



From Waste to Wealth

This editorial is based on [“What is the solution to India’s garbage disposal problem?”](#) which was published in The Indian Express on 28/09/2022. It talks about waste disposal in India and related issues.

For Prelims: Single-use plastic, Non-Biodegradable waste, E-commerce, Plastic Waste Management Amendment Rules 2022, Composting, Carbon dioxide Sequestration,

For Mains: Current Status of Waste Management in India, Challenges Related to Waste Management in India, Recent Government Initiatives, Circular Economy

Rising incomes, rapidly growing but [unplanned urbanization](#), and changing lifestyles have resulted in increased volumes and changing composition (**increasing use of paper, plastic and other inorganic materials**) of [waste in India](#).

Improper waste management in India has numerous implications on the environment and health. Besides paying attention to ameliorate the immediate **environmental and public health crises** resulting from the current state of solid waste management, there is also a need for articulating a **long term strategy** to address the **future challenges of solid waste management in Indian cities**.

What is the Current Status of Waste Management in India?

- The [Municipal Solid Waste Management Handling Rules, 2000](#) indicated that all the [Urban Local Bodies \(ULBs\)](#) are responsible for the **collection, transportation, disposal and segregation of solid waste in India**.
- India generates **62 million tonnes of waste each year**. About **43 million tonnes (70%) are collected**, of which about **12 million tonnes are treated**, and **31 million tonnes are dumped in landfill sites**.
 - With changing consumption patterns and rapid economic growth, it is estimated that urban municipal solid waste generation will increase to **165 million tonnes in 2030**.
- Most of India's dumpsites have exceeded their capacity and height limit of **20 meters**. It is estimated that these sites enclose more than **10,000 hectares of urban land**.

What is the Major Classification of Waste?

- **Solid Waste:** vegetable waste, kitchen waste, household waste etc.
- **E-Waste:** discarded electronic devices such as computers, TV, music systems etc.
- **Liquid Waste:** water used for different industries, tanneries, distilleries, thermal power plants.
- **Plastic Waste:** plastic bags, bottles, buckets, etc.
- **Metal Waste:** unused metal sheet, metal scraps etc.
- **Nuclear Waste:** unused materials from nuclear power plants.

Further, all these types of waste can be grouped into wet waste ([Biodegradable](#)) and dry waste ([Non Biodegradable](#)).

What are the Challenges Related to Waste Management in India?

- **Inefficient Waste Management by ULBs:** In most of the municipalities in India, the solid waste management practices are **highly inefficient** along with other administrative obstructions such as the **difficulties in the decision making and the problem of cost planning**.
 - The **Municipalities bodies** under the state government are mostly understaffed as most of its [financial budgets](#) are utilized in the waste dumping practices.
 - Furthermore, **many municipal bodies hire private contractors** to pick up and dispose of garbage in order to earn profits.
- **Lack of Segregation of Waste:** There is a **lack of awareness** among a large section of the population regarding the **segregation of household waste**. Failing to segregate trade waste properly ends up mixed in landfills.
 - Waste items like food scraps, paper, plastic and liquid waste mix and decompose, **releasing run-off into the soil and harmful gas into the atmosphere**.
- **Unsustainable Packaging:** The popularity of **online retail and food delivery apps**, though restricted to big cities, is contributing to the rise in plastic waste.
 - [E-commerce](#) companies too have come under fire for **excess use of plastic packaging**.
 - Also, there are no **disposal instructions included with packaged products**.
- **Lack of Data Collection Mechanism:** India lacks **time series data or panel data in connection with solid or liquid waste**. So it is very difficult for the waste planners of the country **to analyze the economy of waste management**.
 - Hence **it becomes difficult for private entities** to understand the relationship between cost and benefits of the waste management policies and **enter into the market**.
- **Rising Rural-Urban Conflicts:** In most of the cities in India, waste is dumped in the outskirts near the villages that **impact the environment of the village and induce many health hazards giving rise to urban-rural conflict**.

What are the Recent Government Initiatives Regarding Waste Management?

- [National Dashboard on Elimination of Single Use Plastic and Plastic Waste Management](#)
- [Plastic Waste Management Amendment Rules, 2022](#)
- Mascot Prakriti
- [Project REPLAN](#)

What Should be the Way Forward?

- **Extended Producer Responsibility:** There is a need to devise the mechanism for [Extended Producer Responsibility](#) in India to **ensure that product manufacturers are made financially responsible** for various parts of the life cycle of their products.
 - It includes **take-back, recycling and final disposal at the end of their useful life**, in a way promoting [circular economy](#).
- **Decentralized Waste Management:** A new innovative system can be introduced at city level for **collection of recyclables at the community level**, preferably through **involvement of the informal sector**.
 - Decentralized waste management systems or community level waste management systems will **reduce the burden of handling large volumes of municipal waste at a centralized location**, with **corresponding reduction in costs of transportation and intermediate storage**.
 - It will also provide [job opportunities for informal workers](#) and small entrepreneurs at city level.

- For instance, in **Bhopal (Madhya Pradesh)**, **ULBs in partnership with a local organization**, have been working with waste collectors since 2008 to **streamline plastic waste collection and sales to recyclers**.
- **Behavioral Change Towards Waste and Waste-Pickers: Waste is often viewed as useless, and waste collectors are often isolated.** There is a need to change this perception and look at proper waste management.
 - Also, **ULBs should reward waste pickers by providing incentives** and spreading awareness to the public regarding their social inclusion.
 - The **inclusion of waste pickers is crucial not only for their own health and livelihoods, but for the economies of municipalities as well.**
- **City Composting Centers: Composting** centers can be established in cities to reuse organic waste, which will enhance soil carbon content and **eliminate the need for chemical fertilizers**.
 - **Compost will also help in carbon dioxide sequestration** by storing carbon back into the soil.
- **Technology-Driven Recycling:** Government should encourage research and development in the field of waste recycling at **university and school level** to promote **active participation of masses** in technology enhancement in the field of waste management.
 - **Thiagarajar College of Engineering in Madurai** has received a patent for **manufacturing tiles and blocks from waste plastic**.
 - The manufactured tiles could withstand heavy loads and could be used as a construction material.

Drishti Mains Question

Considering the current state of waste disposal, discuss how a decentralized waste management system can be introduced in India.

UPSC Civil Services Examination, Previous Year Question (PYQ)

Q. Why is there a great concern about the 'microbeads' that are released into the 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)

- **Integrated Solid-Waste Management:**