



# Economics of the Food System Transformation

**For Prelims:** [Food and Agriculture Organisation \(FAO\)](#), [GDP \(Gross Domestic Product\)](#), Malnutrition.

**For Mains:** The Economics of the Food System Transformation.

**Source:** [DTE](#)

## Why in News?

Recently, the Food System Economics Commission has published a report titled-” ***The Economics of the Food System Transformation***”, highlighting that a sustainable transformation of existing food systems is urgently required at an estimated total cost of USD 500 billion per year.

- The Food System Economics Commission (FSEC) is a **private consortium of scientists** across nationalities and academic fields, aimed at identifying the challenges to food system security and the policy changes required to overcome them.

## What are the Food Systems?

- According to the [Food and Agriculture Organisation \(FAO\)](#), food systems encompass the entire range of actors involved in:
  - **Production, aggregation, processing, distribution, consumption** and disposal of food products that originate from agriculture, forestry or fisheries, and parts of the broader economic, societal and natural environments in which they are embedded.

## What are the Key Highlights of the Report?

- **Current Costs and Impacts:**
  - Globally, current food systems **cost significantly more than they contribute** to development. A **sustainable transformation of existing food systems** is urgently **required at an estimated total cost of \$500 billion per year**.
    - This **cost is equivalent to only 0.2-0.4% of global [GDP \(Gross Domestic Product\)](#)** and is small relative to the multi-trillion dollar benefits it could bring.
- **Current Food System Challenges:**
  - The current global food system is characterised by **hidden environmental, health, and social costs** exceeding 10 trillion USD in 2020.
  - If current trends persist, over 640 million individuals (including 121 million children) could suffer **from [Hunger](#) and [Malnutrition](#) by 2050**.
- **Food System to Drive Global Greenhouse Gas:**
  - Under the existing scenario, food systems will continue to drive a third of global **[Greenhouse Gas \(GHG\)](#) emissions**, which will contribute to **2.7 degrees Celsius of**

**warming** by the end of the century compared to pre-industrial periods.

- Food production will become increasingly vulnerable to climate change, with the likelihood of extreme events dramatically increasing.

▪ **Pathways to 2050:**

- The report contrasts **two pathways up to 2050:** Current Trends (CT) and Food System Transformation (FST).
  - The **CT pathway shows continued food insecurity, obesity increase**, and negative environmental impacts by 2050.
  - Transforming food systems can contribute significantly to economies and address health and climate challenges.
  - **Global convergence towards healthy diets** could contribute as much as **70% of the total economic benefits** of pursuing the FST pathway.
  - Food systems under **FST could become net carbon sinks by 2040**, helping **limit global warming to below 1.5°C**.
  - Positive developments include extensive reforestation, reducing extreme weather events, protecting land, halving nitrogen surplus, and reversing biodiversity loss.

▪ **Recommendations:**

- Lifting **financing constraints for lower-income countries** is crucial to unlocking the global benefits of transforming food systems.
- Policymakers are urged to face the food system challenge, make necessary changes, and reap short- and long-term benefits globally.
- The report emphasises the need for comprehensive and sustainable pathways for the transformation of food systems.

## How can we make the Global Food System More Sustainable?

▪ **Reduce Food Waste:**

- Encourage and **support the adoption of circular food systems**, where surplus food is **efficiently redistributed to those in need**.
- Develop and implement **policies** that incentivize businesses and consumers to **minimize food waste**.

▪ **Optimize Food Production Processes:**

- Promote and **invest in smart farming practices** that utilise technology to monitor **and optimize growing conditions**.
- Encourage the **adoption of sustainable agriculture techniques** such as hydroponic and vertical farming.
- Support **research and development of crop varieties** that are resilient to environmental challenges, reducing the need for excessive resource input.

▪ **Promote Sustainable Agricultural Practices:**

- Advocate for the **use of regenerative agriculture**, which focuses on soil health and ecosystem restoration.
- Implement **precision farming techniques to reduce overuse of fertilizers, pesticides, and water**.
- Support **farmers in transitioning to more sustainable and organic farming methods**.

▪ **Encourage Sustainable Consumption:**

- Promote a **shift towards plant-based diets**, which generally have a **lower environmental impact** than diets rich in animal products.
- Educate **consumers about the environmental and social impacts** of their food choices.
- Support **local and sustainable food markets to encourage** the consumption of locally produced goods.

▪ **Invest in Research and Innovation:**

- Allocate **resources to research and development efforts aimed at creating more sustainable agricultural practices and technologies**.
- Support initiatives that **focus on climate-resilient crops and innovative solutions** to address emerging challenges in the food system.

▪ **Empower Local Communities:**

- Support **community-led initiatives for sustainable agriculture and food**

**production.**

- Provide **training and resources to farmers, especially smallholders**, to adopt sustainable practices.
- Ensure that **local communities have a voice in decision-making processes** related to food production and distribution.

## 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)**