



*Palayam Market,
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CHAPTER II

PLANNING AND FINANCIAL MANAGEMENT

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The quantity and composition of Municipal Solid Waste (MSW) generated in the ULB determine the collection, processing and disposal options that could be adopted for waste management. ULBs did not conduct any survey to assess the quantity of waste generated in its jurisdictional area. They did not maintain data on quantum of various categories of waste generated within their jurisdiction. The ULBs adopted per capita generation/ population estimation method for assessing the extent of waste generated. Comparison of details of composition of solid waste as per three different sources of data revealed significant variations in the share of components involved.

The ULBs did not prepare Solid Waste Management (SWM) Plans, Contingency Plans and Byelaws as prescribed in the SWM Rules. There were many deficiencies in the Detailed Project Reports prepared by the test-checked ULBs, which necessitated their revision. Eleven ULBs did not receive Central share worth ₹45.82 crore, due to non-preparation and timely submission of DPRs. The ULBs did not conduct a realistic assessment of performance against Service Level Benchmarks. The Information, Education and Communication activities undertaken by ULBs were not adequate to ensure sustained behavioural change in the local population towards waste management.

The financial management of ULBs with respect to SWM indicates scope for improvement in utilisation of Own funds, Development (General) fund, SBM-Urban fund and Service Cess. The ULBs also need to ensure collection of User fee from public/institutions, for services rendered through Haritha Karma Sena.

The ULBs need to attend on priority basis, to the issue of effective estimation of quantity of waste generated. IEC activities need to be strengthened and financial management made more effective, to ensure efficient utilisation of available sources of funds.

2.1 Strategy and Planning for Waste Management

2.1.1 Generation and assessment of waste

The Municipal Solid Waste Management (MSWM) Manual lays down that the quantity and composition of Municipal Solid Waste (MSW) generated in the ULB determines the collection, processing and disposal options that could be adopted for waste management. For the purpose of long term planning, the average amount of waste disposed by a specific class of generators may be estimated only by averaging data from several samples to be collected continuously over seven days at multiple representative locations, in summer, winter and rainy seasons. Waste should be aggregated over the seven-day period, weighed and averaged³.

³ For short term planning, waste generated in at least 100 representative sampling locations per 1,00,000 population were to be collected to assess the waste composition. The figures were to be extrapolated to the entire ULB and divided by the population to arrive at the per capita waste generation rates.

Details of MSW generated in all 93 ULBs in the State and test-checked 22 ULBs during 2016-17 to 2020-21 are given below:

Table 2.1: Solid waste generation in ULBs

(Weight in tonnes)

	2016-17	2017-18	2018-19	2019-20	2020-21
Quantity of waste generated in 93 ULBs	Certified data not furnished	3831.55	3903.02	3521.00	3543.00
Quantity of waste generated in 22 test-checked ULBs (SPCB data)	Certified data not furnished	1584.03	1684.74	1610.00	1564.00
Quantity of waste generated in 22 test-checked ULBs (as reported by ULBs)		1278.04	1286.65	1298.79	1307.10

Audit scrutiny revealed that the ULBs did not conduct any survey to assess the quantity of waste generated in its jurisdictional area. They did not maintain data on quantum of E-waste, Bio-medical waste, Construction and Demolition (C&D) waste and domestic hazardous waste generated. The ULBs adopted per capita generation/population estimation method for assessing the extent of waste generated. The per capita generation of waste reckoned by Local Self-Government Institutions (LSGIs) was 240-350 grams/day and 300-400 grams/day for Municipalities and Corporations respectively. However, based on the survey conducted (1999-2000) by the Central Pollution Control Board (CPCB), per capita generation of waste was assumed in 2018-19 as 500g in Million Plus cities⁴ and 400 g in Class I towns⁵, whereas the Report on Strategic Environmental Assessment of Waste Management in Kerala prepared by Suchitwa Mission for Kerala Solid Waste Management Project (KSWMP) estimated (2020) per capita waste generated in Municipalities and Municipal Corporations as 419 and 545 g/day respectively.

Audit observed that none of the ULBs had followed a systematic procedure of estimation of average amount of waste generated based on samples collected in seven days each in three seasons from multiple representative locations. In the absence of a scientific estimation of waste generation as prescribed in MSWM Manual, the current planning in SWM was not adequate. Further, under-estimation of quantum of waste generated may lead to construction of facilities with inadequate capacities to meet performance standards.

Composition of solid waste

Composition of waste would determine the applicability of waste processing technology. None of the test-checked ULBs assessed composition of solid waste generated. Audit attempted a comparison of details of composition of solid waste as per WSP⁶-SWM sector assessment Report (2007), State Policy on SWM (2018) and KSWMP Report (2020) as shown in **Table 2.2:**

⁴ Cities with population of one million and above

⁵ Towns with population of one lakh and more

⁶ Water and Sanitation Programme of World Bank

Table 2.2: Details of composition of solid waste as per WSP-SWM sector assessment report, KSWMP report and State Policy

Type of solid waste	Percentage as per WSP - SWM Sector Assessment Report	Percentage as per KSWMP Report	Percentage as per State Policy
Organic waste	62	79	77
Plastics	8.69	11	4
Paper	6.94	4	6
Rag/cloth	6.73	Not mentioned	Not mentioned
Glass	3.25	0	1
Metals	2.2	0	1
Other waste	10.10	6	6
Inert	Not mentioned	Not mentioned	5

Unless a scientific assessment undertaken during a period of seven days at multiple representative locations in each of the three main seasons is adopted, inconsistencies in estimation of composition of waste would continue.

Physical and chemical characteristics of waste

Critical parameters for selecting the appropriate processing technology are quantity and characteristics *viz.*, density, moisture, calorific value, toxicity, etc. of waste. Bio-chemical characteristics of waste determine the suitability of specific treatment processes. The calorific value of garbage will help to select the treatment technologies like Waste-to-Energy and other thermal processes. However, the 22 test-checked ULBs have not assessed the physical and chemical characteristics of waste generated by them. Even Suchitwa Mission, the State nodal agency for SWM, vested with the responsibility to extend technical and financial assistance to Local Bodies for handling solid/special waste, has not conducted any study so far, to assess the quantity as well as physical and chemical characteristics of waste generated in the State.

Accepting the observation, Government replied (May 2022) that though Suchitwa Mission entered into agreement with the Socio Economic Unit Foundation (SEUF) in December 2019 to conduct such a study, the study has been put on hold due to outbreak of COVID-19 pandemic.

2.1.2 Delay in preparation of State Policy and strategy

The Secretary, Urban Development Department was to prepare a Policy and a Solid Waste Management Strategy within one year from the date of notification of SWM Rules⁷. The Hon'ble Supreme Court imposed (July 2018) a penalty of ₹1,00,000 on Government of Kerala (GoK) for failure in framing the State Policy. Subsequently, GoK notified the State Policy in September 2018. Delay also occurred in the formulation of Solid Waste Management Strategy, issued in May 2020. Delayed formulation of Policy (2018) and Strategy (2020) adversely impacted the efficacy in planning process, as detailed below:

⁷As per Rule 11(a) of SWM Rules, 2016 issued by Ministry of Environment, Forests and Climate Change

2.1.2.1 Preparation of Municipal Solid Waste Management plan

Every ULB is to prepare a Solid Waste Management Plan⁸, within six months from the date of notification of State policy. The Manual also emphasised the need to prepare a detailed SWM plan comprising long term plans of 25 years which are divided into short term plan periods of five years.⁹

The test-checked ULBs did not prepare SWM plans in the manner prescribed in the Rules. In the absence of long term/short term action plans specifying goals to be achieved, the ULBs were implementing waste management projects to address a scenario prevailing at a particular point of time or issues demanding short term remedial measures. Despite the existence of a technical support agency Suchitwa Mission, to handhold and assist ULBs in evolving a well-formulated SWM plan, the test-checked ULBs failed to formulate SWM plan to provide a framework for implementation of appropriate systems and technologies for processing and disposal of waste.

The Manual also stipulated that ULBs were to prepare contingency plans for appropriate storage of waste, to tide over situations of non-performance of processing/treatment/disposal facilities. None of the test-checked ULBs had prepared a contingency plan so far.

Government replied (May 2022) that analysis of the existing waste management system was being done based on a scientific study so as to identify the gaps in collection, storage, transportation, processing, disposal, vehicles, Operation and Maintenance, etc. It was also stated that all ULBs had approved the SWM Action Plan by the respective Councils and that SWM Action Plan and approved time schedule were being reviewed by district committees. However, no records pertaining to the scientific study were furnished to Audit. Further, the test-checked ULBs replied to Audit that no long term/ short term SWM plans have been prepared by them so far (March 2021).

2.1.2.2 Preparation of Byelaws on waste management

It is the duty of the local authority to frame Byelaws¹⁰ incorporating provisions of Waste Management Rules within one year from the date of notification of the Rules. Local authorities were to prescribe criteria for levying spot fine and delegate powers to officers or local bodies to levy spot fines on violators. Also, all waste generators shall pay such user fee for solid waste management as specified in the Byelaws of local bodies.

As per Section 572 of KM Act, 1994, no Byelaw shall have effect without Governmental confirmation¹¹. Thirteen out of the 22 test-checked ULBs did not frame Byelaws. Five ULBs framed integrated Byelaw on solid and plastic waste management. Four ULBs framed separate Bye laws on solid and plastic waste

⁸ As per Rule 15 of the SWM Rules, 2016

⁹ The five year short term plan was to be broken up into specific action plans covering aspects of institutional strengthening, community mobilisation, waste minimisation initiatives, waste collection and transportation, treatment and disposal, financial outlay, etc. to facilitate achievement of targets in the long term plan. The short term plan was to be reviewed every two or three years, to ensure mid-course correction and ease of implementation.

¹⁰vide Rule 15 of Solid Waste Management Rules, 2016, Rule 6.4 of Plastic Waste Management Rules, 2016 and Rule 4(3) of SWM Rules

¹¹ the Byelaw shall come into operation on the date of its publication in the Gazette

management. Three¹² ULBs forwarded the Byelaws to Government for approval, which is still awaited (March 2022). As such, the delay in issuing model Byelaws¹³/ approving the Byelaws by Government would contribute to the inability of ULBs in enforcing rates of penalty prescribed in the Byelaws, and their timely revision. Further, the penalty even if imposed, had no legal validity.

Government replied (May 2022) that 40 and 60 ULBs have approved Solid Waste and Plastic Waste Management Byelaws respectively. Further, ₹49.97 lakh has been collected as spot fine (2020-21) and 120 cases registered against violators. However, the reply did not indicate Government approval/ gazette publication of the Byelaws.

Delayed/ Defective preparation of Detailed Project Reports

Government of India (GoI) launched Swachh Bharat Mission-Urban (SBM-U) in October 2014; SWM was one of its components. ULBs were to prepare Detailed Project Reports (DPRs)¹⁴ for SWM in consultation with the State Government. The Government would handhold ULBs in preparing DPRs without delay, by shortlisting/identifying private or government agencies. Suchitwa Mission was the nodal agency for implementation of the scheme in the State. Audit observed the following deficiencies in the process of formulation of DPRs:

- The State High Powered Committee (SHPC)¹⁵ was constituted in October 2015, one year after issue of SBM-U Guidelines. The first SHPC (February 2016) decided in favour of individual DPRs. The State Level Empowered Committee (SLEC)¹⁶ constituted in March 2017 entrusted Suchitwa Mission with the task of technical and economic appraisal of DPRs for SWM, before submission to SLEC. DPRs approved by SLEC were to be recommended to MoHUA¹⁷. Only five meetings were held for approving DPRs. The first SLEC convened in July 2017 decided to invest GoI funds in common infrastructure¹⁸ for ULBs and entrusted Suchitwa Mission with the preparation of DPRs for setting up sanitary landfill in four districts. Based on the feedback from districts¹⁹, it was decided to prepare DPRs for individual projects so as to avoid lapse of funds; the first batch of 57 DPRs were approved by SLEC in April 2018²⁰, following which the first instalment of funds was released (June 2018) by GoI. Thus, there was procedural delay of over three years in formulation/approval of DPRs of SWM projects.

¹² Thiruvananthapuram, Kozhikode Corporations, Nedumangad Municipality

¹³ Model byelaw on SWM Rules 2016 approved by GoK in April 2022

¹⁴ As per Paragraph 7.2 of SBM-U Guidelines

¹⁵ vested with the responsibility to evaluate, scrutinise and approve DPRs

¹⁶ SLEC was designated as the State High Powered Committee in January 2017

¹⁷ Ministry of Housing and Urban Affairs

¹⁸ like sanitary landfill and recycling industries

¹⁹ which revealed that the process of identification of land for sanitary landfill and execution of infrastructure required time and might not be completed during the Mission period

²⁰ The preparation of DPRs commenced only in January 2018

- Eighty six out of 93 ULBs prepared their DPRs and got them approved by SLEC during the period 2018-2021. Of these, 82 DPRs received funds from GoI. Thus, 11 ULBs did not receive Central share worth ₹45.82 crore²¹.
- Preparation of DPRs within short duration (12 DPRs prepared by single agency²² in 50 days) resulted in non-adherence to preparation of comprehensive data regarding the existing source level waste processing facilities in ULBs, quantification of waste in three different seasons, analysis of physical and chemical characteristics of waste generated, etc. envisaged in the SWM Rules and Manual, besides necessitating revision of 31 DPRs (out of 86 DPRs approved by SLEC).
- An important step in planning process is the critical assessment of current scenario of waste management in the ULB and identification of gaps that need to be bridged. Gaps with respect to human resources, institutional capacity, infrastructure, financial resources, availability of essential data, land availability, stakeholder willingness as well as Information, Education and Communication (IEC) needs of the community were to be identified and addressed.

Audit observed that the test-checked ULBs had not assessed the existing waste management system to identify the above gaps. Though GoI issued (November 2017) a separate template for gap analysis for detecting lacunae in existing system of waste management, Suchitwa Mission did not issue instructions to the empanelled agencies to adhere to the template, while preparing DPRs. Audit scrutiny of DPRs of test-checked ULBs revealed deficiencies such as non-preparation of comprehensive data regarding the existing source level waste processing facilities in ULBs, non-conduct of gap analysis in institutional capacity, infrastructure, IEC, etc. Assessment of generation of C&D waste, domestic hazardous waste, etc. was not included in the DPRs.

The DPRs of Eloor and Angamali Municipalities had exactly similar data for road length and beat allocation of sweeping staff. Even the name of the former Municipality was seen printed in place of the latter in its DPR. Kayamkulam Municipality included eight projects for construction of Thumboormuzhi²³ units in its DPR whereas these projects had already been completed in previous years. Such instances strongly suggest that the DPRs were hastily prepared without gap analysis, possibly to avoid lapse of funds earmarked.

- Though guidelines for preparation of DPR issued by Suchitwa Mission envisaged identification of suitable land for setting up infrastructure units like Material Collection Facility (MCF), Material Recovery Facility (MRF), decentralised waste treatment units, Thumboormuzhi model aerobic bins, etc. at the time of formulation of DPRs, DPRs were approved by SLEC without ensuring land availability. Thiruvananthapuram Corporation's project for the construction of 154 Thumboormuzhi aerobic bin units and

²¹ Loss of funds to seven ULBs was on account of non-preparation of DPRs. In the case of four ULBs delay in preparation of DPRs resulted in GoI declining payment and directing to submit fresh proposals under SBM-U 2.0, to be launched in October 2021

²² Socio Economic Unit Foundation (SEUF)

²³ Aerobic compost unit known after the name of the place Thumboormuzhi in Thrissur district

Kayamkulam Municipality's project for MCF, aerobic compost and windrow compost included in the DPR without ensuring the availability of land could not be proceeded with, as no land was identified (November 2021).

- As per SBM-U Guidelines, litter control interventions and dumpsite remediation and Operation and Maintenance arrangements should necessarily be integrated in the DPR. However, these were not included in the DPRs prepared by 20²⁴ test-checked ULBs. Though Kayamkulam Municipality included project for dumpsite remediation in the DPR, no detailed plan was prepared and action initiated so far (January 2022). Eight community level biogas plants installed by Thiruvananthapuram Corporation turned defunct as O&M arrangements were not taken care of.
- Though District Level Monitoring and Review Committees (DLMRCs) were constituted (December 2015), the Committees in the five districts²⁵ in which test-checked ULBs were located, never met. Key responsibilities entrusted *viz.*, ensuring the implementation of programmes in accordance with the guidelines, monitoring of physical/ financial progress, reviewing bottlenecks and suggesting solutions, etc. remained unattended.

Government responded (May 2022) that owing to the need for early submission of DPRs, ULBs prepared DPRs on the assumption that they could identify/purchase land within the mission period. However, several roadblocks occurred which resulted in non-implementation of such projects. The reply is suggestive of the lax approach of the ULBs and Suchitwa Mission in timely preparation of DPRs. Undue delay reflected adversely upon timely discharge of core tasks from segregation till disposal of waste. Government also informed that O&M arrangements as required in all projects would be followed up and incorporated in new DPRs.

2.1.3 Institutional setup

2.1.3.1 Non-constitution of SWM Cell

For planning an effective and advanced Municipal SWM system, it is essential to have an efficient institutional structure along with adequate infrastructure and equipment. Section 1.4.5.4 of MSWM Manual, 2016 strongly recommends that ULBs should have SWM Department/Cell having staff with technical and managerial skills specific to Municipal SWM.

Contrary to the above, none of the test-checked ULBs had a dedicated SWM Department/Cell with staff possessing technical and managerial skills specific to MSW management. In all the ULBs, the Health wing, headed by the Health Officer who was a Doctor/Health Supervisor/Health Inspector managed SWM activities, over and above the health related responsibilities assigned to him. Though Thiruvananthapuram and Kochi Corporations had engaged an Environmental Engineer each on contract basis, they were not assigned managerial functions. An exclusive SWM Cell endowed with adequate staff

²⁴ Kochi and Kozhikode Corporations did not prepare DPRs

²⁵ Thiruvananthapuram, Alappuzha, Ernakulam, Malappuram, Kozhikode

skilled in SWM, could attend to the functions and responsibilities wrt. implementation of waste management in a professional and obligated manner.

Government replied (May 2022) that KSWMP would provide qualified waste management professionals in every ULB.

2.1.3.2 Service level benchmarks

The Ministry of Urban Development (MoUD), Government of India, launched (2008) the Service Level Benchmarking (SLB) initiative covering water supply, waste water, SWM and storm water drainage. A common minimum framework was prescribed for monitoring and reporting on performance indicators, of which eight performance indicators pertained to SWM. Analysis of SLB declarations (2018-19) by 22 test-checked ULBs *vis-à-vis* targets and benchmarks in respect of these performance indicators and assessment by Audit on the basis of details furnished by ULBs (2020-21) are shown in **Appendix 1**. The results flowing from the above analysis were as follows:

- In accordance with the State policy of source level treatment of waste, the test-checked ULBs²⁶ did not collect biodegradable waste from households. They declared their SLBs on daily door-to-door collection and efficiency of collection of Municipal Solid Waste on the basis of extent of collection of plastic waste from households. Audit observed that actual door-to-door collection of plastic waste and efficiency of collection in respect of most of the ULBs were significantly low compared to their declared levels.
- Though SLB on extent of segregation of waste were declared by test-checked ULBs, Audit noticed that these ULBs did not record the quantum of waste segregated.
- Despite the State not possessing scientific landfill to dispose the inert waste, the test-checked ULBs declared SLB on the disposal of waste in landfills.
- The test-checked ULBs declared to have achieved 70 to 100 *per cent* target against SLB on complaint redressal. However, Audit observed that only Thiruvananthapuram Corporation had an online system in place to receive complaints. The remaining ULBs did not even maintain separate registers to record the complaints relating to waste management.

As such, there was no verifiable data to substantiate the SLB scores recorded by ULBs, raising concerns regarding the veracity of scores assigned. During the exit conference (May 2022), it was stated that Government have taken note of the discrepancy in SLB declarations by ULBs, for rectification.

2.1.4 Role of informal waste collectors in waste management

The MSWM Manual, 2016 and SWM Rules, 2016 acknowledged the primary role played by the informal sector of waste pickers, waste collectors and recycling industry in reducing waste. The State Policy (2018) stipulated that LSGIs shall establish a system to recognise organisations of waste pickers or informal waste collectors and provide for integration of these workers into the formal SWM system, to enable reduction of overall system costs, provide support to the local recycling industry, and create new job opportunities.

²⁶ Other than Kochi and Kozhikode Corporations, Perinthalmanna and Aluva Municipalities

However, Audit observed that the State Government has neither addressed the need for integrating the informal sector with waste management system in the Strategy document issued in 2020, nor issued any guidelines in this regard till date.

The following observations were made by Audit on the functioning of the informal system of waste collection:

- There was no system in place to monitor the quantity and type of waste handled by scrap dealers or to ensure their proper storage and disposal. During joint physical verifications in 42 scrap shops in 15 test-checked ULBs, Audit noticed that 31 unauthorised scrap dealers were functioning in eight²⁷ ULBs, and that the ULBs could not furnish any details regarding the nature of waste collected by them, mode of transportation and disposal sites. As the waste collected by these scrap dealers include hazardous objects and harmful elements which are not environment-friendly, negligence in their mode of storage and disposal may cause health hazards. Further, Audit also noticed instances of scrap material collected by the scrap dealers being transported out of the State, which was not being monitored by ULBs.
- Implementation Guidelines for E-waste (Management) Rules, 2016 state that loading, transportation, unloading and storage of end of life product should be carried out without any damage to health, environment and to the product itself.²⁸ However, joint physical verification with officials of ULBs at scrap dealer shops in Thiruvananthapuram and Kozhikode Corporations and Koyilandy, Kayamkulam, Mavelikkara, Angamaly, Aluva and Vadakara Municipalities revealed e-waste requiring careful handling such as computer monitors, television sets, refrigerators, electricity cable/wires, etc. lying scattered in the open among collected scrap items, without any environmental or health safeguards. An adverse impact of collected e-waste/hazardous waste left exposed without mandated safeguards at Killippalam in Thiruvananthapuram Corporation was that, the accumulated quantity of plastic/hazardous waste by unauthorized scrap dealer led to a fire outbreak in January 2022.



Debris of plastic/hazardous waste after a fire outbreak in January 2022 at an unauthorised collection centre of a scrap dealer at Thiruvananthapuram Corporation (April 2022)

²⁷ Vadakara, Koyilandy, Malappuram, Neyyattinkara and Feroke Municipalities and Kozhikode, Kochi, Thiruvananthapuram Corporations

²⁸ The collection centres were to ensure that the e-waste collected by them was stored in a secured manner till it was sent to authorised dismantler or recycler. Cathode Ray Tubes, LCD/LED/ Plasma Televisions, Air Conditioners, fluorescent and other mercury containing lamps needed to be handled with special care to avoid breakage. Further, no damage was to be caused to the environment during storage and transportation of e-waste.

- While issuing Dangerous and Offensive (D&O) trade licence to scrap dealers, the test-checked ULBs did not specify the nature of waste the dealers were authorised to collect, nor ensure that they had a formal agreement with an authorised recycler/dismantler/refurbisher. The ULB or Pollution Control Board did not prohibit scrap dealers from collecting e-waste which led to these dealers collecting and storing e-waste without authorisation of PCB and in violation of E-Waste Management Rules, 2016. Suchitwa Mission/ ULBs/ PCB did not take any action to prevent illegal scrap dealing and transporting and to organise the scrap dealers under the SWM system, to ensure scientific management of waste.

During the exit conference (May 2022) Government informed that it had taken note of the audit finding, and decided to initiate the process of registration of informal sector and to bring into effect, regulatory intervention.

2.1.5 Information, Education and Communication activities

In accordance with the provisions of SWM Rules, 2016 and Manual on MSWM, 2016, Information, Education and Communication (IEC) activities were to be undertaken by Government/ULBs to make people understand the concept and need for segregation and storage at source, role of citizens in primary collection and handing over of waste for reuse, recycle or recover, need for paying user fee for collection/disposal services and mitigating the impact of solid waste on public health and environment. The State policy envisaged for preparation of IEC plan at the State, district and LSGI level, towards educating the citizens on areas of key behavioural change. However, the State/district/ULB level IEC strategy or plan has not been prepared so far.

Under SBM-U, Suchitwa Mission transferred ₹1.57 crore to 22 test-checked ULBs during the period from 2015-16 to 2019-20, for conducting IEC activities. However, test-checked ULBs spent only ₹64.49 lakh (41 *per cent*) till March 2021, indicating the low priority assigned to IEC activities.

Audit noticed the following deficiencies in IEC activities in test-checked ULBs:

- Thirteen out of 22 test-checked ULBs have not conducted any IEC activity on importance of source level segregation and source level processing of biodegradable waste.
- Test-checked ULBs neither notified nor publicised the list of domestic hazardous waste which included both toxic and bio-medical waste.
- No specific IEC activities were planned or conducted on e-waste segregation or Extended Producer Responsibility (EPR) by test-checked ULBs. This resulted in e-waste reaching the processing facilities/hands of scrap dealers and consequent unauthorised dismantling of the same.
- Seventeen test-checked ULBs did not create awareness on provisions regarding levy of penalty²⁹ for littering/dumping of waste in public places and water bodies.
- No IEC activities enlightening the public on the hazards of burning and burying solid waste were seen undertaken by 15 out of 22 test-checked ULBs.

²⁹ Section 334 of KM Act, 1994 and Executive Directive No.9/2016 of the Police Department issued on 04 November 2016

Good Practices

Eloor and Parappanangadi Municipalities promoted awareness on not to burn, not to litter through murals and advertisements exhibited on the body of buses



Government replied (May 2022) that all ULBs have conducted IEC activities by direct intervention through ward level sanitation committees, people’s campaign, seminars, video programmes, signboards, advertisements in bus shelters, etc.

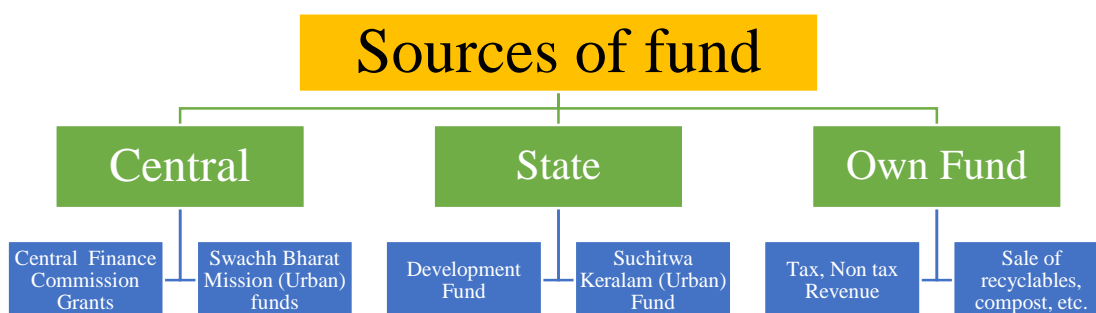
However, Audit observed that the State had not set any targets for IEC, either in terms of activities to be undertaken or allotment of funds. IEC campaign is not to be restricted to a single time activity, as constant communication with the community and all relevant stakeholders is necessary to bring about a sustained behavioural change among the citizens in managing their waste. Rampant use of banned plastic carry bags, burning of waste even by ULB staff, littering and dumping of waste in public places, poor segregation of waste, etc. underscore the need to intensify IEC activities.

2.2 Financial Management

2.2.1 Source of funds for waste management

The resource base of LSGIs consists of Own revenues, Central Finance Commission (CFC) grants, Central Government grants and funds devolved by State Government for traditional functions (General Purpose Fund), maintenance of assets (Maintenance Fund) and development purposes (Development Fund) as per the recommendations of State Finance Commissions. Various sources of funding for Waste management in ULBs are depicted in **Chart 2.1**:

Chart 2.1: Sources of funding for Waste Management in ULBs

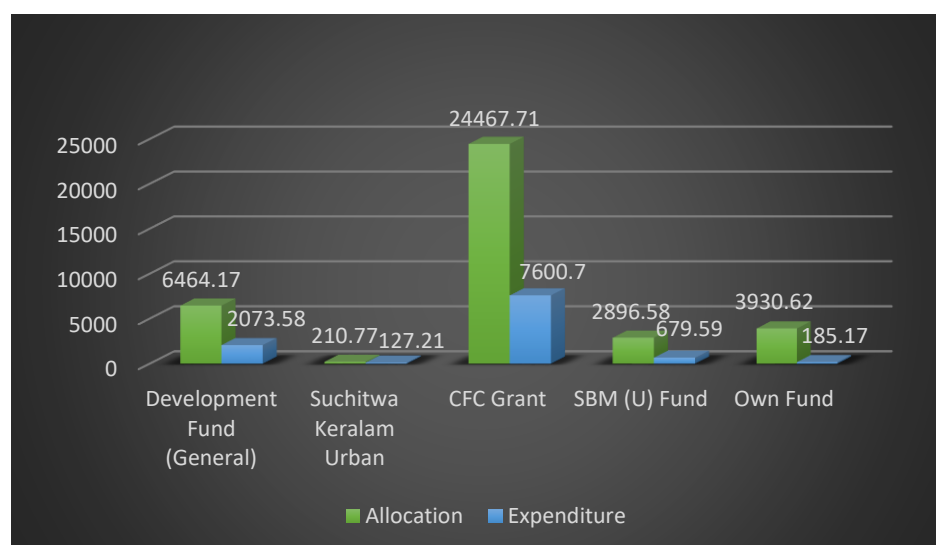


Scrutiny of financial statements of 22 test-checked ULBs revealed that ULBs depended mostly on Government grants for meeting their expenditure on waste management with respect to cost of land, Plant and machinery, daily expenses on MSWM, Operation and Maintenance cost, refurbishment cost, contingent expenditure, etc. The dependency on Government grants to meet expenses on waste management ranged from 94 to 100 *per cent* (**Appendix 2**).

2.2.2 Expenditure on Waste Management by test-checked ULBs

Allocation and expenditure of various funds for SWM during 2016-2021 are depicted in **Chart 2.2**:

Chart 2.2: Allocation and expenditure incurred by test-checked ULBs on Waste Management during 2016-2021 (₹ in lakh)



It is evident that ULBs are completely dependent on Central and State assistance for executing the mandatory functions relating to Solid Waste Management (SWM). The spending efficiency out of central and state assistance was 30.79 *per cent* only, which was significantly low. Of ₹ 244.68 crore of CFC grant allocated during 2016-21, only ₹ 76.01 crore (31.07 *per cent*) could be spent. There is an urgent need for ULBs to step up the utilisation of Central/State funds and own funds allotted for waste management activities.

2.2.3 Allocation and Utilisation of funds for SWM

2.2.3.1 Development fund

Government of Kerala issued orders (June 2016) for mandatory allocation of 10 *per cent* of Development Fund (General) for waste management activities. However, the Government lifted (April 2017) the mandatory clause and directed local bodies to allocate 15 *per cent* of Development Fund (General) to Haritha Keralam Mission projects, by assigning priority to waste management. In February 2018, ULBs were further directed to mandatorily allocate 20 *per cent* of Development Fund (General) for LIFE³⁰ Mission projects and at least 15 *per cent* of the remaining fund for Haritha Keralam Mission projects for waste management and water conservation.

Actual expenditure incurred (2016-21) on waste management by the test-checked ULBs was very low, as against the above stipulations of Government, the details of which are shown in **Table 2.3**:

Table 2.3: Expenditure for waste management by test-checked ULBs out of Development fund (General) during 2016-2021

Year	Total Development fund (General) available (₹ in lakh)	Percentage to be expended on waste management	Fund to be allocated (₹ in lakh)	Actual allocation (₹ in lakh)	Actual expenditure incurred (₹ in lakh)	Percentage of actual expenditure out of total fund available
2016-17	31365.17	10	3136.52	1630.26	198.04	0.63
2017-18	35858.52	15	5378.78	1560.30	498.82	1.39
2018-19	41437.45	12	4972.49	1351.07	325.28	0.78
2019-20	30780.39	12	3693.65	568.87	146.65	0.48
2020-21	54412.87	12	6529.54	1353.67	904.79	1.66

(Source: Data from test-checked ULBs)

Against the mandatory utilisation of 10-15 *per cent* of funds, test-checked ULBs utilised only 0.48-1.66 *per cent* for waste management. The number of ULBs with zero allocation of Development fund (General) ranged from one to six each year. The meagre amount expended on a core function devolved to ULBs is indicative of the reluctance of ULBs to take up new projects for waste management.

2.2.3.2 Utilisation of SBM (Urban) fund

During the period 2018-21, 22 test-checked ULBs received fund amounting to ₹28.97 crore as first instalment for implementation of projects under SBM-U. Utilisation by test-checked ULBs are detailed in **Table 2.4**:

³⁰ Livelihood Inclusion and Financial Empowerment, the flagship housing project of Government of Kerala

Table 2.4: Receipt and utilisation of SBM-U Fund during 2018-21

(₹ in lakh)

Year	Amount received			Corres- -onding ULB share (41.7%)	Total Receipt	Expenditure out of				
	Central share (35%)	State share (23.3%)	Total Central and State share (58.3%)			Centr al share	State Share	Total Central and State share	ULB share	Total Expendit ure
2018-19	665.4	442.97	1108.37	792.78	1901.15	2.55	1.69	4.24	3.01	7.25
2019-20	111.81	74.43	186.24	133.21	319.45	64.15	94.4	158.55	41.49	200.04
2020-21	961.74	640.24	1601.98	1145.84	2747.82	317.31	199.49	516.8	708.59	1225.39
Total	1738.95	1157.64	2896.59	2071.83	4968.42	384.01	295.58	679.59	753.09	1432.68

(Source: Data from test-checked ULBs)

Though SBM-U guidelines envisaged preparation of DPRs and availing funds for implementation of DPR components within the Mission period³¹, ULBs could spend only 23.46 per cent³² of the State and Central share, as of 31 March 2021. Lapses in timely preparation and approval of DPRs which eventually resulted in loss of central assistance of ₹ 45.82 crore have been commented upon in this Report. As the projects approved were mainly capital in nature, reduced expenditure and delayed implementation of projects would adversely affect long term sustainable solutions for SWM.

2.2.3.3 Meagre Utilisation of Own funds for SWM Projects

Own funds consist of tax and non-tax revenue collected by ULBs as per provisions of Kerala Municipality Act, 1994 and allied Rules. Of the total Own funds amounting to ₹ 39.31 crore allocated for SWM during the audit period, the test-checked ULBs utilised ₹ 1.85 crore only, which was a meagre 4.71 per cent. Audit observed that the test-checked Municipalities³³ had Own fund balance above ₹ one crore whereas test-checked Corporations had Own funds ranging from ₹13.75 crore to ₹259.26 crore during the audit period. However, 14 ULBs did not utilise any amount from their Own funds for implementing SWM projects during the audit period. Percentage of utilisation of the remaining eight ULBs³⁴ was only up to 5.34. Despite being endowed with sufficient own funds, these ULBs were lackadaisical in allocating and utilising enhanced share of funds for effective management of waste.

2.2.3.4 Poor utilisation of Service Cess

Rule 27 of Kerala Municipality (Property Tax, Service Cess and Surcharge) Rules, 2011 allows Council of the Municipality to levy four per cent Service Cess on property tax for providing services including general sanitation and safe removal of solid waste such as rubbish, carcasses of animals, etc. provided the buildings assessed were not otherwise exempted under section 235 of KM Act. It was seen that only 14 ULBs collected Service Cess for SWM among the test-checked ULBs. The ULBs did not maintain separate account for depositing

³¹ ending on 02 October 2019

³² 679.59/2896.59

³³ Other than Aluva

³⁴ Thiruvananthapuram Corporation, Nedumangad, Eloor, Maradu, Parappanangadi, Perinthalmanna, Nilambur, Feroke Municipalities

Service Cess collected and deposited the amount in its Own fund account along with other receipts. Audit observed that even the extent of utilisation of Own fund for SWM projects was significantly lower than the amount collected as Service Cess, during the audit period.

The extent of utilisation of Own funds for SWM projects as against Service Cess collected by 14 test-checked ULBs is shown in **Table 2.5**:

Table 2.5: Collection and utilisation of Own Funds as against Service Cess collected by 14 test-checked ULBs

Year	Service Cess collected for sanitation and waste management (4 per cent of property tax) (₹ in lakh)	Own fund utilised for SWM (₹ in lakh)	Percentage of utilisation of Own fund for SWM as against Service Cess collected
2016-17	78.80	0.98	1.24
2017-18	103.74	0.01	0.01
2018-19	421.99	1.38	0.33
2019-20	396.82	86.88	21.89
2020-21	444.73	95.93	21.57
Total	1446.08	185.18	12.81

(Source: Data from 14 test-checked ULBs)

As against the Service Cess amounting to ₹14.46 crore collected by 14 ULBs towards general sanitation and waste management during the audit period, the total expenditure on SWM projects out of Own funds was ₹1.85 crore (12.81 per cent) only. The remaining eight ULBs³⁵ did not even collect Service Cess. This indicates the lack of priority given to tapping of additional funds for waste management by ULBs.

2.2.3.5 User fee

The MSWM Manual defines user fee as a fee imposed through a Byelaw by the ULB on the waste generator. Haritha Karma Sena (HKS)³⁶ was entrusted with the responsibility of collecting user fee from individual households/institutions for the services offered to them. The LSGI, in consultation with the Community Development Society (CDS) of Kudumbashree, was to fix the rate of user fee to be collected by HKS. The fee was to be deposited in HKS Consortium account and used along with other funds³⁷, for meeting expenses in connection with various activities undertaken, including collection of bio/non-biodegradable waste, beautification of premises, etc. It was observed that HKS in test-checked ULBs did not collect user fee on a regular basis from households and institutions in their jurisdiction. The percentage of collection of user fee in these ULBs ranged from zero³⁸ to 35.89³⁹ only.

³⁵ Kochi, Kozhikode Corporations and Angamali, Malappuram, Koyilandy, Kothamangalam, Manjeri, Feroke Municipalities

³⁶ formed (July 2017) by Government of Kerala as a decentralised solution to the problem of waste management

³⁷ Income generated from sale of non-biodegradable waste to agencies, conduct of festivals/celebrations, sale of bio compost, kitchen bins, etc.

³⁸ Mavelikkara Municipality

³⁹ Feroke Municipality

Audit attempted to roughly estimate the potential revenue that could be generated, if ULBs ensured collection of user fee as directed by Government (**Appendix 3**). It was observed that, in prompt collection of user fee at prescribed rates lay a major untapped source of funds for execution of waste management activities.

Government stated in the exit conference (May 2022) that it was intervening significantly in this area by providing Viability Gap Funding to ensure that the waste collectors in field were able to sustain themselves. Government have also conducted an assessment of how much income was generated on a monthly basis by HKS and observed mixed results with respect to revenue collection. It was also informed that there were many instances wherein people refused to pay user fee even when waste was being collected from them. The reply of Government underscores the need to instill favourable attitude in public towards payment of user fee for services availed.

Recommendation 1: 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 2: 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 3: 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, desist from littering in public spaces, etc.

Recommendation 4: 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 5: Government must consider fixing a mandatory minimum percentage of expenditure to be incurred exclusively on solid waste management by the Local Self Government Institutions.