

CHAPTER - I
INTRODUCTION
AND
AUDIT FRAME WORK

CHAPTER-I

Introduction and Audit frame work

1.1 Introduction

Wastes are materials which have no further use for production, transformation or consumption, and which are required to be disposed. Wastes are generally classified into solid waste, bio-medical waste (BMW), construction and demolition Waste (C&D), E-waste, plastic waste, hazardous waste *etc.*, by virtue of their nature. They are also classified as biodegradable, non-biodegradable, combustible, dry and inert based on their characteristics.

Waste Management in urban areas has emerged as one of the biggest challenges that our Municipalities faces today. The situation has been aggravated by rapid urbanisation. Eliminating dumping and minimising release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally is one of the targets set in Sustainable Development Goals (SDGs). Inadequate management of waste has significant negative externalities in terms of public health and environmental outcomes. Besides, it has an adverse impact on the aesthetic appearance of the surroundings.

There are 114 Urban Local Bodies (ULBs) responsible for implementation of the Solid Waste Management Rules, (SWM) 2016 in the State. The estimated solid waste generation in these ULBs was 2,208.60 Tonnes Per Day (TPD) during 2019-20. Out of the above, 2,123.30 TPD of waste was collected and 202.40 TPD was processed. **There was no sanitary landfill in the State and dumping of solid waste is being done in open area.**

Out of 45,339.40 Tonnes Per Annum (TPA) of plastic and 1,646 TPD of C&D waste generated, 45,055 TPA of plastic and 1,646 TPD of C&D waste was disposed to landfill. **As there was no authorised recycler or refurbisher in the State, the information on e-waste recycled out of 396.77 Tonnes per month generated was not available with the State Pollution Control Board.**

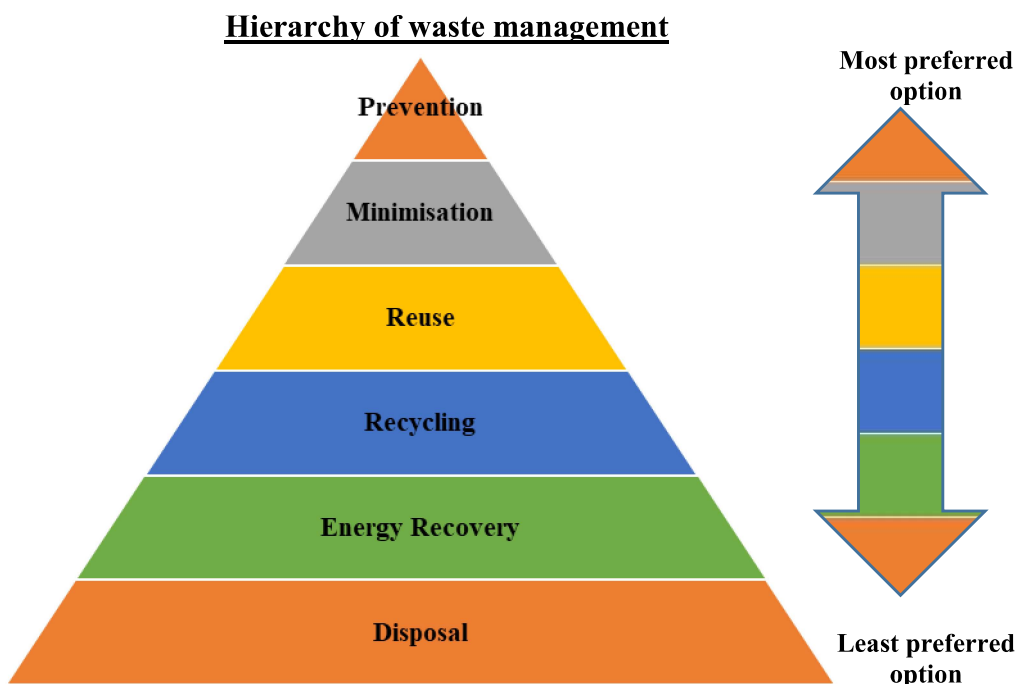
Out of 179.93 TPD of BMW generated, 174.06 TPD was processed and 5.87 TPD was not processed in 2019-20.

Environment (Protection) Act, 1986, provides a legal framework for disposal and management of waste. Guidelines for preparation of comprehensive plan for the prevention, control or abatement of pollution by using scientific¹ waste management methods have been issued by Government of India (GoI) from time to time. The Ministry of Environment, Forests and Climate Change (MoEFCC) notified (September 2000) the Municipal Solid Waste (Management and Handling) (MSW) Rules, 2000. The Solid Waste Management Rules, 2016 superseded MSW Rules, 2000. Section 221 of the

¹ Scientific disposal of solid waste would be to first segregate the waste into bio-degradable and non-degradable materials. The sanitary workers would be trained to collect the waste materials with due segregation at source. The bio-degradable materials are converted into compost/manure through MCC /vermin compost plants. The non-bio-degradable materials are to be sent to sanitary landfills to cover with thin layer of earth. GoO has mandated the above procedure from July 2019

Odisha Municipal Act 1950 and Section 339 to 345 of the Odisha Municipal Corporation Act, 2003 mandate scientific management of solid waste as an obligatory function of the ULBs. The thirteenth and fourteenth Finance Commissions of GoI and 4th State Finance Commission (SFC) also identified solid waste as one of the core sectors of civic services in Urban Sector besides water supply, sewerage and storm water drainage. Municipal Solid Waste (MSW) Rules 2000 envisages that every municipal authority shall be responsible for collection, segregation, storage, transportation, processing and disposal of solid waste. The basic principle to be adopted for managing waste is the hierarchy of 3Rs² i.e., Reduce, Reuse and Recycle.

This Performance Audit would attempt to obtain assurance on the above laid down principles. Solid waste is a challenging issue since inefficient waste collection services have an impact on public health and aesthetics of towns and cities. With the solid waste generation increasing with time, the importance of recycling needs to be recognised and given due importance. The mostly widely accepted waste management hierarchy is depicted below:



² 3Rs: Reduce- to avoid unnecessary waste generation, Reuse- to use again, and Recycle- to convert unwanted things into useful and marketable recycled products

1.2 Process of Waste Management

The process of waste management is depicted below:



Schedule II of the MSW Rules 2000 provides for segregation, storage, collection, transportation, processing and disposal of municipal solid waste for proper management of solid waste.

The waste that is generated should be segregated and collected at source. Thereafter, it should be transported and processed in accordance with the principles of 3Rs. The inert material remaining after processing has to be safely disposed. The process of segregation to disposal of waste management is the responsibility of the ULBs.

1.3 Organisation set up

The Principal Secretary of Housing and Urban Development Department (H&UDD) is responsible for implementation of the MSW Rules in the State. The Additional Chief Secretary, Forest, Environment and Climate Change Department is responsible for monitoring the compliance of the standards as prescribed under MSW Rules, assisted by State Pollution Control Board (SPCB) with 12 Regional Offices³ in the State. SPCB is the prescribed authority to grant authorisation and oversee the implementation of the Rule in 114 ULBs in Odisha (5 Municipal Corporations, 45 Municipalities and 64 Notified Area councils (NACs)). The organisational structure with respect to functioning of ULBs in the State is given in **Appendix-I**.

³ Angul, Balasore, Berhampur, Bhubaneswar, Cuttack, Jharsuguda, Kalinganagar (Jajpur Kalinganagar Road), Keonjhar, Paradeep, Rayagada, Rourkela, and Sambalpur

1.4 Audit Objectives

The Performance Audit was conducted to assess whether:

- Strategy and planning of solid waste management in ULBs is commensurate with the wastes generated and concurrent with the prevailing legal frame work;
- Municipal tasks associated with solid waste management including collection, segregation, storage, transportation, disposal and social inclusion of informal waste workers were effective, efficient and economical;
- Planning, construction, commissioning, operation and maintenance of waste management projects in ULBs was effective, efficient and financially sustainable, and
- Monitoring and evaluation of waste management system including adequacy of awareness creation, citizen engagement for effecting behavioural change, complaint, redressal mechanism for citizens, assessment of environmental impacts and implementation of the “internal control and monitoring mechanism” was adequate and effective.

1.5 Audit Criteria

The following were the audit criteria:

- The Odisha Municipal Act, 1950
- The Odisha Municipal Corporation Act, 2003
- Manual of Municipal Solid Waste Management, 2000 and 2016 issued by GoI and Municipal Solid Waste (Management and Handling) Rules, 2000 and 2016;
- E-waste (Management) Rules, 2016;
- Plastic Waste Management Rules, 2016;
- Construction and Demolition Waste Management Rules, 2016;
- Biomedical waste Management Rules, 2016;
- The Environment (Protection) Act and Rules 1986;
- Water (Prevention and Control of Pollution) Act, 1974 ;
- Odisha Sanitary Policy, 2017;
- National Green Tribunal (NGT) Orders
- Swachha Bharat Mission guidelines;
- Instructions, guidelines, policies issued by Central Pollution Control Board (CPCB), SPCB, and GoI/GoO on waste management from time to time.

The regulatory framework governing the management of different types of waste is indicated in **Appendix-II**.

1.6 Audit scope and methodology

The Performance Audit on Waste management in urban areas was carried out during December 2020 to March 2021 and from July 2021 to September 2021 due to pandemic situation. The period of Audit coverage was from 2015-16 to 2019-20. It involved examination of the records relating to solid waste and plastic waste, E-waste, BMW and C&D waste. Out of 114 ULBs, 21 ULBs were selected by using stratified random sampling method based on 2011

census. Audit examination involved scrutiny of records at selected 21 ULBs (five Corporations⁴, ten Municipalities⁵ and six NACs⁶) and two smart cities (Bhubaneswar and Rourkela), office of the Principal Secretary to GoO, and Director of Municipal Administration (DMA) of H&UD Department, and Member Secretary, SPCB of Forest, Environment and Climate Change Department. Audit also scrutinised the records of other Apex units such as office of Additional Principal Secretary, Health and Family Welfare, office of the Principal Secretary, Industries Departments; Member Secretary, Odisha Water Supply & Sewerage Board (OWSSB); and Director, Water Corporation of Odisha (WATCO) for their involvement in BMW, E-waste and liquid waste management, respectively. Besides the above, records of 21 Health Care Establishments (HCEs)⁷ within the jurisdiction of the above selected ULBs were also verified for Bio medical waste management within the Audit period.

Audit also analysed the usefulness of landfills by physical verification of the sites and also by utilising Geographic information system (GIS) and Global positioning system (GPS).

An Entry Conference with the Principal Secretary, H&UD Department and representatives from SPCB/ Health and Family Welfare and Industries Departments was held on 17 February 2021. The Audit objectives, criteria, scope and methodology were discussed.

Draft Performance Audit Report was issued on 17 January 2022 to Government. An Exit Conference was held on 18 April 2022 and the department furnished replies to the draft report on 23 May 2022. Replies of Government have been suitably incorporated in the report.

Audit acknowledges the co-operation and assistance extended by the State Government, all the ULBs, Health Care establishments and SPCB in conducting the Performance Audit.

1.7 Arrangement of Chapters

Audit covered the aspects on financial management, planning and strategies adopted, infrastructure taken for processing, disposal and monitoring of waste management. Accordingly, the report has been arranged in the following chapters:

- Chapter – II: Financial management
- Chapter – III: Planning and strategy of solid waste management
- Chapter – IV: Segregation, collection and transportation of solid waste

⁴ Municipal Corporations: Bhubaneswar, Berhampur, Cuttack, Rourkela, and Sambalpur

⁵ Municipalities: Balangir, Bargarh, Baripada, Bhadrak, Choudwar, Jeypore, Jharsuguda, Puri, Rayagada, and Sundargarh

⁶ Notified Area Councils: Chandabali, Chhatrapur, Gunupur, Hinjilicut, Nuapada and Ranpur

⁷ Records of 21 HCEs covering (i) 13 District Headquarters Hospitals (DHHs) *i.e.*, Puri, Jeypore, Sundargarh, Nuapada, Sambalpur, Ganjam (Berhampur), Jharsuguda, Baragada, Bhadrak, Cuttack, Rayagada, Rourkela Government Hospital, and Capital Hospital Bhubaneswar (ii) four Community Health Centres (CHCs) *i.e.*, Chandabali, Ranapur, Hinjilicut and Kapileswar; Urban Primary Health Centre (UPHC) Choudwar (iii) two Sub-Divisional Hospitals (SDHs): Gunupur and Chhatrapur; and (iv) two medical colleges *i.e.*, Bhim Bhoi Medical College & Hospital, Bolangir and Pandit Raghunath Murmu Medical College & Hospital, Baripada

- Chapter – V: Processing and disposal of Municipal solid waste
- Chapter – VI: Special waste and Construction and Demolition waste management
- Chapter- VII: Solid waste management by Smart cities
- Chapter – VIII: Monitoring and evaluation of waste management system, and
- Chapter – IX: Conclusion & Recommendations