



An Economic Analysis on Marketing and Constraints of Red Gram (Maruti & Charu Variety) in Chandrapur District of Maharashtra, India

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Authors' contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

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ABSTRACT

The study was conducted in 2022 with a sample of 100 respondents. The Red gram respondents were divided into three farms groups marginal, small and medium (27, 13, 10 in Maruti and 27, 14 and 9 in Charu variety), respectively. Marketing cost of Maruti and Charu variety was Rs.760/qtl and Rs.780/qtl in channel I, and Rs.1190/qtl in channel II. Marketing margin was Rs. 600/ha in channel I and Rs.950/ha and Rs.930/ha in channel II. Price spread was Rs. 1360 and Rs.1340/ha in channel I and Rs. 2140/ha and Rs.2110/ha in channel II respectively. Marketing efficiency of Maruti and Charu was 6.55 and 6.1 in channel I and 6.85 and 6.75 in channel II. Producer's share in consumer's rupee in Maruti and Charu variety was 84.74% and 83.36% in channel I and 75.60% and 75.55% in channel II, respectively. Major constraints during marketing of red gram was lack of storage, high commission charge, delay payment etc.

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1. INTRODUCTION

“Red gram is cultivated throughout the world especially in South Asia, eastern and South Africa, Latin America, Caribbean countries and Australia. According to FAO statistics, worldwide red gram was grown in about 60.96 lakh hectares and its production of 50.12 lakh tonnes and productivity of 822.2kg/ha (2020). India is the largest producer of red gram producing countries are India (37.50 lakh tonnes), Myanmar (6.76 lakh tonnes), Malawi (4.34 lakh tonnes) Tanzania (3.15 lakh tones) and Haiti (0.87 lakh tonnes). Area under redgram reported during 2020-21 was 16.56 lakh ha (40.94 lakh acres) as against 2.79lakh ha (6.89lakh acres) during the same period in 2019-20. In India, major redgram producing states are Maharashtra 7.44 lakh ha (18.88 lakh acres), Karnataka 2.37 lakh ha (5.86 lakh acres), Telangana 2.30 lakh ha (5.68 lakh acres), Madhya Pradesh 1.51 lakh ha (5.86 lakh acres) and Uttar Pradesh 0.87 lakh ha (2.15 lakh acres). According to Government 3rd advance estimates, all India redgram production in 2019-20 is at 3.75 million tonnes” [1-3].

Pulses, which make up 10 to 15 percent of India's food grain intake and are a strong source of protein, are significant to the Indian agricultural economy. According to the guidelines of the Indian Council of Medical Research, a significant majority of the Indian population is vegetarian, and each person should consume 70 to 80 gm of pulses on average every day to maintain good health and physique.

Cajanus cajan (L) Millsp, also known as pigeon pea, tur, or arhar, is a member of the Fabaceae family and a popular vegetable in many nations. It is a protein-rich staple food. With a seed protein level of roughly 21%, the highest among legumes, pigeon pea is a crucial component of the diet. In India and many other nations, where pods are picked on a regular basis, it is a perennial plant with a brief yearly production [4-6]. The crop has a deep root system and can be grown in a variety of soil types, from sandy soil to black clay, but it is quite sensitive to wet weather. It is appropriate for dry-land cultivation because it is a crop resistant to drought [7,8]. Eastern Africa, Central America, and the Indian subcontinent are the primary producing areas. In terms of importance, Bengal gram is the most important pulse crop. It plays a significant role in

the farming practises used by small-scale farmers in numerous developing nations [9-13].

2. METHODOLOGY

2.1 Sampling Design

Multi stage sampling design was adopted for the selection of district as the first stage unit, block as the second stage unit, villages as the third stage units and farm holding as the final and ultimate stage units.

2.2 Selection of Districts

The state comprises 35 districts, among these districts, Chandrapur district was selected purposively for the study of red gram for present study.

2.3 Selection of Blocks

There are 13 blocks in Chandrapur District. Out of them Ghugus block was selected purposively for this study.

2.4 Selection of Villages

A complete list of all villages was obtained from the related Gram Panchayat, of which 5% villages were selected randomly. In order to select the villages from these districts Chandrapur was selected randomly having red gram for the study. Taluka development officer was contacted and lists of red gram growing villages were prepared. From the prepared Information about the selected Districts, taluka, Villages and respondents. The village Bargaon, Belsani, Mursa, Shengaon, Usgaon were selected.

2.5 Selection of Respondents/Farmers

“A separate list of farmers growing red gram of selected villages were obtained from Gram Pradhan. There after these farmers were categorized into different size farm groups. Out of that, 10% of respondents were selected randomly on the basis of gram cultivation for the study” [14]. Based on size of holding farmers were classified into three groups i.e.

From this list 100 respondents were selected randomly through proportionate allocation to the population.

2.6 Analysis of Data

$$1. \text{ Marketing cost} = C = C_f + C_{m1} + C_{m2} + C_{m3} + \dots + C_{mn}$$

Where,

C = Total cost of marketing of commodity

C_f = Cost borne by the producer (farmer) in marketing of soybean

C_{mn} = Cost incurred by the nth middlemen in the process of marketing.

$$2. \text{ Marketing efficiency} = \frac{\text{Consumer paid price}}{\text{Total marketing cost} + \text{total marketing margin}}$$

$$3. \text{ Marketing margin} = \text{Product price} - \text{raw material}$$

$$4. \text{ Price spread} = \text{Consumer paid price} - \text{Net price received by producer}$$

$$5. \text{ Producer Share in consumer's rupee} = \frac{\text{Net price received by producer}}{\text{Consumer price}} \times 100$$

$$6. \text{ Garrett Ranking} = 100(R_{ij} - 0.5)/N_j$$

3. RESULTS AND DISCUSSION

Table 4 reveals Marketing cost of Maruti and Charu variety was Rs.760/qtl and Rs.780/qtl in channel I, and Rs.1190/qtl in Channel II. Marketing Margin Rs. 600/ha in Chanel I and

Rs.950/ha and Rs.930/ha in Channel II. Price spread was Rs. 1360 and Rs.1340/ha in Channel I and Rs. 2140/ha and Rs.2110/ha in Channel II respectively. Marketing Efficiency of Maruti and Charu was 6.55 and 6.1 in channel I and 4.86 and 4.75 in channel II. Producer Share in Consumer's Rupee in Maruti and Charu variety was 84.74% and 90.36% in channel I and 75.60% and 75.55% in channel II, respectively.

Table 5 reveal that constraints faced by the different size of farms group in marketing of red gram. Most of the farms group expressed that major constraint was identified that (I)Frequent price fluctuations and was assigned first rank followed by Lack of information about government schemes and subsidies(II), High commission charges (III), High transportation cost (IV), Delay in cash payment (V), Lack of availability of market Information at farms level (VI), Weighing loss during storage (VII), Lack of storage facility(VIII), Lack of support prices when there is a glut in the market (IX, Lack of awareness of technologies (X), Lack of proper infrastructure in market (XI), Lack of scientific training about Red gram cultivation (XII), Lack of amenities and facilities in the market (XIII), Lack cooperative in marketing societies at village level (XIV), respectively.

Table 1. Selection of farm respondent during agriculture year 2022-23 [14]

Name of Village	Total red gram farmer	Selection number of household/farmers on bases of farm group						Total
		Maruti			Charu			
		Marginal	Small	Medium	Marginal	Small	Medium	
Borgaon	240	7	4	2	7	4	2	24
Belsani	230	6	2	3	6	3	3	23
Mursa	160	4	2	2	5	2	1	16
Shenggaon	160	5	2	1	5	2	1	16
Usgaon	190	5	3	2	4	3	2	19
Total	980	27	13	10	27	14	9	100

Table 2. Marketing cost, marketing margin and price spread in different size of farms group of Maruti and Charu variety

Channel I. Producer – Retailer– Consumer (value in Rs.)

Sr. no	Particulars	Maruti		Charu	
		Rs/quintal	Percentage	Rs/quintal	Percentage
1	Producer sale price to village merchants	7937.5		7900	
2	Cost incurred by the producer				
I	Packaging cost	50	.56	50	.60
II	Package material cost	30	.33	30	.36
III	Transportation cost	100	1.12	100	
IV	Market cost	50	.56	50	.60

Sr. no	Particulars	Maruti		Charu	
		Rs/quintal	Percentage	Rs/quintal	Percentage
V	Labour cost	40	.44	40	.48
VI	Loading and unloading charge	40	.44	40	.48
VII	Weighing charge	30	.33	30	.36
VIII	Miscellaneous charge	40	.44	60	0.72
3	Total cost (I-VIII)	380	4.26	400	4.81
4	Net Price received by the producer	7557.5	84.74	7500	90.36
5	Sale price of producer to Village Merchant/Retailer	7937.5		7900	
6	Cost incurred by the Villager Merchant / Retailer				
I	Loading and unloading charges	40	.44	30	.48
II	Carriage up to the shop	50	.56	40	.60
III	Weighing charge	30	.33	30	.36
IV	Town Charges	100	1.12	100	1.20
V	Transportation	100	1.12	100	1.20
VI	Losses & Miscellaneous charge	60	.67	40	.72
VII	Village Merchant/ Retailer Margin	600	6.72	600	7.22
7	Total cost (i-vii)	980	10.98	940	11.80
8	Sale price of Village Merchant/ Retailer to consumer	8917.5		8300	
9	Price spread	1,360		1,340	
10	Consumer paid price	8917.5	100	8300	100
11	Marketing Efficiency	6.55		6.1	

Table 3. Marketing cost, marketing margin and price spread in different farm group of Maruti and Charu variety

Channel II. Producer – Commission agent/ Wholesale - Retailer – Consumer (Value in Rs.)

Sr. No	Particulars	Maruti Variety		Charu Variety	
		Rs/quintal	Percentage	Rs/quintal	Percentage
1	Producer sale price to commission agent	8270	-	8250	-
2	Cost incurred by the producer				
I	Packaging cost	50	.48	50	.48
II	Package material cost	30	.33	30	.28
III	Transportation cost	100	.98	100	.96
IV	Market cost	50	.48	50	.48
V	Labour cost	40	.34	40	.38
VI	Loading and unloading charge	40	.38	40	.38
VII	Weighing charge	30	.33	30	.28
VIII	Miscellaneous charge	60		60	
3	Total cost (I-VIII)	400	4.50	400	3.84
4	Net Price received by the producer	7870	88.72	7850	
5	Sale price of producer to commission agent/wholesaler	8670	-	8650	-
6	Cost incurred by commission agent/wholesalers				
I	Loading and unloading	40	.38	40	.38

Sr. No	Particulars	Maruti Variety		Charu Variety	
		Rs/quintal	Percentage	Rs/quintal	Percentage
	charges				
II	Grading	50	.48	50	.48
III	Packing	80	.76	80	.76
IV	Market fee	100	.98	100	.96
V	Commission of commission agent/wholesaler	100	.98	100	.96
VI	Losses & Miscellaneous Charges	100	.98	100	.96
VII	Commission agent/ Wholesaler Margin	500	4.80	500	.81
7	Total cost (i-vii)	970	9.31	970	9.33
8	Sale price of commission agent/ wholesalers to Retailer	9640	-	9620	-
9	Cost incurred by the retailer				
I	Weighing Charges	30	.28	30	.28
II	Loading and Unloading Charges	40	.38	40	.38
III	Town Charges	100	.98	100	.96
IV	Carriage up to shop	50	.56	40	.48
V	Miscellaneous Charges	100	.98	100	
VI	Retailer Margin	450	4.32	430	4.33
10	Total cost (I-VI)	770	7.39	740	7.41
11	Sale price of retailers to consumer	10410	-	10390	-
12	Price spread	2140	-	2110	-
13	Consumer paid price	10410	100	10390	100
14	Marketing efficiency	4.86		4.75	

Table 4. Comparison of total marketing cost, total marketing margin, price spread and marketing efficiency in two different channel (Maruti and Charu variety) (Rs/qlt)

Sr. no.	Particulars	Maruti		Charu	
		Channel I	Channel II	Channel I	Channel II
1	Marketing cost	760	1190	780	1180
2	Marketing margin	600	950	600	930
3	Price spread	1360	2140	1340	2110
4	Marketing efficiency	6.55	4.86	6.1	4.75
5	Producer's share in consumer's rupee	84.74%	75.60%	90.36%	75.55%

Table 5. Constraints in marketing of red gram in different size of farms group

Sr. no	Particulars	Size of farms group			Sample average	Rank
		Marginal	Small	Medium		
1	Lack of availability of market information at Farms level	36	28	23	87.00 (8.06)	VI
2	Frequent price fluctuations	44	36	26	106.00 (9.82)	I
3	Lack of storage facility	34	39	15	78.00 (7.23)	VIII
4	Weighing loss during storage	32	31	18	81.00 (7.51)	VII
5	High commission charges	36	37	26	99.00 (9.18)	III

Sr. no	Particulars	Size of farms group			Sample average	Rank
		Marginal	Small	Medium		
6	High transportation cost	37	35	23	95.00 (8.80)	IV
7	Delay in cash payment	35	29	25	89.00 (8.25)	V
8	Lack of information about government schemes & subsidy	38	37	27	102.00 (9.45)	II
9	Lack of awareness of new technology	28	24	15	67.00 (6.21)	X
10	Lack of support prices when there is a gift in the market	29	25	15	69.00 (6.39)	IX
11	Lack of scientific training about red gram Cultivation	24	19	14	57.00 (5.28)	XII
12	Lack of amenities and facilities in the market	22	16	9	47.00 (4.36)	XIII
13	Lack of proper infrastructure in market	32	19	8	59.00 (5.47)	XI
14	Lack of cooperatives in marketing societies at village level	18	17	8	43.00 (3.99)	XIV

4. CONCLUSION

The study reveals the marketing of Maruti and Charu variety of red gram in Chandrapur District of Maharashtra. Small amount of produce is retained for home consumption and the remaining produce is marketed through two marketing channels i.e. channel-I producer - retailer - consumer and channel II producer - commission agent/wholesaler- retailer - consumer. It was observed that channel-I was the most efficient channel and farmer received highest price for their produce in this channel. Price fluctuation, lack of suitable govt. policy like procurement and market regulation are the major constraints to the sample farmer.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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