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Pramod Kumar Netam
Department of Agricultural
Extension CARS, IGKV,
Raipur, Chhattisgarh, India

Socio-personal and socio-economic attributes of the maize growers

Pramod Kumar Netam

Abstract

This investigation was carried out in three district of Bastar plateau of Chhattisgarh State to assess the level of socio-personal and socio-economic attributes of the respondents. 270 farmers were consider as respondents for this study. Respondents were interviewed through personal interview. Collected data were analyzed with the help of suitable statistical methods. The analysis of the results showed that most of the respondents were middle school passed out, having small size of family, 11 to 20 years of farming experiences no participation in any organization, having small land holding and soil types area was Alfisols. All the respondents were dependent on agriculture for their livelihood and earned average annual income of Rs 50,000 to 1, 00000 per family in which maximum share comes from agriculture. Maximum respondents had irrigation facilities at their farm.

Keywords: Socio-personal, socio-economic attributes

Introduction

Maize (*Zea mays* L.) is one of the most important cereal crops in the world and has the highest production among all the cereals. It is a miracle crop, it has very high yield potential, there is no cereal on the earth which has so immense potentiality and that is why it is called 'queen of cereal'. Besides, maize has many types like normal yellow, white grain, sweet corn, baby corn, pop corn, waxy corn, high amylase corn, high oil corn, quality protein maize, etc. Maize is the most important crop in the world after wheat and rice (Verheys, Undated). It is an important staple food in many countries and is also used as animal feed and many industrial applications. Maize is 3rd major crop in India after rice and wheat (Cox, R., 1956 & Reddy *et al.* 2013) [9]. Maize is important cereal crop which provides food, feed, fodder and serves as a source of basic raw material for a number of industrial products *viz.*, starch, protein, oil, food sweeteners, alcoholic beverages, cosmetics, bio-fuel etc, it is cultivated over 8.12 million hectare area with an annual production of 19.77 million tones and an average productivity of 2,435 kg ha⁻¹ (Langade *et al.* 2013) [7]. Maize is the third most important food grain in India after wheat and rice. In India, about 28% of maize produced is used for food purpose, 11% as livestock feed, 48% as poultry feed, 12% in wet milling industry (for example starch and oil production) and 1% as seed (AICRP on Maize, 2007). Maize crop in the state has an area of 123430 ha with the production 254134 MT (C.G. Agriculture Statistic Report 2014). The area and production of Maize crop in Kanker district was 11511 ha and 25705 MT respectively, area of maize crop in Kondagaon district is 13586 ha with production of 31831 MT while the coverage of maize in Bastar district is 9560 ha with the production of 22398 (C.G. Ag. statistic Report 2014). The Socio-personal and socio-economic attributes indicate the social standing or class of an individual or group. It is often measured as a combination of education, income and occupation of respondents. The present study was undertaken with specific objectives to assess the Socio-personal and socio-economic attributes of the maize growers of Bastar plateau of Chhattisgarh.

Material and Methods

The present study was carried out in Bastar plateau of Chhattisgarh State. Three districts in the zone *i.e.* Kanker, Kondagaon and Bastar were undertaken for the study. Two blocks from each of the selected district Block Antagarh and Koylibeda in Kanker District, Keshkal and Baderajpur in Kondagaon, Bastar and Bakawand in Bastar District. Each selected block 3 villages *viz.* Irrabodi, Amagaon, Godri, in Antagarh Block, Chotekapsi, Kodosalhebhat, Manegaon, in Koylibeda Block, Cherbeda, Toraibeda, Amoda in Keshkal Block, Baderajpur, Toraipara, Khargaon (Manduki) in Baderajpur Block, Ikchapur, Bagmohlai, Dubeumargaon in

Corresponding Author
Pramod Kumar Netam
Department of Agricultural
Extension CARS, IGKV,
Raipur, Chhattisgarh, India

Bastar Block, Belputi, Khotlapal and Mangnar in Bakawand Block were selected and from each selected village, 15 farmers were selected randomly. In this way total two hundred seventy respondents were selected to response as per the interview schedule designed for the study. Collected data were analyzed by the help of various statistical tools *i.e.* frequency, percentage, mean, standard deviation, correlation and regression, *etc.* In this study, the Socio-personal and socio-economic attributes indicate the social standing or class of an individual or group. The scoring procedure was used as follow.

Socio-personal Attributes

Education

Different terms are used under category in order to measure it. The term literate, pertains to the ability to read and write or to communicate by means of writing. A similar term which is used interchangeably in the field of agricultural extension is education. Defined simply, education in any form is the production of desirable change in human behavior. Thus education is deemed to have an impact on the performance of respondents. In this study the education has been operationalized as the extent of formal education attained by individual respondents. It was measured by adopting the scale developed by Supe (2007) and categorised as follow.

Table 1: Categories

Categories	Score
Illiterate	0
Can read only	1
Can read and write	2
Primary School	3
Middle School	4
High School	5
Graduate	6

Family size

Family size represents to the total members in the family. This may also influence the decision-making, operationally and adoption behaviour of respondents. Family size was measured by adopting the scale followed by Sahu (2008) and categorised as follow.

Table 2: Categories

Categories	Score
Small (up to 5 members)	1
Medium (6 to 10 members)	2
Big (> 10 members)	3

Farming experience

Farming experience refers to the number of years of experience of cultivation by the individual respondents. Farming experience was measured by using the scale followed by Thoke (1999) with slight modification and categorised as follow.

Table 3: Categories

Categories	Score
Up to 10 years	1
11 to 20 years	2
21 to 30 years	3
Above 30 years	4

Social participation

The social participation of respondents may influence their

adoption behavior. Through social participation is to get an opportunity for more learning exposure towards new ideas and may be motivated for adoption. The term social participation in this study refers to the degree of involvement of the respondents in formal and informal organizations as member or office bearer, or both. Social participation was measured by adopting the scale followed by Nirban (2004) and categorised as follow.

Table 4: Nature of participation

Nature of participation	Score
Regular	2
Occasional	1
Never	0
Status of participation	Score
Member of any organization	1
Office bearer of any organization	2

Socio-economic Attributes

Land holding

Land holding of respondent's family was considered as an important factor influencing their various components of adoption. It is related to cropping pattern, annual income, social status and contacts with extension agents. In this study the actual land holding of the family was considered. Land holding was measured by using the scale developed by Suruliappan (1998) and further it was followed by Priya (2014) and categorised as below.

Table 5: Categories

Categories	Score
Marginal Farmer (Up to 1.0 ha)	1
Small Farmer (1.1 to 2.0 ha)	2
Medium Farmer (2.1 to 4.0 ha)	3
Large Farmer (above 4.0 ha)	4

Occupation

Occupation refers to the principal source of earning which in other words is commonly used for temporary or regular employment, business, calling or pursuit. Occupation is studied on the basis of assumption that it forms one of the important components of socio-economic status of an individual which direct or indirectly influences the performance of respondents. It was measured by adopting the scale assessed by Supe (2007) and categorised as listed below.

Table 6: Categories

Categories	Score
Labour	0
Caste occupation	1
Business	2
Independent profession	3
Agriculture	4
Service	6

Annual income

Annual income represents the amount of money of respondents earns in one year from all sources. It is one of the most important factors for their socio-economic status, investment in agriculture, adoption of crops and it is supported to be improved the package of practices and credit acquisition behavior. It was calculated from the monthly and seasonally income as per the convenience of respondents. Annual income was measured by using the scale followed by Paikra (2014) and categorised as follow.

Table 7: Categories

Categories	Score
Up to Rs. 50,000	1
Rs. 50,001 to Rs.1,00,000	2
Rs. 1,00,001 to Rs.2,00,000	3
Rs.2,00,001 to Rs. 3,00,000	4
Above Rs. 3,00,000	5

Irrigation facility

It refers to regarding the type of irrigation source used by the respondents for providing irrigation to the crops was collected. Different sources of irrigation such as canal, tube well, pond, river and well were identified. Irrigation facility was measured by adopting the scale followed by Paikra (2014) and categorised as follow.

Table 8: Categories

Categories	Score
No irrigation	0
Partial irrigation availability	1
Assured irrigation availability	2

Result and Discussion

The result and discussion of the present study have been summarized on the basis of response of respondents regarding to Socio-personal and socio-economic attributes among the respondents are represented in the following

Socio-personal Attributes**Education**

The education of respondents taken under the investigation has been compiled and tabulated in table 9. The data pertaining to the level of education in the study area revealed that the majority of the respondents were middle school passed out (31.5%) and illiteracy (30%) in the study area was in close proximity. Data revealed that 21.1 percent of the respondents had passed out primary school and 14.4 percent had observed high school. Among the respondents only 1.9 percent of the respondents were can read and write while 1.1 percent can read only.

Table 9: Distribution of the respondents on the basis of their education level

S. No.	Education level	Frequency	Percentage
1	Illiterate	81	30.00
2	Can read only	3	1.10
3	Can read and write	5	1.90
4	Primary School	57	21.10
5	Middle School	85	31.50
6	High School	39	14.40
	Total	270	100.00

It is evident from the data collected and interpreted from the study area shared poor level of education and meager number of the respondents had observed the high school. Similar findings were also reported by Mangala (2008) who reported

Table 12: Distribution of the respondents on the basis of their participation

S. No.	Participations	Frequency	Percentage
1	No participation	159	58.90
2	Participation in one organization	57	21.10
3	Participation in two organizations	32	11.90
4	Participation in more than two organizations	22	8.10
	Total	270	100.00

that 34.30 percent of the IFS beneficiaries in the study area were illiterate.

Family size

The data pertaining to size of family in the study area are presented in table no. 10 apparently majority of the respondents (53.3%) were belong to small size of family followed by medium size of family (42.6%). Least number of respondents about 4.1percent were belongs to big size of family. Similar findings were reported by Kavadi (2015) in the study area where he found that 53 percent of the respondents belong to small (up to 5 members) size of family.

Table 10: Distribution of the respondents on the basis of their size of family

S. No.	Size of family	Frequency	Percentage
1	Small (up to 5 members)	144	53.30
2	Medium (6 to 10 members)	115	42.60
3	Big (> 10 members)	11	4.10
	Total	270	100.00

Farming experience

Data pertaining to farming experience of the respondents in the study area (Table No.11) revealed that majority of the respondents (45.2%) had 11 to 20 years of farming experience followed respondents (33.7%) had been farming experience of 21 to 30 years. Very few percentages (6.7%) of respondents belong to 10 years of farming experience. Similar findings were also reported by Paikra (2014) who indicate that 44.17 percent respondent had 11 to 20 years of farming experience in the study area.

Table 11: Distribution of the respondents on the basis of their farming experience.

S. No.	Farming experience	Frequency	Percentage
1	Up to 10 years	18	6.70
2	11 to 20 years	122	45.20
3	21 to 30 years	91	33.70
4	Above 30 years	39	14.40
	Total	270	100.00

Social participation

Social participation of the respondents from the study area about their involvement in village level organization revealed the wide variation among the respondents. It was observed from the Table No. 12 the majority of the respondents (58.9%) showed no interest for their participation in different organization of village viz. gram panchayat, cooperative societies, cast panchayat etc.

It was indicate that only 21.10 percent and 11.90 percent respondents had participated in one and tow organization respectively, whereas 8.10 percent respondents had their participation in more than tow organization. Similar finding were reported by Kavadi (2015) in the study area, where he found that 21percent of respondents participate in one organization.

Data pertaining to the active participation of the respondents in different bodies of village, revealed (Table No. 13) that majority of the respondents imparted in gram panchayat (52.25%) followed by school governing body (43.24%) and cooperative society (41.44%). The least number of 7.21 percent of respondents were actively participated in caste panchayat. It is evident from the data that participants in gram panchayat

body possessed the active membership (91.38%) and rest 8.62 percent of the respondents were the office bearer. Active participation of the respondents in school governing body and cooperative society was 2.08 and 2.17 percent as office bearer respectively, 97.92 percent and 97.83 percent of the participants were the member of school governing body and cooperative society respectively.

Table 13: Distribution of the respondents on the basis of their social participation in different organization (n=111)

S. No.	Organization	Participants		Types of participation			
				Member		Office bearer	
		No.	Percentage	No.	Percentage	No.	Percentage
1	Gram panchayat	58	52.25	53	91.38	5	8.62
2	Co-operative society	46	41.44	45	97.83	1	2.17
3	Caste panchayat	8	7.21	6	75	2	25
4	Farmers Club	28	25.23	26	92.86	2	7.14
5	School	48	43.24	47	97.92	1	2.08

*Data are based on multiple respondents

About 7.14 percent of the participants hold the office bearer in farmers club and about 92.86 percent of the respondents were the active member. Among the respondents who the active participated in caste panchayat, about 75 percent of the respondents were active member and remaining 25 percent of the respondents were office bearer.

farmers (up to 1.0 ha.), respectively least numbers of 4.4 percent respondents lie under large farmers (above 4.0 ha). Similar finding were reported by Paikra (2014) in the study area, where he found that 55.83 percent respondents had small farmers.

Socio-economic Attributes

Land holding

It is evident from the Table No. 14A showed the variation in size of the land holding among the respondents. It is apparent from the table that the maximum number of respondents belong to small farmers having land holding size of (1.1 to 2.0 ha.) and occupied the 63.0 percent respondents from the total respondents while, 25.6 percent and 7 percent of respondents belong to medium farmer (2.1 to 4.0 ha.) and marginal

Table 14A: Distribution of the respondents on the basis of their size of land holding

S. No.	Size of Land holding	Frequency	Percentage
1	Marginal Farmer (Up to 1.0 ha)	19	7.00
2	Small Farmer (1.1 to 2.0 ha)	170	63.00
3	Medium Farmer (2.1 to 4.0 ha)	69	25.60
4	Large Farmer (above 4.0 ha)	12	4.40
	Total	270	100.00

Average land holding 2.06 ha.

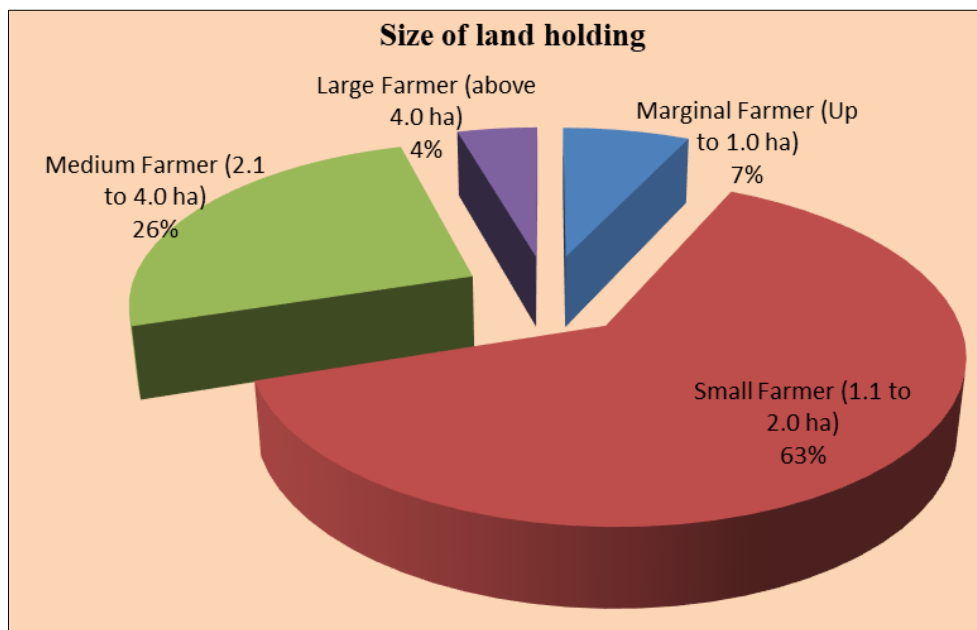


Fig 1: Distribution of the respondents on the basis of their size of land holding

The distribution pattern of soil type in different farming situation showed the wide variation among different respondents (Table No. 14B). Data pertaining to soil type under different farming situations revealed that majority of the soil from the land holding of the respondents were *Alfisols*

contributing 48.22 percent, among which the irrigated area 42.80 percent and 39.85 percent in *Kharif* and *Rabi* season was observed respectively soil type of *Vertisols* and *Entisols* in the study area expressed by respondents showed the close figure of 14.41 percent and 14.24 percent respectively.

Among the *Vertisols* 62.96 percent of the area had been irrigation facility in both *Kharif* and *Rabi* season. Whereas in *Entisols* 26.25 percent of the area were irrigated in both

Kharif and *Rabi* season. Among all soil types the least area of 14.24 percent were represented by *Entisols*.

Table 14B: Distribution of soil type based on irrigation in *Kharif* and *Rabi* season in study area

S. No.	Type of Soil	Area (ha.)	Percentage Area	Irrigated area (ha.)			
				<i>Kharif</i> Area (ha.)	Percentage <i>Kharif</i> Area	<i>Rabi</i> Area (ha.)	Percentage <i>Rabi</i> Area
1	<i>Inceptisols</i> (Tikra)	130	23.13	38	29.23	38	29.23
2	<i>Alfisols</i> (Mal)	271	48.22	116	42.80	108	39.85
3	<i>Vertisols</i> (Gabhar)	81	14.41	51	62.96	51	62.96
4	<i>Entisols</i> (Marhan)	80	14.24	21	26.25	21	26.25

Data pertaining to the distribution of the respondents based on representative soil type and irrigation facilities under different farming situation are depicted in Table No. 14C. From the table that majority of the respondents possess the *Alfisols* as 87.04 percent based on multiple responses. Among which 45.53 percent the respondents had irrigation facilities, whereas 54.47 percent respondents had no irrigation facility at

their farm. 62.96 percent of the respondents had soil type of *Inceptisols*. Among which only 23.53 percent respondents had irrigation facilities and rest were lacking it. Minimum respondents of 26.30 percent had soil type of *Vertisols*, among which 64.79 percent possessed the irrigation facility and remaining 35.21 percent of the respondents did not had the irrigation facility.

Table 14C: Distribution of the respondents on the basis of their soil type and irrigation facility

S. No.	Type of Soil	Frequency	percent	Irri.	percent	Unirri.	percent
1	<i>Inceptisols</i> (Tikra)	170	62.96	40	23.53	130	76.47
2	<i>Alfisols</i> (Mal)	235	87.04	107	45.53	128	54.47
3	<i>Vertisols</i> (Gabhar)	71	26.30	46	64.79	25	35.21
4	<i>Entisols</i> (Marhan)	133	49.26	28	21.05	105	78.95

*Data are based on multiple respondents

Occupation

Occupation of the respondents in the study area represents in the Table No. 15. The main sources of livelihood of the respondents were Agriculture + Labour which contributed 56.29 percent, followed by sole agriculture contributing 39.62 percent. Few number of respondents expressed that their main

occupation was Agriculture + Business, Agriculture + Dairy and Agriculture + Service contributing 3.70 and 0.37 percent respectively. Similar finding were reported by Paikra (2014) in the study area, where he found that 96.66 and 84.17 percent respondents, their occupation was agriculture and agriculture + labour.

Table 15: Distribution of the respondents on the basis of their occupation

S. No.	Occupation	Frequency	Percentage
1	Agriculture	107	39.62
2	Agriculture + Labour	152	56.29
3	Agriculture + Dairy	1	0.37
4	a. Agriculture + Business	9	3.70
	b. Threshing by thresher 4		
	c. Transporting by tractor 2		
	d. Kirana shop 1		
5	Agriculture + Service	1	0.37
	Total	270	100.00

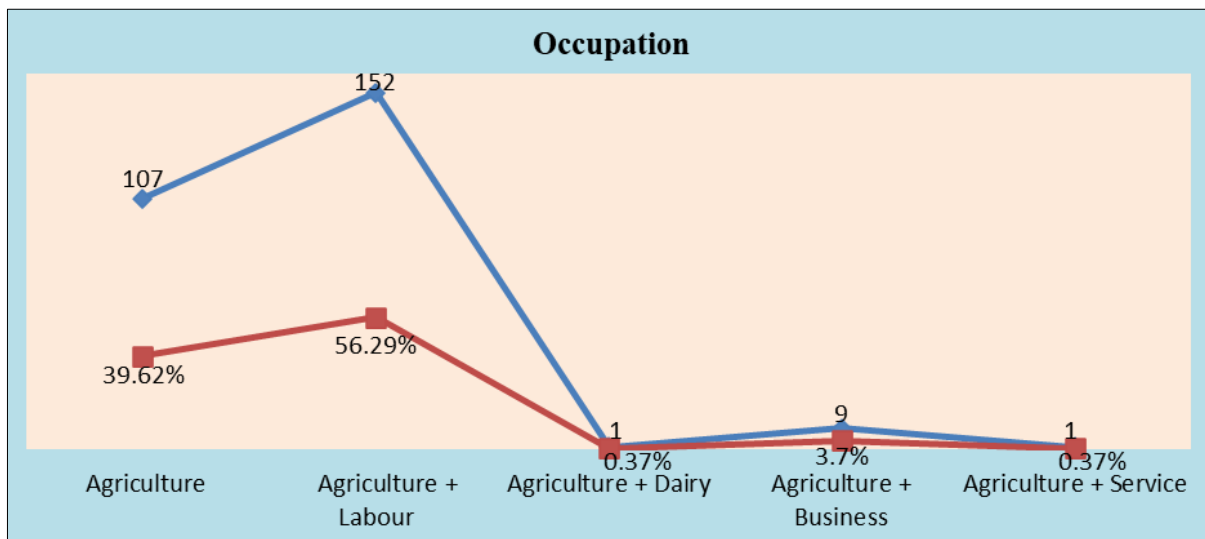


Fig 2: Distribution of the respondents on the basis of their occupation

Annual income

Annual incomes of the respondents from different occupations are depicted in the Table No. 16. It is indicated that among the occupation from Agriculture + Labour, majority of 90.79 percent respondents lied under Rs. 50000 to Rs. 100000 annual income group. Least of the respondents about 5.26 and 3.95 percent respondents lied under annual income of more than Rs. 100000 and up to Rs.50000, respectively.

Table 16: Distribution of the respondents on the basis of their annual income from different Sources

S. No.	Annual income	Frequency	Percentage
1	From agriculture (n=107)		
	Up to Rs. 50,000	2	1.86
	Rs. 50,001 to Rs. 1,00000	63	58.87
	Rs. 1,00001 to 2,00000	39	36.44
	Rs. 2,00001 to 3,00000	1	0.93
	More than Rs. 3,00000	2	1.86
	Total	107	100
2	From Agriculture + Labour (n = 152)		
	Up to Rs. 50,000	6	3.95
	Rs. 50,001 to Rs. 1,00000	138	90.79
	More than Rs. 1,00000	8	5.26
	Total	152	100
3	From Agriculture + Service (n= 1)		
	Rs. 3,60000	1	100
4	From Agriculture + Dairy (n=1)		
	Rs. 3,80000	1	100
5	From Agriculture + Business (n=9)		
	Up to Rs. 1,00000	3	33.34
	Rs1,00001 to 2,00000	4	44.44
	More than Rs. 2,00000	2	22.22
	Total	9	100
6	Total annual income from all different source (n=270)		
	Up to Rs. 50,000	8	2.96
	Rs. 50,001 to Rs.1,00,000	204	75.56
	Rs. 1,00,001 to Rs.2,00,000	51	18.89
	Rs.2,00,001 to Rs. 3,00,000	3	1.11
	Above Rs. 3,00,000	4	1.48
	Total	270	100
	Mean – Rs 103633	SD-	80613.3

Contribution of agriculture for income of the respondents revealed that 58.87 percent of the respondents lied under annual income of Rs. 50001 to Rs. 100000, followed by 36.44 percent of the respondent’s belonged to annual income of Rs. 100001 to 200000. The least number of respondents lied under annual income group of up to Rs. 50000, Rs. 200001 to 300000 and more than Rs. 300000 as 1.86, 0.93 and 1.86 percent, respectively. Respondents belong to Agriculture + Business as main source of occupation revealed that among this category 44.44 percent of the respondents lied under annual income of Rs. 100001 to 200000 followed by 33.34 and 22.22 percent respondents lied under income group up to Rs.100000 and more than Rs. 200000, respectively .

The respondents are further categorised as different income group from the different sources of occupation. It is indicated that highest number of respondents of 75.56 percent lied under annual income group of Rs.50001 to 100000 followed by 18.89 percent respondents lied under income range of Rs.100001 to Rs. 200000. The least number of respondents was lied under income group of up to Rs. 50000, Rs. 200001 to Rs. 300000, and above Rs. 300000. Similar findings were also reported by Paikra (2014) who reported that 34.17 percent respondents annual income at different sources had Rs. 50001 to 1, 00000.

Irrigation facility

Data pertaining to irrigation facility and source of irrigation depicted in Table No. 17 clearly indicated from data 63.7 percent of the respondents possessed the irrigation facility and remaining 36.3 percent respondents did not had irrigation facility at their farm.

Among the different sources of irrigation it was observed that main source of irrigation was tube well contributing 62.20 percent followed by river contributing 51.70 percent. The contributing of canal and pond as source of irrigation contributed 7.60 and 7.00 percent, respectively. Contribution of well, small pond (Dabri) and other sources like chek bund was very small. Similar finding were reported by Paikra (2014) who reported 61.66percent respondent had facilitated to irrigation source in the study area viz. dabri, well and tube well.

Table 17: Distribution of the respondents on the basis of their source wise irrigation availability

S. No.	Irrigation availability	Frequency	Percentage
a.	Available	172	63.70
b.	Un available	98	36.30
	Total	270	100.00
Irrigation sources (n=172)			
1	Tube well	107	62.20
2	River	89	51.70
3	Pond	12	7.00
4	Small pond (<i>Dabri</i>)	1	0.60
5	Well	1	0.60
6	Canal	13	7.60
7	Other (<i>Chek bund</i>)	2	1.20

*Data are based on multiple respondents

Conclusion

From the above research findings it can be concluded that most of the respondents were middle school passed out, having small size of family and possessed 11 to 20 years of farming experience majority of respondents had no participation in any organization, having small land holding and soil types area was Alfisols. All the respondents were dependent on agriculture for their livelihood and earned average annual income of Rs 50,000 to 1,00,000 per family. Maximum respondents had irrigation facilities at their farm.

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