Economic Analysis of Marketing and Constraints of High Yielding Variety Paddy (HYV) vs. Black Aromatic Paddy (Chakhao) in Imphal East District of Manipur

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

The present study was undertaken in Imphal East district of Manipur to know the marketing cost, marketing margin, price spread, producer's share in consumer rupee, marketing efficiency of High Yielding Variety (HYV) paddy and Black aromatic paddy. A total of 120 sample respondents are analysed. Among these 42 are marginal farmers,36 are small farmers,26 are semi medium and 16 are medium farmers .For High yielding variety paddy, in channel I, overall average net price receive by producer is Rs.1885 per quintal and the consumer purchase price is Rs.2000 per quintal. In channel-II, overall average net price receive by producer Rs.1609 per quintal and the consumer purchase price is Rs.3000 per quintal. For Black Aromatic paddy, in channel-I, overall net price received by producer is Rs.6185 per quintal, and the consumer purchase price is Rs.6300 per quintal. In channel-II, overall net price received by producer is Rs.5109 per quintal and the consumer purchase price is Rs.12000 per quintal. Marketing efficiency revealed that for High Yielding Variety paddy (HYV) marketing efficiency of channel-I is high with 16.39. For Black Aromatic Paddy, Marketing efficiency of channel-I is high with 53.78.Farmer should chose for those marketing channels which have lesser intermediaries to get the maximum profits. Price fluctuation, lack of suitable govt. Policy like procurement and market regulation are the major marketing constraints to the sample farmer in study area.

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1. INTRODUCTION

India's agricultural marketing is inefficient due to a mismatch between prices paid by consumers and those received by producers, fragmented marketing channels, inadequate infrastructure, and regulatory distortions. To overcome these problems and regulate the excesses of middlemen, urgent measures are required. In the meantime, price policy needs to be adjusted to reflect the changing demand and supply for different crops. The public sector is equally important to serving the greater social purpose of maintaining price stability through market activities, even as the private sector is crucial to enhancing efficiency [1-4]. Agriculture markets' primary function is to transport goods from producers to consumers. However, in a broad sense, their role also covers providing producer firms with macroeconomic signals, offering incentives to help them reach the desired growth in agri-food output, enhancing producer and consumer welfare, balancing supply and demand, and encouraging the efficient use of resources in the production and distribution systems [5,6,7]. The willingness of consumers to pay a premium for fragrance has risen dramatically [8]. Multiple studies conducted around the nation have revealed the various problems farmers experience in marketing their produce, indicate a poor degree of marketing efficiency, and discovered that the majority of farmers lacked a marketable surplus [9-12].

2. RESEARCH METHODOLOGY

The present study was conducted in the Imphal East district of Manipur in 2022. Multi-stage purposive cum random sampling design was used for the study .For selection of district, Imphal East district of Manipur is taken purposively as it has highest area under cultivation of High Yielding Variety paddy (HYV) and Black aromatic paddy among all the other districts. 2 blocks (Sawombug & Keirao) are selected out of 4 blocks because it has large area under High yielding variety paddy and Black Aromatic Paddy and easily accessible to the researcher. Out of total villages, 6 villages were selected randomly. 120 respondents were selected randomly and the categorization of respondents was based on land holding as marginal, small, semi- medium and medium, which had 42 marginal farmers, 36 small farmers, 26 semi-medium farmers and 16

medium farmers. The data related to prices and arrivals of black rice and HYV was collected from Khurai Lamlong Bazar as it the largest market in Imphal East. A sample of 10% of all the market functionaries involved in the marketing process was randomly selected for the present study.

3. ANAYTICAL TOOLS AND MARKETING CONCEPT USED

3.1 Marketing Cost

The total cost incurred on marketing by various intermediaries involved in the sale and purchase of the commodity till it reaches the ultimate consumer was computed as follow.

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

Where,

C= Total cost of marketing
C_f = Cost paid by the producer from the time the produce leaves till he sells it
C_{mn}= Cost incurred by the ith middlemen in the process of buying and selling the products.

3.2 Marketable Surplus

$$MS = P - C$$

Where,

MS = Marketable surplus
P =Total production
C = Total requirements (family consumption, farm needs, payment to labour, artisans, landlord and payment for social and religious work)

3.3 Producer's Share in Consumer's Rupee

$$Ps = (P_F / P_r) \times 100$$

Ps = Producer's share
P_F = Price received by the farmer
P_r = Retail price paid by the consumer

3.4 Price Spread

Price spread = Consumer price - Net price of producer

3.5 Marketing Efficiency

It has been calculated using Acharya's Modified Marketing efficiency. Formulae as follows:

MME = FP / (MC +MM)

FP= Price received by farmer
MC= Marketing Cost
MM = Marketing Margin

3.6 Garrett's Ranking Technique

Garrett's Ranking Technique used in order to rank the problems faced by the cultivators in production and marketing of paddy respectively.

Per cent position = $[100(R_{ij} - 0.5)] / N_j$

Where,

R_{ij}= rank given for i^{th} problem by j^{th} individual;
N_j= number of problems ranked by the jth individual.

4. RESULTS AND DISCUSSION

Table 1 shows the disposal pattern of marketable surplus in different channels of marketing in different sized farm groups of HYV paddy farmers. The actual marketable surplus is highest in the case of the medium size farm group (152.41 quintals), followed by semi-medium (84.97 quintals), small-size farms (45.23 quintals) and marginal size farm(23.11 quintals) respectively. It is seen from Table 1 that producers in the study area dispose of their produce in two channels that prevail in the study area. Channel II is the most preferred channel for the disposal of their produce, followed by channel I.

Table 1. Disposal pattern of marketable surplus in different channels of marketing in different Size of farm group of High Yielding Variety (HYV) Paddy (Quantity in Quintals)

S. no	Particulars	Size of Farms Group				
		Marginal	Small	Semi-medium	Medium	Sample average
1	Marketable surplus from own farm	23.11 (86.87)	45.23 (84.65)	84.97 (82.16)	152.41 (81.22)	76.43 (82.38)
2	Quantities purchased from other farms	-	-	-	-	-
3	Actual Marketable surplus (in quintals)	23.11 (86.87)	45.23 (84.65)	84.97 (82.16)	152.41 (81.22)	76.43 (82.38)
	Producer – consumer (Channel- I)	4.65 (20.16)	8.79 (19.45)	13.95 (16.42)	27.98 (18.36)	13.84 (18.10)
	Producer -wholesaler-retailer-consumer (Channel - II)	18.46 (79.87)	36.44 (80.56)	71.02 (83.58)	124.43 (81.64)	62.58 (81.87)

Sources: Primary data
Note: Figures in the parenthesis indicate percentage to the total

Table 2. Disposal pattern of marketable surplus in different channels of marketing in different Size of farm group of black aromatic paddy (Quantity in Quintals)

S. no	Particulars	Size of Farms Group				
		Marginal	Small	Semi-medium	Medium	Sample average
1	Marketable surplus from own farm	7.35 (84.48)	12.74 (83.59)	24.12 (83.34)	50.36 (82.58)	23.64 (83.06)
2	Quantities purchased from other farms					
3	Actual Marketable surplus (in quintals)	7.35 (84.48)	12.74 (83.59)	24.12 (83.34)	50.36 (82.58)	23.64 (83.06)
	Producer – consumer (Channel- I)	2.6 (35.37)	4.15 (32.65)	7.39 (30.65)	15.82 (31.42)	7.49 (31.68)
	Producer -wholesaler-retailer-consumer (Channel - II)	4.75 (64.63)	8.59 (67.42)	16.73 (69.35)	34.54 (68.58)	16.15 (68.31)

Sources: Primary data
Note: Figures in the parenthesis indicate percentage to the total

Table 2 shows the disposal pattern of marketable surplus in different channels of marketing in different sized farm groups of black aromatic paddy. The actual marketable surplus of a medium-sized farm group is the highest (50.36 quintals), followed by semi-medium (24.12 quintals), small-sized farms (12.74 quintals), and marginal-sized farms (7.35 quintals). It is seen from Table 2 that producers in the study area dispose of their produce in two channels that prevail in the study area. Channel II is the most preferred channel for the disposal of their produce, followed by channel I.

The Table 3 reveals the marketing cost, marketing margin, price spread, and marketing efficiency of HYV Paddy and Black Aromatic Paddy in channel I. For HYV Paddy, the producer's sale price was Rs. 2000/quintals and the marketing cost included the cost of bags at Rs.60/quintals, unloading & loading cost of Rs. 40/quintals, weighing charges of Rs. 5/quintals, and miscellaneous charge of Rs.10/quintals, which makes the total marketing cost 5 percent. The net price received by the producer was Rs. 1885/quintal. Producer's share in consumer rupee was 94.25 percent. Price spread was Rs.115/quintal, which makes the marketing efficiency 16.39.

In the case of Black Aromatic Paddy, the producer's sale price was Rs. 6300/quintals and the marketing cost included the cost of bags at Rs. 60/quintals, unloading & loading cost of

Rs. 40/quintals, weighing charges of Rs. 5/quintals and miscellaneous charge of Rs. 10/quintals, which makes the total marketing cost 1.26 per cent. The net price received by the producer was Rs. 6185/quintal. Producer's share in consumer rupee was 98.17 percent. Price spread was Rs. 115/quintal, which makes the marketing efficiency 53.78.

Table 4 reveals the marketing costs, marketing margin, price spread, and marketing efficiency in channel II of HYV Paddy and Black Aromatic Paddy. In the case of HYV Paddy, the cost incurred by the producer shows that the total marketing cost was 4.7 percent and the net price received by the producer was 53.63 percent. The cost incurred by the wholesaler includes marketing costs like packing costs of Rs. 60/quintals, transportation costs of Rs. 100/quintals, weighing charges of Rs. 5/quintals and miscellaneous charges of Rs. 8/quintals, respectively. This makes the total marketing cost of 7.36 per cent. The sale price of a wholesaler to a retailer was 88 per cent, and the wholesaler margin was 17.3 per cent. Retailers' costs include unloading and loading charges of Rs.40/quintal, weighing charges of Rs 5/quintal, and miscellaneous charges of Rs. 10/quintal, for a total marketing cost of 3.76 percent. Sale price of the retailer to the consumer was Rs. 3000/quintal and the retailer's margin was 8.23 per cent. The price spread was Rs.1391 and the producer's share in consumer rupee was 53.63 percent, which makes the marketing efficiency 1.29.

Table 3. Marketing cost, marketing margin, price spread and marketing efficiency in channel I producer - consumer

S. no.	Particulars	H.Y.V paddy		Black aromatic paddy	
		Price/Qtl	Percentage	Price /Qtl	Percentage
1	Producer sale price	2000		6300	
2	Cost incurred by producer				
A	Cost of bags	60	3.0	60	0.95
B	Loading/unloading	40	2.0	40	0.63
C	Weighing charges	5	0.25	5	0.07
D	Miscellaneous charge	10	0.5	10	0.15
	Total marketing cost	115	5.75	115	1.26
3	Consumer paid price	2000	100	6300	100
4	Net price received by Producer	1885		6185	
6	Producer's share in consumer rupee	94.25		98.17	
7	Price spread	115		115	
8	Marketing efficiency	16.39		53.78	

Sources: Primary data
Figure in the parenthesis indicates percentage to the total consumer price

Table 4. Marketing cost, marketing margin, price spread and marketing efficiency in channel II producer- wholesaler - retailer – consumer

S. no.	Particulars	H.Y.V paddy		Black aromatic paddy	
		Price/Qtl	Percentage	Price /Qtl	Percentage
1	Producer sale price	1750		5250	
2	**Cost incurred by producer**				
A	Cost of bags	60	2	60	0.5
B	Loading/unloading	40	1.3	40	0.33
C	Weighing charges	5	0.16	5	0.04
D	Transportation charges	30	1	30	0.57
D	Miscellaneous charge	6	0.2	6	0.05
	Total marketing cost	141	4.7	141	1.75
3	Net price received by Producer	1609	53.63	5109	42.57
4	**Cost incurred by wholesaler**				
A	Cost of bags	60	2	60	0.41
B	Miscellaneous charges	8	0.26	8	0.06
C	Transportation charges	100	3.33	100	0.83
D	Weighing charges	5	0.16	5	0.04
	Loading /unloading	40	1.3	40	0.33
	Market fee	8	2.6	8	0.06
E	Total marketing cost	221	7.36	221	1.84
5	Sale price of wholesaler to retailer	2640	88	10000	83.33
6	Wholesaler margin	519	17.3	4369	36.4
7.	Cost for milling				
A	Loading/unloading	40	1.3	40	0.33
B	Processing charges	70	2.33	70	0.58
C	Storage	50	1.66	50	0.04
	Total cost of milling	160	5.33	160	1.33
8	**Cost incurred by retailer**				
	Weighing charges	5	0.16	5	0.04
	Loading /unloading	40	1.33	40	0.33
	Market fee	8	0.26	8	0.06
	Miscellaneous charges	10	0.33	10	0.08
	Transportation charges	50	1.66	50	0.41
	Total marketing cost	113	3.76	113	0.94
	Sale price of retailer to consumer	3000	100	12000	100
9	Retailer margin	247	8.23	1887	17.60
10	**Price spread**	1391		6891	
11	**Producer's share in consumer rupee**	53.63		42.57	
12	**Marketing efficiency**	1.14		0.74	

Sources: Primary data
Figure in the parenthesis indicates percentage to the total consumer price

Whereas, in Black Aromatic Paddy, the cost incurred by the producer shows that the total marketing cost was 1.75 percent and the net price received by the producer was 42.57 percent. The cost incurred by the wholesaler includes marketing costs like packing costs of Rs. 60/quintals, transportation costs of Rs. 100/quintals, weighing charges of Rs. 5/quintals and miscellaneous charges of Rs. 8/quintals, respectively. This makes the total marketing cost of 1.8 per cent. The sale price of a wholesaler to a retailer was 83.33 percent, and the wholesaler

margin was 36.4 percent. The costs incurred by retailers include unloading and loading costs of Rs.40/quintals, weighing charges of Rs. 5/quintals and miscellaneous charges of Rs. 10/quintals, which makes the total marketing cost 0.94 per cent. The sale price of the retailer to the consumer was Rs.12000/quintal and the retailer's margin was 17.60 per cent. The price spread was Rs. 6891 and the producer's share in consumer rupee was 42.57 percent, which makes the marketing efficiency 0.74.

Table 5 represents the marketing efficiency of HYV Paddy and Black Aromatic Paddy in different marketing channels of operation in the study area. It was evident that marketing

Table 5. Estimation of total marketing cost and marketing margin in different channels (Value in Rs/Quintals)

S. no	Particulars	Channel I H.Y.V	Channel I B.R	Channel II H.Y.V	Channel II B.R
1	Total marketing cost	115	115	635	635
2	Total marketing margins	0	0	766	6256
3	Price spread	115	115	1391	6891
4	Producer's share in consumer rupee in per cent	94.25	98.17	53.63	42.57
5	Marketing efficiency in per cent	16.39	53.78	1.14	0.74

Sources: Primary data

Table 6. Constraints in marketing of paddy in study area

| S. no.	Particulars	Garrett mean Score	Ranking
1.	Market is far from production point	48.83	VII
2	High cost of transportation	38.4	IX
3.	Malpractices in weighing	50.12	VI
4.	Price fluctuation	73.64	I
5.	Lack of suitable govt. Policy like procurement ,market regulation	61.21	II
6.	Dependence on middlemen	53.32	IV
7.	Lack of skilled labour for packing	45.78	VIII
8.	Lack of proper infrastructure in market	60.44	III
9.	Lack of storage facility	53.30	V

Sources: Primary data
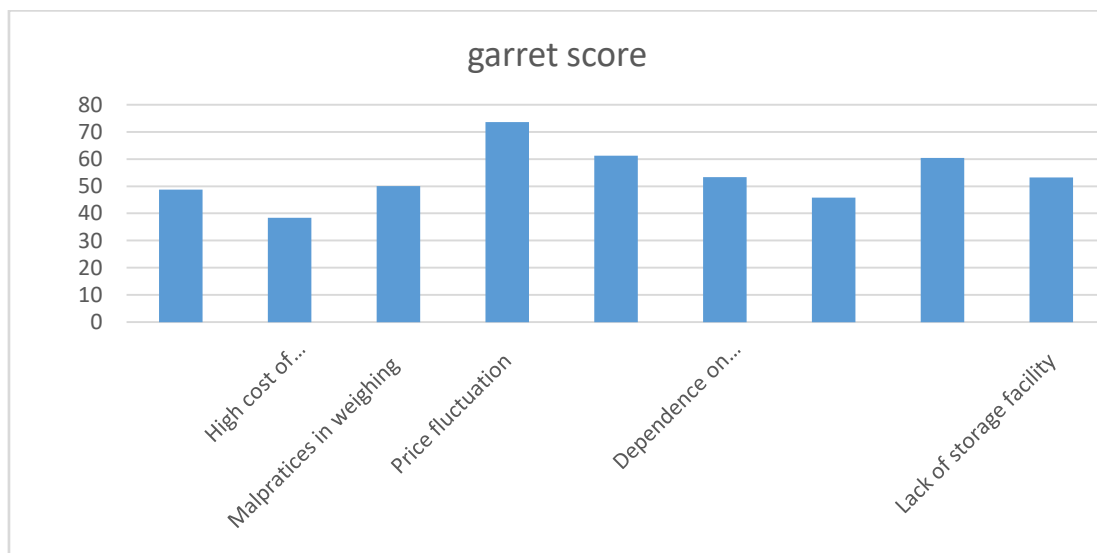
Fig. 1. Constraints in marketing of paddy

efficiency for black aromatic paddy was much higher in channel-I (53.78) than that of the channel-II (0.74). Similarly, marketing efficiency for HYV Paddy was higher in channel-I (16.39) followed by channel-II (1.14). Thus, the study revealed that channel-I is the most efficient channel for both HYV Paddy and Black Aromatic Paddy among the two channels of marketing This was due to the absence of middlemen and consequently the cost incurred in this channel was much lower as compared to channel-II.

Table 6 shows the constraints faced by the paddy growers in the marketing of paddy in the study area. The majority of respondents stated that the most significant constraints in paddy marketing were price fluctuations (1st rank), followed by a lack of appropriate government policies such as procurement and market regulation (2nd rank), a lack of proper market infrastructure (3rd rank), reliance on middlemen (4th rank), a lack of storage facility (5th rank), weighing malpractices (6th rank), market distance from the production point (7th rank), and a lack of skilled labour for packing (8th rank), high cost of transportation at (9th rank).

5. CONCLUSION

The study on the marketing of High Yielding Variety (HYV) paddy and Black aromatic paddy in Imphal East district revealed that among the two channels identified, channels-I (Producer-Consumer) is the most efficient channel for the marketing of High Yielding Variety (HYV) paddy and Black aromatic paddy. There is a need for more attention to the Black Aromatic Paddy growers as major shares were taken by market intermediaries and producer are hard hit in (channels-II) in order to solve this collective marketing process and formation of Farmer Producer Organization (F.P.O) can be done.

The major constraints faced by the farmers in the marketing of High Yielding Variety paddy and Black Aromatic Paddy in the study area are price fluctuation, lack of suitable government policies like procurement, market regulation, lack of proper infrastructure in the market and dependence on middlemen. Stabilization of prices of High yielding variety paddy and black aromatic paddy is necessary by the government to support the farmers, Govt. should take up steps to ensure proper regulation of market and Govt. policy aiming at procuring Black aromatic paddy from the farmer need to be implemented in the state to support the Black aromatic paddy

grower. The study will help researchers or viewers as a good source of data, and this data is partially used for government policies.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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