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Q3

How far is Integrated Farming System (IFS) helpful in sustaining agricultural production.

UPSC Civil Services Mains 2019 · GS III · 10 marks · Indian Economy

Indian Economy and issues relating to planning, mobilization of resources, growth, development and employment.

Core demand of the question

- Explain Integrated Farming System and how far it sustains agricultural production
- Cover income, soil, water, risk, and limits
- Keep a 10-mark length

Revision summary

IFS combines crops with livestock, trees or fish so waste becomes an input.

It sustains output through soil organic matter, farm ponds, and year-round income.

RAD, NMSA, RKVY and ICAR models are the public frame.

PM-KISAN, **PMFBY** and **PMKSY** make the mix bankable and less risky.

Limits are capital, extension, and markets; IFS is not a full substitute for procurement and water reform.

Introduction

An **Integrated Farming System (IFS)** puts crops, animals, trees, fish or poultry on the same holding so waste from one activity feeds another. **ICAR** (including the Indian Institute of Farming Systems Research) promotes it as a path to **steady output** on small plots. It sustains production when nutrient cycles and income diversify; it does not replace water, credit or markets.

Body

What IFS is

- A typical IFS mix is **cereal-pulse-oilseed** with **dairy or small ruminants**, a kitchen garden, **agroforestry**, and, where water allows, a **pond for fish** or ducks.
- Residues become fodder or compost; dung becomes manure or biogas; pond silt returns to the field. The farm is designed as a **loop**, not as a single monsoon gamble on one crop.
- **Rainfed Area Development** under the **National Mission for Sustainable Agriculture**, **Rashtriya Krishi Vikas Yojana**, and State IFS models (Kerala homestead, eastern rice-fish) are the public vehicles. **NITI Aayog's** doubling-farmers'-income work treats diversification as a core lever.

How it helps sustain production

- **Soil and nutrients:** on-farm manure and residue cut the urea-only habit that **Soil Health Card** data still flag. Organic matter holds moisture in dry months.
- **Water:** a farm pond and trees raise **in-situ conservation**; this pairs with **Pradhan Mantri Krishi Sinchayee Yojana** micro-irrigation rather than flooding one paddy crop.
- **Risk:** if one crop fails, milk, eggs, fish or fodder trees still pay. That is why IFS sits well with **Pradhan Mantri Fasal Bima Yojana** - insurance covers the crop slice; livestock and trees cover the rest.
- **Income and labour:** year-round work on a small holding reduces distress migration and uses family labour that a single harvest cannot occupy. **PM-KISAN** cash can fund a first cow, pond or sapling if extension follows.
- **Nutrition and ecology:** household vegetables and fish improve diets; trees and hedges support pollinators and cut wind erosion.

How far - the limits

- IFS needs **knowledge, start-up capital, and veterinary or fishery support**. A poor holding without a road or a milk route cannot sell the extra produce.
- It is **not a substitute** for MSP, storage, or groundwater reform where paddy-wheat is locked by procurement.
- Scaling is through **Farmer Producer Organisations**, KVKs and cluster demonstration, not through a slogan on every 0.5 hectare without water.

Flow diagram

Integrated Farming System -> Crops
 Integrated Farming System -> Livestock fish trees
 Crops -> Residue and manure loop
 Livestock fish trees -> Residue and manure loop
 Residue and manure loop -> Steadier yield and soil
 Steadier yield and soil -> Income with PM-KISAN PMFBY
 Income with PM-KISAN PMFBY -> Sustained production

Conclusion

IFS helps sustain agricultural production by cycling nutrients, spreading risk, and using water and labour through the year. It goes far on small and rainfed farms when **PMKSY**, **PMFBY**, **PM-KISAN** and KVK advice sit behind the mix. It cannot, by itself, fix a missing market or an exhausted aquifer.

Facts & figures

ICAR-IIFSR

Indian Institute of Farming Systems Research, Modipuram: national hub for IFS models by agro-climatic zone.

RAD / NMSA

Rainfed Area Development under the National Mission for Sustainable Agriculture supports on-farm IFS components.

PM-KISAN

Direct income support that can seed a small IFS investment if extension and credit follow.

PMFBY

Crop insurance covers the field slice; livestock and trees in IFS remain the household's other risk pad.

PMKSY

Per drop more crop: farm ponds and micro-irrigation that IFS needs in water-stressed blocks.

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