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An economic analysis of production and marketing of Jeeraphool rice in Balrampur District of Chhattisgarh

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Abstract

This research paper is based on Business performance of SHGs in Jeeraphool rice: A case study of Balrampur district in Chhattisgarh with the objectives: To find out the marketing pattern of aromatic rice in the study area. The study was conducted in Balrampur district of Chhattisgarh. Out of six blocks of the district, one blocks, namely Shankargarh were selected purposively for the study. A sample of one hundred farmers were selected for the study. The primary data from the farmers has been collected through personal interview method with the help of well prepared schedule for the year 2017-18. The average cropping intensity was observed 134.97 per cent. The average size of holding of aromatic rice growers was 1.74 hectares. On an average the cost of cultivation per hectare of Jeeraphool rice was calculated at Rs.36430.77. Among different cost items contribution of field preparation cost was 20.70 per cent to the total cost in case of Jeeraphool rice. Gross income for Jeeraphool variety was found to be Rs.90864.17. On an average input-output ratio of Jeeraphool rice came to 1:2.49. On an average marketable surplus in Jeeraphool rice was worked out to 86.02 per cent. On an average the disposable pattern of the sampled households were found that in case of Jeeraphool rice 49.97 per cent of the sampled member of SHGs sold their produce to CLF/KVK followed by retailer and consumer with 31.20 and 18.82 per cent respectively.

Keywords: Major Jeeraphool rice, production and marketing.

Introduction

The rice is one of the important cereal crops of the world and forms the staple food for more than 50 per cent of population. In world rice occupies an area of 162.43 million hectares with a total production of 496.46 million tones and productivity of 3056.46 kg/ha (Anonymous (a), 2018-19). In India rice occupies an area of 43.79 million hectares with a total production of 116.42 million tones and productivity of 2659 kg/ha (Directorate of Economics & Statistics, DAC & FW 2018-19). China and India alone supply nearly half of total world rice production. India sub continent is very rich in aromatic rice diversity. A major character of aromatic rice is its aroma and which increases its value in international market. The demand of traditional aromatic rice has increased over the past two decades and India is a major exporter of aromatic rice in international market.

In Chhattisgarh, rice is grown in 3.61million hectare with production of 8.23 million tones and productivity of 1810 kg/hectares (Directorate of Economics & Statistics, DAC & FW 2018-19). In Balrampur district, rice is grown in 83.70 ('000 hec.) with production of 127.53 ('000 m. tones) and productivity of 1524 kg/hectares (CLR 2017). Chhattisgarh has traditionally known as the bowl of scented rice in central India particularly due to several varieties of its aromatic rice (Marothia, 2003). Chhattisgarh has a sizeable area under various varieties of aromatic rice i.e., Jeeraphool, Kapoorbhog Vishnubhog, Dubraj, Tulsimanjari, Badshahbhog, Madhuri, Chini-kapoor, Siyaram, Jawaphool, etc. These varieties are grown by the farmers in different agro climatic zones of Chhattisgarh state.

Material and methods

The present study was undertaken in Balrampur district of Chhattisgarh out of six blocks of Balrampur, one blocks namely Balrampur were selected for the study. One hundred member of SHGs were selected purposively from Balrampur blocks. The primary data were collected for the year 2017-18, which were related to cost and return of jeeraphool rice. Information was collected from the respondents using well prepared schedule. To work out the cost of cultivation, cost and returns, measures of farm profit of aromatic rice. Standard method of cost of cultivation has been adopted for analyzed the data. To calculate marketable and disposable pattern of Jeeraphool rice following formula has been adopted.

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Marketable surplus

It is the quantity of produce, which is left into the hands of farmers after curtailing family requirements, quantity stored for seed, and quantity used for wage payment is the marketable surplus, it is computed by use of following mathematical model:

$$MS = P - (C + W + S)$$

Where,

MS = Marketable surplus
P = Total production
C = Family consumption
W = Quantity used for wage payment
S = Quantity kept for seed

Disposal pattern

To examine the marketing pattern of major aromatic rice at different categories of farms, simple analysis was done. To estimate the marketable surplus of produce, total quantity used for different purposes is deducted from total production of crop.

$$MS = P - (C + W + C_f)$$

Where,

MS = Marketable Surplus
P = Total Production
C = Family Consumption
W = Quantity use for Wage
C_f = Quantity used for cattle feed.

Results and discussion**Demographical features of the sampled households**

The demographic characteristics of the sampled farmers in the study area are described in table. It can be seen from the table 1 that the female population was seen slightly higher than male being 51.43 per cent and in case of male it was 48.57 per cent. The average family size was found highest in Parvati SHGs i.e. 8.23 and lowest in Saraswati SHGs i.e. 7.83.

Literacy among the family member of self help group was observed to be higher in Shankar SHGs 94.34. Over all literacy rate was observed to be 81.61 among the SHGs. The scheduled tribe, scheduled castes, other backward caste and general shared 81.00 per cent, 9.00 per cent, 8.00 per cent and 2.00 per cent to the total population of SHGs of the study area respectively.

Table 1: Demographical features of the sampled member of SHGs

S.No.	Particulars	Surya	Shankar	Rani	Saraswati	Laxmi	Parvati	Durga	Moti	Overall
1	Total no. of households	14	13	11	12	13	13	12	12	100
2	Total family member	113 (100)	106 (100)	89 (100)	94 (100)	103 (100)	107 (100)	98 (100)	95 (100)	805 (100)
	a. Male	58 (51.33)	49 (46.23)	42 (47.19)	45 (47.87)	56 (54.37)	48 (44.86)	44 (44.90)	49 (51.58)	391 (48.57)
	b. female	55 (48.67)	57 (53.77)	47 (52.81)	49 (52.13)	47 (45.63)	59 (55.14)	54 (55.10)	46 (48.42)	414 (51.43)
3	Average family member	8.07	8.15	8.09	7.83	7.92	8.23	8.17	7.92	8.05
4	Education									
	a. Literacy percentage	82.30	94.34	63.19	70.5	86.52	93.09	79.38	73.15	81.61
5	Social group									
	a. Scheduled Tribes	10 (71.43)	11 (84.62)	9 (81.82)	10 (83.33)	10 (76.92)	11 (84.62)	9 (75.00)	11 (91.67)	81 (81.00)
	b. Scheduled Castes	2 (14.29)	1 (7.69)	1 (9.09)	1 (8.33)	2 (15.38)	1 (7.69)	1 (8.33)	—	9 (9.00)
	c. Other Backward Castes	1 (7.14)	1 (7.69)	1 (9.09)	1 (1.33)	1 (7.69)	1 (7.69)	1 (8.33)	1 (8.33)	8 (8.00)
	d. General	1 (7.14)	—	—	—	—	—	1 (8.33)	—	2 (2.00)

(Note: Figures in the parenthesis indicate the percentages to member of SHGs and total number of family.)

Operation wise cost of cultivation of Jeeraphool

Operation wise cost of cultivation of Jeeraphool has been presented in table 2 and fig. 1. It gives an overview of cost wise percentage share in different operations of Jeeraphool cultivation. It includes costs incurred in material, human labour, machine labour, bullock labour, etc. No operation was found costlier than field preparation of crop point out to be 20.70 percent to the total cost of cultivation. Manure and fertilizer were found second most expensive operation with the percentage share of 13.70 to the total cost of cultivation and the rental value of land was found third most expensive operation with the percentage share of 16.47. The percentage share of the fixed cost was found 17.65 per cent to the total cost of cultivation.

Measures of farm profit of Jeeraphool paddy

It is quite evident from table 3 and fig. 2 that, on average, the value of net income, family labour income, SGHs business income and SGHs investment income per hectare came to Rs. 54433.39, Rs. 55744.60, Rs. 62163.78 and Rs. 60852.58 respectively from Jeeraphool paddy. The gross income of the SHGs by the main product and byproduct together was found to be Rs. 90864.165 per hectare. The overall input-output ratio was found to be 1:2.49 in Jeeraphool paddy cultivation.

Marketable surplus of Jeeraphool paddy

Marketable surplus of jeeraphool paddy was presented in table 4 and fig. 3. The table reveals that marketable surplus for different groups of SHGs was 85.26, 86.70, 87.03, 90.11, 80.82, 83.73, 86.52 and 86.38 percent for Jeeraphool respectively. Overall marketable surplus for Jeeraphool was 86.02 percent.

Disposable pattern of major aromatic rice

The disposable pattern of jeeraphool paddy is presented in table 5 and fig. 4. The table shows that the overall disposable pattern for jeeraphool paddy was 49.97 per cent to CLF/KVK, 18.82 per cent to consumer and 31.20 per cent to the retailer. Maximum produce was sold to CLF/KVK in case of Jeeraphool paddy.

Conclusion

Study also suggested that the establishment of farmer's cooperative society or sale society will not only solve money problems of jeeraphool rice cultivators but also reduces the role of commission agents in the production and marketing of jeeraphool rice in the state and some specific minimum support price should be declared for aromatic rice to ensure benefit for the producers and also to maintain the precious biodiversity of aromatic rice in the Chhattisgarh state.

Table 2: Operational wise cost of cultivation of jeeraphool

(Rs/ha.)										
S.No.	Particulars	Surya	Shankar	Rani	Saraswati	Laxmi	Parvati	Durga	Moti	Overall
(A)	Vriable cost									
1	Field preparation	7191.44 (19.17)	7419.12 (19.92)	8450.70 (22.82)	7275.59 (19.63)	7420.56 (20.71)	7216.49 (20.92)	8018.87 (21.60)	7505.05 (21.35)	7539.62 (20.70)
2	Manure & Fertilizer	5906.80 (15.74)	5529.41 (14.84)	5042.25 (13.61)	5551.18 (14.98)	5355.14 (14.95)	5247.42 (15.21)	4882.08 (13.15)	5656.57 (16.09)	5409.54 (14.85)
3	Seed Sowing	1013.85 (2.70)	1058.82 (2.84)	1000 (2.70)	1031.50 (2.78)	1000 (2.79)	1000 (2.90)	1733.49 (4.67)	1000 (2.84)	1101.39 (3.02)
4	Interculture	818.64 (2.18)	852.94 (2.29)	704.23 (1.90)	850.39 (2.29)	728.97 (2.03)	680.41 (1.97)	766.51 (2.06)	686.87 (1.95)	762.63 (2.09)
5	Transplanting	4678.84 (12.47)	4610.29 (12.38)	4830.99 (13.04)	4803.15 (12.96)	4570.09 (12.75)	4381.44 (12.70)	4716.98 (12.71)	3969.70 (11.29)	4568.26 (12.54)
6	Irrigation	390.43 (1.04)	230.88 (0.62)	329.58 (0.89)	255.12 (0.69)	307.48 (0.86)	213.40 (0.62)	246.46 (0.66)	209.09 (0.59)	273.92 (0.75)
7	Plant Protection	552.90 (1.47)	532.35 (1.43)	647.89 (1.75)	555.91 (1.50)	554.21 (1.55)	569.07 (1.65)	525.94 (1.42)	531.31 (1.51)	557.48 (1.53)
8	Harvesting	3167.51 (8.44)	3205.88 (8.61)	3380.28 (9.13)	3149.61 (8.50)	3233.64 (9.02)	3082.47 (8.94)	3172.17 (8.55)	3111.11 (8.85)	3185.09 (8.74)
9	Threshing & Winnowing	3942.07 (10.51)	4014.71 (10.78)	3225.35 (8.71)	4031.50 (10.88)	3317.76 (9.26)	3030.93 (8.79)	3643.87 (9.82)	3212.12 (9.14)	3560.42 (9.77)
10	Transportation	2178.84 (5.81)	2147.06 (5.76)	1830.99 (4.94)	1952.76 (5.27)	1803.74 (5.03)	1597.94 (4.63)	1792.45 (4.83)	1767.68 (5.03)	1889.33 (5.19)
11	Interest on working capital	1193.65 (3.18)	1184.06 (3.18)	1177.69 (3.18)	1178.27 (3.18)	1131.66 (3.16)	1080.78 (3.13)	1179.95 (3.18)	1105.98 (3.15)	1153.91 (3.17)
	Total cost	31034.96 (82.72)	30785.53 (82.65)	30619.94 (82.67)	30634.96 (82.66)	29423.25 (82.11)	28100.37 (81.47)	30678.77 (82.64)	28755.47 (81.81)	30001.58 (82.35)
(B)	Fixed cost									
1	Land revenue	10 (0.03)	10 (0.03)	10 (0.03)	10 (0.03)	10 (0.03)	10 (0.03)	10 (0.03)	10 (0.03)	10 (0.03)
2	Rental value of land	6000 (15.99)	6000 (16.11)	6000 (16.20)	6000 (16.19)	6000 (16.74)	6000 (17.40)	6000 (16.16)	6000 (17.07)	6000 (16.47)
3	Interest on fixed capital	471.17 (1.26)	453.42 (1.22)	409.38 (1.11)	417.56 (1.13)	398.53 (1.11)	379.25 (1.10)	432.74 (1.17)	384.17 (1.09)	419.19 (1.15)
	Sub total	6481.17 (17.28)	6463.42 (17.35)	6419.38 (17.33)	6427.56 (17.34)	6408.53 (17.88)	6389.25 (18.53)	6442.74 (17.36)	6394.17 (18.19)	6429.19 (17.65)
(C)	Total cost (A+B)	37516.13 (100)	37248.95 (100)	37039.32 (100)	37062.52 (100)	35831.78 (100)	34489.62 (100)	37121.51 (100)	35149.64 (100)	36430.77 (100)

(Note: Figures in the parenthesis indicate the percentages to the total cost)

Table 3: Measures of SHGs profit of Jeeraphool rice (Rs/ha.)

S.No.	Particulars	Surya		Shankar		Rani		Saraswati		Laxmi		Parvati		Durga		Moti		Overall	
1	Gross income	95026.5		94893		91728		93604.5		88615.5		83043		94282.5		85602		90864.17	
		Qt	Total value	Qt	Total value	Qt	Total value	Qt	Total value	Qt	Total value	Qt	Total value	Qt	Total value	Qt	Total value	Qt	Total value
	Yield of main product (3000)	30.04	90120	30.02	90060	29.12	87360	29.62	88860	28.03	84090	26.25	78750	29.83	89490	27.07	81210	28.75	86250.6
	Yield of by product (150)	32.71	4906.5	32.22	4833	31.53	4368	31.63	4744.5	30.17	4525.5	28.62	4293	31.95	4792.5	29.28	4392	31.02	4613.57
2	Net income (Rs.)	57510.37		57644.05		54688.68		56541.98		52783.72		48553.38		57160.99		50452.36		54433.39	
3	Family labour income (Rs.)	58593.49		58835.23		56533.75		57699.46		53989.33		49800.80		58694.01		51785.69		55744.60	
4	Farm business income (Rs.)	65064.66		65288.65		62943.13		64117.02		60387.86		56180.05		65126.75		58169.86		62163.78	
5	Farm investment income (Rs.)	63981.54		64097.47		61098.06		62959.54		59182.25		54932.63		63593.73		56836.53		60852.58	
6	Input output ratio	1:2.53		1:2.55		1:2.48		1:2.53		1:2.47		1:2.41		1:2.54		1:2.44		1:2.49	

Table 4: Marketable surplus of Jeeraphool paddy of sampled household (per SHGs)

Self Help Groups										
S.No.	Particulars	Surya	Shankar	Rani	Saraswati	Laxmi	Parvati	Durga	Moti	Overall
(A)	Total production	34.07 (100)	30.54 (100)	19.36 (100)	31.75 (100)	18.98 (100)	22.38 (100)	21.08 (100)	22.33 (100)	25.27 (100)
(B)	Consumption									
1	Home consumption	4.17 (12.23)	3.35 (10.96)	2.28 (11.77)	2.46 (7.74)	3.17 (16.18)	3.26 (14.56)	2.53 (12.00)	2.62 (11.73)	3.02 (11.91)
2	Seed retained	0.85 (2.49)	0.71 (2.32)	0.23 (1.18)	0.68 (2.14)	0.47 (2.47)	0.38 (1.69)	0.31 (1.47)	0.42 (1.88)	0.52 (2.01)
	Total consumption	5.02 (14.73)	4.06 (13.29)	2.51 (12.96)	3.14 (9.88)	3.64 (19.17)	3.64 (16.26)	2.84 (13.47)	3.04 (13.61)	3.54 (13.97)
(C)	Marketable surplus	29.05 (85.26)	26.48 (86.70)	16.85 (87.03)	28.61 (90.11)	15.34 (80.82)	18.74 (83.73)	18.24 (86.52)	19.29 (86.38)	21.73 (86.02)

(Note: Figures in parentheses indicate percentages to total quantity produced)

Table 5: Disposable pattern of Jeeraphool paddy of sampled household (qt/farm)

Self Help Groups										
S.No.	Particulars	Surya	Shankar	Rani	Saraswati	Laxmi	Parvati	Durga	Moti	Overall
(A)	Marketable surplus	29.05 (100)	26.48 (100)	16.85 (100)	28.61 (100)	15.34 (100)	18.74 (100)	18.24 (100)	19.29 (100)	21.73 (100)
1	Consumer	5.25 (18.07)	4.84 (18.27)	3.17 (18.81)	3.92 (13.70)	3.67 (23.92)	4.24 (22.62)	3.64 (19.95)	3.71 (19.23)	4.09 (18.82)
2	CLF/KVK	15.42 (53.08)	12.02 (45.39)	8.45 (50.14)	16.45 (57.49)	7.25 (47.26)	8.35 (44.55)	9.06 (49.67)	9.34 (48.41)	10.86 (49.97)
3	Retailer	8.38 (28.84)	9.62 (36.32)	5.23 (31.03)	8.24 (28.80)	4.42 (28.81)	6.15 (32.81)	5.54 (30.37)	6.24 (32.34)	6.78 (31.20)

(Note: Figures in parentheses indicate percentages to total quantity produced)

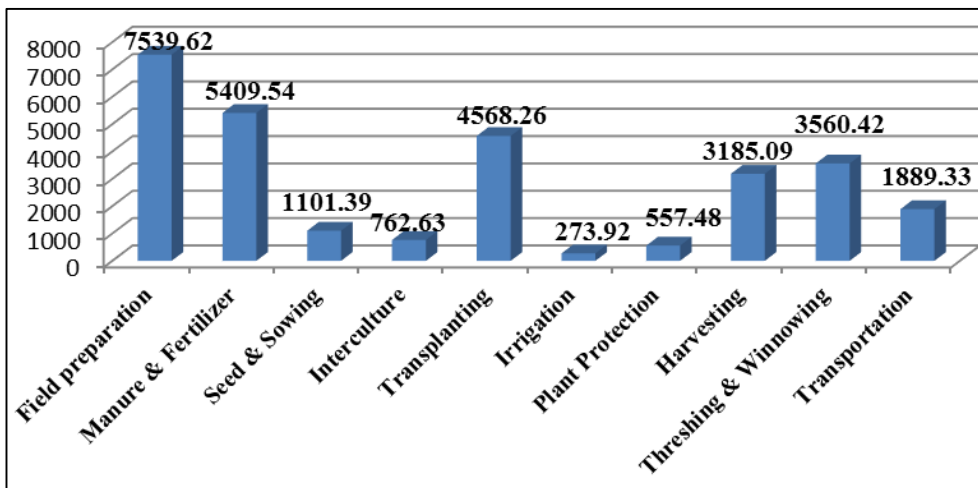


Fig 1: Operation wise cost of cultivation of jeeraphool

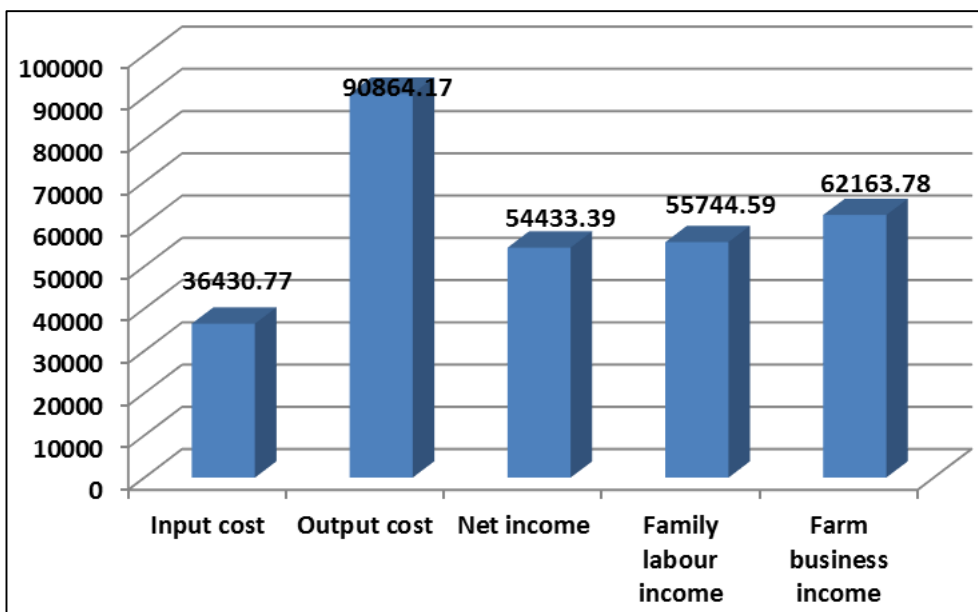


Fig 2: Measures of farm profit by different category of farm of Jeeraphool

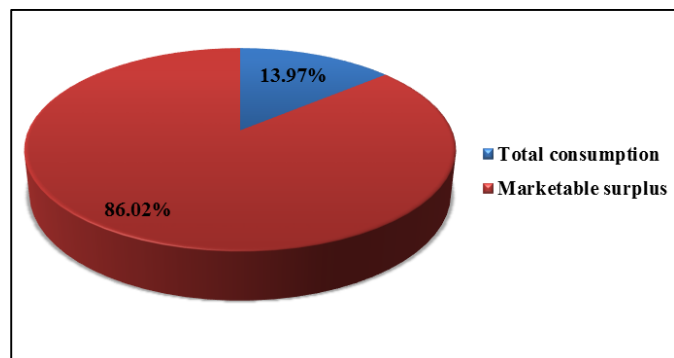


Fig 3: Marketable surplus of jeeraphool paddy of sampled household

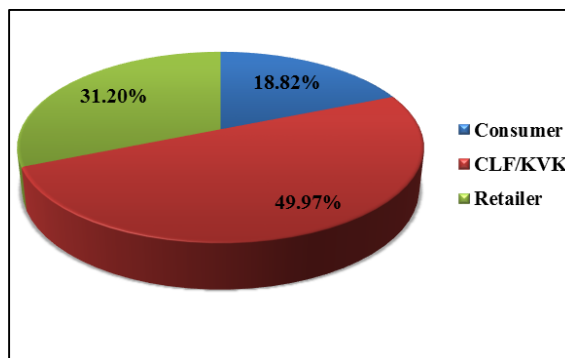


Fig 4: Disposable pattern of jeeraphool paddy

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