



Research Article

FARMERS PERCEPTION ABOUT INTEGRATED FARMING SYSTEM IN EASTERN DRY ZONE OF KARNATAKA

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Abstract: The study was conducted in purposively selected five districts of Eastern Dry Zone of Karnataka. One taluk from each district, one Grama Panchayath from each taluk and two villages from each Grama Panchayath were selected based on the maximum number of beneficiaries covered under Integrated Farming System (IFS) project. Further, from each village, 12 respondents were selected by using simple random technique thus making a total sample of 120. The data were collected by using structured interview schedule. The farmers perception about IFS was recorded on three-point continuum viz. 'Agree' 'Uncertain' and 'Disagree' with a score of 3, 2 and 1 respectively. Further, analysed the data by using appropriate statistical tests. The results revealed that majority of respondents (46.67 %) belonged to high category of perception about IFS. With respect to the different statements such as IFS provides enough scope to employ family members round the year and IFS provides great opportunity to produce diversified products were recorded maximum mean scores (each 3.00) with the respondents. But, the statements namely IFS increase competition for resources among different enterprises and IFS helps to protect environment through recycling of animal waste were recorded least means scores (1.67 and 2.25) with the respondents. The characteristics such as educational status, occupational status, land holding, extension participation, economic orientation and scientific orientation exhibited positive and significant relationship with farmers perception about IFS. Hence, the concerned development departments should organize the demonstrations, trainings, field days, exposure visits etc., to educate the farmers about all the benefits of IFS. The positive and significantly related characteristics need to be considered while selecting the farmers for the extension educational programmes to enhance their perception level and promote the IFS as socially acceptable, economically viable and eco-friendly among farmers.

Keywords: Perception, Integrated Farming System, Resources

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Introduction

Indian Agriculture is known for its multi-functionalities of providing employment, livelihood, food, nutrient and ecological securities. India has basically an agriculture driven economy where, agriculture and allied activities contribute about 17.32 percent to the GDP (2015-16). It employs 48.90 percent of the total work force and it is the principal source of livelihood for 58.00 percent of population. The population of India has already crossed 1.28 billion (2016) and expected to increase 1.39 billion by 2025. The demand for foodgrains would increase from 273.38 million tons (2016-17) to 334.9 million tons by 2025. Simultaneously, the demand for high value commodities viz., fruits, vegetables, livestock products, fish, poultry etc, are increasing faster than food grains and is expected to increase by more than 100.00 percent by 2030 [1]. According to the reports of Indian Council of Medical Research (ICMR) the per capita daily requirement for adult is worked out to be 420 gms cereals, 40 gms pulses, 50 gms leafy vegetables, 60gms other vegetables, 150 ml milk and 40 gms fat and oils get 2738 calories of energy and 65 gms of protein to perform voluntary as well as involuntary functions of body [2]. Hence, the country has to produce more food and other agricultural commodities. But, the average size of land holding in India has declined to 1.16 ha during 2010-11 from 2.28 ha in 1970-71. Further, the average size of land holding in India is expected to decrease 0.68 ha in 2020 and 0.32 ha in 2030 [3]. This is due to fragmentation, rapid urbanization, creation of infrastructure facilities like roads, railway tracks, dams etc. The sustainability and profitability of farming poses a serious challenge due to decreasing trend in average size of land holding. This situation in India, calls for an integrated effort to address the emerging livelihood issues. It is imperative to develop strategies and agricultural technologies that enable adequate income and employment generation for small

and marginal farmers' who constitute more than 85 percent of the farming community. The integrated farming system approach is considered to be the most powerful tool for enhancing the profitability of small and marginal farmers. These integrated farming systems need to be socially acceptable, economically viable and eco-friendly. Integration of enterprises lead to greater dividends than single enterprise-based farming, especially for small and marginal farmers. It also leads to improvement in nutritional quality of daily diet of beneficiaries [4]. In this context, the University of Agricultural Sciences, Bengaluru has taken up an innovative development initiative called "Livelihood Improvement of SC Farm Families through Integrated Farming System (IFS)". It was implemented with the assistance of Department of Agriculture, Government of Karnataka during 2014-17. About 3000 farmers were benefited from the project. The success of project is well evident from the increase in yield of 25-40 percent, provided employment to the family members and checked the migration. Realising the importance of the project, the present study was undertaken with following objectives.

Objectives

To ascertain the farmers perception about Integrated Farming System
To know the relationship between characteristics of farmers with their perception about Integrated Farming System

Material and Methods

The study was conducted in purposively selected five districts of Eastern Dry Zone of Karnataka. From each district, one taluk and from each taluk one Grama Panchayath were selected based on maximum number of beneficiaries covered

Table-2 Distribution of respondents according to their perception about statement wise IFS, N=120

SN	Statements	A	UC	DA	Total Scores	MS
1	IFS reduce vulnerability of farmers in adverse conditions	110(91.67)	04(3.33)	06(5.00)	344	2.87
2	Crop integration helps to mitigate weeds, pest and disease problems.	101(84.17)	10 (8.33)	09(7.50)	332	2.77
3*	Marketing of different products from IFS farm is very difficult	10 (8.33)	07(5.83)	103(85.83)	333	2.78
4	IFS ensure food and nutritional security of farm family.	113 (94.17)	07(5.83)	-	352	2.94
5	IFS help to increase income diversification.	117(97.50)	03(2.50)	-	357	2.98
6	IFS provide enough scope to employ family members round the year.	120(100.00)	-	-	360	3.00
7	The manure and organic waste obtained from IFS farms reduce fertilizer requirement.	111(92.50)	09 (7.50)	-	351	2.93
8	IFS provide great opportunity to produce diversified products	120(100.00)	-	-	360	3.00
9	IFS help to protect environment through recycling of animal waste.	61(50.83)	28(23.33)	31(25.83)	270	2.25
10	IFS help to achieve optimum production level through integration.	88(73.33)	19(15.83)	13(10.83)	334	2.78
11*	IFS values are not compatible with the values and beliefs of farming community.	9(7.50)	13(10.83)	98(81.67)	329	2.74
12	IFS increase competition for resources among different enterprises	56(46.67)	47(39.17)	17(14.17)	201	1.67
13	Fodder shortage can be managed by planting perennial fodder trees as a part of IFS.	84(70.00)	21(17.50)	15(12.50)	309	2.58
14	Every piece of land is effectively utilized in IFS.	114(95.00)	06(5.00)	-	354	2.95
15*	The management of IFS farm is more difficult than conventional farm.	08(6.67)	06(5.00)	106(88.33)	338	2.82

under Integrated Farming System project. Further, from each Grama Panchayath two villages were selected based on the maximum number of farmers availed the benefits under the project. From each village, prepared the list of beneficiaries and 12 respondents were selected by using simple random technique thus making a total sample of 120. The scale developed by Argade Dadaban [5] was used for measuring the farmers perception about Integrated Farming System on three-point continuum viz. 'Agree' 'Uncertain' and 'Disagree' with a score of 3, 2 and 1 respectively for positive statements and reverse scoring for negative statements. The overall possible maximum and minimum scores range for between 45 to 15. The respondents were asked to indicate any one of three responses against each of the statements depending upon their perception. Later, the respondents were classified as low, medium and high perception categories based on mean and standard deviation as a measuring check. The data were collected by using structured interview schedule. Analysed the data by using frequency, percentage, mean, standard deviation and correlation & regression.

Distribution of respondents according to their perception about integrated farming system

The results presented in [Table-1] revealed that majority of farmers belonged to high perception category (46.67%) followed by medium perception (30.00 %) and low perception (23.33%) categories. The possible reasons might be due to more profit, more income per unit area, increased employment, reduction in input cost etc., These findings are in line with the findings of Mithan Kadachi, *et al.*, [6].

Table-1 Distribution of respondents according to their perception about integrated farming system, N=120

SN	Category	Number	Percent
1	Low perception (< 42.234)	28	23.33
2	Medium perception (42.234-51.934)	36	30.00
3	High perception (> 51.934)	56	46.67

The results presented in [Table-2] revealed that the statements such as IFS provides enough scope to employ family members round the year and IFS provides great opportunity to produce diversified products were recorded maximum mean scores (each 3.00). Further, the highest mean scores were recorded in statement IFS helps to increase income diversification (2.98) followed by every piece of land is effectively utilized in IFS (2.95), IFS ensures food and nutritional security of farm family (2.94) and the manure and organic waste obtained from IFS farms reduce fertilizer requirement (2.93). The possible reason might be due to IFS created more employment opportunities provided diversified products, increase income, every piece of land is effectively utilized and manure & organic waste reduced the fertilizer requirement. Hence, it is eco-friendly. These findings are in line with the findings of Madhu Prasad, *et al.*, [7] and Mithan Kadachi, *et al.*, [6]. But, the statements such as IFS increases competition for resources among different enterprises, IFS help to protect environment through recycling of animal waste and fodder shortage can be managed by planting

perennial fodder trees as a part of IFS were recorded lowest mean scores of 1.67, 2.25 and 2.58 respectively with the respondents. The reason might be due to lack of sufficient knowledge about resources of different enterprises, environment protection through recycling of animal waste and planting perennial fodder trees. These findings are more or less in line with the findings of Mithan Kadachi, *et al.*, [6] and Sona Wane and Shirke [8].

Table-3 Relationship between characteristics of respondents with their perception about IFS, N=120.

SN	Characteristics	'r' value
1	Age	-0.170
2	Educational status	0.314**
3	Occupational status	0.118
4	Land holding	0.291**
5	Farming experience	0.098
6	Mass media exposure	0.126
7	Social participation	0.132
8	Extension participation	0.298**
9	Economic orientation	0.335**
10	Material possession	0.106
11	Credit orientation	0.141
12	Scientific orientation	0.329**

The results presented in [Table-3] indicated that independent variables viz., educational status, landholding, extension participation, economic orientation, credit orientation and scientific orientation had positive and significant relationship with perception about IFS. It implies that higher the education status, larger size of land holding, higher extension participation, economically motivated to earn money and later oriented towards scientific IFS technologies were perceived better than other farmers. Similar findings were reported by Madhu Prasad, *et al.* [7].

Summary

It can be concluded that majority of farmers belongs to high category of perception about IFS. With regard to the perception about different statements such as IFS provides enough scope to employ family members round the year and IFS provides great opportunity to produce diversified products were recorded maximum mean scores (each 3.00) with the respondents. But, the statements such as IFS increases competition for resources among different enterprises and IFS helps to protect environment through recycling of animal waste were recorded least mean scores (1.67 and 2.25) with the respondents. The characteristics such as educational status, occupational status, land holding, extension participation, economic orientation and scientific orientation exhibited positive and significant relationship with farmers perception about IFS. It could be concluded that majority of farmers perceived the IFS with respect to the production, income and employment.

Hence, the concerned development departments should organize the demonstrations, trainings, field days, exposure visits etc., to educate the farmers about the other benefits. The positive and significantly related characteristics need to be considered while selecting the farmers for the extension educational programmes to enhance their perception level and promote the IFS as socially acceptable, economically viable and eco-friendly among farmers.

Application of research: The IFS increase the yield, income and provides employment to the farmers. Hence, it can be promoted by enhancing the farmers perception about IFS through extension educational activities.

Research Category: Research article

Abbreviations: IFS- Integrated Farming System

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Conflict of Interest: No conflict of interest

Ethical approval: This article is part of research project conducted by collecting the data from the farmers to assess their perception about IFS. The accurate statements based on the analyzed data constitute ethical behaviour.

References

- [1] Surve U.S., Patil E.N., Shinde J.B. and Thawal D.W. (2014) *Journal Agricultural Issues*, 19(2), 1-9.
- [2] Ray D.P. (2009) *Orissa University of Agriculture and Technology, Bhubaneswar, Odisha*, 1-5.
- [3] Agriculture Census Report, India (2010-11) *Government of India, Krishi Bhavan, New Delhi*.
- [4] Naushad Khan, Mayank Dubey and Tiwari U.S. (2015) *International Journal of Science and Nature*, 6(3), 515-520.
- [5] Argade S. Dadabhau, Gopal Sankhala and Wadkak S Kisan(2015) *International Journal of Agricultural Extension*, 3(1), 25-30.
- [6] Mithan P Kadachi, Bheemappa A., Shreeshail Pudrapur and Anil Biradar (2014) *Agriculture Update*, 3(4), 538-342.
- [7] Madhu Prasad V.L., Venkataravana P. and Venkatesh Murthy, C.V. (2008) *Legume Research*, 31(2), 136-138.
- [8] Sona Wane H.P and Shirke V.S. (2016) *Gujarath Journal of Extension Education*, 27(2), 130-133.