

**Integrated Farming System (IFS): An holistic approach for Sustainable agriculture**Tapasya Tiwari<sup>1</sup>, Dharmendra Kumar<sup>2</sup> and Tripti Mishra<sup>2</sup>**Abstract**

A collection of interconnected agro-economic activities that interact in a specific agricultural environment is known as an integrated farming system (IFS). The primary goals are to reduce risks and boost revenue. Approximately 90–95 percent of the nutrients needed are met by recycling resources, which lowers cultivation costs and boosts employment and profit margins. By applying integrated agricultural system models based on various situations, IFS can boost farm productivity through the synergistic interactions between the various components of farming systems. The Integrated agricultural System (IFS) seems to be the main solution to the increasing need for farm sustainability, stability, food production, and nutrition enhancement given the limited resources available to the small and marginal agricultural community. When it comes to marginal and disadvantaged farmers, the IFS systems can either fully or partially provide their dietary demands from a small plot of land. Furthermore, farm families are kept actively involved in farming activities by the constant need for labour to maintain a system of diverse crops and cattle, offering an opportunity to establish additional jobs.

**Keywords:** IFS, Sustainable agriculture, Profit, Income and Recycling.

**Introduction**

In the Integrated Farming System (IFS), crop and animal farming systems are combined. Animals consume agricultural waste products, and their bodies are turned into manure that is used as fuel and fertilizer

for the land. It has been noted that traditional agricultural methods have resulted in financial challenges connected to crop production exploitation, higher input costs related to energy, and decreased farm profitability. In addition, it has led to ecological issues like low

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variety, contaminated water and soil, and soil erosion. Therefore, these economic and ecological issues can be lessened by the adoption of integrated agricultural production methods, which often require lower input use, such as fertilizers, chemicals (pesticides), and cultivations. The objective of conservation of natural resources, preservation of the environment, and sustained prosperity is considered to be the goal of sustainable agriculture. Agro-economic activities that are interconnected and take place in a specific agrarian environment are called farming systems. While the crop and other businesses coexist in diversified farming, the primary goal is to reduce risks. A complementing benefit is produced by the efficient use (recycling) of wastes and crop residues in integrated farming systems, which guarantee a sensible combination of one or more elements and cropping. IFS is regarded as a potential source of extra cash for the farming sector.

#### **Goals of IFS:**

The four primary goals of IFS are as follows:

1. Maximizing yield across the board to guarantee steady and dependable revenue.
2. Reaching agro-ecological balance and enhancing the production of the system.

3. Using cropping systems, naturally manage and maintain insect, disease, and weed populations.
4. Supplying the public with wholesome food and maintaining a clean environment by using less chemicals, such as fertilizers and insecticides.

#### **Advantages of IFS:**

1. Increased productivity by improved economic yield per unit area per time by virtue of intensification of crops and allied systems.
2. Profitability is increased by recycling system wastes as an energy source for other systems.
3. IFS increases farm production sustainability by integrating several bio systems.
4. It lessens reliance on outside inputs by recycling garbage (into the system), protecting natural resources and lowering resource scarcity.
5. It produces a range of food products within the system, which opens up options to address issues related to malnutrition.
6. Prevents waste from stacking up and causing pollution in the environment by recycling waste.

#### **IFS and sustainable livelihood:**

76.2% of all farmers in India are marginal or small-scale farmers, making up the

bulk of the country's rural and agricultural sector. To meet their agroclimatic and socioeconomic conditions, farmers can combine agricultural operations such as dairy, poultry, pigeon, fishery, sericulture, apiculture, etc. IFS is a type of mixed farming system made up of two or more independent but logically related components, such as livestock and crop components. It is possible to combine an aquaculture system with animals so that fish are fed fresh animal wastes, which will enhance both the component and increase productivity. IFS considers maximizing productivity, reducing risk and profit margins, and enhancing the field's use of organic wastes and agricultural leftovers.

### **Role of IFS in food security:**

For small and marginal farm communities, the Integrated Farming System (IFS) appears to be the key to meeting the growing need for farm sustainability, stability, food production, and nutrition enhancement with limited resources. IFS systems can either fully or partially cover the dietary needs of farm families on a small plot of land in the case of marginal and impoverished farmers. Among many other methods, an integrated crop-livestock system (ICLS) is a sustainable farming approach that can help increase food security. Marginal crop-livestock interactions have the potential to sustainably increase livestock and food crop productivity. In rural

impoverished households, livestock is often considered a significant possession. Having more livestock enables poor families to diversify their income, invest in small scale businesses, and overcome poverty.

### **Conclusion:**

Although the marginal and small-scale farmers have tiny land holdings, if integrated farming is adopted by them and is managed well, it will ensure a large income generation and a diversity of food to sustain the livelihood. Crop-livestock integration on farms benefits human health by supplying wholesome food, and it is important for ensuring food security. Through the recycling of leftovers and byproducts from different system components, IFS lowers production costs and boosts net profitability. Farm families are kept actively involved in farming activities by the steady labour requirement for a system of many crops and livestock, which presents an opportunity for increased employment generation. IFS takes a comprehensive approach, taking into account interactions between the environment and the many IFS components. In terms of waste recycling, IFS is particularly special since it recycles all waste and byproducts, turning them into inputs for other systems. Labor-intensive businesses like dairy, poultry, fruits, vegetables, sericulture, mushrooms, and so on can boost the number of jobs created (man-

days) on an IFS farm, particularly for family labour. Additionally, spending on outside inputs will go down.

**In summary, IFS is both ecologically and economically feasible.**

