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Marketing Efficiency Analysis – A case of Indian Major Carps Marketing in Andhra Pradesh

Potnuru Santosh Kumar[1], J. S. Sonnad[2], Vilas S. Kulkarni[2], Ashalatha K.V.[3] and K. V. Basavakumar[4]

[1]Ph. D. Scholar (Agribusiness Management), College of Agriculture, University of Agricultural Sciences, Dharwad, (Karnataka), India.
[2]Professor (Agribusiness Management), College of Agriculture, University of Agricultural Sciences, Dharwad, (Karnataka), India.
[3]Professor (Agricultural Statistics), College of Agriculture, University of Agricultural Sciences, Dharwad, (Karnataka), India.
[4]Professor (Chief Scientific Officer – Fisheries), College of Agriculture, University of Agricultural Sciences, Dharwad, (Karnataka), India.

(Corresponding author: Potnuru Santosh Kumar)*
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ABSTRACT: The present study was undertaken to analyze the marketing efficiency analysis of Indian major carps marketing in Andhra Pradesh. This study was mainly based on primary data, which was collected through personal interview method from fish farmers, traders, wholesalers, retailers and vendors by using pretested and well-structured schedules. Marketing plays an important and crucial role in aquaculture in general and fisheries in particular, to reach the produce (fish) from farmers to ultimate consumers. Hence, an attempt had been made to identify the marketing channels, estimate the price spread and marketing efficiency of carps in Andhra Pradesh. It was found that two marketing channels were identified for each district, the overall price spread was highest in channel-II amounting to ₹ 48.00 per kg of fish, followed by ₹ 41.62 in channel-I. Whereas, producers share in consumer's rupee was highest in channel-I accounted 71.55 per cent followed by 68.00 per cent in channel-II. In channel-II, marketing costs and margins incurred by the marketing functionaries were more due to the fact that it was local marketing channel and it accounted for 15 per cent of the total carps. As per marketing efficiency concerned, Acharyas method channel-I was the best channel with respect to farmers, because the net price received by the farmers was highest in channel-I compared to channel-II. While as per the Shepherd method, channel-II was the best channel with respect to market functionaries, due to the fact that the consumer purchase price was higher on channel-II than on channel-I.

Keywords: Pattern of sale, marketing costs, margins, price spread and marketing efficiency

INTRODUCTION

Indian aquaculture in general and fisheries in particular is an important sector of food production providing nutritional security, besides livelihood support and gainful employment to more than 14 million people and also contributing to agricultural exports. In India, fishing is considered as an important economic activity and a flourishing sector with varied resources and potential sranging from deep seas to lakes in the mountains and more than 10 per cent of the global biodiversity in terms of fish and shellfish species. The country has shown continuous and sustained increments in fish production since independence.

Currently, fisheries and aquaculture contribute 1.07 percent to the national Gross Domestic Product (GDP), whereas agriculture and related sectors provide 5.30 percent, with an average annual value of output of ₹ 43,720.98 crore and a quantity of 11,49,510 tonnes for the year 2020-21 (Marine Products Export Development Authority (MPEDA)). The total fish production in India during 2019-20 was estimated to be 14.16 million metric tonnes, of which nearly 73.66per cent (10.43 million metric tonnes) is from the inland sector and the rest around 26.34 per cent (3.73 million metric tonnes) is from the marine sector. Andhra Pradesh state produces the maximum fish production in the country, followed by West Bengal and Gujarat (Anon, 2020a). In 2019-20, total fish production in Andhra Pradesh was 41.74 lakh metric tonnes with a share of 36.10 lakh tonnes of inland and 5.64 lakh tonnes of marine fisheries. The well-marked cultivating districts of inland fisheries in the state were East Godavari, West Godavari, Krishna and Nellore. These four districts accounted for roughly 85 percent of the state's total inland fish production (Anon, 2020b).

The inland fish marketing system in Andhra Pradesh is neither efficient nor modern and which was mainly carried out by private traders with a number of intermediaries between producers to ultimate consumer, thereby reducing the producers (fishermen's) share in

consumer's rupee. This study was designed to have a snap-shot of marketing costs, margins and price spread of carp had been analyzed.

MATERIALS AND METHODS

East-Godavari, West-Godavari, Krishna and Nellore districts were selected based on the highest production of inland fisheries across the districts of Andhra Pradesh. These four districts contributed around 85 per cent of total inland production in the state. These above districts were selected purposively for the study. The study was purely based on primary data, which was collected through the personal interview method from fish farmers, traders, wholesalers, retailers and vendors with the help of well-structured and pretested schedules exclusively designed for the study. For studying the marketing aspects, five intermediaries at each stage *i.e.* five traders, 10 wholesalers, 10 retailers and five vendors were selected from each district. Overall, 30 market functionaries were selected from each district for the study. The aspects included for the study were marketing channels, marketing costs, margin, price spread and marketing efficiency.

Marketing channel refers to the alternate routes of product flow from the producer to final destiny. The cost incurred by producers and sellers from the point of production to the point of sale is referred to as marketing cost. The cost per kilogram was worked out by adding different components, namely, transportation cost, loading and unloading charges, icing cost, commission charges, weighing charges and miscellaneous charges.

Price spread was worked out by computing the differences between the prices received by the producer and prices paid by the consumer.

$$\text{Price spread} = P_p - P_f$$

Where, P_p = Prices paid by the consumer

P_f = Prices received by the producer

Marketing efficiency: Kohls and Uhl defined marketing efficiency is the ratio of market output (satisfaction) to marketing input (cost of resources). An increase in the ratio represents improved efficiency and a decrease denotes reduced efficiency.

Acharyas approach: Acharyas approach is an ideal measure of marketing efficiency, particularly for comparing the efficiency of alternate markets/channels, should be such which takes into account of all the following:

$$MME = FP / (MC + MM)$$

Measure of Marketing Efficiency (MME)

Total marketing costs (MC)

Net marketing margins (MM)

Prices received by the farmer (FP)

Shepherd Approach: Shepherd has suggested that the ratio of total value of goods marketed to the marketing cost may be used as a measure of efficiency. This method eliminates the problem of measurement of value added. The formula does not explicitly take into account the net margins retained by the intermediaries and net price received by the farmers in assessing the marketing efficiency. Shepherds formula assumes that marketing cost itself includes some fair margins of intermediaries (Acharya and Agarwal, 1987)

A better expression for Shepherd's idea is: ME = V/I - 1

Where, ME = Index of Marketing Efficiency

V = Value of fish sold (consumer's price)

I = Total marketing cost

RESULTS AND DISCUSSION

A. Marketing channels

Two marketing channels were identified for each district, through which inland fish/shrimp passed from the producers (farmers) to the final consumer.

Channel-I: Farmer – Commission Agent – Trader – Wholesaler – Retailer – Consumer.

Channel-II: Farmer – Wholesaler – Retailer – Vendor – Consumer.

In all the four districts, the usual practice was to sell the standing crop to the trader with the help of commission agent. Maximum number of farmers sold their produce to traders through channel-I rather than through channel-II. The type of sale at farm pond was termed as "sale at farm pond".

Pattern of sale of carps through different channels was depicted in Table 1. The table revealed that, under carps in East-Godavari (73.33 %), Nellore (80 %), West-Godavari and Krishna (93.33 % each) districts the respondents preferred channel-I to sell their produce, and the rest of them preferred channel-II. In carps, overall 85 per cent of the respondents preferred channel-I and least proportion preferred channel-II *i.e.* 15 per cent, respectively.

B. Marketing costs, margins and price spread in marketing of Indian major carp

Marketing costs, margins and price spread in marketing of carps in the study area are depicted in Table 2, the results revealed from the table that producers sold their produce to traders at the pond gate itself. In all the four districts, channel-I fetched a better price for the farmer than channel-II. Producers (farmers) did not incurred any marketing costs in both channels.

Table 1: Sales pattern of Indian major carps.

Sr. No.	Channel	East-Godavari		West-Godavari		Krishna		Nellore		Overall	
		No. of farmers	%	No. of farmers	%	No. of farmers	%	No. of farmers	%	No. of farmers	%
Indian major carps											
1.	Channel – I	22	73.33	28	93.33	24	80	28	93.33	102	85.00
2.	Channel – II	8	26.67	2	6.67	6	20	2	6.67	18	15.00

Table 2: Marketing cost, margin and price spread in marketing of Indian major carps in different channels.

Sr. No.	Particulars	East-Godavari		West-Godavari		Krishna		Nellore		Overall	
		C-I	C-II	C-I	C-II	C-I	C-II	C-I	C-II	C-I	C-II
1.	Producer price	104.80 (72.28)	101.60 (67.73)	104.53 (71.60)	102.40 (68.27)	104.10 (70.82)	102.80 (68.53)	105.11 (71.50)	101.20 (67.47)	104.64 (71.55)	102.00 (68.00)
2.	Traders purchase price	104.80 (72.28)	-	104.53 (71.60)	-	104.10 (70.82)	-	105.11 (71.50)	-	104.64 (71.55)	-
3.	Cost incurred by trader	13.78 (9.50)	-	15.74 (10.78)	-	16.45 (11.19)	-	15.14 (10.30)	-	15.28 (10.45)	-
4.	Profit margin of trader	2.42 (1.67)	-	2.03 (1.39)	-	2.65 (1.80)	-	2.35 (1.60)	-	2.36 (1.62)	-
5.	Selling price of trader	121.00 (83.45)	-	122.30 (83.77)	-	123.20 (83.81)	-	122.60 (83.40)	-	122.28 (83.61)	-
6.	Purchase price of wholesaler	121.00 (83.45)	101.60 (67.73)	122.30 (83.77)	102.40 (68.27)	123.20 (83.81)	102.80 (68.53)	122.60 (83.40)	101.20 (67.47)	122.28 (83.61)	102.00 (68.00)
7.	Cost incurred by wholesaler	6.60 (4.55)	13.07 (8.71)	8.43 (5.77)	12.33 (8.22)	8.01 (5.45)	12.08 (8.05)	7.82 (5.32)	12.01 (8.01)	7.72 (5.28)	12.37 (8.25)
8.	Profit margin of wholesaler	5.80 (4.00)	10.33 (6.89)	4.47 (3.06)	10.67 (7.11)	4.79 (3.26)	10.32 (6.88)	5.08 (3.46)	11.39 (7.59)	5.04 (3.44)	10.68 (7.12)
9.	Selling price of wholesaler	133.40 (92.00)	125.00 (83.33)	135.20 (92.60)	125.40 (83.60)	136.00 (92.52)	125.20 (83.47)	135.50 (92.18)	124.60 (83.07)	135.03 (92.32)	125.05 (83.37)
10.	Purchase price of retailer	133.40 (92.00)	125.00 (83.33)	135.20 (92.60)	125.40 (83.60)	136.00 (92.52)	125.20 (83.47)	135.50 (92.18)	124.60 (83.07)	135.03 (92.32)	125.05 (83.37)
11.	Cost incurred by retailer	7.02 (4.84)	8.14 (5.43)	7.51 (5.14)	7.80 (5.20)	7.20 (4.90)	7.95 (5.30)	7.19 (4.89)	6.78 (4.52)	7.23 (4.94)	7.67 (5.11)
12.	Profit margin of retailer	4.58 (3.16)	4.86 (3.24)	3.89 (2.66)	4.30 (2.87)	3.80 (2.59)	4.85 (3.23)	4.31 (2.93)	5.82 (3.88)	4.15 (2.83)	4.96 (3.31)
13.	Selling price of retailer	145.00 (100.00)	138.00 (92.00)	146.00 (100.00)	137.50 (91.67)	147.00 (100.00)	138.00 (92.00)	147.00 (100.00)	137.20 (91.47)	146.25 (100.00)	137.68 (91.78)
14.	Purchase price of vendor	-	138.00 (92.00)	-	137.50 (91.67)	-	138.00 (92.00)	-	137.20 (91.47)	-	137.68 (91.78)
15.	Cost incurred by vendor	-	6.16 (4.11)	-	6.95 (4.63)	-	6.65 (4.43)	-	7.10 (4.73)	-	6.72 (4.48)
16.	Profit margin of vendor	-	5.84 (3.89)	-	5.55 (3.70)	-	5.35 (3.57)	-	5.70 (3.80)	-	5.61 (3.74)
17.	Selling price of vendor	-	150.00 (100.00)	-	150.00 (100.00)	-	150.00 (100.00)	-	150.00 (100.00)	-	150.00 (100.00)
18.	Purchase price of consumer	145.00	150.00	146.00	150.00	147.00	150.00	147.00	150.00	146.25	150.00
19.	Producer's share in consumer's rupee	72.28	67.73	71.59	68.27	70.82	68.53	71.50	67.47	71.55	68.00
20.	Price spread	40.20	48.40	41.47	47.60	42.90	47.20	41.89	48.80	41.62	48.00
21.	**Marketing Efficiency**										
a.	Acharyas approach	2.61	2.10	2.48	2.15	2.43	2.18	2.51	2.07	2.51	2.13
b.	Shepherd approach	5.29	5.48	4.61	5.54	4.64	5.62	4.88	5.79	4.86	5.61

- Figures in the parenthesis indicate percentage to the respective total.

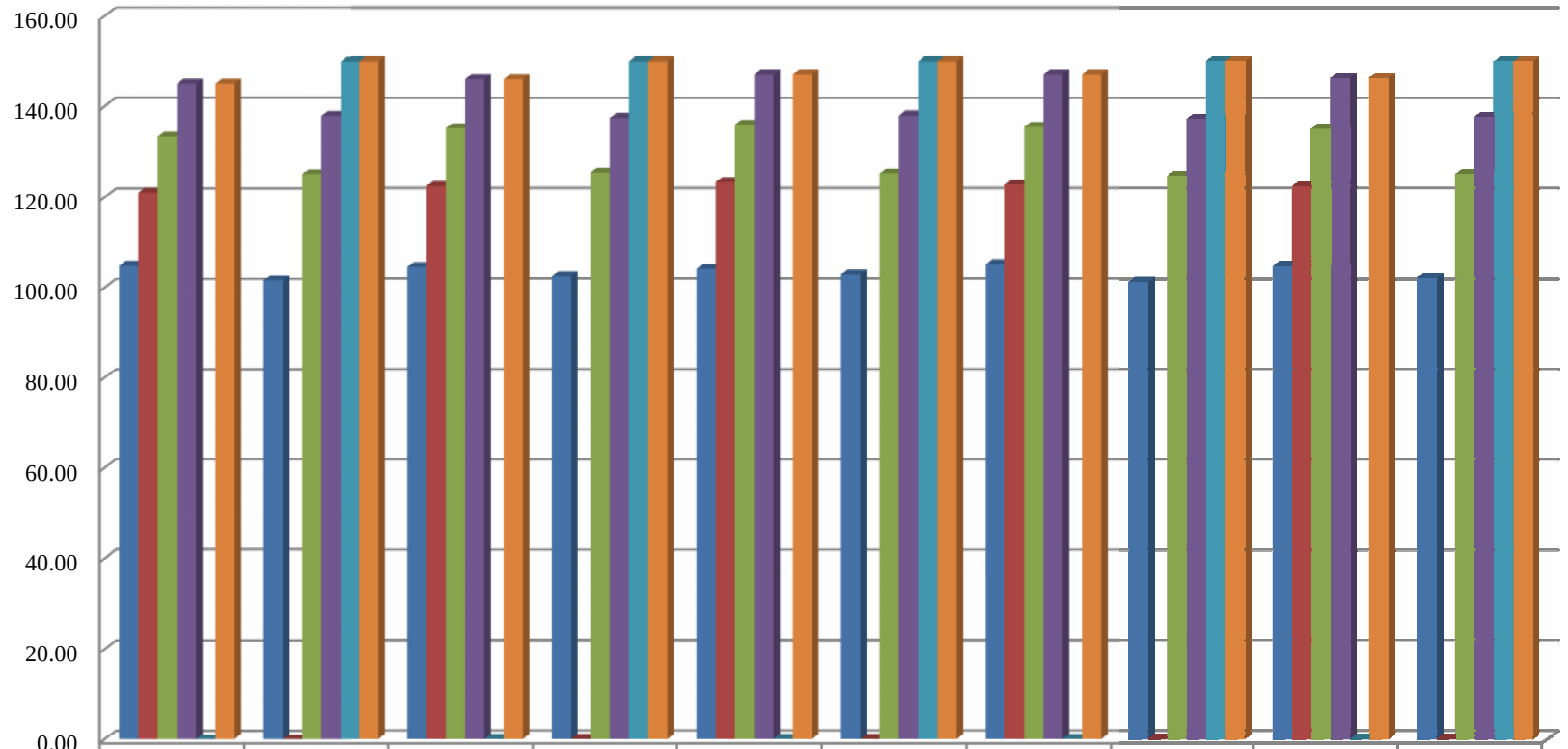
In the East-Godavari, traders purchased the produce at ₹104.80 per kilogram and cost incurred by the trader was ₹ 13.78 and keeping a profit margin of ₹2.42 per kilogram and he sold it to the wholesaler at ₹ 121.00 per kilogram and marketing costs incurred was ₹ 6.60 and with a profit margin of ₹ 5.80/kg. Retailers purchased the produce from wholesalers at a price of ₹ 133.40 per kilogram and cost incurred was ₹ 7.02, profit margin of ₹ 4.58 per kilogram and sold to the ultimate consumer at ₹ 145.00 per kilogram. Further, from the Table 1 it could be seen that in channel-I the producers share in consumers' rupee was 72.28 per cent and price spread was 40.20 rupees with a marketing efficiency of 2.61 (Acharyas approach) and 5.29 (Shepherd approach). Whereas in channel-II, producers sold their produce to wholesalers at a price of ₹ 101.60 per kilogram and cost incurred was ₹ 13.07 and keeping a profit margin of ₹ 10.33/kg and sold to the retailer at ₹ 125.00/kg, marketing cost incurred was ₹ 8.14 and profit margin of ₹ 4.86 per kilogram. Vendors purchased the produce from retailers at a price of ₹ 138.00 per kilogram and the costs and margins incurred were ₹ 6.16 and ₹ 5.84/kg and he sold to the ultimate consumer at ₹ 150.00 per kilogram. Producers held 67.73 percent of the consumer rupee in the channel, and the price spread was 48.40 rupees, with a marketing efficiency of 2.10 (Acharyas approach) and 5.48 (Shepherd approach).

In channel-I of the West-Godavari, traders purchased the produce at ₹ 104.53 per kilogram, while marketing costs and margins incurred were ₹ 15.74 and ₹ 2.03 per kilogram and selling price was ₹ 122.30/kg. Wholesalers purchased price in channel-I was ₹ 122.30/kg and cost incurred was ₹ 8.43/kg and they kept a profit margin of ₹ 4.47/kg and sold it to the retailer at a price of ` 135.20/kg and costs and margins incurred by the retailer were ₹ 7.51 and ₹ 3.89 respectively. Whereas the selling price of retailer to the ultimate consumer was ₹ 146.00 per kilogram, producer share in consumer rupee in the channel was 71.59 per cent and with a price spread of ₹ 41.47 per kilogram, with marketing efficiency of 2.52 (Acharyas approach) and 4.61 (Shepherd approach). Whereas in the case of channel-II, wholesalers purchase price, marketing costs and margins were ₹ 102.40, ₹ 12.33 and ₹ 10.67/kg respectively, and the selling price (retailers purchase price) was ₹ 125.40 per kilogram. Costs and margins incurred by retailer in the channel were ₹ 7.80 and ₹ 4.30/kg respectively. Vendors purchased the produce from retailers at a price of ₹ 137.50 per kilogram and costs and margins incurred by them were ₹ 6.95 and ₹ 5.55/kg respectively and he sold it to the ultimate consumer at a price of ₹ 150.00 per kilogram. Producers share in consumer rupee was 68.27 per cent and price spread was 47.60 rupees, with a marketing efficiency of 2.15 (Acharyas approach) and 5.54 (Shepherd approach).

Whereas in the case of Krishna, traders purchased price in channel-I was ₹ 104.10, marketing costs and profit margins accounted for 11.19 (₹16.45) and 1.80 per cent (₹ 2.65) respectively, and he sold it to the wholesaler at a price of ₹ 123.20/kg. The marketing costs and margin of profit incurred by wholesalers in channel-I were ₹ 8.01 and ₹ 4.79, with a selling price of ₹ 136.00 to the retailer. The retailers purchased the produce from the wholesalers and sold it to the ultimate consumer at a price of ₹ 147.00/kg. In this process, retailer incurred a cost of ₹ 7.20 and the margin of profit was ₹ 3.80/kg, producers share in consumer rupee was 70.82 per cent with a price spread of 42.90 rupees. Marketing efficiency of the channel was 2.43 (Acharyas approach) and 4.64 (Shepherd approach). In the case of channel-II, the wholesalers purchased price, marketing costs and margins were ₹102.80, ₹ 12.08 and ₹ 10.32/kg respectively. Retailers purchased the produce from wholesalers at a price of ₹ 125.20 per kilogram and cost incurred was ₹ 7.95/kg, by received a profit margin of ₹ 4.85 per kilogram and he sold it to the vendor at a price of ₹ 138.00, costs and margins incurred by vendor were ₹ 6.65 and ₹ 5.35/kg respectively. The ultimate consumer price in the channel was ₹ 150.00, with producer share in consumer rupee of 68.53 per cent and price spread of 47.20 rupees per kilogram. Marketing efficiency of the channel was 2.18 (Acharyas approach) and 5.62 (Shepherd approach).

In Nellore district, producer (farmer) selling prices in channel-I and II are ₹ 105.11 and ₹ 101.20 per kilogram respectively. In channel-I, traders incurred marketing costs of ₹ 15.14 and secured a profit margin of ₹ 2.35/kg and sold it to wholesalers at a price of ₹ 122.60/kg. The costs incurred by the wholesaler towards marketing were ₹ 7.82/kg in channel-I and ₹ 12.01/kg in channel-II, the respective margins of profits received were ₹ 5.08 and ₹ 11.39 and selling prices were ₹ 135.50 and ₹ 124.60/kg respectively in channel-I and II. Retailers received a profit margin of ₹ 4.31 (channel-I) and ₹ 5.82 (channel-II) by incurring a marketing costs of ₹ 7.19 and ₹ 6.78/kg respectively. Vendors purchased price, marketing costs incurred and margin realized in channel-II were ₹ 137.20, ₹ 7.10 and ₹ 5.70 per kilogram respectively, with a selling price to the final consumer was ₹ 150.00/kg. Producers share in consumer rupee was 71.50 per cent (channel-I) and 67.47 per cent (channel-II), similarly price spread was ₹ 41.89 and ₹ 48.80 rupees respectively. Marketing efficiency by the Acharyas approach in channel-I and II respectively are 2.51 and 2.07, whereas by the Shepherd approach were 4.88 and 5.79 respectively.

Overall in carps under channel-I, traders purchased the produce at ₹ 104.64 per kilogram and cost incurred by the trader was ₹ 15.28 and keeping a profit margin of ₹ 2.36 per kilogram and he sold to the wholesaler at ₹ 122.28 per kilogram and marketing costs incurred was ₹ 7.72 and with a profit margin of ₹ 5.04/kg.



	C-I	C-II	C-I	C-II	C-I	C-II	C-I	C-II	C-I	C-II
	East-Godavari		West-Godavari		Krishna		Nellore		Overall	
Producer price	104.80	101.60	104.53	102.40	104.10	102.80	105.11	101.20	104.64	102.00
Traders selling price	121.00	0.00	122.30	0.00	123.20	0.00	122.60	0.00	122.28	0.00
Wholesalers selling price	133.40	125.00	135.20	125.40	136.00	125.20	135.50	124.60	135.03	125.05
Retailers selling price	145.00	138.00	146.00	137.50	147.00	138.00	147.00	137.20	146.25	137.68
Vendor selling price	0.00	150.00	0.00	150.00	0.00	150.00	0.00	150.00	0.00	150.00
Consumers price	145.00	150.00	146.00	150.00	147.00	150.00	147.00	150.00	146.25	150.00

Fig. 1. Marketing of Indian major carps in different channels in Andhra Pradesh.

Retailers purchased the produce from wholesalers at a price of ₹ 135.03 per kilogram and cost incurred was ₹ 7.23, profit margin was ₹ 4.15 per kilogram and it was sold to the ultimate consumer at ₹ 146.25 per kilogram.

Further, from the table it could be seen that in channel-I the producers share in consumers' rupee was 71.55 per cent and price spread was 41.62 rupees with a marketing efficiency of 2.51 (Acharyas approach) and 4.86 (Shepherd approach). Whereas in case of channel-II, producers sold their produce to wholesalers at a price of ₹ 102.00 per kilogram and costs incurred were ₹ 12.37 and keeping a profit margin of ₹ 10.68/kg and selling to the retailer at ₹125.05/kg, marketing cost incurred was ₹ 7.67 and profit margin was ₹ 4.96 per kilogram. Vendors purchased the produce from retailers at a price of ₹ 137.68 per kilogram and costs and margins incurred were ₹ 6.72 and ₹ 5.61/kg and it was sold to the ultimate consumer at ₹150 per kilogram. Producers share in consumer rupee in the channel was 68 per cent and price spread was 48.00 rupees with a marketing efficiency of 2.13 (Acharyas approach) and 5.61 (Shepherd approach).

CONCLUSION

Farmers in the study area typically sold their first harvest to traders and their second harvest to wholesalers, so farmers in channel-I command a higher price than farmers in channel-II. The producer's share of consumer rupee was found to be highest in channel-I of all the districts, which is a direct marketing channel and it accounted for around 85 per cent in carps. Whereas in price spread, the scenario was opposite *i.e.* channel-II was highest compared with channel-I. In channel-II, marketing costs and margins incurred by the marketing functionaries were more due to the fact that it was local marketing channel and it accounted for rest 15 per cent in carps. Marketing efficiency concerned, as per Acharyas method channel-I was the best channel with respect to farmers, because the net price received by the farmers was highest in channel-I compared to channel-II. While as per Shepherd method, channel-II was the best channel with respect to market functionaries, due to consumer purchase price was higher on channel-II than channel-I.

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