



CHAPTER-VIII
CONCLUSION AND
RECOMMENDATIONS

Chapter- VIII

Conclusion & Recommendations

8.1 Conclusion

Based on the analysis in the preceding paragraphs, Audit concludes that the function of Municipal Waste Management in the state of Meghalaya is severely hampered due to weak institutional mechanism that is manifested in none of the multiple agencies involved in this process being compliant with the responsibilities assigned to them under the Meghalaya SWM Rules. SWM functions are further hampered by the fact that though a state wise policy has been put in place, none of the agencies involved, *i.e.* Municipal Boards, Cantonment Board (in Shillong) and Autonomous District Councils had formulated their Bye Laws respectively. The Town Committees were found to be practically non-existent as a result of which habitations covered under the census towns were completely deprived of functional waste management systems. At the government level, Urban Affairs department was hamstrung with lack of data on municipal waste generation to be in any position to take effective policy based initiatives to handle the municipal waste scientifically and effectively. Periodic Surveys for assessment of waste generation was not conducted in the test checked ULBs/Town Committee except in Shillong. As a result, inaccurate methods of evaluation such as per capita estimation and estimation of quantity of transported waste was adopted in Tura and Jowai. Data was unavailable for Nongpoh Town with regard to waste generation, segregation, collection, and disposal from 2017-18 to 2020-21. Similarly, MSPCB's role making effective intervention in controlling pollution in and around dumping ground seemed ineffective since it had no reliable data on waste generated and collected.

Waste Management Plans (either short term or long term) were not prepared in the test checked ULBs/Town Committee except for Shillong Municipal Area, where a City Solid Waste Action Plan had been prepared by the Shillong Municipal Board (SMB) but the same was still awaiting approval. A contingency plan was neither envisaged in the Meghalaya State Waste Management Policy and Strategy nor addressed by any of the test checked ULBs/Town Committee. These delays in preparation and approval of requisite legislations and plans had inhibited the implementation of SWM activities. Further, shortage of supervisory staff in the Municipal Boards and Town Committees as well as lack of trained staff for collection and transport of municipal waste resulted in unscientific management of municipal waste in the urban areas.

Analysis of financial resources for the solid waste management in Meghalaya has brought out that over a period of previous five years, bulk of the financial resource

has been received under the Asian Development Bank's external funded project of NERCCDIP. However, the NERCCDIP funding agreement being for a period of 10⁷² years and for specified activities, this remained a finite source of fund. The Municipal Boards were unable to meet even the operational costs of collection and disposal of municipal waste due to poor collection of user charges. In the absence of any significant budgetary support from the state government, and lack of own funds in the Municipal Boards, the SWM activities in Meghalaya suffer from paucity of funds.

Segregation of waste at different levels was either absent or partial in all the test-checked ULBs. Segregation of domestic hazardous waste was not done and sanitary waste was not collected separately. Hence, mixed waste was transported to landfills. Household bins for source segregation were purchased and distributed only in Shillong and Jowai but not in Tura and Nongpoh. Even though bins were distributed in Jowai, source segregation of waste had not yet been carried out.

During joint physical verification, majority of the workers handling waste were not utilising the available safety equipment even though protective gears were procured by the ULBs. The vehicles were not covered during transportation resulting in foul odour emanating from the uncovered waste. None of the available vehicles were equipped with Management Information Systems such as GPS and GIS, due to which tracking of transportation vehicles was not carried out.

Processing of municipal waste and its scientific disposal have emerged as the weakest links in the state's solid waste management system. In Shillong urban areas only 20 *per cent* of waste collected was processed through composting plants while in other urban areas the extent of waste processing was negligible. The grave situation of solid waste processing and disposal was caused by two key factors, namely, one that most of the municipal waste ended up in landfill sites untreated, and two, that the landfill sites were either grossly inadequate to handle the burden on dumping or were entirely absent, resulting in dumping of untreated waste in ad hoc dumping sites.

The value chain in solid waste management was practically non-existent as composting was unsuccessful due to poor waste segregation practices. Failure to make the compost plant functional under SWM project rendered the expenditure incurred on these plants unfruitful. Little incentive was visible for informal sector to be involved in waste segregation.

Health care institutions were functioning without authorisation and unauthorised disposal of biomedical waste and e-waste was observed in TMB. SMB was imposed a fine amounting to ₹0.82 crore as Environmental Compensation by the CPCB due

⁷² Tranche 1- Date of loan agreement-04.08.2009, Loan closing date-22.06.2019.
Tranche 2- Date of loan agreement-19.11.2012, Loan closing date-22.06.2019.

to non-compliance to BMW Rules 2016. The accuracy and reliability of data in the annual reports submitted with regards to BMW was not verified by MSPCB. Similarly, annual reports submitted by ULBs regarding plastic waste generation were found to be inconsistent with the data generated by CPCB. In addition, the list of bulk generators of e-waste maintained by MSPCB did not include various central and state offices and other institutions and an inventory of e-waste generation was not maintained. There are only three registered Producer Responsibility Organisation (PROs) for collection of e-waste in Meghalaya. Infrastructure for the efficient management of Plastic waste and C&D waste was non-existent in all the test checked urban areas.

8.2 Recommendations

Recommendation 1: The State Government may ensure that the required Bye laws under the Solid Waste Management Rules, 2016 are framed and implemented by the ULBs and ADCs in the State. The State Government may take up the matter with Shillong Cantonment Board for effective implementation of the SWM Act and Rules.

Recommendation 2: The Urban Affairs Department needs to assist ULBs/ local traditional bodies involved in SWM for preparation of Long-term, Mid-term and Short-term action plans to enhance the efficacy of solid waste management.

Recommendation 3: The Urban Affairs Department should encourage and promote involvement of informal sector in solid waste management (SWM) activities to increase efficiency of SWM.

Recommendation 4: Considering the intricate administrative framework encompassing agencies engaged in solid waste management (SWM) activities within urban areas of Meghalaya, it is imperative for the State Government to establish robust coordination among these entities and ensure vigilant monitoring of the diverse provisions pertaining to SWM.

Recommendation 5: Necessary steps should be taken for augmentation of sustainable financial resources of the Municipal Boards including system of collection of user charges and for strengthening their administrative capacity by recruiting the required manpower and imparting regular training to them to improve efficiency and effectiveness in solid waste collection, transportation and processing.

Recommendation 6: The State Government should encourage segregation of waste at source by devising a system for incentivising waste generators and collectors

for proper segregation of waste and through public awareness campaigns and regular meetings with local traditional bodies, group housing associations, and NGO.

Recommendation 7: Municipal Boards may consider option of installing community waste bins for collection of waste in a segregated manner apart from providing bins to each household.

Recommendation 8: ULBs should sensitise workers involved in handling waste to ensure compliance to occupational health and safety protocols by wearing safety gear and other protective equipment.

Recommendation 9: The vehicles procured should be suitably designed to collect and transport segregated waste efficiently so as to prevent mixing of segregated waste during various stage of SWM.

Recommendation 10: The State Government needs to urgently acquire suitable land for establishing modern SWM facilities and sanitary landfill to mitigate the risk of public health disasters and soil and water pollution.

Recommendation 11: Responsibility needs to be fixed for non-completion compost plant at Nongpoh & Tura and under-utilisation of the compost plant at Shillong.

Recommendation 12: The State Government should expedite preparation of State policy on C&D waste without any further delay.

Recommendation 13: The MSPCB needs to ensure that all health care facilities obtain necessary authorisation for their functioning and adhere to the BMW Rules.

Recommendation 14: The State Government must promote awareness and adherence to e-waste management regulations to ensure that e-wastes are exclusively channelled through authorised Producer Responsibility Organisations (PROs). Additionally, the MSPCB should maintain a database of bulk generators and an inventory of e-waste.

Recommendation 15: Greater emphasis needs to be placed on proper disposal of e-waste to minimise the risk of toxic pollutants contaminating the soil, air, water

bodies, etc. and sensitise the public at large about benefits of disassembling, repairing and recycling of e-waste.

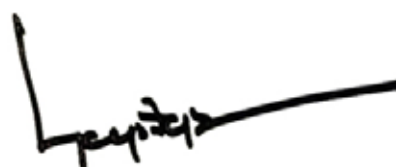
Recommendation 16: The MSPCB should analyse the data/information in the reports submitted by ULBs/ other bodies before compiling and forwarding to CPCB since unreliable data is likely to result in incorrect/skewed action taken by the management. They should also ensure timely submission of reports vis-à-vis various waste management rules by repeated follow up.

Shillong
The: 05 August 2024



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Principal Accountant General (Audit), Meghalaya

Countersigned



New Delhi
The: 07 August 2024

(Girish Chandra Murmu)
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