

Executive Summary

Municipal Solid Waste Management in urban areas has emerged as one of the biggest challenges the country faces today. Rapid urbanization has aggravated the complexities of the situation. Inadequate management of waste would have significant negative impact on public health and environmental outcomes.

Considering the significance of waste management in urban areas, the Comptroller and Auditor General of India took up this performance audit, covering the period 2016-2021, with an objective to assess whether the strategy and planning of waste management in ULBs was in accordance with extant provisions and supported by adequate institutional mechanism. Audit also proposed to analyse whether the tasks and projects associated with management of waste (all through the stages of segregation, collection, transportation, processing and disposal) in ULBs were planned, implemented and maintained in an effective manner. Care was also taken to examine the extent to which the risks to environment posed by waste were identified and minimised.

The 22 test-checked ULBs adopted per capita estimates of waste generation without conducting any survey, during the audit period 2016-2021. We observed that this method had low level of reliability. No scientific study has so far been conducted to assess the quantity, composition and physical and chemical characteristics of the waste generated in the State.

There was delay of over two years in the preparation of the State Policy and over four years in the formulation of State Strategy on waste management. The test-checked ULBs did not prepare short term or long-term plans. Byelaws were either not prepared or not approved by Government.

Preparation of several Detailed Project Reports over a very short period without proper gap analysis of institutional capacity resulted in non-incorporation of comprehensive data regarding the existing waste management system. Due to non-preparation/delay in preparation of DPRs by eleven ULBs in the State, ULBs lost Central assistance to the tune of ₹ 45.82 crore.

Audit noticed rampant use of banned plastic carry bags in all test-checked ULBs and low utilization of shredded plastic in road construction works. Material Collection Facilities and Resource Recovery Facilities were either not installed or non-functional in the ULBs. Informal waste collectors/waste pickers were not seen integrated into the formal waste management system.

Implementation of Solid waste management projects in ULBs was undertaken utilising funds received from Central/ State Governments as well as Own funds. Test-checked ULBs utilised only 0.48 to 1.66 *per cent* of Development fund for waste management, which was much lower than the prescribed 10-15 *per cent*. While fourteen ULBs did not utilise Own funds for implementing any SWM project

during the five-year audit period, the percentage of utilisation by the remaining eight was only upto 5.34 *per cent*.

Low priority was accorded to Information, Education and Communication activities as reflected in absence of Strategy/Plan/targets at State/District/ULB level, besides poor utilisation of funds.

Incomplete segregation of waste at source and secondary levels resulted in flow of mixed waste to processing sites. Colour coded bins were not provided to households in all test-checked ULBs. Disposal of huge quantity of rejects by ULBs was noticed due to improper segregation at source level and secondary stage. Very few restaurants/community halls in test-checked ULBs had source level treatment facilities. Though installation of source level treatment facility was mandatory in apartments, only 52 *per cent* (286 out of 548) of apartments had the facility. Only three test-checked ULBs had a system for collection of poultry waste, and food waste was seen disposed by restaurants to pig farms. The test-checked ULBs did not have a system for collection of domestic hazardous waste, sanitary waste and horticulture waste. Test-checked ULBs were far from achieving 100 *per cent* door-to-door collection of waste. Besides, the State has no landfill facility for disposal of waste. The only landfill site in the State at Ambalamedu for disposal of hazardous waste is being used for disposal of mixed/ non-hazardous waste.

The ULBs used open vehicles or vehicles without partition for waste transportation, which was against the Rules. In Kochi and Thiruvananthapuram Corporations, vehicles owned by the local bodies were off the road for want of timely repair and receipt of fitness certificates, while private vehicles continued to be hired for waste transportation.

Audit observed huge accumulation of wastes in the Centralised processing plant of Kochi Corporation at Brahmapuram which has been functioning without the authorisation of Pollution Control Board for several years. Leachate treatment plant was non-functional at the processing facilities in Brahmapuram and Njaliyanparamba. Out of the 14 dumpsites in test-checked ULBs, remediation works had not commenced in any of the Municipalities.

The absence of proper segregation of waste led to mixing of solid waste with plastic waste, bio-medical waste and e-waste. Several Healthcare institutions were functioning without authorisation and resorting to unauthorised means of disposal of bio-medical waste, thereby endangering the environment. Though bio-medical waste is to be treated and disposed within 48 hours, there was a huge backlog at the IMAGE facility at Palakkad due to insufficient disposal capacity. The KEIL facility on the other hand, handled only 6.2 tonnes, despite capacity to handle 16 tonnes per day.

Test-checked ULBs did not collect or channelise e-waste to authorised dismantlers/recyclers and e-waste was found mixed with municipal solid waste.

None of the test-checked ULBs had a system in place for accounting, collecting and disposing Construction and Demolition waste.

Recommendations

I Planning and Financial Management

- *Government must ensure that scientific estimation of quantity and composition of waste generated in Urban Local Bodies are taken up on priority basis to establish adequate treatment and disposal facilities of all categories of waste. Waste moving through the system needs to be quantified at multiple locations in different seasons, to assess the actual quantities of waste available for processing and disposal, so as to identify and plan for innovative and efficient treatment technologies.*

(Recommendation 1)

- *Government must ensure that Urban Local Bodies formulate Municipal Solid Waste Management Plans and have approved Byelaws in place for effective management of waste. The waste management plans formulated may also provide for integration of informal waste pickers into the formal system of waste management.*

(Recommendation 2)

- *Government must promote Information, Education and Communication (IEC) campaign by ULBs in a sustained manner by formulating yearly plans and targets for effective utilisation of available funds. Government must undertake IEC campaign through its Public Relations wings and other agencies, to create public awareness among waste generators on the need to minimise waste generation, re-use waste to the extent possible, practise segregation of waste and desist from littering in public spaces.*

(Recommendation 3)

- *Government must ensure that ULBs enhance the extent of utilisation of Central/State funds and Own Revenue allocated for waste management. They may take earnest efforts to step up collection of Service Cess and User fee, so as to contribute to expenditure on waste management activities.*

(Recommendation 4)

- *Government must consider fixing a mandatory minimum percentage of expenditure to be incurred exclusively on solid waste management by the Local Self Government Institutions.*

(Recommendation 5)

II SEGREGATION, COLLECTION AND TRANSPORTATION OF WASTE

- *Government must ensure that ULBs adopt effective strategies for segregation of waste at various levels, viz. source/ household, centralised sorting facility and waste processing sites, door-to-door collection of domestic hazardous waste and sanitary waste and providing separate colour coded bins at public places to enable effective segregation and collection of waste.*

(Recommendation 6)

- *Government/ULBs must ensure that a realistic assessment of vehicles used by ULBs for transportation of waste is undertaken. Urgent action needs to be initiated for executing maintenance/repair works of vehicles to limit hiring of vehicles while keeping own vehicles off the road for prolonged periods.*

(Recommendation 7)

III PROCESSING AND DISPOSAL OF WASTE

- *Government/ULBs must ensure adequate resources to implement source level treatment facilities for processing of biodegradable waste and handhold households/institutions for effective utilisation of the facilities provided. Government must also set up adequate number of community level facilities for processing spillover waste from all sources.*

(Recommendation 8)

- *Government must ensure that mixed waste generated gets segregated at source points itself and biodegradable waste alone reach the Centralised processing plants at Brahmapuram and Njaliyanparamba. Government must also urge the Corporations to set up Leachate treatment plants to treat the leachate generated, thereby preventing pollution of nearby water bodies and farmlands.*

(Recommendation 9)

IV MANAGEMENT OF PLASTIC WASTE, BIO-MEDICAL WASTE, E-WASTE AND CONSTRUCTION AND DEMOLITION WASTE

- *Government must direct State Pollution Control Board to establish a mechanism by which Producers, Importers and Brand owners of products fulfill their Extended Producer Responsibility (EPR) obligation under Plastic Waste and E-waste Management Rules 2016.*

(Recommendation 10)

- *With a view to maximise the possibility of reduction, reuse and recycling (3R strategy) of waste generated, Government must ensure that ULBs effectively implement ban on single use plastic, promote substitutes for*

plastic carry bags, use non-recyclable shredded plastic in roads, operationalise Waste-to-energy plants, etc.

(Recommendation 11)

- *Government must ensure that ULBs set up Material Collection Facilities (MCF) in all wards to facilitate proper segregation of recyclable portion of plastic waste.*

(Recommendation 12)

- *Government must initiate urgent steps for establishing Common Bio-medical Waste Management Facilities at regional level to ensure disposal of bio-medical waste within the time limit and distance specified in the Rules. Government and the State Pollution Control Board must oversee that Health care facilities (HCFs) are functioning with proper authorisation and that solid/liquid bio-medical waste generated in these HCFs are treated effectively.*

(Recommendation 13)

- *ULBs must place appropriate containers for collection of Construction and Demolition (C&D) waste and identify land for establishing processing plant for C&D waste generated within their jurisdiction.*

(Recommendation 14)

V MONITORING

- *Government and the State Pollution Control Board must jointly establish an effective mechanism for monitoring the performance of solid waste management system, complying with extant Rules. Government must also operationalise computerised Management Information System (MIS) and resort to stringent action to curb instances of violation of Waste Management Rules.*

(Recommendation 15)