

# India's Challenges in Waste Management

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## Abstract

The key to efficient waste management is to ensure segregation source and resource recovery. Most recyclable waste ends up in a dump yard due to the lack of efficient waste management. Waste management rules in India are based on the principles of "sustainable development", "precaution" and "polluter pays". These principles mandate municipalities and commercial establishments to act in an environmentally accountable and responsible manner—restoring balance, if their actions disrupt it. The increase in waste generation as a by-product of economic development has led to various subordinate legislations for regulating the manner of disposal and dealing with generated waste are made under the umbrella law of Environment Protection Act, 1986 (EPA). Specific forms of waste are the subject matter of separate rules and require separate compliances, mostly in the nature of authorizations, maintenance of records and adequate disposal mechanisms.

**Introduction-** Waste management (or waste disposal) is the activities and actions required to manage waste from its inception to its final disposal. This includes the collection, transport, treatment and disposal of waste, together with monitoring and regulation of the waste management process. Waste can be solid, liquid, or gaseous and each type has different methods of disposal and management. Waste management deals with all types of waste, including industrial, biological and household. In some cases waste can pose a threat to human health. Waste is produced by human activity, for example the extraction and processing of raw materials. Waste management is intended to reduce adverse effects of waste on human health, the environment or aesthetics. Waste management practices are not uniform among countries developed and developing nations; regions urban and rural areas and residential and industrial sectors can all take different approaches. A large portion of waste management practices deal with municipal solid waste (MSW) which is the bulk of the waste that is created by household, industrial, and commercial activity.

The key to efficient waste management is to ensure proper segregation of waste at source and to ensure that the waste goes through different streams of recycling and resource recovery. Then reduced final residue is then deposited scientifically in sanitary landfills. Sanitary landfills are the ultimate means of disposal for unutilized municipal solid waste from waste processing facilities and other types of inorganic waste that cannot be reused or recycled. Major limitation of this method is the costly transportation of MSW to far away landfill sites.

## The way to front

Around 100 cities are set to be developed as smart cities. Civic bodies have to redraw long term vision in solid waste management and rework their strategies as per changing lifestyles. They should reinvent garbage management in cities so that we can process waste and not landfill it (with adequate provisioning in processing and recycling). To do this, households and institutions must segregate their waste at source so that it could be managed as a resource. The Centre aims to do away with landfill sites in 20 major cities. There is no spare land for dumping garbage; the existing ones are in a critical state. It is reported that almost 80 per cent of the waste at Delhi landfill sites could be recycled provided civic bodies start allowing rag pickers to segregate waste at source and recycle it. Compost pits should be constructed in every locality to process organic waste. Community participation has a direct bearing on efficient waste management. Recovery of e-waste is abysmally low; we need to encourage recycling of e-waste on a very large scale level so that problem of e-waste disposal is contained.

## Questing on sustainable cities

The concept of sustainable cities can be a confused one when it attempts to cater to all interests with rapid urbanization; “sustainable cities” are much in news. Globally, and in India, planning and policy emphasize sustainable city development, devising interventions, indicators and metrics to track progress. Yet what do we mean by a sustainable city? It varies greatly. By this definition, a city is sustainable if it has public transport, green cover, clean water bodies, and has dealt with air pollution and garbage. But such “sustainable” cities import their food, water and energy from distant regions, and export their wastes to create environmental and social challenges outside, prompting the argument that sustainable cities need to look outwards to limit their external impacts. Some definitions are purely based on environmental characteristics such as air pollution. Others argue that sustainable cities ought to prioritize equity, justice, and wellbeing. Many studies focus on sustainability within a city’s boundaries.

Indian cities, which have tried this, have been met with a chorus of protest from within. Balancing the needs of the present and the future is also a challenge. How can cities redesign themselves to meet the as yet unknown transportation needs of future generations of urban residents, for instance? In India, we have even lesser consensus on what the concept of sustainability means for our cities. These problems of definition are not scientific problems which demand expert definition. They represent societal challenges, requiring sustained conversation and contestation about norms and values. For this, we need public debate across a variety of platforms and audiences.

## Why decentralized SWM?

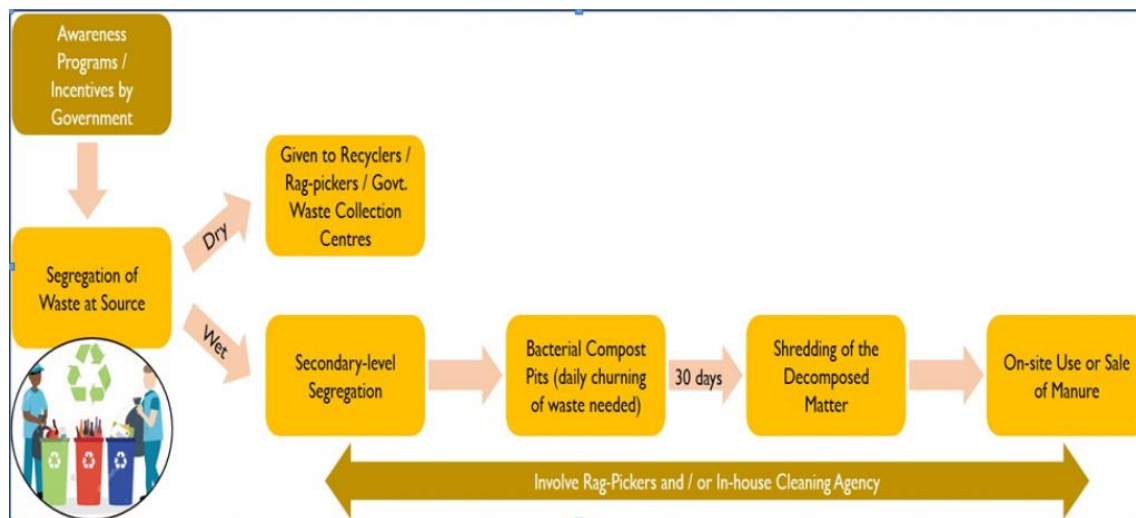
Solid waste management has been believed to be the responsibility of solely the municipal governments. However, decentralized SWM involves a paradigm shift from this perception and system of SWM, and puts the onus on the generator of the waste by beginning waste management at the source. This would reduce the quantity of waste generated at source by involving the community in waste segregation and processing by adopting practices of recycling, composting, bio-gas generation, among others. The Solid Waste Management Rules, 2016, released by the Union Ministry of Environment, Forest and Climate Change are a step in this direction.

This will reduce the cost incurred in collection, transportation and processing of waste. Also, less waste will reach the landfill because in most cities as much as 50 per cent of the waste is fit for composting and about 30 per cent for recycling. Effective segregation at source, in transit and during disposal, will mean only 20 per cent of the refuse is needed to be sent to the landfill.

Importantly, informal workers like rag-pickers and recyclers would get integrated into the system. Pune Municipal Corporation's initiative to integrate the rag-pickers in SWM process through an organization named SWACH has proved to be a success in effective SWM. Similarly, the work done by SEWA in Ahmadabad to integrate female rag-pickers in the mainstream has shown great results and has been appreciated by the World Bank.

### How to achieve decentralized SWM?

The focus of a decentralized SWM initiative should be on the segregation of waste at source by institutionalizing this throughout the waste management chain from collection to disposal and by promoting behavioral change. The NIMBY approach must be completely wiped out by incentivizing segregation at source, systematic awareness programmes, involving the youth and making waste management a matter of pride rather than just another task.



There is tremendous potential in group housing societies to reduce the burden on civic agencies by segregating waste at household level. The organic waste, which is in majority, can be composted at site or if feasible, there can be a common composting site for a few housing societies. The manure produced can either be used for gardens in the housing societies or for public parks. Manure can even be sold to earn some revenue for sustaining the system.

Involving rag-pickers and recyclers of the neighborhood in processing waste would help both the society and rag-pickers. The rag-pickers can collect and sell the recyclables. This too reduces the waste headed to the landfill and prevents rag-pickers from having to rummage through the waste.

### Success stories

It's encouraging to know that there are communities that have undertaken such initiatives. In Delhi, Resident Welfare Associations (RWAs) have been key players in decentralized SWM. A Defense Colony RWA has been composting the colony's household and park waste in simple dug pits in a park for many years now. The municipal corporation supported construction of the pits and the operational costs are met through user fees, sale of recyclables and manure (a detailed case study can be found here). A Vasant Vihar RWA had also started composting in a park, but a visit in August showed that the composting has been stopped due to some residents' concerns over foul smell. Thus, the entire community must be mobilized from the planning stage itself and each household must have a stake through source segregation. Only when every citizen takes ownership of waste management will we actually achieve a Swachh Bharat.

## Waste food is about recycling

First, this reinvention means we need to incorporate and not negate the role of the recycling industry in waste management. Currently, it is said (data is weak however) that recycling of dry waste provides employment to about 1-2 per cent of a city's population, often the poorest women and children. In large cities, there are two-three tiers of waste buyers, all very well organized and specialized in specific wastes. What is not recognized is that this trade, happening in the backyards of slums and shoved aside by policy, is the only thing saving cities from drowning in waste. It is also this trade which ensures that less waste reaches landfills. There is a great need for official support to this unappreciated activity that saves at least 10-15 per cent in transportation costs daily to the city, adding up to millions of rupees a year. Over the years, civil society groups working with informal waste collectors have worked on several policies to promote this business—starting a dialogue to find out the needs of this sector, issuing ID badges to waste pickers who desire them (through NGOs or police, to prevent harassment), providing them with sorting and storage space, and doorstep pickup service for post-sorting rejects to be taken away from slum houses or waste buyers' yards, so that these do not end up clogging the storm drains. The Kerala government has found that the only way it can manage its dry waste is by activating its informal recycling industry. The state government's Suchitwa Mission for a garbage-free Kerala has collated information on this industry and put the data, including the rate paid for different categories of waste, on its official website. Now households can use this service. It has also started a company to manage its plastic waste and to work with recyclers

## Conclusion

Waste is not something that should be discarded or disposed of with no regard for future use. It can be a valuable resource if addressed correctly, through policy and practice. With rational and consistent waste management practices there is an opportunity to reap a range of benefits. Those benefits include:

1. Economic – Improving economic efficiency through the means of resource use, treatment and disposal and creating markets for recycles can lead to efficient practices in the production and consumption of products and materials resulting in valuable materials being recovered for reuse and the potential for new jobs and new business opportunities.
2. Social – By reducing adverse impacts on health by proper waste management practices, the resulting consequences are more appealing civic communities. Better social advantages can lead to new sources of employment and potentially lifting communities out of poverty especially in some of the developing poorer countries and cities.
3. Environmental – Reducing or eliminating adverse impacts on the environment through reducing, reusing and recycling, and minimizing resource extraction can result in improved air and water quality and help in the reduction of greenhouse gas emissions.
4. Inter-generational Equity – Following effective waste management practices can provide subsequent generations a more robust economy, a fairer and more inclusive society and a cleaner environment.

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