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Research Article

A STUDY OF MARKETING OF COCONUT IN RAIGAD DISTRICT OF MAHARASHTRA

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Abstract- The present study was conducted on the 90 farmers during 2013-14 Alibag and Murud Tahsils of Raigarh district of Maharashtra State. The present study was examined marketing costs, margins and price spread of coconut. At the overall level, 89.65 per cent quantity was sold in different markets, of which, 9.64 per cent quantity was sold through Channel I (Producer-Consumer), 41.78, 39.92 and 8.66 per cent quantities were sold through Channel II (Producer-Village trader-Retailer-Consumer), Channel III (Channel-III: Producer-Wholesaler-Retailer-Consumer) and Channel IV (Producer-Village trader- Wholesaler- Retailer- Consumer), respectively. The Producers share in consumer's rupee was the highest in channel I (96.29 per cent) and lowest in Channel IV (66.22 per cent), however maximum quantity was passed through Channel III (41.78 per cent) and Channel II (39.92 per cent) very low quantity was passed through channel IV (8.66 per cent). The cost of marketing of coconut in Channel IV i.e. in nearby markets was observed highest in Pen and Alibag markets due to higher transportation charges.

Keywords- Marketing Cost, Coconut, Marketing channels, Price spread, Raigarh District

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Introduction

The Green Revolution of the 1960's ushered in rapid increases in food crop production such as wheat, rice and other cereals. Efforts were also taken to achieve similar increases in nonfood crop production viz., coconut, sugarcane, cotton etc. The coconut is growing in 93 countries in the world and India is the major coconut producing country in the world. The area under coconut cultivation is around 18.95 lakh ha in India with an estimated 16943 million nuts during 2014-2015 with an average productivity of 8937 nuts per ha [1].

India ranks third on world map with the production of 9500 million nuts under plantation of about 19 lakh ha, and having productivity of 10,750 nuts/ha. In India, coconut is cultivated mainly in the coastal tracts of Kerala, Tamil Nadu, Karnataka, Andhra Pradesh, West Bengal, Pondicherry and Maharashtra & in the islands of Lakshadweep, Andaman & Nicobar. During the period from 2010-2011 to 2012-2013, the area under cultivation of coconut was increased from 18.95 lakh hectares to 21.37 lakh ha with the annual growth rate of 8%. India ranks third in world production of coconut. The coconut production in the country was increased by 30.55% from 10,840 million nuts in 2010-2011 to 15,609 million nuts in 2012-2013. The yield of coconut per hectares shows an increasing trend at national level from 5,717 nuts per ha in 2010-2011 to 10,750 nuts per ha in 2012-2013 [2].

In Maharashtra state, area under coconut cultivation is 15.49 lakh ha with production of 9,78.5 Million nuts and Productivity is 6,316 nuts per hectare [3].

Konkan region is the coastal plain of Maharashtra State in the Western India with Asian Sea on the West and Western Ghats on the East and it is the major coconut growing belt as about 92.34 per cent of the total area and production of coconut is concentrated in this region. The region composes of Ratnagiri, Raigad, Sindhudurg, Thane districts and greater Mumbai and has hilly terrain and extensive sea coast of 720 Kilometers. It is reported that Raigad district covers area of 2,245 ha (12 per cent), in which Alibag (505 ha) and Murud (151 ha) tahsils of Raigad district contribute major share in area and production of coconut [4].

The other districts in Western Maharashtra state like Kolhapur, Satara, Pune, Ahmednagar, Nasik, Dhule and Jalgaon district in North Maharashtra have also taken up coconut plantation on small scale, where canal water and lift irrigation is available. In the Marathvada and Vidarbha region of Maharashtra, the coconut palms are grown as an ornamental plant on very small scale.

Materials and Method

This study was conducted in Alibag and Murudtahsils of Raigarh district of Maharashtra. A total sample of 90 farmers were drawn comprising of 30small farmers ((0.01 ha to 0.20 ha), medium farmers (0.21 to 0.40 ha) and large farmers (above 0.41 ha.). The primary data were collected with the help of pre-tested schedule by interviewing farmers and traders personally for the year 2012-13.

Analytical Tools

Total Marketing Cost

$$C = C_f + C_{m1} + C_{m2}.....C_{mn}$$

Where,

C = Total Cost of Marketing of commodity

C_f= Cost paid by the producer from the time of produce leaves the farm till he sells it.

C_{mi} = Cost incurred by i^{th} middleman in the process of buying and selling the product.

Market Margin

Market margin at different stages of marketing of green chili was calculated as follows [5].

$$MM_i = SP_i - (PP_i + MC_i)$$

Where,
MM_i = Marketing margin of i - th middlemen
SP_i = selling price of i- th middlemen
PP_i = purchase price of i- th middlemen
MC_i = marketing cost of i- th middlemen

Producers shares in consumers rupee

The difference between price paid by consumer and price received by the producer was calculated by using this formula.

Producers shares in consumers rupees=(Producers price/consumers price) x 100

Price Spread

Price spread: Consumer's price – price received by farmer

$$P_s : Pc- P_f$$

Where,
P_s = Price spread (Rs.)
C_f = Consumer's price (Rs.)
P_f = price received by farmer (Rs.)

Marketing Efficiency

Acharya's Formula: $E = (O/I) \times 100$

Where,
E = Marketing Efficiency
O = Net price received by farmer (Rs.)
I = 'cost + margin' of market intermediaries (Rs.)

Results and Discussion

Disposal Pattern of Coconut

It is observed From [Table-1] that the total production of coconut at overall level was 4182.00 nuts out of which 89.65 per cent of produce was sold in market and 4.66 per cent quantity was kept for home consumption and other purposes. The total production of coconut in small, medium and large groups were 2192 nuts, 4145 nuts and 6842 nuts, respectively.

Table-1 *Per Farm Disposal of Coconuts (Numbers)*

Sr. No.	Size Groups	Total production of nuts (Nos.)	Home consumption	Storage loss	Gift to relatives	Used for preparation of seedling	Wage payment	Marketable surplus
1	Small	2192 (100)	184.33 (8.41)	2.23 (0.10)	27.23 (1.24)	1.73 (0.08)	84.21 (3.84)	1892.26 (86.33)
2	Medium	4145 (100)	187.07 (4.51)	21.77 (0.53)	63.23 (1.53)	4.20 (0.10)	152.59 (3.68)	3715.74 (89.65)
3	Large	6842 (100)	212.97 (3.11)	39.40 (0.58)	113.21 (1.65)	6.90 (0.10)	185.06 (2.70)	6284.19 (91.85)
4	Overall	4182 (100)	194.79 (4.66)	21.13 (0.51)	67.89 (1.53)	4.28 (0.10)	140.62 (3.68)	3964.06 (89.65)

(Figures in the parentheses indicate percentage to total)

Agency Wise Sale of Coconut

It is seen from [Table-2] that, at overall level total quantity marketed was 356765.63 nuts, out of this 49.42 per cent (176323.47 nuts) was marketed through village trader; 40.94 per cent (146046.64 nuts) was marketed through wholesalers and only 9.64 per cent (34395.52 nuts) was sold directly to the consumers as direct sale. It is also observed that, maximum sale (49.42 per cent) was through village trader.

Table-2 *Agency wise sale of coconut (No. of Nuts)*

Sr. No.	Marketing Agency	Village Trader		Wholesaler		Direct		Total	
	Size of Group	No. of Farmers	Quantity Sold	No. of Farmers	Quantity Sold	No. of Farmers	Quantity Sold	No. of Farmers	Quantity Sold
1.	Small	12 (29.26)	26141.76 (14.83)	8 (23.53)	17254.60 (11.81)	10 (66.66)	13371.40 (38.88)	30 (100)	56767.76 (15.91)
2.	Medium	12 (29.26)	43848.28 (24.87)	13 (38.24)	46599.84 (31.91)	5 (33.33)	21024.12 (61.12)	30 (100)	111472.24 (31.25)
3.	Large	17 (41.46)	106333.43 (60.30)	13 (38.24)	82192.20 (56.28)	-	-	30 (100)	188525.63 (52.84)
	Total	41 (45.56)	1776323.47 (49.42)	34 (37.78)	146046.64 (40.94)	15 (16.67)	34395.52 (9.64)	90 (100)	356765.63 (100)

(Figures in the parentheses indicate percentage to total)

Marketing Channels in Coconut Marketing

Table-3 *Channel-wise frequency distribution of coconut growers and quantity marketed through various channels.*

Sr. No.	Marketing Channels	No. of Growers (Nos.)	Total quantity marketed (No. of nuts)
1	Channel I	15 (16.67)	34395.52 (9.64)
2	Channel II	34 (37.78)	149057.81 (41.78)
3	Channel III	33 (36.67)	142404.76 (39.92)
3	Channel IV	8 (8.89)	30907.54 (8.66)
	Total	90 (100.00)	356765.63 (100.00)

(Figures in the parentheses indicate percentages to total)

It was observed that, in the process of marketing of coconuts, village traders, farmer cum village traders, commission agents/wholesalers, and retailers were important intermediaries. Further in the marketing of coconut following three different marketing channels were observed in study area.

Channel-I: Producer-Consumer (Direct sale)
Channel-II: Producer-Village trader-Retailer-Consumer
Channel-III: Producer-Wholesaler-Retailer-Consumer
Channel IV: Producer- Village trader- Wholesaler- Retailer- Consumer

It is observed from [Table-3] that, maximum number of growers (37.78 per cent) sold their nuts through Channel II. Whereas number of coconut growers operated through Channel I, Channel III and Channel IV were 16.67 per cent, 36.67 per cent and 8.89 per cent respectively. Regarding quantity marketed, it was observed that maximum quantity (41.78 per cent) passed through Channel-II followed by Channel III (39.92 per cent), Channel I (9.64 per cent) and 8.66 per cent quantity was marketed through Channel IV. The analysis revealed that, on the basis of

number of growers and quantity marketed; Channel II and channel III was most popular channel in the study area.

Details of Market Intermediaries

Cost of Marketing of Coconut

The marketing cost incurred by various agencies in different channels on harvesting, assembling, and transport, packaging, grading and other miscellaneous is computed and given in [Table-4].

Table-4 *Per farm Cost of marketing of coconut (Rs.)*

Sr. No.	Item of cost	Channel			
		I	II	III	IV
1	Labour cost for, assembling, grading and dehusking, loading – unloading	2180.2	3964.0	3964.0	3964.0
2	Cost of packing	0.0	475.7	495.5	515.3
3	Cost of transport	0.0	6592.1	7694.1	8946.7
4	Market charges	0.0	178.4	158.6	218.0
5	Loss at farm level and in transport	130.8	87.2	174.4	130.8
	Total	2311.00	11297.40	12486.60	13774.90
	Per Nut Marketing Cost	0.6	2.9	3.2	3.5

It is seen from [Table-4] that, per farm nuts, cost of marketing was highest in Channel IV. (Rs.13774.90) followed by channel III (Rs. 12486.60) in the total marketing cost share of, transport cost and labour was highest in all marketing channels.

Marketing cost and market margin in coconut marketing

Table-5 *Marketing cost and market margin incurred by different market intermediaries (Rs.)*

Sr. No.	Particulars	Channels			
		I	II	III	IV
1	a) Gross price received by growers	62234.80 (100.00)	61442.00 (78.48)	64744.01 (82.91)	61422.00 (69.35)
	b) Cost incurred by growers	2311.01 (3.71)	2774.80 (3.54)	4955.00 (6.35)	2774.80 (3.13)
	c) Net price received by growers	59923.79 (**96.29**)	58667.20 (**74.94**)	59789.01 (**76.56**)	58667.20 (**66.22**)
2	Village traders				
	a) Price paid	-	61442.00 (78.48)	-	61442.00 (69.35)
	b) Cost incurred	-	3567.60 (4.56)	-	5054.10 (5.70)
	c) Price received	-	70757.40 (**90.38**)	-	73631.30 (**83.11**)
	d) Gross margin	-	5747.80 (**7.34**)	-	7135.20 (**8.05**)
3	Wholesalers/Commission Agent				
	a) Price paid	-	-	64744.01 (82.91)	73631.30 (83.11)
	b) Cost incurred	-	-	4955.00 (6.35)	3369.40 (3.80)
	c) Price received	-	-	72144.80 (**92.39**)	81460.20 (**91.95**)
	d) Gross margin	-	-	2445.79 (**3.13**)	4459.50 (**5.03**)
4	Retailers				
	a) Price paid	-	70757.40 (90.38)	72144.80 (92.39)	81460.20 (91.95)
	b) Cost incurred	-	4955.00 (6.33)	2576.60 (3.30)	2576.60 (2.91)
	c) Price received	-	78289.00 (100.00)	78090.80 (100.00)	88595.40 (**100.00**)
	d) Gross margin	-	2576.60 (**3.29**)	3369.40 (**4.31**)	4558.60 (**5.15**)
5	Price paid by consumer	62234.80 (100.00)	78289.00 (100.00)	78090.80 (100.00)	88595.40 (100.00)

(Figures in parentheses indicate percentage with consumer's price)

The market cost incurred and market margin received in each channel by different market intermediaries is given in [Table-5]. It is seen from [Table-5] that, in Channel I, per farm nuts (3964), price paid by consumer was Rs.62250.50 of which net price received by producer was 96.29 per cent. In Channel II price paid by consumer was Rs.78308.75 of which net price realized by producer was 74.94 per cent. In this channel cost incurred by grower, village merchant and retailer was 3.54; 4.56 and 6.33 per cent respectively and the gross market margin of village trader was 7.34 per cent and retailer was 3.29 per cent. In Channel III price paid by consumer was Rs.78090.80 of which net price realized by producer was 76.56 per cent. In this channel cost incurred by grower, wholesaler and retailer was 6.35, 6.35 and 3.30 per cent respectively and the gross market margin of wholesaler was 3.13 per cent and retailer was 4.31 per cent.

In Channel IV price paid by consumer was Rs.88595.40 of which net price realized by producer was 66.22 per cent. In this channel cost incurred by grower, village trader, wholesaler and retailer was 3.13 per cent; 5.70 per cent; 3.80 per cent; 2.91 per cent respectively and the gross market margin of village trader was 8.05, wholesaler was 5.03 per cent and retailer was 5.15 per cent. Gross price received by grower is of 100.00; 78.48 and 82.91 per cent; 69.35 per cent for Channel I, Channel II, Channel III and channel IV, respectively. This revealed that per farm nuts price received by coconut grower was highest in Channel I i.e. 100.00 per cent followed by in Channel III (82.91 %), channel II (78.48 %) and in Channel IV (69.35 %).

Price Spread in Marketing of Coconut:

The price spread refers to difference between the price paid by the consumer and the price received by the producer for an equivalent quantity of farm produce. This spread consists of marketing cost and market margins of the intermediaries, which ultimately determine the overall effectiveness of market system. The price-spread studies can be helped in studying the efficiency of the marketing system. The channel-wise price spread in marketing of coconut was worked out and the information of the same is presented in [Table-6]. It is revealed from [Table-6] that, per farm nuts price paid by the consumer in local markets of Raigad district was more or less same. But the variation was seen in price received by coconut growers in different channels. This was because of variation in market margin and cost of marketing in different channels.

Table-6 *Price spread in marketing of coconut (Rs.)*

Sr. No.	Particulars	Channel			
		I	II	III	IV
1.	Net price received by producer	59923.79 (96.29)	58667.20 (74.94)	59789.01 (76.56)	58667.20 (66.22)
2.	Net margin of village trader	-	5747.80 (7.34)	-	7135.20 (8.05)
3.	Net margin of wholesalers /Commission agent	-	-	2445.79 (3.13)	4459.50 (5.03)
4.	Net margin of retailers	-	2576.60 (3.29)	3369.40 (4.31)	4558.60 (5.15)
5.	Total cost of marketing	2311.01 (3.71)	11297.40 (14.43)	12486.60 (15.99)	13774.90 (15.55)
6.	Total Marketing Margin	-	8324.40 (10.63)	5815.19 (7.45)	16153.30 (18.23)
7.	Consumers price	62234.80 (100.00)	78289.00 (100.00)	78090.80 (100.00)	88595.40 (100.00)

(Figures in the parentheses indicate percentage of total)

Share of producer in consumer's price

The producer share in consumer rupees was the highest in Channel I (100.00 %) followed by Channel III (76.56 %), Channel II (74.94 %) and in Channel IV (66.22 %). The producer's share in consumer's rupees in Channel IV was low because producer sold their nuts to middlemen like village merchants and commission agents. This clearly showed that, selling of coconuts directly to consumer in market is advantageous but it is done rarely. Maximum producer sold their produce directly to wholesaler/commission agent and village trader.

Producers Share in Consumers Price

Table-7 *Producers Share in Consumers Price (Figures in percentage)*

Sr. No.	Particulars	Channels			
		I	II	III	IV
1	Producer's share	96.29	74.94	76.56	66.22
2	Marketing cost	3.71	14.43	15.99	15.55
3	Marketing margin	-	10.63	7.45	18.23
4	Consumer's price	100.00	100.00	100.00	100.00

[Table-7] revealed that, in the analysis of price spread in different marketing channels, maximum share of consumer price was grasped by different intermediaries as market margin. This proportion was ranged in between 7.45 to 18.23 per cent. The share of marketing cost in each marketing channel was more or less same. It ranged between 3.71 per cent in Channel-I and 15.99 per cent in Channel-III. Producers share in Channel-I is maximum i.e. 96.29 per cent due to direct sale to consumer in the market.

Marketing Efficiency

Table-8 *Marketing Efficiency of Identified Channels (Rs.)*

Sr. No	Particulars	Channels			
		I	II	III	IV
1	Net price Received by the farmer	59923.79	58667.20	59789.01	58667.20
2	Total marketing cost	2311.01	11297.40	12486.60	13774.90
3	Total marketing margin	0.00	8324.40	5815.19	16153.30
4	Marketing efficiency ratio	1:25.93	1:2.99	1:3.27	1:1.96

It is observed from [Table-8] that, the marketing efficiency was much higher in Channel I (1:25.93) than that of Channel II (1:2.98), channel III (1:3.27) and Channel IV (1.1.96). The higher marketing margins in Channel IV resulted into poor efficiency of this channel. Thus the analysis indicated that marketing of coconut directly by farmer without intervention of middlemen was most effective and beneficial but it was done rarely due to some constraints in marketing activity in study area. However in study area Channel-II and channel III were very much popular.

Conclusions

The study concluded that around 49.42 per cent of coconut growers sold their nuts through village traders followed by wholesalers (40.94 per cent). This indicated that marketing system of coconut in Raigarh is in the hands of village traders and wholesalers. Though the price received by the growers was highest when produce was sold directly to consumer but quantity sold in this channel was very low i.e. (9.64 per cent).The highest marketing cost was found in Channel IV *i.e.,* Rs. 13774.90 per farm nuts in which maximum intermediaries were involved while lowest cost was observed in Channel I (Rs. 2311.01 per farm nuts). The Producers share in consumer's rupee was the highest in channel I (96.29 per cent) and lowest in Channel IV (66.22 per cent), however maximum quantity was passed through Channel III (41.78 per cent) and Channel II (39.92 per cent) very low quantity was passed through channel IV (8.66 per cent). The total marketing margin was highest in Channel IV (Rs. 16153.00 per farm nuts) and lowest in Channel III (Rs. 5815.19 per farm nuts). The marketing efficiency was highest in Channel I (1:25.93) and lowest in Channel IV (1:1.96).

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Author's contributions

Narendr Kumar Meena is the main author for his research paper, S. S. Naik and Rajesh kumar is my classmate G.N. Gurjar is my juniorand A. N. Ratnaparkheis major Guide for this research article.

Abbreviations

% = Percent
ha = Hectare
kg/ha = Kilogram per hectare
MT = Million tone
qtl = Quintal
qty = Quantity
UK = United Kingdom
USA = United States of America

Ethical approval

This article does not contain any studies with human participants or animals performed by any of the authors. This is the my original research work of post-graduation.

Conflict of Interest: None declared

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