160	0.62
4	Maintenance	310	1.21
5	Total marketing cost	25,650	100.00
6	Sale price per nut	30	-
7	Gross income	30,000	-
8	Net income	4,350	-

**Table 6:** Average marketing cost and returns of the tender coconut contract retailer (₹ per 1000 nuts)

S. No	Particulars	Amount (₹)	Percentage (%)
1	Tender purchase	8333.33	30.71
2	Harvesting	2000	7.37
3	Purchase price	15,000	55.28
4	Transportation	1,000	3.71
5	Loading & unloading	500	1.85
6	Miscellaneous	300	1.11
7	Total marketing cost	27,133.33	100
8	Sale price per nut	30	-
9	Gross income	30,000	-
10	Net income	2,866.66	-

The price spread during the marketing of tender coconut in three observed channels was given in the Table 7. Channel-I was more prominent in the study area with 55 per cent of the producers opting for it. Channel-II and Channel-III were preferred by 37.50 per cent and 7.50 percent of the producers respectively. The gross incomes of producer, preharvest contractor, APMC trader, wholesaler, retailer and contract retailer was calculated in the above tables. The price spread was more in the Channel-1 having the pre harvest contractor. Least price spread was observed in the Channel-III involving the contract retailer who keeps tender among the Universities'/colleges' farms. For 1000 nuts the price spread observed in Channel-I, Channel-II and Channel-III was ₹ 20,000, ₹ 18,000 and ₹ 15,000 respectively. The price spread

for each nut was ₹ 20, ₹ 18 and ₹ 15 in the three channels respectively. The Producer's Share in the Consumer's Rupee (PSCR) was found to be 33 per cent, 40 per cent and 50 per cent respectively in the three channels. The producer's share in consumer's rupee was highest in the Channel-III as there were only two participants in the complete chain. Next highest producer's share in the consumer's rupee was found

in the Channel-II involving the APMC trader. The results were in confirmation with the results of the Ravikumar. N. S. (2012). The Shepherd's efficiency calculated for the three channels was as 0.37, 0.38 and 1.00 respectively. This, indicated that the Channel-III was more efficient compared to other two channels.

**Table 7:** Price spread of tender coconut in different marketing channels

S. No	Particulars	Channel I	Channel II	Channel III
1	Number of producers opting (%)	55.00	37.50	7.50
2	Producer gross income	10,000	12,000	15,000
3	Preharvest contractor gross income	15,000	-	-
4	APMC trader gross income	-	15,000	-
5	Wholesaler gross income	25,000	25,000	-
6	Retailer gross income	30,000	30,000	-
7	Contract retailer gross income	-	-	30,000
8	Price spread per 1000 nuts (5-1)	20,000	18,000	15,000
9	Price spread per nut	20.00	18.00	15.00
10	Producer's share in consumer's rupee (%) (1/5*100)	33.00	40.00	50.00
11	Shepherd's efficiency value	0.37	0.38	1.00

### Conclusion

It was noted that Preharvest contractor was an important marketing intermediary in the study area who undertakes all the marketing activities including harvesting. Channel-III was used solely for the selling of produce from the farms managed by the Universities/ institutions. The price spread was more in the Channel-I (₹ 20 per nut) having the pre harvest contractor. Least price spread was observed in the channel-III (₹ 15 per nut) involving the contract retailer who keeps tender among the Universities'/colleges' farms. The producer's share in consumer's rupee was highest in the Channel-III as there were only two participants in the total chain. Highest producer's share in the consumer's rupee was found in the Channel-II involving the APMC trader. Even though the producer's share in consumer's rupee was highest in the channel involving the APMC trader (40%) rather than in the channel involving the preharvest contractor (33%), most of the producers (55%) were preferring the preharvest contractor. Hence it is advised to facilitate the collection of nuts directly from the farmers' field. This could be made easy by improving the logistics.

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