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A Study on Farmers' perception towards Integrated Farming System in Cuddalore District of Tamil Nadu

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Abstract

Integrated farming system represent a holistic and sustainable approach to agriculture that integrates various components like crop production, livestock rearing, aquaculture and agroforestry. It offers significant potential for achieving sustainable and resilient agricultural systems, enhancing farmer livelihoods and contributing to a more secure and equitable food system. Perception is mental organization and understanding of sensory information. It is the opinion expressed by the farmers. This study explores farmer's perception towards Integrated Farming System in Cuddalore district of Tamil Nadu state was conducted with the 300 respondents who are practicing Integrated farming system. The selected IFS practicing farmers have been interviewed personally with the help of a well-structured and pre-tested interview schedule. The farmer's perception about IFS was based on three-point continuum *viz*. Agree, Uncertain and Disagree with a score of 3,2 and 1 respectively. Results revealed that, the different 26 statements towards IFS, majority of the respondents strongly agreed with the statement that, Integrated farming system helps to increase income diversification with 95.56 MPS followed by Integrated Farming System ensures livelihood security of farm family (94.56 MPS), IFS provides employment to the farm family round the year" (92.44 MPS) and IFS helps in supply of balanced and nutritious food to the family due to combination of various enterprises (92.22 MPS).

Key words : Integrated Farming System, Livelihood Security, Employment and Nutritious Food.

Agriculture, a cornerstone of the Indian economy, plays a pivotal role in shaping the nation's GDP, employment landscape, and food security. While its contribution to GDP has been steadily declining, agriculture remains a major source of income and livelihood for a significant portion of the Indian population, particularly in rural areas. The sector's

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importance extends beyond food production, as it also provides raw materials for diverse industries, generates foreign exchange through exports, and fuels rural development. Tamil Nadu, a state renowned for its agricultural heritage, faces an array of challenges in the modern world. These include diminishing natural resources, climate change impacts, and the pressure to feed a growing population. However, Indian agriculture faces challenges such as low productivity, climate change impacts, and limited access to resources, demanding strategic interventions to enhance its resilience and ensure sustainable growth for a thriving and prosperous nation. Integrated farming system (IFS) is recognized as a solution to the continuous increase of demand for food production, providing stability to the income and nutritional security particularly for the small and marginal farmers with limited resources.

Integrated farming system is a mix of farm enterprises such as crop, livestock, aquaculture, poultry, sericulture and agro-forestry to achieve economic and sustained agricultural production through efficient utilization of resources. The principle of IFS model is developed such as wastes generated from one component becomes an input for other system and hence there is efficient recycling of farm and animal wastes in the integrated system. There is increase in yield per unit area through intensification and diversification of crops. Apart from this IFS helps in controlling insect pests and diseases and weeds through natural cropping system management and there is less use of harmful agro-chemicals for farm production. Integrated Farming Systems offer a promising solution, promoting sustainable agricultural practices that aim to harmonize environmental, economic, and social needs.

Perception is the process by which individuals interpret and make sense of sensory information from their environment. It involves the organization, identification, and interpretation of sensory input to understand and interact with the world around us. Perception is influenced by various factors, including individual experiences, beliefs, cultural background, and context. It is the opinion expressed by the respondents. Perception was operationally defined as the meaningful sensation about Integrated Farming Systems as perceived by the farmers. Understanding the process of human perception is crucial to understanding human behaviour[1].

The study was conducted in Cuddalore district of Tamil Nadu as it possesses adequate population of beneficiaries from National Agricultural Development Programme (NADP) and National Mission for Sustainable Agriculture- Rainfed Area Development (NMSA-RAD) Integrated farming system project under state department of agriculture. Out of the total fourteen blocks, eight blocks were selected in Cuddalore district namely Cuddalore, Kurinjipadi, Annagramam, Keerapalayam, Nallur, Mangalore, Panruti and Melbhuvanagiri have been selected purposively. Further, A total of forty-nine villages from eight blocks this study area and the respondents were identified from the selected villages by following proportionate random sampling method. Thus, a total of 300 IFS farmers are considered as sample for the farmers perception about integrated farming system apropos in Cuddalore district of Tamil Nadu.

Farmer's perception regarding the utility of integrated farming system apropos was operationalized as the farmer's awareness about the benefits of various components of IFS. 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. In this schedule finally 26 statements were selected for study the perception of farmers on IFS was developed. The responses were collected on a three point continuum *viz.,* agree, uncertain and disagree with a weightage of 3, 2 and 1 for positive statements and reverse scoring for negative statements. The individual score was obtained by summing up the scores for all the statements and on the basis of cumulative frequency method was categorized into three groups are low, medium and high. To measure the priority of the statements, the responses were counted for each statement and converted in to mean per cent score. On the basis of Mean Percentage Score rank was assigned to each statement.

Findings :

Perception is the process by which individuals interpret and make sense of sensory information from their environment. It involves the selection, organization, and interpretation of stimuli to understand and respond to the world around them. Perception is influenced by various factors, including personal experiences, beliefs, cultural background, and context, which can shape how one views and reacts to different situations or information. In essence, perception is not just about what is observed but also how it is understood and given meaning by the observer.

Looking to the importance of perception, it is imperative to study the perception of farmers towards Integrated Farming System. For measuring the perception of the farmers, a separate scale was followed and data were collected from the respondents by using well-structured interview schedule. Thereafter, data were properly analyzed by using statistical tools such as percentage analysis and mean percentage scores for further interpretation. The details of the results including overall distribution of the respondents on the perception of IFS and item-wise analysis on perception towards IFS are presented in subsequent tables in this paper.

Overall perception of farmers towards Integrated Farming System :

The detail of overall distribution of farmers according to perception about IFS by farmers has been presented in Table-1.

Table-1. Distribution of respondents according to their overall perception of farmers towards Integrated Farming Systems

(n=300)

S. No.	Categories	Frequency	Percentage
1	Low	61	20.33
2	Medium	165	55.00
3	High	74	24.67
Total		**300**	**100**

From the Table-1, revealed that more than half of the respondents (55.00 per cent) belonged to medium category of perception regarding integrated farming system followed by 24.67 per cent of farmers belonged to high perception category and 20.33 per cent of farmers were from low perception category about integrated farming system. From the above discussion it can be concluded that more than seventy five per cent of the respondents (79.67 per cent) shown their perception medium to higher levels about IFS. It means majority of farmers were interested in Integrated Farming System in the study area.

This might be due to the reason that, majority of the farmers are characterized by medium land holding, better education, training and cosmopolite nature of perception about integrated farming systems. Hence, they responded positively about integrated faming systems. The farmers were well aware of benefits from the various enterprises of farming systems which ensures food security, income security, social security, created more and continuous employment, reduced the risk of crop failure and also helped to protect the environment through recycling of plant and animal wastes. Similar findings were also reported by Shwetha[8] and Gopika[2].

The present findings supported the view expressed by Parmar[6] who indicating that out of the total farmers, the higher proportion of the farmers (65.83 per cent) had partial and useful perception about Integrated Farming System. Similar findings were also reported by Gopika and Lalita[2], Nair *et al.*[5] and Rithe[7].

Item-wise perception of farmers towards Integrated Farming Systems :

To find out the statement-wise perception of respondents about Integrated Farming Systems total of twenty-six statements were considered in the perception scale. For this, the Mean Percent Score (MPS) for each statement was calculated and ranked accordingly. The results are presented in Table-2.

Table 2. Distribution of respondents according to their Item-wise perception of farmers towards Integrated Farming Systems

(n=300)

S. No	Statements	Mean Percent Score	Rank
1	Integrated farming system helps to increase income diversification	95.56*	I
2	Integrated farming system ensures livelihood security of farm family	94.56*	II
3	Interdependence on different farming systems ensures effective utilization of farm resources	86.78*	VII
4	IFS provides employment to the farm family round the year	92.44*	III
5	More of remunerative prices for farm produce of IFS	48.22	XXV
6	Dairy farming is a significant and most promising choice	88.89*	VI

	among different components of integrated farming systems		
7	IFS provides adequate protection against risk and uncertainties of the farm yield	70.22	XV
8	IFS helps in maintaining sustainable soil fertility and soil health	82.44*	VIII
9	Through integration of different enterprises, IFS helps to achieve optimum production level	74.67*	XII
10	IFS helps in supply of balanced and nutritious food to the family due to combination of various enterprises	92.22*	IV
11	IFS provides greater opportunity to produce diversified products from agriculture and allied enterprises	81.22*	IX
12	IFS ensures the complimentary combination of different farm enterprises	47.11	XXVI
13	The standard of living of farmers is enhanced by adopting IFS	90.00*	V
14	IFS units act as model farms in the local area to teach neighboring farmers	64.56	XIX
15	IFS help in efficient recycling of the farm bio-mass and animal waste	65.67	XVIII
16	Cost of production could be minimized by recycling farm waste in IFS	63.56	XX
17	IFS helps in improving the knowledge and skills of the farmers	71.33	XIV
18	IFS helps in building symbiotic relation between different enterprises	53.67	XXIII
19	Appropriate selection of enterprises results in increase the profit of whole farm in IFS	65.89	XVII
20	IFS motivates the farmers to adopt new technologies	76.89*	XI
21	It is easy to adopt IFS successfully, with the help of various stakeholders	56.11	XXI
22	IFS requires more skilled labour which leads to increase in labour cost	67.00	XVI
23	IFS improves cosmopoliteness among farmers	55.00	XXII
24	IFS helps in reducing fodder scarcity for the animals	79.11*	X
25	Integrating enterprises in IFS requires technical skills and more resources	50.44	XXIV
26	IFS farmers are more aware about farm management and profit maximization	73.67*	XIII
Average Mean Percentage Score		**72.58**	

Data accorded in Table-2 revealed that among the twenty six statements of perception of farmers towards integrated farming system there are thirteen statements are the above average score categories. These statements are Integrated Farming System helps to increase income diversification was strongly agreed by the respondents with 95.56 MPS followed by Integrated Farming System ensures livelihood security of farm family (94.56 MPS), IFS provides employment to the farm family round the year (92.44 MPS), IFS helps in supply of balanced and nutritious food to the family due to combination of various enterprises (92.22 MPS), The standard of living of farmers is enhanced by adopting IFS (90.00 MPS), Dairy farming is a significant and most promising choice among different components of Integrated Farming Systems (88.89 MPS), Interdependence on different farming systems ensures effective utilization of farm resources (86.78 MPS), IFS helps in maintaining sustainable soil fertility and soil health (82.44 MPS), IFS provides greater opportunity to produce diversified products from agriculture and allied enterprises (81.22 MPS), IFS helps in reducing fodder scarcity (79.11 MPS), IFS motivates the farmers to adopt new technologies (76.89 MPS), IFS helps to achieve optimum production level through integration of different enterprises (74.67 MPS) and IFS farmers are more aware about farm management and profit maximization (73.67 MPS).

Integrated Farming System helps to increase income diversification was strongly agreed by the respondents with 95.56 MPS and ranked first among the different statements of perception of Integrated Farming System. This may be due to different type of enterprises engaged in IFS with suitable combination increase the yield and decrease the cost of production. So the income from whole farm considerably increased. Integrated Farming System ensures livelihood security of farm family secured (rank II) with mean percentage score of 94.56. This may due to the failure of any one or more unit of IFS may compensate or managed by other unit of IFS. It may give livelihood security by the means of financial security to the farmers. IFS provides employment to the farm family round the year secured (rank III) with mean percentage score of 92.44. This may due to the diversified farm activities from various enterprises offering employment opportunity almost overall the year not only for the farmer and also family members and labours.

The present finding supported the views expressed by Parmar[6] who indicated that IFS increase productivity by way of increase in economic gain per unit area, supply of balanced and nutritious food to family due to combination of crop and livestock, IFS improve the standard living of the farmers, better use of farm by- products from the various enterprises and IFS make sustainable family income throughout the year.

Further analysis of table-2 reveals that, IFS helps in improving the knowledge and skills of the farmers (71.33 MPS), IFS provides adequate protection against risk and uncertainties of the farm yield (70.22 MPS) and IFS requires more skilled labour which leads to increase in labour cost (67.00 MPS), Appropriate selection of enterprises results in increase the profit of whole farm in IFS (65.89 MPS), IFS help in efficient recycling of the farm bio-mass and

animal waste (65.67 MPS), IFS units act as model farms in the local area (64.56 MPS), Cost of production could be minimized by recycling farm waste in IFS (63.56 MPS), It is easy to adopt IFS successfully, with the help of various stakeholders (56.11 MPS), IFS improves cosmopoliteness among farmers (55.00 MPS), IFS helps in building symbiotic relation between different enterprises (53.67 MPS), Integrating enterprises in IFS requires technical skills and more resources (50.44 MPS), more remunerative prices for farm produce of the IFS (48.22 MPS) and "IFS ensures the complimentary combination of different farm enterprises" with 47.11 MPS are below average score of perception of famers towards integrated farming systems. Similar findings were also reported by Kumar[4].

The study on farmers' perceptions towards integrated farming systems in reveals a complex interplay of benefits, challenges, and opportunities associated with this sustainable agricultural practice. Overall findings of this study on perception of IFS indicate a growing awareness and acceptance of IFS among farmers, driven by its potential to enhance productivity and livelihood security, improve the economic security by resource efficiency, maximizing employment opportunity and promote environmental sustainability. Based on the perception farmers contributes to improved soil health, reduced chemical use, enhanced farmer well-being and a more resilient agricultural landscape capable of adapting to climate change. IFS offers a promising path towards a more sustainable and resilient agricultural future. By addressing the key challenges and fostering collaboration, we can unlock the full potential of IFS, creating a thriving agricultural sector that benefits both farmers and the environment.

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