

Original Research Article

Institutional Governance and Policy Gaps in Municipal Solid Waste Management Practice in FCT Abuja

Aminu Bello-Dange^{1*}, Prof Ikenna Osu Okonkwo¹, Dr. Richmond Ideozu¹

¹ Institute of Natural Resources, Environmental Management and Sustainable Development, University of Port Harcourt, Rivers State, Nigeria

Correspondence should be addressed to Aminu Bello-Dange: aminudange@gmail.com

Article No: 006 | **Accepted:** 12 August 2026 | **Published:** 10 September 2026

Abstract: Rapid urbanisation across select African nations has made formal governance structures a critical, yet often under-acknowledged, element to assess the outcomes of planned municipal solid waste management (SWM) systems. Using Abuja, Nigeria's Federal Capital Territory (FCT), as a case study, this paper explores the governance and policy implementation challenges associated with municipal SWM in this region. This study rests on a contemporaneous triangulated mixed-method approach involving field observations, policy document reviews, focus groups with informal sector waste actors, 23 key informant interviews, and the analysis of 689 filled and valid questionnaires. Given the study's focus, the roles and responsibilities, overlaps, and accountability challenges affecting the Abuja Environmental Protection Board (AEPB), the Federal Ministry of Environment (FME), the National Environmental Standards and Regulations Enforcement Agency (NESREA), Area Councils, private contractors, and both formal and informal sector waste actors are explored. A major finding indicates that the waste governance challenges in Abuja are best described as the absence of a policy-practice implementation framework that includes formal operational systems, funding, enforcement, and articulating and measuring accountability. Only 42.3% of surveyed households indicated regular door-to-door waste collection; 26.3% indicated that they practice waste segregation; and 66.4% of the respondents reported a lack of awareness regarding the waste management regulations in Abuja. Insufficient integration of informal sector waste actors, weak data management and poor cost recovery systems, and varying contractor performance, combined with the limited waste management capacity of the Area Councils, were revealed. It is contended that the diffuse multi-actor governance structure of SWM in Abuja presents a major challenge to the performance of the SWM systems within the city. The study advocates for major reforms to include more streamlined multi-actor governance structures, performance management frameworks, and the formalisation of the roles of informal waste sector actors. The article expands the environmental governance literature

by illustrating the impact of institutional fragmentation on sustainable waste management in a strategically planned but rapidly growing African capital city.

Keywords: Waste Governance, Policy Implementation; Institutional Fragmentation, Environmental Regulation, Abuja, AEPB, Nigeria, Municipal Solid Waste Management, Policy-Practice Gap, Accountability

1.0 Introduction

1.1 Background to the study

The governance of municipal solid waste management (MSWM) systems transcends the technical aspects of solid waste management (SWM) systems. It encompasses cross-sector coordination of regulatory function, public financing, private sector participation, household, spatial, and behavioural planning, policies, environmental law, data, and management. Service delivery failures persist where these elements are poorly integrated, despite the existence of policies, institutions, and contractors. Abuja, the Federal Capital Territory, exemplifies a mixture of the planned Capital City of a Nation and the challenges of rapid urbanisation, the informal economy, inequitable service delivery, and increased waste generation.

Within the framework of the formal institutional setting for municipal waste management in Abuja, the Abuja Environmental Protection Board (AEPB) is the leading environmental management and waste management agency at the FCT level. Environmental management services and information pertaining to policies and regulations are provided by the National Environmental Standards and Regulations Enforcement Agency (NESREA) and the Federal Ministry of Environment (FMENV) at the national level. Though private companies are the major service providers, area councils have a local community planning function in relation to environmental services. Though informal waste pickers, waste traders, and waste recyclers are engaged in the recovery of waste materials, they are not effectively integrated in the formal governance of waste management.

This article focuses on a governance gap in the waste management framework in Abuja. Although there are institutions for waste management, they do not operate as a performance system. There are issues with overlapping mandates, inconsistent enforcement, low public awareness, ineffective cost recovery, poor management of contractors, lack of performance indicators, and failure to include informal sector workers in circular economy planning. These issues result in insufficient waste management services, open dumping and burning, low levels of source segregation, and poor recycling.

This article is a result of the larger PhD study on municipal solid waste management in the Federal Capital Territory. Issues of governance with the performance of waste management systems are the main focus of the article. The main concern is the effect of the

institutional implementation and accountability problems on the performance of waste management in Abuja.

1.2 Conceptual Framework

The paper offers an analysis of municipal waste management through an integrated sustainable waste management (ISWM) perspective as well as other theories, which will be explained briefly later. First, the ISWM views waste management performance through the physical flow of waste, the participation of different stakeholders, and the governance aspect of sustainability. This is complemented by an institutional analysis which explains how poor role definition among public servants, weak or lack of rules, poor coordination and fragmented accountability result in the failure to provide an effective public service. From the perspective of stakeholder theory, waste management requires the recognition of households, contractors and informal sector (waste) recyclers, area councils, regulators, and (waste) management service delivery staff as well as the community at large. The policy implementation gap explains why the mere adoption of a policy does not result in an implementation change.

Using the proposed framework, governance failure is the absence of integrated and mutually reinforcing coordination, standards, and resource management (governance) as well as the absence of meaningful data and feedback. In municipal solid waste management, this is typically expressed as mixed waste collection, unclear or overlapping contractor boundaries, poor enforcement, and low compliance, as well as unregulated disposal, weak source separation, and inadequate waste recovery infrastructure. This framework will analyze the municipal waste governance of Abuja in terms of institutional mandates, policy implementation, regulatory enforcement, and (financial) governance and stakeholder inclusion.

Table 1: Governance Dimensions and Analytical Questions

Governance dimension	Analytical question	Expected evidence
Institutional mandate clarity	Are roles and jurisdictions clearly defined?	Mandate overlaps, duplication, unclear Area Council and contractor responsibilities
Policy implementation	Do policies translate into practice?	Awareness, source segregation, recycling, contractor monitoring and enforcement outcomes
Regulatory enforcement	Are rules applied consistently?	Inspection capacity, penalties, illegal dumping control and contractor sanctions
Financing and accountability	Does financing support reliable performance?	Cost recovery, budget stability, user fees, payment compliance and subsidy dependence
Stakeholder inclusion	Are households, contractors and informal actors integrated?	Public participation, informal-sector registration, community feedback and cooperative structures

Source: Field Study (2026)

1.3 Statement of the Problem

In the Federal Capital Territory (FCT), Abuja, municipal solid waste management is really an institutional governance issue rather than just an operational one involving collection, transportation, and disposal. Despite the fact that Abuja was intended to be a planned capital city, a waste-management system whose institutional structures have not developed at the same rate has been under constant pressure due to rapid population increase, peri-urban expansion, rising consumption, and increasing trash creation. The principles of integrated solid waste management, waste hierarchy, source separation, stakeholder participation, and extended producer responsibility are recognised in existing policy structures, but they have yet to be fully integrated in terms of implementation in service provision, contractor accountability, recycling linkage, and citizen engagement (Federal Ministry of Environment, 2020; Kaza et al., 2018; Ogwueleka, 2009).

The core problem is that there still exists an institutional gap between institutional behaviour and policy objectives. The Abuja Environmental Protection Board (AEPB), Area Councils, and other institutional actors are responsible for the management of the waste in Abuja, including federal environmental institutions, private contractors, citizens groups, and informal recyclers. But these actors work in a fragmented institutional setting characterised by overlapping jurisdiction, weak coordination among institutions, poor information infrastructure, limited resources, poor enforcement, and lack of public accountability. In this regard, collection coverage is inconsistent, peri-urban areas are poorly served, open dumping and burning are prevalent, households do not segregate waste, and informal recyclers are marginalised, even though they help recover materials (Imam et al., 2008; Olukanni & Akinyinka, 2012; Wilson et al., 2015).

Although previous research works have established poor collection efficiency, underdeveloped infrastructure, improper waste disposal practices, and lack of public awareness in Abuja, there has been less research considering such issues as the signs of a bigger problem of governance and implementation. There has been no development of a cohesive performance framework due to lack of alignment of roles with the service performance standards, monitoring, finance transparency, and sanctioning. Such lack of integration between policy and practice can be observed in the lack of implementation of source separation practices, inefficient regulation of contractors, non-existence of flow data, insufficient recycling activities, and use of landfills like Gosa/Dutse (Buwah et al., 2024; Federal Ministry of Environment, 2020; Ogwueleka, 2013).

In conclusion, the municipal solid waste management problem in Abuja is presented in this article as one of institutional governance and policy implementation problems. It argues that sustainable improvement requires more than procurement of equipment or increased collection frequency; it requires clearer institutional mandates, performance-based public-private partnership arrangements, formal inclusion of informal waste actors, strengthened enforcement, ring-fenced financing, community feedback systems, and an integrated monitoring architecture. The research problem is consequently

centred on explaining why existing policy instruments have not generated effective municipal waste outcomes in the FCT and identifying the governance reforms needed to close this gap.

2.0 Literature Review

The urban garbage crises in developed and developing countries are due to poorly developed governance systems as well as technological and infrastructural inadequacies, as discussed in several research papers on municipal solid waste management. Being an approach that analyses waste systems based on physical waste flows, stakeholders' involvement, and governance structure, ISWM can be used as a useful analytical framework for the discussion of the issues related to municipal solid waste management (van de Klundert & Anschütz, 2001; Wilson et al., 2013). In accordance with the paradigm, institutions, financing, regulations, providers of services, households, and informal actors must collaborate for efficient waste management. The theory is relevant to Abuja, as the problems with waste in the city are not due to lack of regulations, but rather inefficient collaboration between different entities.

In empirical literature covering Abuja as well as other Nigerian cities, common deficiencies include coverage of collection, control of disposal, provision of recycling facilities, funding, public participation, and enforcement. Ogwueleka (2009) pointed out inefficiencies in waste collection and dependence on informal means of waste disposal in Abuja, while Imam et al. (2008) highlighted overlapping responsibilities, lack of enforcement, and lack of cost recovery as structural impediments in the management of waste in Nigeria. In their analysis, Olukanni and Akinyinka (2012) attributed poor management of waste to insufficient institutional capacity and low level of public awareness. Recent analyses reveal that although policy makers have emphasized integrated waste management and recycling and source separation, appropriate systems for implementation are still lacking (Buwah et al., 2024; Federal Ministry of Environment, 2020).

Execution gaps are a frequent topic in literature. Concepts such as duty of care, polluter pays principle, extended producer responsibility, separation at source, stakeholder participation, and community participation are explained in Nigeria's National Policy on Solid Waste Management (Federal Ministry of Environment, 2020). The example of Abuja demonstrates that institution effectiveness does not always come as a consequence of policy-making. Problems such as the absence of integrated systems for waste data collection, inconsistent financing, poor enforcement capacity, fragmented requirements, and insufficient contractor control are obstacles to implementation. This proves the general theory of implementation according to which multi-institutional policies can suffer from coordination problems if they do not have sufficient legitimacy, incentives, monitoring, and accountability mechanisms (Ostrom, 2009; Pressman & Wildavsky, 1973).

The concept of Public-Private Partnerships (PPPs) is another notable area that deserves consideration in urban waste governance literature. While private sector involvement can increase efficiency and broaden the scope of services while reducing the

burden on the public sector, PPPs depend on transparency in procurement, output-based agreements, independent monitoring, timely payments, enforcement of penalties, and social feedback mechanisms (Cointreau, 2006; Guerrero et al., 2013; Obani & Ita, 2025). The case of Abuja is a good example where the existence of private contractors does not necessarily translate into better waste management because of poor performance standards and lack of monitoring mechanisms.

The informal sector of garbage disposal is an important research domain. According to the waste management literature on developing cities, informal recyclers and waste pickers carry out significant recovery work, yet are completely left out of formal contracts, protections, planning, and Occupational Safety and Health Administration (OSHA) and producer responsibility frameworks (Scheinberg et al., 2010; Wilson et al., 2006). Informal recyclers in Abuja recover valuable metals, plastics, and other resources from dumpsites, collection points, and from within the neighbourhoods. However, these efforts remain uncoordinated within the formal waste management framework. Such exclusion impacts negatively on the effectiveness of recycling, livelihoods, and the ability of the city to embrace a circular economy. Hence, the literature encourages legal recognition, cooperative registration, health and safety protection, and the integration of informal actors into the municipal recycling system (Pholoto & Chitaka, 2022).

Indeed, research indicates that the most effective way of approaching the issue of municipal solid waste management in Abuja is by viewing it as a governance and policy gap issue. There are very few research papers that have provided a comprehensive analysis of how institutional fragmentation, weak policy implementation, the policy implementation gap, exclusion of the informal sector, and the monitoring gap lead to poor waste management outcomes in the FCT, even though there are many studies that have offered sufficient proof of operational gaps. Through the provision of an analysis of the institutional and policy preconditions for transforming Abuja's waste management approach from a fragmented collection and disposal process to an integrated governance approach, this study bridges the gap.

3.0 Materials and Methods

The paper uses a concurrent triangulation mixed-methods design. This design enabled governance and policy questions to be examined through complementary quantitative and qualitative evidence. Quantitative data came from 689 valid survey responses, including 494 household respondents and 195 non-household respondents drawn from businesses, institutions, civil society, regulators, waste contractors and waste-sector actors. 23 important stakeholder interviews, focus groups with informal waste-sector participants, field observations, and policy document reviews were used to gather qualitative data.

The household survey provided evidence on service access, public awareness of waste regulations, collection methods, disposal behaviour, source segregation and perceived service performance. Stakeholder interviews provided qualitative evidence on coordination, enforcement, contractor management, policy implementation, public participation and

financing. Policy review focused on the institutional and legal frameworks shaping MSWM, including national sanitation and waste regulations, the AEPB framework, national solid waste management policy direction and FCT-level implementation arrangements. Qualitative data were analysed thematically, while survey results were used descriptively to anchor governance interpretation in household-level outcomes.

Table 2: Data sources and their use in the governance article

Data source	Scope	Use in governance article
Household survey	494 household respondents	Regulatory awareness, collection access, source segregation and household-facing policy outcomes
Non-household survey	195 institutional, business, civil society and waste-sector respondents	Operational and institutional perspectives on service and compliance issues
Key stakeholder interviews	23 participants	Governance structure, enforcement, contractor supervision, financing and policy implementation themes
Focus group discussions	Informal waste-sector participants	Informal-sector exclusion, material recovery, occupational risks and inclusion requirements
Policy and document review	National and FCT-linked policy instruments	Assessment of policy intent, mandate structure, implementation gaps and reform needs

Source: Field Study (2026)

4.0 Results

4.1 Formal governance architecture

The governance architecture guiding MSWM in Abuja is multi-actor. AEPB functions as the principal FCT-level environmental and waste-management institution, while FMENV and NESREA shape the national policy and regulatory environment. The six Area Councils have components of local sanitation, and public-private partnerships by Area Councils' service providers, including private contractors, and the informal recycling sector, support material recovery. However, for the proposed arrangements to function as an integrated waste management system, alignment of roles, data, funding and accountability is a prerequisite.

Table 3: Actors and observed governance gaps in Abuja MSWM

Actor	Formal or practical role	Observed governance gap
AEPB	Lead FCT-level institution for environmental protection, waste collection oversight, sanitation monitoring and enforcement	Strong mandate but constrained by funding, manpower, monitoring limitations and uneven enforcement

FMENV	National policy direction and environmental governance framework	Policy direction does not automatically translate into FCT-level operational systems
NESREA	National environmental standards and the enforcement context	National standards require stronger local monitoring and coordination mechanisms
Area Councils	Local sanitation and community-level governance relevance	Weak integration, limited technical and financial capacity, and uneven local operations
Private contractors	Operational collection and disposal services in designated zones	Performance varies; monitoring, KPIs, sanctions and route verification are weak
Informal recyclers	Material recovery, recycling supply chain and informal circular economy functions	Under-recognised, unregistered and weakly protected within formal governance

Source: Field Study (2026)

4.2 Institutional fragmentation and mandate ambiguity

The evidence indicates that the existence of multiple institutions does not automatically produce integrated governance. Overlaps and gaps occur between AEPB, Area Councils, national regulators, contractors and communities. Role ambiguity is especially visible in collection monitoring, enforcement, contractor supervision, peri-urban service responsibility and informal-sector integration. Where no single actor is clearly accountable for territory-wide outcomes, service failures become difficult to diagnose and correct.

This fragmentation helps explain why planned urban districts receive relatively stronger service while peri-urban and rural settlements remain less consistently covered. Contractors are concentrated where routes are profitable and accessible, Area Councils are closer to underserved communities but have limited capacity, and AEPB's enforcement presence is stronger in central locations than in peripheral settlements. The result is a governance geography in which service quality follows institutional reach, infrastructure access and revenue potential rather than uniform environmental rights.

4.3 Policy awareness and the communication gap

One of the most important household-level governance findings is the low awareness of municipal waste regulations. About 66.4% of household respondents reported no awareness of municipal waste regulations. This finding is significant because regulatory compliance depends partly on residents knowing what the rules require. Where households do not know segregation expectations, disposal prohibitions, payment obligations or penalties for illegal dumping and burning, enforcement becomes reactive rather than preventive.

Table 4: Key household-level governance indicators

Indicator	Reported value	Governance interpretation
Door-to-door collection access	42.3%	Formal service delivery is uneven and does not yet support universal compliance
Open dumping	14.4%	Unsafe disposal persists where formal systems are weak
On-site burning	5.1%	Households use coping strategies that regulations should prevent
Source segregation	26.3%	Circular economy and policy commitments remain weak at the household level
No awareness of municipal waste regulations	66.4%	Policy communication and public compliance support are insufficient

Source: Field Study (2026)

The communication gap is not strictly an information issue. It is the lack of a formalized process to bridge national and FCT level policies to household communication of the appropriate bin systems, collection schedules, community campaigns, enforcement protocols and feedback mechanisms. Without this translation layer, policy remains institutional text rather than implemented behaviour.

4.4 Enforcement and compliance monitoring gaps

Policy implementation and enforcement are reported as weak and inconsistent. Enforcement is constrained by inadequate funding, insufficient infrastructure, limited manpower, poor inter-agency coordination, political and administrative interference, low public participation, weak contractor supervision and limited digital monitoring systems. These constraints reduce the credibility of sanctions for illegal dumping, burning, non-payment and contractor non-performance.

Compliance monitoring also suffers from the geographical scale and settlement diversity of the FCT. Planned districts with better roads and higher visibility are monitored more easily than satellite settlements, informal neighbourhoods and rural communities. This reinforces unequal enforcement and service inequality. Compliance monitoring is therefore not only a legal task; it is also a logistics, data, staffing and institutional coordination challenge.

Table 5: Constraints to policy implementation and enforcement

Constraint	Governance effect	Waste-management consequence
Limited manpower and technical capacity	Reduced inspection frequency and weak enforcement follow-up	Illegal dumping and burning remain difficult to control
Insufficient vehicles and monitoring equipment	Limited field presence and slow response	Peripheral communities experience weaker regulatory coverage
Weak inter-agency coordination	Duplication in some areas and neglect in others	Diffuse accountability for service failure

Low public awareness	Residents do not understand rules or sanctions	Compliance remains weak despite the existence of the policy
Weak data and digital monitoring	Contractor and waste-flow performance are difficult to verify	Planning and enforcement remain reactive

Source: Field Study (2026)

4.5 Private contractor governance and performance accountability

Private contractors are operationally significant in Abuja's MSWM system, but their contribution is weakened by inadequate performance accountability. Waste collection contracts may contain service-oriented expectations, but they do not function as strict outcome-driven contracts where payment, renewal and sanctions are consistently tied to verified KPIs. Weak GPS monitoring, limited digital reporting, irregular penalties and poor community feedback integration reduce the ability of regulators to distinguish good performance from underperformance.

This contractor governance gap has equity implications. Contractors have stronger incentives to serve accessible and higher-income districts where cost recovery and operational convenience are better. Low-income, informal and peri-urban communities are less attractive because of poor road access, lower willingness or ability to pay and higher collection costs. Without performance-based contracting and cross-subsidy mechanisms, PPP arrangements can unintentionally widen service inequality.

4.6 Financing and cost-recovery gaps

The MSWM financing model in Abuja is mixed, combining public budget allocations, PPP participation and user charges. However, it remains structurally weak. Public funding is insufficient and vulnerable to competing priorities; user-fee compliance is low; billing and enforcement systems are weak; and PPP contractors face uncertain incentives. Informal recycling generates economic value but is not integrated into formal revenue systems. This creates a financing-enforcement paradox: service quality is too weak to motivate payment, while low payment further weakens service quality.

Table 6: Financing elements and observed weaknesses

Financing element	Observed weakness	Governance implication
Government allocation	Insufficient, unstable or delayed relative to service demand	Waste services remain dependent on public subsidies
User fees/sanitation charges	Low compliance and weak billing systems	Cost recovery is inadequate and public trust remains low
PPP financing	Weak performance-linked incentives and uncertain contractor accountability	Private delivery does not guarantee service equity or efficiency
Recycling and resource recovery	Value exists but is informal and weakly captured	Circular economy finance remains underdeveloped
Digital revenue systems	Limited customer databases and payment tracking	Planning and revenue accountability remain weak

Source: Field Study (2026)

4.7 Circular economy and ISWM Alignment gap

Current policy frameworks show emerging conceptual alignment with the circular economy and integrated solid waste management principles. Policy language supports reduction, reuse, recycling, recovery, PPPs and extended producer responsibility. However, operational reality remains largely linear: collect, transport and dump. Weak source segregation, limited recycling infrastructure, underdeveloped material recovery facilities, poor integration of informal actors and lack of structured incentives indicate that policy intent has not yet become system design.

This gap matters because a circular economy cannot operate through policy language alone. It requires household separation, reliable, segregated collection, aggregation points, material recovery facilities, recycling markets, data traceability and financing. In Abuja, these system components are weakly connected. Thus, the governance challenge is to convert normative policy alignment into operational alignment.

4.8 Discussion

The findings support the argument that the waste management problem in Abuja is largely a governance issue. There is no shortage of operational problems, such as waste collection that is either inconsistent or improperly done, as well as illegal dumping and waste burning. However, these problems are symptoms of governance issues that are of an institutional nature. Ambiguity in the mandates results in a lack of accountability, which in turn results in a lack of discipline among contractors, poor performance by contractors, a breakdown of trust among households, and a lack of financing that perpetuates poor service.

The gap between policy and practice is of greatest concern. There are sufficient policies in Abuja for environmental sanitation and for integrated and possibly other forms of waste management reforms. The challenge is that policies are translated poorly and are neither accompanied by financing nor by the various elements of institutional coordination. Service delivery suffers because of failure to implement policies because of the gap between legally binding and everyday policies.

There is also a spatial justice problem with the institutional fragmentation witnessed in Abuja. Planned areas have better infrastructure and presence of contractors with better enforcement, while peri-urban, informal, and rural areas have poor waste collection, poor monitoring, and greater reliance on self-disposal. This means that poor governance results in the inequitable distribution of environmental risks. The poorest communities are the ones that are the most impacted by dumping and waste disposal.

Private sector involvement is best regarded as a governance tool, not a solution. Contracted services improve only when the contract is clear, route coverage is assured, complaints are addressed, payments are made, and penalties are applied. Without these measures, PPP projects may leave significant areas of a city underserved.

There is a policy gap regarding informal sector exclusion. Materials recovery already occurs through informal waste picking and recycling activities. However, these activities are not performed through formal contracts, protective measures, or reporting on performance. The inclusion of informal waste workers and recyclers would likely enhance the performance of recycling activities, the livelihoods of these informal workers, and decrease the pressure on waste disposal facilities. This inclusion requires legal recognition, registration, provision of PPE and facilities, formation of cooperatives, installation of buy-back facilities, and the provision of material recovery infrastructure.

The implication is that Abuja requires a significant increase in not just the physical infrastructure of waste management, but also a new way of organising its waste management activities. There must be a realignment of the mandates of formal and informal organisations in the waste management activities. There must also be a fencing of revenues, monitoring of service providers, communication of the public service requirements, and inclusion of informal organisations in the waste management activities.

4.9 Institutional Reform Agenda

Table 7: Institutional reform agenda and recommended actions

Reform area	Recommended action	Expected governance outcome
Mandate clarification	Create a legally recognised coordination mechanism defining AEPB, Area Council, contractor and regulator roles	Reduced duplication and clearer accountability
Coordination authority	Establish an Integrated Waste Management Coordination Authority or equivalent FCT-wide coordination platform	Unified planning, data, tariff, licensing and compliance oversight
Performance contracting	Convert contractor agreements into measurable SLAs with GPS route tracking, complaint response, coverage targets and penalties	Improved contractor accountability and service equity
Independent audit	Introducing annual public-sector and bi-annual contractor performance audits	Reduced agency-assessor divergence and stronger public confidence
Policy communication	Translate policies into household guides, community campaigns, school programmes and enforcement notices	Improved awareness, compliance and behavioural participation
Ring-fenced financing	Create a Waste Services Fund supported by user fees, public allocation, penalties, EPR and grants	More predictable financing and infrastructure investment
Informal-sector inclusion	Register waste pickers, support cooperatives, provide PPE and link them to buy-back and recovery facilities	Safer livelihoods and stronger recycling performance
Data system	Create an MSWM dashboard covering generation, collection, complaints,	Evidence-based planning and transparent accountability

	disposal, recycling, contractor performance and enforcement	
--	---	--

Source: Field Study (2026)

4.10 Recommendations

- i. Define statutory and operational functions of AEPB, Area Councils, NESREA, FMENV, private contractors, and community actors.
- ii. Designate FCT-wide waste governance coordination authority as the primary control unit for data management, licensing, performance reporting, and resolution of inter-agency conflicts.
- iii. Modify private contractor agreements to include clearly defined service level indicators and routes, frequency, and verified routes, penalty for non-compliance and responsiveness to complaints.
- iv. Establish an independent waste governance auditing system for public and private agencies based on household, operational and environmental evidence.
- v. Institute an ongoing campaign to educate the public on the waste management rules concerning source segregation, dumping, burning, waste fee payment and household obligations.
- vi. Establish a dedicated Waste Services Fund for the enhancement of cost recovery and reduction of leakage for services pertaining to the collection of waste, recycling, and monitoring services, and the incorporation of the informal sector.
- vii. Incorporate informal waste actors through the establishment of cooperatives, provision of PPE, access to sorting facilities, buy-back systems, and representation in policy formulation.
- viii. Construct a digital database for managing MSWM information on waste generation, contractor performance, complaints, enforcement, recycling quantities, and disposal site status.
- ix. Priorities underserved peri-urban and rural settlements in enforcement, collection expansion and infrastructure investment to reduce environmental inequality.
- x. Align Abuja's policy implementation with ISWM and circular economy principles by linking source segregation, collection logistics, recovery infrastructure, finance, and accountability.

4.11 Limitations

This article utilizes data from the cross-sectional studies that capture the state of governance during the period of data collection, rather than measuring the extent of long-term institutional changes. Some governance findings are based on the perceptions of stakeholders, which could be influenced by the institutional position, professional experience or vested interests of the stakeholder. However, the studies attempt to limit the impact of those findings by using data from the household surveys, field observations and focus group discussions, in addition to the author's policy review. A full political economy of the procurement process, of party politics, and of the budget lines is beyond the scope of this article. These are areas for future research. Likewise, the fiscal implications of each

proposed reform are not explored here. Future studies should seek to address the implications of cost, possible financing sources, and the limits of institutional changes for the governance reforms proposed in this article.

5.0 Conclusion

This article examined the FCT Abuja municipal solid waste management policies to assess the state of governance and policy formulation. Data shows that there is more to waste management in Abuja than a shortage of trucks, bins, or disposal facilities. It is due to a chronic waste management governance system that is characterised by fragmented mandates, lack of inter-agency cooperation, uneven enforcement of the law, lack of public awareness, weak contractor accountability, inadequate cost recovery, poor data management and exclusion of the informal sector.

It is thus concluded that the policy and institutional frameworks for waste management in Abuja are relevant but are misaligned. The policies incorporate components of sustainable waste management and of recycling, and of integration, but collection, transport, and dumping, with little to no source segregation and poor accountability, dominate the implementation of waste management. The filling of this gap will require the restructuring of waste management governance and will not be catered for by the repetition of policies. The provision of a central governance authority, clearly defined mandates, performance-based contracts, an independent audit, dedicated funds, structured communication, and the use of technology to aid governance, as well as the inclusion of the informal sector, would transform Abuja's fragmented waste management governance into a system of measurable governance.

References

1. Adewumi, I. K., Mafimisebi, O. P., & Oluwole, F. A. (2018). Municipal solid waste characterisation and management in Abuja, Nigeria. *Journal of Applied Science and Environmental Management*, 22(1), 91–97.
2. Ajzen, I. (1991). The theory of planned behaviour. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211.
3. Bello Dange, A. (2026). *Evaluation of municipal solid waste management practices in the Federal Capital Territory (FCT), Abuja and its environs* [Doctoral thesis, University of Port Harcourt].
4. Borg, K., & Ezeah, C. (2021). Analysing governance structures for solid waste management in low-income settings. *Sustainability*, 13(11), 6046.
5. Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101.
6. Buwah, P., Jibrin, A., & Dada, A. (2024). Solid waste management challenges in the Federal Capital Territory, Abuja: A governance and infrastructure assessment. *Urban Climate*, 44, 101207.
7. Cointreau, S. (2006). *Occupational and environmental health issues of solid waste management: Special emphasis on middle- and lower-income countries*. World Bank.
8. Creswell, J. W., & Plano Clark, V. L. (2018). *Designing and conducting mixed methods research* (3rd ed.). SAGE.
9. Ezeah, C., & Roberts, C. L. (2014). Analysis of barriers and success factors affecting sustainable municipal solid waste management in Nigeria. *Journal of Environmental Management*, 103, 9–14.
10. Ezeudu, O. B., Ezeudu, T. S., & Uzodinma, E. O. (2023). Circular economy potential in Nigeria's municipal solid waste management system: A systematic review. *Sustainability*, 15, 1–24.

11. Federal Ministry of Environment. (2020). *National policy on solid waste management*. Federal Republic of Nigeria.
12. Freeman, R. E. (2010). *Strategic management: A stakeholder approach*. Cambridge University Press.
13. Geels, F. W. (2002). Technological transitions as evolutionary reconfiguration processes. *Research Policy*, 31(8–9), 1257–1274.
14. Guerrero, L. A., Maas, G., & Hogland, W. (2013). Solid waste management challenges for cities in developing countries. *Waste Management*, 33(1), 220–232. <https://doi.org/10.1016/j.wasman.2012.09.008>
15. Hoornweg, D., & Bhada-Tata, P. (2012). *What a waste: A global review of solid waste management*. World Bank.
16. Imam, A., Mohammed, B., Wilson, D. C., & Cheeseman, C. R. (2008). Solid waste management in Abuja, Nigeria. *Waste Management*, 28(2), 468–472. <https://doi.org/10.1016/j.wasman.2007.01.006>
17. Kaza, S., Yao, L. C., Bhada-Tata, P., & Van Woerden, F. (2018). *What a waste 2.0: A global snapshot of solid waste management to 2050*. World Bank. <https://doi.org/10.1596/978-1-4648-1329-0>
18. Obani, P., & Ita, E. (2025). Public-private partnerships in Nigeria’s waste management sector: Governance and performance implications. *Journal of Integrity in Ecosystems and Environment*, 3(1), 1–18.
19. Ogwueleka, T. C. (2009). Municipal solid waste characteristics and management in Nigeria. *Iranian Journal of Environmental Health Science & Engineering*, 6(3), 173–180.
20. Ogwueleka, T. C. (2013). Survey of household waste composition and quantities in Abuja, Nigeria. *Resources, Conservation and Recycling*, 77, 52–60.
21. Olukanni, D. O., & Akinyinka, O. O. (2012). Environment, health and wealth: Towards an analysis of municipal solid waste management in Ota, Ogun State, Nigeria. *Journal of Environmental Science and Engineering*, 1(11), 1188–1196.
22. Ostrom, E. (2009). A general framework for analysing sustainability of social-ecological systems. *Science*, 325(5939), 419–422. <https://doi.org/10.1126/science.1172133>
23. Pholoto, T., & Chitaka, T. Y. (2022). Waste picker integration in South Africa: Cooperative models, social enterprise pathways, and public-private partnership options. *Resources, Conservation and Recycling Advances*, 15, Article 200087.
24. Pressman, J. L., & Wildavsky, A. (1973). *Implementation: How great expectations in Washington are dashed in Oakland*. University of California Press.
25. Scheinberg, A., Simpson, M., & Gupta, Y. (2010). *Economic aspects of the informal sector in solid waste management*. Deutsche Gesellschaft für Internationale Zusammenarbeit.
26. Scheinberg, A., Wilson, D. C., & Rodić, L. (2010). *Solid waste management in the world’s cities*. UN-Habitat.
27. UNEP. (2015). *Global waste management outlook*. United Nations Environment Programme.
28. van de Klundert, A., & Anschutz, J. (2001). *Integrated sustainable waste management: The concept*. WASTE.
29. Wilson, D. C., Araba, A. O., Chinwah, K., & Cheeseman, C. R. (2006). Building recycling rates through the informal sector. *Waste Management*, 26(8), 797–808. <https://doi.org/10.1016/j.wasman.2005.09.016>
30. Wilson, D. C., Rodić, L., Modak, P., Soos, R., Carpintero, A., Velis, K., Iyer, M., & Simonett, O. (2015). *Global waste management outlook*. UNEP and ISWA.
31. Wilson, D. C., Rodic, L., Cowing, M. J., Velis, C. A., Whiteman, A. D., Scheinberg, A., Vilches, R., Masterson, D., Stretz, J., & Oelz, B. (2015). “WasteAware” benchmark indicators for integrated sustainable waste management in cities. *Waste Management*, 35, 329–342. <https://doi.org/10.1016/j.wasman.2014.10.006>



© 2026 by the authors. Submitted for possible open access publication under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by-nc-sa/4.0/>).