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Garbage-Free Cities: Reimagining Urban Waste Management for Sustainable Urbanisation

A city cannot truly be garbage-free unless it reimagines and restructures the relationship between people, resources, and the local economy. When responsible consumption becomes a habit, communities become partners, discarded materials acquire new value, and city governments enable effective systems. Cleaner cities can become healthier cities; and healthier, resource-efficient cities can lay stronger foundations for sustainable urban prosperity.

In ancient times, Indus Valley civilisation had advanced urban planning including sophisticated urban sanitation and drainage systems. In modern times, rapid urbanisation, population growth, and rising consumption have increased the waste generation. Management, processing and disposal of waste have become a major determinant in the quality of life in urban areas. A city's waste begins with lifestyle decisions made long before the collection happens: what we buy, how products are packaged, whether we reduce consumption, reuse and repair products, recycle materials, and segregste the remaining waste. These everyday choices link our homes and workplaces to municipal services, sanitation workers, waste management systems, and the environment. Reimagining urban waste management therefore requires us to examine the relationship between people, resources and the economy.

India's pursuit of Garbage-Free Cities must therefore build on efficient collection and scientific processing to progressively prevent avoidable waste, keeping materials in circulation for as long as possible before they are sent to landfills and protect public health as well. Cleaner neighbourhoods, dignified livelihoods, and productive use of recovered resources can strengthen local economies and build resilience. The progression from Garbage Free Cities to Clean, Healthy, and Prosperous Cities expresses this wider ambition. Realising this ambition requires sustained cooperation between governments, citizens, communities, civil society organisations, and enterprises.

Building on the foundations of Swachh Bharat Mission - Urban

Swachh Bharat Mission – Urban has been successful in bringing sanitation into public conversation and municipal priorities. Furthermore, SBM-U 2.0 has played a pivotal role in advancing the vision of Garbage Free Cities through segregation, scientific processing, and legacy dumpsite remediation. At present, the official processing rate standing at 81.3 per cent., along with remediation of 19.94 crore tonnes of legacy waste and reclamation of around 11,000 acres from dumpsites. The SBM-U mission has already created a strong foundation for improving service reliability and the quality of waste recovery.

The Solid Waste Management (SWM) Rules, 2026, effective from 1 April 2026, strengthen the mission by

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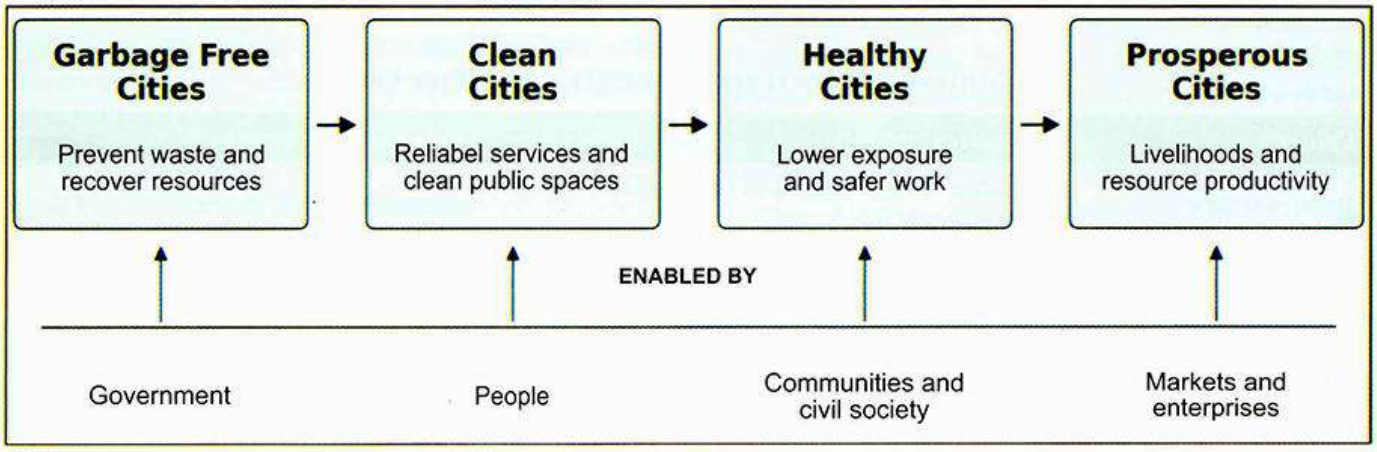
mandating waste segregation into wet, dry, sanitary and special care waste. The Rules introduce Extended Bulk Waste Generator Responsibility; and provide for digital monitoring, facility audits, and environmental compensation under the Polluter Pays principle. Bulk waste generators, including qualifying institutions, commercial establishments, and residential societies, must discharge responsibility for their waste. Effective compliance can improve segregation and clarify responsibility for processing costs clearer. The Supreme Court's recent directions reinforce implementation through district-level infrastructure audits, local accountability, and source-segregation education. For cities, these measures provide an opportunity to translate routine SWM responsibilities into reliable services that can be digitally monitored, tracked, and audited.

A Garbage-Free City Begins Before the Bin

Waste prevention deserves greater attention in city planning and everyday life. Buying only what is needed, avoiding unnecessary packaging, repairing useful goods, and choosing reusable products reduce the burden on collection and processing systems. India's



A shared pathway to sustainable urban prosperity

traditions of repair, sharing and reuse provide ready pillars for resource efficiency and circular economies. Municipalities can support them through accessible reuse centres, repair enterprises, and arrangements for reusable items. Private enterprises are also supporting these initiatives.

Segregation preserves the character and value of materials discarded as waste. The waste must remain segregated during collection, transportation, and receipt at processing facilities. Clear instructions, appropriate collection arrangements, and trained workers are essential to maintaining segregation. Schools can make responsible consumption and segregation part of daily practice through refill stations, repair activities, and supervised waste audits. Children should learn about these principles in classrooms as well as experience resource stewardship in their surroundings.

Community organisations can help adapt these practices to local conditions. Residents need opportunities to discuss collection timings, storage methods, and suitable arrangements for shared spaces. Businesses can make durable and refillable options easier to choose. Such cooperation makes resource-responsible behaviour practical and helps it endure beyond individual campaigns.

Indian Experience Offers Practical Pathways

Indore illustrates the importance of connecting civic participation with efficient SWM services through sustained public communication, children's participation, municipal monitoring, and arrangements for vehicle maintenance. Its 550-tonne-per-day bio-CNG facility links wet waste processing with fuel use in transport. The lesson for other cities is to plan the entire chain; segregated feedstock, reliable collection, competent processing, and a ready market for recovered products.

Ambikapur offers a complementary lesson in prevention. Its *Bartan* Banks allow residents to rent steel utensils for gatherings and return them after washing, with eight such banks involving 89 women from self-help groups. This affordable service makes reuse convenient while creating livelihood opportunities. This shows how municipalities can support community enterprises in turning an environmental preference into an everyday choice.

Participation also means recognising people already engaged in resource recovery. For instance, in Pune municipal partnership with the SWaCH waste-pickers' cooperative supports household collection through a user-fee model. Such experience offers lessons for integrating workers' knowledge into municipal systems. Such partnerships should provide for safe working conditions, fair remuneration, and access to social protection, while enabling workers and community organisations to help shape service delivery.

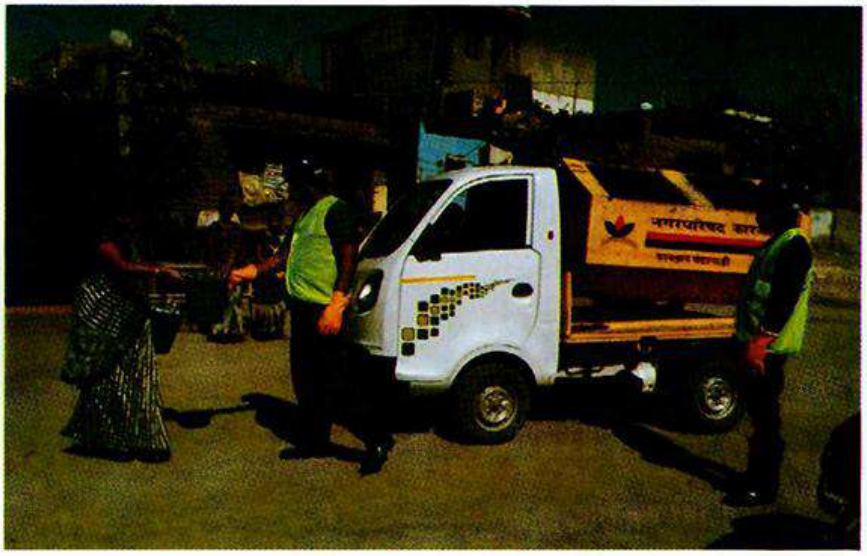
Sustaining the System Every Day

A collection system, a sorting centre, and a processing plant all require motivated workers, adequate fuel or energy and timely maintenance. Delays in operating cash flow at any stage can disrupt the entire chain. Cities must therefore provide for recurring expenditure, timely payments, and asset replacement in addition to construction. Predictable public funding, equitable user charges from citizens, and bulk generators need to work together. Revenues from waste processing can contribute, but the variability of such revenues must be recognised in financial planning.

The Polluter Pays principle should help align costs appropriately for managing waste. Extended Producer Responsibility (EPR) under the relevant waste-stream

Priorities for the next generation of Garbage Free Cities

Priority	Practical action	Evidence of progress
Reduce waste	Enable reuse, repair and responsible consumption	Lessen avoidable waste
Preserve segregation	Keep streams separate throughout collection, transportation and processing	Right materials reaching dedicated facilities
Sustain services	Fund operations and pay service providers on time	Reliable collection and functioning facilities
Recover value	Connect processors and industry /economy	Resource efficient processing; Less land filling/ dumping



rules should contribute directly to municipal collection and registered recovery systems. This is distinct from the obligations of bulk generators under the SWM Rules 2026. Clear contracts and traceable material flows can make EPR more effective. Cities also need viable aggregation models for compost and recyclable materials, supported by quality assurance, aggregation, and suitable procurement.

Urban spatial planning should reserve suitable land for SWM facilities at every stage, ensuring compliance with environmental safeguards and access to transport. Smaller municipalities can explore shared facilities where geography and costs favour clusterisation. Facility selection should reflect local waste composition and the ability to sustain operations. Reliable services must reach informal settlements and urban peripheries as well as established neighbourhoods.

Knowledge and capacity-building must reach elected representatives, municipal staff, operators, bulk generators, and community partners. Digital feedback can identify missed collections, littering, and other defaults. Compliances should be on the basis of recognised, rewarded, and defaults penalised with evidence. The city priorities in SWM services given below connect this institutional effort with aspirational changes for garbage-free cities and visible cleanliness.

Health and Prosperity as Outcomes of Garbage-Free Cities (GFCs)

Preserving public health provides a compelling reason for scientific and sustainable SWM services. WHO's 2025 assessment highlights exposure to pollution through air, water, and soil from poorly managed waste, highlighting particular risks for waste workers and communities near disposal sites. Preventing open burning, controlling leachate, and ensuring safe handling of sanitary and special care waste can reduce harmful exposure. Preventing dumping and burning also contributes to cities' climate and environmental goals. A GFC must aim to reduce reliance on landfilling through a levy of landfill fees or mechanisms appropriate for the waste to be land filled.

This wider vision must retain the waste hierarchy. Prevention and reuse conserve value long before recycling or other recovery becomes necessary. Appropriate treatment and safe disposal remain essential for any residual waste. Similarly, restoring a legacy dumpsite must be accompanied by arrangements that prevent fresh dumping. Reclaimed land should be assessed and managed for uses compatible with its environmental condition, thereby protecting neighbouring communities over time.

The economic benefits extend through repair services, recycling enterprises, compost markets, and other productive uses of recovered materials. Safer workplaces and cleaner public spaces create the conditions in which people and businesses can thrive. These outcomes depend on service quality and viable markets for resource recovery. Cities should progressively assess data on waste prevented, materials reused or refurbished, worker health and the quantity of land filling or dumping, besides waste quantities collected and processed.

A city cannot truly be garbage-free unless it reimagines and restructures the relationship between people, resources, and the local economy. When responsible consumption becomes a habit, communities become partners, discarded materials acquire new value, and city governments enable effective systems. Cleaner cities can become healthier cities; and healthier, resource-efficient cities can lay stronger foundations for sustainable urban prosperity.

One of the key drivers for clean and healthy cities is the adoption of sustainable cleanliness and waste management practices at the level of the individual, the family and society. The mindset of a clean home must extend to our neighbourhood, recognising that a clean neighbourhood is an integral part of a clean and healthy home. A clean and healthy city is agglomeration of these clean and healthy neighbourhoods. ❑