Marketing costs and Price Spread Analysis for Citrus in Samba district of Jammu region

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Abstract

The present study made a detailed analysis of citrus fruit by studying its marketing costs and price spread which is the important researchable issue for the said crop in Samba district. The marketing chain of three types mainly Producer → Forwarding/ Commission agent → Retailer → Consumer, Producer → Retailer → Consumer and Producer → Consumer were followed in the sample area. The average per quintal marketing cost at producers' level varied to the extent of Rs.438.65, Rs.264.00 and Rs.226.67 per quintal for channel I, II and III, respectively. The average per quintal marketing cost borne by the retailer was found to be Rs.30.95 and Rs.19.40 in channel I and II, respectively whereas in channel III whole of the marketing cost i.e., Rs. 226.67 was borne by the producer as there was the direct marketing of produce. As far as the price spread analysis is concerned, the per quintal net price received by the producer was about Rs.945.90, Rs.1036.00 and Rs.1073.33 which was about 44.00 per cent, 51.29 per cent and 82.56 per cent of the price paid by the consumer for channel I, II and III, respectively. A comparison of different channels thus showed that producers' share in the consumers' rupee was the highest in case of channel III as compared to other channels. Where in the consumer also paid the lowest price i.e., Rs.1300.00 per quintal in channel III as compared to Rs.2150.00 per quintal and Rs.2020.00 per quintal in channel I and II, respectively which revealed that direct sale from producer to ultimate consumer was beneficial for both producer and consumer. The channel-III with marketing efficiency 4.74 was most efficient followed by Channel-II (1.05) and channel-I (0.79).

Keywords: citrus, marketing cost, price spread, marketing efficiency, producer, retailer, consumer, forwarding agent

India has the unique distinction to grow almost all the varieties of fruits and vegetables. India is second largest producer of fruits in the world (9 per cent) after China. India is the second largest producer of fruits and vegetables in the world with 81285 thousand metric tonnes production of fruits and 162187 thousand metric tonnes production of vegetables for the year 2012-13. Major fruits cultivated in India are banana (32.61 per cent), mango (22.14 per cent), Citrus (12.41 per cent), papaya (6.61 per cent) and apple (2.35 per cent) (NHB, 2013). Citrus is the third most important tropical fruit crop of India after mango and banana with an area of 1042 thousand hectares and 10090 thousand metric tonnes of production (9.7 MT/ha productivity) (NHB, 2013). Among the various fruit crops, growing of citrus

has vast potential in Jammu region of Jammu and Kashmir state as it comprises highest area under its cultivation (13.88 thousand hectares) which is almost 99 per cent of total area of citrus in J&K, whereas its production has been realized to (20.81 thousand metric tonnes) which is 99.90 per cent of the total citrus production of J&K (NHB, 2013). In Jammu region, the districts mainly Rajouri, Kathua, Jammu, Udhampur, Samba and Reasi are the prominent areas where it is grown. To encourage diversification of agriculture in Jammu, it is necessary to enhance the returns from fruits. This is possible only by efficient production and marketing processes.

Diversification to horticultural crops has been found to be best option as they make more profit, generate additional employment for rural masses and conserve natural resources. Agriculture continues to be core sector of the Indian economy, on which more than 60 per cent of our population is dependent for their livelihood. Agriculture, the most important industry of India, contributes about 17.5 per cent of the national income and employs directly or indirectly 52.1 per cent of its population (Anonymous, 2010) thereby indicating its predominance. But unfortunately Indian farmers in general are small and marginal land holders with poor resources and realizing income mainly from cereal based production system, which is insufficient to improve their living standards. The introduction of World Trade Organization (WTO) is also leading them into challenging situations because of the reason that in India, lot of diversification has taken place in which fruits have become the significant part of one's diet. In such a typical scenario, need of the hour is to adopt such production system, which is capable of saving the interest of small farmers and increasing their economic condition. Under present agricultural scenario, fruits in the food consumption play the key role in enhancing trade and business worldwide. The country's population has almost tripled in the last five decades and its food grain production has more than quadrupled, significantly enhancing the per capita food grain availability (Bhat, 2011).

The economic aspects of fruit cultivation are not less important as well maintained and established orchards give better returns than field crops from the same piece of land. It may also be mentioned that there are many factors which may enhance the production of citrus fruits but among them cost and return coupled with marketing are considered to be the key factors for increasing the production. Moreover, along with the production, the role of marketing opportunities of fruits is equally important, as the farmers can ensure the reasonable return for their produce and also a legitimate share in the price paid by the consumers.

Although area under citrus and its production has shown a steady increase over time, yet their marketing aspects (comprising of marketing cost, marketing margin, marketing loss and price spread) has all along been almost neglected and at present marketing facilities for citrus are inadequate. Under the existing marketing practice, before the produce reaches to the end user, it has to be handled and passed through a long chain of various intermediaries, with the result that the producers are getting a small share of consumers' rupee. Therefore, working out the price spread particularly in citrus fruits provides an opportunity to know the difference between the price received by the orchardists and price paid by the consumer which comprises cost of undertaking and rendering market services such as assembling, grading, transporting, processing, wholesaling, retailing and the margins of the intermediaries, charges, sale tax etc, as they are too wide because to its perishable nature, seasonality of production, spatial distribution of citrus plantation far off from consuming centres, inadequate cold storage and credit facilities and lack of comprehensive marketing information. All these forces compel the growers to sell their produce unprocessed and immediately after harvest, resulting gluts in the markets and thereby fall in prices and hence lower returns.

Further, citrus fruits are among the important commercial fruit crops and evaluating their marketing will help the fruit growers of the study area to a greater extent as how to make their cultivation and marketing more profitable. Keeping in view the above, the present investigation has been undertaken with the objective as to study its

marketing channels, marketing cost, price spread and marketing efficiency

Materials and Methods

A multi stage sampling was adopted for the selection of samples, with district, blocks, villages and citrus growers as the first, second, third and fourth stage sampling units. Samba district of Jammu region was selected because it is one of the leading citrus producing areas of the region. Then three blocks were selected on the basis of area under citrus cultivation and from each block two villages were selected. The ultimate units, that is, citrus growers were selected randomly from each village so as to constitute a sample size of 48 growers from the area under study.

The required information was collected through personal interview method, using well-designed and pre-tested schedules. This paper is based on primary data collected from a survey of citrus producers, market intermediaries and fruit markets in citrus production and consumption areas. Ccommission agents and wholesalers dealing in citrus citrus and the retailers from different localities of the area were also interviewed. Information was collected on prices, marketing costs and marketing margins to estimate price spread for the selected citrus fruit using average and percentage analyses. Producer's share in consumer's rupee was obtained from the price spread analysis.

Analysis of Marketing

The data collected were tabulated and analyzed for examining the marketing cost, margins, price spread and the marketing efficiency.

Marketing Margins, Costs and Loss

The modified formulae has been used for separating the 'post harvest loss during marketing at different stages of marketing as well as for estimating the producers' share, marketing margins and marketing loss.

Net Farmers' Price

The net price received by the grower has been estimated as the difference in gross price received and sum of marketing costs and value loss during harvesting, grading, transit and marketing. Thus, the net farmer's price was expressed mathematically as follows:

$$NP_F = GP_F - \{C_F + (L_F \times GP_F)\} \text{ or}$$

$$NP_F = \{GP_F\} - \{C_F\} - \{L_F \times GP_F\}$$

Where NP_F = net price received by the farmers (Rs./kg),

GP_F = gross price received by the farmers or wholesale price to farmers (Rs./kg),

C_F = cost incurred by the farmers during marketing (Rs./kg),

L_F = physical loss in produce from harvest till it reaches assembly market (per kg).

Marketing Margins

The margins of market intermediaries included their profit, which accrued to them for storage, the interest on capital and establishment after adjusting for the marketing loss due to handling. The general expression for estimating the margin for intermediaries is given below.

Intermediaries = Gross price – Price paid – Cost of – Loss in value

Margin (sale price) (cost price) marketing during wholesaling

Thus, the total marketing margin of the market intermediaries (MM) was calculated as

$$MM = MM_W + MM_R$$

Similarly, the total marketing cost (MC) incurred by the producer/ seller and by various intermediaries was calculated as

$$MC = C_F + C_W + C_R$$

The total loss in the value of produce due to injury/ damage caused during handling of produce from the point of harvest till it reached the consumers was

estimated as

$$ML = \{L_F \times GP_F\} + \{L_W \times GP_W\} + \{L_R \times GP_R\}$$

Marketing Efficiency

Modified marketing efficiency (ME) formula (Acharya and Agarwal (2001) is given below.

$$ME = \frac{NP_F}{MM + MC + ML}$$

Where NP_F is net price received by the farmers (Rs./kg),

MM   =   marketing margin,

MC   =   marketing cost,

ML   =   marketing loss.

Results and discussion

Marketing cost of citrus

In general marketing costs constitute the expenses on the items like picking, filling, packing, transportation, loading and unloading, commission and other charges. These costs are the actual expenditure incurred for the smooth running of business as well as for efficient marketing of particular farm commodity. Three important channels identified for citrus arketing in the study area were:

I. Producer → Forwarding/ Commission agent Retailer → Consumer

II. Producer → Retailer → Consumer

III. Producer → Consumer

The channel wise decomposition of marketing costs components for citrus fruit is given in Table 1. The marketing costs involved for the ultimate disposal of the produce like (picking, filling, cost of container, transportation cost and loading/ unloading charges) was Rs.438.65, Rs.264.00 and Rs.226.67 per quintal for channel I, II and III, respectively in which Rs.112.57, Rs.111.00 and Rs.111.67, respectively was for picking

Table 1. Channel wise decomposition of marketing costs components for citrus fruit in Samba district (Rs./qtl)

S. No.	Functionary	Channel-I	Channel-II	Channel-III
1	Marketing cost incurred by the producer	438.65	264.00	226.67
		(93.41)	(93.15)	(100.00)
	i) Picking, Filling	112.57	111.00	111.67
		(23.97)	(39.17)	(49.27)
	ii) Depreciation of container	194.00	84.00	48.17
	(Tokri/ Crate/ Gunny bags)	(41.31)	(29.64)	(21.25)
	iii) Transportation cost	49.86	56.00	48.33
		(10.62)	(19.76)	(21.32)
	iv) Loading/ unloading charges	10.00	10.00	10.00
		(2.13)	(3.53)	(4.41)
	v) Miscellaneous charges	3.43	3.00	8.50
		(0.73)	(1.06)	(3.75)
	vi) Commission	68.79	0.00	0.00
		(14.65)	(0.00)	(0.00)
2	Marketing cost incurred by the	30.95	19.40	0.00
	retailer	(6.59)	(6.85)	(0.00)
	i) Transportation cost	4.00	0.00	0.00
		(0.85)	(0.00)	(0.00)
	ii) Loading/ unloading charges	12.57	5.00	0.00
		(2.68)	(1.76)	(0.00)
	iii) Shop/ Rehri charges	4.38	4.40	0.00
		(0.93)	(1.55)	(0.00)
	iv) Cost of plastic bags	10.00	10.00	0.00
		(2.13)	(3.53)	(0.00)
	Total Marketing Cost (1+2)	469.60	283.40	226.67

Figure in parentheses are the percentage of total marketing cost of their respective channels

and filling, Rs.10.00 per quintal in each channel for loading/ unloading and Rs.49.86, Rs.56.00 and Rs.48.33, respectively as transportation cost. The table further indicated that the grower also incurred expenditure on depreciation of container which was highest in case of channel I (Rs.194.00) followed by channel II (Rs.84.00) and channel III (Rs.48.17). The per quintal miscellaneous charges were found to be highest in channel III (Rs.8.50) followed by channel I (Rs.3.43) and channel II (Rs.3.00). Expenditure of Rs.68.79 per quintal were incurred as commission to commission/ forwarding agent in channel I. The retailer incurred about Rs.4.00 towards transportation charges in channel I for carrying the fruits to shop. The retailer also incurred a cost of Rs.12.57 and Rs.5.00 towards loading/ unloading and Rs.4.38 and

Rs.4.40 towards shop/ rehri charges for channel I and II, respectively while as the cost of plastic bags came out to be Rs.10.00 per quintal in both the channels (I and II). The total marketing cost of the retailer came out to be Rs.30.95 and Rs.19.40, respectively in channel I and II. Thus, the total marketing cost involved in marketing of citrus in the selected sample area was Rs.469.60, Rs.283.40 and Rs.226.67 for channel I, II and III, respectively. . These findings are in close conformity with Lepeha *et al*. (1993).

Price spread and marketing margins

The price spread for different market functionaries of citrus under different channels in Samba district of Jammu region is shown in Table 2. In the study area of this district, the wholesaler was not involved directly in any channel but sometimes wholesaler himself worked as forwarding/ commission agent. The growers of Samba district received the net price of about Rs.945.90/ qtl, Rs.1036.00/qtl and Rs.1073.33/ qtl which was about 44.00, 51.29 and 82.56 per cent of the price paid by the consumer for channel I, II and III, respectively. The producers' sale price was Rs.1384.55/qtl in channel I and Rs.1300.00/qtl each in channel II and channel III. The marketing costs borne by the orchardist was Rs.438.65/qtl in case of

channel I followed by channel II (Rs.264.00/qtl) and channel III (Rs.226.67/qtl). The marketing cost in the consumer rupee was highest in channel I (20.40 per cent) followed by channel III (17.44 per cent) and channel II (13.07 per cent).

Table 2. Price spread of citrus fruit under different marketing channels in Samba District (Rs./qtl)

S. No.	Particulars	Channel - I	Channel - II	Channel - III
1.	Net price received by the producer	945.90	1036.00	1073.33
2.	Marketing cost incurred by the producer	438.65	264.00	226.67
		(20.40)	(13.07)	(17.44)
3.	Producers' sale price	1384.55	1300.00	1300.00
		(64.40)	(64.36)	(100.00)
4.	Marketing cost incurred by the retailer	30.95	19.40	0.00
		(1.44)	(0.96)	(0.00)
5.	Marketing loss incurred by the Retailer	19.50	14.00	0.00
		(0.91)	(0.69)	(0.00)
6.	Margin of retailer	715.00	686.60	0.00
		(33.26)	(33.99)	(0.00)
7.	Retailers' sale price	2150.00	2020.00	0.00
		(100.00)	(100.00)	(0.00)
8.	Price paid by consumer	2150.00	2020.00	1300.00
		(100.00)	(100.00)	(100.00)
9.	Producers' share in consumers' rupee	0.44	0.51	0.83
		(44.00)	(51.29)	(82.56)
10.	Total marketing margin	715.00	686.60	0.00

Figures in parentheses are the percentages of price paid by consumer

The retailers' sale price was Rs.2150.00/qtl and Rs.2020.00/qtl in channel I and II, respectively. The marketing costs borne by the retailer were found to be Rs.30.95/qtl (1.44 per cent) in case of channel

I and Rs.19.40 (0.96 per cent) in case of channel II. Marketing margin of the retailer was found to be 33.26 per cent and 33.99 per cent of the consumers' price in case of channel I and II, respectively. The table revealed that producers' share in consumers' rupee was highest in channel IV (82.56 per cent) followed by channel III (51.29 per cent) and channel I (44.00 per cent) which revealed that direct sale in the local market resulted in highest share of the producer in the consumers' rupee. The wholesaler as such was not present but sometimes commission agent acted as wholesaler. The margin of the retailer was highest in channel I (Rs.715.00 per quintal) followed by channel III (Rs.686.60 per quintal). The best channel both for producer and consumer point of view was found to be channel IV in which producer got maximum share (82.56 per cent) of consumers' rupee and consumer purchased the fruit at minimum price (Rs.1300.00 per quintal). These findings are in close conformity with Shah *et al*. (2010).

Table 3: Marketing efficiency of different channels for citrus fruit

Particulars	Channel-I	Channel-II	Channel-III
Net price received by farmer (Rs./qtl.)	945.90	1036.00	1073.33
Marketing margin (Rs./qtl.)	715.00	686.60	0.00
Marketing cost (Rs./qtl.)	469.60	283.40	226.67
Marketing loss (Rs./qtl.)	19.50	14.00	0.00
Marketing efficiency	0.79	1.05	4.74

Marketing efficiency in different channels

The Table 3 revealed the efficiency of different marketing channels of study area. The results indicated that it was maximum (4.74) when farmer sold his produce directly to consumer i.e., channel - III. When the fruit was sold through intermediaries i.e., commission agents and retailers, marketing efficiency decreases to 1.05 and 0.79 in channel-II and I, respectively, thereby indicating that the marketing efficiency decreased with the increase in market intermediaries i.e., more the marketing functionaries, less the marketing efficiency. These results are in conformity with Ajani (2005) and Ladaniya et al. (2005).

Conclusion

The price spread in marketing of citrus in Samba has indicated that producers' share (82.56 per cent) in consumers' rupee worked out to be highest when the produce was sold directly to consumers without the intermediaries i.e., channel III. Price spread analysis revealed that, various market intermediaries were the highest beneficiaries in the marketing channels. However, the marketing efficiency was found high in channel III (4.74) followed by channel II (1.05) and channel I (0.79).

References

Acharya, S. S. and Aggarwal, N. L. 2001. *Agricultural Marketing in India*. Third edition, Oxford & IBH Publishing Company, New Delhi.

Bhat, Anil. 2011. Ph.D . Economics of Production and Marketing of Citrus in Jammu region of Jammu and Kashmir state. PhD. thesis. Sher-e-Kashmir University of Agricultural Sciences and Technology of Jammu, Jammu, India.

Ladaniya, M. S., Wanjari. V. and Mahalle, B. C. 2005. Marketing of grapes and raisins and post-harvest losses of fresh grapes in Maharashtra. *Indian Journal of Agricultural Research*, 39(3): 167-176.

Lepeha, Y., Ali Md. H., Maity, A., Mukherjee, A. K. and Chattopadhayay, T. K. 1993. Economics of Marketing of mandarin orange in Darjeeling district of West Bengal. *Economic affairs*, **38**(4): 232-241.

Website www.nhb.gov.in assessed on 11.06.2014.

Shah, N., Khan, M., Khan, N., Muhammad Idrees, Haq, I. 2010. Profit margins in citrus fruit business in Haripur district of NWFP, Pakistan. *Sarhad Journal of Agriculture*, **26**(1): 135-140.