

DOCUMENTATION OF INTEGRATED FARMING SYSTEMS MODELS IN MAHARASHTRA : AN APPROACH TO BOOST UP FAMILY INCOME

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ABSTRACT

The Integrated Farming Systems (IFS) adopts greater importance for sound management of farm resources to enhance the farm productivity and reduce the environmental degradation, improve the quality of life of resource poor farmers and maintain sustainability. Better resource management is a key to avert these shortages otherwise situation will become more complex. To confront the issue that people in rural areas are not utilizing their resources efficiently we had conducted a study in rural area of the country. In this study reviewed different types of Integrated Farming System (IFS) and their returns in Pune & Solapur District of Maharashtra. Structured questionnaires were used for data collection. Total 58 respondents were purposively selected. Data were analyzed by different integrated farming system's margins, farm incomes from different agriculture enterprises. The highest farm income B:C ratio was 2.47 This Income was recorded by Agriculture + horticulture + value addition (fruit processing) Integration type.

Keywords: *integrated farming systems, sustainable agriculture, resource management*

INTRODUCTION

The world's population is increasing day by day. More the population, more the resources required by the country to meet their basic demands. In developing countries the availability of lands, accessibility to quality water decreasing with the passage of time but on the other side population is on increasing side. Farming system is a mix of farm enterprises in which farm families allocate resources for efficient utilization of the existing enterprises for enhancing productivity and profitability of the farm. These farm enterprises are crop, livestock, aquaculture, agro-forestry, agri-horticulture and sericulture. Integrated farming system approach is not only a reliable way of obtaining fairly high productivity with considerable scope for resource recycling, but also concept of ecological soundness leading to sustainable agriculture. With increasing energy crisis due to shrinking of non-renewable fossil-fuel based sources, the fertilizer nutrient costs have increased steeply and with gradual withdrawal of fertilizer subsidy. It is expected to have further hike in the cost of fertilizers. This will leave the farmers with no option but to fully explore the potential alternate sources of plant nutrients at least for the partial substitution of the fertilizer nutrients for individual crops and in the cropping systems.

Integrated farming system, which is a synonym to family farming, provides an opportunity to profitably

engage the available man power in the farm family to the fullest extent throughout the year leading to higher income and family satisfaction. A good IFS aims at least dependence on outside resources and efficient recycling of available farm resources. People have fewer resources to fulfil their basic needs. Better resource management is a key to avert these shortages otherwise situation will become more complex. To confront the issue that people in rural areas are not utilizing their resources efficiently we had conducted a study in rural area of the country. In this study reviewed different types of Integrated Farming System (IFS) and their returns in Pune & Solapur District of Maharashtra.

OBJECTIVES

- (1) To document the various integrated farming system models adopted by the farmers in Pune region
- (2) To obtain constraints and suggestions of the respondents in adoption of integrated farming system
- (3) To obtain the feedback of respondents about integrated farming system

METHODOLOGY

The study was conducted in two districts Pune and Solapur districts of Maharashtra for finding the contribution of total income to the livelihood of farmers who practice

integrated farming system. By Purposive simple random sampling. Total 58 respondents were selected for the studied

RESULTS AND DISCUSSION

Results of the integrated farming systems are deliberated here. Integrated farming system method (IFS) recorded higher productivity and profitability than farmers practice method.

(1) Subsidiary occupations

Table 1: Distribution of respondents according to their subsidiary occupation (n=58)

Sr. No.	Particulars	Frequency	Per cent
1	Horticulture	30	51.72
2	Dairy	45	77.59
3	Poultry	09	15.52
4	Goat farming	07	12.07
5	Polyhouse	07	12.07
6	Processing	04	06.90
7	Fisheries	02	03.45
8	Sericulture	02	03.45
9	Vermi-compost preparation	01	01.72

It was observed that all the respondents were involved in the farming and allied occupation. Majority of them were involved in dairy (77.59 per cent) followed by 51.72 per cent of them were involved horticulture farming. 15.52 per cent were engaged in poultry while equal per cent of them were doing goat farming and had polyhouse. Meager percent of them were engaged in processing (6.90 per cent), fisheries and sericulture (3.45 per cent each) and vermi-compost preparation (1.72 per cent).

(2) Income enhancement of farmers from different enterprise combinations

It was observed that majority of the respondents operated on a combination of farming enterprises which gave them sustained cash flow to manage many of the farm activities. The total income obtained from all the enterprises owned by the respondents for the past one year was computed as annual gross income of family. The average of total income from different enterprises was worked out. Also the average expenditure, net income and benefit cost ratio was calculated for the different combinations used by the farmers. The crops found in the field of farmers under study having IFS include paddy, wheat, gram, sugarcane and fodder maize. The horticultural crops include flower crops like tuberose, leafy and fruit vegetables. Custard apple and guava was also found prominently.

Table 2: Different combination of enterprises followed by the farmers under IFS and its economics (Fig. in lakhs) (n=58)

Sr. No.	Combination of enterprises	Expenditure	Income	Net/ha	B:C ratio
1	Agriculture +Horticulture	3.74	4.49	0.76	1.52
2	Agriculture +Poultry	1.39	2.30	0.91	1.65
3	Agriculture + Horticulture(Polyhouse)+ Dairy	4.50	8.80	4.30	1.96
4	Agriculture + Horticulture + Dairy	2.93	6.03	3.10	1.95
5	Agriculture + Dairy +Goat	1.81	3.57	1.76	1.91
6	Agriculture + Horticulture + Value Addition (Fruit Processing)	4.43	10.22	5.80	2.41
7	Agriculture + Horticulture + Dairy + Poultry	5.14	9.50	4.36	1.91
8	Agriculture + Horticulture, Polyhouse + Dairy + Vermicompost	10.62	21.96	11.34	2.07
9	Agriculture + Goat	1.4	2.3	0.9	1.64
10	Agriculture + Horticulture + Poultry + Fisheries	3.1	7.37	4.27	2.38
11	Agriculture +Horticulture +Dairy + Goat + Poultry	4.25	9.41	5.16	2.18
12	Agriculture + Dairy + Value Addition (Dairy Processing	10.34	22.25	11.91	2.15
13	Horticulture + Dairy	2.15	3.40	1.25	1.58
14	Agriculture + Dairy	1.15	2.12	0.97	1.82

Sr. No.	Combination of enterprises	Expenditure	Income	Net/ha	B:C ratio
15	Agriculture + Horticulture (Polyhouse)	2.30	4.60	2.30	2.00
16	Horticulture (Polyhouse) + Dairy	7	14.4	7.4	2.00
17	Agriculture+ Sericulture	1.65	3.45	1.80	2.09
18	Agriculture + Sericulture + Goat Farming	5.36	8.85	3.49	1.65
19	Agriculture + Horticulture (Polyhouse) + Dairy	4.47	10.15	5.68	2.27

It was observed that Agriculture + horticulture + value addition (fruit processing) was found to be give higher B : C ratio of 2.41 followed by Agriculture + horticulture + poultry +Fisheries (2.38), Agriculture + Horticulture (polyhouse) + Dairy (2.27). Agriculture + Horticulture + Dairy + Goat + poultry (2.18), Agriculture + Dairy +Value addition (Dairy processing) (2.15), Agriculture+ sericulture

(2.09), Agriculture + Horticulture, polyhouse + Dairy + vermi-compost (2.07) are the combinations having benefit cost ratio more than two. The other combinations are also giving the returns but less than or equal to benefit cost ratio of two. It was also observed that the farmers are following these different combinations of enterprises with the efficient use of their available family labour.

Problems faced by the respondents

Table 3 : Problems faced by the farmers in adopted IFS model

(n=58)

Sr. No.	Particulars of problems	Number	Percentage
1	Lack of supportive price for the produce	50	86.21
2	Lack of inputs availability	39	67.24
3	High labour wages	37	63.79
4	More feeding cost for livestock	25	43.10
5	Timely unavailability of labour	22	37.93

Table 3 indicates that most (86.21 per cent) of the respondents mentioned that no fixed support price is the major problem in farming followed by higher cost of inputs

(67.24 per cent) and higher labour cost (63.79 per cent). 43.10 per cent, 37.93 per cent of them reported more feeding cost and timely unavailability of labour as their problems.

Suggestions given by the respondents

Table 4 : Distribution of the respondents according to their suggestions

(n=58)

Sr. No.	Particulars of suggestions	Number	Per cent
1	Fixed supportive price for each crop	43	74.14
2	Input cost should be reduced	32	55.17
3	Labour cost should be minimize	31	53.45
4	Feeding cost should be reduced	23	39.66
5	Middlemen in the market chain should be removed	19	32.76

Table- 4 indicates that fixed support price for each crop is the major suggestion given by the majority (74.14 per cent) of the respondents. More the of the respondents suggested for low cost of inputs (55.17) and labour (53.45)

followed by low feeding cost (39.66 per cent), removal of middlemen in the market chain (32.76 per cent) were the other suggestions given by the respondents. Results are in line with Raut et al. (2018)

Feedback given by the respondents

Table- 5 : Distribution of the respondents according to their feedback

(n=58)

Sr. No.	Particulars	Number	Per cent
1	IFS has resulted in more income	47	81.03
2	IFS has helped to use the labour more efficiently	25	43.10
3	IFS has helped to reduce the fear of insecurity in farming	20	34.48

Above results shows that most (81.03 per cent) of the respondents given feedback as increase in income as a result of implementation of Integrated farming system. 43.10 per cent of them said that by the use of IFS in the farming the labour is utilized more efficiently while 34.48 per cent given feedback as the fear of insecurity in farming has been reduced due to IFS.

CONCLUSION

Integrated Farming System is common to most part of India because of the small farm system which are backbone of the traditional agriculture. In India farmers are generally practicing organic farming; therefore a farmer prefers to keep few livestock so that soil nutrient could be increased through animal excreta. It was observed that Agriculture + horticulture + value addition (fruit processing) was found to be give higher B:C ratio of 2.41 followed by Agriculture + horticulture + poultry + Fisheries (2.38), Agriculture + Horticulture (polyhouse) + Dairy (2.27) and hence the farmers in Pune region should go for these IFS models for enhancing their income.

The adoption of IFS is the right approach for enhancing the income of the farmers and hence non-adopters of IFS should be promoted through the efforts and co-ordination of State Department of Agriculture and allied development departments.

REFERENCES

Bahire VV, Kadam RP, Sidam VN. Sustainable Integrated Farming is the need of the Indian farmer. In: 22nd national seminar on "Role of Extension in Integrated Farming Systems for sustainable rural livelihood, 9th

-10th Dec, Maharashtra, 2010, pp. 65.

Bhalerao R.A., Charge K.V., Patil V.G. Profile of the farmers practising the livestock based farming system: In 22nd national seminar on "Role of Extension in Integrated Farming Systems for sustainable rural livelihood, 9th -10th Dec, Maharashtra, 2010. pp. 29.

Kadam S.S, Hatey A.A, Nikam TR, Landge S.P, Palampalley H.Y. Constraints of IFS in Kankan region of Maharashtra - A case study. In: 22nd national seminar on "Role of Extension in Integrated Farming Systems for sustainable rural livelihood, 9th -10th Dec 2010; 101.

Raut, V. D., Raut, D. D. and Deshpande, S. K. (2018) A boost of organic farming to farmers. *Guj. J. Ext. Edu.* 29(2):159-162.

Ravishankar, N., Pramanik, Rai, S. C., Shakila Nawab., Topan. R, B., Biwas, K. R. and Nabisat Bibi 2007. Study on integrated farming system in hilly areas of Bay Islands. *Indian Journal of Agronomy* 52: 7

Sachinkumar, T.N., Basavaraja, H., Kunnal, L.B. Kulkarni, G.N., Ahajanashetty, S.B., Hunshal, C. S. and Hosamani, S. V 2012. Economics of farming systems in northern transitional zone of Karnataka. *Karnataka Journal of Agriculture Science* 25 (3): 350-358.

Torane, S.R., 2009. An econometric analysis of farming systems in north Konkan region of Maharashtra. Ph.D. Thesis, Univ. Agric. Sci., Dharwad (India).