Economic analysis of marketing of major vegetables in varanasi district of Uttar Pradesh, India

Snehal Mishra✉, Rakesh Singh and O.P. Singh

Department of Agricultural Economics, IAS, BHU, Varanasi, U.P., India

✉Corresponding author: snehalmishra130@gmail.com

Abstract

India is second largest producer of fruits and vegetables in world. India produces about 14% of world's vegetables from 15% world's area. The vegetable productivity in India is less than the world average productivity. Nearly 30-40% vegetables were wastage during the supply chain i.e. reaching from producer to consumer. Most of the marketing of vegetables in India is done in unorganised sector and very little quantity is marketed through organised sector. Present study was an attempt to study the marketing channels and to examine the marketing efficiency of organized retail chain. The Varanasi district of Uttar Pradesh was selected purposively for the present study.Spencer retail Bhelupur was selected purposively. A total of 45 farmers, 4 intermediaries, one retailer and 60 consumers were selected. Vegetables viz tomato, cabbage, pea, okra and brinjal were selected for the study. Among the organized supply chain i.e. channel II, the cost incurred per kg of vegetables was much lower than the cost incurred in the traditional supply chain i.e. channel I. In channel – I, the net return and marketing efficiency was higher for channel II than channel I for all the vegetables under study. At the same time organized supply chain was found to be smallest price spread. Hence organized supply chain (channel – I) was found more efficient as compared to unorganized supply chain (Channel – II). Hence it is advisable to the farmers to sell their produce through modern supply chain i.e. channel II as it is more efficient because the commodity was purchased directly from the producer. However due to APMC Act Spencer retail was not permitted to procure commodities directly from the farmers. Therefore it was suggested that policy reform should be done to facilitate direct marketing.

Keywords: Marketing efficiency

India is the second largest producer of fruits and vegetables in the world next only to China. With diverse agro-climatic conditions and distinct seasons, Indian farmers are able to grow a wide range of vegetables which are an important constituent of Indian diet. Vegetables are short duration crops with high yield per unit area, economically viable and provide nutritional security. Total area under horticultural crops was 21.83 million hectare and production was 240.53 million tones in the year (2010-11). Fruits and vegetables together contribute about 92% of the total horticultural production in the country. As per the Indian Institute of Vegetable Research, India produces about 14% (146.55 million tonnes) of world's total vegetables from the 15% 8.5 million hectares) of world's area. Productivity of vegetables in India (17.3 tonnes per hectare) is less than the world's average productivity (18.8 tonnes per hectare). Out of total vegetable production in India, Potato (28.9%), tomato (11.3%), onion (10.3%) and Brinjal (8.1%) are the four major vegetables growing in the country which contributes about 58.6% of total vegetable production. Other important vegetables are cabbage (5.4%), cauliflower (4.6%), okra (3.9%) and peas (2.4%).

In 2010-11, total value of vegetable exports from India were accounted for ₹ 2706.97 crores in 2010-11, which account for about 2.25% of total agricultural exports and 0.23% of India's total export.. Major importers of Indian vegetables are UAE, Nepal, Sri Lanka, UK and Saudi Arabia accounting for about 55% of the total vegetable exports from India. Keeping in view the increased production of vegetables and its export potential it is essential to work out the marketing channels followed by organized retail and its efficiency. Present study was an attempt to study the marketing channels and to examine the marketing efficiency of organized retail chain.

Methodology

Sampling procedure

The multistage purposive random sampling was used for selection of sample. The Varanasi district was purposively selected for the present study because farmers of Varanasi district of Uttar Pradesh were allocating larger area under vegetable cultivation.A list of all assigned retail outlets was prepared and Spencer retail outlet (Bhelupur and Mehmoorganj) was selected purposively for study. The primary data were collected from the selected farmers, wholesalers, retailer (Spencer) and consumers with the help of a pre-tested schedule by personal interview method. The 45 farmers, four intermediaries, one retailer and 60 consumers were selected for the study.

Analytical Tools

To work out the marketing efficiency of vegetables, Shepherd method was used. The marketing cost was estimated by using following formula:

$C = C_f + C_{m1} + C_{m2} + C_{m3} + \ldots\ldots\ldots\ldots + C_{mi}$

Where, C is the total cost of marketing of the commodity; C_f is the cost paid by the producer from the time the produce leaves the farm till sells and C_{mi} is cost incurred by the ith middleman in the process of buying and selling of the product.

Marketing Margins

Following methods were used to find out the marketing margins (Srivastava *et al.*, 2010). The algebraic form of the equations presented below:

Absolute margin

$A_{mi} = P_{Ri} - (P_{Pi} + C_{mi})$

Percentage margins

It is the share of absolute margin in selling price.

$$P_{in} = \frac{\left[P_R - \left(P_P + C_{in}\right)\right]}{P_R} \times 100$$

Mark-up

It is the share of absolute margin in buying price.

$$M_i = \frac{\left[P_R - \left(P_P + C_{in}\right)\right]}{P_P} \times 100$$

Where,

A_{mi} = Absolute margins of ith functionary

P_{mi} = Percentage margin of i_{th} functionary

M_i = Mark-up of ith functionary

P_{Ri} = Total value of receipts per unit (sale price)

P_{Pi} = Purchase value of goods per unit (purchase price)

C_{mi} = Cost incurred on marketing per unit

Price spread

$$P_S = \left(\frac{\text{Absolute margin}}{\text{Consumers price}}\right) \times 100$$

Where,

P_S = Producer's/intermediaries' share in consumer's rupee.

Marketing efficiency

Marketing efficiency was calculated using Shepherd's approach:

M.E. = $C_P / (P_C + C + A_{mi})$

Where,

M.E. = Market efficiency

C_P = Consumer's purchase price

P_C = Marketing cost of producer

C = Marketing cost of all the intermediaries involved

in the channel

A_{mi} = Marketing margin of the intermediaries involved in the channel

Results and Discussion

Marketing Channels

Two marketing channels were prevailing in the study area. These are [1] Channel – I: Producer - Commission Agent/Adhatia –Retailer-Consumer and [2] Channel – II: Producer-Retailer-Consumer. Channel – I was prevailing in unorganized marketing chain whereas channel – II was found in organized sector.

Marketing Cost and Margin of Major Vegetables

The marketing cost, marketing margin and marketing efficiency for channel – I and channel – II for all the vegetable crops under study was presented in Table 1. It is observed from the Table 1 that the per quintal total marketing cost for the brinjal, cabbage, okra, pea and tomato was ranging between ₹ 227 to ₹ 327 in channel – I (unorganized sector), whereas it was ₹ 100 for all the vegetable crops in channel – II (organized sector). The market margin for all the vegetable crops was found to be ₹ 225 per quintal in channel – I and ₹ 190 per quintal in case of channel II.

The contribution of producers' share in consumers' price was found to be higher in case of channel – II as compared to channel – I. In case of brinjal, cabbage, okra, pea and tomato, the producers' share in consumer's price was 55.05, 55.90, 70.15, 85.85 and 68.88% respectively under channel – I. In case of channel – II, the producers' share in consumers' price was 59.77, 62.07, 81.76, 92.45 and 73.39% for brinjal, cabbage, okra, pea and tomato respectively (Table 1).

Marketing Efficiency

The marketing efficiency is directly related to the cost involved to move the goods from producer to consumer and the quantum of service provided or desired by the consumer. If the cost paid by the consumer is less than the services provided to them then the channel will be called as efficient otherwise inefficient. More the number of intermediaries between the farmer and the consumer, the channel will be less efficient.

It may be observed from the Table 1 that the marketing efficiency for channel I for brinjal, cabbage, okra, pea and tomato was 2.22, 2.22, 3.34, 7.06 and 2.04% respectively and marketing efficiency for channel II for the same sequence of vegetables was 2.48, 2.63, 5.48, 13.24 and 3.75% respectively. The marketing efficiency was higher for channel II. Channel I has lower marketing efficiency since intermediaries are involved, resulting in higher marketing cost and marketing margin.

Table 1: Marketing cost, Marketing margin and Marketing efficiency in different channels for vegetables in Varanasi

Particulars	Unit	Brinjal	Cabbage	Okra	Pea	Tomato
Channel – I						
Retailer's sale price/consumers purchase price	₹/Qt	1030	1050	1849	3902	1131
Total marketing cost	₹/Qt	327	327	327	327	227
Net marketing margin	₹/Qt	225	225	225	225	225
Net price received by farmers	₹/Qt	567	587	1297	3350	779
Price spread		21.84	21.42	12.16	5.76	19.89
Marketing efficiency		2.22	2.22	3.34	7.06	2.04
Channel – II						
Retailer's sale price/consumers purchase price	₹/Qt	1064	1036	1590	3840	1090
Total marketing cost	₹/Qt	100	100	100	100	100
Net marketing margin	₹/Qt	190	190	190	190	190
Net price received by farmers	₹/Qt	636	643	1300	3550	800
Price spread		17.85	18.33	11.94	4.94	17.43
Marketing efficiency		2.48	2.63	5.48	13.24	3.75

Conclusion

It is clear from above discussion that as the number of middlemen in marketing channel increases, the marketing efficiency of the channel decreases due to increase in marketing cost and margin. The total marketing cost and marketing margin involved in unorganized channel was much higher than the organized channel for the vegetable crops under study. Since the marketing cost and marketing margin in former was higher, the marketing efficiency was low and for later, because of saving of marketing cost due to absence of market intermediaries and relatively low consumer's price, the marketing efficiency was higher. The marketing efficiency for channel – I for brinjal, cabbage, okra, pea and tomato was 2.22, 2.22, 3.34, 7.06 and 2.04% respectively and marketing efficiency for channel – II for the same sequence of vegetables was 2.48, 2.63, 5.48, 13.24 and 3.75% respectively. The study revealed that among different factors influencing the farmers to sell their vegetables to particular format in the supply chain was due to the spot payment, correct weight, proximity and remunerative price which were found to be major factors. However if it is seen, the farmers sell their vegetables to the unorganized marketing chain was mainly because of spot payment, correct weight, remunerative price and proximity of buyers. The major constraint of the organized retail market in Varanasi was the competition from the un-organized sector.

Structural changes in Indian economy have transformed the way food is being consumed and produced. Demand and supply of high value commodities (HVC) have transformed the procurement system of agro –processing companies and super market chains; from spot market with numerous intermediaries to centralized market transactions by entering into supply relationship with farmers either though oral or written contracts (Reardon *et al.*, 2003,2008).

Government of India permitted Foreign Direct Investment (FDI) in multi brand retailing, which remains a subject of controversy. It is advocated that the FDI in multi brand retailing would bring much needed investment in back end infrastructures to reduce post harvest losses, scale economies of organized retail may offer higher prices to the farmers and reduce transaction cost of marketing by disintermediation. Government of Uttar Pradesh has not amended its APMC Act in the light of Mandi Model Act 2003 which was circulated by Government of India. However, keeping in view the preferences of consumers many organized retailers have opened a section of fruits and vegetable in their retail outlets.

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