



Integrated Farming System: Bridging Sustainability and Profitability

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Introduction

Integrated Farming System (IFS) is an interdependent, interrelated and production systems based on crop production, rearing animals and related subsidiary enterprises in such a way that maximize the utilization of resources of each system and also minimize the negative effect of these enterprises on environment. The integrated farming system is defined as the farming system which integrate natural resources regulation mechanisms into farming activities to achieve maximum replacement of off-farm inputs, secure sustainable production of high-quality food and other products through ecologically proffered technologies, sustain farm income, reduce sources of present environment pollutions generated by agriculture and sustains the multiple function of agriculture. Integrated farming system involves the utilization of primary produce and secondary produce of one system as basic input of other system, thus making the mutually integrated as one whole unit.

Goals of Integrated Farming System

The primary goal of FSR is to maximize the yield of all component enterprises to provide steady and stable income at higher level, rejuvenation of systems productivity and achieve agro-ecological equilibrium, reducing biotic stress via natural cropping systems and reducing the use of fertilizers and other harmful agro-chemicals to provide pollution free, healthy produce and environment to the society. Thus, farming system as a concept takes into account of components of soil, water, crops, livestock, labour and other resources with farm family at the centre managing agriculture related activity. Avoiding degradation of forests, enhancing the employment generation, increase input use efficiency and finally improve the livelihood of the farming community are also included under the goals of IFS.

Objectives of integrated forming

IFS aims at an area specific, formulate models involving main and allied enterprises for different farming situations. It focuses at

ensuring optimal utilization and conservation of available resources with efficient recycling within each system included. IFS should raise the net return of the farm household by complementing main activity with allied enterprises and also aim at addressing the nutritional insecurity of resource poor farmers vulnerability and poverty of landless labourers.

Importance of IFS

Rejuvenation of systems productivity and maintain agro ecological equilibrium can be achieved. Control the spread of insects-pest, diseases and weeds population through natural cropping system management and keep them at low level of intensity. Reducing the use of chemical fertilizer and other harmful agrochemicals and pesticides to maintain the natural equilibrium. The entire farm wastes and by products is recycled and used as inputs to other enterprises. A better integration of agricultural enterprises like dairy, poultry, piggery, fishery, sericulture etc. suited to the given agro-climatic conditions and socio-economic status of the farmers resulted in prosperity of farmers.

Components of integrated farming system

Crops, livestock, birds and trees are the major components of any IFS. Crop may have subsystem like monocrop, mixed/intercrop, multi-tier crops of cereals, legumes (pulses), oilseeds, forage etc. Livestock components may be milch cow, goat, sheep, poultry, bees. Tree components may include timber, fuel, fodder and fruit trees.

Elements of integrated farming system

- Watershed
- Farm ponds
- Bio-pesticides
- Bio-fertilizers
- Plant products as pesticides
- Bio-gas
- Solar energy
- Compost making
- Green manuring
- Rain water harvesting

Integrated farming system models

Agricultural + livestock
Agricultural + livestock + poultry
Horticulture + fish culture + poultry
Pig cum fish culture
Agricultural + Silvi pasture
Sericulture + fish culture
Fish culture + sericulture
Agricultural(rice) + fish+ mushroom cultivation
Agricultural + Duckery + poultry
Poultry + fish culture

Advantages of IFS

IFS had been a better approach to increase productivity through increased economic yield per unit area per time, improving profitability by recycling of waste of enterprise as energy inputs for other system, achieving greater sustainability in production and integrating different production systems.

Constraints

If IFS is a boon, it can be a bane in another ways too. Some of the major constraints were



like nutritional values of crop residues are generally low in digestibility and protein content, IFS models were somewhat expensive to poor farmers, intensive recycling might cause nutrient losses in the soil. Farmers, expecting high yield and faster results, prefer use of chemical fertilizer instead of manure because it acts faster and easy to apply. Resource investments are required to improve intake and digestibility of crop residues.

Conclusion

IFS are also an eco-friendly approach in which waste of one enterprise becomes the input of another thus making efficient use of resources. It helps in improving the soil health, weed and pest control, increase water use efficiency and maintains water quality. As this system minimizes the use of harmful chemical fertilizers, weed killers and pesticides and thus safeguards the environment from the adverse effects.

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