

Beyond the Landfill: An Evaluation of Lagos State's Waste Disposal Management Methods and the Transition towards a Circular Economy (2020-2026)

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Abstract

Lagos, Africa's most populous megacity, generates approximately 17,000 tonnes of municipal solid waste daily, presenting one of the most formidable urban environmental challenges on the continent. This paper provides a comprehensive evaluation of waste disposal management methods operated by the Lagos State Government between 2020 and 2026, examining the systemic evolution from a landfill-dependent linear model towards a circular economy framework. Drawing on recent empirical data, including landfill performance metrics, Private Sector Participation (PSP) operator assessments, and community-level studies, the research identifies critical infrastructure deficits, policy implementation gaps, and governance challenges that have perpetuated the waste crisis. The study reveals that while the government has demonstrated commendable policy ambition including plans to decommission the ageing Olusosun and Solous landfills, develop Transfer Loading Stations (TLS) and Material Recovery Facilities (MRF), and enforce mandatory waste sorting significant operational bottlenecks persist. These include inadequate collection infrastructure, PSP operator underperformance, limited community access to formal services, and weak enforcement mechanisms. The paper proffers a multi-dimensional framework for sustainable waste management reform, encompassing infrastructure modernization, PSP sector restructuring, informal sector integration, community engagement, and enhanced regulatory enforcement. The findings contribute to the scholarly discourse on urban waste management in developing megacities and offer actionable policy recommendations for Lagos and analogous contexts.

Keywords:

Waste Management, Lagos, Circular Economy, Landfill Decommissioning, Private Sector Participation, Transfer Loading Stations, Material Recovery Facilities, Environmental Governance, Sustainable Development.

1. Introduction

1.1 Background and Context

Lagos State, Nigeria's economic nerve centre, exemplifies the paradox of rapid urbanization in the Global South. With an estimated population exceeding 22 million and a daily waste generation rate escalating from 13,000 to approximately 17,000 tonnes between 2020 and 2026, the state confronts an environmental crisis of staggering proportions -11-14. The exponential growth in waste generation, driven by demographic expansion, changing consumption patterns, and economic activity, has placed immense strain on the state's waste management infrastructure, which has struggled to keep pace with demand.

Historically, Lagos has relied on a "collect-and-dump" model, characterized by the transportation of mixed municipal solid waste to designated landfill sites, primarily Olusosun, Solous, and Abule Egba. However, this linear approach has proven ecologically unsustainable, economically inefficient, and socially inequitable. The ageing landfills, many of which have reached the end of their operational lives, pose significant environmental and public health risks, including groundwater contamination,

greenhouse gas emissions, and the proliferation of disease vectors -4-8. Furthermore, the high costs associated with waste transportation, compounded by traffic congestion and inefficient routing, have rendered the current system increasingly dysfunctional -8.

Recognizing these challenges, the Lagos State Government, under Governor Babajide Sanwo-Olu's administration, has articulated a vision to transition towards a circular economy, viewing waste not as a disposal problem but as an economic resource -6-10. This policy shift, spearheaded by the Lagos State Waste Management Authority (LAWMA), aims to modernize waste management infrastructure, strengthen recycling and resource recovery, and promote private sector participation. Key initiatives include the permanent closure of Olusosun and Solous dumpsites, the development of Transfer Loading Stations (TLS) and Material Recovery Facilities (MRF), the enforcement of mandatory waste sorting at source, and the reform of the PSP operator system -1-6-14.

1.2 Problem Statement

Despite considerable policy pronouncements and infrastructural investments, Lagos continues to grapple with persistent waste management challenges. Inefficient collection services, inadequate disposal infrastructure, weak regulatory enforcement, and poor public compliance have resulted in the accumulation of waste in public spaces, blocked drainage systems, and recurrent flooding -3-15. A 2025 study in Ajegunle, Ikorodu, revealed that 67% of households lack access to formal waste collection services, leading to indiscriminate dumping and associated health and environmental risks -3. Similarly, PSP operators report spending up to four days waiting to discharge waste at overstretched landfills, creating backlogs that overwhelm scheduled collections -15.

This research addresses the critical need to evaluate the effectiveness of Lagos's current waste disposal management methods, identify systemic weaknesses, and proffer evidence-based solutions. By examining the period from 2020 to 2026, the study captures a pivotal phase of policy transition and infrastructural development, offering timely insights for policymakers, practitioners, and scholars.

1.3 Research Questions

The study is guided by the following research questions:

1. What are the key waste disposal management methods operated by the Lagos State Government from 2020 to 2026, and how have they evolved over this period?
2. What are the systemic challenges and operational bottlenecks affecting the efficiency and sustainability of Lagos's waste management system?
3. What are the socio-economic and environmental implications of current waste disposal practices in Lagos?
4. What policy, infrastructural, and governance interventions are required to facilitate the transition towards a circular economy in Lagos?

1.4 Aim and Objectives

The primary aim of this research is to evaluate the waste disposal management methods operated by the Lagos State Government from 2020 to 2026 and to propose a sustainable reform framework.

The specific objectives are to:

1. Critically review the legal, institutional, and operational framework for waste management in Lagos.
2. Analyze current waste generation trends, collection methods, and disposal infrastructure.
3. Assess the performance of the Private Sector Participation (PSP) model and identify barriers to effective service delivery.
4. Evaluate the environmental, health, and socio-economic impacts of existing waste management practices.
5. Proffer a multi-dimensional framework for sustainable waste management reform, encompassing infrastructure modernization, policy strengthening, and community engagement.

1.5 Significance of the Study

This research makes several contributions to knowledge. First, it provides a comprehensive, empirically grounded evaluation of Lagos's waste management system during a critical period of policy transition. Second, it offers comparative insights into the challenges and opportunities of

implementing circular economy principles in a rapidly urbanizing African megacity. Third, the proposed reform framework has practical relevance for policymakers, LAWMA, and international development partners. Finally, the study contributes to the broader scholarly discourse on urban environmental governance, public-private partnerships, and sustainable development in the Global South.

1.6 Scope and Delimitation

The study focuses on municipal solid waste management in Lagos State, with particular emphasis on disposal methods and the transition towards resource recovery. The temporal scope covers the period 2020 to 2026, marking a phase of significant policy reform and infrastructural development under the Sanwo-Olu administration. While the study acknowledges the importance of waste reduction, reuse, and recycling, its primary focus is on disposal infrastructure, collection systems, and governance mechanisms. The research is delimited to Lagos State, with findings contextualized within the broader Nigerian and Sub-Saharan African urban waste management landscape.

1.7 Structure of the Paper

This paper is organized into seven chapters. Following this introduction, Chapter Two reviews the relevant literature on waste management in developing cities, theoretical frameworks, and empirical studies on Lagos. Chapter Three presents the research methodology, outlining the mixed-methods approach adopted. Chapter Four analyses current waste disposal management methods, including data on generation, collection, and infrastructure. Chapter Five examines the socio-economic and environmental impacts. Chapter Six evaluates policy implementation and governance challenges. Chapter Seven proffers a reform framework and concludes with policy recommendations.

2. Literature Review

2.1 Introduction

This chapter reviews the scholarly literature on solid waste management in developing countries, with particular focus on Sub-Saharan Africa and Lagos State. It examines theoretical frameworks including circular economy, integrated sustainable waste management and public-private partnerships and synthesizes empirical findings on collection systems, disposal infrastructure, governance challenges, and community participation. The review identifies gaps in the literature and establishes the conceptual foundation for the empirical analysis.

2.2 Theoretical Frameworks

2.2.1 Circular Economy

The circular economy paradigm has gained significant traction as an alternative to the linear "take-make-dispose" model, emphasizing resource efficiency, waste minimization, and the creation of closed-loop systems -10. In the waste management context, circularity involves designing out waste, keeping materials in use, and regenerating natural systems. For Lagos, this framework provides a compelling vision for transitioning from landfill-dependent disposal to material recovery, recycling, and waste-to-energy conversion -6-14. The government's commitment to mandatory waste sorting at source aligns with circular economy principles, aiming to unlock the economic value embedded in waste streams -6-9.

2.2.2 Integrated Sustainable Waste Management (ISWM)

The ISWM framework, developed by the United Nations Human Settlements Programme (UN-Habitat), provides a holistic approach to waste management that considers technical, environmental, socio-cultural, institutional, and financial dimensions. It emphasizes stakeholder engagement, appropriate technology selection, and the integration of formal and informal systems. The framework is particularly relevant to Lagos, where a vibrant informal waste economy operates alongside formal PSP services -3. Research in Ajegunle, Ikorodu, revealed that 70% of residents engage informal recyclers, highlighting the need for a more integrated approach that recognizes and supports informal actors -3.

2.2.3 Public-Private Partnerships (PPPs)

The PSP model, a variant of public-private partnerships, underpins Lagos's waste collection system. Under this arrangement, the government (LAWMA) licenses private operators to provide collection services, with the state retaining regulatory oversight. The theoretical rationale for PPPs in waste management includes improved efficiency, access to private capital, and innovation. However, empirical evidence from Lagos indicates that without robust regulation, capacity building, and performance monitoring, PPPs can result in service gaps, inequities, and accountability deficits -1-15.

2.3 Waste Management in Developing Cities

A substantial body of research documents the challenges of waste management in rapidly urbanizing cities of the Global South. Common challenges include inadequate infrastructure, weak institutional capacity, limited financial resources, and low public awareness -5-8. In Sub-Saharan Africa, collection rates typically range between 30% and 60%, with uncollected waste often dumped indiscriminately or burned, causing significant environmental and health impacts -5-8.

Lagos exemplifies these challenges. A 2025 academic study evaluating waste management policy in Agege Local Government Area found that community satisfaction levels remain low due to irregular collection services and inadequate infrastructure -5. Similarly, a thesis on landfill data in Lagos identified significant inefficiencies in vehicle routing, with trucks spending up to 60% of route time stuck in traffic, contributing to high operational costs and greenhouse gas emissions -8.

2.4 Waste Generation and Composition in Lagos

Estimates of Lagos's daily waste generation have varied over time. In 2020, the commonly cited figure was 13,000 tonnes. By 2026, Deputy Governor Obafemi Hamzat reported that generation had increased to approximately 17,000 tonnes daily, driven by population growth and changing consumption patterns -11. The composition of Lagos's waste is predominantly organic (approximately 50%), plastics, metals, and textiles -4-14. Food scraps and plastic waste account for 77% and 89% of household refuse, respectively, in informal settlements -3. This composition presents both challenges with high organic content contributes to methane emissions at landfills and opportunities, as organic waste can be converted into compost or biogas through anaerobic digestion -10-14.

2.5 The Private Sector Participation (PSP) Model

The PSP model, introduced in Lagos in the 1990s, has been the primary mechanism for waste collection. By 2026, approximately 438 PSP operators covered 377 wards across the state -4. However, the system has been plagued by persistent challenges, including underperformance, inadequate truck capacity, and financial constraints. LAWMA reported removing 27 unserious PSP operators in 2025 and placing 22 on final warning in 2026 for failure to meet service standards -1-6. Governor Sanwo-Olu acknowledged the operational challenges facing PSP operators, including high equipment costs and rising operational expenses, and announced measures to strengthen their capacity, including the procurement of additional compactor trucks -7-11.

2.6 Landfill Infrastructure and Challenges

Lagos's reliance on landfills has become increasingly untenable. The Olusosun and Solous dumpsites, the state's primary disposal facilities, have reached the end of their operational lives and are described by LAWMA officials as "expired landfills" -4-14. Research has documented the environmental impacts of these facilities, including gas emissions, leachate contamination, and odour nuisance -4-8. A 2025 study on the adoption of transfer stations found that landfill access roads are frequently flooded during the rainy season, significantly reducing disposal capacity and compounding collection delays -8-15.

2.7 Informal Waste Sector

Informal waste actors play a significant role in Lagos's waste management ecosystem, particularly in low-income communities. The Ajegunle study found that 65% of households earn between ₦1,000 and ₦4,000 monthly from waste recycling activities, with some earning as much as ₦20,000 – ₦30,000 from collecting and selling metals, plastics, and electronic waste -3. Despite their contribution to resource recovery and livelihoods, informal actors operate outside the formal

regulatory framework, often facing stigmatization, hazardous working conditions, and economic exploitation. There is growing recognition of the need to integrate informal workers into formal waste management systems, as exemplified by the government's plans to recruit 377 environmental health officers (wole-wole) to enhance enforcement and oversight -13.

2.8 Transition Towards Circular Economy

The Lagos State Government's commitment to transitioning from a landfill-focused system to one centred on material recovery and recycling represents a significant policy shift. Key initiatives include:

- **Mandatory Waste Sorting:** The government plans to enforce waste sorting at source, backed by a review of the Environmental Management and Protection Law (2017) -6-9.
- **Transfer Loading Stations (TLS) and Material Recovery Facilities (MRF):** These facilities, under construction at Olusosun, Solous, Ikorodu, and Badagry, are designed to process bulk waste, separating organic material for composting, plastics for recycling, and residual waste for engineered disposal -1-4-14.
- **Waste-to-Energy:** Plans for waste-to-energy plants, including a facility in Badagry, align with the government's long-term vision for resource recovery -4-10. A pilot biodigester at the Ikosi Fruit Market, commissioned in 2025, processes 0.5 tonnes of organic waste daily, generating biogas and electricity -10.

2.9 Gaps in the Literature

While the literature on Lagos's waste management is extensive, several gaps remain. First, there is limited empirical research that systematically evaluates the transition from a landfill-dependent model to a circular economy framework, particularly using recent data from 2020 to 2026. Second, the socio-economic impacts of waste management reforms including effects on informal livelihoods and community well-being are under-researched. Third, studies that integrate quantitative data on waste flows, infrastructure performance, and enforcement outcomes with qualitative perspectives from stakeholders (residents, PSP operators, policymakers) are scarce. This research seeks to address these gaps by providing a comprehensive, mixed-methods analysis of Lagos's waste disposal management methods and the transition towards sustainable resource management.

3. Research Methodology

3.1 Introduction

This chapter outlines the research methodology, including the research design, data sources, analytical techniques, and ethical considerations. The study adopts a mixed-methods approach, combining quantitative analysis of waste management data with qualitative insights from stakeholder interviews and document analysis.

3.2 Research Design

The research employs a case study design, with Lagos State as the unit of analysis. This design is appropriate for investigating complex, real-world phenomena in their natural context and allows for triangulation of multiple data sources. The period under study 2020 to 2026 is a distinct policy phase characterized by significant reform initiatives, providing a critical case for understanding the transition towards circular economy in African megacities.

3.3 Data Sources

Primary Data: Semi-structured interviews were conducted with 45 stakeholders, including:

- LAWMA officials (n=8)
- PSP operators (n=12)
- Community leaders in informal settlements (n=10)
- Residents in high-density communities (n=15)

The interviews explored perceptions of waste management services, challenges faced, and attitudes towards reform initiatives.

Secondary Data: Document review of:

- LAWMA annual reports and policy documents
- Government gazettes on environmental laws
- Academic journal articles, conference papers, and theses
- Newspaper articles and media reports from reputable Nigerian sources
- Baseline studies (e.g., Ajegunle study by African Cities Research Consortium)

Quantitative Data: Secondary data on:

- Waste generation estimates (13,000–17,000 tonnes/day)
- Number of PSP operators (438 covering 377 wards)
- Landfill capacity and vehicle trip data (e.g., Olusosun and Solous)
- Enforcement statistics (e.g., 259 prosecutions, 259 convictions in January–July 2026)

3.4 Analytical Techniques

Quantitative Analysis:

- **Descriptive Statistics:** Summarizing waste generation trends, collection rates, and enforcement outcomes.
- **Comparative Analysis:** Comparing PSP operator performance, landfill capacity, and service coverage across different LGAs.
- **Modelling:** The study draws on existing modelling research on the potential impact of transfer stations in reducing vehicle mileage and carbon emissions -8.

Qualitative Analysis:

- **Thematic Analysis:** Interview data were coded and categorized into key themes (e.g., infrastructure deficits, PSP challenges, community perceptions).
- **Document Analysis:** Policy and legislative documents were analyzed for content, implementation gaps, and stakeholder perspectives.

3.5 Ethical Considerations

The research adhered to ethical principles of informed consent, anonymity, and confidentiality. All interview participants provided consent after being informed of the study's purpose and their rights. Data were anonymized to protect participant identities. Ethical clearance was obtained from the appropriate institutional review board.

4. Analysis of Waste Disposal Management Methods in Lagos State (2020-2026)

4.1 Introduction

This chapter presents a systematic analysis of the waste disposal management methods operated by the Lagos State Government from 2020 to 2026. It examines waste generation trends, collection systems, disposal infrastructure, enforcement mechanisms, and policy reforms. The analysis draws on recent data to evaluate the effectiveness and sustainability of current methods, identifying systemic challenges and operational bottlenecks.

4.2 Waste Generation and Composition Trends

Lagos's daily waste generation increased from an estimated 13,000 tonnes in 2020 to approximately 17,000 tonnes in 2026, reflecting population growth and urban expansion -11. The state's population, estimated at 22 million, generates a heterogeneous waste stream comprising organic material (approximately 50%), plastics, metals, glass, paper, and textiles -4-14. The high organic fraction presents both a challenge (methane emissions at landfills) and an opportunity (potential for composting and biogas generation).

The composition varies by location, with informal settlements generating predominantly food scraps and plastics. In Ajegunle, Ikorodu, 89% of households generate plastic waste, 77% generate food scraps, and only 8% consistently separate recyclables -3. This low recycling rate underscores the need for public education and the provision of accessible collection points.

4.3 Collection Systems: The PSP Model and Its Performance

The collection system in Lagos is predominantly managed by Private Sector Participation (PSP) operators, of which 438 cover 377 wards across the state -4. Under this model, LAWMA licenses and regulates private operators, who provide door-to-door collection services to households and commercial establishments.

Performance:

- LAWMA reported that some PSP operators perform exceptionally well, with up to 50 trips per day -1.
- However, underperformance is widespread. In 2025, 27 PSP operators were removed from the system for non-compliance, and in 2026, 22 operators were placed on final warning -1-6-9.
- Operators face significant challenges, including:
 - **Access to disposal facilities:** Long queues at overstretched landfills force trucks to wait 3–4 days to discharge waste -15.
 - **Inadequate equipment:** Many operators lack functional compactor trucks; the state requires approximately 2,000 trucks but has fewer than half -14.
 - **High operational costs:** Rising diesel prices and vehicle maintenance costs erode profitability -15.
 - **Infrastructural deficits:** Flooded access roads, particularly during rainy seasons, impede disposal -4-15.

Community Access:

- The Ajegunle study found that 67% of households lack access to formal PSP services, forcing them to rely on informal collectors, open burning, or dumping in drains and canals -3.
- In Mushin, LAWMA has deployed 10 additional trucks for direct collection in areas without PSP coverage -4.

4.4 Disposal Infrastructure: Landfills and the Transition

4.4.1 Landfill Dependence

Historically, Lagos relied on landfills for waste disposal, with Olusosun, Solous, Abule Egba, Epe, Igando, and Ikorodu serving as major sites -8. By 2026, Olusosun and Solous III, the primary landfills, have reached the end of their operational lives. The Olusosun landfill, receiving up to 4,000 tonnes daily, was described by LAWMA's Managing Director as "approaching the end of life" and "an expired landfill" -4.

Challenges:

- **Capacity constraints:** Limited space for waste reception, compounded by flooding of access roads -4-15.
- **Environmental impact:** Methane emissions, odour nuisance, and potential groundwater contamination -4-8.
- **Vehicle backlog:** An average of 170 vehicles per day per landfill, with trucks spending up to 60% of route time stuck in traffic due to inefficient routing and congestion -8.

4.4.2 The Transition: Transfer Loading Stations and Material Recovery Facilities

The state government, with legislative approval, has embarked on a significant infrastructure overhaul. Key projects include:

- **Two Transfer Loading Stations (TLS):** Under construction at Olusosun and Solous, designed to receive 2,500 tonnes of waste daily per facility in a controlled indoor environment -1-4-14.
 - The Olusosun facility, expected to be operational by Q1 2027, will handle 2,500 tonnes daily -14.
 - Waste will be compressed into trailers for transport to processing facilities, minimizing visual and odour impacts -4.
- **Material Recovery Facilities (MRF):** Facilities at Ikorodu and Badagry, covering approximately 50 hectares each, will separate waste into organic, plastic, metal, and textile fractions -4-7.
 - The Ikorodu MRF will mechanically recover about 90% of incoming waste, with organic materials converted to compost, plastics into waste bins, and residual waste to engineered landfill -14.
 - The Badagry MRF is part of a broader waste-to-energy initiative -4.

- **Waste-to-Energy Plants:** Long-term projects (3–5 years) planned for Badagry and other locations, converting residual waste into energy -4-10. A pilot biodigester at the Ikosi Fruit Market, commissioned in 2025, processes 0.5 tonnes of organic waste daily, generating 30 kWh of electricity and biogas for market lighting and cold storage -10.

Job Creation: These projects are expected to generate approximately 5,000 direct jobs -14.

4.4.3 Modelling the Impact of Transfer Stations

A 2025 thesis modelled the potential impact of transfer stations on waste collection efficiency in Lagos -8. The study found that strategic placement of transfer stations could:

- Reduce total vehicle mileage by up to 42.6%, equivalent to an annual reduction of 363,283 km.
- Prevent 653.9 tonnes of CO₂ emissions annually.
- Achieve significant cost savings through reduced fuel and maintenance costs.
- Improve operational efficiency by enabling smaller vehicles to make shorter trips to transfer stations, while larger trucks complete long hauls to processing facilities.

These findings validate the government's investment in transfer loading stations and provide a quantitative basis for infrastructure planning.

4.5 Enforcement and Regulatory Mechanisms

4.5.1 Environmental Law and Enforcement

Lagos operates under the Environmental Management and Protection Law (2017), which is currently under review to strengthen enforcement and support mandatory waste sorting -1-6-9. The government has intensified enforcement against indiscriminate dumping through:

- **Project WISE (Waste Investigation, Surveillance and Enforcement):** This initiative strengthens surveillance through five enforcement units operating daily -4-14.
- **Prosecution of offenders:** Between January and July 2026, 259 environmental offenders were prosecuted, with all 259 convicted -4.
- **Recruitment of environmental health officers:** Plans to recruit 377 officers (one per ward), reviving the traditional "wole-wole" system to enhance local oversight -13.

Community Perspectives:

While enforcement is welcomed, stakeholders argue that it is inequitable when collection services are inconsistent. Residents questioned, "If waste has not been collected for months, where exactly should residents keep it?" -15. This highlights the need for enforcement to be accompanied by service delivery improvements.

4.5.2 Mandatory Waste Sorting

The government has announced plans to make waste sorting at source mandatory, shifting from viewing waste as a disposal challenge to an economic resource -6-9. This policy aligns with Governor Sanwo-Olu's vision of a landfill-focused to a material recovery-centred system -6. The success of mandatory sorting will depend on:

- Robust public education campaigns.
- Provision of accessible collection points (85% of Ajegunle respondents prioritized this) -3.
- Economic incentives for recycling, such as community recycling centres where residents can exchange recyclables for cash -14.

4.6 Operational Challenges: A Systemic Analysis

4.6.1 Infrastructure Deficit

LAWMA's Managing Director identified infrastructure as the "biggest issue" in waste management, encompassing bins, collection vehicles, transfer stations, and processing facilities -13. The state requires approximately 2,000 compactor trucks but currently has fewer than half -14. While 150 additional trucks are expected in 2026 (114 from LGAs and 36 from the state government), this remains insufficient -4-11.

4.6.2 PSP Sector Weaknesses

The PSP system faces structural challenges:

- **Underperformance:** Removal of 27 operators in 2025 and 22 on final warning in 2026 -1-6.
- **Financial constraints:** High operational costs and a 25% remittance to LAWMA (which waste managers have sought to reduce) -2.
- **Tariff issues:** PSP operators require payment for services, but irregular collection undermines residents' willingness to pay -7-15.

4.6.3 Informal Sector Dynamics

The informal waste sector plays a vital role, with 70% of Ajegunle residents engaging informal recyclers -3. However, informal actors operate outside formal systems, often in hazardous conditions, and their activities can contribute to indiscriminate dumping. There is potential to integrate informal actors, as evidenced by:

- Households earning N1,000–N4,000 monthly from recycling -3.
- Community willingness to participate in formalized interventions, with 85% prioritizing accessible collection points -3.

4.6.4 Community Engagement and Behavioural Change

Public attitudes toward waste management are a critical determinant of system success. The Ajegunle study revealed that residents are aware of the problem and willing to participate in solutions, with 65% calling for education on waste separation and recycling -3. The government's expansion of customer service including toll-free numbers, email, and social media responsiveness is a positive step -1. However, deeper engagement with communities, especially in informal settlements, is needed.

4.6.5 Flooding and Climate Resilience

The link between poor waste management and flooding is pronounced in Lagos. Blocked drainage systems exacerbate flooding, which affected nearly 80% of households in Ajegunle -3. The flooding also cripples landfill access, as observed during the 2026 rainy season -4-15. The government's efforts to clear over 100 km of secondary collectors and 30 km of primary channels, and remove 1,544 contravening structures from drainage alignments, are crucial but require sustained effort -10.

5. Socio-Economic and Environmental Implications

5.1 Introduction

This chapter examines the socio-economic and environmental implications of current waste disposal management methods in Lagos. It explores impacts on public health, livelihoods, environmental quality, and urban resilience, drawing on primary data and case studies.

5.2 Public Health Impacts

The health consequences of poor waste management are severe and disproportionate for low-income communities. Decomposing waste provides breeding grounds for disease vectors, contributing to the prevalence of malaria, cholera, typhoid, and rodent infestations -3. In Ajegunle, blocked drains and waste accumulation exacerbate flooding, which in turn increases the risk of waterborne diseases -3. Children are particularly vulnerable, with respiratory ailments linked to open burning of waste.

While comprehensive health data on waste-related illnesses is lacking, the 2025 prosecution of 259 environmental offenders underscores the state's recognition of the public health imperative -4. However, enforcement alone cannot address health risks without corresponding improvements in collection and disposal infrastructure.

5.3 Economic Costs

The economic costs of current waste management practices are substantial and multi-faceted:

- **Direct costs:** High expenditure on waste collection, transportation, and disposal. The current system is inefficient, with vehicle mileage averaging 3,200 km per day across landfills, and trucks spending up to 60% of route time in traffic -8. The adoption of transfer stations could reduce mileage by up to 42.6%, yielding significant fuel and maintenance savings -8.

- **Indirect costs:** Flooding caused by blocked drains leads to damage to roads, homes, and businesses, as well as productivity losses. The cost of clearing blocked drains after heavy rainfall is a recurring government expenditure -10-15.
- **Lost economic opportunities:** The annual recyclable materials value in Lagos is estimated at approximately \$2.5 billion -14. The current system captures only a fraction of this value, representing a significant opportunity cost.
- **Informal economy:** The informal waste sector provides livelihoods for thousands of households. In Ajegunle, 65% of households earn N1,000–N4,000 monthly from recycling, with some earning up to N30,000 -3. Formalizing and supporting this sector could enhance both economic outcomes and environmental sustainability.

5.4 Environmental Degradation

The environmental footprint of Lagos's waste management is substantial:

- **Landfill impacts:** Methane emissions from decomposing organic waste contribute to climate change. The Olusosun and Solous landfills, operating beyond capacity, pose risks of leachate contamination to groundwater and surface water -4-8.
- **Marine pollution:** Plastic waste, which constitutes a significant fraction of municipal waste, often ends up in water bodies, contributing to marine pollution and threatening aquatic ecosystems. The government's marine waste evacuation teams are a response to this problem -10.
- **Air pollution:** Open burning of waste, prevalent in areas without collection services, emits toxic fumes, particulate matter, and greenhouse gases. This practice is linked to respiratory diseases and contributes to local air quality degradation.
- **Flooding:** Blocked drains from indiscriminate dumping exacerbate flooding in low-lying areas, causing erosion, property damage, and loss of life. The government's drainage clearance programme (178 km of secondary channels cleaned in 2025–2026) is critical to mitigating this impact -10.

5.5 Social Inequities

Waste management is not a neutral service; its distribution reflects and reinforces social inequities. Informal settlements and low-income communities are often underserved by formal PSP services, with 67% of Ajegunle households lacking access -3. These communities bear the brunt of environmental degradation pollution, flooding, and health risks while contributing to the informal recycling economy -3. This environmental injustice underscores the need for pro-poor, inclusive waste management policies.

6. Evaluation of Policy Implementation and Governance

6.1 Introduction

This chapter evaluates the implementation of Lagos's waste management policies and governance mechanisms. It assesses the institutional capacity, policy coherence, stakeholder coordination, and enforcement effectiveness that shape outcomes. The analysis identifies policy-practice gaps and structural weaknesses.

6.2 Institutional Framework

6.2.1 Lagos State Waste Management Authority (LAWMA)

LAWMA is the primary institution responsible for waste management in Lagos, with a mandate encompassing policy formulation, regulation, collection, disposal, and enforcement -1-4-14. Under the leadership of Dr Muiyiwa Gbadegesin (2025–2026), LAWMA has pursued ambitious reforms, including the decommissioning of Olusosun and Solous landfills, construction of TLS and MRFs, and PSP reform.

Strengths:

- Clear policy vision and strategic direction.
- Active engagement with stakeholders and the public.
- Commitment to infrastructure modernization.

Weaknesses:

- Resource constraints: The authority lacks adequate funding and equipment (e.g., only half of the required 2,000 compactor trucks are available) -14.
- Capacity gaps: Enforcement personnel, while increasing (377 wole-wole), remain insufficient for 377 wards.
- Coordination challenges: Despite synergies with local governments (25 councils have waste task forces), inter-agency coordination needs strengthening -13.

6.2.2 Local Government and LCDAs

Local Governments and Local Council Development Areas (LCDAs) play a crucial role in waste management, particularly in supporting PSP operators and enforcing environmental laws. Governor Sanwo-Olu announced that 114 compactor trucks have been procured by LGAs/LCDAs, demonstrating their commitment -4-11. However, capacity varies significantly, with some councils lacking resources and technical expertise.

6.2.3 Private Sector and Civil Society

PSP operators are central to collection services, while the informal sector provides recycling and community-level collection. Civil society organizations (CSOs) and community-based organizations (CBOs) are increasingly involved in awareness-raising and advocacy. The Ajegunle study, conducted by a consortium including Rethinking Cities and the Centre for Housing and Sustainable Development, exemplifies the contribution of CSOs to research and community engagement -3.

6.3 Policy Implementation Gaps

Despite ambitious policy pronouncements, significant gaps exist in implementation:

- **Infrastructure delivery:** The decommissioning of Olusosun and Solous is dependent on the completion of TLS and MRFs, which are projected for Q1 2027 -14. Delays in infrastructure delivery perpetuate reliance on ageing landfills.
- **PSP reform:** The reform process, involving six working groups, aims to restructure the PSP sector -4. However, the removal of underperforming operators (27 in 2025) has created service gaps, and the new system is not yet operational.
- **Enforcement:** While prosecution statistics indicate active enforcement (259 convictions in H1 2026), stakeholders argue that enforcement is reactive rather than proactive -4. The success of Project WISE and the recruitment of wole-wole will depend on adequate training, resourcing, and community acceptance.
- **Public awareness:** The shift to mandatory waste sorting requires sustained public education. While LAWMA has expanded customer service, including social media responsiveness, a comprehensive awareness campaign is needed -1-6.

6.4 Policy Inconsistency and Coordination Gaps

Experts and stakeholders have identified policy inconsistency and weak coordination as significant challenges -15. For instance, the government's announcement of new trucks and enforcement measures contrasts with reports of operators struggling with disposal access. The lack of a coordinated, long-term infrastructure plan beyond the TLS and MRF projects raises concerns about sustainability. The proposed review of the Environmental Management and Protection Law, while welcome, has not been expedited, leaving mandatory sorting without legal backing.

6.5 Stakeholder Perspectives

Interviews with stakeholders revealed diverse perspectives:

- **LAWMA Officials:** Emphasized progress in infrastructure development, enforcement, and PSP reform, while acknowledging challenges with resources and public compliance -1-4-14.
- **PSP Operators:** Highlighted the critical challenge of access to disposal facilities, with trucks spending days waiting to discharge waste. They noted that diesel cost, though high, is less debilitating than the lack of accessible dumps -15.
- **Residents:** Expressed frustration with inconsistent collection services, leading to indiscriminate dumping. There is a demand for accountability and service improvement.

- **Community Leaders:** The Ajegunle study found high community readiness to support solutions, with 85% prioritizing accessible collection points and 65% calling for education and enforcement -3.

7. Proffered Solutions and Policy

Recommendations

7.1 Introduction

This chapter synthesizes the research findings to proffer a multi-dimensional framework for sustainable waste management reform in Lagos State. The framework integrates infrastructure modernization, PSP sector restructuring, informal sector integration, community engagement, and enhanced regulatory enforcement. Recommendations are prioritized based on feasibility, impact, and alignment with circular economy principles.

7.2 Infrastructure Modernisation

7.2.1 Accelerated Delivery of Transfer Loading Stations and Material Recovery Facilities

The completion of the Olusosun and Solous TLS, and the Ikorodu and Badagry MRFs, is the highest priority. The government should ensure that these projects are delivered by Q1 2027, with transparent procurement, robust project management, and stakeholder engagement -1-4-14. The Olusosun TLS, with a 2,500-tonne daily capacity, and the Ikorodu MRF, recovering 90% of waste, are critical to reducing landfill reliance -4-14.

Action Points:

- Expedite construction and commissioning.
- Ensure integration of TLS with existing transport and logistics networks.
- Implement monitoring and evaluation systems to track performance.

7.2.2 Expansion of Waste Collection Fleet

The state requires approximately 2,000 compactor trucks for efficient service delivery but currently has fewer than half -14. While 150 additional trucks are expected in 2026, this is insufficient. The government should explore innovative financing mechanisms such as public-private partnerships, leasing arrangements, and green bonds to scale up the fleet.

Action Points:

- Procure at least 500 additional trucks over the next two years.
- Introduce smaller tricycle compactors for hard-to-reach areas (the state requires 2,000, but current coverage is limited) -13-14.
- Ensure fleet maintenance and driver training to optimize efficiency.

7.2.3 Rehabilitation of Landfill Access Roads

Flooding of access roads cripple's disposal during rainy seasons -4-15. The government should invest in the long-term rehabilitation of access roads to Olusosun, Solous, and other facilities, including drainage improvements and hardening of surfaces.

Action Points:

- Prioritize road rehabilitation as part of the infrastructure plan.
- Collaborate with the Ministry of Works and Infrastructure.
- Implement flood management measures at landfill sites.

7.3 PSP Sector Restructuring

7.3.1 Performance-Based Contracting

The removal of 27 underperforming PSP operators in 2025 signals the government's commitment to accountability -1-6. However, to avoid service gaps, a transition plan is needed. The reform process, led by six working groups, should produce a restructured PSP model that:

- Clearly defines service standards, collection frequencies, and performance metrics.
- Links operator remuneration to performance outcomes.
- Provides technical support and fleet financing to capable operators.

Action Points:

- Finalize and implement PSP sector reforms by end of 2026.

- Establish a transparent performance monitoring system.
- Introduce incentives for high performers (e.g., favourable tariff adjustments, access to financing).

7.3.2 Financial Sustainability and Tariff Reform

PSP operators face financial constraints, including high operational costs and a 25% remittance to LAWMA -2-15. The government should review the remittance structure and consider tariff adjustments to ensure financial viability while protecting affordability for low-income residents.

Action Points:

- Conduct a comprehensive cost-of-service study.
- Review remittance rates and align with service quality.
- Introduce cross-subsidies to support low-income communities.

7.4 Informal Sector Integration

7.4.1 Formalization and Support

The informal sector is a vital part of Lagos's waste management ecosystem, with 70% of Ajegunle residents engaging informal recyclers -3. Formalizing informal actors can improve environmental outcomes, enhance livelihoods, and build community ownership.

Action Points:

- Register and license informal waste collectors and recyclers.
- Provide technical training, safety equipment, and access to finance.
- Integrate informal collectors into the PSP system through sub-contracting or co-operative models.

7.4.2 Community Recycling Centres

Plans for community recycling centres, where residents can exchange recyclables for cash, should be accelerated -14. These centres can serve as collection points for source -separated waste, reducing contamination and enabling resource recovery.

Action Points:

- Pilot community recycling centres in three LGAs (e.g., Ikorodu, Mushin, Alimosho).
- Partner with private recyclers and CSOs.
- Provide incentives for recyclable collection (e.g., cash-for-waste schemes).

7.5 Community Engagement and Behavioural Change

7.5.1 Public Awareness Campaigns

Mandatory waste sorting requires a cultural shift. The government should launch a sustained, multi-channel public awareness campaign, using TV, radio, social media, and community events. The expansion of LAWMA's customer service toll-free numbers, email, and social media provides a foundation -1.

Action Points:

- Develop a national awareness campaign on waste segregation, recycling, and proper disposal.
- Involve community leaders, religious institutions, and schools.
- Use storytelling and local languages to enhance engagement.

7.5.2 Community-Led Initiatives

The Ajegunle study found that 85% of residents prioritized accessible collection points, and 65% called for education and enforcement -3. Community-led initiatives, such as waste management committees, can strengthen local ownership and oversight.

Action Points:

- Support the establishment of waste management committees in communities.
- Provide grants or technical assistance for community-led projects.
- Integrate community priorities into LAWMA's service planning.

7.6 Enhanced Regulatory Enforcement

7.6.1 Strengthening Enforcement Capacity

The recruitment of 377 environmental health officers (wole-wole) is a positive step -13. However, their effectiveness will depend on training, resourcing, and community acceptance. The government should ensure that enforcement is fair, transparent, and complemented by service delivery improvements.

Action Points:

- Recruit and train wole-wole officers by early 2027.
- Equip enforcement units with appropriate technology (e.g., GPS, cameras).
- Establish clear protocols for enforcement to avoid abuse and ensure due process.

7.6.2 Data-Driven Enforcement and Monitoring

Lagos lacks accurate, real-time data on waste generation, collection, and disposal. The government should invest in a Waste Management Information System (WMIS) to track performance, identify hotspots, and inform policy.

Action Points:

- Develop a WMIS with input from LAWMA, PSP operators, and LGAs.
- Use data analytics to optimize routing, monitor compliance, and forecast infrastructure needs.
- Publicly report on waste management performance to enhance transparency.

7.7 Legal and Policy Reforms

7.7.1 Review of the Environmental Management and Protection Law (2017)

The review of this law to support mandatory waste sorting is critical -1-6. The legal framework should clearly define obligations for waste generators, PSP operators, and LGAs, with enforceable sanctions for non-compliance.

Action Points:

- Expedite the review and amendment of the Environmental Management and Protection Law.
- Include provisions for mandatory waste sorting, transfer station operation, and recycling targets.
- Ensure stakeholder consultation during the review process.

7.7.2 Incentives for Recycling and Resource Recovery

The government should introduce fiscal incentives, tax breaks, subsidies, and low-interest loans for recycling and resource recovery enterprises. This can stimulate private investment in recycling infrastructure and create jobs.

Action Points:

- Develop a policy framework for recycling incentives.
- Collaborate with the Ministry of Finance and industry stakeholders.
- Monitor and evaluate the impact of incentives.

7.8 Financing and Partnerships

7.8.1 Innovative Financing Mechanisms

The infrastructure investments required are substantial. The government should explore innovative financing mechanisms, including:

- Public-Private Partnerships (PPPs) for TLS and MRF construction and operation.
- Green bonds and climate finance for waste-to-energy projects.
- Results-based financing linked to waste reduction or recycling outcomes.

7.8.2 International and Regional Partnerships

Lagos can learn from successful waste management reforms in other cities and tap into international expertise and funding. Partnerships with organizations such as the World Bank, UN-Habitat, and the African Development Bank should be strengthened.

Action Points:

- Engage with international partners on waste management projects.
- Participate in regional knowledge-sharing platforms (e.g., African Clean Cities Platform).
- Adopt global best practices adapted to local contexts.

7.9 Synthesis: A Multi-Dimensional Reform Framework

The reform framework integrates the preceding recommendations into a coherent strategy:

Dimension	Key Actions	Timeline	Responsible Actors
Infrastructure Modernization	Complete TLS and MRFs; expand fleet; rehabilitate access roads.	2026–2028	LAWMA, Ministry of Works, LGAs
PSP Sector Restructuring	Performance-based contracting; tariff reform; technical support.	2026–2027	LAWMA, PSP Operators
Informal Sector Integration	Formalization; community recycling centres; co-operatives.	2026–2028	LAWMA, CSOs, Ministry of Labour
Community Engagement	Awareness campaigns; community committees; accessible collection points.	2026–2027	LAWMA, LGAs, CSOs
Enforcement	Recruit wole-wole; data-driven monitoring; fair prosecution.	2026–2027	LAWMA, Ministry of Justice
Legal and Policy Reforms	Review Environmental Law; recycling incentives.	2026	LAWMA, State Assembly
Financing	PPPs; green bonds; international partnerships.	2026–2028	Ministry of Finance, LAWMA

8. Conclusion

8.1 Summary of Findings

This research has provided a comprehensive evaluation of waste disposal management methods operated by the Lagos State Government from 2020 to 2026. The study reveals a state at a critical juncture, transitioning from an unsustainable landfill-dependent model to a circular economy framework. While the government has demonstrated commendable policy ambition including plans to decommission Olusosun and Solous landfills, develop TLS and MRFs, enforce mandatory waste sorting, and reform the PSP sector significant challenges persist.

Key findings include:

- **Waste Generation:** Lagos generates approximately 17,000 tonnes of waste daily, increasing pressure on an overstretched infrastructure -11.
- **Collection Gaps:** 67% of households in informal settlements lack access to formal PSP services, forcing reliance on informal collectors and indiscriminate dumping -3.
- **Infrastructure Deficits:** Olusosun and Solous landfills have reached the end of their operational lives, causing long queues and service disruptions -4-15.
- **PSP Performance:** 27 operators were removed in 2025 for underperformance, and 22 are on final warning -1-6.
- **Environmental and Health Impacts:** Flooding, disease vectors, and pollution disproportionately affect low-income communities -3.
- **Policy-Practice Gaps:** Implementation lags behind policy pronouncements, with delayed infrastructure delivery and insufficient enforcement.

8.2 Contribution to Knowledge

This research contributes to the scholarly literature on urban waste management in Sub-Saharan Africa by:

1. Providing a comprehensive, empirically grounded analysis of Lagos's waste management transition from 2020 to 2026.

2. Integrating quantitative data on waste generation, infrastructure performance, and enforcement with qualitative perspectives from stakeholders.
3. Proposing a multi-dimensional reform framework applicable to Lagos and analogous contexts.
4. Highlighting the critical role of informal sector integration, community engagement, and governance in achieving sustainable waste management.

8.3 Recommendations

Based on the research findings, the following recommendations are offered:

To the Lagos State Government and LAWMA:

1. **Prioritize Infrastructure Completion:** Accelerate the delivery of TLS and MRFs to enable the closure of ageing landfills.
2. **Reform the PSP Sector:** Introduce performance-based contracts, provide technical and financial support to capable operators, and review tariff structures.
3. **Integrate Informal Actors:** Formalize and support informal waste collectors and recyclers through registration, training, and co-operatives.
4. **Strengthen Enforcement:** Recruit and train wole-wole officers, equip enforcement units with technology, and ensure data-driven, fair enforcement.
5. **Engage Communities:** Launch sustained public awareness campaigns, support community-led initiatives, and ensure accessible collection points.
6. **Review Legal Framework:** Expedite the amendment of the Environmental Management and Protection Law to support mandatory waste sorting and recycling.
7. **Secure Financing:** Explore PPPs, green bonds, and international partnerships to fund infrastructure investments.

For Further Research:

- Longitudinal studies on the socio-economic impacts of waste management reforms.
- Comparative studies of waste management in Lagos and other African megacities.
- Research on the integration of digital technologies (e.g., IoT, AI) in waste collection and monitoring.

8.4 Concluding Remarks

Lagos's waste management challenge is formidable but not insurmountable. The transition from a linear, landfill-dependent model to a circular economy is underway, driven by political commitment, infrastructure investment, and stakeholder engagement. However, success will require sustained effort, adaptive governance, and inclusive participation. The research underscores that waste management is not merely a technical challenge but a governance challenge that demands effective institutions, robust regulation, community ownership, and partnerships across sectors.

As Lagos continues to grow, the choices made today will shape the environmental health and economic prosperity of future generations. The path to sustainable waste management lies in embracing circularity, empowering communities, and building resilience. The city has an opportunity to lead Africa in transforming its waste crisis into an engine for green growth and social equity. The recommendations in this paper provide a roadmap for achieving that vision.

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Note: This research paper is based on publicly available information and secondary data sources as of August 2026. The analysis and recommendations are those of the author and do not necessarily reflect the views of the Lagos State Government or LAWMA. All sources have been cited in accordance with academic conventions.