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RESEARCH PAPER

Supply chain management in arecanut - A comparative study of co-operative and private processing units in Uttara Kannada district

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ABSTRACT

Arecanut (*Areca catechu* Linn.) is an important commercial crop in India and is popularly known as betelnut. Arecanut being a tropical palm, its distribution is mainly confined to South East Asian countries. The study focused on the supply chain management in arecanut. For the study, Sirsi Taluk in Uttar Kannada district was purposively selected and collected for the year 2010-2011. From Sirsi Taluk, one co-operative unit and 5 private arecanut processing units were randomly selected. The purchase price was Rs. 11000 per quintal in co-operative unit and Rs. 10650 per quintal in private unit. Co-operative units dominated in both the procurement as well as sales of arecanut and they had procured 51.73 per cent of rashi type and 54.99 per cent of chali type. Price spread was seen low in case of channel-IV *i.e.* Rs. 5000 and price sread was seen high *i.e.* 7.81.

Key words **:** Co-operative, Arecanut, Procurement, Supply chain management

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Arecanut (*Areca catechu* Linn.) is an important commercial crop in India and is popularly known as betelnut. It finds a place in all the religious social and cultural functions of Indian people. Its kernel is used mainly for chewing purpose in "pan supari". The cultivation of arecanut can be traced to vedic periods.

Arecanut being a tropical palm, its distribution is mainly confined to South East Asian countries. The production of arecanut covers an area of 7.02 lakh hectares with a total production of 8.54 lakh tonnes (Directorate of Arecanut and Spices Development, 2008). Though, the commercial cultivation is confined to India, Bangladesh, Sri Lanka and Malaysia, but India occupies first position in the world with respect to area and production of arecanut. India occupies the first place in the world as a producer of arecanut among the major producing countries. Although the cultivation of crop is scattered in many states but it is mainly concentrated in the states of Karnataka, Kerala and Assam which together accounts for 89 per cent of the total area and 84 per cent of the total production of arecanut in the country. The other states where arecanut is produced in minor quantities are West Bengal, Tamil Nadu, Meghalaya, Andaman and Nicobar, Maharashtra Tripura and Mizoram.

In India, Karnataka occupies the largest area under arecanut by growing in an area of 1.74 lakh hectares with a production of 2.31 lakh tonnes constituting about 45 per cent of the total area and 48 per cent of the total production of the country. It is followed by Kerala which has an area of 1.08 lakh hectares with a production of 1.10 lakh tonnes and Assam with an area of 0.70 lakh hectares with a production of 0.68 lakh tones (Indian Horticulture Data Base, 2009). In Karnataka state, Shimoga, Dakshina Kannada, Davangere, Tumkur,

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Chickmagalur and Uttara Kannada are the important districts where arecanut is extensively grown. These districts nearly comprise 81.20 per cent of the total area and 83.28 per cent of the total production of arecanut in the state (Directorate of Economics and Statistics, Government of Karnataka, 2008-09).

The important factors affecting the quality of arecanut are colour, tenderness, gleam, shape, weight etc. In Karnataka 90 per cent of the total production of arecanut is processed. There are mainly two types of processing in arecanut such as chali (ripe sun dried nuts) and rashi (tender boiled). Chali is mainly practiced in Dakshina Kannada district and parts of Chickmagalur and Uttara Kannada district. It is used in preparation of scented supari and is greatly demanded in Northern India. Rashsi is prepared in Shimoga and Chickmagalur districts and is used for chewing. This type has a greater demand in Southern India. Rashsi can be further graded into Api/Hasa, Bette and Gorabalu. Api is more tender and commands a premium price in the market followed by Bette and Gorabalu.

Value addition in arecanut:

Arecanut (or betel nut) plays an important and popular part in Asian culture, especially in India. Arecanut is a widely grown cash crop in the Malnad belt (hill belt) of Karnataka. Arecanut is among the most important crops (along with coconut and paddy) of most farmers in these regions. The post harvest processing consists of deshelling the arecanut, boiling of the arecanut followed by drying (typically sun drying) of the boiled arecanuts. This results in significant value addition to the arecanut. However, on the farmer's part, it requires upfront investment for the process.

Many varieties of scented suparis are now prepared by blending the dried, broken bits of arecanut with flavoured mixtures and packed. Some commercial supari reparations are made by cutting dried arecanuts into bits and roasting them in fat to which flavouring, sweetening agents and condiments are added. Pan masala is a mixture of supari (arecanut or betel nut), slaked lime, betel leaf, flavourings and spices.

METHODOLOGY

The present study was conducted in Sirsi taluk of Uttar Kannada district. It was purposively selected and collected the data of the year 2010-2011. From Sirsi Taluk, one co-operative unit and 5 private arecanut processing units were randomly selected.

In order to test the specific objective of investigation, data were collected from primary and secondary sources. The present study was undertaken in Sirsi arecanut union jurisdiction and the data were collected mainly from the arecanut processing units. The data relating to the procurement of arecanut were drawn from the records of respective units. Figures pertaining to the costs and margins have been taken from the profit and loss accounts and the balance sheets in the case of both co-operative unit and private units. Relevant data pertaining to the financial aspects of the unit for the study period were collected from the balance sheet and profit and loss accounts. The primary data related to arecanut processing units, procurement management, value additional, distribution channels, pricing efficiency and marketing practices were collected through pre-tested schedule.

Analytical techniques:

The main analytical techniques employed in the study were tabular analysis marketing efficiency index to interpret the results efficiently.

ANALYSIS AND DISCUSSION

Table 1 shows the costs incurred by co-operative and private units in procurement of arecanut. The total cost incurred in procurement of arecanut in co-operative unit was Rs. 102 per quintal and in case of private unit it was Rs 362 per quintal. The commission charges accounted for major portion of total cost (58.84 %) in private units. The purchase price was Rs. 11000 per quintal in co-operative unit and Rs 10650 per quintal in private unit. Private units purchased at lower cost because they procured arecanut from the farmers and village traders during itself. Similarly, the cost of packing material was higher in private units as compared to co-operative unit because private traders brought their produce

Table 1 : Cost incurred in procurement of arecanut (Rs per quintal)

Sr. No.	Particulars	Co-operative unit	% of total	Private unit	% of total
	Purchase price	11000	-	10650	-
1.	Commission charges	-	-	213.00	58.84
2.	Transportation charges	30.00	29.41	60.00	16.57
3.	Packing material charges	60.00	58.82	75.00	20.72
4.	Weighing charges	2.00	1.97	2.00	0.56
5.	Loading and unloading charges	10.00	9.80	12.00	3.31
	Total	102.00	100	362.00	100

from far-away places.

The Tables 2 and Table 3 show that co-operative unit were dominate in the both procurement as well as sales of arecanut and they had procured 51.73 per cent of rashi type and 54.99 per cent of chali type and also they had sold 48.92 per cent and 56.54 per cent, respectively. Whereas trader procured lesser compared to co-operative unit because turnover of business in co-operative unit was higher from rashi and chali type. Similarly, in case of wholesaler-cum-commission agent and retailer had lesser turnover of business.

The results of the price spread (Table 4) on the producer's net price, marketing costs and profits for individual intermediaries are discussed in this section.

Channel I:

In this channel a meagre amount of produce was being

Table 2 : Procurement of intermediaries in arecanut marketing during 2009-10

Sr. No.	Intermediaries	Quantity purchased	
		Rashi (in q)	Chali (in q)
1.	Co-operative unit	38,36,258	48,69,650
		(51.73)	(54.99)
2.	Trader	35,64,293	39,73,152
		(48.07)	(44.87)
3.	Wholesaler-cum-commission	13,674	11,316
	agent	(0.18)	(0.13)
4.	Retailer	984	846
		(0.02)	(0.01)
	Total	74,15,209	88,54,964
		(100)	(100)

Table 3 : Sales by intermediaries in arecanut marketing during 2009-10

Sr. No	Intermediaries	Total quantity sales	
		Rashi (in q)	Chali (in q)
1.	Co-operative	32,57,346	49,26,183
		(48.92)	(56.54)
2.	Trader	33,86,079	37,74,495
		(50.86)	(43.32)
3.	Wholesaler-cum-commission	13,400	11,090
	agent	(0.20)	(0.12)
4.	Retailer	965	830
		(0.02)	(0.02)
	Total	66,57,790	87,12,598
		(100)	(100)

Table 4 : Price spread in marketing of arecanut in different channels **(Rs./q)**

Sr. No.	Particulars	Channel-I	Channel-II	Channel-III	Channel-IV
A	Producer's net price	11000 (61.21)	11000 (61.21)	11500 (67.65)	12000 (70.59)
B	Marketing cost incurred by:				
1.	Co-operative	276.01 (1.54)	276.01 (1.54)	-	-
2.	Trader	497.67 (2.77)	-	572.77 (3.37)	742.47 (4.37)
3.	Wholesaler-cum-commission agent	722.10 (4.02)	803.57 (4.47)	735.75 (4.33)	-
4.	Retailer	945.00 (5.26)	996.20 (5.54)	966.60 (5.69)	1071.63 (6.30)
	Total marketing cost	2440.78 (13.58)	2075.78 (11.55)	2275.12 (13.38)	1814.10 (10.67)
C	Margin earned by:				
1.	Co-operative	1223.99 (6.81)	1223.99 (6.81)	-	-
2.	Trader	1002.33 (5.58)	-	1727.23 (10.16)	457.53 (2.69)
3.	Wholesaler-cum-commission agent	1077.90 (6.00)	2496.43 (13.89)	564.25 (3.32)	-
4.	Retailer	1225.00 (6.82)	1173.80 (6.53)	933.40 (5.49)	2728.37 (16.05)
	Total margin	4529.22 (25.20)	4894.22 (27.24)	3224.88 (18.97)	3185.90 (18.74)
D	Producer's selling price	11000 (61.21)	11000 (61.21)	11500 (67.65)	12000 (70.59)
E	Co-operative selling price	12500 (69.56)	12500 (69.56)	-	-
F	Trader selling price	14000 (77.91)	-	13800 (81.18)	13200 (77.65)
G	Wholesaler cum commission agent selling price	15800 (87.92)	15800 (87.92)	15100 (88.82)	
H	Retailer selling price	17970 (100.00)	17970 (100.00)	17000 (100.00)	17000 (100.00)
I	Price spread	6970	6970	5500	5000
J	Marketing efficiency	5.89	7.01	6.11	7.81

Note: Figures in parentheses indicate percentage

sold; farmers supplied their produce to co-operative unit. In this channel, the marketing cost includes the cost on transportation, loading and unloading, packing, grading, and electricity charges. Producer's share in consumer's rupee was lowest (61.21 %) and marketing efficiency was also low at 5.89 mainly because involvement of many intermediaries in this channel.

Channel II:

This was the second important channel found under operation. Farmers supplied their produce to co-operative unit. The co-operative unit sold their produce to wholesaler cum commission agent where the marketing cost was found to be higher than in channel- I. The producer's share was worked out to be 61.21 per cent, which was mainly due to value added in different channels. In channel- II all the intermediaries got less margin compared to channel- I. The margin retained by co-operative unit, wholesaler-cum-commission agent and retailer was recorded as only Rs. 1223.99 (6.81 %), 2496.43 (13.89 %) and Rs.1173.80 (6.53 %), respectively. However, this channel was found to be efficient since, the marketing cost was lowest compared to channel-I and channel-III because of lesser number involvement of intermediaries. The marketing efficiency in channel- II was recorded the higher at 7.01 compare to channel-1.

Channel III:

This was the third important channel found under operation. The traders purchased the produce at farm gate. The marketing cost was found to be higher than in channel- I and II. The producer's share was worked out to be 67.65 per cent, which was mainly due to value added in different channels. In this channel all the intermediaries got less margin compared to channel- I and II. The margins retained by trader, wholesale-cum-commission agent and retailer were recorded at only Rs. 1727.23 (10.16 %), Rs. 564.25 (3.32 %) and Rs.933.40 (5.49 %), respectively.

Channel IV:

Through this channel the bulk of the produce was being disposed off. In channel IV, the producer's share in consumer's rupee was highest (70.59%). The margin retained by different intermediaries in channel IV indicated that retailers received Rs. 17,000.00 followed by trader Rs. 13,200.00, which was found to be the highest among all the channels. However, this channel was found to be most efficient since the marketing cost was lowest compared to other channels because of lesser number of intermediaries in the marketing. The marketing efficiency in this channel was recorded the highest (7.81). Singh and Sharma (2007) and Siddaram *et al.* (2007) have also made some investigation on marketing strategies of beekeepers and investment and procurement management in milk processing, respectively. Karutagi *et al.* (2009) and Singh and Singh (2009) worked on marketing of sapota in Karnataka and repeseed and mustard in Rajasthan, respectively.

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