



## Fostering Sustainable Agrifood System

**For Prelims:** Fostering [Sustainable](#) Agrifood System, 16th Agricultural Science Congress (ASC), National Academy of Agricultural Sciences (NAAS).

**For Mains:** Need for Adopting Sustainable Agri-Food Systems, Food processing and related industries in India- scope and significance, location, upstream and downstream requirements, and supply chain management.

[Source: PIB](#)

### Why in News?

Recently, the Ministry of Agriculture & Farmers Welfare has inaugurated the 16<sup>th</sup> Agricultural Science Congress (ASC) in Kochi, Kerala in order to promote [Sustainability in the Agri-Food System](#).

- Organized by the National Academy of Agricultural Sciences (NAAS), the ASC will come out with recommendations that facilitate the agriculture sector for moving towards a path of greater sustainability.

### Note

- Agricultural Science Congress (ASC):** The ASC serves as a platform for experts, researchers, practitioners, and stakeholders in the **agricultural and allied sectors** to come together and discuss various critical areas related to agriculture, sustainability, and related subjects.
- National Academy of Agricultural Sciences (NAAS):** NAAS is a **prestigious organization based in India**, established with the aim of promoting agricultural science and research. The primary objective of NAAS is to provide a forum for agricultural scientists to deliberate on significant issues and advancements in the field of agriculture and related sciences.

### What are Sustainable Agri Food Systems?

- About:**
  - Sustainable agri-food systems encompass a **holistic approach to agricultural production, distribution, consumption, and waste management** that is environmentally sound, socially equitable, and economically viable.
  - These systems aim to **meet current food needs** while ensuring long-term sustainability, minimizing **negative impacts on the environment**, improving livelihoods, and promoting social well-being.
    - In 2020, global agrifood systems **emissions were 16 billion tonnes of carbon dioxide equivalent**, an increase of 9 % since 2000.
- Need for Adopting Sustainability in Agri Food Systems:**

- **Rising Demand for Food:**
  - The increasing **global demand for food necessitates** sustainable agri-food systems to ensure sufficient and consistent food production to meet the needs of a growing population.
- **Environmental Degradation:**
  - Widespread environmental degradation **caused by unsustainable agricultural practices** underlines the urgency to transition to sustainable methods to mitigate further harm to the environment.
- **Climate Change Challenges:**
  - Climate change **poses a significant threat to agriculture**. Sustainable practices are essential to adapt to these challenges and reduce the sector's contribution to climate change.
    - There are several sustainable and climate resistant agricultural practices in India which are recognised by the [\*\*GIAHS \(Globally Important Agricultural Heritage Systems\)\*\*](#), like [Pokkali rice](#), [Kuttanad below Sea Level Farming System of Kerala](#) etc.

## How can Sustainability be Adopted in Agri Food Systems?

- **Enhanced Technological Interventions:**
  - Scientific innovations and advanced technological interventions are pivotal for sustainable agricultural practices, aiding in efficient resource use and reducing negative environmental impacts.
- **Genome Editing and Modern Technologies:**
  - Genome editing and other modern technologies are highlighted as core tools for technological breakthroughs in agriculture, addressing limitations of traditional breeding methods.
- **Carbon-Neutral Agricultural Practices:**
  - Transitioning to carbon-neutral agricultural practices can be adopted to mitigate climate impacts, promote environmental sustainability, and contribute to global efforts to reduce carbon emissions.

## What are the Issues in Adopting a Sustainable Agrifood System?

- **Food Waste and Loss:**
  - A significant portion of food is wasted at various stages of the food supply chain, from production to consumption. Addressing food waste and loss is critical to improving the sustainability of the food system.
- **Climate Change and Environmental Impact:**
  - Agriculture is a major contributor to greenhouse gas emissions, deforestation, water pollution, and soil degradation. Implementing sustainable practices to mitigate these impacts is essential for a sustainable food system.
- **Resource Scarcity:**
  - Depletion of natural resources such as water, arable land, and energy poses a challenge to sustainable food production. Efficient use of resources and adopting sustainable farming practices is crucial.
- **Biodiversity Loss:**
  - Modern agriculture practices often lead to loss of biodiversity, affecting ecosystem services and disrupting natural balances. Promoting biodiversity-friendly farming approaches is vital for a sustainable food system.
- **Monoculture and Crop Diversity:**
  - The dominance of monoculture farming can lead to vulnerability in the food supply. Encouraging crop diversity and sustainable farming systems can enhance resilience and sustainability.

## What are the Government Initiatives to Promote Agrifood Systems?

- **Indian Initiatives:**

- India has created a dedicated **Agriculture Infrastructure Fund** which aims to create farm gate and agriculture marketing infrastructure in rural areas by providing interest subsidies and credit guarantee to entrepreneurs which will greatly help in **reducing the post-harvest losses**.
- To conserve precious water resources, the Government has launched a scheme to increase water use efficiency at the farm level by using **micro-irrigation technologies for which a dedicated micro-irrigation fund** has been set up.
  - India has developed 262 abiotic stress-tolerant varieties of different crops.
- To address the issues of under-nutrition and malnutrition, India is running the world's largest food-based safety net programmes which include the **Targeted Public Distribution System (TPDS)** that will serve about 800 million people in 2020.
- The UN recognised India's proposal of celebrating the year **2023 as the 'International Year of Millets'**.

## Conclusion

The integration of sustainability into agri-food systems is imperative to address the increasing demand for food, environmental challenges, and climate change impacts while ensuring the well-being of farmers and the broader society.

## UPSC Civil Services Examination Previous Year Questions (PYQs)

### Prelims

**Q. What are the significances of a practical approach to sugarcane production known as 'Sustainable Sugarcane Initiative'? (2014)**

1. Seed cost is very low in this compared to the conventional method of cultivation.
2. Drip irrigation can be practiced very effectively in this.
3. There is no application of chemical/inorganic fertilizers at all in this.
4. The scope for intercropping is more in this compared to the conventional method of cultivation.

**Select the correct answer using the code given below:**

- (a) 1 and 3 only
- (b) 1, 2 and 4 only
- (c) 2, 3 and 4 only
- (d) 1, 2, 3 and 4

**Ans: (b)**

### Mains:

**Q. How far is Integrated Farming System (IFS) helpful in sustaining agricultural production? (2019)**

**Q. What are the reformative steps taken by the Government to make the food grain distribution system more effective? (2019)**