

Traditional Integrated Farming System: A Profile of Socio-economic Status of Farmers in Bishnupur District of Manipur

Daya Ram^{*1}, Suparna Dey², M. K. Singh³, M. D. Devi⁴ and N. O. Singh⁵

Received: 20 Feb 2021 | Revised accepted: 23 Apr 2021 | Published online: 26 Apr 2021

© CARAS (Centre for Advanced Research in Agricultural Sciences) 2021

ABSTRACT

The present study was conducted in Bishnupur district, Manipur during the year 2019-20. An *Ex-post facto* research design was adopted for the study. From the three villages of Bishnupur district, a total of 120 respondents were drawn following purposive and simple random sampling method. The objective of the study was to study the impact of Traditional Integrated Farming System on their socio-economic status and its relationship with the socio-personal profile. The data collected by using the structured interview schedule were encrypted, tabularized and analyzed statistically. The results showed that there is an overall positive impact of traditional IFS on their socio-economic status. Correlation analysis between selected characteristics of MGMG farmers and the impact of traditional IFS on socio-economic status revealed that variables such as age was negatively correlated at 0.01 level of probability whereas, organizational participation, farming experience, innovation proneness, mass media exposure, source of information, extension contact, annual income and economic motivation were positively correlated at 0.01 level of probability. Multiple regression analysis showed that age, organizational participation, farming experience, innovation proneness and economic motivation contributed significantly to the prediction of impact of IFS on the socio-economic status of the farmers and they may be entitled as good predictors of impact.

Key words: Development, Impact, Integrated farming system, Socio-economic, Traditional

Agriculture, with its allied sectors, constitutes the largest source of livelihoods in India. About 70 per cent of its rural households rely on agriculture for their living, with 82 per cent of farmers being small and marginal. As the Indian economy has grown diversifically, agriculture's contribution to GDP has steadily declined from 1951 to 2011. While achieving food sufficiency in production, India still accounts for one fourth of the world's hungry people and shelter over 190 million undernourished people. In context to restrict high degree of uncertainty in income and employment in relation to mono cropping in crop production, it is imperative to evolve suitable strategy for augmenting the income of the small and marginal farmers by combining different enterprises at farm level to increase the productivity and supplement the income.

The population is increasing in constant rate without any chance of increase in land areas. The income from cropping for an average farmer is hardly sufficient to sustain his family for which the farmer has to be assured of a regular income for a reasonable standard of living by including other enterprises. Diversification of agricultural livelihoods through traditional and agri-allied sectors like forestry, fishery, vermicomposting etc. may enhance livelihood opportunities;

strengthen resilience and consequent to a rise in labor force participation in the sector apart from prevention from the threat of the declining trend in the average size of farm holding. Hence, adoption of traditional styled Integrated Farming System is a prime focus which is truly apt to enhance the economic options among smaller farms for a labour surplus economy in rural sector for maximizing employment opportunities in order to uplift the landless, small and marginal farmers, who constitute about 84 per cent of total farmers. Therefore, the main goal of Integrated Farming System i.e., integration of farm enterprises often suggested as one of the means for rapid economic development in India [1].

Among the Seven Sister States of North-East India Manipur has a large share of the total state domestic product from agriculture and hence 22.13 per cent of employments out of the total workers are provided by the sector. To its contrary, only 7.41 per cent of the geographical area of the state is in use for cultivation purpose. As majority of the farmers in these villages are engaged in integration of two or more than two enterprises considering the traditional methods and approaches to earn the living such as crop production; rearing of livestock and fish production etc. for proper dissemination of the technology and guidance, five farmers were selected as beneficiaries under MGMG in each village to bridge with the rest of the farmers. Keeping in view of these scopes, a study was undertaken to measure the impact of traditional integrated farming system (IFS) on socio-economic status of MGMG farmers and its relationship with the socio-personal profile of MGMG farmers.

***Daya Ram**

d.dram@rediffmail.com

¹⁻⁵Department of Extension Education, College of Agriculture, Central Agricultural University, Imphal - 795 004, Manipur, India

MATERIALS AND METHODS

The present study was conducted in Nambol block of Bishnupur district in Manipur with a total of 120 respondents drawn by following purposive and simple random sampling method. Out of the sixteen districts in Manipur, Bishnupur district was selected purposively for the present investigation because the district has more than half of the beneficiaries and highest number of villages under adoption of the programme MGMG in the state. Bishnupur district comprises of three blocks out of which Nambol block was purposively selected as all MGMG adopted villages of the district comes under Nambol Block hence sufficient number of respondents are available to conduct the study. Fourteen villages of Nambol block were selected purposively. From the total beneficiaries and adopters of the MGMG programme a total of 120 farmers combining all the beneficiaries and adopters were selected by

using purposive sampling and simple random sampling method respectively. The data were collected using structured interview schedule and were then analyzed using appropriate statistical tools viz. frequency, percentage, mean, SD, simple correlation and multiple regression.

RESULTS AND DISCUSSION

This section deals with the analysis of the impact of traditional IFS on socio-economic status of MGMG farmers. The parameters selected for the study were occupation, number of houses owned, type of houses owned, farm power possession, material possession, land holding and annual income. The differences of frequency and percentage of respondents for the above-mentioned parameters which signified the impact of traditional IFS on socio-economic status are presented in (Table 1).

Table 1 Impact of IFS on socio-economic status of MGMG farmers (N=120)

Table 1 Impact of IRIS on socio-economic status of MGMG farmers (N=120)							
S. No.	Parameters	Before implementation of MGMG		After implementation of MGMG		Impact	
		Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Occupation							
1.1. Primary occupation							
1.	1.1.1. Agriculture	67	55.83	85	70.83	18.00	15.00
	1.1.2. Agricultural labour	53	44.17	35	29.17	-18.00	-15.00
	1.2. Secondary occupation						
	1.2.1. Business	24	20.00	28	23.33	4.00	3.33
	1.2.2. Service	7	5.83	11	9.17	4.00	3.33
	1.2.3. Other	6	5.00	9	7.50	3.00	2.50
No. of houses owned							
2.	2.1. One house	120	100.00	85	70.83	-35	-29.17
	2.2. Two house	0	0.00	35	29.17	35	29.17
Type of house owned							
3.	3.1. Kutcha	45	37.50	28	23.34	-17	-14.16
	3.2. Pucca	22	18.34	37	30.84	15	12.50
	3.3. Mixed (Kutcha + Pucca)	53	44.16	55	45.82	2	1.66
Farm power possession							
4.	4.1. Power tiller	12	10.00	12	10.00	0	0.00
	4.2. Tractor	9	7.50	9	7.50	0	0.00
	4.3. Sprayer	36	30.00	48	40.00	12	10.00
	4.4. Cattle	48	40.00	60	50.00	12	10.00
Material possession							
5.	5.1. Radio	58	48.33	74	61.67	16	13.33
	5.2. Television	40	33.33	52	43.33	12	10.00
	5.3. Furniture (1-2 Nos)	66	55.00	51	42.50	-15	-12.50
	5.4. Furniture (3-4 Nos)	22	18.33	42	35.00	20	16.67
	5.5. Furniture (5-6 Nos)	5	4.17	13	10.83	8	6.67
	5.6. Improved agricultural implements (1-2 Nos)	26	21.67	45	37.50	19	15.83
	5.7. Improved agricultural implements (3-4 Nos)	11	9.17	18	15.00	7	5.83
	5.8. Improved agricultural implements (5-6 Nos)	0	0.00	0	0.00	0	0.00
	5.9. Bicycle	38	31.67	61	50.83	23	19.17
	5.10. Motor cycle	12	10.00	17	14.17	5	4.17
Land holding							
6.	6.1. Marginal farmers	65	54.17	32	26.67	-33	-27.50
	6.2. Small farmers	55	45.83	87	72.50	32	26.67
	6.3. Semi medium farmers	0	0.00	1	0.83	1	0.83
	6.4. Medium farmers	0	0.00	0	0.00	0	0.00
	6.5. Big farmers	0	0.00	0	0.00	0	0.00
Annual income							
7.	7.1. Low income	8	6.67	2	1.67	-6	-5.00
	7.2. Medium income	95	79.17	101	84.17	6	5.00
	7.3. High income	17	14.17	17	14.17	0	0.00

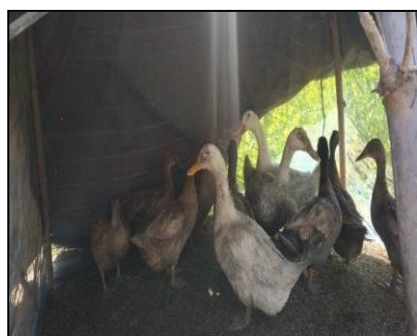
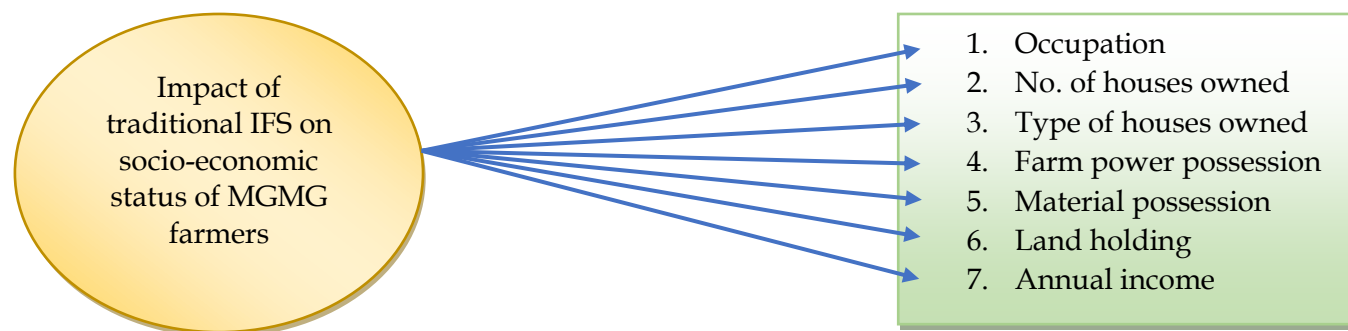


Plate 1 Duckery



Plate 2 Vermicomposting



Plate 3 Pig farming



Plate 4 Fish cum poultry farming



Plate 5 Vegetable farming

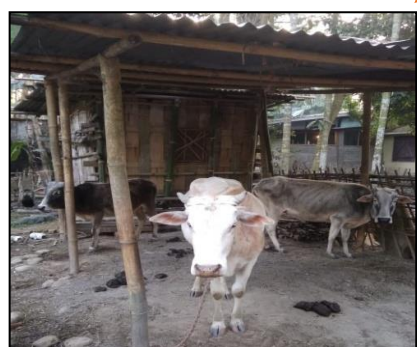


Plate 6 Cattle farming

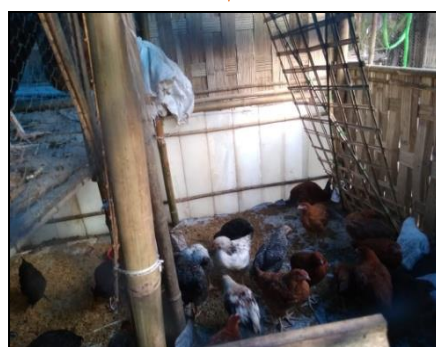


Plate 7 Poultry farming

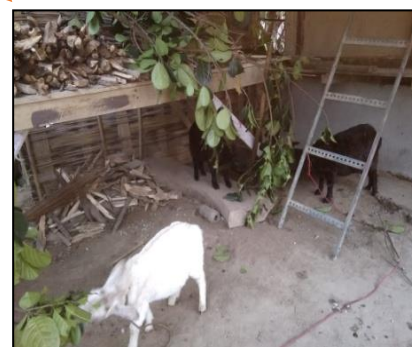


Plate 8 Goat rearing

Traditional Integrated Farming System

Agriculture as a primary occupation had few respondents (55.83%) before implementation of traditional IFS as compared to an increased frequency (70.83%) after implementation which showed a positive impact on socio-economic status (Table 1). In case of agricultural labour frequency of respondents decreased from 44.17 per cent before to 29.17 per cent after implementation of MGMG consequent to a negative impact which in turn had contributed positively on socio-economic status. In terms of secondary

occupation, the respondents (20.00%) engaged in business before implementation increased to 23.33 per cent after implementation of traditional IFS under MGMG programme. The respondents engaged in service-oriented occupation (5.83%) got increased to 9.17 per cent after implementation of traditional IFS. Respondents belonging to other occupation (5.00%) before increased to 7.50 per cent after implementation. This positive impact might be due to the increasing awareness about the better return and resource

sufficiency in integrating the enterprises traditionally than in mono-cropping [2-3].

It was found that initially 100 per cent of respondents had owned one house. However, after implementation of traditional IFS under MGMG few respondents (29.17%) were reported who owned two houses thereby reducing the respondents (70.83%) who had single house. This positive impact on the socio-economic status might be because of the better purchasing power after implementation of traditional IFS under MGMG [4].

There was a sharp decline in the respondents (37.50%) who owned kutchra house before to 23.34 per cent after implementation which also contributed positively to the socio-economic status of MGMG farmers. Simultaneously, the positive impact on socio-economic status was revealed by a significant rise in respondents (18.34%) who owned pucca house to 30.84 per cent after implementation of IFS under MGMG programme. There was a slight increase in the respondents who owned mixed type of houses (1.66%). The potential reason behind this positive impact might be due to improved annual income due to traditional integration of farming enterprises and hence an increased urge to lead a more comfortable life [5-6].

It was a positive impact on socio-economic status of MGMG farmers as the respondents who owned sprayer had increased from before (30.00%) to after (40.00%) and owner of cattle had increased from before (40.00%) to after (50.00%). The respondents who owned power tiller and tractor remained same after implementation of traditional IFS which had neutral impact on socio-economic status. The reason leading to such trend might be due to enhanced buying capacity and improvement in production process after implementation of MGMG [7-8].

Results depicted in (Table 1) pointed that the respondents who possessed radio increased from before (48.33%) to after (61.67%) implementation of MGMG. In case of television owned respondents, there was an increase from before (33.33%) to after (43.44%) implementation of MGMG programme. Similar trend was observed in respect beneficiaries who owned three to four nos. of furniture which increased from before (18.33%) to after (35.00%) implementation of MGMG. Percentage of respondents possessing five to six furniture increased from before (4.17%) to after (10.83%) implementation. Also, it was evident that respondents who had one to two improved agricultural implements and three to four improved agricultural implements increased from before (21.67%) to after (37.50%) implementation and before (9.17%) to after (15.00%) implementation of MGMG respectively. On the other hand, respondents with respect to one to two furniture decreased from before (55.00%) to after (42.50%) implementation. Whereas, there was no respondent who were five to six improved agricultural implements for both before and after implementation of IFS. The probable reason behind such trend might be the gain in economic power due to reduction in cost of production in traditional IFS and realization of more profit which showed a positive impact on socio-economic status.

It was found that an increase from before (45.83%) to after (72.50%) implementation of MGMG in case of small farmers. Also, with respect to semi medium farmers there was a slight increase from before (0.00%) to after (0.83%) implementation. Whereas, respondents were remained zero in case of both medium and big farmers in both before and after implementation of MGMG. On the other hand, there was a negative impact of IFS on percentage of MGMG farmers in

case of marginal farmer which had decreased from before (54.17%) to after (26.67%) implementation of MGMG which contributed positively to the socio-economic status. The reason behind this trend might be due to improvements in production process and urge of the farmer to acquire more land to increase the farm income [9-10].

The data further revealed that, before implementation of MGMG programme more respondents (6.67%) belonged to low-income group which after implementation of MGMG programme reduced (1.67%). On the other hand, respondents who belonged to medium income group had increased from before (79.17%) to after (84.17%) implementation of MGMG (Table 1). Whereas, respondents belonged to high income groups were remained same for both before and after i.e., 14.17 per cent. The potential reason behind this might be that integration of different enterprises traditionally have had reduced the cost of input and increased the resource use efficiency. This trend as a whole indicated a positive impact on socio-economic status of MGMG farmers [11-13].

Table 2 Correlation of socio-personal profile with impact of IFS on socio-economic status of MGMG farmers

Independent Variables	Correlation Coefficient "r"
Age	-0.277**
Education	0.157 ^{NS}
Land Holding	-0.007 ^{NS}
Organizational participation	0.516**
Farming experience	0.330**
Innovation Proneness	0.528**
Risk Orientation	0.035 ^{NS}
Mass media exposure	0.414**
Sources of information	0.388**
Extension Contact	0.269**
Annual Income	0.310**
Economic motivation	0.556**

**Significant at 0.01 level of probability

*Significant at 0.05 level of probability

NS: Non-significant

This section deals with the nature of relationship between selected dependent variables and independent variables. For ascertaining the relationship correlation coefficient was calculated as depicted in (Table 2). Out of the twelve independent variables, eight were found to have positive and significant relationship with the impact of IFS on socio-economic status of MGMG farmers. They were organizational participation, farming experience, innovation proneness, and mass media exposure, source of information, extension contact, annual income and economic motivation whereas age is negatively correlated. However, the remaining three variables viz. education, land holding and risk orientation showed non-significant relationship with impact of IFS on socio-economic status.

The multiple regression analysis showed in (Table 3) revealed that out of the twelve independent variables considered only five variables viz. age, organizational participation, farming experience, innovation proneness and economic motivation contributed significantly to the prediction of impact of IFS on the socio-economic status of the farmers and they may be entitled as good predictors of impact. The R^2 value (0.642) suggested that all the twelve independent variables together contributed 64.20 percent towards variation in impact of IFS on socio-economic status of MGMG farmers. The F-value (15.988) was also found significant at 0.01 level of probability.

Table 3 Regression analysis of impact of IFS on socio-economic status of MGMG farmers with independent variables

Independent variables	Beta	Regression co-efficient (b ₁)	Standard error (S.E)	't' value of 'b'
Age	-0.315	-0.150**	0.034	-4.472
Education	0.038	0.294 ^{NS}	0.480	0.614
Land holding	-0.044	-0.281 ^{NS}	0.387	-0.726
Organizational participation	0.296	1.070**	0.233	4.591
Farming experience	0.212	0.132**	0.050	2.623
Innovation proneness	0.201	0.151**	0.052	2.908
Risk orientation	0.017	0.042 ^{NS}	0.148	0.281
Mass media exposure	0.036	0.058 ^{NS}	0.121	0.478
Sources of information	0.086	0.230 ^{NS}	0.184	1.249
Extension contact	0.071	0.257 ^{NS}	0.237	1.085
Annual income	0.082	0.028 ^{NS}	0.022	1.298
Economic motivation	0.252	0.692**	0.194	3.571

**Significant at 0.01 level of probability

*Significant at 0.05 level of probability

$$R^2 = 0.642 \quad F = 15.988$$

CONCLUSION

The study concluded that there was an overall positive impact of IFS on socio-economic status of MGMG farmers. From the results obtained from regression analysis of the study, it was observed that age, organizational participation, farming experience, innovation proneness and economic motivation were the important factors which had significant

influence over the impact of IFS on socio-economic status of MGMG farmers. The fact that most of the parameters had shown a positive impact except few is a lucid display of the development of the socio-economic status of the respondents. Therefore, it is essential on the part of the government and other private and non-governmental organization to augment the efforts to transfer educational and technical support to the farmers by the grass root level workers.

LITERATURE CITED

1. Anonymous. 2019. Agriculture in India, (https://en.m.wikipedia.org/wiki/Agriculture_in_India. Accessed 19 August 2019).
2. Mangala B. 2008. Impact of integrated farming system on socio-economic status of Bharatiya Agro-industries foundation (BAIF) beneficiary farmers. *M. Sc. (Agriculture) Thesis*, Submitted to University of Agricultural Sciences, Dharwad, Karnataka.
3. Chandregowda MJ and Jayaramaiah KM. 1990. Impact of watershed development programme on socio-economic status, land productivity and income of small and marginal farmers. *Indian Journal of Extension Education* 25(3/4): 44-47.
4. Singh R, Riar T, Gill J. 2017. Integrated Farming Systems and Socio-economic Characteristics of Punjab Agricultural University Awardee Farmers. *Asian Journal of Agricultural Extension, Economics and Sociology* 16(3): 1-5.
5. Gill MS, Singh JP, Gangwar KS. 2011. Integrated farming system and agriculture sustainability. *Indian Journal of Agronomy* 54: 128-39.
6. Arunkumar YS. 1998. Economic evaluation of watershed development- a case study of Kuthangere micro-watershed in Karnataka. *Ph. D. Thesis*, Submitted to University of Agricultural Sciences, Bangalore, Karnataka.
7. Sridhara K. 2002. An evaluative study of watershed programme in Pavagadataluk of Tumkur district in Karnataka. *M. Sc. (Agriculture) Thesis*, Submitted to University of Agricultural Sciences, Dharwad, Karnataka.
8. Chidananda. 1996. Influence of socio-economic status on aspiration and work orientation of small farmers. *M. Sc. (Agriculture) Thesis*, Submitted to University of Agricultural Sciences, Bangalore, Karnataka.
9. Deepak MP. 2003. A study on perception on beneficiaries and non-beneficiaries towards WYTEP programme in Dharwad district. *M. Sc. (Agriculture) Thesis*, Submitted to University of Agricultural Sciences, Dharwad, Karnataka.
10. Dolli SS. 2006. Sustainability of natural resources management in watershed development project. *M. Sc. (Agriculture) Thesis*, Submitted to University of Agricultural Sciences, Dharwad, Karnataka.
11. Kumar S, Bhatt B, Dey A, Shivani K, Ujjwal, Idris M, Mishra JS. 2018. Integrated farming system in India: Current status, scope and future prospects in changing agricultural scenario. *Indian Journal of Agricultural Sciences* 88(11): 1661-1675.
12. Nirmala B. 2003. Impact of watershed development programme on socio-economic dimensions of beneficiaries in Rangareddy district of Andhra Pradesh. *M. Sc. (Agriculture) Thesis*, Submitted to University of Agricultural Sciences, Dharwad, Karnataka.
13. Rao MS. 1996. Soil and water conservation through watershed management in the semi-arid region of south India in watershed development. *Proceedings of Paridas International Workshop on W. D, WDVC, New Delhi*.