



## International Day of Awareness of Food Loss and Waste

**For Prelims:** [International Day of Awareness of Food Loss and Waste](#), [Food and Agriculture Organization](#), [Natural disasters](#), [2030 Agenda for Sustainable Development](#), [Greenhouse gas](#), [Methane](#), [United Nations Environment Programme](#), [Farmer Producer Organisations](#).

**For Mains:** Impact of Food Loss and Waste on Food Security in India, Environmental Consequences of Food Waste

[Source: FE](#)

### Why in News?

Recently, on **29<sup>th</sup> September**, the world observed the [International Day of Awareness of Food Loss and Waste \(IDAFLOW\)](#), highlighting its implications for [food security](#) and [environmental sustainability](#).

- A 2023 report by the [Food and Agriculture Organization \(FAO\)](#) reveals that about **30% of global food production is lost or wasted**, which could feed the hungry. This urgent issue demands immediate action, especially in **India**, where [post-harvest losses](#) are significantly high.

### Key Terms

- **Food Loss:** It refers to a decrease in **mass (dry matter) or nutritional value (quality)** of food intended for human consumption.
  - This occurs primarily due to **inefficiencies in food supply chains**, including poor infrastructure, inadequate logistics, lack of technology, and insufficient skills and management. Additionally, [natural disasters](#) contribute to these losses.
- **Food Waste:** It refers to food suitable for human consumption that is **discarded**, whether due to **spoilage or exceeding its expiry date**.
  - This waste can result from factors such as **market oversupply or individual consumer shopping and eating habits**.
- **Food Wastage:** It refers to any food lost by **deterioration or waste**. Thus, the term “wastage” encompasses both food loss and food waste.

### What is the International Day of Awareness of Food Loss and Waste?

- The IDAFLOW, designated by the [United Nations General Assembly \(UNGA\)](#) in 2019, focuses on the critical issue of [food loss and waste \(FLW\)](#), it aims to raise awareness and mobilise efforts to reduce FLW, highlighting the need for financial support to achieve [climate goals and the 2030 Agenda for Sustainable Development](#).

- The initiative aligns with **SDG Target 12.3**, which aims to halve global food waste and reduce food losses by 2030, and is linked to the [Kunming Montreal Global Biodiversity Framework](#).
  - Reducing FLW is a climate solution that requires increased [climate finance](#).

## What are the Implications of Food Loss and Waste (FLW)?

- **Impact on Food Security:** According to a study published in *Nature*, approximately **29% of the global population experiences moderate to severe food insecurity** while one-third of food produced (1.3 billion tonnes) is lost or wasted.
  - FLW contributes to a significant **decrease in the availability of food for consumption**, exacerbating hunger and [malnutrition](#), especially in vulnerable populations.
- **Environmental Consequences:** Enormous resources **land, water, energy, and labour** are wasted alongside food, contributing to the depletion of natural resources.
  - **Carbon Footprint:** Food wastage generates **3.3 billion tons of CO2** equivalents annually, contributing heavily to [global greenhouse gas \(GHG\) emissions](#).
  - **Water Usage:** The amount of water wasted on uneaten food is equivalent to the **annual flow of Russia's Volga River or three times the volume of Lake Geneva**.
  - **Land Usage:** Nearly **1.4 billion hectares of land** are used to produce food that is ultimately wasted, roughly 28% of the world's agricultural land.
  - **Energy Waste:** About **38% of total global food system energy** is consumed in producing food that is lost or wasted.
  - **Methane Emissions:** Food waste in landfills produces [methane](#), a greenhouse gas far more potent than CO2, thus accelerating [climate change](#).
  - **Climate Goals:** The agricultural sector's inefficiencies make it difficult to meet **global climate targets**, as emissions from food systems account for up to **37% of all GHG**.
- **Economic Impacts:** The economic costs associated with FLW are significant, leading to lost income for producers and higher prices for consumers.
  - Food prices often fail to reflect the **true social and environmental costs of food production**, resulting in market inefficiencies and reinforcing inequalities.

## How Significant are FLW in India?

- **Post-Harvest Losses:** According to the [National Bank for Agriculture and Rural Development Consultancy Services \(NABCONS\)](#) survey conducted in 2022, India incurs food losses worth Rs 1.53 lakh crore (USD 18.5 billion).
  - Major losses include 12.5 million metric tonnes of [cereals](#), 2.11 million metric tonnes of [oilseeds](#), and 1.37 million metric tonnes of pulses.
  - Around 49.9 million metric tonnes of horticultural crops are lost annually due to inadequate cold chain infrastructure.
  - **Key Causes of Post-Harvest Losses:** A survey by **Indian Council for Research on International Economic Relations (ICRIER)** found that food loss largely occurs during **harvesting, threshing, drying, and storage** due to low levels of mechanisation.
    - Poor storage facilities contribute to roughly **10% of total food grain losses in India**, according to the **Indian Grain Storage Management and Research Institute (IGSMRI)**.
- **National Food Loss:** The [United Nations Environment Programme \(UNEP\)](#) estimates that **India wastes 74 million tonnes of food each year**, representing a loss of 92,000 crore rupees.
  - **Food waste in restaurants** stems from overproduction, large portion sizes, and the complexity of offering a wide variety of dishes, leading to spoilage.
    - Additionally, customers often **over-order, leaving food uneaten or discarded**. A lack of awareness among staff and patrons about the economic, social, and environmental impacts further exacerbates the problem.
  - According to the **UNEP Food Waste Index Report 2021**, Indian households generate **50 kg of food waste per capita per year**, resulting in a total of 68,760,163 tonnes annually.

## Why is Reducing FLW Crucial for India's Future?

- **Climate Change:** Reducing food wastage could significantly lower GHG emissions, addressing a key contributor to **climate change**.
  - Reducing FLW can cut emissions by as much as 12.5 gigatons of CO<sub>2</sub> equivalent (Gt CO<sub>2</sub>e), which is equivalent to removing emissions from 2.7 billion cars from the road.
  - By minimising FLW, the strain on natural resources like water and land, can be significantly reduced to ensure that more food reaches those in need.
- **Food Security:** Globally, Between 691 and 783 million people faced hunger in 2022 . As per the [Food and Agriculture Organization \(FAO\)](#), over 74% of India's population is unable to afford a healthy diet.
  - With millions of people in India still **malnourished**, cutting food loss could help ensure that **more food reaches those in need**, particularly in times of crisis.
- **Economic Efficiency:** By improving post-harvest processes, India can enhance farm productivity, reduce waste, and **boost farmer incomes**, fostering a more resilient agricultural economy.

## What are India's Initiatives to Combat Food Loss and Waste?

- **Pradhan Mantri Kisan Sampada Yojana:** It is a central sector umbrella scheme by the Ministry of Food Processing Industries (MoFPI) aimed at reducing food loss and waste through the development of robust **food processing and preservation infrastructure across India**.
  - **Key Components:**
    - **Cold Chain, Value Addition & Preservation Infrastructure:** Establishes [integrated cold chain, preservation infrastructure and value addition Infrastructure](#) to minimise post-harvest losses.
    - **Mega Food Parks:** Aims to streamline food processing and distribution (was discontinued by the Government of India in April 2021).
    - **Agro Processing Clusters:** Promotes localised food processing units to reduce food wastage and enhance local supply chains.
    - **Operation Greens:** Provides credit linked financial aid in the form of grants-in-aid / subsidy is provided for establishing food processing projects leading to creation of food processing and preservation infrastructure facilities.
- **Save Food, Share Food, Share Joy (IFSA):** This initiative, led by the [Food Safety and Standards Authority of India \(FSSAI\)](#), brings together various stakeholders to prevent food loss and waste throughout the supply chain. It also facilitates the safe distribution of surplus food.

## International Models Addressing Food Waste

- **Incentives for Businesses:** In the US, the **Protecting Americans from Tax Hikes (PATH) Act of 2015** introduced enhanced tax deductions for food donations, encouraging businesses to donate excess food.
- **Italy's Incentive Model:** Italy has allocated approximately USD 10 million annually to reduce one million tonnes of food waste by offering businesses incentives to donate food to charities.
- **UN Global Food Loss and Waste Protocol:** It is a global standard for the measurement of food loss and waste. It was proposed as an **indicator for the SDG target 12.3**, regarding processing, retail, consumers.
  - It can be used by both countries and companies to measure FLW within their borders and supply chains.

## What Actions are Needed to Address FLW?

- **Promote Mechanisation:** Farmers using mechanised equipment like combine harvesters report significantly lower losses in paddy production. However, only a small percentage of Indian cultivators own such machinery.

- Expanding mechanisation through **Farmer Producer Organisations (FPOs)** and **Custom Hiring Centres (CHCs)** can make technology more accessible to small and marginal farmers, reducing on-field losses.
- **Improve Storage and Packaging Solutions:** Traditional storage methods, including **sun drying and jute packaging**, are prone to **contamination, quality degradation**, and spoilage due to rodent attacks or pilferage.
  - Implementing **solar dryers, airtight packaging**, and upgrading India's grain storage capacity by **70 million metric tons (MMT) over five years**, as planned by the government, could significantly **curb post-harvest losses**.
- **Waste Management Protocols and Recycling:** Adopting the **UN Global Food Loss and Waste Protocol** could enable India to quantify food loss across the value chain and develop targeted solutions.
  - **Recycling** food waste into **compost, biogas, or energy** provides a sustainable way to manage excess production and post-harvest waste.
- **Redistribute Surplus Food:** Surplus food can be redistributed to those in need, reducing hunger and food insecurity. Alternatively, surplus food can be converted into animal feed or organic manure, offering an effective **recycling solution**.
- **Consumer Responsibility:** Consumers play a vital role in reducing food waste by **purchasing only what is necessary**.
  - Changing consumer behaviour through awareness campaigns can drive responsible consumption patterns.
- **Adopt Innovative Technologies:** Innovations such as **mobile food processing systems**, better logistics, and **e-commerce** platforms can help bridge the gap between food production and consumption, reducing inefficiencies in storage, transportation, and distribution.
- **Food Collection from Social Events:** Social events often lead to significant food wastage. **City-based organisations** are already collecting surplus food from events and distributing it to slum areas, addressing both food waste and hunger.
- **Align Food Production with Demand:** To minimise **resource wastage, aligning food production with actual demand** can optimise the use of water, energy, and land, ensuring that excess resources are not expended on food that will eventually go to **waste**.

## Conclusion

Reducing food loss and waste in India is not just a matter of improving economic efficiency; it is about **safeguarding food security for millions** while mitigating **environmental damage**. Technological innovations, along with supportive policies, can pave the way for reducing food wastage by 50%. As India moves toward a **sustainable future**, addressing food loss and waste is an essential part of the solution to feeding its population and protecting the planet.

### Drishti Mains Question:

Discuss the implications of food loss and waste on food security in India. What measures can be taken to address this issue?

## UPSC Civil Services Examination Previous Year Question (PYQ)

### Mains

**Q.** What are the challenges and opportunities of food processing sector in the country? How can income of the farmers be substantially increased by encouraging food processing?(**2020**)

**Q.** Food Security Bill is expected to eliminate hunger and malnutrition in India. Critically discuss various apprehensions in its effective implementation along with the concerns it has generated in WTO.(**2013**)

