

Assessing Integrated Farming System Models Apropos Employment Generation Potential in Madhya Pradesh

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ABSTRACT

Integrated Farming System (IFS) approach has been identified as the way-out for providing income and employment to the millions farmers and farm women engaged in agriculture sector. It has immense potential to ensure livelihood as well as income security to the persons engaged through any component of IFS. The study was conducted in Mandla district of Madhya Pradesh to assess the IFS models in relation to employment generation of tribal farmers. The study was conducted with 250 respondents (125 respondents each from marginal and small land holdings respondents) selected randomly from 5 blocks using personal interview. Results revealed that, among the 10 IFS models in study area high employment generation was found in the category of Crop + dairy (1816 man days/year) followed by Crop + dairy + poultry (533 man days/year), Crop + dairy + goat rearing (202 man days/year), Crop + dairy + poultry + goat rearing (64 man days/year), Crop + poultry (61 man days/year), Crop + dairy + fishery (41 man days/year), Crop + poultry + Goat rearing (27 man days/year), Crop + Dairy + Goat rearing + Fishery (20 man days/year), Crop + fishery (18 man days/year) and very least in case of Crop + Goat rearing (11 man days/year). Correlation analysis reveals that out of 18 independent variables only 6 variables were significantly correlated with employment generation by IFS either at 0.05 or at 0.01 level of probability.

Keywords: Employment generation, Integrated farming system, Marginal farmers, Man days

INTRODUCTION

Agriculture plays a vital role in Indian economy and contributes 17 per cent to the total GDP and also provides employment to more than 60 per cent of the population. It seems that Indian economy is mostly rural and agricultural – based and dependent on Indian cultivable land consisting of mainly small holdings (65%) and overall 86.2 per cent farmers are small and marginal. 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, goat rearing, poultry, bee-keeping etc., Nowadays this type of

system including at least one component of farming is called the Integrated Farming System. IFS is an integrative whole farm approach and effective in solving the problems of small and marginal farmers. Aim of IFS is boosting employment and income from small-holding by integrating various farm enterprises and recycling crop residues and by products within the farm itself (Gupta *et al.*, 2020). In this way, IFS provides an opportunity to increase economic yield per unit area, per unit time by stabilizing the intensification of crop and allied enterprises. It will also provide the profitability, sustainability, balance diet, environmental safety, income and employment generation throughout the year, solving fuel demands etc., Along with the associated farmers will make their growth

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faster. Thus, the integrated farming system approach is considered to be the most powerful tool for enhancing the profitability of the farming system. Overall, an integrated farming system fulfills the multiple objectives of making farmers self-sufficient by ensuring the family members a balanced diet, improving the standard of living through maximizing the total net returns and providing more employment, minimizing the risk and uncertainties and keeping harmony with the environment (Mali *et al.*, 2014). The present study was considered to assess employment generation in different integrated farming systems.

METHODOLOGY

In this study, Mandla district has been selected purposively from the state as it possesses an adequate population of tribal farmers. The five development blocks, namely Mandla, Niwas, Nainpur, Gughari and Mawai, were selected purposively from Mandla district. A random selection of five villages from each block was made and ten small and marginal tribal farmers practicing IFS were selected from each village. Thus, a total of 250 small and marginal tribal farmers were considered to study the Integrated Farming System (IFS) approach for employment generation. The selected IFS practicing farmers were interviewed personally with the help of a well-structured and pre-tested interview schedule to get the appropriate information. Exploratory research design was used.

Employment generation was measured in terms of man-days for both family and hired labour in an agricultural year in different combinations. It was calculated by computing the actual time in hours devoted to all the activities of the enterprise per day. One man-day is equal to eight working hours. The men, women and children labour were converted into man-days by considering one man equals to one man-day, three women = two man-days and two children = one man-day. The total work hours contributed by family as well as hired labour in an agricultural year in different IFS were converted into man-days.

RESULTS AND DISCUSSION

Table 1 reveals that, in the case of marginal farmers, high employment generation was in the category of Crop +

Table 1: Employment generation of different IFS Models

IFS models	Marginal farmers	Small farmers	Total Employment Generation
C + D (157)	1120	696	1816
C + P (07)	23	38	61
C + G (04)	08	03	11
C + F (02)	18	00	18
C + D + P (49)	192	341	533
C + D + G (19)	89	113	202
C + D + F (02)	41	00	41
C + P + G (02)	00	27	27
C + D + P + G (06)	00	64	64
C + D + G + F (02)	00	20	20
Total	1,491	1,302	2,793

C = Crop, D = Dairy, P = Poultry, G = Goat Rearing, F = Fishery

dairy (1120 man days/year) followed by Crop + dairy + poultry (192 man days/year), Crop + dairy + Goat rearing (89 man days/year), Crop + dairy + fishery (41 man days/year), Crop + poultry (23 man days/year), Crop + fishery (18 man days/year) and Crop + Goat rearing (08 man days/year), while (Crop + poultry + Goat rearing), (Crop + dairy + poultry + Goat rearing), (Crop + dairy + Goat rearing + fishery) these IFS models were not employment generation in the marginal farmers category under this study. On the other hand, in the case of small farmers, high employment generation was found in the category of Crop + dairy (696 man days/year) followed by Crop + dairy + poultry (341 man days/year), Crop + dairy + Goat rearing (113 man days/year), Crop + dairy + poultry + Goat rearing (64 man days/year), Crop + poultry (38 man days/year), Crop + poultry + Goat rearing (27 man days/year), Crop + dairy + goat rearing + fishery (20 man days/year), very least in the case of Crop + goat rearing (03 man days/year). While Crop + fishery and Crop + dairy + fishery IFS models were not practised by any of the respondents. Thus, pooled data depicted that, high employment generation was found in the category of Crop + dairy (1816 man days/year) followed by, Crop + dairy + poultry (533 man days/year), Crop + dairy + goat rearing (202 man days/year), Crop + dairy + poultry + goat rearing (64 man days/year), Crop + poultry (61 man days/year). Where sufficient number of respondents were lacking in

any category those models also extended sufficient employment generation such as; Crop + dairy + fishery (41 man days/ years), Crop + poultry + goat rearing (27 man days/ year), Crop + Dairy + Goat rearing + Fishery (20 man days/ year), Crop + fishery (18 man days/year) and very least in case of Crop + Goat rearing (11 man days/year). Thus the total employment generation in all modals computed that 2793 man days/ year. On average in a year 11.172 person were employed by the farmers who utilized the IFS models. It is also true that the more number of enterprises in any of the farming system definitely add for generating additional employment.

Thus, it concluded that, high employment generation was found in the category of Crop + dairy (1816 man days/year). This finding are also supported by Jaiswal *et al.* (2018); Sahoo *et al.* (2019); Shwetha (2012); Singh *et al.* (2016); Singh and Burark (2016) and Tarai *et al.* (2016).

Relationship between independent variables and employment generation by IFS

In order to study the relationship between independent variables and the employment generation by IFS, the correlation co-efficient (r) values were computed and findings are furnished here under.

The results presented in Table 2 indicated that correlation coefficient of independent variables with employment generation by IFS. The study indicated that the age (r = - 0.033) a negative and significant correlation exists between age and employment generation with decision making (r = - 0.059) scientific orientation (r = - 0.103), risk orientation (r = - 0.015), economic motivation (r = - 0.051) and innovativeness (r = - 0.075) were found to be negative and significant correlation with employment generation by tribal farmers. These findings are in accordance with the results of Satyanarayana and Sudhakar (2013). The correlation coefficients of education (r=0.172) positively and highly significant with the family income (r = 0.322), cropping pattern (r = 0.184), material possession (r = 0.493) and credit seeking behaviour (r = 0.222) were positively and highly significant (at 0.01 level of probability) correlation with employment generation by tribal farmers. Land holding (r = 0.140) was positively

Table 2: Relationship between independent variables and employment generation by IFS (n=250)

Characteristics	Correlation Coefficient (r)
Age	-0.033
Education	0.172**
Family Size	0.122
Occupation	0.102
Land Holding	0.140*
Family Income	0.322**
Cropping Pattern	0.184**
Material Possession	0.493**
Animal Possession	0.061
Credit seeking behaviour	0.222**
Social Participation	0.039
Information seeking behaviour towards IFS	0.077
Decision making	-0.059
Scientific orientation	-0.103
Risk orientation	-0.015
Economic motivation	-0.051
Innovativeness	-0.075
Management efficiency	0.066

** Significant at 0.01 level, * Significant at 0.05 level

and significantly correlated (at 0.05 level of probability) with employment generation by tribal farmers. The Correlation coefficients of family size (r = 0.122), occupation (r = 0.102), animal possession (r = 0.061), social participation (r = 0.039), information seeking behaviour (r = 0.077) and management efficiency (r = 0.066) were found to be non-significant. Almost similar findings were also reported by Gupta *et al.* (2018).

CONCLUSION

High employment generation was in the category of Crop + dairy (1816 mandays/year), followed by, Crop + dairy + poultry, etc. Thus, the total employment generation in all models was computed 2793 mandays/year. On average in a year 11.172 person were employed by the farmers in IFS models. It is also true that the more number of enterprises in any of the farming system definitely added additional employment but it same time the volume of scale was reduced due to paying capacity coupled

with risk – bearing ability which hindered the employment opportunity in multiple integration of enterprises. Farmers have to be very conscious and informed during adoption of the IFS models as per the resources as well as family labour support among small and marginal farmers.

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