

# **PERFORMANCE AUDIT REPORT OF THE AUDITOR-GENERAL, DELTA STATE ON SOLID WASTE DISPOSAL AND MANAGEMENT IN DELTA STATE BY DELTA STATE WASTE MANAGEMENT BOARD**



**September, 2025**



### **Our Mission**

**To safeguard public trust by conducting independent, Objective and impartial audit of the management of the State's resources in accordance with professional standards and best practices.**

### **Our Vision**

**To be foremost in promoting transparency, accountability and excellence in public financial management.**



## AUDITOR-GENERAL'S MESSAGE

22<sup>nd</sup> September, 2025.

The Speaker,  
Delta State House of Assembly  
Asaba  
Delta State

### **Submission of Performance Audit Report on Solid Waste Disposal and Management in Delta State by Delta State Waste Management Board for the period 2022 – 2024**

---

In accordance with Section 125(2) of the Constitution of the Federal Republic of Nigeria, 1999 (as amended) and section **7(5)** of the State audit law 2021. I have undertaken a performance audit on Solid Waste Disposal and Management in Delta State by Delta State Waste Management Board for the period 2022 – 2024 and hereby submit the report.

We conducted our audit in accordance with the International Standards of Supreme Audit Institutions for Performance Auditing (ISSAI 3000). This standard requires that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidences obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

My Office intends to carry out a follow-up audit at an appropriate time in future regarding actions taken in relation to the recommendations in this report.

We wish to formally acknowledge and express our appreciation to the former Auditor-General of Delta State, Mrs Okonji Veronica Awele for her pivotal role in initiating and overseeing the performance Audit on solid waste disposal and management in Delta State. Although she retired prior to the publication of this report. Her visionary leadership was instrumental in shaping the audit direction and ensuring its relevance and impact. The final report reflects the enduring legacy of her commitment to public accountability and good governance.

We extend our best wishes for a fulfilling retirement.

I would like to thank my staff: The Team members: Mr. Francis Agbai (Team Lead), Mr. Ibemenem Cephas Chukwuma, and Mrs. Oduh Awele Fortune, Mr. Matthew Emasogbe ; (Performance Audit Manager), who undertook this audit. I would also like to thank the staff of Delta State Ministry of Environment, Delta State Waste Management Board, Delta State Task Force on Environment, Delta State Asaba Capital Territory Agency and other stakeholders for the assistance offered to my staff during the period of the audit.



**EMASOGBE M.O. (FCA)**  
**fng: AUDITOR - GENERAL (STATE)**  
**DELTA STATE**

# **TABLE OF CONTENTS**

AUDITOR-GENERALS MESSAGE.....	i
LIST OF ACRONYMS.....	iii
INTERPRETATIONS .....	iii
EXECUTIVE SUMMARY .....	iv - v
 <b>CHAPTER 1</b>	
1.0 INTRODUCTION .....	1
1.1 BACKGROUND .....	1 - 2
1.2 MOTIVATION .....	2
1.3 MATERIALITY .....	3
1.4 AUDIT OBJECTIVES & SCOPE .....	3
1.4.1 AUDIT OBJECTIVE.....	3 - 4
1.4.2 AUDIT SCOPE .....	4
1.5 AUDIT METHODOLOGY .....	4
1.5.1 ENTRANCE MEETINGS .....	4 - 5
1.5.2 SAMPLING METHODS USED .....	5
1.5.3 DATA COLLECTION METHODS .....	6 - 7
1.5.4 METHODS FOR DATA ANALYSIS .....	7
 <b>CHAPTER 2</b>	
2.0 HISTORICAL BACKGROUND OF SOLID WASTE DISPOSAL AND MANAGEMENT IN DELTA STATE.....	8
2.1 PLANS, PROCESS AND PROCEDURE FOR WASTE MANAGEMENT & MONITORING.....	8 - 13
2.2 REGULATORY FRAMEWORK GOVERNING MANAGEMENT OF SOLID WASTE ....	13
2.2.1 ROLES AND RESPONSIBILITIES OF KEY PLAYERS AND STAKEHOLDERS.....	13 - 17
 <b>CHAPTER 3</b>	
3.0 AUDIT FINDINGS.....	18
3.1 STAFFING PROFILE DOES NOT SUPPORT EFFECTIVE EXECUTION OF MANDATE.....	18
3.1.1 STAFFING IMBALANCE .....	18
3.1.2 CAPACITY GAPS.....	18
3.2 THE OPERATIONAL EFFICIENCY OF WASTE COLLECTION, SEGREGATION, TRANSPORTATION AND DISPOSAL PROCESSES.....	19 - 21
3.3 INEFFECTIVE COLLECTIONS, TRANSPORTATION AND DISPOSAL OF SOLID WASTE.....	22 - 25
3.4 WASTE MANAGEMENT INFRASTRUCTURE GAPS .....	26 - 30
3.5 COMPLIANCE WITH LAWS AND REGULATION.....	30 - 34
 <b>CHAPTER 4</b>	
4.0 CONCLUSION.....	35
 <b>CHAPTER 5</b>	
5.0 RECOMMENDATIONS.....	36 - 41
APPENDIX .....	42 - 22



## LIST OF ABBREVIATION

Acronym	Full Meaning
CEO	Chief Executive Officer
DG	Director General
DSCTDA	Delta State Capital Territory Development Agency
DSWMB	Delta State Waste Management Board
Edu.	Education
INTOSAI	International Organization of Supreme Audit Institutions
ISSAI 3000	International Standard of Supreme Audit Institutions 3000
IWMF	Integrated Waste Management Facilities
PSPs	Private Sector Participants
SL	Sanitary Landfills
SWM	Solid Waste Management
TLS	Transfer Loading Stations
WUEDA	Warri, Uvwie and Environs Special Area Development Agency

## Interpretations

Term	Meaning
<b>Bill</b>	Refers to the <i>Waste Management Bill 2004</i> .
<b>Illegal Dumpsite</b>	An <i>Unauthorised Dumpsite</i> used for waste disposal outside approved regulations.
<b>Leachate</b>	Water that has percolated through general waste in the landfill, potentially carrying dissolved or suspended contaminants.
<b>Ministry</b>	Refers to the <i>Ministry of Environment</i> .

## EXECUTIVE SUMMARY

### Background

Solid Waste Management (SWM) in Delta State remains a critical environmental and public health challenge, with indiscriminate dumping by households, businesses, and pedestrians being widespread. Despite its legal mandate, the Delta State Waste Management Board (DSWMB) has not achieved effective service delivery due to weak institutional capacity, inadequate infrastructure, and poor enforcement of environmental laws.

The audit, conducted under the Constitution and the Delta State Audit Law, assessed operational efficiency, environmental impact, financial management, compliance, and control mechanisms. It involved document reviews, field inspections of dumpsites and facilities, and stakeholder consultations.

### Key findings include:

**Institutional Weakness:** Staffing imbalances, limited technical capacity, and poor monitoring.

**Indiscriminate Dumping:** Widespread use of unauthorized sites and open burning, worsened by PSP inefficiencies.

**Infrastructure Gaps:** Only four temporary dumpsites exist; integrated waste facilities are obsolete; sewage treatment plants are absent.

**Resource Shortages:** Inadequate trucks and equipment, with frequent breakdowns.

**Data Gaps:** No reliable waste generation or collection records.

**Financial Weakness:** Lack of transparent expenditure records despite budgetary allocations.

**Low Public Awareness:** Limited knowledge of waste segregation and safe disposal.

**Weak Enforcement:** Overlapping mandates and ineffective supervision of PSPs and citizens.

**Conclusion:** Waste management in Delta State needs significant improvement in effectiveness, funding and coordination to reduce / eliminate health risk and promote environmental sustainability.

## Key Recommendations:

1. **Legal/Policy Reform:** Harmonize waste management laws and clarify institutional responsibilities.
2. **Infrastructure:** Acquire new dumpsites, modernize integrated waste facilities, and establish sewage treatment plants.
3. **Operational Efficiency:** Procure new trucks, strengthen PSP accountability, and adopt reliable data systems.
4. **Enforcement:** Improve supervision, curb illegal dumping, and enforce compliance.
5. **Public Engagement:** Conduct awareness campaigns and foster community participation.
6. **Financial Management:** Ensure timely releases, transparency, and accountability.
7. **Partnerships:** Promote private sector and international collaboration in recycling and waste-to-energy projects.



## **CHAPTER ONE**

### **1.0 Introduction**

#### **1.1 Background**

Solid Waste Management (SWM) is an important part of modern infrastructure as it ensures the protection of the environment and of human health. Waste are products that are no longer suited for its intended use. It may be worn out or unwanted by-product of a process, which includes solid or semi-solid domestic waste, sanitary waste, commercial waste, institutional waste, catering and market waste and other non-residential wastes, street sweeping, silt removed or collected from the surface drains, agriculture and dairy waste. Delta State Environmental Sanitation Law (3) & (4), Delta State Environmental Protection Agency Law (37) & (38), the Delta State Waste Management Board Law, 2004 provides appropriate legislations, guidelines and standards in solid waste management and general sanitation.

Waste management involves collection, transportation, treatment, and disposal, following strict regulations to ensure minimal environmental impact. Waste can be recycled and repurposed, used to generate wealth, jobs, and other advantages for the environment and society.

The fast growing population, rapidly changing lifestyle, great urbanization along with aggressive economic development and the rapid changes in consumption rate have accelerated the daily generation and volume rate of municipal solid wastes in Delta State, making sustainable waste management practices more crucial than ever.

Asaba, the State capital, Agbor, Sapele and Warri are experiencing speedy urbanization leading to overcrowding and the development of slums and unorganized settlements with impoverished and unhealthy waste management practices. Lack of proper waste management systems results in open dumping of waste, burning of waste and the indiscriminate disposal of waste into water bodies and drainages, leading to environmental pollution and health risks.

The harmful waste (special criminal provision) act of 2004 prohibits the carrying, deposition and dumping of harmful waste on any land, territorial water, and other related environment. However, In Delta State the enforcement of this law and other such laws for waste disposal and management appears weak. Waste management continues to be a major issue in Delta State with increasing complaints about delays in collection of solid waste, poor disposal and management of disposal sites by Private Sector Participants (PSPs) and other government agencies which were the major drivers of this study.

The Delta State Waste Management Board was established through Waste Management Law of Delta State in 2004. The Board is saddled with the primary responsibility of managing waste in the entire State which includes waste storage, collection, treatment, and disposal. The Board has an administrative headquarters in Asaba, the State Capital and Operational Field Offices in six Local Government Area of Delta State. The Ministry of Environment as the supervisory ministry, provides appropriate legislation, guidelines and standards in solid waste management and general sanitation. The evaluation of the economy, effectiveness and efficiency of their operations is determined by the state of the environment.

## 1.2 Motivation

This study was motivated by the growing public outcry in Delta State regarding the indiscriminate disposal of waste, with residents and authorities expressing concerns about the health and environmental consequences.

*Source: The Southern Examiner Newspaper Mon Nov 8, 2021  
Punch Newspaper 6 Jan 2020,*

The quality of services provided by the various organs of government involved in the operation of waste management in the State, have not provided the desired outcome. The resulting effect is the pileup of garbage and solid wastes in the communities, along roadways, blockage of drainage and water channels, causing flooding that endangers the live and wellbeing of citizens and the environment.

Though the Chairman of Delta State Waste Management Board has repeatedly advice residence in the State to desist from dumping waste materials into drainages and unauthorized places in the State.

*(Punch Newspaper 29 August 2024).*

Policy makers and government at all levels should be concerned about the public health of its citizens. Refuse dumps, found in almost every area, are one of the breeding sites for mosquitoes, cockroaches, rodents etc., which can lead to outbreak of Cholera, malaria, typhoid, diarrhoea other dreaded communicable diseases and death while the State government bears one of the heaviest burdens of malaria. Therefore, Solid Waste Management is one of the major environmental areas that needs to be addressed effectively.

### 1.3 Materiality

The increase in economic and developmental activity driven by production and consumption patterns as well as rapid urbanization is driving the increase in the generation of solid waste. Sule (2004) stated that “human population and rural-urban migration has increased through urbanization, natural increase rate and industrialization, yet the service rendered is not sizeable enough to control the high level of solid waste generated in urban areas and these have contributed, to a large extent, about 70% vis-à-vis the total rate of its disposal which is 30% (Edu, 2003).”

Memon (2016) revealed that municipal solid waste as unwanted waste or materials that primarily produced by households which include institutions, shopping complexes, hotels, housing estates, shops, offices, schools and from municipal services of street cleaning and the maintenance of gardens, parks and other recreational areas.

In urban areas where the annual population growth rate is high, regulations and legislation governing solid waste management must be adequately designed and implemented. The benefits of having an effective waste management system are immense; a suitable environment promotes a healthy population, improved economic activities, and a beautiful environment. The environmental issues associated with improper waste disposal pose significant health risks to the population.

## 1.4 AUDIT OBJECTIVES & SCOPE

### 1.4.1 AUDIT OBJECTIVE

Our audit objective was to gain understanding of the activities of DSWMB and the solid waste disposal and management process to determine the effectiveness of solid waste disposal and management in Delta State; with the intention of identifying problems, areas of challenges and ways of improvement. It is also to know the level of impact and involvement of various stakeholders in the disposal and management process.

The key objectives of this exercise are to evaluate:

**>The Operational Efficiency;** Assess the efficiency of waste collection, segregation, transportation, and disposal processes.

**>The Environmental Impact;** Assess the effectiveness of measures to minimize waste-related environmental damage.



>**The Financial Management;** Review the cost-effectiveness of waste management operations, budget allocations, and resource utilization.

>**The Compliance with Laws and Regulations:** Assess operations compliance with local, national, and international waste management regulations and laws.

>The deployment mechanism for effective solid waste collection and disposal control, and management system.

>The feasibility and impact of waste prevention opportunities in the study area and to identify the present and potential challenges to achieving the sustainable management of solid waste in the study area and recommendations to improve current practice.

#### **1.4.2 AUDIT SCOPE**

The audit focused on the waste disposal activities of DSWMB in Asaba, Agbor, Sapele, Warri and Environs and was conducted between 9<sup>th</sup> September 2024 and 28 February, 2025 through series of meetings with various stakeholders, administration of questionnaires, interviews, sites visits and documents reviews. The audit covered 3 financial years 2022 to 2024, the team therefore examined relevant records for year 2022 to year 2024.

### **1.5 AUDIT METHODOLOGY**

#### **1.5.1 Entrance Meetings**

Audit had an introductory meeting with the Permanent Secretary (PS), the Director SWM, the Deputy Director SWM, the Assistant Director SWM and the Scientific Officer of the Ministry of Environment on the **23<sup>rd</sup> September 2024**. At this meeting the Permanent Secretary was informed of the performance audit that will be carried out on Solid Waste Disposal and Management in Delta State.

The Permanent Secretary said that the objective of the Ministry in the management of waste in Delta State is to ensure that waste is managed from the Cradle to the collection point and to make waste less voluminous by sorting recyclable waste and converting them into useful form to create wealth. The Permanent Secretary affirmed her office's support and the provision of information and data required for our audit fieldwork to enable us achieve the audit objectives.

Other introductory meetings were held on the 11<sup>th</sup> September 2024 with the management of Delta State Waste Management Board. The attendees were the Director Admin, the Director of Finance and Accounts, the Director Operations, the Internal Auditor and the Director Legal. On 25<sup>th</sup> September 2024 another meeting was held in the office of the Chairman Delta State Environmental Task Force. The attendees were the Chairman and a Director. The last introductory meeting was with Delta State Capital Development Territory Agency

The Management of the Delta State Waste Management Board and other agencies affirmed their offices' support and the provision of information and data required for the audit fieldwork to enable us achieve the audit objectives.

The following audit procedures were used to gather evidence:

#### **1.5.2 Sampling methods Used**

The audit team used non-probability sampling methods to select Directors and Management staff interviewed at the Headquarters of the Ministry of Environment, Delta State Waste Management Board, Delta State Task Force, Delta State Capital Development Territory Agency as well as Waste Management Board Field offices. The team carried out physical inspection and interviews.

We conducted interviews with the Director Administration and Director Operations of DSWMB, the Permanent Secretary and Director SWM of Min of Environment, Chairman Delta State Environmental Task Force, Director Administration of Delta State Capital Development Territory Agency, The Chairman Delta State PSPs Union and other directors in the agencies.

The Qualitative data from the interviews were analyzed qualitatively and used to interpret and explain the quantitative data and information from questionnaires, documents reviewed, etc.

The team visited 6 out of the 21 field offices across the three senatorial zones of the State and also inspected four Government approved Dumpsites located in Asaba, Agbor, Sapele and Warri and Other Illegal dumpsites in Udu, Sapele, Agbor, Warri, Effurun and Asaba.

Ultimately, the Performance audit team was able to gather sufficient and necessary information for the effective evaluation of the functions and operations of Delta State Waste Management Board. This was done through series of meetings with relevant stakeholders, interviews conducted, administration of questionnaires, sites visits and review of documents.

### 1.5.3 Data Collection Methods

The audit team collected both qualitative and quantitative data to provide strong evidence regarding the collection and disposal of wastes in the State by Waste Management Board and other stakeholders in waste management arena in the State. The team used different methods to gather information from the audited entity in assessing whether the collection and disposal of waste in the State were properly and efficiently carried out. The audit team used document reviews, interviews, and physical inspection/observation as detailed below:

#### (a) Document Review

The audit team reviewed various documents from the Ministry of Environment and Delta State Waste Management Board. The documents included Policies, operating/other Manuals/Guidelines, Reports, Programs, regulations establishing the various audited entities, Minutes of Board and Management Meetings, Researches and Project evaluation Reports.

#### (b) Interviews

Oral interviews were conducted with the **Chairman** Delta State Task Force on Environment, **Permanent Secretary**, Director SWM, Deputy Director SWM and Assistant Director SWM of the Ministry of **Environment** Director Admin, Director Operations, Delta State Waste Management Board Headquarters Asaba, the Chairman and the Secretary of the Private Sector Participants (PSP) Union and some staff of DSWMB in the Field Offices to obtain their views and actions taken in the waste management process and practice in compliance with the environmental laws that says The landlord or occupier of tenement shall at all times keep the tenement and its surroundings together with the adjoining and connecting drains, gutters or channels free from weeds, grasses, filth, rubbish, refuse or any matter other waste.

**Delta State Waste Management Law** (Laws of Delta State, 2006) provides for **Mandatory PSP Registration** with accredited PSPs for waste collection from their premises, provide bins and sanitation facilities, comply with clean environment norms, face prosecution if negligent. The assessment of the Private Sector Participants (PSP) functionality in waste collections and disposals in the State, operational challenges and suggestions on the improvement of waste management best practices in the State were evaluated. The PSP is responsible for waste collection and transportation services to designated disposal facilities. Their operations are supervised by the Waste Management Board, and they may lose their registration if they fail to deliver services effectively



Several stakeholders meetings involving the Ministry of Environment, Delta State Waste Management Board, Delta State Task Force, Delta State Capital Development Territory Agency, Private Sector Participants (PSPs) and Oshimili South Local Government Authority were held to assess the extent of collaboration among these stakeholders in ensuring the proper coordination of efforts in the disposal of waste in Delta State and understand their challenges.

### **(c) Physical Inspections**

Physical survey was carried out to check the waste disposal methods on the immediate and surrounding environment. Visit was made to the Asaba, Agbor, Sapele and Warri dumpsites to physically inspect the dumpsites and gather evidence to form opinions on quality of service delivery by the waste management players and as well as ascertain the impact of indiscriminate disposal and collection of waste on the environment and on the health of residents of the communities.

The audit team also visited the Delta State Integrated Waste Management Facility at Asaba to verify its state, functionality and processes of waste management.

### **(d) Administration of Questionnaires**

Questionnaires were designed and distributed to individuals, residents, businesses and road users in the affected areas to gather information about waste management practices carried out and their effect in and around the immediate environment, the data extracted from the retrieved questionnaires were subjected to simple regression statistical analysis.

## **1.5.4 Methods for Data Analysis**

The audit team analyzed data gathered through document review, interview, and physical inspection, by separating and grouping them into qualitative and quantitative data so that they could be easily analyzed using different approaches.

Quantitative data were analyzed by organizing, summarizing and compiling using software for data analysis such as spreadsheets and different statistical methods of data computations. The analyzed data were presented using data tabulations in tables, graphs, charts and percentage distribution. The presented data were then explained to answer the 'what' and 'how many' questions. Qualitative data were described, compared and related so that they could be extracted and explained in order for the data to be contended.

The analysis involved looking for categories such as events, descriptions, consistencies or variances to develop theory from the gathered data.

## CHAPTER 2

### 2.0 Historical Background of Solid Waste Disposal and Management in Delta State

Delta State was formerly part of Midwest State (1963–1976) and Bendel State (1976–1991), before becoming a distinct entity on August 27, 1991. The State expanded rapidly during the oil boom and industrialization era of the 1970s, inheriting weak waste management systems from the old Bendel State.

Prior to the creation of Delta State, waste collection and disposal in Nigeria was the responsibility of local governments, as mandated in the **1999 Constitution of the Federal Republic of Nigeria (as amended)**. The Constitution provides the broad legal basis for waste management:

**Section 20** mandates the State to protect and improve the environment.

**Sections 33 and 34** guarantee the right to life and dignity, which are threatened by indiscriminate waste disposal.

**Second Schedule** empowers States to legislate on sanitation.

**Fourth Schedule** vests local governments with responsibility for refuse disposal, sewage, and environmental sanitation.

Building on this, Delta State established the **Delta State Waste Management Board (DSWMB)** through a law passed in October 2004 to complement local governments and overcome their limitations in technical knowledge, manpower, and funding.

### 2.1 PLANS, PROCESS AND PROCEDURE FOR WASTE MANAGEMENT & MONITORING

#### (a) Plans, Process and Procedure

The primary responsibility for Waste disposal and management process in Delta state lies with DSWMB. The DSWMB has adopted the Private Sector Participant (**PSP**) the SEEFOR Waste Management model approach of 2020 in the collection and disposal of waste, with the Delta State Waste Management Board (DSWMB) overseeing and regulating these activities. The DSWMB partners with PSPs for waste collection and disposal, ensuring proper waste management and promoting a cleaner environment. The PSP carry out a proper enumeration exercise where houses and offices are counted and divided into zones for easy administration and coverage, while the state government also encourages residents to register with PSPs to prevent illegal dumping. The private sector collects waste from tenements, and commercial and industrial premises that are ready to pay for their services.

## **(b) Dumpsites**

There is only one Dumpsite operated in each of the location sampled in the three senatorial districts (Agbor, Sapele, and Warri) and Asaba the State Capital Territory of Delta State maintained by Waste Management Board. These dumpsites are located off Ibusa road Asaba, Abavo road Agbor, Ibada Amukpe road Sapele and Agbahro Warri.

## **(c) Integrated Waste Management Facilities**

Delta State Government has acquired multi-million naira integrated waste management facilities capable of processing 1,000 tons of waste daily without polluting the environment in 2013 fabricated in Port Harcourt and then installed at Ibusa Road, primarily to address the growing challenge of waste disposal and environmental pollution, and to promote a more sustainable and economically viable approach to waste management.

The equipment has various compartments such as incinerators in-vessel composters, recycling systems, refuse-derived fuels, integrated waste management and smokeless flares, among others.

## **(d) Funding Arrangement and Budget**

Delta State Waste Management Board is funded through the Delta State Annual Appropriation Budget passed by the State House of Assembly and assented to by the Governor for the three years under review, as enshrined in the waste management law;

### **Finance.**

- (1) The Board shall establish and maintain a fund from which shall be defrayed, all expenditure incurred by the Board.
- (2) The funds and resources of the Board shall consist of
  - (a) such moneys as may be appropriated from time to time to the Board;
  - (b) all grants, gifts and donations to the Board; and
  - (c) all receipts in respect of fees charged for services rendered by the Board and in respect of fines.

### **Expenditure of the Boards.**

- (1) The Board may, from time to time, apply the funds at its disposal to
  - (a) perform all or any of its functions under this Law;
  - (b) meet its cost of administration;



- (c) pay the remuneration, honoraria and expenses of members in respect of their duties under the provisions of this Law; and
- (d) meet the payment of salaries, allowances, gratuities or pensions of employees of the Board;
- (e) the payment of commissions to approved agents of the Board;
- (f) the payment of rents on rented property;
- (g) the payment of interest on loans;
- (h) the payment of taxes, duties, or other charges payable by it under any enactment or Law.

**Power to borrow.**

(1) The Board may, with the approval of the Governor, or in accordance with any general order given in that regard, borrow by way of loan or overdraft from any legal source, any sum required by the Board for capital projects and for meeting its obligations and discharging its functions under this Law and for this purpose may pledge its property by way of mortgage, fixed or floating debenture or any other collateral.

(2) The Board may, by its resolution, borrow money for its recurrent expenditure provided the expenditure for which such borrowings are made is recognised in its current budget.

**Guarantee by Government for Loans to the Board.**

The Government may guarantee, in such manner and on such terms and conditions as it may deem fit, payment of the principal and interest of any sum of money borrowed by the Board.

Table 1:

Summary of budget of Delta State Waste Management Board

Year	Capital ₦	Personnel ₦	Overhead ₦	Total ₦
2022	200,000,000.00	116,792,507.00	205,600,000.00	522,392,507.00
2023	250,,000,000.00	118,478,827.00	12,394,000.00	380,872,827.00
2024	200,000,000.00	159,310,380.00	22,300,000.00	381,610,380.00
<b>TOTAL</b>	<b>650,000,000.00</b>	<b>394,581,714.00</b>	<b>240,294,000.00</b>	<b>1,284,875,714.00</b>

Source: DELTA STATE BUDGET MANUAL (2022, 2023, 2024)

## (e) **Business Process/Operational Process of Waste Management**

The waste management process currently adopted by the Board starts from waste generation to final disposal stage .

### **Waste Generation**

Every household, business, or institution must store waste in proper containers (bags, bins, drums) provided or approved by the Waste Management Board.

### **Primary Collection**

Waste are collected from homes, streets, and offices by **registered Private Sector Participants (PSPs)**. Residents are required to pay fees for service delivery.

### **Transportation**

Only PSPs licensed by the Board may transport waste using **approved vehicles** (not wheelbarrows or carts). Vehicles must be covered to prevent spillage along the roads.

### **Transfer/Storage**

Waste collected is moved to designated **dumpsite** approved by the Board, ensuring waste does not litter the environment or clog drains.

### **Processing/Sorting**

At designated sites, waste may be **sorted, recycled, or processed** under supervision of the Board to recover useful materials, in line with environmental standards.

### **Final Disposal**

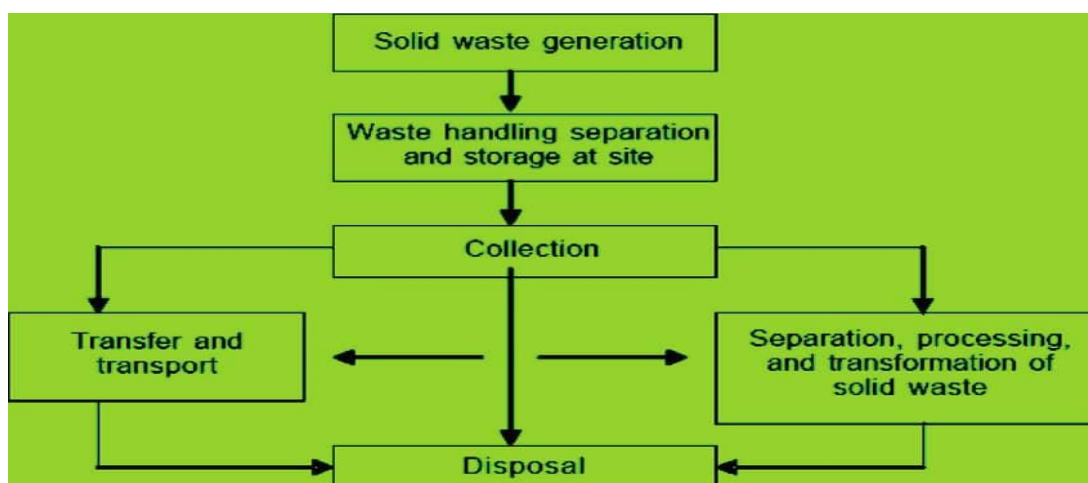
Non-recyclable waste must be disposed of only at **approved dumpsites, sanitary landfills, or treatment facilities** designated by the Board. Open dumping in unauthorized areas is illegal.

### **Monitoring & Enforcement**

The Waste Management Board supervises PSPs, enforces compliance, and prosecutes offenders who dump indiscriminately, fail to pay fees, or operate without authorization.

See the operational flowchart for clarity.

## OPERATIONAL FLOWCHART



### DELTA STATE WASTE MANAGEMENT BOARD

#### **Composition of the Board.**

The Delta State Waste Management Board is made up of the Chairman who shall be the Chief Executive Officer and three other members drawn from each of the three senatorial districts of the State; appointed by the Governor subject to the confirmation of the House of Assembly. The Director of the Department of Legal Services and Compliance shall be the Secretary to the Board.

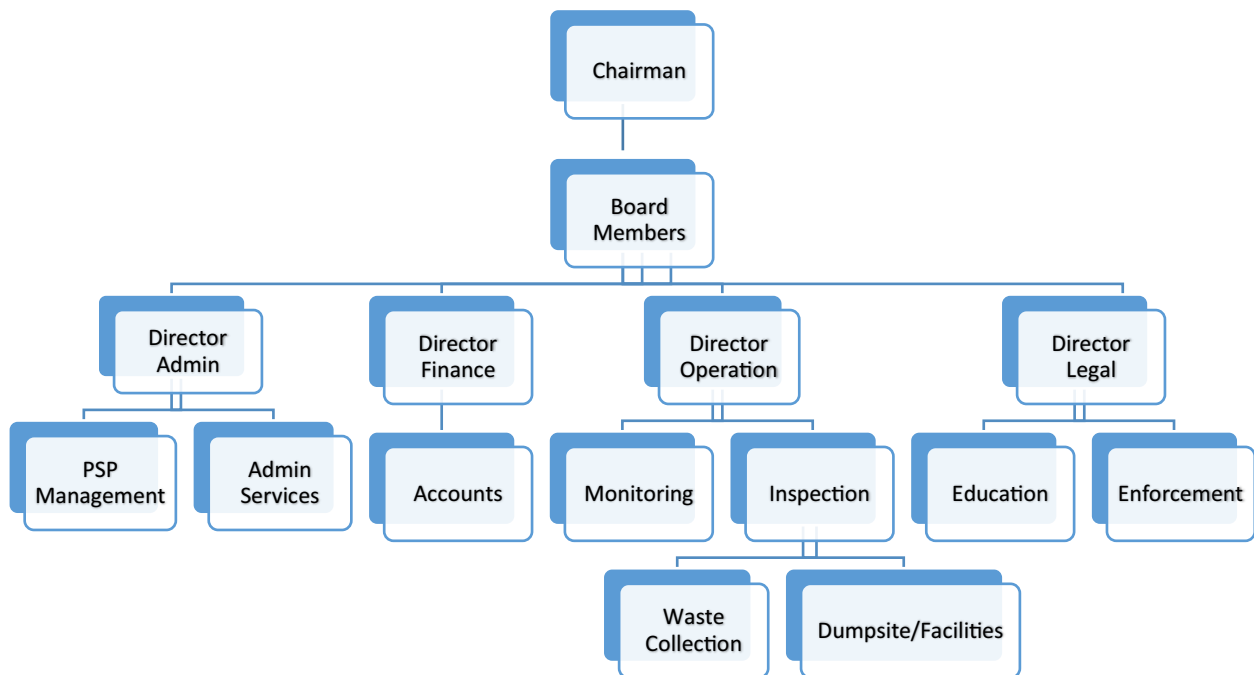
#### **Administrative Structure of DSWMB**

The Delta State Waste Management Board (DSWMB) operates as a **statutory body under the Ministry of Environment**, vested with powers from the Waste Management Law of 2004. The Board is headed by a Chairman, supported by Directors, Departmental Heads, and Zonal Officers. It oversees **Private Sector Participants (PSPs)** who carry out daily waste collection, ensuring accountability, monitoring, and enforcement.

The DSWMB have four major departments: Operations, Administration, Finance and Supply, and Legal and Compliance. The Director of Operations is directly responsible for the day-to-day activities of the Board. The organizational chart indicates that there is a clear lines of reporting.

This structure combines **centralized authority** (policy, regulation, and enforcement) with **decentralized operations** (zonal PSPs and local officers), making it both **administratively efficient** and **operationally expedient**. It ensures policies are consistent statewide while service delivery is localized and responsive to community needs

## ORGANOGRAM



## 2.2 REGULATORY FRAMEWORK GOVERNING MANAGEMENT OF SOLID WASTE

### 2.2.1 Roles and responsibilities of key players and stakeholders

#### A. Audit Mandate

The powers and primary responsibilities/duties of the Delta State Office of the Auditor-General (State) are outlined in Section 125 of the Constitution of Federal Republic of Nigeria, 1999 (as amended) and Section (7)(5) of the Delta State Audit Law 2021 as amended.

**In carrying out the duties, the Auditor-General shall ensure that:**

- (i) monies have been expended with efficiency and effectiveness in compliance with the processes laid down in the Public Finance Management Law, Fiscal Responsibility Law, Public Procurement Law of the State and other relevant extant laws, rules and regulations.
- (ii) Satisfactory procedures have been established to measure and report the effectiveness of programs where such procedures could appropriately and reasonably be implemented.

## **B. DELTA STATE MINISTRY OF ENVIRONMENT, ASABA**

### **ENVIRONMENTAL POLICY (2009) ON SOLID WASTE MANAGEMENT AND SANITATION**

It is Delta State Ministry of Environment Policy to:

- i. Provide appropriate legislation, guidelines and standards in solid waste management and general sanitation.
- ii. Effectively promote the Integration of Solid Waste Systems and sanitation into national and regional/sectoral policies.
- iii. Work towards the formulation and implementation of an Integrated Solid Waste Control System for the State.
- iv. Routinely monitor the general status of solid waste systems and sanitation in the State.
- v. Design, consult and manage public solid waste processes, systems and facilities.
- vi. Monitor private sector solid waste system.
- vii. Consult stakeholders in the enforcement of solid waste and sanitation.
- viii. Develop and maintain relationships that enhance solid waste systems and general sanitation.

## **C. DELTA STATE WASTE MANAGEMENT BOARD**

The Delta State Waste Management Board was established through the enactment of Delta State Waste Management Board Law, 2004 by the Delta State House of Assembly, enforced on the 6th day of July, 2004. The law recognized waste management as a Board saddled with the primary responsibility of managing waste in the entire State of Delta. The managing process includes but is not limited to collection and disposal stages.

### **FUNCTIONS OF THE BOARD**

The Board shall perform the underlisted functions, and that is, to;

- (a) Clear refuse from designated refuse dumps and bins along the streets and corners of the villages, towns and cities in the State;
- (b) Manage the disposal and recycling of refuse and other waste materials in a manner that will cause little or no harm to the environment and people living in the State.
- (c) Acquire and maintain refuse dump sites and recycling facilities in all Local Government areas of the State;
- (d) Procure and maintain all vehicles and equipment necessary for proper management of refuse and waste materials in the State;



- (e) Control, recycle and manage effluent discharge, industrial and domestic waste from households and companies operating within the State;
- (f) License, register and regulate the operations of all waste management companies in the State;
- (g) Formulate and foster private sector participation schemes in waste management in partnership with registered waste management companies;
- (h) Educate the public on the importance and different methods of waste management for the purpose of maintaining a clean and sustainable environment and improving public sanitary habits and health standards;
- (i) Monitor and enforce compliance with waste management standards and practices prescribed under this Law;
- (j) Monitor and evaluate from time to time as the Board may determine the possible effects of the dumpsites waste on the environment and cost-effective restoration;
- (k) Develop the skills and knowledge of its employees and provide facilities for training, education and research;
- (l) Undertake research in waste management methodology and technology;
- (m) Establish waste treatment and recycling facilities in the State;
- (n) Advise Government in the formulation of waste management policies and in the preparation and review of action plans on waste management; and
- (o) Perform such other functions as may be prescribed by a law of the House of Assembly.

#### **D. STAFFING PROFILE OF DELTA STATE WASTE MANAGEMENT BOARD (DSWMB)**

- **Administration:** 65 staff
- **Finance & Supply:** 7 staff
- **Legal:** 1 staff
- **Operations (technical):** 17 staff
- **Cleaner (support):** 35 staff
- Total:** 125 staff

The current staff strength of **125 personnel** is considered not adequate to carry out **The Board's mandate**. While administrative support is overrepresented, the Board lacks sufficient **operational, legal, and technical staff** required for effective waste collection, monitoring of PSPs, environmental enforcement, and innovation in recycling and landfill management.

## **E. DELTA STATE CAPITAL DEVELOPMENT TERRITORY AGENCY**

The Delta State Capital Territory Development Agency (DSCTDA) was established by law and came into effect on June 3, 2015 as an interventionist agency to tackle the growing urban problems such as roads, erosion/drainages, and poor environmental sanitation/waste management in the Capital territory which has expanded into neighbouring towns of Okpanam, Ugbolu, Issele Asagba and Ibusa.

### **MANDATE OF THE AGENCY**

The agency, empowered by **Section 8 (i) (a-b) of the Delta State Environmental Law**, is mandated to drive infrastructural and environmental development of the State Capital Territory, with a focus on **beautification, urban renewal, and sanitation**. As an interventionist body, it formulates and implements policies and projects such as **road sweeping, drain clearing, sanitation of markets and residential areas, and environmental inspections**, often in collaboration with the Delta State Waste Management Board. These functions directly support **waste disposal and management** by ensuring that refuse collection, drainage maintenance, and public cleanliness are systematically carried out to promote a cleaner, healthier capital territory.

## **F. DELTA STATE TASK FORCE ON ENVIRONMENT**

The Delta State Task Force on Environment **was** established in September 2019 by the Delta State Government **as a specialized enforcement body** focused on environmental sanitation and compliance across all 25 local government areas and reinforced through administrative harmonization in 2022.

Its mandate includes sanitation enforcement, environmental inspections, legal prosecutions via mobile courts, and revenue generation through fines—strictly supervised to prevent abuses, work in collaboration with Ministry of Environment, Waste Management Board, DSCTDA and State Orientation

## **G. PRIVATE SECTOR PARTICIPANTS (PSP)**

Delta State Waste Management Board (DSWMB) oversees and regulate the activities of the PSPs in waste collection and disposal. In Delta State, anyone who wants to collect and dispose refuse must first register with the Waste Management Board and get an operational license, which has to be renewed every year. To qualify, the company or person must be properly registered with the Corporate Affairs Commission, show proof of

incorporation or business name registration, and own well-functioning trucks clearly marked with the company's name. Each operator must employ at least five workers, including drivers and collectors, and must create awareness in their assigned community, register households, and work only within the zone officially given to them.

They are required to collect waste promptly, prevent refuse from piling up, and dump all collected waste only at government-approved dumpsites. Operators must also protect their staff by providing safety equipment, first aid, and transport in case of injury, and they must cover their trucks with tarpaulins to avoid littering the streets. Their payment will come from the monthly waste fees that residents and business owners pay, based on the tariff approved by the government. In addition, they must keep their operations clean, avoid disturbing the community, and take part in the monthly sanitation exercise to remove waste generated in their zones. Any operator who fails to follow these rules or works outside their assigned zone will face sanctions.

## CHAPTER 3

### 3.0 AUDIT FINDINGS

This chapter presents the audit findings on the performance of the DSWMB on the disposal and management of waste in Delta State. The findings focus on the extent to which DSWMB operations are effective and efficient in the management of the waste collection, segregation, transportation, and disposal process and areas for improvement in Delta State

#### 3.1 Staffing Profile Does Not Support Effective Execution of Mandate

Adequate staffing, particularly in operational, technical, and legal roles, is required for effective execution of DSWMB's mandate.

The Delta State Waste Management Board (DSWMB) is mandated to plan, regulate, and implement waste collection, transportation, disposal, recycling, and environmental sensitization across Delta State, covering 25 Local Government Areas, three senatorial districts, and a population exceeding 4.1 million residents. Effective execution requires adequate technical, operational, legal, and enforcement capacity.

##### 3.1.1 Staffing Imbalance

- Administration (65) constitutes **52% of staff strength**, showing heavy concentration in clerical/administrative roles.
- Operations (17) and Legal (1) together make up **only 14%**, despite being the **core functions** of waste management.
- Cleaners (35) provide support services but does not substitute for trained environmental officers, engineers, or monitoring staff.

##### 3.1.2 Capacity Gaps

- **Operations:** With just 17 technical staff, it is inadequate for managing multiple dumpsites, PSP monitoring, recycling plants, and enforcement across the State.
- **Legal:** Only 1 legal officer is insufficient to handle contract vetting, litigation, enforcement cases, and compliance monitoring.
- **Finance & Supply:** 7 staff may be adequate for basic budgeting, but given the Board's annual budgets exceeding ₦1 billion, capacity for procurement oversight and revenue monitoring is weak.

The DSWMB's current profile shows **administrative overstaffing and technical understaffing**, which undermines effectiveness.

### **3.2 The Operational efficiency of waste collection, segregation, transportation and disposal processes.**

The environmental policy of Ministry of Environment and the Delta state Waste Management law require the existence of an adequate functional solid waste collection and disposal system. However, the audit finding reveals the under listed gaps of waste management practices in the State.

#### **● Indiscriminate Waste Disposal**

The Delta State Waste Management Board (DSWMB) is mandated to ensure organized, safe, and regular collection and disposal of solid waste to protect public health and the environment.

Audit review of relevant documents, field inspections, and community surveys established persistent and widespread indiscriminate dumping of refuse across major towns and cities in Delta State. The prevailing waste disposal practices rely heavily on open dumpsites and unauthorized dumping in non-designated areas.

Audit survey further revealed the following:

- i. Some residents habitually dispose of refuse illegally at night, littering streets and public spaces.
- ii. Unauthorized pushcart and wheelbarrow operators are widely patronized, with a large portion of collected waste indiscriminately dumped on vacant plots, sidewalks roads, streams, drainage channels, and watercourses.
- iii. Drainage systems in Asaba and Warri were observed to be clogged with solid waste, heightening exposure to flooding during rainfall and aggravating public health hazards.

These operational gaps lead to environmental degradation, increased incidence of disease, flooding, and significant public dissatisfaction with waste management services.

#### **● Attitude to Waste Disposal**

Citizens are expected to comply with established waste management regulations, properly utilize available waste collection and disposal facilities, and actively participate in government-led initiatives such as recycling, segregation at source, and timely disposal. Environmental laws and policies of Delta State require responsible waste handling practices that protect public health, maintain cleanliness, and prevent indiscriminate dumping.



The audit observed that entrenched negative attitudes towards waste disposal are driven by years of weak waste management practices, inadequate public awareness, limited access to proper disposal facilities, and weak enforcement of environmental laws. These systemic gaps have contributed to persistent indiscriminate dumping, poor utilization of solid waste, and environmental degradation.

- **Waste Disposal Equipment**

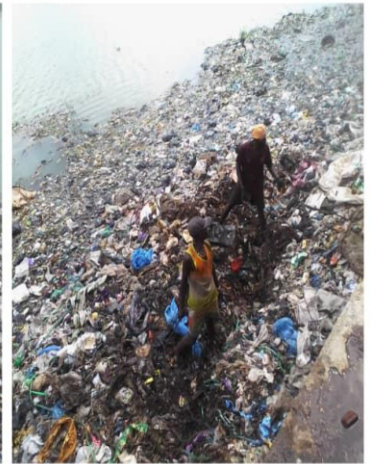
Effective solid waste management requires the availability of functional transportation equipment to ensure timely evacuation of refuse. In the event of breakdowns or defaults by Private Sector Participants (PSPs), the Delta State Waste Management Board (DSWMB) is expected to have backup vehicles in good condition to maintain uninterrupted waste collection and disposal.

Furthermore, the Delta State Waste Management Board was found to lack adequate transportation equipment to evacuate refuse in the event of Private Sector Participant (PSP) vehicle defaults or breakdowns. Several of the Board's available trucks were non-operational and had been left unrepaired. The audit could not conduct a complete inventory of collection vehicles due to their dispersion across different locations.

Overall, the persistence of indiscriminate waste disposal, coupled with inadequate evacuation equipment, has contributed to environmental pollution, flooding risks, and weakened public confidence in the State's waste management system.



Illegal dumpsite at Ad-hoc Rd Sapele



Illegal dumpsite at Okpe Grammar School Sapele



Illegal dumpsite at Sapele main market (Ethiope River)



Waste dumped by road side





### 3.3 Ineffective Collection, Transportation, and Disposal of Solid Waste

Waste collection should be conducted regularly by PSPs using safe and adequate vehicles, covering all designated collection zones efficiently.

Audit review of the Delta State Waste Management Board's (DSWMB) operational plans for waste collection, transportation, and disposal revealed that service delivery has been largely ineffective and inefficient. Despite regulatory provisions and the adoption of the SEEFOR Private Sector Participation (PSP) model—which initially demonstrated positive outcomes in job creation and improved sanitation—performance significantly declined after the conclusion of the World Bank-backed SEEFOR project in 2015.

The PSP model was designed to ensure regular household waste collection, reduce indiscriminate dumping, and promote sustainable waste management practices. However, audit field surveys and stakeholder interviews revealed that PSP operators engaged by the Board have not been regular in waste collection. In several urban and suburban areas, residents reported waste remaining uncollected for periods ranging from one to two months, while some zones experienced complete neglect. This situation has resulted in overflowing bins, unsanitary conditions, and growing reliance on unauthorized individuals such as “wheelbarrow boys” or illegal dumping in roads and drainage channels.

Further engagement with stakeholders, including the PSP Association, highlighted operational challenges undermining efficiency. These includes non-payment of service fees by residents, frequent breakdown of old and inadequate vehicles, and difficult in accessing the dumpsites, particularly during the rainy season. Audit also noted that DSWMB has been unable to sustain the performance targets initially set under the SEEFOR PSP model, where weekly household waste collection was mandated.

Limited operational capacity of PSPs, poor vehicle maintenance, and weak regulation of collection fees contributed to the observed inefficiencies. Inefficient service delivery, higher levels of illegal dumping, public Regulatory authorities are responsible for ensuring PSPs meet operational standards to guarantee regular, timely, and safe waste evacuation.

Audit review and field surveys revealed significant weaknesses in the operational and institutional capacity of Private Sector Participants (PSPs) engaged in waste collection and transportation across Delta State. The

majority of PSPs operate with old, unreliable trucks that frequently break down, resulting in irregular and delayed evacuation of waste. In some zones, waste is left uncollected due to inadequate coverage, further compounding public complaints.

The audit also noted that the number of registered PSP operators remains insufficient relative to the growing population and increasing dissatisfaction, and increased environmental risks were noted.

- **Weak Institutional and Operational Capacity of PSP Operators**

Private Sector Participants (PSPs) engaged in solid waste management are expected to possess the institutional and operational capacity to deliver efficient waste collection and transportation services. This includes having sufficient and reliable vehicles, adequate geographic coverage, and access to essential infrastructure such as Transfer Loading Stations (TLS).

waste volumes. Furthermore, the absence of essential infrastructure, such as Transfer Loading Stations (TLS), and the poor condition of urban roads hinder the effective use of packer trucks, reducing operational efficiency.

Additionally, the allocation of service zones was found to be uneven, with some areas being more commercially viable than others. This created monopolistic tendencies in lucrative zones, while operators in less profitable areas struggled to recover costs. In such cases, households reported high collection fees and inconsistent service delivery. The absence of adequate regulation by the Delta State Waste Management Board (DSWMB) over PSP pricing and fee enforcement has further fueled public resistance to registration and payment, leading many residents to resort to informal cart pushers and indiscriminate waste disposal.

Overall, the weaknesses in PSP operations—marked by inadequate equipment, poor regulation, and uneven service coverage—have significantly undermined the effectiveness, efficiency, and sustainability of waste management in the State.



Refuse not collected by the PSP



PSP OPERATIONAL VEHICLES



### ● Transportation of Solid Waste

Waste transportation vehicles are required to be adequately covered to prevent spillage, minimize public exposure, and ensure safe and hygienic transport of refuse to designated disposal sites. Best practices further recommend that vehicles be fitted with separate compartments to facilitate segregation of different waste streams and to enhance worker safety.

The audit observed that collected waste from households, street bins, and designated collection points is transported to processing and disposal sites using a range of vehicles. These include tractor-trailers, auto tippers,



open-body autos, lorries, conventional trucks, and a limited number of modern hydraulic vehicles. The mix of traditional and modern transport methods highlights the lack of standardization and uneven capacity in waste evacuation, often resulting in inefficiencies in speed, safety, and volume handled. Waste transportation vehicles are expected to be fully covered to ensure that waste is not visible to the public and to prevent spillage during transit. They should also be equipped with compartments that allow for segregation of different types of waste, thereby reducing risks of contamination and safeguarding the health and safety of waste management workers.

The audit observed, however, that most of the vehicles currently in use are **second-hand trucks with a single drive axle**, which face significant challenges navigating both city roads and dumpsites, particularly during rainy conditions. While some vehicles were covered with tarpaulins or netting to reduce spillage while in transit to designated dumpsites, this practice was not consistent or standardized.

Furthermore, the lack of proper body covers and separate waste compartments was noted. This deficiency not only increases the likelihood of **waste spillage and cross-contamination**, but also poses **serious health and safety risks** to workers directly involved in handling waste, as well as to surrounding communities. The failure of the responsible authorities to adequately equip transportation vehicles with proper covers and compartmentalization has hindered safe, hygienic, and efficient waste transportation across the State.



### **3.4 Waste Management Infrastructure Gaps**

The waste management board is required by law to provide appropriate waste disposal facilities and dumpsites to prevent indiscriminate disposing of waste in unauthorized area. However, the following gaps were observed during the audit.

- **Inadequate Dumpsites**

The Waste Management Board is mandated to acquire and maintain refuse dump sites, sanitary landfills, and recycling facilities in all Local Government Areas. Dumpsites and sanitary landfills must meet technical standards to ensure safe disposal, minimize environmental hazards, and protect public health.

Audit observed that the Delta State Waste Management Board (DSWMB) operates four temporary dumpsites (Asaba, Warri, Sapele, and Agbor environs), which are essentially reclaimed borrow pits. These sites lack engineered controls and depend on bulldozers for compaction, followed by open burning. Scavenging activities were also observed, with waste handlers operating without protective equipment, exposing them to hazardous health risks substances and serious.

Field inspections confirmed that the dumpsites have exceeded their useful life. Encroachment by residential housing has worsened the situation, exposing inhabitants to odor nuisances, air pollution, and health hazards.

Audit further noted community interference, where local youths occasionally shut down dumpsite operations and forced negotiations before reopening, thereby undermining institutional authority and efficiency.

- **Lack of Sewage Treatment Plant**

Modern urban waste management requires functional sewage treatment plants to safely process wastewater, protect water resources, and prevent public health hazards.

The State Government has not prioritized or invested in sewage treatment infrastructure, and weak institutional capacity has prevented the design, funding, and operation of such facilities

- **Absence of Sanitary Landfills**

Despite its statutory mandate, DSWMB has not established any sanitary landfill equipped with liners, leachate collection systems, weighing bridges, or daily soil cover.

The absence of properly engineered sanitary landfills has left the State dependent on uncontrolled dumpsites, thereby increasing the risk of groundwater contamination, environmental degradation, and reduced lifespan of waste management infrastructure.





Ibada Amukpe Sapele Dumpsite



Agbor dumpsite along Abayo Rd  
Agbor



Agbarho Dumpsite



Sapele Dumpsite

- **Underutilization of Integrated Waste Management Facility**

Integrated Waste Management (IWM) systems are designed to reduce reliance on dumpsites by enabling recycling, resource recovery, energy generation, and environmentally safe disposal. Facilities must be operated at the contracted capacity and according to technical specifications to ensure value for money and sustainability.

Audit review revealed that the Delta State Government invested over one billion Naira in the procurement and installation of a multi-million naira Integrated Waste Management Facility (IWWMF) along Ibusa Road, designed to process up to 1,000 tonnes of household and clinical waste daily. The facility, developed under contract with Boskel Nigeria Limited, was expected to provide an environmentally safe and sustainable solution to the State's growing waste management challenges.

However, audit physical verification and stakeholder interviews indicated that the facility is severely underperforming, with an actual processing capacity of less than 100 tonnes per day. This underutilization demonstrates that the facility is not delivering its intended objectives, resulting in wasted expenditure and continued reliance on dumpsites for waste disposal.

Further audit inquiry confirmed that the Delta State Government had initiated legal proceedings against the contractor for alleged breach of contractual obligations. Nonetheless, the contractor's Chief Executive Officer consistently failed to attend scheduled stakeholder meetings, and the audit team could not confirm the current status or outcome of the litigation.

The ineffective performance of the IWWMF highlights significant weaknesses in project planning, contract management, and post-procurement monitoring. This has resulted in substantial financial loss to the State and limited progress toward achieving modern, sustainable waste management solutions.





- **Limited Public Knowledge and Weak Adoption of Recycling Practices**

Waste should be segregated at source and recycled, both to reduce environmental impact and to generate revenue.

Audit established that recycling as a waste management strategy is poorly understood and underutilized in Delta State. The study revealed that most residents lack adequate knowledge of recycling methods and do not perceive recycling as an integral component of solid waste management. Consequently, recyclable materials continue to be indiscriminately disposed of as refuse rather than harnessed as valuable resources.

Globally, recycling is recognized as a critical element of sustainable waste management. It not only reduces the volume of waste destined for dumpsites but also transforms waste into raw materials for new products, thereby promoting resource efficiency and environmental sustainability. In Delta State, however, recycling initiatives remain largely absent or insufficiently implemented.



Audit further noted that recycling presents significant opportunities for revenue generation beyond waste collection fees. Properly structured recycling and “waste-to-wealth” initiatives could offset the operational costs of waste management services while creating jobs and contributing to the State’s economic development. The absence of a recycling framework in Delta State represents a missed opportunity to leverage these socio-economic and environmental benefits.

### **3.5 Compliance with Laws and Regulations:**

The Ministry of Environment and Delta State Waste Management Board should have well designed community awareness programs and up-to date website which allows the community to access policy and information on solid waste disposal and management.

- **Low Public Awareness and Weak Implementation of Waste Segregation Practices**

DSWMB and the Ministry of Environment are responsible for educating residents on waste segregation, recycling, and compliance with environmental regulations.

The Delta State environmental laws and policies mandate the Ministry of Environment and the Delta State Waste Management Board (DSWMB) to organize continuous awareness campaigns through radio, television, social media, flyers, posters, banners, and newsletters to sensitize residents on the dangers of indiscriminate waste disposal and the benefits of proper waste management. These initiatives are intended to drive behavioral change and encourage citizens to take responsibility for maintaining a clean environment.

Audit observed that public education on waste classification and segregation remains inadequate. Although waste segregation at source — such as separating organic waste, plastics, textiles, bottles, and metals — is globally recognized as one of the most effective strategies for reducing waste volumes, extending landfill lifespan, and mitigating environmental impacts, this practice is yet to be widely adopted in Delta State.

Interviews conducted with residents in Asaba and Warri revealed limited awareness of DSWMB’s initiatives on waste segregation. Furthermore, audit review showed that a structured system for collective waste

segregation and collection has not been introduced across urban or suburban areas of the State. Consequently, there is little understanding among waste generators regarding the necessity and methods of waste segregation.

The absence of widespread awareness campaigns and the lack of operational waste segregation systems have undermined the State's ability to reduce waste volumes at dumpsites and advance sustainable waste management practices

- **Ineffective Monitoring and Supervision of Waste Management Activities**

DSWMB must actively monitor PSP activities and enforce compliance with environmental and waste management laws.

Audit noted that, in an effort to curb illegal waste disposal, the Delta State Government constituted a Joint Waste Monitoring Taskforce led by the Director General of the Delta State Capital Territory Development Agency, with membership including the Executive Chairman of the Delta State Waste Management Board, the Chairman of the State Taskforce on Environment, and representatives from the Ministry of Justice and the Ministry of Environment. The Taskforce was mandated to address issues such as illegal waste dumping, blocked drainage systems, and unkempt surroundings.

However, audit enquiries and stakeholder confirmations revealed that there was inadequate monitoring and supervision of both residents and Private Sector Participants (PSPs) by the responsible agencies. This resulted in frequent delays in waste collection and widespread practices of residents dumping refuse by roadsides at night to avoid detection.

The audit further observed that these shortcomings were primarily due to the absence of clearly defined roles and responsibilities among participating agencies. The overlaps and conflicts of mandate, coupled with lack of institutional commitment, have hindered effective enforcement of waste management laws and weakened overall service delivery within the waste management value chain

## **Weak Enforcement of Waste Management Regulations**

Under the Delta State Environmental Policy and the Delta State Waste Management Board (DSWMB) Law, the Ministry of Environment and the DSWMB are mandated to:

- Regulate and monitor all waste management activities in the State.
- Supervise and evaluate the performance of Private Sector Participants (PSPs).
- Enforce compliance with environmental standards and approved waste disposal practices.
- Prevent indiscriminate dumping and ensure safe, sustainable waste management.

Audit review established that the Ministry of Environment and the Delta State Waste Management Board (DSWMB), though empowered under the State Environmental Policy and the DSWMB Law to regulate, monitor, and enforce compliance with waste management standards, have not fully discharged this mandate. The agencies lack a strategic, targeted approach to detect and curb illegal dumping, supervise PSP operations, and enforce compliance mechanisms effectively.

While the Delta State Judiciary approved the establishment of five mobile courts to prosecute waste management offences in Asaba, Warri, Uvwie, and environs, enforcement outcomes remain minimal. Stakeholder interactions and documentary evidence (*Punch Newspaper, 3 January 2024; Leadership Newspaper*) confirm that enforcement is undermined by disproportionately low penalties for offenders, inadequate funding, weak institutional capacity, corruption, poor public awareness, and gaps in the environmental legal framework.

The absence of robust and coordinated enforcement has contributed to persistent illegal dumping, irregular waste evacuation, and weak deterrence against non-compliance by both waste generators and PSP operators.

- **Fragmented and Overlapping Waste Management Legislation**

Effective waste management requires a **clear, harmonized legal and institutional framework** that establishes unambiguous roles, responsibilities, and coordination mechanisms among relevant agencies.

Legislation should be comprehensive, coherent, and enforceable across the State to ensure consistency, accountability, and efficiency.

Audit review of the Delta State Waste Management Board Law and other enabling legislation governing waste management revealed significant fragmentation, overlap, and lack of coordination. The laws are inconsistently applied across local councils and are hampered by conflicting mandates, resulting in loopholes and enforcement conflicts among the principal waste management agencies.

Discussions held with stakeholders—including the Ministry of Environment, the Delta State Waste Management Board (DSWMB), and the Delta State Capital Territory Development Agency—confirmed that the legislative framework suffers from gaps and ambiguities. Undefined roles and overlapping responsibilities have led to duplication of functions, jurisdictional disputes, and weakened enforcement. This has been further compounded by poor inter-agency coordination and political interference, particularly in areas such as billing, allocation of collection zones, enforcement, and public sensitisation.

In response to these challenges, a Four-Man Committee was constituted with representation from the Ministry of Environment, DSWMB, and the Capital Territory Development Agency. The committee was tasked with reviewing the existing legal framework and making recommendations for harmonisation of Delta State's waste management and environmental laws to address these institutional and regulatory weaknesses.



## Stakeholders Meetings



## CHAPTER 4

### 4.0 CONCLUSION

The audit found that solid waste management in Delta State remains largely ineffective due to weak institutional capacity, poor infrastructure, and weak enforcement of environmental laws. The Delta State Waste Management Board operates with an imbalanced staffing structure, inadequate equipment, and insufficient oversight of Private Sector Participants, leading to irregular and unsafe waste collection and disposal.

Key infrastructure gaps—including the absence of sanitary landfills, sewage treatment plants, and functional integrated waste facilities—have forced continued reliance on open dumpsites, posing serious environmental and public health risks.

Additionally, fragmented and overlapping legislation, coupled with poor inter-agency coordination, has created regulatory loopholes and enforcement failures. Unless urgent reforms are made to strengthen institutional capacity, harmonize laws, invest in modern infrastructure, and improve compliance, waste management in Delta State will remain unsustainable.



## CHAPTER 5

### 5.0 RECOMMENDATIONS

Emerging from the above findings and discussion, the study recommends:

#### **1. Adequacy of Staffing at DSWMB**

The DSWMB should restructure its staffing to prioritize technical, operational, and monitoring roles. Recruitment should focus on environmental engineers, waste management specialists, compliance officers, and additional legal staff. Continuous training and capacity building should also be provided to enhance staff efficiency and alignment with the Board's mandate.

#### **2. PROMPT COLLECTION AND DISPOSAL OF WASTE**

The DSWMB should provide approved bins, implement color-coded segregation, and ensure accessible collection points. More PSPs should be licensed and fairly allocated zones, with periodic rotation to avoid monopolies. The Board should regulate and enforce standardized tariffs, monitor compliance, and ensure PSP staff use uniforms and PPE. Strict penalties should be imposed on illegal dumping and residents who refuse to register with PSPs.

#### **3. Collection and Transportation**

To address these inefficiencies, the DSWMB should establish Transfer Loading Stations (TLS) in inaccessible areas to reduce travel distances, minimize turnaround time, and lower operating costs of trucks. In addition, the Ministry of Environment and the Board should secure adequate and timely budgetary provisions and fund releases for the procurement of trucks and operational equipment, thereby ensuring efficient, effective, and economical waste management services across the State.

#### **4. Adequacy of Dumpsite Provision and Management**

The State Government should establish new, fenced dumpsites in major cities, restrict access to licensed PSPs, and equip managers with shelters, PPE, and bulldozers to improve operations. Illegal dumpsites should be cleared and barricaded, while the government should introduce health insurance schemes for waste collectors and dumpsite workers.

## **5. Sanitary Landfills and Modern Waste Facilities**

The State Government should construct sanitary landfills with integrated facilities and weighing bridges to enable safe decomposition, prevent contamination, and generate reliable data on waste volumes. Legislation should prohibit encroachment and open burning, with violators subjected to penalties. Existing Integrated Waste Management Facilities should be fully operationalized, new ones established in strategic areas, and sewage treatment plants procured to complement waste management.

## **6. Public Enlightenment and Sensitisation**

The DSWMB and Ministry of Environment should implement a structured Information, Education, and Communication (IEC) program that promotes behavioural change at individual, household, and community levels. Sensitisation should be conducted in local languages and integrated into school curricula, religious platforms, and mass media campaigns (radio, television, newspapers, and social media). Stakeholders should be regularly engaged through accessible environmental policies, feedback mechanisms, and continuous outreach to raise awareness of health risks, the importance of waste segregation, and compliance with environmental regulations. These measures will foster a culture of environmental responsibility and sustainable waste management practices across the State

## **7. Monitoring, Supervision, and Enforcement**

The DSWMB and Ministry of Environment should establish an integrated monitoring framework that includes community-level taskforce participation, dedicated mobile courts for swift prosecution of offenders, and stronger sanctions for both waste generators and PSPs who default. Regular supervision of PSPs should be enforced to ensure adherence to licensing guidelines, environmental standards, and contractual obligations. In addition, the DSWMB should develop a reporting mechanism to periodically provide data on waste management operations across zones to improve accountability and decision-making.

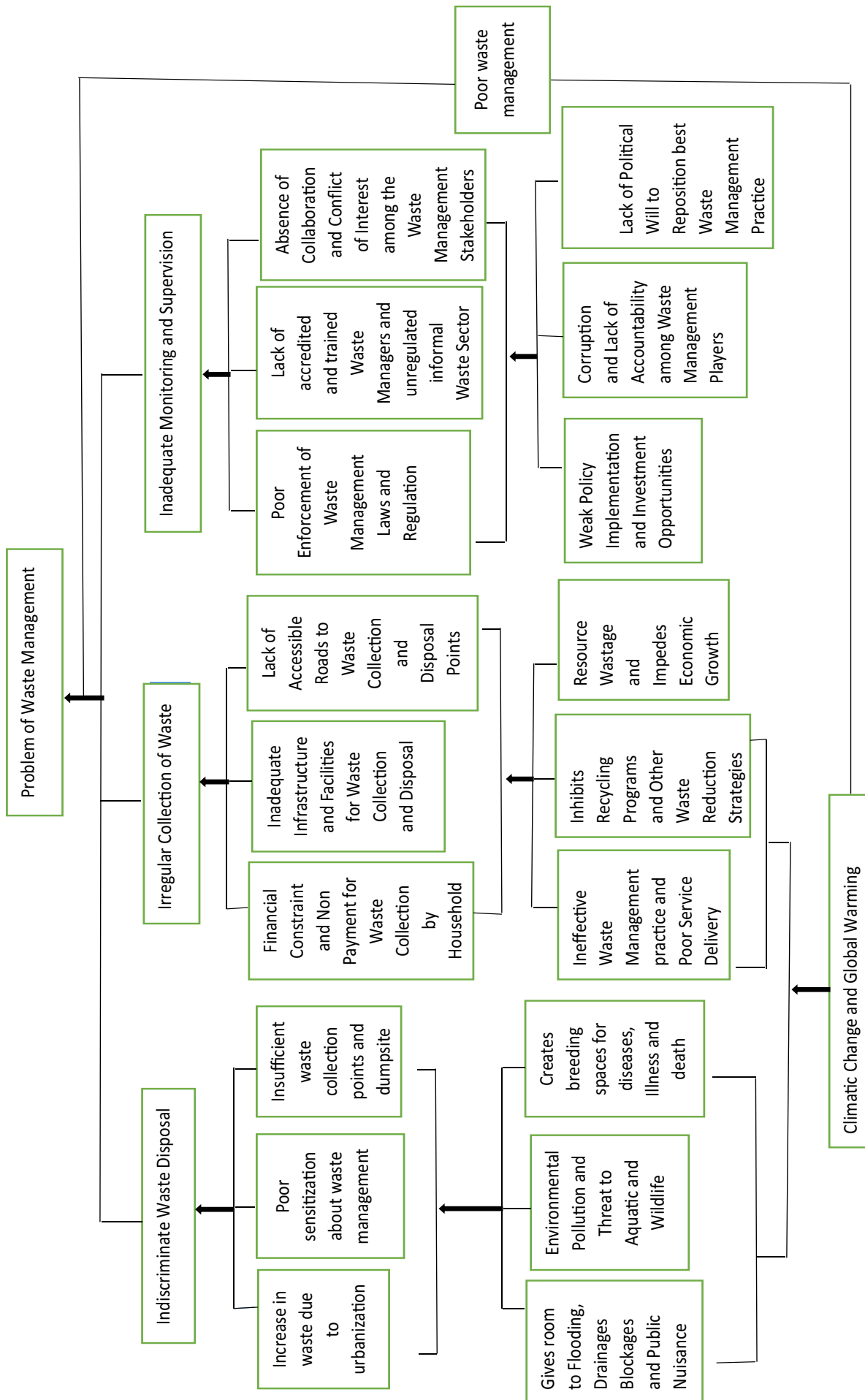
## **8. Enforcement of Waste Management and Environmental Laws**

The Ministry of Environment and DSWMB should collaborate to establish robust enforcement mechanisms for environmental, sanitation, and

waste disposal laws. Non-compliance should attract heavy fines, stiffer penalties, and disciplinary sanctions for both residents and PSPs. Government should prioritize adequate funding for environmental agencies to reinforce waste collection and disposal systems, while ensuring strict monitoring of program implementation. Effective enforcement will enhance compliance, reduce indiscriminate dumping, and achieve higher standards of urban cleanliness across the State.

## **9. Recycling and Waste-to-Wealth Initiatives**

The Ministry of Environment and DSWMB should establish a clear policy and operational framework to promote recycling and waste -to-wealth initiatives. This should include fostering partnerships with private firms and investors to set up recycling plants and facilities capable of converting waste into reusable products. Such initiatives will not only reduce pressure on dumpsites and landfills but also generate employment, stimulate private investment, and support Delta State's transition toward a circular economy.



## AUDIT DESIGN MATRIX

Audit question and sub-questions What we want to know	Audit criteria The standards we measure evidence against	Data collection and analysis			Anticipated findings The problems or shortcomings we expect to find	Risk to the execution What can go wrong
		Audit evidence needed The evidence that will answer the question	Methods for data collection How we are going to get the evidence	Method of analysis What we will do with it once we get it		
1. To ascertain measures put in place to ensure effective and solid waste disposal and management.						
Where there measures in place to ensure timely evacuation of municipal solid waste process?	<b>Environmental Policy (2009) E. SOLID WASTE MANAGEMENT AND SANITATION</b> It is Delta State Ministry of Environment Policy to: (i) Provide appropriate legislations, guidelines and standards in solid waste management and general sanitation. (iv) Routinely monitor the general status of solid systems and sanitation in the state  <b>Delta State Waste Management Board shall perform the function:</b> 6. (a) clear refuse from designated refuse dumps and bins along the streets and corners of the villages, towns and cities in the State; (j) monitor and evacuate from time to time as the Board may determine the possible effects of the dumpsites waste on the environment and cost-effective restoration	<b>Copy of Environmental Policy (2009) and Delta State Management Board manual or any Stakeholder document</b> used as guide to ensure prompt evacuation and disposal of municipal solid wastes	1. Distribution of Questionnaires  2. Interview	Documentary Analysis Analysis of residents’ feedback in terms of taxing principles, costs of services and offences committed	Untimely evacuation of wastes from resident’s locations by the PSPs.	Too many indiscriminate dumping of wastes in the localities
2. To ascertain the measures put in place to ensure sound system practice on municipal solid waste management						
3. To ascertain if the PSPs are supervised in course of discharging their duties						
Did Delta State Waste Management Board supervise the PSPs for timely evacuation of waste?	<b>Environmental Policy (2009) E. SOLID WASTE MANAGEMENT AND SANITATION</b> It is Delta State Ministry of Environment Policy to: (i) Provide appropriate legislations, guidelines and standards in solid waste management and general sanitation; (vi) Monitor private sector solid waste system; (vii) Develop and maintain relationships that enhance solid waste systems and general sanitation.  <b>Delta State Waste Management Board shall perform the function:</b> (i) monitor and enforce compliance with waste management standards and	<b>Copy of Environmental Policy (2009) and Delta State Management Board manual or any Stakeholder document</b> used as guide to ensure prompt evacuation and disposal of municipal solid wastes.	1. Formal request of PSPs’ schedule 2. Interview	<b>Compare the assessment of the PSPs by the Delta State Waste Management Board with audit findings</b>	<b>The PSPs may not be performing optimally but above average.</b>  Sometimes, the Board receives complaint from households on functionality and inconsistency on waste collection by the PSPs, which could be due to low level of compliance by	<b>Inadequate operational vehicle for site visitations had resorted to the use of Tricycle (Keke Napep).</b>  Rainy season affects the evacuation of wastes to dumpsites due to bad roads linking to the dumpsites.

2.1 Has the role of the State been set clearly; and are they understood to achieving strategic goals on municipal solid waste management practices?	<p><b>Environmental Policy (2009) E. SOLID WASTE MANAGEMENT AND SANITATION</b></p> <p>It is Delta State Ministry of Environment Policy to:</p> <p>(i) Provide appropriate legislations, guidelines and standards in solid waste management and general sanitation;</p> <p>(ii) Effectively promote the integration of Solid Waste Systems and sanitation into national and regional/sectored policies;</p> <p>(iii) Work towards the formulation and implementation of an Integrated Solid Waste Control System for the State;</p> <p>(iv) Routinely monitor the general status of solid systems and sanitation in the State.</p> <p><b>Delta State Waste Management Board shall perform the function:</b></p> <p>6. (a) clear refuse from designated refuse dumps and bins along the streets and corners of the villages, towns and cities in the State;</p> <p>(h) educate the public on the importance and different methods of waste management for the purpose of maintaining a</p>	<p><b>Copy of Environmental Policy (2009) and Delta State Management Board manual or any Stakeholder document</b> used as guide to ensure prompt evacuation and disposal of municipal solid wastes</p>	<p>1. Distribution of Questionnaires</p> <p>2. Interview</p>	<p><b>Documentary Analysis</b></p> <p>Analysis of residents' feedback in terms of taxing principles, costs of services and offences committed</p>	<p>Low sensitization of residents about solid waste management practices.</p>	<p>Low compliance on solid waste management practices</p>
---	--	--	--	---	---	---

#### Organizing the Audit

The Audit Team will maintain high standard of Professionalism and objectivity throughout the audit. As far as possible, the Team will obtain data of the pre-study from collection of relevant documents such as Policies, Laws, Plans Programs Documentation and regulations establishing the various audited entities such as:

#### Delta State Waste Management Board

Delta State Ministry of Environment;  
Delta State Capital Territory Agency;  
Delta State Environmental Task Force; and  
Delta State Environmental Protection Agency (DELSEPA).

The Team will interact with the Stakeholders in the Waste Management process to obtain sound system and good practice.

Reviewing and testing the valid contractual documents and payments.

Conducting oral interview and administration of questionnaires with key stakeholders.

Finally, visitation of dumpsites for physical inspection to gather evidence and opinions on quality service delivery issues as well as the impact of indiscriminate disposal of and collection of waste on the environment and the health of residence of the communities.



## **Appendix**

### **Components of The IWMMF**

The equipment has various compartments such as incinerators in-vessel composters, recycling systems, refuse-derived fuels, integrated waste management and smokeless flares, among others. Recyclables and compostable materials are separated both from other waste and the compostable materials are moved to the composting section, which uses aerated static pile composting. The remaining waste is conveyed into the three incinerators. The resulting ash is recycled by mixing it with cement and sharp sand and molding it into interlocking tiles. The stacks of the three incinerators are fitted with smoke cleaning systems to reduce emissions. The process produces wastewater, which is channeled to a pit where it is treated and reused.

### **OPERATIONAL GUIDELINES/REGULATION FOR PRIVATE SECTOR PARTICIPANTS (PSP) IN REFUSE COLLECTION AND DISPOSAL IN DELTA STATE**

1. All persons/Companies engaged in refuse collection and disposal in Delta State shall register with and obtain operational license from the Delta state Waste Management Board (the “Board”)
2. The operational license shall be renewed annually.
3. The applicant for registration and/or grant operational license to engage in the business of refuse collection and disposal shall comply with the following conditions:
  - (a) Applicant shall be registered with the Corporate Affair Commission and provide Certificate of Incorporation or registration of business name.
  - (b) Posses sound operational Compactor or tipping truck(s); with the company’s name boldly written on truck.
4. All PSPs must have at least 5 workers for their operations including collectors, a driver, and any other person necessary to carry out their business.
5. The PSP shall take all measures to sensitize the franchise zone and ensure that households within the franchise zone are enumerated and registered for compliance.

6. The PSP shall ensure prompt collection and disposal of waste using environmental best practice.
7. The PSP shall take measure to maintain the environmental quality of operations and not disrupt the quality of life of the community wherein they operate.
8. The PSP shall ensure that refuse do not accumulate unnecessarily; pick and evacuate refuse from households within their franchise zone and dispose same at the government approved dumpsite.
9. The PSP shall minimize health risks; provide Personal Protective Equipment and First Aids Services to staff including transport for injured personnel to hospital when injured and use tarpaulin to avoid littering of roads and streets with refuse.
10. The PSP shall be remunerated from monthly refuse disposal fee paid by owners of facilities and residents for service delivery based on government approve tariff.
11. The PSP shall confine its operations to officially-assigned franchise zone. Any PSP that defaults shall be sanctioned.
12. The PSP shall fully participate in monthly environmental sanitation exercise to ensure that waste generated during the exercise is promptly evacuated from the franchised zone.

## References

- [1] Aniekan, I., & Ikechukwu, O. (2016). Review of municipal solid waste management technologies and its practices in China and Germany. International journal of technology enhancements and emerging engineering research.
- [2] Igbinomwanhia, D. I. (2012). Characterization of commercial solid waste in Benin metropolis, Nigeria. Journal of emerging trends in engineering and applied sciences.
- [3] Ikpe, A. E., Owunna, I. B., & Agho, N. (2019). Physiochemical analysis of municipal solid waste leachate from open dumpsites in Benin City metropolis. Journal of applied sciences & environmental management.

- [4] Ikpe, A., Imonitie, D. I., & Ndon, A. I. E. (2019). Investigation of the energy (biogas) derivation from anaerobic digestion of food waste products. Akademik platform mühendislik ve Fen bilimleri dergisi.
- [5] Nwaokobia, K., Ogboru, R. O., & Okolie, P. L. (2013). Solid waste management: efficient approach towards sustainable development in Nigeria. Greener journal of environmental management and public safety.
- [6] Onwurah, I. N. E., Ogugua, V. N., & Otitoju, O. F. (2006). Integrated environmental biotechnology oriented framework for solid waste management and control in Nigeria. International journal of environment and waste management.
- [10] Samuel M. M., Davou D. D., Juliet D. D. and Ruth A. N. (2016). Environmental hazards of continued solid waste generation and poor disposal in municipal areas of Nigeria. Journal of geography, environment and earth science inter



**Email-auditorgeneral@dsa.dl.gov.ng**  
**Website-www.dsa.dl.gov.ng**