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Q14

What is Integrated Farming System ? How is it helpful to small and marginal farmers in India ?

UPSC Civil Services Mains 2022 · GS III · 15 marks · Crops, Irrigation and Marketing

Major crops - cropping patterns in various parts of the country; different types of irrigation and irrigation systems; storage, transport and marketing of agricultural produce and issues and related constraints; e-technology in the aid of farmers.

Core demand of the question

- Define Integrated Farming System
- Explain how it helps small and marginal farmers

Revision summary

Integrated Farming System is a planned mix of enterprises on one holding so waste becomes input.

- **It is matched to agro-ecology:** crop-dairy, rice-fish, agri-horti-silvi, or homestead livestock.

For small and marginal farmers it diversifies cash flow, spreads climate and price risk, and cuts bought fertiliser and feed.

Family labour and household nutrition improve; soil organic matter is recycled.

Capital, water realism, **KVK** design and a market remain necessary; **IFS** is not every activity on every acre.

Introduction

A **small or marginal farmer** cannot live on one monsoon crop on a hectare or less. **Integrated Farming System (IFS)** is a designed mix of crops, livestock, trees, fish or bees on the same holding so that **waste from one enterprise is an input to another**, income is spread across the year, and risk is not a single failed sowing.

Body

What **IFS** is

- **IFS** is **not** a random backyard cow plus paddy. It is a **planned combination** matched to agro-ecology: crop + dairy; crop + poultry + compost; rice-fish; agri-horti-silvi; or homestead nutrition gardens with goats.
- **Principle: recycling.** Dung and poultry litter fertilise fields; crop residue feeds animals; pond silt and fish raise rice; trees give fodder, fuel and microclimate.
- It sits in ICAR and Krishi Vigyan Kendra models as a **small-farm livelihood system**, not as a plantation monoculture.
- **Related ideas: mixed farming, agroforestry, and natural farming** overlaps (on-farm inputs), but **IFS** is broader than any one chemical-free slogan.

How it helps small and marginal farmers

- **Income diversification:** milk, eggs, fish, honey or fruit pay in weeks when grain pays once. That is cash-flow, not only annual profit.
- **Risk spreading:** a drought that cuts the cereal still leaves the goat or the pond if water was budgeted; a pest on one crop does not zero the household.
- **Input cost:** on-farm manure, compost and fodder cut the bill for urea and bought feed-the main cash drain on a marginal plot.
- **Employment of family labour:** women and elders can run dairy, poultry and kitchen gardens; the holding uses **household labour** that a single wheat crop under-employs.
- **Nutrition:** milk, eggs, vegetables and fish from the homestead improve household diets, not only the marketed surplus.
- **Soil and residue:** recycling organic matter and avoiding residue burning protects a small plot that cannot afford degradation.
- **Resilience to price crashes:** if tomato crashes, the dairy still sells; processors and FPOs can still take a mixed lot more easily than a desperate distress sale of one perishable.

Limits (must be stated)

- Capital for a cow, a pond or a polyhouse is still a barrier; **credit, insurance and KVK training** matter.
- Water-scarce **IFS** cannot copy a rice-fish model. Integration must be **site-specific**.
- Markets for milk and vegetables can still fail; **IFS** is not a substitute for roads and a buyer.

Policy hook

- Schemes for dairy (Rashtriya Gokul Mission / dairy infrastructure), **PM-Kisan** cash, horticulture missions, and **agroforestry** guidelines work better when the **KVK** treats them as **one farm design**, not separate silos.

Flow diagram

IFS design -> Crops
 IFS design -> Livestock
 IFS design -> Trees pond bees
 Crops -> Residue fodder
 Livestock -> Manure biogas
 Residue fodder -> Livestock
 Manure biogas -> Crops
 IFS design -> Year-round income nutrition

Conclusion

Integrated Farming System is a planned recycle of crop, animal, tree and sometimes fish on one small farm. For marginal holders it spreads income and risk, cuts bought inputs, uses family labour, and feeds the household. It needs site-specific design, a little capital, and a market-not a poster of every enterprise at once.

Facts & figures

Small / marginal farmer

Holdings of generally up to two hectares (marginal under one); the majority of Indian operational holdings.

IFS

Integrated Farming System: ICAR/KVK-promoted combination of crop, livestock, trees and/or aquaculture with nutrient recycling.

KVK

Krishi Vigyan Kendra: district farm-science centre that trials IFS models for local ecology.

PM-Kisan

Income-support credit that can seed a small livestock or garden enterprise if the household so uses it.

Agroforestry

Trees on farms for fodder, fruit, timber and microclimate; a common IFS limb.

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