

Successful Integrated Farming System Intervention – Success Story of a Marginal Farmer

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Abstract

A farmer driven economy in a developed country like ours is facing enormous pressures due to population increase necessitating increased production through successful scientific interventions. The horizontal expansion of farming system is not possible because of change in land use system through urbanization and industrialization and hence interventions based on increasing productivity and hence economic returns per unit area are inevitable. Integrated farming system is one such approach utilising the farm resources for maximum returns which can improve the socioeconomic status of a farmer. Integrated Farming Systems involves meaningful combinations of many complementary and supplementary enterprises leading to optimal sustained use of natural resources, effective utilization of available by-products, profitable employment to all family members throughout the year, higher combined farm income generation, high degree of stability in income generation and prosperity of the farmers. One such initiative was done to evolve the strategy of maximising economy of a farmer from district Shopian of Kashmir valley wherein the farmer was cultivating Apple with dwindling production. The additional enterprises Sheep rearing, Poultry and vermicomposting increased the annual income by 30 percent with additive impacts on soil fertility leading to additional yield benefits in apple produce.

Key words: Apple, Poultry, Vermicompost, IFS

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I. Introduction

In India, the farmers maintain different enterprises for their complimentary and supplementary nature and for ensuring sustainable livelihood from time immemorial. After the advent of green revolution in late 1960s and economic liberalization in early 1990s, the farmers gradually started focusing on a few enterprises due to several imposing factors including shrinking farm sizes, fluctuating commodity prices, livelihood diversification and shortage of labour during peak agriculture season. It had a severe impact on food and nutritional security of millions of poor farm households. The anguish of farmers is often expressed in terms of their agitation in one or the other part of the country, unwillingness to continue farming and increasing demands of compensating their economic loss. Although suggestions Introduction: are pouring in from experts and leaders of organisation for strengthening the income base of farmers, the government cannot implement them entirely due to compulsions from socio-economic and political considerations. However, the Government of India has made an announcement about Doubling Farmers' Income by 2022. Experts are judging the options and strategies for achieving this enviable target.

According to the Economic Survey of India, between 1990 and 2007, food grain output grew at a rate of 1.2 percent, which is lower than the population growth rate of 1.9 percent. Our country's population is expected to reach 1370 million by 2030, and 1600 million by 2050. To meet future demand, we'll need to produce 289 and 349 mt of food grains during the next two years. According to the current situation in the country, the area under cultivation may continue to decline, with more than 20% of current cultivable land being converted to non agricultural uses by 2030. (Gill et al., 2005). Small and marginal farmers are the core of the Indian rural economy constituting 85% of the total farming community. 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 (IFS) also defined as biologically integrated farming system which integrates natural resources and regulation mechanisms into farming activities to achieve maximum replacement of off-farm inputs, secures sustainable production of high quality food and other products through ecologically preferred technologies, sustain farm income, eliminates or reduces sources of present environment pollutions generated by agriculture and sustains the multiple function of agriculture. IFS is a mixed farming system described as a crop and livestock enterprise that comprises of at least two different but logically interdependent sections (Okigbo, 1995).

(Edwards, 1997 and Jitsanguan, 2001) describes the integrated farming system as crop aquaculture farming system in which the fishes are fed with fresh animal waste and along with that fishes leads to increase in the nitrogen and phosphorous content of the soil and plants (Giap et al. 2005). A farming arrangement is a collection of farm enterprises in which farm owners allocate resources for the most efficient use of the actual enterprises in order to boost the production and economic profit of farm. Crops, agroforestry, cattle, aquaculture, agri-horticulture, and sericulture are among the agricultural operations (Singh, 2004). IFS is defined by (Radhamani et al., 2003) as a component of farming systems that considers the notions of boosting productivity, reducing risk, and increasing profits while enhancing the utilisation of organic wastes and crop leftovers in the field. Developing an integrated farming system requires the employment of appropriate technologies. It is vital to consider how to assist farmers in improving the quality of their crops as a tool in integrated farming. Technology must also be regarded as a means of overcoming and balancing the drop in food production caused by the loss of agricultural land. Because of technology, some countries with limited land can still solve their food problems (Ansar, 2018). The phrase “Integrated farming system” is frequently used to refer to a more integrated farming method when compared to monoculture farming. It also goes by the name “Integrated Biosystem” and it describes an agriculture system that combines the production of fish and animal husbandry or livestock and crops (Soni et al., 2014). Long-term agricultural research has been carried out in many regions of the world in addition to developing an integrated system, and in certain cases, economic and environmental observations with the conventional method have been made. Integrated farming has proven to be equally profitable in the long run (Holland, 2020).

II. Material and Methods

The farm study was undertaken to evaluate the socio economic change of a 56 years old orchardist Mr. Ghulam Nabi Bhat, from Keegam village of District Shopian after adopting the Integrated Farming System approach. The farmer was in close association with KVK Shopian and was keenly attending the programmes of KVK, including Training programmes, farmer scientist interactions, awareness programmes FLD’s. the orchardist was struggling hard for the better produce but the dwindling production due to weather vagaries and pest outbreaks incurred heavy costs which lead the farmer to adopt the integrated Farming system by adding sheep rearing, Vermicomposting and poultry to his apple orchard. The scientists from KVK motivated the orchardist for this change and provided regular consultancy to the farmer necessitated for this multipenterprise. The economics of the conventional and IFS was worked out for two years after the adoption of IFS.

III. Results & Discussion

The orchardist after getting motivated from the concept of IFS started to work on the model provided by the KVK. This model was prepared in accordance with the farming situation, the waste produced, irrigation facilities and the market demands. The model was market driven one which produced successful results in terms of economic change of the farmer. The Driving forces which led for the adoption of this new model where

- Dwindling Productivity of Fruits due to market , climate vagaries and frequent disease and pest outbreaks.
- Intervention by KVK through Awareness/ training camps advocating the IFS for farm income security.
- Round the year Farm produce from the same area of land.
- Innovativeness of farmer to adopt new Technologies.

The farmer was holding 20 kannals of land in which 15 kanals was having apple orchard, and after the new adoption the farmer successfully included Sheep rearing poultry and vermicompost to his multienterprise.(Table1).The poultry, sheep manure was reused for orchard and vermicompost which had an additive impact on the production capacity of orchard.

Table 1: Components of IFS

	Components of Farming	Area/Capacity
1.	Vermicompost	70quintal /year
2.	Apple	15 kanals
3.	Poultry farm	500 chicks/crop
4.	Sheep Rearing	20 Sheep

The economic analysis of this multienterprise done for the two years as presented in Table:2 revealed that in conventional farming the farmer was producing on an average 2000 boxes which yielded a net profit of Rs 6,95,000 annually whereas the integrated farming system conceived a profit of Rs. 9,05,000 annually. Pertinent to mention here that alone apple production out yielded from the conventional farming by 300 boxes which can be attributed to higher availability of organic inputs like sheep manure, poultry manure and vermi compost improving soil quality and hence better produce. A small intervention by additional enterprises, Sheep farming, vermicompost and poultry, increased the farm income by 30.2 % annually.

Table 2: Economic Impact

Conventional Farming				Integrated Farming		
S.No	Crop	Production	Net return (Rs)	Crop	Production	Net return (Rs)
1	Apple	2000 boxes	6,95,000	Apple	2300 boxes	7,55,000
2				Poultry farming	500 birds/yr	12000
3				Sheep rearing	20	80,000
4				Vermicompost	50qt	58000
Total		6,95,000		9,05,000		

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