



## Life of Plastic

**For Prelims:** Plastic Waste, Types of Plastic Waste, Related Initiatives

**For Mains:** Plastic Waste, Types of Plastic Waste, Impact of Plastic Waste, Challenges in Plastic Waste Management, Government's Initiatives

### Why in News?

Recently, the document titled “**The Plastic Life-Cycle**” has stated that **India is not collecting and recycling its polymer waste properly.**

- The document highlighted that **unless the entire life cycle of plastic**, from source to disposal, is not together considered as the root cause of the pollution it causes, **the problem is not going away.**

### What is Plastic Waste?

- **About:**
  - Unlike **other forms of waste** like paper, food peels, leaves etc., **which are biodegradable** (capable of being decomposed by bacteria or other living organisms) in nature, plastic waste **because of its non-biodegradable nature** persists into the environment, for hundreds (or even thousands) of years.
- **Major Polluting Plastic Waste:**
  - **Microplastics** are small plastic pieces of **less than five millimeters** in size.
    - Microplastic includes **microbeads** (solid plastic particles of less than one millimeter in their largest dimension) that are used in **cosmetics and personal care products, industrial scrubbers**, microfibers used in textiles and virgin resin pellets used in plastic manufacturing processes.
    - Due to sun exposure and physical wear, large pieces of plastic that were not recycled break up to produce microplastics.
  - **Single-use plastic** is a disposable material that can be **used only once before it is either thrown away or recycled**, like plastic bags, water bottles, soda bottles, straws, plastic plates, cups, most food packaging and coffee stirrers are sources of single use plastic.
- **Issues Associated:**
  - **More Plastic Per Person:**
    - A little over 10,000 tonnes a day of plastic waste remains uncollected.
  - **Unsustainable Packaging:**
    - India's **packaging industry** is the biggest consumer of plastics.
    - A 2020 study on packaging in India projects a loss of almost 133 billion dollars worth of plastic material value over the next decade due to unsustainable packaging.
    - Unsustainable packaging involves **general packaging through single use plastic.**

- **Online Delivery:**
  - The popularity of **online retail and food delivery apps**, though restricted to big cities, is **contributing to the rise in plastic waste**.
  - India's biggest online delivery startups Swiggy and Zomato are each reportedly delivering about 28 million orders a month.
- **Upsets the Food Chain:**
  - Polluting plastics can affect the **world's tiniest organisms**, such as **plankton**.
  - When these organisms become poisoned due to plastic ingestion, this causes problems for the larger animals that depend on them for food.

## What are the Challenges Faced by India in Plastic Waste Management?

- **Management of plastic waste involves two distinct steps:**
  - Collection and recycling
  - End-of-life disposal.
  - **Both are not executed properly in India.**
- **Improper Implementation and Monitoring:**
  - The collection of plastic waste is the **responsibility of [local government bodies](#)**, producers, importers and brand owners.
    - However, plastic waste in India is collected mostly by ragpickers, rather than the authorities.
  - As high as 42% - 86% of the plastic waste in India flows through the informal sector to material recovery facilities operated by multinational corporations in partnership with local governments or otherwise.
  - The Indian government claims that the country is recycling 60% of its plastic waste. However, this is limited to specific types of polymers (plastics) like PET bottles.
  - As per a statistical analysis done by Centre for Science and Environment using Central Pollution Control Board (CPCB) 's data, **India is merely recycling (through mechanical recycling) 12% of its plastic waste.**
- **Burning of Waste:**
  - Close to 20% of plastic waste is channelised for end-of-life solutions like co-incineration, plastic-to-fuel and road making, which means India is burning 20% of plastic waste.

## What is India Doing for Plastic Waste Management?

- **[National Dashboard on Elimination of Single Use Plastic and Plastic Waste Management:](#)**
  - India launched a nationwide awareness campaign on **Single Use Plastics on World Environment Day in June 2022**.
  - A mobile app for **Single Use Plastics Grievance Redressal** was also launched to empower citizens to check sale/usage/manufacturing of SUP in their area and tackle the plastic menace.
- **[Plastic Waste Management Amendment Rules, 2022:](#)**
  - It prohibits the manufacture, import, stocking, distribution, sale and use of several **single-use plastic items as of July 1, 2022**.
  - It has also mandated **[Extended Producer Responsibility \(EPR\)](#)** that incorporates circularity by making manufacturers of products responsible for collecting and processing their products upon the end of the products' lifetime.
- **[India Plastics Pact:](#)**
  - It is the first of its kind in Asia. The Plastics Pact is an **ambitious and collaborative initiative to bring stakeholders together** to reduce, reuse and recycle plastics within the material's value chain.
- **Mascot 'Prakriti':**
  - To spread awareness among masses about small changes that can be sustainably adopted in lifestyle for a better environment.
- **[Project REPLAN:](#)**
  - **Project REPLAN (stands for REducing PLastic in Nature)** launched by **[Khadi and Village Industries Commission \(KVIC\)](#)** aims to reduce consumption of plastic bags by providing a more sustainable alternative.

## What should be Our Approach Moving Forward?

- **Identifying Hotspots:**
  - Identifying **key hotspots of Plastic leakage** associated with production, consumption, and disposal of Plastic can assist governments in developing effective policies that address the plastic problem directly.
- **Designing Alternatives:**
  - Identifying **plastic items that can be replaced with non-plastic, recyclable, or biodegradable materials is the first step.**
  - Promoting the use of **Oxo-biodegradable plastics**, that are manufactured to be broken down by ultra-violet radiation and heat, more quickly than regular plastics.
- **Recycling through Technologies and Innovation:**
  - Waste is valuable and Waste is a resource, especially plastic. Recycling, especially plastic recycling, sets a system in place which creates a value chain for waste.
- **Circular Economy for Plastic Management:**
  - **Circular economy** can reduce material use, redesigns materials to be less resource intensive, and recaptures “waste” as a resource to manufacture new materials and products.
  - Circular economy can also contribute significantly to the achievement of sustainable development goals.

### UPSC Civil Services Examination, Previous Year Questions (PYQ)

**Q. Why is there a great concern about the ‘microbeads’ that are released into environment? (2019)**

- (a) They are considered harmful to marine ecosystems.
- (b) They are considered to cause skin cancer in children.
- (c) They are small enough to be absorbed by crop plants in irrigated fields.
- (d) They are often found to be used as food adulterants.

**Ans: (a)**

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