Economic Affairs, Vol. 67, No. 05, pp. 987-991, December 2022
DOI: 10.46852/0424-2513.5.2022.34

Case Study

Study on Marketing of Green Chili in Jorhat District of Assam

Niharika Borbaruah*, R.N. Barman and Amvrin Baruah

Department of Agricultural Economics and Farm Management, Biswanath College of Agriculture, Assam Agricultural University, Jorhat, Assam, India

*Corresponding author: niharika.borbaruah.adj21@aau.ac.in (**ORCID ID:** 0000-0002-5204-4203)

Received: 10-09-2022 **Revised:** 28-11-2022 **Accepted:** 03-12-2022

ABSTRACT

The present study was conducted with the aim of identifying factors affecting marketing, marketing channels and analysing the marketing cost, margin, price spread, and marketing efficiency of farmers in the marketing of green chilies in Jorhat district of Assam. A sample of 80 farmers was selected using multistage stratified random sampling, and 30 market intermediaries were selected from the study area. Production was kept for home consumption, and the seed was one of the factors that indirectly affected the marketable surplus of green chili, significant at 1 percent. However, transportation costs of green chilies directly affected the markable surplus, significant at 10 percent. Among the two marketing channels identified, total marketing cost was low in channel I (₹ 124.06 per quintal) as compared to channel II (₹ 178.04 per quintal), signifying that marketing cost was low if the channel has lesser market intermediaries. The best channel for both producer and consumer was found to be channel I, in which producers receive the maximum share of consumers' rupee (77.06 percent), and consumers purchase the product at the low price ₹ 7700 per quintal. Marketing efficiency was found to be higher in channel I (3.36). The major constraint faced by the producers in the marketing of green chili was the low selling price that prevailed during the Covid-19 pandemic in the local and distant markets during the peak harvesting time.

HIGHLIGHTS

- Major factors affecting the marketing of green chilies were production kept for home consumption and seed rhizome and transportation costs.
- Two marketing channels of green chilies were identified, viz., (i) Channel I: Producer → Retailer → Consumer and (ii) Channel II: Producer → Wholesaler → Retailer → Consumer.
- Presence of middlemen and low selling price of the produce as perceived by growers were the major constraints found in the study area.

Keywords: Marketing channels, chili, price spread, marketing costs

The green chili is commonly grown in all tropical and subtropical nations, including India, and is thought to have originated in South America. It is a tropical and subtropical crop that can be grown up to 2000 meters above sea level and needs a warm, humid climate to grow in India (Kala *et al.* 2020). Chilies are a popular and commercial crop and are the most widely used universal spice, known as the "Wonder Spice" (Hazari and Kalita, 2022). In India, chili is the primary spice contributing about 36.94% by volume and 29.84% by value of total spices exported in the year 2020-2021 (Spices Board of India, 2021). Assam produces about 20,189 tonnes of green chilies in an area of about 20,459 hectares. However, the production of green chilies in Assam has increased by 5.38% from 2019-20 to 2020-2021 (Directorate of Economics and Statistics, Government of Assam).

Green chilies had been transported from farmers to consumers via various market intermediaries

How to cite this article: Borbaruah, N., Barman, R.N. and Baruah, A. (2022). Study on Marketing of Green Chili in Jorhat District of Assam. *Econ. Aff.*, **67**(05): 987-991.

Source of Support: None; **Conflict of Interest:** None

or marketing channels. Marketing costs were calculated by estimating the costs incurred by each intermediary in the channel (Murry and Tsopoe, 2019). Non-institutional support and lack of regulated markets were some of the constraints in marketing faced by chili growers while marketing the produce (Kumar *et al.* 2017). The present study is undertaken with the objectives as identifying the factors affecting marketing, marketing channels and study the marketing costs, margins and price spread, marketing efficiency, and constraints faced by farmers in marketing green chilies in the Jorhat district of Assam.

MATERIALS AND METHODS

A list of farmers growing green chilies in Jorhat East block and Jorhat Central block of Jorhat district were collected from the Department of Agriculture, and 15 percent of the total respondents were then selected, growing chilies in more than 1 bigha of land using Multistage Stratified Random Sampling, with the sample being allocated proportionally, making it a total of 80 farmers. Two villages were randomly selected from each block, namely Lahing Gaon and Hatigarh Grant from Jorhat East and Arandhara Gaon and Meleng Grant from Jorhat Central Block. The daily and weekly local markets in Jorhat were selected for the study, as convenient per the researchers' reach as the study was conducted during the Covid-19 second phase. Five numbers of intermediaries were selected, each from village traders, wholesalers, and retailers, randomly making a sample of 30 intermediaries. Also, 15 consumers from each market were interviewed. The primary data were collected using a pre-structured questionnaire by personal interview during 2020-2021.

Analytical tools

The Multiple Linear Regression Analysis

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + u$$

Where,

Y = value of dependent variable (Quantity of Marketable Surplus in quintals)

X_i = Value of independent variables

X_1 = Production kept for home consumption and seed rhizome (in quintals)

X_2 = Selling Price (in ₹ per quintals)

X_3 = Transportation Cost (in ₹ per quintals)

X_4 = Total Marketing Cost (in ₹ per quintals)

β_0 = The y-intercept

β_i = Regression Coefficient of X_i variables

u = Error term

Marketing Costs

$$\text{Total cost of marketing, } C = C_F + C_{m1} + C_{m2} + C_{m3} + \ldots\ldots\ldots + C_{mn}$$

Where,

C = Total cost of marketing of spices

C_F = Cost paid by the producer from the time the spice products leave the farm till it is sold by the producer

C_{mi} = Cost incurred by the i^{th} middleman in the process of buying and selling the spices.

Price Spread

$$\text{Price spread (\%)} = \frac{\text{Consumer Price} - \text{Producer Price}}{\text{Consumer Price}} \times 100$$

Marketing Margin of a Middleman

Absolute margin of the ith middleman

$$(A_{mi}) = P_{Ri} - (P_{Pi} + C_{mi})$$

Where,

P_{Ri} = total value of receipts per unit (sale price)

P_{Pi} = purchase value of good per unit (purchase price)

C_{mi} = cost incurred on marketing per unit

Producer's Price

This is the net price received by the producer or farmer at the time of first sale of the commodity.

$$\text{Producer's Price, } P_F = P_A - C_F$$

Where,

P_A = wholesale price in the primary assembling market

C_F = marketing cost incurred by the farmer

Producer's Share in the Consumer's Rupee

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

Where,

P_F = Producer's Price

P_r = Retail Price

Marketing Efficiency

The marketing efficiency is the degree of performance of the market. It was estimated with the help of Acharya's Method of marketing efficiency given as

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

Where,

MME = Modified Measure of Marketing Efficiency

NPp = Net price received by the producer (₹/q)

MC = Marketing cost

MM = Marketing margin

Constraints faced by the farmers

The information on various constraints faced by the green chili growers and middlemen during the marketing of the crop based on their perceptions was collected and the multiple responses were listed and ranked in tabular form to understand and explain the constraints faced by them.

RESULTS AND DISCUSSION

Factors affecting the marketing of green chili

Table 1: Regression estimates for Chili

Variables	Coefficients	Standard error
Intercept	1.8728	2.6467
Production kept for home consumption and seed rhizome (X_1)	-15.1667***	0.1262
Selling Price (X_2)	0.0000	0.0000
Transportation Cost (X_3)	0.0161*	0.0094
Total Marketing Cost (X_4)	-0.0184	0.0203
R^2 = 0.8972		
Adjusted R^2 = 0.8688		

****= 1% level of significance, *= 10% level of significance.*

Table 1 depicts that the major factor that affected the marketable surplus of chili negatively was the production kept for home consumption and seed rhizome, significant at 1 percent. However, transportation costs positively impacted the marketable surplus of chili at a 10 percent level of significance. This is because, with an increase in the quantity of marketable surplus, more of the products are transported to the market with a higher transportation cost during the pandemic period. A similar study was conducted by Sashimatsung and Giribabu (2016).

Marketing channels of chili

Two marketing channels of green chilies were identified in the study area, which includes (i) Channel I: Producer → Retailer → Consumer and (ii) Channel II: Producer → Wholesaler → Retailer → Consumer.

With regards to the total quantity of green chilies sold, it was found that 38.67 percent of the quantity is sold directly to the retailers at a lower price through channel- I. Hence, most producers sold their produce (61.33%) to the wholesalers who fetch them a higher price in the channel -II. Similar results were reported by Patel and Pundir (2016) and Thomas *et al.* (2015).

Marketing Costs and Marketing Margins, Price Spread and Marketing Efficiency

Table 2 reveals the marketing cost incurred by the intermediaries of two channels in the marketing of green chili. The total marketing cost was higher in channel II (₹ 178.04 per quintal), as the marketing cost was comparatively lower in channel I (₹ 124.06 per quintal) due to the prevalence of wholesalers. It also shows that the wholesalers incurred the highest marketing cost (₹ 60.33 per quintal), followed by retailers (₹ 59.47 per quintal) and producers (₹ 58.24 per quintal) in Channel II, respectively. A similar study was also carried out by Singh *et al.* (2021) in the North-Eastern hill states of Sikkim, Mizoram, and Nagaland.

Total marketing margin was found to be the highest in Channel II (₹ 2880.20 per quintal). The largest chunk of the margin was enjoyed by the retailers (₹ 1940.53 per quintals). In channel I, the marketing margin of retailers was found to be ₹ 1642.01 per quintal.

Table 2: Marketing costs incurred by the marketing functionaries in marketing channels of green chilli (Value in ₹ /q)

Sl. No.	Particulars	Channel I	Channel II
(I)	**Marketing costs incurred by the Producer**		
1	Net price received by the Producer	5933.33	6941.76
2	Cost incurred by the Producer	66.07 (53.26)	58.24 (32.71)
(A)	Transportation charges	37.83 (30.49)	37.83 (21.25)
(B)	Loading and unloading charges	15.50 (12.49)	15.50 (8.71)
(C)	Packaging charges	0.61 (0.49)	0.61 (0.34)
(D)	Market fee	2.25 (1.81)	2.25 (1.26)
(E)	Weighing charges	2.05 (1.65)	(1.15)
(F)	Spoilage/losses	1.05 (0.85)	1.05 (0.60)
(G)	Miscellaneous	6.78 (5.47)	—
	Total	66.07 (53.26)	58.24 (32.71)
3	Sale price of Producer/Purchase price of Wholesaler	—	7000.00
4	Marketing cost incurred by the Wholesaler	—	
5	Gross price paid by the Wholesaler	—	7000.00
6	Cost incurred by the Wholesaler	—	60.33 (33.89)
(A)	Transportation charges	—	25.33 (14.23)
(B)	Loading and unloading charges	—	15.50 (8.71)
(C)	Packaging charges	—	0.50 (0.28)
(D)	Market fee	—	3.45 (1.94)
(E)	Weighing charges	—	2.05 (1.15)
(F)	Spoilage/ losses	—	6.50 (3.65)
(G)	Commission	—	7.00 (3.93)
	Total	—	60.33 (33.89)
7	Sale price of Wholesaler/ Purchase price of Retailer	—	8000.00
8	Marketing margin of Wholesaler	—	939.67 (32.63)*
9	Marketing cost incurred by the Retailer		
10	Gross price paid by the Retailer	6000.00	8000.00
11	Cost incurred by the Retailer	57.99 (46.74)	59.47 (33.40)
(A)	Transportation charges	32.41(26.12)	21.22 (11.92)
(B)	Loading and unloading charges	15.50 (12.49)	7.75 (4.35)
(C)	Packaging	0.78 (0.63)	0.50 (0.28)
(D)	Market fee	2.25 (1.81)	3.45 (1.94)
(E)	Weighing charges	2.05 (1.65)	2.05 (1.15)
(F)	Spoilage/ losses	1.05 (0.85)	19.50 (10.95)
(G)	Commission	—	5.00 (2.80)
	Total	57.99 (46.74)	59.47 (33.40)
12	Sale price of Retailer/ Purchase price of Consumer	7700.00	10000.00
13	Marketing margin of Retailer	1642.01 (100)*	1940.53 (66.12)*
14	Total Marketing Cost	124.06	178.04
15	Total Marketing Margin	1642.01	2880.20

Parentheses indicate percentage to total marketing cost, () indicates percentage to total marketing margin.*

Price spread and marketing efficiency of Chili in different marketing channels

Table 3 revealed the producers' share in consumer rupee, price spread, and marketing efficiency of chili in the study area. The producers' share of 77.06 percent and 69.42 percent was found in Channel I and Channel II, respectively. A price spread of 44.05 percent was found to be higher in Channel II followed by a price spread of 29.76 percent found in Channel I.

The marketing efficiency of 3.36 was higher in channel I than the marketing efficiency of 2.27 in Channel II. However, due to the very high marketing margin in both channels, the marketing

efficiency was not found to be conspicuous. As a result, the findings indicate that, to improve marketing efficiency and producer share in the consumer rupee, intermediaries in marketing channels must be reduced, as well as marketing cost and marketing margin (Imtiaz and Soni, 2013).

Table 3: Price Spread and Marketing Efficiency of Chili

Particulars	Channel I	Channel II
Total Marketing Cost (₹ /q)	124.06	178.04
Total Marketing Margin (₹/q)	1642.01	2880.20
Producer's Net Price (₹/q)	5933.93	6941.76
Consumer's Price (₹/q)	7700.00	10000.00
Producer's share in consumer rupee (%)	77.06	69.42
Price spread (%)	29.76	44.05
Modified Marketing Efficiency (MME)	3.36	2.27

Constraints in marketing of Chili

(i) The major constraint pertaining to the marketing of chili was the low selling price prevailing during the Covid-19 pandemic in the local and distant markets during the peak harvesting time as faced by the producers. The presence of middlemen in the marketing of chili prevents the producers from getting higher revenue. They sold the produce in bulk at lower prices to the middlemen in fear of spoilage or losses and also to sustain their living during the period of a pandemic.

(ii) Market arrival from other districts was another constraint. These products fetch a better price in the local market. However, the producers reported a lack of local market demand, which could result in lower returns and, as a result, make the cultivation of chili unprofitable.

(iii) Poor market infrastructure was another constraint, and poor processing, storage, and post-harvest facilities prevailed in the study area.

CONCLUSION

This study reveals that, due to the absence of wholesalers in channel I, the total marketing costs and marketing margin were low compared to channel II. Channel I have the highest marketing efficiency of 3.36 percent. Middleman exploitation was one of the major problems that reduced the farmers' net income in the study area. Farmers' cooperative marketing systems must be developed for efficient marketing to increase the producer's share of the consumer's rupee and avoid the monopoly of traders/commission agents.

REFERENCES

Acharya, S.S. and Agarwal, N.L. 1987 . *Agricultural Marketing in India.* Oxford & IBH Publishing Co. Pvt Limited, New Delhi.

Anonymous. 2021. *Directorate of Economics and Statistics, Assam*.

Anonymous. 2021. *Spices Board of India*.

Hazari, S. and Kalita, M. 2022. An Economic Analysis of Chilli Production in Tripura, India. *Agric. Sci. Digest. Res. J.,* **42**(4): 459-463.

Imtiyaz, H. and Soni, P. 2013. Marketing cost, marketing loss and marketing efficiency of green chilli in different supply chains. *New Agriculturist,* **24**(2): 1-8.

Kala, S., Jain, S., Shekhawat, P.S. and Sharma, M.K. 2020. An Economic Analysis of Marketing and Constraints for Green Chilli in Jaipur District of Rajasthan. *Econ. Aff.,* **65**(4): 627-632.

Murry, N. and Tsopoe, J. 2019. A Study on Marketing Pattern of Chilli Cultivation in Wokha District of Nagaland, India. *Int. J. Econ. Plants,* **6**(4): 168-171.

Patel, V.K., Gupta, S.P. and Sharma, G.L. 2017. A critical analysis on economics and constraints in chilli cultivation in Raigarh district of Chhattisgarh. *Ind. J. Econ. Dev.,* **13**(2a): 324-327.

Patel, H. and Pundir, R.S. 2016. A study on Marketing of Cauliflower in Middle Gujarat, India. *Int. J. Crop Improv.,* **2**(1): 72-78.

Sashimatsung, and Giribabu, M. 2016. An Economic Analysis of Production and Marketing of Chilli in Mokokchung District of Nagaland. *Arthshastra Indian J. Econ. Res.*, **5**(1).

Singh, R., Passah, S., Singh, N.A., Feroze, S.M., Devi, A., Kumar, S. and Jhahjria, A. 2021. Organic chilli production in the North Eastern Hill Region, India: value chain analysis for doubling farmers' income. *Agric. Econ. Res. Rev.,* **34**(2): 243-252.

Thomas, S., Kumar , D. and Ali, A. 2015. Marketing of Green Chilli in Kaushambi District of Uttar Pradesh, India. *Int. J. Scientific Engin. Res.*, pp. 47-48.