

Integrated Farming System

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Introduction

In the present scenario, it is hardly difficult to meet the ever-increasing requirement for the ever-rising population in India. Unfortunately, small and marginal farmers have dominated food-producing industries in India, including agriculture and related fields like cattle husbandry, horticulture, aquaculture, etc. Hence, they are unable to invest more capital in intensive farming activities to produce more and meet the requirements. The Integrated Farming System (IFS) is crucial in this scenario as it maximizes productivity and profit while requiring less capital to address food security and nutritional needs. Integrated farming system is the best answer for the problems of small-scale farmers, as they don't have much land to do the production of crops and other agricultural products. They can make effective use of the entire land to grow nutritious crops, as well as the capital for themselves, with limited resources and without any adverse effect on the environment or agro-ecosystem. In this system, waste products are also used by others on the field. Hence, integration of different aspects of agriculture with crop production's base is what gives way to the recyclable chain. Concept of Integrated Farming System (IFS)

"Waste is only a misplaced resource that can become a valuable material for another product," according to FAO (1977) in IFS. IFS is defined by Okigbo (1995) as a mixed farming system made up of a minimum of two independent but logically connected components of a livestock and crop enterprise. The IFS is described as an aquaculture system that is integrated with livestock and uses fresh animal waste to feed fish by Edwards (1997) and Jitsanguan (2001). They also reported that there are synergies and complementarity between enterprises that comprise a crop and animal component that form the basis of the concept of the IFS. A farming system consists of a variety of agricultural endeavors, including crop production, livestock rearing, aquaculture, agroforestry, and fruit crops, to which the farm family devotes its resources in order to effectively manage the current environment and achieve the family objective.

Definitions :-

Farming systems are defined by their physical, biological and socio- economic setting and by the farm families, goals and other attributes, access to resources, choices of productive activities (enterprises) and management practice.

The term "Integrated Farming System" can also mean different things to different people. To avoid ambiguity and confusion, both terms "farming" and "system" should be clearly understood. "Farming" is the process of harnessing solar energy in the form of economic plant and animal products, and "system" implies a set of inter-related practices/processes organised into a functional entity. Therefore, "Integrated Farming System" designates a set of agricultural activities



organised while preserving land productivity, environmental quality and a maintaining desirable level of biological diversity and ecological stability.

Factors Affecting Integration of Farm Enterprises

1. Soil and climatic features of the selected area.
2. Availability of resources, land, labor and capital.
3. Present level of utilization of resources.
4. Economics of proposed integrated farming system.
5. Managerial skill of the farmer

Types of Integrated Farming System

- Crop-livestock farming system
- Crop-livestock-fishery farming system
- Crop-poultry-fishery-mushroom farming system
- Crop-livestock-fishery-vermicomposting
- Agri- horticulture- silviculture-pastoral system

Advantages of IFS

Profitability: -Additionally, one of the components with the lowest cost is waste materials. As a result, middlemen's intervention is eliminated when manufacturing and waste material use expenses are reduced. Calculating the B/C ratio of net profit is elevated.

Potentiality and Sustainability: -Through the effective utilisation of organic supplements by the linked components of the farming system, which provides the opportunity to sustain the potentiality of production for a longer period of time,

Balanced Food: -Different linked components of the system enable the production of different sources of nutrition.

Environmental Safety: -In IFS, waste materials are effectively recycled by the appropriate components present in the system, thus minimizing environmental pollution.

Recycling: - Waste materials are effectively recycled by the other in IFS model.

Income Rounds of the year: -Due to the interaction of enterprises with crops such as eggs, milk, mushrooms, honey, cocoons, and silkworms, provides a flop of money to the farmer throughout the year.

Goals of IFS

The primary four goals of integrated farming system are :-

- To achieve agro-ecological equilibrium and rejuvenation or amelioration of the system's productivity
- Maximization of the use of all types of component enterprises in the field to provide steady and stable income
- reducing the use of chemicals like fertilizer and pesticides to provide a chemical-free, healthy product to the environment and to society.
- To conserve the natural resource base, protect the environment, and enhance prosperity for a longer period of time

Limitation of IFS

- Farmers have to rely on costly modern technologies for some farming activities. Small-scale farmers required higher skills to use the machinery for biogas production and many other resources.
- Plants, animals, and poultry cannot be mixed. Like some plants cannot be used as feed and fodder for the plants. They can be harmful to them.
- The combination of many birds, fish, and pigs can cause various harmful diseases, like influenza.
- Bees cannot be kept near livestock and poultry because they can be dangerous to the crop as well as the birds.
- There is no minimum support price (MSP) system that applies to the beekeeping and mushroom businesses. As a result, better communication with the hotel and food manufacturing industries is required.
- Large cattle are out of reach for small and marginal farmers due to financial constraints.

Conclusion

Farming system models enhance the productivity of the farm as a whole in different situations and improve the farmer's income in terms of additional net worth and a profitable flow of income to the farmer. Improves soil health with the mixing of residue and waste material from other animals and supplies major and micro-essential nutrients. This enterprise provides more opportunity for on-farm employment. An integrated farming system seems to be the answer to the problems of increasing food production, increasing income, and improving the nutrition of small-scale farmers with limited resources without any adverse effects on the environment or agro-ecosystem.

So, what is required for integrated farming at present is how we could improve the productivity of the existing farming system with technological advancements and the integration of traditional knowledge of the farming system.