

## **India's Solid Waste Management Crisis: A Call to Action**

India, with its massive population, generates a staggering amount of solid waste. Alarming, a large portion remains untreated, posing a severe threat to public health and the environment. A recent Supreme Court critique of New Delhi's situation highlights the national urgency.

### **Waste Composition and Generation:**

Solid waste in India encompasses household waste, commercial waste, and even agricultural and dairy waste. The country generates a significant 62 million tonnes of waste annually, with only 43 million tonnes collected. Even from this collected amount, a mere 12 million tonnes are treated, leaving a concerning 31 million tonnes dumped in landfills. With India's rapid economic growth and changing consumption patterns, this burden is projected to worsen, reaching a staggering 165 million tonnes by 2030.

### **Key Challenges:**

- **Poor Implementation:** Many cities lack proper waste management infrastructure, with overflowing and damaged bins. A critical issue is the lack of waste segregation at source, leading to mixed waste reaching landfills in violation of the Solid Waste Management Rules, 2016. Furthermore, some areas lack regular collection services, causing waste buildup and littering.
- **Dumping Site Problems:** Land scarcity in metro cities hinders the development of adequate waste processing plants. This, coupled with illegal dumping and poor coordination among stakeholders, exacerbates waste management issues. Despite existing facilities, a significant amount of waste remains untreated, leading to environmental hazards like methane emissions and landfill fires. The ongoing biomining efforts, intended to clear legacy waste, are projected for completion in 2026, leaving a gap in proper management until then.
- **Data Constraints:** The absence of comprehensive data on waste generation and composition across regions makes it difficult for private companies to assess potential involvement in waste management projects.
- **Formal vs. Informal Systems:** Municipal collection services often fall short in low-income communities, creating a reliance on the informal sector. Informal waste pickers, however, face health risks due to poor working conditions and a lack of safety gear. Child labor is also a concern in some areas.
- **Public Awareness:** A general lack of public awareness regarding proper waste management practices leads to littering and improper disposal habits.



### **Solid Waste Management Rules, 2016:**

These rules mandate waste segregation at source into three streams: wet (biodegradable), dry (recyclable), and hazardous waste. Generators are responsible for proper segregation and handing waste to authorized collectors or local bodies. The rules also include user fees for waste collection and spot fines for littering and non-segregation. The focus is on promoting composting and bio-methanation of biodegradable waste. Additionally, manufacturers are obliged to financially support local waste management systems.

### **The Way Forward:**

- **Municipal Role:** Cities need to enhance waste processing capacities by focusing on composting and biogas generation for biodegradable waste. Collaboration with stakeholders is crucial for identifying land, setting up efficient plants, and ensuring their effective operation.
- **Waste-to-Energy:** Non-recyclable dry waste can be converted into refuse-derived fuel (RDF) for power generation in waste-to-energy plants.
- **Decentralized Processing:** Metropolitan areas can explore collaboration with neighbouring states to establish composting facilities closer to waste generation points. Additionally, micro-composting centers and dry waste collection centers can be implemented at the ward level, inspired by successful models in other Indian states.
- **Integrated Approach:** A combination of decentralized options and large-scale processing facilities is necessary to ensure all waste is treated effectively.

India's solid waste management crisis demands immediate and comprehensive action. By addressing the challenges outlined above and implementing the solutions proposed, India can move towards a cleaner and healthier future.

**References:**

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