

Executive Summary

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Purpose to undertake this audit

Municipal Solid Waste Management in urban areas has emerged as one of the biggest challenges today. The situation is aggravated by rapid urbanisation. Inadequate management of waste has significant negative externalities in terms of public health and environmental outcomes. The Solid Waste Management Rules, 2016 provide a legal framework for the disposal and management of Solid waste and entrusts responsibilities at the State level, ULBs and on the generators of waste.

Effective Solid Waste Management requires policies, infrastructure, public awareness, and stakeholder participation. It is a shared responsibility among authorities, urban local bodies, waste management agencies, communities, and individuals.

This Performance audit examines the solid waste management in Urban Local Bodies from end to end i.e. collection, segregation, processing and disposal of waste. It also assesses the adequacy of resources, its efficient utilization and monitoring of SWM.

Major Audit Observations

Planning for Solid Waste Management

Out of 18 test checked ULBs, Detailed Project Reports (DPRs) were prepared only by six ULBs under ISWM/SBM 1.0 and 11 ULBs under SBM 2.0. In three test checked ULBs where DPR were prepared assessment method prescribed under the MSWM manual were not followed as two ULBs (Bhiwadi and Dungarpur) collected data on waste generation for three days instead of seven continuous days from different location and in different seasons and extrapolated it over the entire year. ULB Balotara also incorrectly calculated per capita waste generation by dividing waste disposed of in landfill by the population.

Inconsistency in estimated waste generation data between State and test checked 16 ULBs indicates unreliability of data and lack of monitoring and coordination among ULBs and State Government.

Management of Solid Waste in ULBs

Analysis of the service level benchmark (SLB) indicators stipulated by the Ministry of Urban Development, GoI showed that in the test checked ULBs, the achievement of the majority performance indicators was significantly low against the fixed targets.

Processing of waste was only 11 *per cent* to 25 *per cent* at State level and 29 *per cent* to 35 *per cent* in test checked ULBs. Direct dumping of solid waste ranged between 63 *per cent* to 79 *per cent* at the State level and 65 *per cent* to 71 *per cent* in test checked ULBs. Thus, remaining unprocessed waste at State level was not being dumped at dumping site. Instances of variation in reported figures of waste collection and actual waste collection were also noticed in test checked ULBs.

It was observed that the quantity of waste generated reported by the Director Local Bodies to audit was different from the figures reported by the ULBs in their Annual Report to the Rajasthan State Pollution Control Board.

Out of 18 test checked ULBs, weigh bridges were not installed in 14 ULBs due to which daily waste collection could not be measured and monitored properly. Further, eight weigh bridges were installed in remaining four ULBs. In Municipal Council, Bhiwadi one of the vehicles shown to have been used for waste collection was found to be a passenger vehicle.

Radio Frequency Identification (RFID) waste management system solutions support identification and traceability of waste. It was observed that only three out of 18 test checked ULBs made provisions in respective bid documents for installation of RFID at each household. RFID is reported to have been installed in two zones of Municipal Corporation, Jaipur (Greater) only.

Only 50 per cent to 60 per cent of ULBs in the State undertook segregation of waste at secondary storage facilities during 2021-23. Out of 18 test checked ULBs, 11 ULBs reported non segregation of solid waste at secondary storage facilities during 2021-22 and it reduced to five ULBs in 2022-23.

Neither specific centres were established for deposition of hazardous waste nor hazardous/sanitary waste was segregated at source/secondary source in 12 test checked ULBs. During the physical verification of secondary storage/dumpsites, instances were seen where mixed waste was dumped.

Though material recovery facilities were available in all 18 test checked ULBs, however, during physical verification it was observed that in nine test checked ULBs material recovery facilities or secondary storages facilities were not covered or fenced, which allowed the stray animals to move around the waste storage sites. Storages were not cleaned regularly which resulted in overflowing of waste and littering on the roadside.

Test checked 17 ULBs did not follow provisions of the byelaws related to optimum utilisation of solid waste and dumped the waste in landfill/dump sites. Only one ULB (Municipal Corporation, Jaipur) used the Refuse Derived Fuel method and techniques of composting for recycling of solid waste.

Six out of 18 test checked ULBs procured compost machines of different capacities between February 2019 and December 2019. Out of these, in four ULBs compost machines were not used since their installation.

Due to inordinate delay in setting up of waste to energy plants, waste could not be processed and leading to piling up to dump unprocessed at dumping sites.

The processing of Construction and Demolition (C&D) waste is important as per C&D Waste Management Rule, 2016. It prevents unscientific disposal that causes air, water and soil pollution and it reduces dust, littering, and unmanaged dumping. Construction and Demolition (C&D) waste comprises of buildings materials, debris and rubble resulting from construction, repair and demolition of any civil structure. Four (Bikaner, Jaipur, Jodhpur and Udaipur) out of 18 test checked ULBs were eligible for setting up of Construction & Demolition (C&D) processing plant. Only Municipal Corporation, Udaipur set up one C&D waste processing plant in the State. This plant was also not functioning due to

want of O&M. Due to non-set up of C&D waste processing plant the C&D waste is being mixed with solid waste or disposed in low lying area.

Out of 18 test checked Urban Local Bodies, 15 ULBs did not construct sanitary landfill sites and dumped the municipal solid waste in open dumping sites. Though Municipal Corporation, Jaipur and Municipal Council Baran constructed landfill sites in year 2012 and 2016 respectively at a cost of ₹ 12.06 crore but these remain unutilized since their construction due to non-setting up of processing plants which resulted in Municipal Solid Waste being dumped in open dumping site.

Monitoring and Information, Education and Communication Activities

Health and Sanitation committees essential for planning and monitoring public health and sanitation activities were not constituted in 12 test checked ULBs.

Only six test checked ULBs undertook audio, visual, mass communication and advocacy and outreach activities. Remaining 12 ULBs did not conduct any Information, Education and Communication activities during 2017-18 to 2021-22 despite allotment of separate funds of ₹ 11.99 crore to these ULBs.

Recommendations

- *The State Government may ensure compliance of procedures laid down for estimation of waste generation and preparation of DPR as per MSWM Manual by all ULBs for effective planning of Solid Waste Management.*
- *The State Government may ensure installation of weigh bridges and RFID cards in all ULBs for accurate measurement and to check collection efficiency.*
- *The State Government should undertake advocacy and outreach activities and Health & Sanitation Committees to ensure 100 per cent segregation of waste at secondary stage.*
- *The State Government may make efforts to reduce dependency on landfills by enhancing its processing capacity.*
- *The State Government should make material recovery facilities mandatory to divert recyclable material from landfills by increasing recycling rates and reducing waste sent to landfills.*
- *The State Government should ensure GPS enabled solid waste management vehicle for route optimization, real time tracking and enhanced customer services by ensuring timely waste collection.*

- *The State Government should take new initiative for composting and waste to energy plants in line with other cities like Indore, Ahmedabad, Pune and Gangtok.*
- *All Urban Local Bodies may undertake regular Information, Education and Communication activities to raise public awareness and promote responsible behaviour towards the Solid Waste Management.*