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RESEARCH ARTICLE :

An analysis of the marketing effectiveness of the farmers

■ **SUSHIL KUMAR, RASHMI SINGH AND VIKRAM YOGI**

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SUMMARY : This research was aimed at assessing the effectiveness of marketing services. The study was conducted in Faridabad from Haryana, Hapur from Uttar Pradesh and North-West Delhi from Delhi selected purposively to explore the marketing extension system as they adequately represent the peri-urban agriculture. 90 farmers, 30 rice, wheat and tomato grower farmers from each district were selected to constitute the total sample size. Interview schedule were used in eliciting information from the farmers. Effectiveness were analysed using indicators specifically marketable surplus, producer share in consumer prices, middlemen share in consumer prices, marketing cost, marketing margin, price spread and marketing efficiency using Shepherd's equation. The study found that marketing cost is high when more intermediaries are involved in marketing of produce. Producer's share in consumer's price is high when produce is directly sold to consumer by producer. Marketing efficiency of cereals is high than vegetable crop because of heavy transport and post harvest losses occur in vegetables.

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KEY WORDS :
Marketing effectiveness,
Price spread,
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Author for correspondence :

SUSHIL KUMAR
Division of Agricultural Extension, Indian Agricultural Research Institute, NEW DELHI, INDIA
Email: sushilnb29@gmail.com

See end of the article for authors' affiliations

BACKGROUND AND OBJECTIVES

Agriculture in peri-urban areas may include a wide range of activities such as fisheries, poultry and goat rearing, horticulture, floriculture, dairy farming, cattle farming and arable farming. The pervading characteristic of peri-urban areas is the concentration of poor people, consisting of inner-city as well as rural migrants and/or marginal local farmers. Fringe areas in Asia are characterized by densely populated intensive smallholder agriculture (McGee, 1991 and Druijven and Singh, 1994). The road and railway networks are reasonably well developed, facilitating access to nearby urban markets. The additional availability of cheap migrant labour forces as well as highly qualified urban professionals makes peri-urban areas valuable locations for national and international industries. Natural resources are under increased pressure in the peri-urban areas because of the use of land for, inter alia, clay pits, quarries, sewage disposal tanks and garbage dumps, and as a result of air and water pollution from local industrial and urban sources (Druijven and Singh, 1994). The livelihoods of the poorest inhabitants of the rural-urban fringes of many cities in developing countries are adversely affected by problems of land and water degradation (Hardoy *et al.*, 1992 and Druijven and Singh,

1994) and natural resource degradation in general, including air pollution stresses. Urbanization and industrialization affect agriculture in the peri-urban areas, as population pressure from the city results in changes in land use - from agricultural to urban land use, be it for housing, commercial, industrial or other purposes, where the land use remains agricultural, cultivation practices change. Access to urban ready markets for agricultural produce and for seasonal labour open up the possibility of cultivating on a commercial basis high-value, highly perishable crops such as leafy vegetables, replacing storable crops such as cereals and pulses. Industries and their derivative trade and commerce offer new labour opportunities for cultivators and agricultural labourers, resulting in changing occupational structures. Marketing plays an important role in determining the levels of income to the producer for his produce. Marketing is the final stage where the farmer converts all his efforts and investment into cash. In modern times farmers have become highly cost conscious and their financial position will depend not only on returns they receive from a particular enterprise but, also the place where they are selling their produce for getting a remunerative price. Hence, it is important to analyse the marketing practices that are being followed and to identify the market intermediaries and channels of marketing. Though the marketing system is more concerned with the surplus which enters the market, the quantum of total production is essential for this surplus because larger the production, larger will be the surplus. Marketing of the surplus is crucial from the farmer's point of view. The net return to the farmers from the sale of its product through different marketing channels will determine the efficiency of the marketing system in the market. Unless marketing efficiency improves, cultivators will not be attracted to increase production. Higher share in consumer's rupee and attractive terms of trade will motivate the farmers for commercial production. This study aimed at assessing marketing effectiveness of rice, wheat and tomato grower farmer in the peri-urban agriculture of NCR region of India.

RESOURCES AND METHODS

The study was undertaken in Faridabad from Haryana, Hapur from Uttar Pradesh and North-west Delhi from Delhi selected purposively to explore the marketing effectiveness of the peri-urban farmers. A peri-urban area is not only a zone of direct impact experiencing the immediate impacts of land demands from urban growth and pollution, but is also a wider market-related zone of influence that is recognizable in terms of the handling of agricultural and natural resource products (Simon *et al*., 2004). 90 farmers, 30 rice, wheat and tomato grower farmers from each district were selected to constitute the total sample size. Interview schedule were used in eliciting information from the farmers. Effectiveness were analysed using indicators specifically marketable surplus, producer share in consumer prices, middlemen share in consumer prices, marketing cost, marketing margin, price spread and marketing efficiency using Shepherd's equation. The selected respondents were interviewed personally with the help of a well structured interview schedule. The data thus, collected were tabulated and statistically analysed to interpret the results. Descriptive statistics were used to characterize marketing effectiveness of different marketing channels of different crops.

OBSERVATIONS AND ANALYSIS

The results obtained from the present study as well as discussions have been summarized under following heads and Tables 1 to 10.

Production, farm retention and marketed surplus :

Marketed surplus may be more, less or equal to marketable surplus because of cash requirement, hoarding or perishable nature. The overall production of tomato was 108.13 quintals of which marketable surplus was 107.17 quintals (99.11%) after retaining 0.97 quintal (0.9%) for family consumption, religious payment and gift to friends and relatives. Marketed surplus was 88.14 quintal (81.51 %) and losses due to mishandling, breakage and spoilage accounted 17.60 per cent of total quantity. Of the total farm level retention, home consumption has the greater share (0.54%) followed religious payment and gift (0.34%).

The average per farmer production of rice was 27.72 quintals of which marketable surplus was 25.22 quintals (90.98%) after retaining 0.94 quintal (3.39%) for family consumption, 0.37 quintals (1.33%) religious payment and gift to friends and relatives and 1.19 quintals (4.29%) kept for seed purpose. Marketed surplus was 25.01 quintals (90.22 %) and losses due to mishandling, breakage and spoilage accounted 0.76 per cent of total

quantity. Of the total farm level retention, kept for seed purpose has the greater share (4.29%) followed by home consumption (3.39%) and gifts and kinds (1.33%).

The production of wheat was 28.03 quintals (Table 1) of which marketable surplus was 19.90 quintals (71.00%) after retaining 8.13 quintal (21.48%) for family consumption, 0.42 quintals (1.50) religious payment and gift to friends and relatives and 1.69 quintals (6.03%) kept for seed purpose. Marketed surplus was 19.56 quintal (69.78 %) and losses due to mishandling, breakage and spoilage accounted 1.21 per cent of total quantity. Of the total farm level retention, home consumption has the greater share (21.48%) followed by kept for seed purpose (6.03%) and gift (1.50%).

Marketing channels :

Marketing channels indicate how market intermediaries are set to accomplish the movement of a product from producer to the final consumer. Three marketing channels were identified in the study area for marketing of rice, wheat and tomato.

Channel I: Producer- wholesaler- Retailer-consumer
Channel II: Producer- retailer- consumer
Producer- Processor/miller- retailer- consumer (For rice only)
Channel III: Producer- consumer.

The channel I was the important channel in sale of rice, wheat and tomato for the farmers in the study area because major portion of the produce was marketed through this channel.

Marketing cost incurred by different market functionaries :

The cost incurred by different marketing intermediaries and incurred by farmer is given in Table 3 Cost incurred by farmer includes assembling charges, grading, storage, processing, loading and unloading, weighing and market fee. From the Table 3, per quintal marketing cost of tomato incurred by the producer was highest in channel III (Rs.190.4 /quintal) followed by channel II and I. In channel III, producers incurred all the expenses went through streets as vendors and sold the fresh tomato directly to the consumers. In rice, the cost incurred by farmer is highest in channel III due to processing charges, because in this channel farmer sell processed rice directly to consumer. In channel I and II, cost incurred by farmer varies slightly.

The cost incurred by wholesaler in tomato marketing is Rs. 263.5/qtl. The highest share in cost incurred by wholesaler of packaging (19.67%) followed by commission (18.98%). The cost incurred by wholesaler in rice marketing is more in channel I than channel II. Cost incurred by wholesaler in wheat marketing is Rs.169.8/qtl, which includes the highest share of commission followed by losses in transit.

The cost incurred by retailer in tomato marketing is more in channel II than channel I. In tomato marketing cost, the highest share is of losses of transit and storage followed by transportation charges. The cost incurred by retailer is high in losses in transit and storage due to perishable nature of produce. In rice marketing, cost in channel II (Rs.105.5/qtl) is more than channel I (Rs.102.2/qtl). In wheat marketing, highest share is of transportation charges (36.44%) followed by losses in transit and storage (22.66%).

Price spread and marketing margin :

In rice crop, price spread in channel I is Rs. 683.61 and in channel II is Rs. 671.00. It is high in comparison to wheat because of processing charges. In wheat, price

Table 1 : Marketable surplus **(n=90)**

Sr. No.		Total production (qtl/annum)	Home consumption (qtl/annum)	Kept for seed purpose (qtl/annum)	Gift and kinds (q/annum)	Marketable surplus (qtl/annum)	Wastages (qtl/annum)	Marketed surplus (qtl/annum)	Avg. price (Rs./qtl)	Total value sold (Rs./qtl)
1.	**Rice**									
	Production	27.72	0.94	1.19	0.37	25.22	0.21	25.01	2110.65	52787.36
	Share (%)	3.39	4.29	1.33	90.98	0.76	90.22	3.39		
2.	**Wheat**									
	Production	28.03	6.02	1.69	0.42	19.90	0.34	19.56	1445.35	28271.05
	Share (%)	21.48	6.03	1.50	71.00	1.21	69.78	21.48		
3.	**Tomato**									
	Production	108.13	0.58	0.00	0.39	107.17	19.03	88.14	1160.90	102321.7
	Share (%)	0.54	0.00	0.36	99.11	17.60	81.51	0.54		

Table 2 : Marketing incurred by retailer **(n=90)**

Type of cost	Rice (Rs./qtl)						Wheat (Rs./qtl)						Tomato (Rs./qtl)					
	Channel I Rs./qtl per cent		Channel II Rs./qtl per cent		Channel III Rs./qtl per cent		Channel I Rs./qtl per cent		Channel II Rs./qtl per cent		Channel III Rs./qtl per cent		Channel I Rs./qtl per cent		Channel II Rs./qtl per cent		Channel III Rs./qtl per cent	
Loading/ unloading charges	8.4	8.22	8.70	8.25	-	-	11.3	12.42	13.72	14.43	-	-	11.6	5.18	12.70	5.51	-	-
Transportation charges	41.5	40.61	42.70	40.47	-	-	35.8	40.44	34.65	36.44	-	-	32.4	14.48	34.80	15.09	-	-
Storing	12.7	12.43	13.50	12.80	-	-	12.6	13.85	13.45	14.14	-	-	11.8	5.27	12.90	5.59	-	-
Losses in transit and storage and sale	25.9	25.34	27.20	25.78	-	-	20.5	22.53	21.55	22.66	-	-	130	58.09	131.9	57.20	-	-
Disposal charges	4.6	4.50	4.80	4.55	-	-	3.2	3.52	4.08	4.29	-	-	12.7	5.67	11.90	5.16	-	-
Other charges	9.4	9.20	8.60	8.15	-	-	6.6	7.25	7.65	8.04	-	-	25.6	11.44	26.40	11.45	-	-
Total cost	102.2	100	105.50	100	-	-	91	100	95.10	100	-	-	223.8	100	230.6	100	-	-

Table 3 : Marketing incurred by farmer **(n=90)**

Type of cost	Rice (Rs./qtl)						Wheat (Rs/qtl)						Tomato (Rs./qtl)					
	Channel I Rs/qtl per cent		Channel II Rs./qtl per cent		Channel III Rs./qtl per cent		Channel I Rs./qtl per cent		Channel II Rs./qtl per cent		Channel III Rs./qtl per cent		Channel I Rs./qtl per cent		Channel II Rs./qtl per cent		Channel III Rs./qtl per cent	
Assembling charges upto home	15.10	13.63	15.6	13.75	15.8	5.53	15.33	15.07	20.33	16.85	21.03	17.33	13.17	10.03	14.17	10.09	22.17	11.64
Grading	5.10	4.60	4.6	4.05	4.5	1.57	5.23	5.14	6.23	5.16	5.13	4.23	16.47	12.54	18.26	13.00	26.26	13.79
Storing	13.83	12.48	13.63	12.01	18.03	6.31	11.83	11.63	13.83	11.46	13.93	11.48	12.00	9.13	14.00	9.96	22.00	11.55
Processing	-	-	-	-	169.25	59.2	-	-		-			-	-				
Transportation charges	42.65	38.51	43.85	38.65	41.45	14.51	42.2	41.49	46.2	38.29	45.80	37.74	62.00	47.22	67.00	47.69	92.90	48.79
Loading/ unloading charges	5.07	4.57	6.17	5.45	6.37	2.23	5.10	5.01	8.1	6.71	9.10	7.50	5.67	4.31	6.87	4.89	7.10	3.73
Commission	20.00	18.05	20.9	18.4	21.1	7.39	15.00	14.74	18.96	15.71	19.36	15.95	0.00	0	0.00	0.00	0.00	0.00
Weighing	4.00	3.61	4	3.52	4	1.40	4.00	3.93	4	3.31	4.00	3.30	18.50	14.08	17.70	12.60	17.47	9.18
Market fee	5.00	4.51	5	4.40	5	1.75	3.00	2.94	3	2.48	3.00	2.47	2.50	1.90	2.50	1.78	2.50	1.31
Total cost	110.75	100	113.4	100	285.5	100	101.70	100	120.65	100	121.3	100	131.3	100	140.5	100	190.4	100

spread in channel II is (Rs. 510.5/qtl.) very larger than channel II (Rs. 129.65/qtl.), because in channel II producer sell their produce to retailer, so, cost of wholesaler is eliminated. In channel III, the price spread is zero, because farmer directly sells their produce to consumer. In tomao mareting, similarly, price spread is high in channel I (Rs. 1080.33/qtl.) than channel II (Rs. 770.30/qtl.).

In rice crop, marketing margin of wholesaler is Rs. 120.8/qtl. And marketing margin of processor is Rs.151.15/qtl. Marketing margin of retailer in rice marketing is more in channel II (Rs.171.15 /qtl.) than channel I (Rs. 159.8/qtl.). In the crop of wheat, the marketing margin of wholesaler in channel I is Rs.126.7/ qtl. Marketing margin of retailer in wheat crop in channel II (Rs. 145.2/qtl.)is more than channel I (Rs. 122.5/qtl.).

In tomato marketing, marketing margin of retailer is more in channel II (Rs. 679.30/qtl.) than channel I (Rs. 445.2/qtl.).

Share of producer, wholesaler and retailer in consumer's price :

In rice crop, producer's share in consumer' price is highest in channel III (88.53%) followed by channel I (71.34%) and channel II (70.96%). Wholesaler's share in consumer's price is 4.35 per cent and processor's share in consumer's price is 7.35 per cent. Retailer's share in consumer's price is larger in channel II (6.25%) than channel I (5.76%). In wheat crop marketing, producer's consumer's price is highest in channel III (92.22%) followed by channel II (85.01%) and channel I (68.53%). Wholesaler's share in consumer's price is 6.51 per cent and retailer's share in consumer's price is larger in channel II (8.69%) than channel I (6.29%). In tomato marketing, producer's consumer's price is highest in channel III (86.87%) followed by channel II (55.10%) and channel I (45.01%).Wholesaler's share in consumer's price is 5.95 per cent and retailer's share in consumer's price is larger in channel II (33.46%) than channel I (19.75%).

Marketing efficiency index :

Marketing efficiency index was found to be highest in marketing channel III in the marketing of all three crops. This high ratio indicates the absence of market middlemen accept the labour cost of the producers. In rice marketing, applying shepherd's formula, marketing

Tabe 4 : Marketing incurred by wholesaler **(n=90)**

Type of cost	Rice (Rs./qtl)				Wheat (Rs./qtl)				Tomato (Rs./qtl)			
	Channel I Rs./qtl per cent		Channel II Rs./qtl per cent		Channel III Rs./qtl per cent		Channel I Rs./qtl per cent		Channel II Rs./qtl per cent		Channel III Rs./qtl per cent	
Packagirg charges	21.6	7.92	20.40	8.07	-	-	20.9	12.31	-	-	-	-	51.7	19.62	-	-	-	-
Loading/ unloading charges	5.2	1.91	6.40	2.53	-	-	6.1	3.59	-	-	-	-	21.8	8.27	-	-	-	-
Transportation charges	12.2	4.47	10.20	4.04	-	-	14.5	8.54	-	-	-	-	31.6	11.99	-	-	-	-
Storing	13.3	4.88	12.30	4.87	-	-	11.3	6.65	-	-	-	-	22	8.35	-	-	-	-
Gracing/cleaning charges/ hulling	108.9	39.93	94.55	37.42	-	-	21.9	12.90	-	-	-	-	41.5	15.75	-	-	-	-
Losses in transit and storge	27.1	9.94	30.10	11.91	-	-	30.9	18.20	-	-	-	-	21.6	8.20	-	-	-	-
Commission	50	18.34	45.00	17.81	-	-	40	23.56	-	-	-	-	50	18.98	-	-	-	-
Disposal charges	21.3	7.81	21.60	8.55	-	-	13	7.66	-	-	-	-	11.8	4.48	-	-	-	-
Other charges	13.1	4.80	12.10	4.79	-	-	11.2	6.60	-	-	-	-	11.5	4.36	-	-	-	-
Total cost	272.7	100	252.6	100	-	-	169.8	100	-	-	-	-	263.5	100	-	-	-	-

efficiency of channel I is 4.71; channel II is 5.79; channel III is 7.72, in wheat crop, marketing efficiency of channel I is 4.31; channel II is 6.74; channel III is 11.86 and in tomato crop, marketing efficiency of channel I is 2.62; channel II is 4.47; channel III is 6.61.Channel III is the most efficient marketing channel of tomato, wheat and rice while channel II was second most efficient channel. The study depicts that higher marketing margins pocketed by the intermediaries resulted in poor marketing efficiency of tomato.

The present investigation was aimed at analyze the marketed surplus, price spread, marketing margin of intermediaries, producer's and marketing intermediaries' share in consumer's price, marketing cost incurred by farmer and marketing intermediaries and marketing efficiency of different marketing channel. During the

Table 5: Price spread **(n=90)**

Sr. No.	Crop	Marketing channel	Consumer's average purchase price (Rs./wtl)	Producer's selling price (Rs./qtl)	Price spread
1.	Rice	Channel I	2772.5	2088.89	683.61
		Channel II	2736.50	2055.50	671.00
		Channel III	2490.55	2490.55	0
2.	Wheat	Channel I	1945.5	1435.00	510.5
		Channel II	1670.15	1540.50	129.65
		Channel III	1560.80	1560.80	0
3.	Tomato	Channel I	2240	1139.67	1080.33
		Channel II	2030	1260.30	770.30
		Channel III	1450.75	1450.75	0

Table 6 : Producer's share in consumer price **(n=90)**

Sr. No.	Crop	Marketing channel	Consumer's average purchase price (Rs./qtl)	Producer's net price (Rs./qtl)	Producer share in consumer price (%)
1.	Rice	Channel I	2772.5	1978.14	71.34
		Channel II (Processor)	2736.5	1942.05	70.96
		Channel III	2490.55	2205.05	88.53
2.	Wheat	Channel I	1945.5	1333.30	68.53
		Channel II	1670.15	1419.85	85.01
		Channel III	1560.80	1439.45	92.22
3.	Tomato	Channel I	2240	1008.37	45.01
		Channel II	2030	1120.10	55.10
		Channel III	1450.75	1260.35	86.87

Table 7 : Wholesaler's share in consumer price **(n=90)**

Sr. No.	Crop	Marketing channel	Consumer's average purchase price (Rs./qtl)	Wholesaler's market margin (Rs./qtl)	Wholesaler's share in consumer price (%)
1.	Rice	Channel I	2772.5	120.8	4.35
		Channel II (Processor)	2736.5	201.15	7.35
		Channel III	-	-	-
2.	Wheat	Channel I	1945.5	126.7	6.51
		Channel II			
		Channel III	-	-	-
3.	Tomato	Channel I	2240	133.5	5.95
		Channel II			
		Channel III	-	-	-

Table 8: Retailer's share in consumer price **(n=90)**

Sr. No.	Crop	Marketing channel	Consumer's average purchase price (Rs./qtl)	Retailer's market margin (Rs./qtl)	Retailer's share in consumer price (%)
1.	Rice	Channel I	2772.5	159.8	5.76
		Channel II	2736.5	171.15	6.25
		Channel III	-	-	-
2.	Wheat	Channel I	1945.5	122.5	6.29
		Channel II	1670.15	145.20	8.69
		Channel III	-	-	-
3.	Tomato	Channel I	2240	445.2	19.75
		Channel II	2030	679.30	33.46
		Channel III	-	-	-

Table 9 : Marketing efficiency index **(n=90)**

Sr. No.	Crop	Marketing channel	Marketing efficiency
1.	Rice	Channel I	4.71
		Channel II	5.49
		Channel III	7.72
2.	Wheat	Channel I	4.31
		Channel II	6.74
		Channel III	11.86
3.	Tomato	Channel I	2.62
		Channel II	4.47
		Channel III	6.61

Table 10 : An analysis of three market channels of major farm produce of peri urban agriculture **(n=90)**

Sr. No.	Particulars	Rice			Wheat			Tomato		
		Channel I (cost)	Channel II (cost)	Channel III (cost)	Channel I (cost)	Channel II (cost)	Channel III(cost)	Channel I (cost)	Channel II(cost)	Channel III(cost)
1.	**Producer**									
	Gross price received	2088.89	2055.50	2490.55	1435.00	1540.50	1560.80	1139.67	1260.60	1450.75
	Cost incurred	110.75	113.45	285.50	101.70	120.65	121.35	131.30	140.50	190.40
	Net price received	1978.14	1942.05	2205.05	1333.30	1419.85	1439.45	1008.37	1120.10	1260.35
2.	**Wholesaler**					**Processor**				
	Purchase price	2088.89	2055.50	-	1435.00	-	-	1139.67	-	-
	Cost incurred	272.7	252.65	-	169.8	-	-	263.5	-	-
	Net margin	120.8	151.15	-	126.7	-	-	133.5	-	-
	Selling price	2510.5	2459.85	-	1732	-	-	1551	-	-
3.	**Retailer**									
	Purchase price	2510.5	2459.85	-	1732	1419.85	-	1551	1120.10	-
	Cost incurred	102.2	105.50	-	91	95.10	-	223.8	230.60	-
	Net margin	159.8	171.15	-	122.5	145.20	-	445.2	679.30	-
	Selling price	2772.5	2736.50	-	1945.5	1670.15	-	2240	2030	-
4.	**Consumer**									
	Purchase price	2772.5	2736.50	2490.55	1945.5	1670.15	1560.80	2240	2030	1450.75
	Net price received by producer	1978.14	1942.05	2205.05	1333.30	1419.85	1439.45	1008.37	1120.10	1260.35
	Producer share in consumer rupees (%)	71.34	70.96	88.53	68.53	85.01	92.22	45.01	55.10	86.87

investigation it was observed that majority of the farmer sold their produce through marketing channel I. Share of marketed surplus in total production in wheat is low due to more requirements of home consumption and in the context of tomato, it is low because of post harvest losses. Marketing cost and price spread is highest in marketing channel I because of more number of intermediaries are involved in marketing of produce. The findings are consistent with the Chole *et al*. (2003). The data show that producer's share in consumer's price is highest when producer directly sell their produce to consumer. The same findings were found by Sashimatsung and Lanusunep (2013). Marketing cost is increased when number of marketing intermediaries increased in marketing channel which is showing in the result. Marketing efficiency of marketing channel III is highest in the marketing of all three crops because cost incurred in this channel is low comparatively other marketing channels. Marketing efficiency of tomato marketing is lesser than cereals because of high losses during transit and storage.

Conclusion :

For marketing of crops like rice, wheat and tomato, following three channels were patronized by the farmers for marketing of their produce: Channel-I (Producer-wholesaler-retailer-consumer), Channel-II (Producer-retailer-consumer) Channel-III (Producer -consumer). The channel I was most favoured channel in the study area as maximum quantity was passed through this channel. Share of marketed surplus of rice was highest in total production among three crops which were analyzed. The producer's share in consumer's rupee was maximum in channel III, followed by channel II and channel I in case of all three major crop rice, wheat and tomato. The total marketing cost was maximum in channel I and minimum in channel III. It was also revealed that the marketing efficiency was higher in Channel-III followed by Channel-II and Channel-III.

Authors' affiliations :

RASHMI SINGH AND VIKRAM YOGI, Division of Agricultural Extension, Indian Agricultural Research Institute, NEW DELHI, INDIA
Email: rashmisingh@iari.res.in; Agrico.vikramyogi@gmail.com

REFERENCES

Chole, V. M., Talthi, J. M. and Naik, V. G. (2003). Price spread in marketing of brinjal in Maharashtra state, *Agric. Mktg.*, **46** (2): 5-8.

Druijven, P.C.J. and Singh, R.B. (1994). Environmental degradation and its impact on livelihood strategies in the urban fringe of Delhi – some theoretical reflections. In: R.B. Singh, ed. Disasters, environment and development. p. 355-367. *Proceedings of the International Geographical Union Seminar,* 9-12 December. Oxford and IBH Publishing, NEW DELHI, INDIA.

Hardoy, J.E., Mitlin, D. and Sattethwaite, D. (1992). Environmental problems in Third World cities. Earthscan, LONDON, UNITED KINGDOM.

McGee, T. (1991). The emergence of Desakota regions in Asia: Expanding a hypothesis. In: Ginsburg, N., Koppel, B. and McGee, T. (eds) *The extended metropolis: settlement transition in Asia*. University of Hawaii Press, Honolulu.

Sashimatsung, Giribabu M. and Lanusunep (2013). A study on marketable surplus and price spread of tomato in Mokokchung district of Nagaland. *Internat. J. Human. & Soc. Sci. Invention,* **2** (8) : 37-42.

Simon, D., McGregor, D. and Nsiah-Gyabaah, K. (2004). The changing urban–rural interface of African cities: definitional issues and anapplication to Kumasi, Ghana. *Environ. & Urbanizat.*, **16** : 245-247