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Socio-economic profile of integrated farming system practicing farmers in Madhya Pradesh state

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Abstract
The study was conducted on 250 integrated farming system practicing small and marginal tribal farmers in Madhya Pradesh state to ascertain their socio-economic characteristics. The selected IFS practicing farmers have been interviewed personally with the help of a well-structured and pre-tested interview schedule. The findings of the study revealed that majority of the respondents were middle-aged, having higher secondary school education, medium family size, Integrated farming system (Crop includes dairy, poultry, goat rearing and fishery) is main occupation, having small and marginal land holding category, medium family income, practicing Rice-Wheat/Chick Pea cropping pattern, medium material possession, medium animal possession and medium credit seeking behaviour.

Keywords: Socio-economic profile, integrated farming system, small and marginal tribal farmers

Introduction

In India agriculture plays an important role in Indian economy. More than (70%) of rural households are dependent on agriculture. It is an important sector of Indian economy as it as about (17%) to the total GDP and provides employment to more than (60%) of the population. Indian economy is mainly agriculture oriented. Small and marginal farmers are the core of the Indian rural economy constituting (85%) of the total farming community but possessing only (44%) of the total operational land (GoI 2014) [6]. It seems that Indian economy is mostly rural and of the agricultural nature and dependent on Indian cultivable land consisting of mainly small holdings (65%) and overall (86.2%) farmers are small and marginal.

Madhya Pradesh is the second largest state with respect to area (30.82 M ha) and fifth in terms of population (72 Million) in the country. More than 70% of the area is rainfed dominated by small and marginal holdings. The socio-economic scenario in the state is observed by a lot of regional disparities especially among the tribal farmers consists of 52 districts and 11 diversified agro climatic zones. The tribal population is largely concentrated in and around the forest area of Madhya Pradesh. They have maintained their cultural peculiarity and individuality over the years. They have somewhat made progress in social and religious reformation but economically they are very much backward as compared to other societies (Rajan *et al.,* 2018) [14]. Agriculture is the only backbone of the farmers living in this state and is characterized by a number of wide crop diversifications. In the present scenario besides agriculture farmers grow fruits cultivation, dairy, goatery, poultry, bee-keeping etc., nowadays this type of system including at least one component of farming is called the Integrated Farming System. Biswas and Singh (2003) [2], defied integrated farming as the integration of two or more enterprises for each farm according to the availability of resources to sustain and satisfy as many necessities of the owner as it is possible which leads to increase productivity per unit area, efficient recycling of farm wastes, better utilization of resources, generate employment, reduce the risks and ensure sustainability. Overall an integrated farming system fulfil the multiple objective of making farmers self-sufficient by ensuring the family members a balance diet, improving the standard of living through maximizing the total net returns and provide more employment, minimizing the risk and uncertainties and keeping harmony with environment (Mali *et al.* 2014) [10].

The main objective of present paper is to analyze the Socio-Economic Profile of Integrated Farming System practicing farmers in Madhya Pradesh State.

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Material and Methods

The study was carried out in Mandla district has been selected purposively from the Madhya State as it possesses adequate population of tribal farmers. From Mandla district five blocks namely Mandla, Niwas, Nainpur, Gughari and Mawai have been selected purposively and a random selection of five villages from each block has been taken and after then ten small and marginal tribal farmers are selected from each village. Thus, a total of 250 small and marginal tribal farmers are considered to study the Socio-Economic Profile of Integrated Farming System practicing farmers in Madhya Pradesh State. The selected IFS practicing farmers have been interviewed personally with the help of a well-structured and pre-tested interview schedule to get the appropriate information. Ex-post-facto research design was used in the study.

Results and Discussion

Age

Table 1 reveals that, in case of marginal farmers, majority (68.00%) of the farmers belonged to middle age group followed by, old (16.80%) and young (15.20%) age categories. Whereas in case of small farmers, majority (64.80%) of the farmers were under middle age category followed by, young (19.20%) and old (16.00%) age categories. The pooled data indicated that, majority of the respondents (66.40%) were of the middle age group, followed by young (17.20%) and old (16.40%) age categories. Thus, it inferred from the data, majority of the respondents (66.40%) were from middle age group, which indicated that they have enough maturity and have better experience of their field. Almost similar findings were also observed by Kumaran and Vasanthakumar (2010) [8] and Morya (2015) [11].

Table 1: Distribution of the respondents according to their age

Sr. No.	Age	Marginal farmers (n = 125)		Small farmers (n = 125)		Total farmers (n = 250)	
		f	%	f	%	f	%
1.	Young (upto 35 years)	19	15.20	24	19.20	43	17.20
2.	Middle (36 – 55 years)	85	68.00	81	64.80	166	66.40
3.	Old (above 55 years)	21	16.80	20	16.00	41	16.40
	Total	125	100.00	125	100.00	250	100.00

f = frequency, % = percentage

Education

The perusal from the table 2 reveals that, more than of one third (37.60%) of the marginal farmers had higher secondary education, while 30.40 per cent had primary education followed by 27.20 per cent had college and above level of education and 04.80 per cent were illiterate. On the other hand, in small farmers, 39.20 per cent had higher secondary education, while 32.00 per cent had primary education followed by 24.00 per cent had college and above level of education and 04.80 per cent were illiterate. Thus, pooled data indicated that, both among marginal and small farmers, less than two fifth of the respondents (38.40%) had higher secondary education, followed by 31.20 per cent had primary education and 25.60 per cent had college and above level of education, while 04.80 per cent were illiterate. It inferred that, most of the respondents (38.40%) were higher secondary education. The above facts indicate that the respondents have awareness regarding the importance of the education as a mean of improvement in overall living standard. The results of the present study are similar to the findings of Tekale (2013) [17] and Morya (2015) [11].

Table 2: Distribution of the respondents according to their education

Sr. No.	Education	Marginal farmers (n = 125)		Small farmers (n = 125)		Total farmers (n = 250)	
		f	%	f	%	f	%
1.	Illiterate	06	04.80	06	04.80	12	04.80
2.	Primary education	38	30.40	40	32.00	78	31.20
3.	Higher secondary education	47	37.60	49	39.20	96	38.40
4.	College and above education	34	27.20	30	24.00	64	25.60
	Total	125	100.00	125	100.00	250	100.00

f = frequency, % = percentage

Family Size

The data presented in table 3 reveals that, in marginal farmers, nearly half of the respondents 48.80 per cent had medium family size followed by, 36.80 per cent had small and 14.40 per cent had large size family. On the other hand, among small farmers, higher percentage of the respondents (43.20%) had medium family size followed by, 39.20 per cent small family size and 17.60 per cent large family size. It reported from the pooled data, higher percentage of the respondents (46.00%) had medium size family, followed by 38.00 per cent small family size and 16.00 per cent large family size. Thus, it inferred from the above results, majority of the respondents (46.00%) had medium family size. These findings are in line with the results of Tekale (2013) [17] and Rai (2015) [12].

Table 3: Distribution of the respondents according to family size

Sr. No.	Family size	Marginal farmers (n = 125)		Small farmers (n = 125)		Total farmers (n = 250)	
		f	%	f	%	f	%
1.	Small family (upto 4 members)	46	36.80	49	39.20	95	38.00
2.	Medium family (5-8 members)	61	48.80	54	43.20	115	46.00
3.	Large family (more than 8 members)	18	14.40	22	17.60	40	16.00
	Total	125	100.00	125	100.00	250	100.00

f = frequency, % = percentage

Occupation
Table 4 revealed that, in terms of marginal farmers, majority of the respondents (80.80%) were practiced only IFS (farming includes dairy, poultry, goat rearing and fishery), while 12.00 per cent under IFS + business category and 07.20 per cent under IFS +service category. Whereas in small farmers, more than half of the respondents (52.00%) were practiced IFS (farming includes dairy, poultry, goat rearing and fishery), while 26.40 per cent respondents under IFS +service category and 21.60 per cent had practiced IFS + business category.

Table 4: Distribution of the respondents according to occupation

Sr. No.	Occupation	Marginal farmers (n = 125)		Small farmers (n = 125)		Total farmers (n = 250)	
		f	%	f	%	f	%
1.	IFS	101	80.80	65	52.00	166	66.40
2.	IFS + Service	09	07.20	33	26.40	42	16.80
3.	IFS + Business	15	12.00	27	21.60	42	16.80
	Total	125	100.00	125	100.00	250	100.00

f = frequency, % = percentage

The pooled data reported that, majority of the respondents (66.40%) were practiced IFS (farming includes dairy, poultry, goat rearing and fishery) followed by, 16.80 per cent had under the category of IFS +service and IFS +business. It inferred from the data, majority of the respondents (66.40%) had IFS (farming includes dairy, poultry, goat rearing and fishery) alone or as their main occupation. The study has the conformity with the findings of Morya (2015) [11].

Land Holding
The data presented in table 5 indicated that, both the respondents (50.00%) had marginal and small land holding. In general, the majority of respondents (100.00%) had marginal and small land holding. The possible reason of this finding is that inherited deviation of land from generation to generation leads to reduction in size at every generation. The finding is supported by Kumaran and Vasanthakumar (2010) [8] and Tage and Jha (2015) [16].

Table 5: Distribution of the respondents according to their land holding

Sr. No.	Categories	Frequency	Percentage
1.	Marginal land holding (up to 1 ha)	125	50.00
2.	Small land holding (1.1 to 2 ha)	125	50.00
	Total	250	100.00

Family Income
The data depicted in table 6 reveals that, among marginal farmers, majority of the respondents (84.80%) were having medium family income, followed by high (10.40%) and low family income (04.80%). On the other hand, in small farmers, majority of the respondents (88.00%) were having medium family income, followed by high family income (12.00%), and none of the small farmers were having low income. The pooled data concluded that, majority of the respondents (86.40%) were having medium family income, followed by high (11.20%) and low family income (04.80%). Thus, from the above result it could be inferred that, majority of the respondents (86.40%) had medium family income. This finding is consonance with Mangala (2008) [9] and Tekale (2013) [17].

Table 6: Distribution of the respondents according to their family income

Sr. No.	Family income	Marginal farmers (n = 125)		Small farmers (n = 125)		Total farmers (n = 250)	
		f	%	f	%	f	%
1.	Low income (Up to Rs 50,000)	06	04.80	00	00.00	06	04.80
2.	Medium income (Rs 50,001 to 1,00,000)	106	84.80	110	88.00	216	86.40
3.	High income (Above Rs 1,00,001)	13	10.40	15	12.00	28	11.20
	Total	125	100.00	125	100.00	250	100.00

f = frequency, % = percentage

Cropping Pattern
The data presented in table 7 revealed that, in marginal farmers, majority of the respondents (61.60%) follow Rice-Wheat/Chick pea cropping system, followed by 19.20 per cent of respondents taking Rice-Wheat-Mungbean/Urdbean, Mungbean/ Urdbean as a third crop in crop rotation, while 14.40 per cent of the respondents taking Kodo millet-Little millets and followed Rice-Kodo millet/Little millet-Mungbean/Urdbean cropping pattern and 04.80 per cent respondents follow Rice-Lentil/Mustard cropping pattern. Whereas, in small farmers, majority of the respondents (66.40%) were practicing Rice-Wheat/ Chick pea, cropping pattern, followed by 19.20 per cent of respondents taking Rice-Wheat-Mungbean/Urdbean cropping pattern, while 08.00 per cent of the respondents taking Rice-Kodo millet/Little millet-Mungbean/Urdbean cropping pattern and 06.40 per cent respondents follow Rice-Lentil/Mustard cropping pattern. The pooled data concluded that, majority of the respondents (64.00%) were practicing Rice-Wheat/ Chick Pea cropping pattern followed by 19.20 per cent were taking Rice-Wheat-Mungbean/ Urdbean cropping pattern, 11.20 per cent taking Rice-Kodo millet/Little millet-Mungbean/Urdbean cropping pattern, while only 05.60 per cent followed Rice-Lentil/Mustard cropping pattern. Thus, it inferred that, majority of the respondents (64.00%) follow Rice-Wheat/Chickpea cropping system, due to the problem of grazing by cattle and unavailability of fencing and water the percentage of taking a third crops as a leguminous crop in zaid/summer was very less. These results are in conformity with the results of Kumar *et al*., (2011) [7].

Table 7: Distribution of the respondents according to their Cropping pattern

Sr. No.	Cropping pattern	Marginal farmers (n = 125)		Small farmers (n = 125)		Total farmers (n = 250)	
		f	%	f	%	f	%
1.	Rice-Lentil/Mustard	06	04.80	08	06.40	14	05.60
2.	Rice-Wheat/Chick pea	77	61.60	83	66.40	160	64.00
3.	Rice-Kodo millet/Little millet-Mungbean/Urdbean	18	14.40	10	08.00	28	11.20
4.	Rice-Wheat-Mungbean/Urdbean	24	19.20	24	19.20	48	19.20
	Total	125	100.00	125	100.00	250	100.00

f = frequency, % = percentage

Material Possession
The result from the table 8 shows that, in case of marginal farmers, majority of the respondents (72.00%) were having medium material possession followed by, 16.80 per cent were high material possession and 11.20 per cent of them were low material possession.

Table 8: Distribution of the respondents according to their material possession

Sr. No.	Material possession	Marginal farmers (n = 125)		Small farmers (n = 125)		Total farmers (n = 250)	
		f	%	f	%	F	%
1.	Low (upto 6 score)	14	11.20	08	06.40	22	08.80
2.	Medium (7-18)	90	72.00	100	80.00	190	76.00
3.	High (above 18)	21	16.80	17	13.60	38	15.20
	Total	125	100.00	125	100.00	250	100.00

(Mean= 11.62) (SD= 5.79) f = frequency, % = percentage

In case of small farmers, majority of the respondents (80.00%) were having medium material possession followed by, 13.60 per cent were high material possession, whereas slightly less 06.40 per cent of them were low material possession. The pooled data concluded that majority (76.00%) of the farmers were having medium material possession followed by, 15.20 per cent were high and only 08.80 per cent were having low material possession. From result it inferred that, majority (76.00%) of the farmers had medium material possession. The finding is supported by Roy et al (2013) [15] and Dwivedi et al. (2014) [5].

Animal Possession
Analysed data in table 9 reveals that, in case of marginal farmers, majority of the respondents (84.80%) were having medium animal possession followed by, 08.00 per cent were low animal possession and 07.20 per cent were high animal possession. In case of small farmers, majority of the respondents (73.60%) were having medium animal possession followed by, 20.00 per cent were high material possession and 06.40 per cent were having low animal possession. The pooled data concluded that, majority of the respondents (79.20%) had medium animal possession followed by, 13.60 per cent had high animal possession and 07.20 per cent low animal possessions, respectively. Thus, from the above result, it inferred that majority of the farmers (79.20%) had medium animal possession. This finding is supported with Chintaman (2010) [3], Raina et al., (2016) [13] and Dabhi et al., (2018) [4].

Table 9: Distribution of the respondents according to their animal possession

Sr. No.	Animal possession	Marginal farmers (n = 125)		Small farmers (n = 125)		Total farmers (n = 250)	
		f	%	f	%	f	%
1.	Low (upto 3 score)	10	08.00	08	06.40	18	07.20
2.	Medium (3-18)	106	84.80	92	73.60	198	79.20
3.	High (above 18)	09	07.20	25	20.00	34	13.60
	Total	125	100.00	125	100.00	250	100.00

(Mean = 10.04) (SD= 7.82) f = frequency, % = percentage

Credit Seeking Behaviour
Data in table 10 shows that, in case of marginal farmers, majority of the respondents (76.80%) were having medium credit seeking behaviour followed by, 12.80 per cent were low and 10.40 per cent were high credit seeking behaviour. Whereas in case of small farmers, majority of the respondents (80.00%) were having medium credit seeking behaviour followed by, 12.00 per cent were high and 08.00 per cent were having low credit seeking behaviour. The pooled data reported that, majority of the respondents (78.40%) were having medium credit seeking behaviour followed by, 11.20 per cent high and 10.40 per cent were having low credit seeking behaviour. It inferred that majority of the farmers (78.40%) had medium credit seeking behaviour. The study has the conformity with the findings of Bhatt (2006) [1] and Rai (2015) [12].

Table 10: Distribution of the respondents according to their credit seeking Behaviour

Sr. No.	Credit seeking behaviour	Marginal farmers (n = 125)		Small farmers (n = 125)		Total farmers (n = 250)	
		f	%	f	%	f	%
1.	Low (upto 6 score)	16	12.80	10	08.00	26	10.40
2.	Medium (7-9)	96	76.80	100	80.00	196	78.40
3.	High (above 9)	13	10.40	15	12.00	28	11.20
	Total	125	100.00	125	100.00	250	100.00

(Mean = 7.09) (SD= 1.34) f = frequency, % = percentage

Conclusion

Integrated Farming System (IFS) approach plays a vital role to sustain production, income generation, and environmental security and meeting consumer demand, is the only alternative for the small and marginal tribal farmers of the Mandla district. The findings of the study revealed that majority of the respondents were middle-aged, having higher secondary school education, medium family size, Integrated farming system (Crop includes dairy, poultry, goat rearing and fishery) is main occupation, having small and marginal land holding category, medium family income, practicing Rice-Wheat/ Chick Pea cropping pattern, medium material possession, medium animal possession and medium credit seeking behaviour.

Acknowledgments

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