



Research Article

ANALYSIS OF FARMER'S PROFILE ENGAGED IN RICE CULTIVATION IN CHHATTISGARH PLAINS AGRO-CLIMATIC ZONE OF CHHATTISGARH STATE

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Abstract: The current study was conducted in the state of Chhattisgarh's plain agro-climatic zone of Chhattisgarh state during the year 2020. The purpose of this study is to evaluate information on rice farming during the wet and dry seasons. The study took place in 18 villages in the Chhattisgarh Plains Agro-Climatic Zone, which were chosen at random from six blocks in three districts. The information was acquired via an interview schedule and a personal interview. The data was analyzed with the use of relevant statistical approaches and tools. The study area is dominated by respondents, belonged to 36 to 50 years of age group, belonged to other backward class and obtained education up-to middle school. Most of them were living in Joint families with no membership in any organization. Majority of them were doing agriculture as their main occupation and having overall annual family income in the range of Rs.50001 to Rs. 100000. Farmers with semi-medium size of land holdings dominated the research area, with Inceptisols accounting for the majority of land holdings.

Keywords: Rice Cultivation, Profile, Annual Income, Social and Economical characteristics

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Introduction

The agriculture's contribution to global GDP is decreasing, it continues to support the livelihoods of more than 2.6 billion people worldwide, and the majority of whom live in rural regions. The state is divided into three agro-ecological zones: the plains of Chhattisgarh, the plateau of Bastar, and the Northern hills of Surguja. This zone has a wide range of soil topography, rainfall intensity and distribution, irrigation, and agricultural production system adoption, resulting in a wide range of rice productivity in these areas. In Chhattisgarh, the absence of adequate rainfall and reliable irrigation water are major factors in the low cultivation of rabi or dry season rice. Modern agriculture demands cutting-edge technology that methodically applies scientific knowledge to farming [1]. Higher earnings and lower poverty have been linked to the adoption of new agricultural technologies, as well as improved nutritional status, cheaper staple food prices, more work options, and earnings for landless laborers [2].

Material and Methods

The present study was carried out in Chhattisgarh Plains Agro-Climatic Zone of Chhattisgarh State. On the basis of maximum area coverage of dry season rice cultivation, the three districts in the zone *i.e.* Janjgir-Champa, Dhamtari, and Raipur were undertaken for the study. Two blocks from each of the selected district were selected randomly for this investigation. In this way a total of 6 blocks were taken for this study, from each selected block, 3 villages were selected randomly for the selection of respondents and from each selected village, 15 farmers were selected randomly. In this way, a total of 270 farmers were considered as respondent to respond as per the interview schedule design for the study. The interview schedule was designed on the basis of objectives and independent and dependent variables considered for this investigation.

To facilitate the respondents, the interview schedule was framed in "Hindi". Before the interview schedule was finalized, each question was thoroughly scrutinized and debated with the specialists. Adequate precautions and care were taken into consideration to formulate the questions in a manner that they were well understood by the respondents and would find it easier to respond. Before using prepared interview schedule for collection of data it was pre-tested by 20 non-sample respondents and also checked its reliability and validity. Before finalizing the interview schedule, the necessary tweaks and suggestions were incorporated based on the pre-testing experience. The collected data were analyzed with the help of suitable statistical methods like Frequency, Percentage, *etc.*

Result and Discussion

Socio-personal characteristics

This section includes the socio-personal characteristics of the respondents which is associated with dependent variables and may influence their perceptions. However, some socio-personal characteristics of respondents were identified namely age, caste, education and social participation.

Age of the respondents

The findings about the age of respondents are presented in [Table-1]. The data reveals that majority of the respondents (45.92%) belonged to the age group of 36 to 50 years. About 44 per cent of the respondents were found above the age of 50 years whereas, 9.63 per cent of the respondents were found below 35 years. The findings indicate that majority of the respondents in the study area were falling below the age of 50 years may be because of much involvement of young people in rice cultivation. These findings find support from Narbaria (2013) [3].

Table-1 Distribution of the respondents according to their age

Sl. No	Category	Frequency	Percentage
1	Below 35years	26	9.63
2	36-50 years	124	45.92
3	Above 50 years	120	44.45

Caste of the respondents

The data regarding caste of the respondents presented in [Table-2] indicates that majority (78.52%) of the respondents belonged to Other Backward Class, followed by 11.85 per cent of the respondents belonged to Scheduled Tribes and 5.55 percent of them were belonged to Scheduled Castes. In the study area, the respondents from Other Castes were only 4.07 per cent. This study was confined in the Chhattisgarh Plains Agro-climatic zone of Chhattisgarh state which is pre dominated by Other Backward Class, hence in this study Other Backward Class populations were dominated.

Table-2 Distribution of respondents according to their caste

Sl. No	Category	Frequency	Percentage
1	Scheduled Castes	15	5.55
2	Scheduled Tribes	32	11.85
3	Other Backward Class	212	78.52
4	Other Castes	11	4.08

Education of the respondents

Regarding education of the respondents, the data compiled in [Table-3] shows that 10.74 per cent of the respondents were found illiterate and 26.67 per cent respondents were literate only up to middle school level. About 24 per cent of them had primary school level of education, 18.15 per cent were passed higher secondary school and 14.08 per cent were high school passed. Among the selected respondents, only 4.44 per cent were having Graduation and only 2.22 per cent of them possessed Post Graduate degree. The findings reveal slight poor education status in the study area may be due to the most of the respondents were up to 50 years' age group and in their childhood there was less facility of education institutes at villages. These results were also supported by Narbaria (2013) and Pradhan (2014) [4].

Table-3 Distribution of respondents according to their education level

Sl. No	Category	Frequency	Percentage
1	Illiterate	29	10.74
2	Primary School	64	23.70
3	Middle School	72	26.67
4	High School	38	14.08
5	Higher Secondary School	49	18.15
6	Graduate	12	4.44
7	Post Graduate	6	2.22

Social participation of the respondents

The findings regarding social participation of respondents are presented in [Table-4]. The data reveals that most (46.67%) of the respondents had no membership in any social and political organizations, followed by 32.96 per cent respondents were found to have membership in at least one organization and 14.44 per cent respondents reported that they were having membership of more than one organization. Further, it was found that only 5.93 per cent of the respondents were office bearer in one or more organizations. The findings reflected that respondents had very low participation in social organizations.

Table-4 Distribution of respondents according to their social participation

SNo	Category	Frequency	Percentage
1	No membership	126	46.67
2	Member of one organization	89	32.96
3	Member of more than one organizations	39	14.44
4	Office bearer in one or more organizations	16	5.93

Socio-economic characteristics

Socio-economic characteristics of the respondents are very important to determine the adoption of different recommended practices of rice cultivation, thus, important variables that are directly associated with the adoption of recommended practices and productivity of rice are sequentially arranged and presented under following sub-heads:

Occupation

Occupation of the respondents is the main source of earning for their family livelihood. It is an assumption that who are having more than one occupation in addition to agriculture were more capable to adopt more recommended practices and got more productivity and income from rice cultivation. The data related to the occupation of the respondent families are presented in [Table-5]. The finding shows that all the respondents were engaged in agriculture and among them 94.44 per cent had agriculture as their main occupation and remaining 5.55 per cent of them were practicing agriculture as subsidiary occupation. Agricultural labour was found as the second most popular occupation amongst the respondents (34.81%), but all of them were practicing it as subsidiary occupation. Service and business were found as the main occupation of 2.22 per cent, and 1.49 per cent of the respondents, respectively. Non-Agricultural Labour, Animal Husbandry and business were also practiced by 18.15, 14.44 and 5.55 percent of the respondents as subsidiary occupation. The findings clearly stated that majority of the respondents depends for their livelihood on agriculture followed by Agricultural Labour may be because of selection of only farmers as respondent for this study. These findings are in line with findings of Pradhan (2014) who found that majority (72.92%) of the respondents had farming as main occupation. Narbaria (2013) also observed that majority (77.53%) of the respondents practiced agriculture as their main occupation.

Table-5 Distribution of respondents according to their family occupation

Sl. No	Occupation	Occupation					
		Main		Subsidiary		Total	
		F	%	F	%	F	%
1	Agriculture	255	94.44	15	5.55	270	100.00
2	Non-Agricultural labour	0	0.00	49	18.15	49	18.15
3	Animal Husbandry	0	0.00	39	14.14	39	14.14
4	Business	4	1.49	15	5.55	19	7.03
5	Service	6	2.22	0	0.00	6	2.22
6	Agriculture labour	5	1.85	94	34.81	103	36.66

Income from different occupations

The agriculture is main source of income of most of the respondents, but it is always very difficult to assess the average annual family income of each individual, as they are not maintaining such records. The attempt was made to collect the annual family income of the respondents through discussion and interpretation from different angles. The data on total annual income earned and occupation wise average income of the respondents from different occupations is presented in [Table-6]. The findings reveals that highest total income by all the respondents was earned from Agriculture, followed by Animal husbandry, Service, Agriculture labour, Non-agricultural labour, and Business.

It was also observed from the data that the maximum (Rs. 198,000 / Family) average annual family income of the respondents was received from service, followed by Rs102,000 from agriculture, Rs.46,000 from business, Rs24,000 from animal husbandry, Rs22,000 from non-agricultural labour and Rs14,000 from agricultural labour. The findings clearly indicate that among all the occupations the maximum average income earned was from service and agriculture, may be due to all selected respondents were farmers and few of them were services man but the amount of salary is more that by they were earning more average income than agriculture.

Table-6 Total income earned from different occupations

Sl. No	Source of income	Total income received by all respondents (Rs. 000)	Average income (Rs. 000)
1	Agriculture	27561	102
2	Non-agricultural labour	1122	22
3	Animal Husbandry	9132	24
4	Business	878	46
5	Service	1190	198
6	Agricultural labour	1474	14
Overall average income from all sources / family			Rs. 124241.85

Overall annual income

The distribution of respondents according to their overall family income is presented in [Table-7].

The finding indicates that 45.18 per cent of the respondents were having annual income in the range of Rs. 50001 to 100000 per family, followed by 18.15 per cent families of the respondents managed to earn Rs. 100001 to Rs. 200000 in a year, 14.14 per cent of respondents earned less than Rs. 50000 and 10.38 per cent of the respondents reported that their family have earned between Rs. 200001 to 500000 from all the sources. Very few of them (1.85%) were reported that they earned above Rs. 500000.

Table-7 Distribution of respondents according to their overall annual family income

Sl. No	Annual income	Frequency	Percentage
1	Up to Rs 50000	39	14.44
2	Rs 50001 to Rs 100000	122	45.18
3	Rs 100001 to Rs 200000	76	28.15
4	Rs 200001 to Rs 500000	28	10.38
5	Above Rs 500000	5	1.85

Average income shares from different occupation

The data regarding average income share earned from different occupation is presented in [Table-8]. The finding reveals that majority of the average income share was earning from agriculture, followed by 4.40 per cent from agricultural labour, 3.84 from business, 3.54 from services, 3.34 per cent from non-agricultural labour and 2.72 average income share from animal husbandry.

Table-8 Average income share from different occupations

Sl. No	Occupation	Average income share (%)
1	Agriculture	82.16
2	Non Agricultural Labour	3.34
3	Animal husbandry	2.72
4	Business	3.84
5	Service	3.54
6	Agricultural Labour	4.40

Size of land holding

The distribution of respondents according to their land holdings are presented in [Table-9]. The data regarding land holdings indicates that 45.55 per cent of the selected farmers had 2.1 to 4 ha of land (semi medium land holding), followed by 20.37 per cent of the respondents had up to 1ha of land holding (marginal land holding), 14.82 per cent had 1.1 to 2 ha of land (small land holding), 10.37 per cent had above 10 ha of land (big land holding) and only 8.89 per cent of the respondents had 4.1 to 10 ha land (big land holding). These findings find support from Singh (2013) [5] who reported that 58 per cent of respondents had 2 to 3 ha land holding. On the basis of findings, it can be concluded that most of the respondents were semi-medium farmers may be due to frequently participation and transfer of ownership from parents to their children in the family which may also increase the fragmentation of land.

Table-9 Distribution of respondents according to their land holding

Sl. No	Land holding	Frequency	Percentage
1	Marginal (up to 1ha)	55	20.37
2	Small (1.1 to 2 ha)	40	14.82
3	Semi Medium (2.1 to 4.0 ha)	123	45.55
4	Medium (4.1 to 10.0 ha)	24	8.89
5	Big (above 10 ha)	28	10.37

Area under different soil types

The common classification of land in the study area is done according to land situation and broadly divided into Bhata, Matasi, Dorsa and Kanhar in [Table-10].

Table-10 Distribution of respondents according to area under different soil types

Types of soil	Respondents			
	Frequency	Percentage	Total area (ha)	Percentage
Entisols (Bhata)	4	1.48	5.46	0.83
Inceptisols (Matasi)	141	52.22	349.93	53.51
Alfisols (Dorsa)	13	4.81	27.73	4.24
Vertisols (Kanhar)	112	41.49	271.42	41.5
Total	270	100	654.54	100
Average land holding= 2.42 ha/family				

This classification is also scientifically based on soil topography and depth and scientifically these terms are known as Entisols, Inceptisols, Alfisols and Vertisols. The data compiled in [Table-10] indicates that 52.22 per cent respondents of the study area occupy Inceptisols. Vertisols occupied by 41.49 per cent respondents.

About 5 per cent respondents reported that they were having Alfisols which is suitable for short and medium duration rice cultivation. The 1.48 per cent respondents were found to have Entisols. In order to assess the per cent area in different soil types amongst the respondents, out of the total 654.54 ha of land holding amongst the respondents, Inceptisols had maximum coverage (53.51%), followed by Vertisols (41.50%), Alfisols (4.24%) and Entisols (0.83%), respectively.

Conclusion

It was concluded from the study that the majority of the respondents belonged to 36 to 50 years of age, belonged to other backward class and obtained education up to middle school. Most of the respondents living in Joint family with no membership in any organization. Majority of them doing agriculture as their main family occupation earned an average income of Rs. 102000.00 from agriculture and had family income in the range of Rs. 50001 to Rs. 100000 in which agriculture contributed more than 82.16 per cent share. Majority of them had semi medium land holding, the Matasi (Inceptisols) and Kanhar (Vertisols) are common soil type found in study area.

Application of Research: This research helps in assessing the information about the socio-personal and socio-economic characteristics of the farmers, engaged in rice cultivation and provides base for formation of various development programmes for rice growers in Chhattisgarh State.

Research Category: Post facto research

Abbreviations: GDP: Gross Domestic Product

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Study area / Sample Collection: Chhattisgarh Plains Agro-Climatic Zone of Chhattisgarh State

Cultivar / Variety / Breed name: Nil

Conflict of Interest: None declared

Ethical approval: This article does not contain any studies with human participants or animals performed by any of the authors.
Ethical Committee Approval Number: Nil

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