

Price Spread and Marketing Efficiency under Different Marketing Channels: A Case Study of Rice Marketing in Bihar, India

P. K. SINGH*, O. P. SINGH, REKHA RANI AND SUDHIR TIWARI

Deptt. of Agric. Eco., Institute of Agricultural Sciences, Banaras Hindu University, Varanasi-U.P.

**Corresponding author: pksbhu222@gmail.com*

Abstract

Agriculture, being the backbone of Indian economy for decades, for its growth and development requires parallel welfare of all the stakeholders of economy. The remunerative price to farmer or producer is the foremost thing to be considered for the development of agricultural economy. Producer's share in consumer rupee depends on several factors viz., marketing cost, net marketing margin of middle men and marketing channels etc. Efficient marketing system and less price spread leads to the increase in the producer's share. The present study is conducted in Rohtas district which is known as the rice bowl of the Bihar. Bihar holds 6th position in rice production in India. To access the marketing efficiency Acharya's measure of modified marketing efficiency (MME) was used. In the study area two marketing channels viz., channel-I and channel-II were identified in rice marketing. The results revealed that the marketing cost incurred by producer in both the channel was almost same i.e. Rs 50 per quintal for paddy. But as the produce reach to the ultimate consumer it is Channel-II which ensured higher producer's share in consumer rupee than Channel-I. Results further revealed that the channel-I was less efficient than channel-II. The study found that it is the net margin of intermediaries which contributes more to the less marketing efficiency in marketing channel I. Based on the results of study it was suggested that the suitable policies should be made in such a way that shorter routes or less market intermediaries will be involved in the marketing of agricultural produce.

Key Words: Producer's share, Marketing Channels, Price spread, Marketing Efficiency, MME.

Introduction

The agriculture sector continues to be the backbone of Indian economy contributing along with its allied sectors, 15.35% of the Gross Value Added (GVA) during 2015-16 at 2011-12 prices (CSO). It accounts for 9.2% of the country's exports and is the fourth-largest exported principal commodity (Economics Survey 2015-16). India holds the second position in the world in agricultural production. Among cereals, India is second largest producers of rice after China accounting for 22% of global rice production for the year 2015-16. Rice Production in India has increased from 53.6 million tons in FY 1980 to 104.80 million tons in FY 2015-16, more than 90% increase over the decades. Apart from the leading rice producer, India is also the largest exporter of rice in the world.

Rice covers one third of total cultivated area of India and provides food to more than half of the Indian population. This makes it India's largest produced food crop both by area under cultivation as well as production. Rice is grown widely across the nation in

more than 20 states. Out of these states, top 10 rice producing states account for more than 80 percent of total rice production in India. West Bengal is the leader among all rice producing states with more than 13% contribution in India's Rice Production. Bihar holds 6th position in rice production after West Bengal, Uttar Pradesh, Andhra Pradesh, Tamil Nadu, and Punjab (Farmer's Portal, Ministry of Agriculture).

Bihar lies in the river plains of the basin of the river Ganga. It is endowed with fertile alluvial soil with abundant water resources, especially ground water resources. This makes the agriculture of Bihar rich and diverse. Rice, wheat, and maize are the major cereal crops. Cropping pattern in Bihar is dominated by cereals. Rice-wheat cropping system occupies more than 70% of the gross cropped area. Rice is cultivated in 37 districts of Bihar. Out of this, 25 districts are falling under low productivity group which accounts for 63 percent of 36.57 lakh hectares of total area under rice in the state. Only one district i.e. Rohtas is

falling under high productivity group (Directorate of Rice Development, Patna).

An increase in the agricultural production is not of use until it reaches to the consumers. Thus increasing trend of agricultural production has drawn the attention of marketing. Marketing plays an important role to stimulate production and consumption and accelerates the pace of economic development of a country. In earlier days the marketing of agricultural products presented no difficulty as the farmer sold his produce to the consumer on a cash or barter basis. Today's agricultural marketing has to undergo a series of exchanges or transfers from one person to another before it reaches the consumer. In such condition the farmer receives what the consumer pays after the various costs of marketing have been deducted. This residual, expressed as a percentage of the price paid by the consumer is the farmer's share. An increase in this means increase in the efficiency of the marketing system in favor of the farmer which in turn is a prerequisite for sustaining the tempo of increased agricultural production. Generally, price spread of an agricultural commodity is the measure of economic efficiency of the marketing system. The smaller price spread, the greater the efficiency of the marketing system and vice versa (Acharya and Agarwal).

Keeping this background in view present study was conducted with an objective to identify the marketing channels and estimate marketing efficiency and price spread in rice marketing in Bihar state of India.

Methodology

Sampling technique and data collection:

The study used the primary data which was collected from the respondents on the basis of pre tested survey schedule for the agricultural year 213-14. Multistage stratified sampling technique with development block of first stage unit, village as second stage unit and farm households the ultimate unit was adopted for the study. Among the 38 districts of Bihar, Rohtas district was selected purposively as it is known as bowl of rice. Paddy occupies maximum area and the district has 90 modern rice mills. Among all 19 block of Rohtas district, Nokha block was selected purposively as it ranks first under area and production of rice and also have about 25% modern rice mills. The 10 villages were then selected randomly and from each village 10 farmers were selected randomly with the help of random numbers. Data pertaining to marketing channels, marketing costs, marketing margin and price spread in marketing of rice were collected from 50 market intermediaries.

Analytical Tools:

Price Spread: It is calculated by determining the difference between the price paid by the consumer and price received by the farmer. It involves various costs incurred by various intermediaries and their margins.

Marketing Efficiency: The limitations of conventional and Shepherd approach to calculate the marketing efficiency are taken care by the modified method suggested by Acharya. The study used Acharya's measure of modified marketing efficiency of the following form:

$$MME = [RP \div (MC + MM)] - 1$$

Where:

MME = Modified measure of marketing efficiency

RP = Retailer's sale price (Rs/qtl) and;

RP = FP + MC + MM.

MC = Total Marketing Cost (Rs/qtl)

MM = Total net margins of intermediaries (Rs/qtl)

FP = Net price received by farmers (Rs/qtl)

Results and Discussion

Improved marketing efficiency is the pre-requisite for the farmer's welfare. It results into increase in the producer's share in consumer rupee. Producer's share varies channel to channel in the marketing of agricultural produce.

Marketing channels

Marketing channels are routes through which agricultural products move from producers to consumers. The length of the channel varies from commodity to commodity depending on the quantity to be moved and the form of consumer's demand.

There were two common marketing channels observed in marketing of rice in the study area. These were

1. Channel-I: Producer → Commission agent → Wholesaler → Miller → Retailer → Consumer
2. Channel-II: Producer → Commission agent → Miller → Wholesaler → Retailer → Consumer

Table 1 reveals the details about the net price received by the producer in each marketing channel. Table shows that marketing cost incurred by producer in channel-I and channel-II was almost same i.e. Rs.50 per quintal for paddy. In channel – I the producer's share in consumer rupee was 51.68%. Cost incurred by commission agent, wholesaler, miller and retailer was 0.42, 3.95, 12.44 and 2.33% of consumer rupee respectively in channel-I. The farmer's share in the consumer rupee was 54.54% in channel-II. In channel-II, cost incurred by commission agent was 0.43%, by miller 15.18%, by wholesaler 2.59% and by retailer 2.36% of consumer rupee. This shows that Channel-II ensured higher producer's share in consumer rupee than Channel-I.

Table 1: Rice marketing in channel-I and channel-II of Nokha Block of Rohtas district

Particulars	Channel- I (Rs./quintal)	Channel-II (Rs./quintal)
Net price received by producer	1150 (51.68)	1200 (54.54)
Cost incurred by producer		
Loading charges	3.50 (0.16)	3.50 (0.15)
Unloading charges	3.50 (0.16)	3.50 (0.15)
Transportation	20.00 (0.89)	20.00 (0.90)
Cost of gunny bags	20.00 (0.89)	20.00 (0.90)
Charges of grading	3.00 (0.13)	3.00 (0.13)
Total cost	50.00 (2.24)	50.00 (2.27)
Producer sale price/CA purchase price	1200 (53.92)	1250 (56.81)
Cost incurred by Commission agent		
Mandi tax by CA	6.50 (0.29)	6.50 (0.29)
Weighing	3.00 (0.13)	3.00 (0.13)
Total cost	9.50 (0.42)	9.50 (0.43)
Net margin of CA	40.50 (1.82)	40.50 (1.88)
Sale price of CA/purchase price of Wholesaler	1250 (56.17)	1300 (59.09)
Cost incurred by wholesaler		
Sale tax @ 4Per cent	56.00 (2.51)	-
Loading charges	3.50 (0.16)	-
Unloading charges	3.50 (0.16)	-
Transportation	25.00 (1.12)	-
Total cost	88.00 (3.95)	-
Net margin of wholesaler	62.00 (2.78)	-
Sale price of wholesaler/purchase price of Miller	1400 (62.92)	-
Cost incurred by miller		
Sale tax @ 4Per cent	-	52.00 (2.36)
Transportation charges from mandi to mill shop	25.00 (1.12)	30.00 (1.36)
Labour charges for loading and unloading	7.00 (0.31)	7.00 (0.31)
Storage facilities	20.00 (0.89)	20.00 (0.90)
Processing	225.00 (10.11)	225.00 (10.22)
Total cost	277.00 (12.49)	334.00 (15.18)
Net margin of miller	303.00 (13.61)	246.00 (11.18)
Value of husk @ Rs.4/kg assuming grain, husk ratio of 70:30 per quintal.	120.00 (5.39)	120.00 (5.45)
Total net margin of miller	423.00 (19.01)	366.00 (16.63)
Sale price of miller/Purchase price of Wholesaler	2100 (94.33)	2000 (90.90)
Cost incurred by wholesaler		
Transportation charges from mandi to Shop	-	30 (1.36)
Labour charges for loading and unloading	-	7.00 (0.31)
Storage facilities	-	20.00 (0.90)
Total cost	-	57.00 (2.59)
Net margin of Wholesaler	-	43.00 (1.95)
Sale price of Wholesaler /Purchase price of retailer	-	2100.00 (95.45)
Transportation charges from mandi to Shop	25 (1.12)	25 (1.13)
Labour charges for loading and unloading	7.00 (0.31)	7.00 (0.31)
Storage facilities	20.00 (0.89)	20.00 (0.90)
Total cost	52.00 (2.33)	52.00 (2.36)
Net margin of retailer	73.00 (3.28)	48.00 (2.18)
Sale price of retailer /Purchase price of Consumer	2225 (100)	2200 (100)

Figures in parentheses are the per cent of total marketing cost incurred by respective middlemen in channel – I and channel –II; CA – commission agent

Price spread

Price spread was calculated considering Rice is not consumed directly. Hence, processor was considered as the ultimate consumer and processor's purchase price was considered as consumer's price for working out the price spread. The prices spread in different marketing channels of Rice are presented in Table 2. In channel-I, Producer's share was 51.68% in consumer's rupee and price spread was as high as 48.32%, out of which, 21.41% was accounted for by marketing cost and 26.89 per cent was accounted for by margin. The margins shared by commission agent, wholesaler, Miller and Retailer were 1.82, 2.78, 19.01 and 3.28%, respectively of the consumer's rupee. In channel-II, producer's share was 54.54 per cent in consumer's rupee and price spread was 45.45 per cent. The marketing costs and total margins were 22.84 per cent and 22.61% in consumer's rupee, respectively. The margins shared by commission agent, wholesaler, Millers and retailer were 1.08, 2.06, 10.24 and 2.19%, respectively of the consumer's rupees.

Table 2: Price spread in Marketing of Rice in Channel-I and Channel-II in Nokha block

Particulars	Channel-I (%)	Channels-II (%)
Producer's net price	1150 (51.68)	1200 (54.54)
Cost incurred by		
Producer	50 (2.24)	50 (2.27)
Commission Agent	09.50 (0.42)	09.50 (0.43)
Wholesaler	88 (3.95)	57 (2.59)
Miller	277 (12.44)	334 (15.18)
Retailer	52 (2.33)	52 (2.36)
Total cost	476.50 (21.41)	502.50 (22.84)
Margin of		
Commission agent	40.50 (1.82)	40.50 (1.84)
Wholesaler	62 (2.78)	43 (1.95)
Miller	423 (19.01)	366 (16.63)
Retailer	73 (3.28)	48 (2.18)
Total margin	598.50 (26.89)	497.50 (22.61)
Sale price of retailer/purchase price of consumer	2225 (100)	2200 (100)

Figures in square brackets are the per cent of price spread in marketing of rice in channel – I and channel -II
Marketing Efficiency

It was calculated by using Acharya's method of Modified Marketing efficiency and the results are presented in table 3. Table reveals that the channel-I was less efficient than channel-II, as the marketing efficiency in former was 1.06 lower than that of later i.e. 1.20. Table further shows that retailer's sale price in channel I is Rs 2225 which is greater than that of channel II i.e. Rs 2200. Total marketing cost in channel

I was Rs. 476.50 where as that of channel II was Rs. 502.50. Table further reveals that it is the total net margin of intermediaries which contribute more to the less marketing efficiency in channel I.

Table 3: Marketing Efficiency in Channel I and Channel II

Particulars	Channel I(Rs.)	Channel II(Rs.)
Retailer's sale price	2225	2200
Total marketing costs	476.50	502.50
Total net margin of intermediaries(MM)	598.50	497.50
Net price received by farmer	1150	1200
MME*	1.06	1.20

* MME =Modified measure of marketing efficiency

Literally, marketing efficiency is the ratio of market output (satisfaction) to marketing input (cost of resources) as defined by Kohls and Uhl. An increase in this ratio means that the marketing efficiency of the system improves. So it can be concluded from the table that in marketing channel II consumer is getting more satisfaction as the price paid by them is lower than that of channel I. Net margin of intermediaries is also less in case of channel II which ensures the greater net price received by the farmer which in turn increases the producer's share in consumer rupee.

References

- Baba, S. H., Wani, M. H. and Yousuf, S. (2010). Marketed Surplus and Price Spread of Vegetables in Kashmir Valley. *Agricultural Economics Research Review*, 23:115-127.
- Directorate of Rice Development (2002). Rice in India - A Status Paper., Patna.
- Farmer's Portal, Ministry of Agriculture (2015). Top 10 largest rice producing states in India. Retrieved from <http://listz.in/top-10-rice-producing-states-in-india.html>.
- Gupta, Shakuntla and Singh, B. (1998) "Price spread in marketing of groundnut and rapeseed-mustard in Punjab". *Indian J. Agril. Mktg.*, 12(2): 129-134.
- Naveen, B., Jayaram, M. S., swamy, Dhanajaya, Ramesh, G. B., and Raghavendra, D.V. (2015). Marketing channels and price spread of banana in Chikkaballapur district of Karnataka. *International Res. J. of Agri. Economics and Statistics*, 1(6): 18-22.
- Tiwari, S. (2015). Economics of Paddy Production and Marketing of Rice in Noka Block of District Rohtas-Bihar. Master's thesis submitted to the department of Agricultural Economics, IAS, BHU, Varanasi, UP 221005 (unpublished).