Issue of Solid Waste Management

For Prelims: Solid Waste Management, Landfills, Solid Waste Management Rules 2016

For Mains: Issues related to Solid Waste Management

Source: TH

Why in News?

Recently, the **Supreme Court's** critique of **solid waste management** in New Delhi underscores the pressing concern, with over 3,800 tonnes of **untreated waste** in the national capital posing threats to **public health** and the **environment** as it accumulates in landfills.

What are the Issues with India's Solid Waste Management?

- **About:**
  - Solid Waste comprises **solid or semi-solid household waste,** sanitary waste, commercial waste, institutional waste, catering and market waste, as well as other non-residential wastes.
    - It also includes street sweepings, silt collected from surface drains, horticulture waste, agriculture and dairy waste, treated biomedical waste (excluding industrial, bio-medical, and e-waste), battery, and **radioactive waste.**
  - India accounts for roughly **18% of the world's population and 12% of global municipal waste generation.**
    - According to a report by The Energy and Resources Institute (TERI), **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.**
- **Issues:**
  - **Poor Implementation of Rules:**
    - **Most** metro cities are littered with garbage bins that are either old, damaged or insufficient in containing solid wastes.
    - One major issue is the **lack of waste segregation** at the source, leading to unprocessed mixed waste entering landfills in contravention of **Solid Waste Management Rules 2016.**
    - Additionally, some areas **lack regular waste collection** services, leading to waste buildup and littering.
  - **Problem of Dumping Sites:**
    - Waste processing plants in metro cities face land scarcity, leading to untreated waste and exacerbated by illegal dumping and lack of stakeholder coordination, complicating municipal waste management.
    - Despite waste-processing facilities in metro cities, a huge amount of solid waste

remains unprocessed, leading to **environmental hazards** such as **methane emissions**, leachates, and landfill fires often turning into tonnes of legacy waste.
        - **Biomining efforts** initiated in 2019, are now projected for **completion by 2026,** prolonging the environmental impact until fresh waste is properly managed, perpetuating the growth of landfills.
    - **Lack of Data Collection Mechanism:**
        - Without historical data (time series) or data on multiple regions (panel data), private companies cannot effectively assess the potential costs and benefits of participating in waste management projects.
        - The lack of data makes it challenging for private entities to **gauge the overall market size** and potential profitability of **waste management** solutions in different regions of India.
    - **Formal and Informal Waste Management System:** Municipal waste collection services often fall short in low-income communities, creating a gap filled by the informal sector.
        - Informal waste pickers often face health risks due to **unhygienic conditions** and lack of safety gear, with **child labour** being a concern in some areas.
    - **Lack of Public Awareness**: There is also a general **lack of public awareness** and proper waste management practices, leading to littering and improper disposal habits.

What are the Solid Waste Management Rules 2016?

- These rules replaced the **Municipal Solid Wastes (Management and Handling) Rules, 2000** and focused on the segregation of waste at source, the responsibility of the manufacturer to dispose of sanitary and packaging wastes, and user fees for collection, disposal and processing from the bulk generator.
- **Key Features:**
    - **Responsibilities of Generators** have been **introduced to segregate** waste in to three streams:
        - Wet (Biodegradable)
        - Dry (Plastic, Paper, metal, wood, etc.)
        - Domestic hazardous wastes (diapers, napkins, empty containers of cleaning agents, mosquito repellents, etc.) and handover segregated wastes to authorized rag-pickers or waste collectors or local bodies.
    - **Waste Generators will have to pay:**
        - ‘User Fee’ to waste collectors.
        - ‘Spot Fine’ for Littering and Non-segregation.
    - The **bio-degradable waste** should be processed, treated and disposed of through composting or **bio-methanation** within the premises as far as possible.
    - **Manufacturers** and **brand owners** of disposable products like tin, glass, and plastic packaging must **financially assist local authorities** in establishing a **waste management system.**

Other Initiatives Related to Waste Management

- **Plastic Waste Management (PWM) Rules, 2016:** It mandates the generators of plastic waste to take steps to minimise the generation of plastic waste, prevents littering of plastic waste, and ensure segregated storage of waste at source among other measures. In Feb 2022, **Plastic Waste Management (Amendment) Rules, 2022** were notified.
- **Bio-Medical Waste Management Rules, 2016:** The objective of the rules is to properly manage the **per day bio-medical waste** from Healthcare Facilities (HCFs) across the country.
- **Waste to Wealth Portal:** It aims to identify, develop, and deploy technologies to treat waste to generate energy, recycle materials, and extract resources of value.
- **Waste to Energy:** A waste-to-energy or energy-from-waste plant converts municipal and industrial solid waste into electricity and/or heat for industrial processing.
- **Project REPLAN:** It aims to make carry bags by mixing processed and treated plastic waste with cotton fibre rags in a ratio of 20:80.

Way Forward

- **Role of Municipalities**: Cities must enhance **waste processing capacities,** considering future population growth, by focusing on **composting and biogas generation** for biodegradable waste, and establishing and operating facilities through **stakeholder consultation.**
    - Identifying land, setting up plants, and operating them effectively should be done by consulting various stakeholders.
- **Waste-to-Energy Justification: Refuse-derived fuel (RDF),** comprising **non-recyclable dry waste** like plastics, paper, and textiles, has a **high calorific value** and can be used for power generation in waste-to-energy projects.
- **Decentralised Waste Processing:** It could be implemented in metropolitan areas such as Delhi by collaborating with neighbouring states (Haryana, Uttar Pradesh) to establish several composting facilities.
    - An organic compost market also exists in these states.
    - For the Wet Waste implementing Micro-Composting Centres (MCC) with 5 TPD capacity in each ward (inspired by Tamil Nadu & Kerala).
    - For the Dry Waste, Dry Waste Collection Centres (DWCC) can be established with 2 TPD capacity in each ward (inspired by Bengaluru).
- **Integrated Approach:** Combine decentralised options with large-scale processing facilities to ensure all waste gets treated.

Drishti Mains Question:

Q. Discuss the challenges encountered by urban areas in managing waste effectively and suggest measures necessary to address these issues.

UPSC Civil Services Examination, Previous Year Question (PYQ)

Prelims:

Q. As per the Solid Waste Management Rules, 2016 in India, which one of the following statements is correct? (2019)

(a) Waste generator has to segregate waste into five categories.

(b) The Rules are applicable to notified urban local bodies, notified towns and all industrial townships only

(c) The Rules provide for exact and elaborate criteria for the identification of sites for landfills and waste processing facilities.

(d) It is mandatory on the part of the waste generator that the waste generated in one district cannot be moved to another district.

Ans: (c)

Mains:

Q. What are the impediments in disposing of the huge quantities of discarded solid waste which are continuously being generated? How do we safely remove the toxic wastes that have been accumulating in our habitable environment? **(2018)**

Q. “To ensure effective implementation of policies addressing the water, sanitation and hygiene needs the identification of the beneficiary segments is to be synchronised with anticipated outcomes.” Examine the statement in the context of the WASH scheme. **(2017)**

Q. How could social influence and persuasion contribute to the success of Swachh Bharat Abhiyan?

(2016)