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Economic analysis of summer paddy cultivation in Gadchiroli District

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Abstract

The present study entititled “Economic Analysis of Summer paddy Cultivation in Gadchiroli District” has been undertaken in Desaiganj-wadsa and Armori tahsil of Gadchiroli district. In all six villages were selected from these tahsils viz; Kurud, Kondhala, Shivrajpur from desaiganj and Arsoda, Ravi, Waghada from Aromri tahsil. Over all 72 farmers were selected for present study. The data pertain for the year 2017-18. The socio-economic characteristics of farmers i.e. size of family, educational status, land utilization pattern and cropping pattern were studied. The study revealed that On overall basis, family size 40 per cent male, 40 per cent female 20 per cent children of the family members. The higher per cent (9.43 per cent) illiteracy was noted in small size land holding group of selected summer paddy growers. The average size land holding in small, medium and large farmers was 1.2 hectare, 3 hectare and 6.4 hectare, respectively. At overall level average size of holding was 1.82 hectares. The cropping intensity was found to be higher in Medium size of land holding of farmer's i.e.209.21 followed by small (204.23%) and large farmers (126.06%) and cropping intensity was 194.35 per cent at overall basis.

Keywords: Socio economic status, summer paddy, Gadchiroli District

Introduction

Rice (*Oryza sativa* L.) is the staple cereal crop not only of India but also of other tropical and subtropical countries of the world. Paddy is a member of gramineae family. India and Burma should be regarded as the center of origin of cultivated rice where different species of rice were originated.

There are two most important cultivated species of paddy namely i) *Oryza sativa* and ii) *Oryza glaberriumn*. There are around 18 wild species of paddy grown in the continents of Asia, Africa and America.

While *Oryza sativa* is grown in most parts of the Asian and American continents, *Oryza glaberriumn* is grown only in Africa. There are three sub species of paddy in the world i.e. *Indica* (long grain), *Japonica* (round grain) and *Javanica* (medium grain). *Indica* rice is grown in warm climate zone of Indo-China, India, Pakistan, Thailand, Brazil and Southern U.S.A. *Japonica* is mostly grown in cold climate zone of Northern China, Korea, Japan and California. The *Javanica* is grown in Indonesia only.

Rice is an important food crop contributing to more than half the daily requirement of calories. It contains 6 to 7 per cent proteins and 2 to 5 per cent fat only. Grain contains calcium and vitamin B. Rice is primarily a high energy calorie food. The major part of rice consists of carbohydrate in the form of starch, which is about 72-75 per cent of the total grain composition. The protein of rice contains glutelin, which is also known as oryzein.

In world, rice has occupied an area of 160.60 m ha. With a total production of 738.20 mt. and productivity 3424.41 kg/ha.

The people of republic China and India are two major Asian countries produced half of the world rice. Thailand, India, Vietnam and the United State are the top four exporting countries of rice supplying 66 per cent of trade (World Rice Research Conference, 2004).

According to Ministry of Agriculture, government of India. India covers 87.56 million hectares area under paddy. The production of rice touches a new record of 103.5 million tonnes harvested from 43.46 million hectares in the year 2015-16 market year.

Maharashtra covers summer paddy 0.73 lakh hectares area and 1.24 lakh tonnes production and productivity 1710 kg per hectare according to 2015-2016 data (Source-Joint Directorate of Agriculture Office, Nagpur). Paddy is one of the important cereals in Maharashtra.

The important rice growing region in Maharashtra is at most all the districts of Konkan region and Bhandara, Gondia, Chandrapur and Gadchiroli and part of Nagpur district in Vidarbha.

The area, production and productivity of summer paddy in Gadchiroli District in 2016-2017 is 5100 hectare, 10400 million tonn and 2063 kg/ha, Respectively. Summer paddy is grown to some extent in all the talukas of Gadchiroli district. It is grown on a large scale in Wadsa, Armori, Kurkheda, Chamorshi, Korchi and Sironcha.

Methodology

Selection of area: The present study was undertaken in Gadchiroli district of Vidarbha region. In first stage district was selected purposively. The data pertained for the year 2017-2018.

Selection of Samples

Table 1: The details of selected village and No. of farmer in Gadchiroli district.

Sr. No.	Tahsils	Selected villages	No. of farmer selected			
			Small (up to 2 ha.)	Medium (2.01-4 ha.)	Large (4.01-above ha.)	Over all
1	Desaiganj-Wadsa	Kurud	7	5	0	12
		Kondhala	9	3	0	12
		Shivrajpur	12	0	0	12
2	Armori	Arsoda	9	3	0	12
		Waghada	6	4	2	12
		Ravi	10	1	1	12

The present study was conducted in Gadchiroli district. Two tehsil viz; Wadsa and Armori from Gadchiroli district and three villages from each tahsil were selected for the study. Kurud, Kondhala and Shivrajpur villages were selected from Desaiganj-wadsa tehsil and Arsoda, Waghada, Ravi villages were selected from Armori tahsils. Twelve farmers from each village were selected. Total Seventy-Two farmers from the sample area were selected for the study. The collected farmers were grouped under different category small, medium and large farmers.

Source of data

The primary data were collected from the selected farmers by personal interview method on different costs and returns involve in production of Summer paddy far specially designed pre tested schedule. The data were collected for the year 2016-2017.

The survey method which is most identical was selected for collecting the data for the present study. The schedules were so prepared were tested to collect the relevant information.

Results and Discussion

Various socio-economic aspect of sample farmer such as size of land holding, education, family size, land use pattern, and cropping pattern were studied.

Details of farmers selected and their distribution

Table 2 presents the distribution of farmers in the three categories i.e. small, medium and large according to their size of holding. Out of the total 72 selected cultivators 73.61 per cent cultivators belonged to small holding groups, 22.23 per cent medium land holding group and 4.16per cent were large farmers.

Table 2: Distribution of farmers according to size of holding (Area ha)

Sr. No.	Size of holding	Farmers selected	Average size of holding
1	Small (up to 2 Ha)	53 (73.61)	1.2
2	Medium (2.01 to 4.00)	16 (22.23)	3
3	Large (4.01 and above)	3 (4.16)	6.4
	Total	72 (100.00)	1.82

(Figure in parenthese indicates the percentage to total)

On the basis of average size of holding 72 paddy cultivators are categorized in to small, medium and large size of holding contributed 1.2 hectares, 3 hectares and 6.4 hectares

respectively. While average size of holding at overall based was 1.82 hectares.

Average size of family for selected paddy growers

Family size and its components are basically the functions of economic and social characteristics, custom and religious belief of society. The family size of farmer plays an important role in managing the paddy crop. The family members work as farm labours as and when required. In view of this, the composition of family size of the selected farmer was studied to know the availability of labours force at his hand. The details of Average family size are presented in Table 5.2.

Table 3: Average family size of selected farmers

Sr. No	Particulars	Size of family			Overall
		Small	Medium	Large	
1	Male	2 (40)	2 (40)	2 (40)	2 (40)
2	Female	2 (40)	2 (40)	2 (40)	2 (40)
3	Children	1 (20)	1 (20)	1 (20)	1 (20)
4	Total	5 (100.00)	5 (100.00)	5 (100.00)	5 (100.00)

(Figure in parenthesis indicate the percentage to total)

The Table 3 revealed that the average family size of selected farmer was 2male, 2 female and 1 children at over all basis. Total family member under small, medium and large group of selected farmer was found to 5, 5 and 5, respectively.

Education status of selected paddy growers in Gadchiroli district

Education is an important factor in understanding important and availability technology and its adoption. It is also one of the important aspects which affect the standard of living of growers. The information regarding the education status of selected paddy growers is presented in Table 4.

Table 4: Educational pattern of selected farmers

Sr. No.	Particulars	Size groups			Overall
		Small	Medium	Large	
1	Illiterate	5 (9.43)	1 (6.25)	—	6 (8.33)
2	Primary school	14 (26.42)	3 (18.75)	1 (33.34)	18 (25.00)
3	Middle school	4 (7.54)	—	—	4 (5.55)
4	High school	15 (28.31)	4 (25.00)	1 (33.33)	20 (27.79)
5	Higher secondary	13 (24.53)	4 (25.00)	1 (33.33)	18 (25.00)
6	Graduate & above	2 (3.77)	4 (25.00)	—	6 (8.33)
7	Total	53 (100.00)	16 (100.00)	3 (100.00)	72 (100.00)

(Figure in parenthese indicates the percentage to total)

The education profile of selected farmers shows that, 8.33 per cent of farmer illiterate and rest of them have educated, among them 25.00 per cent farmers was primary school level education and 5.55 per cent, 27.79 per cent, 25.00 per cent farmers had completed their middle school, high school and junior college. Whereas graduate and above level of educated were 8.33 per cent only.

Highest illiterate (9.43 per cent) people were observed in small size of holding. On an overall basis 27.79 per cent farmers completed their education up to High school level.

Land utilization pattern of selected farmers in Gadchiroli district: Land utilization indicates the area of land actually utilize in different purpose like crop production, irrigated, unirrigated etc. It was observed from Table 5 the overall gross cropped area was 3.44 hectares. While 97.25 per cent area under net cultivable land followed by 91.75 per cent area sown more than ones. In regard to cropping intensity it was observed that the highest cropping intensity was 209.21 per cent in Medium farmers followed by small farmers 204.23 per cent and 126.06 per cent in large farmers, respectively. At overall level the cropping intensity was 194.35 per cent.

Table 5: Average land utilization pattern of selected farmers (Area Ha)

Sr. No.	Particulars	size group			Overall
		Small	Medium	Large	
1	Total land holding	1.2 (100.00)	3 (100.00)	6.4 (100.00)	1.82 (100.00)
2	Current fallow	0.018 (1.5)	0.07 (2.33)	0.53 (8.29)	0.05 (2.75)
3	Net cultivated area	1.18 (98.50)	2.93 (97.66)	5.87 (91.71)	1.77 (97.25)
4	Area sown more than once	1.22 (101.66)	3.2 (106.66)	1.53 (23.90)	1.67 (91.75)
5	Gross cropped area	2.41	6.13	7.4	3.44
6	Cropping intensity (%)	204.23	209.21	126.06	194.35

(Figure in parentheses indicates the percentage to total land holding)

The cropping pattern of selected paddy growers

Cropping pattern of selected paddy growers is said to be the results of past experience of farming, the type of soil available, irrigation resources and the pattern of distribution

of rainfall in cultivation of different crops. The percentage area allocated to different crops with reference to gross cropped area by the selected paddy growers has been present in Table 6.

Table 6: Cropping Pattern of selected farmers (Area Ha)

Sr. No.	Particulars	Size group			Over all
		Small	Medium	Large	
A	Kharif Crops				
1	Paddy	1.18 (48.97)	2.93 (47.79)	5.87 (79.32)	1.77 (51.49)
	Total of Kharif crop	1.18 (48.97)	2.94 (47.93)	5.87 (79.32)	1.77 (51.49)
B	Rabi Crops				
2	Wheat	0.06 (2.48)	0.27 (4.40)	0.13 (1.75)	0.11 (3.19)
3	Gram	0.12 (4.97)	0.36 (5.87)	0.26 (3.51)	0.17 (4.94)
4	Rabi jowar	-	0.05 (0.81)	-	0.01 (0.29)
5	Udid	0.1 (4.18)	0.19 (3.09)	0.2 (2.70)	0.12 (3.48)
6	Linseed	0.04 (1.70)	0.12 (1.95)	0.06 (0.81)	0.06 (1.74)
7	Mung	0.045 (1.95)	0.08 (1.31)	-	0.06 (1.74)
8	Lakhodi	0.026 (1.12)	0.05 (0.81)	-	0.03 (0.87)
9	Mustard	0.026 (1.12)	0.15 (2.45)	-	0.05 (1.45)
10	Pea	0.003 (0.12)	0.1 (1.63)	-	0.025 (0.72)
11	Other	0.04 (1.70)	0.06 (0.97)	-	0.04 (1.16)
	Total of Rabi	0.47 (19.50)	1.43 (23.32)	0.65 (8.79)	0.67 (19.69)
C	Summer paddy				
12	Summer paddy	0.76 (31.53)	1.77 (28.75)	0.88 (11.89)	0.98 (28.82)
	Gross cropped Area	2.41 (100.00)	6.13 (100.00)	7.4 (100.00)	3.44 (100.00)
	Cropping intensity (%)	204.23	209.21	126.06	194.35

(Figure in parenthesis indicate the percentage to gross cropped area)

It was observed that in kharif season proportionate area under paddy was the highest as 51.49 per cent. While in rabi season the proportionate area under gram was the highest as 4.94 per

cent. It revealed that paddy is major crop in kharif season in there farmer groups while gram is the one of the major crop in rabi in the study area.

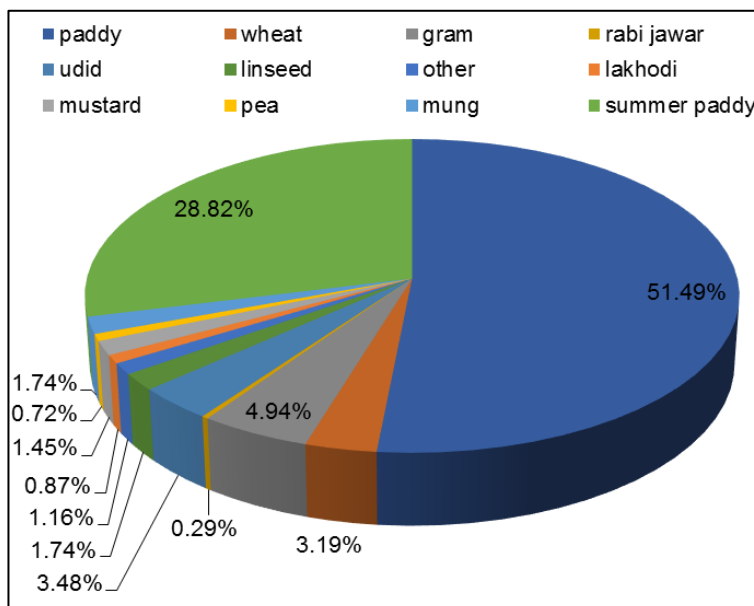


Fig 1: Cropping pattern of selected farmers (overall)

Remaining area in both season kharif and rabi was used for cultivation of udid, linseed, wheat, pea, mung, mustard etc in very small proportion.

In summer season due to lack of water small area was under paddy cultivation i.e. 0.98 hectares. The gross cropped area on an overall basis was found to be 3.44 hectares.

Conclusion

The result of this study leads to the conclusion that, on overall basis, family size 40 per cent male, 40 per cent female 20 per cent children of the family members. The higher per cent (9.43 per cent) illiteracy was noted in small size land holding group of selected summer paddy growers. The average size land holding in small, medium and large farmers was 1.2 hectare, 3 hectare and 6.4 hectare, respectively. At overall level average size of holding was 1.82 hectares. The cropping intensity was found to be higher in Medium size of land holding of farmer's i.e. (209.21%) followed by small (204.23%) and large farmers (126.06%) and cropping intensity was 194.35 per cent at overall basis.

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