

Empirical study of onion marketing channels in Rajasthan

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ABSTRACT

India is the second largest producer of vegetables in the world next only to China. The Onion is the major vegetable crop of Rajasthan. The present investigation was carried out to study the price spread and efficiency in marketing of Onion. The study was conducted in Jodhpur and Nagaur which were selected on the basis of highest area and production of Onion. A sample of 50 Onion growing farmers from different land size categories was selected by probability proportion to number of farmers in each size group. Five intermediaries each, from the commission agents, wholesalers and retailers were selected randomly. 19585 quintal of onion was produced by the sample households, of which 19061 quintal was the marketable surplus. There was no difference in marketable and marketed surplus of onion as farmers were hard pressed by cash needs. The marketable surplus was higher on medium farms (9747 quintals) followed by small (6021 quintals) and large (3293 quintals). In channel – I producer's share was 46.67 per cent. Total marketing cost accounted for 17.47 per cent and marketing margins accounted for 35.86 per cent of consumer's rupee in Jodhpur mandi. In Nagaur, the producer's share was 47.50 per cent. Total marketing cost accounted for 18.33 per cent and marketing margins accounted for 34.17 per cent of consumer's rupee. In channel –II, producer's share was 42.22 per cent. Total marketing cost accounted for 17.64 per cent and marketing margins accounted for 40.14 per cent of price paid by the consumer in Jodhpur Mandi. In Nagaur, producer's share was 40.0 per cent. Total marketing cost accounted for 18.73 per cent and marketing margins accounted for 41.27 per cent of price paid by the consumer. Marketing efficiency was 0.88 and 0.73 in Jodhpur mandi and 0.90 and 0.67 in Nagaur mandi for channel –I and channel –II respectively. Hence, channel –I was more efficient for onion marketing.

Keywords: Marketing channel, onion, marketing efficiency, rajasthan

Consumer preferences have shifted away from cereals and moved towards high-value agricultural produce like vegetables. With increase in economic standards, urbanization, international market integration and trade liberalization, the demand for horticultural products is expected to increase even further. On the production side, if cereal pricing is left to market forces, land will be released from traditional cultivation

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to meet the growing demand for non-cereal crops such as fruits and vegetables in accordance with the diversification in consumption pattern (Mittal, 2006). Thus, in a holistic way, horticulture can be promoted as a means of agro-diversification for the second green revolution, providing the much needed impetus to the growth of agricultural sector, through increase in trade, income and employment. Presently, Indian agriculture is diversifying into the production of high value commodities, also providing an increasing role to small holding farmers. Indian rural economy had been facing the challenge of inability to manage the problems involved with transition of agriculture from a supply-driven value chain to a demand-led market-oriented supply chain (Viswanadham, 2006).

India is the world's second largest producer of vegetables next only to China. Important vegetable crops grown in the country are tomato, onion, brinjal, cabbage, cauliflower, okra and Onions. In Rajasthan, area under vegetables crop in 2010-11 was 140.3 thousand ha and production was 885 thousand MT with productivity of 6.3 MT/ha (Anonymous, 2010-11). In India onion is grown in 1064 thousand ha with production of 15118 thousand tonnes. Onion is grown in 49 thousand ha area with production of 494.2 thousand MT in Rajasthan (Anonymous, 2010-11).

Marketing of vegetable crops is quite complex and risky due to the perishable nature of the produce, seasonal production and bulkiness. The spectrum of prices from producer to consumer, which is an outcome of demand and supply of transactions between various intermediaries at different levels in the marketing system, is also unique for vegetables. Moreover, the marketing arrangements at different stages also play an important role in price levels at various stages viz. from farm gate to the ultimate user. The present study was undertaken to study price spread and efficiency in marketing of onion.

METHODOLOGY

A sample of 50 Onion growing farmers from different land size categories was selected by probability proportion to number of farmers in each size group. Two vegetable markets of Jodhpur and Nagaur were selected

purposively as these were nearby district markets. Five intermediaries each, from the commission agents, wholesalers and retailers were selected randomly, thus making a sample of 30 intermediaries from two markets (15 from each selected market).

ANALYTICAL TOOLS

Marketable and marketed surplus

Marketable surplus was worked out by deducting the total quantity required for family consumption and farm needs from the total quantity available.

$$MS = P - C$$

Where,

MS = Marketable surplus

P = Total production

C = Total requirement for family and farm

Marketed surplus refers to actual quantity sold by the producer in the market.

Marketing Cost: The marketing cost incurred by farmers was computed by using following formula:

$$MC_i = CG_i + CP_i + CT_i + CC_i + CM_i$$

Where,

MC_i = Average marketing cost of i^{th} vegetable crop (₹/ quintal)

CG_i = Average cost of grading i^{th} vegetable crop (₹/ quintal)

CP_i = Average cost of packing i^{th} vegetable crop (₹/ quintal)

CT_i = Average cost of transporting i^{th} vegetable crop (₹/quintal)

CC_i = Average amount of commission paid for i^{th} vegetable crop (₹quintal)

CM_i = Average miscellaneous cost of i^{th} vegetable crop (₹/quintal)

Absolute and per cent margin

$$\text{Absolute margin} = PR_i - (P_{pi} + C_{Mi})$$

$$\text{Per cent margin} = \frac{P_{Ri} - (P_{Pi} + C_{Mi})}{P_{Ri}} \times 100$$

Where,

P_{Ri} = Total value of receipts (sell price)

P_{Pi} = Total purchase value of goods (purchase price),
and

C_{Mi} = Cost incurred in marketing

Producer's share in consumer's rupee

The producer's share in the consumer's rupee was worked out as under:

$$P_s = \frac{P_F}{P_C} \times 100$$

Where,

P_s = Producer's share in consumer's rupee,

P_F = Price of the produce received by the farmer, and

P_C = Price of the produce paid by the consumer.

Marketing efficiency

The modified marketing efficiency (MME) suggested by Acharya was worked out:

$$\text{MME} = \frac{RP}{MC + MM} - 1$$

Where,

MME = Modified measure of marketing efficiency

MC = Marketing cost

MM = Marketing margin

RP = Price paid by consumer

Various constraints faced by farmers and intermediaries in production and marketing of selected vegetable crops were also studied.

RESULTS AND DISCUSSION

Marketable and Marketed Surplus

Table 1 shows marketable and marketed surplus of Onion. From the table, it may be observed that 19585 quintal of onion was produced by the sample households, of which 19061 quintal was the marketable surplus. There was no difference in marketable and marketed surplus of onion as farmers were hard pressed by cash needs.

Table 1: Marketable and marketed surplus of Onion on all sample farms

Size groups	Total prod. (Quintal)	Family and farm requirement (Quintal)	Marketable surplus (Quintal)	Marketed surplus (Quintal)
Small	6213	192	6021	6021
Medium	9923	176	9747	9747
Large	3449	156	3293	3293
Over all	19585	524	19061	19061

Marketing cost, Price spread and Marketing efficiency in Jodhpur district

Two marketing channels were prevailing in the study area as under;

Channel- I: Producer – Commission agent cum wholesaler – Retailer – Consumer

Channel- II: Producer – village trader - Commission agent cum wholesaler – Retailer – Consumer

Table 2 provides the marketing cost and margin for market functionaries involved in sale of onion in channel-I and channel-II. In the case of marketing channel-I marketing cost borne by producer was ₹ 67.0 per quintal. Net price received by farmer was 46.67 per cent of price paid by consumer. Average selling price of commission agent cum wholesaler was ₹ 600 per quintal and it was 66.67 per cent of consumer's rupee. The commission agent cum wholesaler incurred marketing

cost of ₹ 53.24 and sold it to retailer at an average price of ₹ 600, and got a margin of ₹ 59.76 per quintal. The retailer incurred an average cost of ₹ 37.0 per quintal and received, on an average, ₹ 263.0 as his margin per quintal,

which accounted for 29.22 per cent of consumer's rupee. The average price paid by the consumer was ₹ 900.0 for a quintal.

Table 2: Marketing cost and margins in Channel –I and Channel-II in Jodhpur

S. No.	Particulars	₹ per quintal	Per cent of consumer's purchase price	₹ per quintal	Per cent of consumer's purchase price
1.	Producer's net price	420	46.67	380.0	42.22
2.	Cost incurred by producer				
(i)	Labour charges (packing and loading)	12.0	1.33	12.0	1.33
(ii)	Gunny bags	30.0	3.33	30.0	3.33
(iii)	Weighing	-	-	0.36	0.04
(iv)	Transportation	25.0	2.78	25.0	2.78
	Total cost	67.0	7.44	67.36	7.49
	Net margin of village trader	-	-	52.64	5.85
3.	Producer's sale price/ commission agent cum wholesaler purchase price	487.0	54.11	500.0	55.56
4.	Cost incurred by commission agent cum wholesaler				
(i)	Mandi tax (1.6%)	7.79	0.87	8.00	0.89
(ii)	Commission (6.0%)	29.22	3.25	30.00	3.33
(iii)	Unloading	6.00	0.67	6.00	0.67
(iv)	Weighing	0.36	0.04	0.36	0.04
(v)	Quantity loss @ 1%	4.87	0.54	5.00	0.56
(vi)	Miscellaneous	5.00	0.56	5.00	0.56
	Total cost	53.24	5.92	54.36	6.04
5.	Net margin of commission agent cum wholesaler	59.76	6.64	65.64	7.29
6.	Sale price of commission agent cum wholesaler/purchase price of retailer	600.00	66.67	620.0	68.89
7.	Cost incurred by retailer				
(i)	Loading	6.00	0.67	6.0	0.67
(ii)	Transportation	15.0	1.67	15.0	1.67
(iii)	Unloading	6.0	0.67	6.0	0.67
(iv)	Store charges	5.0	0.56	5.0	0.56
(v)	Miscellaneous	5.0	0.56	5.0	0.56
	Total cost	37.0	4.11	37.0	4.11
8.	Retailer's net margin	263.0	29.22	243.0	27.00
9.	Sale price of retailer/purchase price of consumer	900.0	100.00	900.0	100.00

The marketing cost in channel-II showed that the total cost incurred by village trader was ₹ 67.36 per quintal of onion, which was 7.49 per cent of consumer's rupee. Cost incurred by commission agent cum wholesaler was ₹ 54.36 per quintal of onion, which was 6.04 per cent of consumer rupee. Margin earned by village trader and commission agent cum wholesaler was ₹ 52.64 and 65.64 per quintal, respectively. Cost incurred by retailer was ₹ 37.0 per quintal of onion, which was 4.11 per cent of consumer's rupee. The producer's share in consumer's rupee was 42.22 per cent. Margin earned by the retailer was ₹ 243.0, which was 27.00 per cent of consumer's rupee.

Price spread in marketing of onion

Total cost incurred and margin earned along with price spread for different intermediaries in Jodhpur area presented in Table 3. Channel I was more efficient as the producer's share in consumer's rupee was 46.67 per cent in channel- I and 42.22 per cent in channel-II. Total cost of marketing in channel- I was 17.47 per cent and 17.64 per cent in channel-II. Analysis of marketing margin showed that a margin of 40.14 per cent was earned by intermediaries in channel-II compared to 35.86 per cent in channel-I.

Table 3: Price spread in marketing of onion in different marketing channels in Jodhpur

S. No.	Particulars	Channel –I (Mandi sale)		Channel –II (Village Sale)	
		₹ /Qt.	Per cent share in consumer's rupee	₹ /Qt.	Per cent share in consumer's rupee
1.	Producer's net price	420	46.67	380	42.22
2.	Cost incurred by				
(a)	Producer	67	7.44		
(b)	Village trader			67.36	7.49
(c)	commission agent cum wholesaler	53.24	5.92	54.36	6.04
(d)	Retailer	37	4.11	37	4.11
	Total cost	157.24	17.47	158.72	17.64
3.	Margin earned by				
(a)	Village trader			52.64	5.85
(b)	commission agent cum wholesaler	59.76	6.64	65.64	7.29
(c)	Retailer	263	29.22	243	27.00
	Total margin	322.76	35.86	361.28	40.14
4.	Consumer's price	900	100.00	900	100.00

Marketing efficiency for channel –I and channel-II was worked out and is presented in Table 4. Marketing efficiency was 0.88 for channel-I and 0.73 for channel

-II. Table reveals that efficiency was higher in channel- I, hence, it was the most efficient market.

Table 4: Marketing efficiency in marketing of onion in Jodhpur

S. No.	Particulars	Channel I	Channel II
1	Price paid by consumer (₹/Qt.)	900.00	900.0
2	Marketing Cost (₹/Qt.)	157.24	158.72
3	Marketing margin (₹/Qt.)	322.76	361.20
4	Marketing efficiency	0.88	0.73

Marketing cost, Marketing margin, Price spread and Marketing efficiency in Nagaur district

The marketing costs and margins in channel-I and channel-II have been presented in table 5. In the case of channel-I the cost incurred by producer was ₹ 82 per quintal of onion which was 8.20 per cent of consumer's rupee. Cost incurred by commission agent cum wholesaler was ₹ 59.25 per quintal of onion which was 5.93 per cent of consumer's rupee. Cost incurred by retailer was ₹ 42.0 per quintal of onion which was 4.20 per cent of consumer rupee. The farmer's share in the consumer's rupee was 47.50 per cent in channel-I. The margin earned by the commission agent cum wholesaler and retailer was ₹ 83.75 and ₹ 258.0 which accounted for 8.37 and 25.80 per cent of consumer's rupee, respectively.

The marketing cost incurred by producer and different middlemen have been presented for channel-II in same table. It reveals that the total cost incurred by village trader was ₹ 82.36 per quintal of onion, which was 8.24 per cent of consumer rupee. Cost incurred by commission agent cum wholesaler was ₹ 62.96 per quintal of onion, which was 6.30 per cent of consumer rupee. Margin earned by village trader and commission agent cum wholesaler agent was ₹ 117.64 and 57.04 per quintal, respectively. Cost incurred by retailer was ₹ 42.0 per quintal of onion, which was 4.20 per cent of consumer's rupee. The producer's share in consumer rupee was 40.0 per cent. Margin earned by the retailer was ₹ 238.0, which was 23.80 per cent of consumer's rupee.

Table 5: Marketing cost and margins in Channel –I and Channel-II in Nagaur

S. No.	Particulars	₹per quintal	Per cent of consumer's purchase price	₹per quintal	Per cent of consumer's purchase price
1.	Producer's net price/purchase price of trader	475	47.50	400.0	40.00
2.	Cost incurred by producer				
(i)	Labour charges (packing and loading)	12.0	1.20	12.0	1.20
(ii)	Gunny bags	30.0	3.00	30.0	3.00
	Weighing			0.36	0.04
(iii)	Transportation	40.0	4.00	40.0	4.00
	Total cost	82.0	8.20	82.36	8.24
	Net margin of village trader			117.64	11.76
3.	Producer's sale price/trader or commission agent cum wholesaler purchase price	557.0	55.70	600.00	60.00
4.	Cost incurred by commission agent cum wholesaler				
(i)	Mandi tax (1.6%)	8.90	0.89	9.6	0.96
(ii)	Commission (6.0%)	33.42	3.34	36.0	3.60
(iii)	Unloading	6.00	0.60	6.0	0.60
(iv)	Weighing	0.36	0.04	0.36	0.04
(v)	Quantity loss @ 1%	5.57	0.57	6.0	0.60
(vi)	Miscellaneous	5.00	0.50	5.0	0.50
	Total cost	59.25	5.93	62.96	6.30
5.	Net margin of commission agent cum wholesaler	83.75	8.37	57.04	5.70

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6.	Sale price of commission agent cum wholesaler/ purchase price of retailer	700.00	70.00	720.0	72.00
7.	Cost incurred by retailer				
(i)	Loading	6.00	0.60	6.0	0.60
(ii)	Transportation	20.0	2.00	20.0	2.00
(iii)	Unloading	6.0	0.60	6.0	0.60
(iv)	Store charges	5.0	0.50	5.0	0.50
(v)	Miscellaneous	5.0	0.50	5.0	0.50
	Total cost	42.0	4.20	42.0	4.20
8.	Retailer net margin	258.0	25.80	238.0	23.80
9.	Sale price of retailer/purchase price of consumer	1000.0	100.00	1000.00	100.00

Total cost incurred and margin earned along with price spread for different intermediaries is presented in table 6. Channel I was more efficient as the producer's share in consumer's rupee was 47.50 per cent in channel- I and 40.0 per cent in channel-II. Total cost of marketing

in channel- I was 18.43 per cent and 18.73 per cent in channel-II. Analysis of marketing margin showed that higher margin of 41.27 per cent was earned by intermediaries in channel-II compared to 34.07 per cent in channel-I.

Table 6: Price spread in marketing of onion in different marketing channels in Nagaur

S. No.	Particulars	Channel –I (Mandi Sale)		Channel –II (Village sale)	
		₹/Qtl.	Per cent share in consumer's rupee	₹/Qtl.	Per cent share in consumer's rupee
1.	Producer's net price	475	47.50	400	40.00
2.	Cost incurred by				
(a)	Producer	82	8.20		
(b)	Village trader			82.36	8.24
(c)	Commission agent cum wholesaler	59.25	5.93	62.96	6.30
(d)	Retailer	42	4.20	42	4.20
	Total cost	183.25	18.33	187.32	18.73
3.	Margin earned by				
(a)	Village trader			117.64	11.76
(b)	Commission agent cum wholesaler	83.75	8.37	57.04	5.70
(c)	Retailer	258	25.80	238	23.80
	Total margin	341.75	34.17	412.68	41.27
4.	Consumer's price	1000	100.00	1000	100.00

Marketing efficiency for channel –I and channel-II was worked out and is presented in table 7. There marketing efficiency was 0.90 for channel-I and 0.67 for channel –II. Table reveals that efficiency was higher in channel- I, hence, it was the most efficient marketing channel.

Table 9: Marketing efficiency in marketing of onion in Nagaur

S. No.	Particulars	Channel I	Channel II
1	Price paid by consumer (₹/Qt.)	1000.0	1000.00
2	Marketing Cost (₹/Qt.)	183.25	187.32
3	Marketing margin (₹/Qt.)	341.75	412.68
4	Marketing efficiency	0.90	0.67

Policy Implications

Looking at quantum of the marketed surplus coupled with perishability of vegetables, every effort should be made by the policy makers to promote processing of vegetables for value addition and should also exploit export avenues from the state. Provision of cold storage facilities to the farmers at the village level and adequate refrigerated transport facilities for the smooth movement of vegetables from the places of production to the various consumption centers are some of the means suggested to improve the efficiency of marketing of vegetables in the state. This will help in reducing the wide gap prevailing between price paid by the consumer and price received by the vegetable growers. In order to encourage vegetable production, prices should be stabilized by fixation of minimum support prices for the vegetables.

There is an urgent need to set up an efficient market information network by state Government, so that farmers can get timely and adequate market information which may help them to get better prices of vegetables.

CONCLUSION

The marketable surplus was higher on medium farms (9747 quintals) followed by small (6021 quintals) and large (3293 quintals). There was no difference

in marketable and marketed surplus of onion. There were two marketing channels used viz., i), Producer – commission agent cum wholesaler - Retailer – Consumer. and ii) Producer – Village trader – commission agent cum wholesaler – Retailer – Consumer. In channel – I producer's share was 46.67 per cent. Total marketing cost accounted for 17.47 per cent and marketing margins accounted for 35.86 per cent of consumer's rupee in Jodhpur mandi. In Nagaur, the producer's share was 47.50 per cent. Total marketing cost accounted for 18.33 per cent and marketing margins accounted for 34.17 per cent of consumer's rupee. In channel –II, producer's share was 42.22 per cent. Total marketing cost accounted for 17.64 per cent and marketing margins accounted for 40.14 per cent of price paid by the consumer in Jodhpur Mandi. In Nagaur, producer's share was 40.0 per cent. Total marketing cost accounted for 18.73 per cent and marketing margins accounted for 41.27 per cent of price paid by the consumer. Marketing efficiency was 0.88 and 0.73 in Jodhpur mandi and 0.90 and 0.67 in Nagaur mandi for channel – I and channel – II respectively. Hence, channel – I was more efficient for onion marketing. Problems of spurious plant protection chemicals (84.19%) which were not very effective in controlling insects-pest/diseases, higher prices of pesticide and insecticides (72.06%), lack of information about high yielding variety (58.68%), higher labour charges (52.79%) and unavailability of labour when needed (52.24%) were the major constraints faced by farmers in production of onion. The major constraints faced in marketing were higher price fluctuations, lack of market information, lack of transportation facilities, loss during transportation and low price in post harvesting period, lack of labours for loading and unloading and higher margins of middleman.

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