



COUNTY GOVERNMENT OF KIAMBU

JUJA MUNICIPALITY

**DEPARTMENT OF MUNICIPAL ADMINISTRATION AND URBAN
DEVELOPMENT**

SOLID WASTE MANAGEMENT POLICY

2025

Foreword

Juja Municipality is one of the fastest-growing urban centres within Kiambu County, driven by its strategic location along the Nairobi–Thika corridor, proximity to Nairobi City, and the presence of key institutions such as Jomo Kenyatta University of Agriculture and Technology (JKUAT). This growth has spurred rapid expansion of residential developments, commercial enterprises, educational institutions, and light industries. While these developments present significant economic opportunities, they have also resulted in a steady increase in the generation of solid waste.

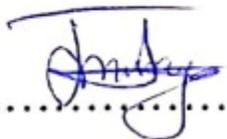
The growing volumes and changing composition of waste—from households, markets, institutions, and industrial activities—pose increasing challenges to effective waste management. In particular, issues such as inadequate waste segregation at source, illegal dumping in open spaces and drainage systems, and pressure on existing collection services threaten environmental sustainability and public health within the municipality.

The Juja Municipality Solid Waste Management Policy has been developed to provide a clear and coordinated framework for addressing these challenges. The policy seeks to strengthen waste management systems through improved collection services, promotion of waste segregation at source, expansion of recycling and composting initiatives, and enforcement of environmental regulations.

Juja Municipality recognizes the critical role of partnerships in achieving sustainable waste management. Private sector actors, recycling enterprises, community-based organizations, and informal waste collectors already contribute to waste collection and resource recovery within the municipality. This policy aims to strengthen such collaborations and promote a circular economy approach where waste is treated as a resource.

The policy further emphasizes the importance of public participation and shared responsibility. Residents, businesses, institutions, and developers must all play an active role in ensuring proper waste handling, disposal, and environmental stewardship. The Polluter Pays Principle remains central to this policy, ensuring accountability among all waste generators.

This policy represents a commitment by Juja Municipality to build a clean, healthy, and environmentally sustainable urban environment. Its successful implementation will depend on the collective efforts of all stakeholders working together toward improved waste management and sustainable urban development.



Joseph Muraya
Municipal Manager
Juja Municipality



Executive Summary

The Juja Municipality Solid Waste Management Policy provides a strategic and integrated framework for managing solid waste in a rapidly urbanizing municipality within Kiambu County. Juja has experienced significant population growth and spatial expansion, driven by its proximity to Nairobi, its location along the Nairobi–Thika transport corridor, and the presence of major institutions such as Jomo Kenyatta University of Agriculture and Technology. This growth has led to increased waste generation from residential areas, student hostels, commercial centres, markets, and light industrial activities.

With an estimated population exceeding 300,000 residents (based on projections from Kenya National Bureau of Statistics), Juja Municipality generates substantial volumes of solid waste daily. Like many urban areas in Kenya, waste generation is dominated by organic materials, alongside significant quantities of plastics, paper, and other recyclables. However, the municipality faces key challenges including limited waste segregation at source, uneven waste collection coverage, illegal dumping in open spaces and along drainage systems, and insufficient recycling and waste processing infrastructure.

This policy responds to these challenges by establishing a comprehensive approach to solid waste management based on the principles of sustainability, inclusivity, and circular economy. It promotes an Integrated Solid Waste Management (ISWM) system that addresses the entire waste value chain—from generation and segregation to collection, recycling, treatment, and final disposal. Priority is given to waste minimization, reuse, recycling, and resource recovery, in line with national policy direction.

The policy is anchored in Kenya’s legal and institutional framework, including the Constitution of Kenya, the Environmental Management and Coordination Act, and the Sustainable Waste Management Act (2022). These frameworks affirm the right to a clean and healthy environment and assign responsibility for waste management to county governments and municipalities.

Juja Municipality’s waste stream is influenced by its unique socio-economic characteristics. High population densities in residential estates and student housing areas contribute to large volumes of household waste. Markets and commercial establishments generate mixed waste streams, while construction activities associated with rapid urban development produce significant amounts of soil, rubble, and debris. These dynamics require tailored waste management approaches that address both high-density urban zones and expanding peri-urban areas.

The policy identifies several strategic priorities to improve waste management in Juja Municipality. These include strengthening waste segregation at source, expanding and improving waste collection and transportation systems, promoting recycling and composting initiatives, and ensuring environmentally sound disposal practices. It also emphasizes the need to regulate construction and demolition waste to prevent environmental degradation, particularly in riparian zones and drainage channels.

Institutional coordination and governance are central to the implementation of this policy. The Juja Municipal Board, under the County Government of Kiambu, will provide leadership in planning, regulation, and oversight of waste management services. The policy promotes collaboration with national regulatory agencies, private sector service providers, community organizations, and informal waste collectors to enhance efficiency and resource recovery.

Sustainable financing mechanisms are also emphasized to support service delivery and infrastructure development. These include municipal revenues, user fees and service charges, county government allocations, public–private partnerships, and emerging frameworks such as Extended Producer Responsibility (EPR). These financing approaches are essential to ensuring reliable and scalable waste management services.

Public participation, awareness, and behavioural change form a key pillar of the policy. The municipality will implement education and outreach programmes to encourage waste reduction, segregation at source, and proper disposal practices. Engagement with institutions such as schools, universities, and community organizations will be critical in fostering long-term environmental responsibility.

The policy further recognizes the importance of integrating waste management into urban planning and infrastructure development. As Juja continues to grow, provision for waste collection points, transfer stations, and recycling facilities must be incorporated into land use planning processes to ensure sustainable service delivery.

Monitoring and evaluation mechanisms will be established to track progress and performance using key indicators such as waste collection coverage, recycling rates, reduction in illegal dumping, and public participation levels. These systems will support data-driven decision-making and continuous improvement.

Overall, the Juja Municipality Solid Waste Management Policy provides a roadmap for transforming waste management into an efficient, inclusive, and environmentally sustainable system. By strengthening governance, promoting innovation, and encouraging stakeholder participation, the policy aims to enhance public health, protect the environment, and unlock economic opportunities within the waste management sector.

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1: Title, Authority and Legal Basis

1.1 Title

This Policy shall be known as the Juja Municipality Solid Waste Management Policy (2025).

1.2 Adopting Authority

This Policy is adopted by the Juja Municipal Board, operating under the authority of the County Government of Kiambu, in accordance with the provisions of the Constitution of Kenya (2010), the Urban Areas and Cities Act (2011, as amended), and other relevant national and county legislation governing environmental management and urban service delivery.

The Municipal Board shall provide overall policy direction, oversight, and coordination for the implementation of this Policy within Juja Municipality.

1.3 Date of Adoption

This Policy shall take effect upon its formal approval and adoption by the Juja Municipal Board and subsequent endorsement by the County Government of Kiambu.

1.4 Legal and Policy Framework

This Policy is grounded in Kenya's constitutional, legal, and policy frameworks that govern environmental management and solid waste management.

1.4.1 Constitutional Framework

The Constitution of Kenya (2010) provides the foundation for environmental governance and waste management in the country. Key provisions include:

- **Article 10** – Establishes national values and principles of governance, including sustainable development, public participation, transparency, and accountability.
- **Article 42** – Guarantees every person the right to a clean and healthy environment.
- **Article 69** – Obligates the State to ensure sustainable management of natural resources and to eliminate activities that may harm the environment.
- **Article 70** – Provides for enforcement of environmental rights.
- **Fourth Schedule (Part 2)** – Assigns county governments responsibility for refuse removal, refuse dumps, and solid waste disposal.

1.4.2 National Legal Framework

This Policy shall be implemented in accordance with the following key laws:

- **Environmental Management and Co-ordination Act (EMCA), Cap 387**
Provides the overarching framework for environmental management in Kenya, including regulation of waste handling, transportation, and disposal.
- **Environmental Management and Coordination (Waste Management) Regulations, 2006**
Establish requirements for waste segregation, licensing of waste handlers, and prohibition of illegal dumping.
- **Sustainable Waste Management Act, 2022**
Introduces an integrated approach to waste management, emphasizing:

- Mandatory segregation at source
- Extended Producer Responsibility (EPR)
- Circular economy principles
- **Urban Areas and Cities Act, 2011 (Amended 2019)**
Mandates municipalities to provide services including solid waste management and environmental protection.
- **County Governments Act, 2012**
Requires county planning and public participation in policy development and service delivery.
- **Public Health Act (Cap 242)**
Provides for the prevention of conditions harmful to human health, including improper waste disposal.
- **Environmental Regulations on Water and Air Quality**
These regulate pollution of water bodies and air, including impacts from waste dumping and open burning.

1.4.3 National Policy Framework

This Policy aligns with national policy instruments that promote sustainable waste management, including:

- National Sustainable Waste Management Policy
- National Environment Policy
- Kenya National Climate Change Action Plan

These frameworks emphasize waste minimization, recycling, climate resilience, and transition toward a circular economy.

1.4.4 County and Local Development Framework

At the county and municipal level, this Policy is aligned with:

- The Kiambu County Integrated Development Plan (CIDP 2023–2027)
- County spatial plans and environmental management strategies
- Municipal development plans and by-laws applicable to Juja Municipality

These frameworks prioritize sustainable urban development, improved service delivery, and environmental protection.

1.4.5 Policy Alignment and Application

This Policy provides a localized framework for implementing national and county waste management laws within Juja Municipality. It ensures that waste management practices:

- Protect public health and the environment
- Promote resource efficiency and recycling
- Support climate change mitigation and resilience
- Enhance compliance with environmental regulations

By aligning with these frameworks, Juja Municipality will strengthen its capacity to manage solid waste in a manner that is environmentally sustainable, socially inclusive, and economically viable.

1.5 Policy Status

This Policy is an official municipal policy instrument guiding solid waste management within Juja Municipality. It is binding on all stakeholders, including residents, businesses, institutions, developers, and waste service providers operating within the municipality.

The Policy serves as a strategic and regulatory guide for planning, implementation, and enforcement of solid waste management practices.

It shall be periodically reviewed and updated to reflect:

- Emerging waste management challenges
- Technological advancements
- Changes in legal and institutional frameworks
- Evolving urban development patterns within Juja Municipality

2. Preamble and Policy Rationale

Solid waste management is a critical environmental, public health, and urban governance issue within Juja Municipality. Over the past decade, the municipality has experienced rapid urban growth driven by its strategic location along the Nairobi–Thika transport corridor, increasing real estate development, and the expansion of educational, commercial, and industrial activities. The presence of major institutions such as Jomo Kenyatta University of Agriculture and Technology has further accelerated population growth, particularly through student populations and associated high-density residential developments.

This rapid urbanization has significantly increased the volume and complexity of solid waste generated within the municipality. Waste is produced from a wide range of sources including households, student hostels, markets, commercial establishments, small-scale industries, and construction activities. Changing consumption patterns, increased use of packaged goods, and rising economic activity have also contributed to more diverse and non-biodegradable waste streams, particularly plastics and other recyclables.

Despite ongoing efforts to manage waste, Juja Municipality continues to face several challenges. Waste segregation at source remains limited, resulting in mixed waste streams that reduce opportunities for recycling and resource recovery. Waste collection services, while present, are not uniformly accessible across all areas, particularly in rapidly expanding peri-urban settlements and informal residential zones. Illegal dumping of waste in open spaces, road reserves, and drainage channels is common, contributing to environmental pollution and increasing the risk of flooding during heavy rainfall events.

Construction and demolition waste associated with ongoing urban development is another emerging challenge. Improper disposal of soil, rubble, and debris has led to blockage of drainage systems and degradation of environmentally sensitive areas, including riparian zones. These practices not only compromise environmental quality but also increase infrastructure maintenance costs and public health risks.

In addition, the municipality faces constraints related to limited waste management infrastructure, including insufficient transfer stations, recycling facilities, and environmentally sound disposal sites. Coordination among stakeholders—including municipal authorities, private waste service providers, informal waste collectors, and community groups—also requires strengthening to ensure a more efficient and integrated system.

This Solid Waste Management Policy has therefore been developed to provide a structured and coordinated framework for addressing these challenges. It translates national legal and policy provisions into practical and locally relevant strategies tailored to the specific needs and conditions of Juja Municipality. The policy supports the implementation of key national legislation, including the Environmental Management and Co-ordination Act and the Sustainable Waste Management Act (2022), which emphasize integrated waste management, waste minimization, and circular economy principles.

At the county level, the policy aligns with development priorities outlined in the Kiambu County Integrated Development Plan, which identifies improved solid waste management and environmental sustainability as key priorities for urban areas. It also supports broader national goals related to climate change mitigation, pollution control, and sustainable urban development.

The policy is guided by internationally recognized environmental management principles, including the Polluter Pays Principle, which requires waste generators to take responsibility for the waste they produce, and the precautionary principle, which emphasizes proactive measures to prevent environmental harm. These principles are essential in promoting accountability and ensuring that waste management practices do not compromise environmental integrity or public health.

The policy also recognizes the importance of stakeholder participation in achieving sustainable waste management. Households, businesses, institutions, developers, private sector actors, and informal waste collectors all play a critical role in the waste management value chain. Strengthening collaboration among these actors will be key to improving waste collection, promoting recycling, and enhancing resource recovery within the municipality.

Furthermore, the policy acknowledges the economic potential of waste as a resource. With a significant proportion of waste in Juja being organic and recyclable, there are opportunities to expand composting, recycling, and waste-to-resource initiatives. Harnessing these opportunities can contribute to job creation, income generation, and the transition toward a circular economy.

Overall, this Policy provides a comprehensive and forward-looking framework for improving solid waste management in Juja Municipality. By addressing current challenges, strengthening institutional capacity, promoting sustainable practices, and encouraging stakeholder participation, the policy aims to support the development of a clean, resilient, and environmentally sustainable municipality.

3. Vision, Mission and Guiding Principles

3.1 Vision

To achieve a clean, healthy, and environmentally sustainable Juja Municipality through efficient, inclusive, and resource-oriented solid waste management systems.

3.2 Mission

To establish and maintain an integrated solid waste management system in Juja Municipality that promotes waste reduction, segregation at source, efficient collection, recycling, and environmentally sound disposal, through strong institutional coordination, stakeholder participation, and sustainable financing mechanisms.

3.3 Policy Goal

The overall goal of this Policy is to improve solid waste management in Juja Municipality by promoting sustainable practices that protect public health, preserve environmental quality, and support economic opportunities through resource recovery.

The Policy seeks to achieve the following objectives:

- 1. Enhance Waste Segregation at Source**
Promote separation of waste at household, institutional, and commercial levels to improve recycling and reduce landfill burden.
- 2. Improve Waste Collection and Transportation**
Expand coverage, efficiency, and reliability of waste collection services across all areas of the municipality, including high-density and peri-urban zones.
- 3. Promote Recycling and Resource Recovery**
Support the development of recycling, composting, and waste-to-resource initiatives to reduce environmental impact and create economic value.
- 4. Ensure Environmentally Sound Waste Disposal**
Promote safe handling, treatment, and disposal of waste to minimize pollution and protect ecosystems.
- 5. Strengthen Institutional Capacity and Governance**
Enhance coordination, planning, regulation, and enforcement mechanisms within the municipality.
- 6. Promote Public Awareness and Participation**
Encourage behavioural change through education and stakeholder engagement.
- 7. Mobilize Sustainable Financing Mechanisms**
Establish reliable funding systems to support waste management infrastructure and services.
- 8. Integrate Waste Management into Urban Planning**
Ensure that waste management infrastructure is incorporated into land use planning and development control processes.

3.4 Guiding Principles

Implementation of this Policy shall be guided by the following principles:

3.4.1 Polluter Pays Principle

All waste generators—including households, businesses, institutions, and developers—shall bear responsibility for the waste they produce, including costs associated with its collection, treatment, and disposal.

3.4.2 Waste Hierarchy Principle

Waste management shall follow a prioritized approach that emphasizes:

1. Waste prevention and reduction
2. Reuse
3. Recycling and composting
4. Energy recovery (where feasible)
5. Safe disposal as a last resort

3.4.3 Precautionary Principle

Preventive action shall be taken to minimize environmental harm, even in situations where there is limited scientific certainty regarding potential impacts.

3.4.4 Proximity Principle

Waste shall be managed as close as possible to its point of generation to reduce transportation costs, environmental impacts, and inefficiencies.

3.4.5 Public Participation and Inclusivity

All stakeholders—including residents, community groups, private sector actors, and informal waste collectors—shall be actively involved in waste management planning and implementation.

3.4.6 Extended Producer Responsibility (EPR)

Producers and importers of goods, especially packaging materials, shall be responsible for the post-consumer stage of their products, including collection, recycling, and disposal.

3.4.7 Sustainability and Circular Economy

Waste shall be treated as a resource, with emphasis on recovering value through recycling, composting, and innovation, thereby reducing environmental impact and supporting green economic growth.

3.4.8 Equity and Service Accessibility

Waste management services shall be accessible, affordable, and equitable across all areas of Juja Municipality, including underserved and rapidly growing settlements.

3.4.9 Institutional Accountability and Transparency

All institutions involved in waste management shall operate with accountability, transparency, and adherence to legal and regulatory requirements.

4. Scope and Applicability

4.1 Geographic Scope

This Policy applies to the entire jurisdiction of Juja Municipality within Kiambu County. It covers all wards under the municipality:

- Juja Ward
- Kalimoni Ward
- Witeithie Ward
- Murera Ward
- Theta Ward

The Policy is applicable across all land use zones within the municipality, including residential estates, informal and peri-urban settlements, commercial centres, industrial areas, institutional zones, and public spaces.

4.2 Sectoral Scope

This Policy provides a comprehensive framework for the management of solid waste generated from various sectors within Juja Municipality, including:

- **Residential Sector** – households, apartments, gated communities, and student hostels
- **Commercial Sector** – shops, markets, restaurants, and business premises
- **Institutional Sector** – schools, universities, healthcare facilities, and government offices
- **Industrial Sector** – light industries, manufacturing units, and workshops
- **Construction Sector** – construction and demolition activities associated with rapid urban development
- **Public Spaces** – roads, streets, drainage systems, parks, and open areas

4.3 Types of waste covered

This Policy applies to the management of all categories of **non-hazardous solid waste**, including:

- **Household (Domestic) Waste**
Organic waste (food scraps), plastics, paper, glass, metals, and other general waste.
- **Commercial Waste**
Waste generated from businesses, including packaging materials and mixed refuse.
- **Institutional Waste**
Waste from schools, universities, offices, and public institutions.
- **Industrial Waste (Non-Hazardous)**
Waste from light manufacturing and processing activities that does not fall under hazardous classifications.
- **Construction and Demolition Waste**
Soil, rubble, concrete, debris, and other materials from construction activities.
- **Market Waste**
Organic waste, packaging materials, and other refuse generated from markets and trading centres.
- **Street and Public Area Waste**
Waste from street sweeping, drain cleaning, and public litter.

4.4 Waste Streams Excluded from This Policy

This Policy does not directly cover the management of hazardous and specialized waste streams, which are regulated under separate national frameworks. These include:

- Hazardous industrial waste
- Medical and healthcare waste
- Electronic waste (e-waste)
- Radioactive waste

However, the Municipality shall coordinate with relevant national authorities and licensed handlers to ensure that such waste is managed in accordance with applicable laws and regulations.

4.5 Functional Scope of the Policy

This Policy addresses the full solid waste management value chain, including:

1. Waste generation and minimization
2. Segregation at source
3. Storage and handling
4. Collection and transportation
5. Transfer and processing
6. Recycling and resource recovery
7. Treatment and final disposal

It also covers cross-cutting areas such as:

- Public awareness and education

- Institutional coordination
- Financing mechanisms
- Regulation and enforcement
- Monitoring and evaluation

4.6 Stakeholder Coverage

This Policy is binding on and applicable to all stakeholders involved in solid waste management within Juja Municipality, including:

- Residents and households
- Property owners and developers
- Businesses and commercial operators
- Educational and research institutions
- Waste collection and recycling companies
- Community-based organizations and informal waste collectors
- County and municipal government entities

Each stakeholder group is expected to comply with the provisions of this Policy and contribute to sustainable waste management practices.

4.7 Temporal Scope

This Policy provides a medium- to long-term framework for solid waste management in Juja Municipality. It shall guide planning and implementation over a defined period and will be subject to periodic review to reflect:

- Changes in population growth and urban development
- Emerging waste management technologies
- Updates in national and county legislation
- Evolving environmental and socio-economic conditions

5. Situational Analysis

This chapter provides a comprehensive analysis of the current solid waste management situation in Juja Municipality, highlighting waste generation patterns, management flows, existing systems, challenges, gaps, and opportunities. The information guides decision-making, policy formulation, and implementation strategies.

5.1 Waste Generation and Characteristics

Juja Municipality is experiencing rapid population growth, urban expansion, and increased commercial and institutional activity, leading to rising volumes of solid waste. The municipality covers:

- **High-density residential areas:** including town centre housing estates and peri-urban settlements

- **Commercial areas:** markets, retail shops, hotels, restaurants, and informal businesses
- **Institutional zones:** schools, universities, hospitals, and government offices
- **Industrial sites:** small-scale and medium enterprises producing non-hazardous waste
- **Agricultural lands:** generating organic waste and biodegradable residues

Based on municipal estimates and national benchmarks, Juja Municipality generates approximately 0.5 kg of waste per person per day (World Bank, 2018; KNBS, 2019). With a projected population of around 200,000 residents in 2025 (KNBS, 2019 projections), total daily waste generation is estimated at approximately 100-105 tonnes per day. The waste stream is dominated by organic waste (approximately 60–65%), followed by plastics, paper, metals, and other recyclable materials.

Table 1: Estimated waste generation by source

Waste Generator	Approx. Daily Waste (Tons)	Percentage of Total Waste
Residential	55	53.8%
Commercial	17	16.1%
Construction & Demolition	18	16.1%
Industrial	9	8.6%
Institutional	6	5.4%
Total	105	100%

The composition highlights opportunities for recycling, composting, and resource recovery, especially from organic, plastic, and paper fractions. Construction and demolition waste is significant due to ongoing development along waterways such as River Thika, which requires strict management to prevent pollution.

5.2 Solid Waste Management Flow

The municipal solid waste management system in Juja follows an integrated waste management approach, comprising the following stages:

1. **Waste Generation** – Occurs across households, commercial centres, institutions, construction sites and industrial sites.

2. **Segregation at Source** – Encouraged but not consistently practiced; organic, recyclable, and residual waste streams are partially separated.
3. **Collection and Transportation** – Managed by a combination of municipal staff and licensed private service providers, with varying coverage across the municipality. Service gaps exist in densely populated areas.
4. **Treatment and Resource Recovery** – Recycling and composting activities are emerging, mainly led by private actors such as Taka Taka Solutions, but remain limited relative to the volume of waste generated.
5. **Final Disposal** – Residual waste is deposited in designated municipal dumpsites or landfill sites, with some illegal dumping occurring in open areas and along rivers.

This flow highlights critical points for intervention, particularly in promoting source segregation, enhancing recycling and composting, and improving collection and transportation efficiency.

5.3 Existing Solid Waste Management Systems

Within the Municipality, solid waste management is done through a mix of municipal services, private contractors, informal sector actors, and community-based initiatives. Collection coverage is higher in Juja CBD and Witiethie and other commercial areas, but lower in peri-urban and agricultural zones.

Challenges include:

1. Predominantly mixed waste collection: Most waste is collected without segregation, reducing efficiency of recycling and composting programs.
2. Limited transport and transfer infrastructure: There is insufficient municipal capacity for frequent collection in outlying areas; transfer stations are sparse.
3. Scarce recycling and composting facilities: Few formal processing facilities exist, limiting resource recovery.
4. Informal waste collectors: Operate without integration into formal systems, often lacking personal protective equipment (PPE) and training.
5. Financial, logistical, and operational constraints: Limited budget allocations, aging collection vehicles, and low manpower affect coverage, reliability, and efficiency.

5.4 Key Challenges and Gaps

Despite ongoing municipal and private sector efforts, Juja Municipality faces several challenges that hinder effective solid waste management. These gaps must be addressed through targeted interventions to ensure efficient, sustainable, and environmentally sound services.

1. Rapidly Increasing Waste Volumes

Population growth, urban expansion, commercial activities, and institutional development are driving higher waste generation, outpacing current collection and disposal capacity.

Without improved collection systems, illegal dumping and environmental pollution are likely to increase.

2. Low Levels of Segregation at Source

Most households, businesses, and institutions still dispose of mixed waste, limiting the efficiency of recycling, composting, and resource recovery.

Lack of proper containers, guidance, and public awareness contributes to non-compliance.

3. Incomplete Collection Coverage

Outlying peri-urban areas, agricultural settlements, and informal housing clusters receive irregular or no collection services.

This creates pockets of unmanaged waste, contributing to environmental degradation, flooding risks, and vector-borne diseases.

4. Illegal Dumping and Littering

Waste is frequently dumped along roadsides, drainage channels, and near rivers, including the River Thika corridor, posing health and ecological hazards.

Enforcement of municipal by-laws is limited by insufficient monitoring and staff capacity.

5. Limited Recycling and Resource Recovery Infrastructure

Few formal recycling centers, composting facilities, and material recovery facilities exist, restricting opportunities to divert waste from landfills.

Informal recyclers operate independently, often without support, equipment, or recognition, limiting efficiency and safety.

6. Weak Institutional Coordination

Coordination among municipal departments, private service providers, and community stakeholders is inconsistent.

This affects service planning, data collection, monitoring, and enforcement.

7. Inadequate Financial and Operational Resources

Limited municipal budgets, aging collection vehicles, and insufficient personnel constrain service delivery and expansion.

Low compliance with user fees or service charges reduces revenue for operational improvements.

5.5 Opportunities and Emerging Trends

Despite existing challenges, Juja Municipality presents significant opportunities to strengthen solid waste management, promote sustainability, and generate economic and environmental value. These opportunities can be leveraged through policy, planning, and practical interventions:

1. Private Sector Engagement

Increasing interest from private companies in waste collection, recycling, and composting services presents opportunities for partnerships.

Formalizing and integrating private actors can expand coverage, improve efficiency, and introduce innovative solutions.

2. High Organic Waste Content

A large proportion of municipal waste, particularly from households, markets, and institutions, is organic (food and garden waste).

This presents opportunities for composting, biogas production, and soil amendment programs, which can support local agriculture and reduce landfill volumes.

3. Recyclable Material Recovery

Waste streams contain significant quantities of plastics, paper, metals, and glass, offering potential for material recovery and income generation through recycling enterprises.

Partnerships with both formal recyclers and organized informal collectors can enhance recovery rates.

4. Community Awareness and Demand for Clean Environments

Residents and institutions increasingly value clean, safe, and environmentally friendly neighborhoods.

Public demand can drive compliance with segregation, payment for services, and participation in clean-up campaigns.

5. Alignment with National and County Policies

National frameworks such as the Sustainable Waste Management Act 2022, EMCA, and county plans provide legal and policy support for sustainable interventions.

Leveraging these frameworks enables the municipality to access funding, technical support, and compliance tools.

6. Integration of Informal Sector Actors

Informal waste collectors and recyclers are an untapped resource for material recovery.

Organizing, training, and incorporating them into municipal programs can enhance recycling rates, create jobs, and improve occupational safety.

7. Innovative and Circular Economy Approaches

Emerging opportunities in waste-to-energy, eco-friendly construction materials, and circular economy solutions can reduce environmental impact while creating economic value from waste.

Pilot projects and partnerships with private and community actors can demonstrate practical, scalable models.

8. Technology and Data-Driven Planning

Use of GIS mapping, smart waste bins, route optimization, and data collection tools can enhance operational efficiency and decision-making.

Tracking waste generation and collection allows for targeted interventions, performance monitoring, and resource allocation.

6. Integrated Solid Waste Management Framework

6.1 Integrated Solid Waste Management Approach

Juja Municipality shall adopt an Integrated Solid Waste Management (ISWM) approach, addressing the entire waste management chain—from generation to final disposal. The approach emphasizes:

- Waste prevention and minimization
- Segregation at source into organic, recyclable, and residual streams
- Recycling and resource recovery to create economic and environmental value
- Environmentally sound treatment and final disposal

The ISWM framework ensures efficient, sustainable, and health-protective waste management and guides municipal planning, investment, and operational decisions. By adopting ISWM, Juja Municipality aims to transform waste from a liability into a resource, promote circular economy practices, and encourage private sector and community participation.

6.2 Waste Streams and Sources

The municipality recognizes and manages different waste streams, reflecting Juja’s diverse land-use and socio-economic profile:

Waste Stream	Primary Sources	Type of Waste
Household & Domestic	Residential households	Food waste, garden waste, plastics, paper, textiles
Commercial & Market	Shops, supermarkets, markets	Food waste, packaging materials, plastics, cardboard

Waste Stream	Primary Sources	Type of Waste
Institutional	Schools, hospitals, offices	Paper, plastics, organic waste
Non-Hazardous Industrial	Factories, workshops	Packaging waste, non-toxic chemicals, scrap metals
Construction & Demolition	Building sites, contractors	Rubble, soil, timber, concrete debris
Special & Bulky	Large items from households or businesses	Furniture, appliances, tires, mattresses
Hazardous Waste	Health facilities, industries	Chemicals, medical waste, batteries, paints

Key Principles:

- Hazardous waste is managed separately in compliance with EMCA, Cap 387 and the Sustainable Waste Management Act 2022.
- All waste streams are tracked for volume, collection frequency, and processing opportunities.

6.3 Waste Generation, Handling, and Segregation at Source

- Segregation: Waste generators—households, institutions, commercial businesses, and construction sites—must separate waste into organic, recyclable, and residual streams at the point of generation.
- Provision of Infrastructure: Juja Municipality will supply color-coded bins, compostable bags, and designated storage containers to facilitate segregation.
- Handling Standards: Generators are required to store waste in sealed, leak-proof containers to prevent odors, vermin, and environmental contamination.
- Inspection and Compliance: Municipal inspectors will conduct regular site visits, enforcing segregation compliance and issuing warnings, fines, or incentives as per municipal by-laws.
- Public Engagement: Awareness campaigns through radio, social media, schools, and community forums will educate residents and businesses on proper handling and segregation practices.
- Construction & Demolition Sites: Builders must sort soil, rubble, timber, metals, and plastics, with the municipality providing guidance on approved collection and recycling points.

6.4 Waste Collection Systems

- Residential Collection: Implement door-to-door collection in high-density and urban areas with scheduled pickups. Collection frequency will depend on waste generation levels: e.g., daily in markets, twice weekly in households.
- Peri-Urban and Agricultural Areas: Establish communal collection points where residents can deposit segregated waste. The municipality will provide community bins and scheduled pickups.
- Commercial & Institutional Collection: Set up contractual collection agreements for schools, hospitals, and businesses, ensuring timely service.
- Private Sector Integration: Licensed private operators will complement municipal services, with monitoring systems to track coverage, efficiency, and compliance.
- Collection Performance Monitoring: Use GPS-enabled vehicles and collection logs to ensure on-time service and route efficiency.

6.5 Waste Transfer and Transportation

- Optimized Routing: Design routes based on waste volume, population density, and vehicle capacity, reducing fuel use and operational costs.
- Transfer Stations: Establish strategically located transfer stations for consolidation of waste from multiple collection points before transport to processing or disposal sites.
- Vehicle Standards: Ensure all vehicles are enclosed, leak-proof, and segregated for different waste types to prevent contamination during transport.
- Integration with Private Operators: Licensed operators will adhere to municipal-approved routes, schedules, and reporting requirements.
- Emergency Response: Provide rapid response teams to collect waste from areas affected by floods or illegal dumping.

6.6 Waste Processing, Recycling, and Resource Recovery

Waste processing and resource recovery will be central to the ISWM framework. The Municipality shall:

- Promote composting of organic waste from households, markets, and institutions
- Support recycling enterprises and material recovery facilities for plastics, paper, metals, and glass
- Facilitate private sector participation in recycling and waste-to-resource initiatives
- Encourage innovative solutions, such as anaerobic digestion, bioenergy production, and eco-friendly construction materials derived from waste

These interventions aim to reduce the volume of waste sent to landfills, create economic opportunities, and foster a circular economy.

6.7 Waste Treatment and Final Disposal

Final disposal shall be carried out in an environmentally sound manner in compliance with national standards, including EMCA (Cap 387) and the Sustainable Waste Management Act 2022.

Key measures include:

- Progressive reduction of open dumping, particularly in peri-urban and agricultural areas
- Development and maintenance of sanitary landfills with leachate and gas management
- Consideration of treatment technologies such as composting, incineration, and engineered landfills
- Monitoring and mitigation of environmental impacts, including water and soil contamination

6.8 Integration with Climate and Environmental Management

1. **Greenhouse Gas Mitigation:** Promote composting and anaerobic digestion to reduce methane emissions from organic waste.
2. **Flood and Stormwater Management:** Ensure waste does not block drainage channels, rivers, or wetlands; integrate waste management in urban planning and flood-prone areas.
3. **Biodiversity Protection:** Prevent pollution of natural habitats by strictly regulating dumping near rivers, forests, and wetlands.
4. **Climate-Resilient Infrastructure:** Design collection points, transfer stations, and disposal sites to withstand extreme weather events, such as heavy rains or flooding.
5. **Energy Recovery:** Encourage biogas, biomass, and waste-to-energy solutions as part of a climate-smart circular economy.
6. **Environmental Awareness:** Conduct continuous education on the link between waste management and climate change, engaging schools, communities, and businesses.

7. Policy Measures and Strategies

7.1 Policy Measures for Solid Waste Management

Juja Municipality shall implement a range of policy measures to ensure sustainable and integrated solid waste management across the entire value chain. The municipality will promote waste reduction and minimization by encouraging responsible consumption, reducing excessive packaging, and supporting reuse of materials through continuous public education and awareness campaigns targeting households, businesses, and institutions. Segregation at source shall be progressively enforced, requiring all waste generators to separate waste into organic, recyclable, and residual streams, supported by clear guidelines, provision of appropriate containers, and regular compliance monitoring.

The municipality shall strengthen waste collection services by expanding coverage to all areas, including peri-urban settlements, and adopting scheduled and reliable collection systems that support segregated waste streams. Efficient waste transfer and transportation systems shall be developed through route optimization, use of appropriate vehicles, and establishment of transfer stations where necessary to enhance operational efficiency. Juja Municipality shall promote recycling and resource recovery by supporting material recovery facilities, recycling enterprises, and composting initiatives, particularly for organic waste, which constitutes a significant portion of the waste stream.

Specific measures shall be implemented for organic waste management, including promotion of composting at household, institutional, and market levels, as well as development of centralized composting facilities to support agriculture. The municipality shall also regulate construction and demolition waste through enforcement of proper handling, transportation, and disposal practices to prevent illegal dumping, especially in environmentally sensitive areas such as rivers and drainage systems. Environmentally sound disposal practices shall be enforced through gradual reduction of open dumping, adoption of sanitary landfills, and compliance with national environmental standards.

Institutional strengthening shall be prioritized to enhance the municipality's technical, administrative, and regulatory capacity, while promoting coordination with relevant county and national agencies. The municipality shall also promote public awareness and community participation through continuous education and engagement of community groups, schools, and other stakeholders. Sustainable financing mechanisms, including user fees, service charges, and public-private partnerships, shall be implemented in line with the polluter pays principle to ensure cost recovery and service sustainability. Monitoring and evaluation systems shall be established to track performance, guide decision-making, and ensure continuous improvement.

7.2 Strategies for Implementation

To operationalize these policy measures, Juja Municipality shall adopt targeted strategies that ensure effective implementation and measurable outcomes. The municipality will undertake structured public education and behavior change campaigns to promote waste reduction, segregation at source, and timely payment for waste services. Strategic partnerships with private sector actors and community organizations will be strengthened to expand service delivery, improve efficiency, and enhance recycling and resource recovery initiatives.

The municipality shall implement phased enforcement mechanisms, combining incentives for compliance—such as recognition programs and service prioritization—with penalties for non-compliance, including fines and denial of services. Data-driven approaches, including waste mapping, route optimization, and performance tracking systems, will be used to improve planning, monitoring, and resource allocation. Integration of informal sector actors into formal systems through training, licensing, and provision of protective equipment will enhance recycling efficiency and create employment opportunities.

Juja Municipality will prioritize investment in infrastructure, including collection equipment, transfer stations, composting facilities, and landfill improvements, leveraging public-private

partnerships where feasible. Targeted interventions will focus on high-impact waste streams, such as organic waste, recyclables, and construction waste, to maximize environmental and economic benefits. The municipality will also strengthen interdepartmental coordination and stakeholder engagement platforms to ensure alignment of policies, programs, and enforcement actions.

Continuous monitoring, evaluation, and periodic policy reviews will be undertaken to assess progress, address emerging challenges, and incorporate innovations in waste management. Through these strategies, Juja Municipality will ensure that policy measures are effectively translated into action, leading to a sustainable, efficient, and resilient solid waste management system.

8. Institutional and Governance Framework

This chapter outlines the institutional arrangements and governance structures that shall guide the implementation, coordination, and oversight of solid waste management within Juja Municipality. Effective governance is critical to ensuring accountability, regulatory compliance, and coordinated action among the various actors involved in the waste management system.

8.1 Overall Institutional Responsibility

The overall responsibility for solid waste management within Juja Municipality shall rest with the Juja Municipal Board, operating under the policy and administrative oversight of the County Government of Kiambu, in accordance with relevant national and county legislation.

The Municipal Board shall provide strategic direction, policy oversight, and coordination of solid waste management services within the municipality. This responsibility shall be exercised in alignment with the Urban Areas and Cities Act (2011), the Sustainable Waste Management Act (2022), the Environmental Management and Coordination Act (EMCA), and other applicable laws and regulations.

The Board shall ensure that waste management policies are implemented effectively, resources are allocated appropriately, and service delivery meets required environmental and public health standards.

8.2 Roles of the Municipality

Juja Municipality shall serve as the primary implementing authority for solid waste management within its jurisdiction. The municipality shall be responsible for:

- Planning, coordination, and oversight of all municipal solid waste management services
- Development, implementation, and enforcement of municipal by-laws, operational standards, and service guidelines
- Provision of waste collection, transportation, and disposal services, either directly or through licensed private service providers
- Identification, development, and maintenance of waste collection points, transfer stations, composting sites, and disposal facilities

- Licensing, supervision, and monitoring of private waste service providers and transporters
- Promotion and enforcement of waste segregation at source and resource recovery initiatives
- Implementation of public awareness, environmental education, and community engagement programs
- Collection, analysis, and management of waste-related data for planning, monitoring, and reporting
- Enforcement of regulations to address illegal dumping, littering, unlicensed waste transport, and improper disposal practices

The municipality shall also collaborate closely with county and national agencies to ensure compliance with environmental standards and public health requirements.

8.3 Role of County Government Departments

Relevant departments of the County Government of Kiambu shall provide policy guidance, regulatory oversight, and technical support to the Municipality in the implementation of this Policy.

Key responsibilities of county departments shall include:

- Development of county-level waste management strategies, policies, and regulations
- Provision of technical support for infrastructure development and service improvement
- Environmental monitoring and compliance enforcement in collaboration with regulatory agencies
- Coordination of waste management planning across municipalities within the county
- Mobilization of financial and technical resources for improved waste management systems

County departments shall also ensure alignment between municipal waste management activities and broader county development plans, including the County Integrated Development Plan (CIDP).

8.4 Private Sector Participation

Private sector entities shall play a critical role in enhancing service delivery, efficiency, and innovation in Juja Municipality. The municipality shall actively promote private sector participation in:

- Waste collection and transportation services
- Recycling and material recovery operations
- Organic waste processing, composting, and biogas production
- Operation and maintenance of waste treatment and disposal facilities
- Development of innovative waste-to-resource and circular economy solutions

Engagement shall be conducted through transparent and competitive processes, including licensing, service contracts, and public–private partnerships (PPPs). All private operators shall

comply with municipal regulations and environmental standards set by the National Environment Management Authority (NEMA).

8.5 Informal Sector Integration

Informal waste collectors and recyclers are key contributors to resource recovery in Juja Municipality. The municipality shall recognize and progressively integrate these actors into the formal waste management system.

Integration measures shall include:

- Registration and mapping of informal waste collectors and recyclers
- Capacity building and training on safe and efficient waste handling practices
- Provision of designated sorting and recycling spaces within the municipality
- Support for formation of cooperatives, associations, or self-help groups
- Promotion of occupational health and safety standards, including provision of PPE

This integration will improve recycling efficiency, enhance livelihoods, and promote a more inclusive waste management system.

8.6 Community and Civil Society Participation

Communities, community-based organizations, and civil society groups shall play a vital role in promoting sustainable waste management practices.

Their participation shall include:

- Supporting waste reduction and segregation at household and community levels
- Participating in environmental awareness campaigns and clean-up activities
- Reporting illegal dumping, littering, and non-compliance
- Engaging in consultative forums on waste management planning and service delivery

The municipality shall establish mechanisms to facilitate continuous community engagement, ensuring that residents actively participate in maintaining clean and healthy environments.

8.7 Intergovernmental and Stakeholder Coordination

Effective solid waste management requires strong coordination among multiple stakeholders. Juja Municipality shall establish structured coordination mechanisms involving:

- Municipal departments (environment, public health, planning, enforcement)
- County government agencies
- National regulatory bodies such as NEMA
- Development partners and research institutions
- Private waste service providers
- Community and civil society organizations

Coordination shall be facilitated through:

- Regular stakeholder forums and consultative meetings
- Technical working groups for planning and implementation
- Inter-agency coordination committees to align activities and share information

These mechanisms will enhance collaboration, reduce duplication, and improve efficiency in service delivery.

8.8 Accountability and Transparency

Juja Municipality shall promote accountability and transparency in the management of solid waste services to build public trust and ensure efficient use of resources.

Key measures shall include:

- Establishment of clear reporting and monitoring systems for waste management activities
- Public disclosure of service performance indicators, revenue collection, and operational data
- Inclusive stakeholder participation in planning, budgeting, and oversight processes
- Transparent procurement and contracting procedures for service providers

These measures will strengthen governance, improve service delivery, and enhance public confidence in municipal operations.

8.9 Occupational Health and Safety

Juja Municipality shall promote accountability and transparency in the management of solid waste services to build public trust and ensure efficient use of resources.

Key measures shall include:

- Establishment of clear reporting and monitoring systems for waste management activities
- Public disclosure of service performance indicators, revenue collection, and operational data
- Inclusive stakeholder participation in planning, budgeting, and oversight processes
- Transparent procurement and contracting procedures for service providers

These measures will strengthen governance, improve service delivery, and enhance public confidence in municipal operations.

9. Financing and Economic Instruments

This chapter outlines the financial mechanisms and economic instruments that Juja Municipality shall adopt to ensure sustainable financing of solid waste management services. Adequate and predictable financing is essential for effective service delivery, infrastructure development, regulatory enforcement, and long-term environmental sustainability. The municipality shall adopt a cost recovery approach anchored on efficiency, equity, and the polluter pays principle.

9.1 Financing Framework for Solid Waste Management

Juja Municipality shall establish a diversified financing framework combining:

- Own-source revenue from solid waste management-related charges and fees
- County government budgetary allocations
- National government support and conditional grants
- Public-private partnerships (PPPs)
- Donor and development partner support where applicable

The municipality shall prioritize strengthening internally generated revenue streams, as these provide the most reliable and sustainable source of funding for waste management operations.

9.2 Revenue Streams for Solid Waste Management

Juja Municipality shall mobilize revenue through a structured set of waste-related charges and fees, including:

- Solid waste management fees (linked to Single Business Permits)
- Tipping fees for domestic waste
- Tipping fees for industrial waste
- Waste transportation licensing fees (standard and industrial)
- Sorting site charges
- Excavation and construction-related waste charges
- Noise and excessive vibration permits
- Private exhauster permits
- Demolition permits
- Conservation and environmental compliance fees

These revenue streams shall be regularly reviewed and updated to reflect operational costs, inflation, and service demand.

9.3 Cost Recovery and the Polluter Pays Principle

The municipality shall adopt the polluter pays principle, ensuring that all waste generators contribute fairly to the cost of managing the waste they produce.

Key approaches shall include:

- Linking waste management fees to business licensing systems to improve compliance
- Charging tipping fees based on volume and type of waste disposed
- Enforcing licensing requirements for waste transporters and service providers
- Applying penalties for illegal dumping and non-compliance

Efforts shall be made to ensure that cost recovery mechanisms are equitable, taking into account different categories of users while maintaining financial sustainability.

9.4 Revenue Administration and Collection Efficiency

To improve revenue performance, Juja Municipality shall strengthen its revenue administration systems through:

- Digitization of billing and payment systems to enhance efficiency and reduce leakages
- Regular updating of revenue registers and databases for all waste generators and service providers
- Active follow-up on pending invoices, including direct engagement with clients
- Integration of revenue collection with existing county systems such as e-payment platforms
- Strengthening enforcement to ensure that only licensed operators participate in waste-related activities

Field-based verification, including mapping of businesses (e.g., car wash operators, construction sites, and waste generators), shall be undertaken to expand the revenue base.

9.5 Public–Private Partnerships (PPPs)

Juja Municipality shall promote PPPs to mobilize investment, improve efficiency, and enhance service delivery in solid waste management.

PPPs may be applied in:

- Waste collection and transportation services
- Development and operation of transfer stations and material recovery facilities
- Composting and organic waste processing
- Waste-to-energy and other innovative waste treatment solutions

All PPP arrangements shall be guided by clear contractual frameworks, performance standards, and accountability mechanisms.

9.6 Incentives for Waste Reduction and Resource Recovery

To promote a circular economy, the municipality shall introduce incentives to encourage waste reduction, reuse, and recycling.

These may include:

- Reduced fees for entities practicing waste segregation and recycling
- Support for recycling enterprises and youth-led waste initiatives
- Incentives for businesses adopting sustainable packaging and production practices
- Promotion of composting through technical support and market linkages

Such incentives will reduce pressure on disposal systems while creating economic opportunities.

9.7 Financial Planning and Budgeting

Juja Municipality shall integrate solid waste management financing into its annual budgeting and planning processes.

Key actions shall include:

- Preparation of annual waste management budgets aligned with policy priorities
- Allocation of funds for operations, maintenance, infrastructure, and enforcement
- Medium-term financial planning to support long-term investments
- Regular financial performance reviews to track revenue collection and expenditure

Budgeting shall be informed by data on waste generation, service coverage, and infrastructure needs.

9.8 Addressing Revenue Gaps and Leakages

To address existing revenue gaps and improve collection performance, Juja Municipality shall implement targeted measures including:

- Strengthening enforcement against unlicensed waste transporters, particularly in high-activity areas such as Juja town and Witiethie
- Routine inspections and compliance checks for businesses generating waste
- Improved tracking of high-value revenue streams such as solid waste management fees and tipping charges
- Sealing revenue leakages through accountability and audit mechanisms
- Enhancing staff capacity in revenue collection and management

These measures will ensure that all eligible revenue is captured and accounted for.

9.9 Monitoring and Reporting of Financial Performance

The municipality shall establish systems for continuous monitoring and reporting of solid waste management finances.

This shall include:

- Regular reporting on revenue targets versus actual collections
- Tracking performance of individual revenue streams
- Periodic audits and financial reviews
- Public disclosure of financial performance to enhance transparency

Performance data shall be used to inform decision-making, improve efficiency, and guide future policy adjustments.

10. Monitoring, Evaluation, and Reporting Framework

This chapter establishes the framework through which Juja Municipality shall track, assess, and continuously improve the performance of solid waste management systems. Monitoring and evaluation (M&E) is essential for ensuring accountability, measuring progress toward targets, identifying gaps, and informing evidence-based decision-making. The framework emphasizes data-driven management, transparency, and continuous improvement.

10.1 Objectives of Monitoring and Evaluation

The Monitoring and Evaluation framework shall aim to:

- Track progress in implementation of solid waste management policies and strategies
- Measure performance against set targets and service standards
- Identify operational, financial, and institutional gaps
- Support informed planning, budgeting, and resource allocation
- Enhance accountability and transparency in service delivery
- Promote continuous improvement in waste management systems

10.2 Key Performance Indicators

Juja Municipality shall adopt clear and measurable indicators to track performance across the waste management value chain. Key indicators shall include:

Service Delivery Indicators

- Waste collection coverage (% of households and businesses served)
- Frequency and reliability of waste collection services
- Number and distribution of waste collection points and skips

Waste Management Efficiency Indicators

- Level of waste segregation at source (%)
- Volume of waste collected, recycled, composted, and disposed
- Reduction in illegal dumping sites

Financial Performance Indicators

- Revenue collected versus annual targets
- Performance of individual revenue streams (e.g., SWM fees, transport licenses, tipping fees)
- Cost recovery levels (%)

Compliance and Enforcement Indicators

- Number of licensed waste service providers
- Number of inspections conducted
- Cases of non-compliance and enforcement actions taken

Environmental and Public Health Indicators

- Cleanliness levels in public areas and markets
- Reduction in waste-related environmental pollution
- Incidence of waste-related public health risks

10.3 Data Collection and Management

Juja Municipality shall establish structured systems for data collection, storage, analysis, and reporting to support effective monitoring.

Key measures shall include:

- Development of standardized data collection tools and reporting templates
- Routine data collection by field officers, enforcement teams, and service providers
- Use of digital systems and mobile tools for real-time data capture where feasible
- Maintenance of updated databases for:
 - Waste generators (businesses, institutions, households)
 - Licensed waste service providers
 - Revenue streams and payment records
- Periodic data validation and quality checks to ensure accuracy and reliability

Data shall be centrally managed within the municipal environment or revenue department for ease of access and analysis.

10.4 Reporting Mechanisms

Regular reporting shall be undertaken to ensure transparency, accountability, and informed decision-making.

The municipality shall prepare:

- **Monthly operational reports** covering collection performance, enforcement activities, and emerging issues
- **Quarterly performance reports** assessing progress against key indicators and targets
- **Annual reports** summarizing overall performance, financial status, and policy implementation outcomes

Reports shall be shared with:

- The Municipal Board
- County Government departments
- Relevant national agencies where required
- Stakeholders and the public (in summarized formats)

10.5 Evaluation and Performance Reviews

Juja Municipality shall conduct periodic evaluations to assess the effectiveness, efficiency, and impact of solid waste management programs.

This shall include:

- Mid-term reviews to assess progress and make necessary adjustments
- End-term evaluations to measure overall outcomes and policy impact
- Thematic assessments (e.g., revenue performance, waste segregation compliance, enforcement effectiveness)

Findings from evaluations shall inform policy revisions, planning, and resource allocation.

10.6 Feedback and Continuous Improvement

The municipality shall establish mechanisms to incorporate feedback from stakeholders and improve service delivery.

These shall include:

- Public complaint and feedback channels (hotlines, digital platforms, physical reporting points)
- Stakeholder forums and consultative meetings
- Engagement with community groups, businesses, and service providers

Feedback shall be systematically analyzed and used to:

- Address service delivery gaps
- Improve operational efficiency
- Strengthen enforcement and compliance
- Enhance customer satisfaction

10.7 Institutional Responsibilities for M&E

Monitoring and evaluation responsibilities shall be shared across different actors:

- **Municipal Environment Department:** Lead data collection, monitoring, and reporting
- **Revenue Department:** Track financial performance and revenue collection
- **Enforcement Units:** Provide data on compliance and enforcement actions
- **Private Service Providers:** Submit regular operational and performance reports

- **County Government:** Provide oversight, technical support, and consolidated reporting

Clear roles and coordination mechanisms shall be established to ensure effective implementation of the M&E framework.

10.8 Use of Technology in Monitoring

Juja Municipality shall promote the use of technology to enhance monitoring and efficiency, including:

- Digital revenue collection and tracking systems
- GIS-based mapping of waste generation, collection routes, and illegal dumping hotspots
- Mobile applications for field data collection and reporting
- Dashboards for real-time performance tracking

Adoption of technology will improve data accuracy, reduce inefficiencies, and support timely decision-making.

10.9 Review of the Policy

This Solid Waste Management Policy shall be subject to periodic review every 3–5 years, or as necessary, to reflect:

- Changes in national legislation and policies
- Emerging waste management challenges and opportunities
- Technological advancements
- Lessons learned from implementation

The review process shall be consultative, involving all key stakeholders to ensure relevance and effectiveness.

11. DEFINITIONS AND INTERPRETATION

11.1 Definitions

For the purposes of this Policy, unless the context otherwise requires, the following terms shall have the meanings assigned to them below:

“Biodegradable Waste”

Waste materials that can be broken down naturally by microorganisms into simpler organic substances. Examples include food waste, garden waste, and other organic materials.

“Bulky Waste”

Large household or commercial items that cannot be accommodated in regular waste containers due to their size or weight, such as furniture, mattresses, and large appliances.

“Circular Economy”

An economic system aimed at eliminating waste and promoting the continual use of resources through reuse, repair, recycling, and recovery.

“Collection”

Means the gathering, loading, and removal of solid waste from designated storage points for transportation to treatment, recovery, or disposal facilities.

“County Government”

Means the County Government of Kiambu established under the Constitution of Kenya, 2010.

“Disposal”

Means the final placement of solid waste in an environmentally sound manner, including at an approved landfill or disposal site.

“Extended Producer Responsibility (EPR)”

Means an environmental policy approach in which producers are given significant responsibility for the management of waste arising from products they place on the market, in accordance with applicable national legislation.

“Hazardous Waste”

Means waste that poses substantial or potential threats to public health or the environment due to its chemical, physical, biological, or toxic characteristics, and which is regulated under national legislation.

“Informal Sector”

Means individuals or groups engaged in waste collection, sorting, recycling, or recovery activities outside formal contractual arrangements with the Municipality.

“Integrated Solid Waste Management (ISWM)”

Means a comprehensive approach to solid waste management that considers waste prevention, minimisation, segregation, collection, recycling, treatment, and environmentally sound disposal in a coordinated manner.

“Municipality”

Means Juja Municipality as established under the Urban Areas and Cities Act, 2011.

“Municipal Solid Waste”

Means non-hazardous solid waste generated from households, commercial establishments, institutions, markets, and similar sources within the Municipality.

“Private Service Provider”

Means a legally registered entity contracted or licensed to provide solid waste management services within the Municipality.

“Recycling”

Means the processing of waste materials for the purpose of converting them into new products, materials, or substances.

“Resource Recovery”

Means the extraction of useful materials or energy from waste, including recycling and composting.

“Segregation at Source”

Means the separation of waste materials at the point of generation into designated categories such as organic, recyclable, and residual waste.

“Solid Waste”

Means discarded materials that are solid in form and are generated as a result of human activities.

“Solid Waste Management”

Means the collection, storage, transportation, treatment, recovery, and disposal of solid waste in a manner that protects public health and the environment.

“Waste Generator”

Means any person, household, institution, or entity whose activities produce solid waste.

“Waste Management”

The systematic control of the generation, storage, collection, transportation, recycling, treatment, and disposal of waste.

“Waste Minimization”

Measures aimed at reducing the quantity and harmfulness of waste generated through improved production processes, reuse, and sustainable consumption practices.

12. Annexes

Implementation matrix

Table: Solid Waste Management Implementation Matrix – Juja Municipality

Policy Area	Key Action	Specific Activities	Timeframe	Responsible Entity	Key Outputs/Indicators
Waste Reduction & Minimization	Promote waste reduction	Public awareness campaigns, business engagement on sustainable packaging	Short-term (0–2 yrs)	Municipality (Environment Dept)	Reduced waste generation, number of awareness campaigns conducted
Waste Segregation at Source	Implement segregation system	Develop guidelines, distribute bins, enforce compliance	Short–Mid term (0–5 yrs)	Municipality, Private Sector	% households/businesses practicing segregation
Waste Collection Services	Expand collection coverage	Route planning, increase skips, engage private collectors	Short-term (0–3 yrs)	Municipality	% coverage, reduced uncollected waste
Waste Transportation	Improve efficiency	License transporters, enforce compliance, route optimization	Short-term (0–2 yrs)	Municipality, Enforcement Unit	Number of licensed transporters, reduced illegal dumping
Transfer & Infrastructure	Develop transfer systems	Establish transfer stations, upgrade equipment	Mid-term (3–5 yrs)	Municipality, County Govt	Operational transfer stations
Recycling & Resource Recovery	Promote recycling	Support recyclers, establish MRFs, partnerships	Mid–Long term (3–8 yrs)	Municipality, Private Sector	% waste recycled, number of recycling initiatives
Organic Waste Management	Promote composting	Household composting, market waste	Short–Mid term (0–5 yrs)	Municipality, CBOs	Volume of organic waste composted

Policy Area	Key Action	Specific Activities	Timeframe	Responsible Entity	Key Outputs/Indicators
		composting sites			
Construction Waste Management	Regulate C&D waste	Enforce permits, designate disposal sites	Short-term (0–2 yrs)	Municipality, Enforcement Unit	Reduced illegal dumping of construction waste
Disposal Systems	Improve final disposal	Transition to controlled disposal/sanitary landfill	Long-term (5–10 yrs)	County Govt, Municipality	Improved disposal standards
Revenue Collection	Enhance revenue streams	Billing, enforcement, follow-ups, mapping businesses	Immediate–Short term (0–2 yrs)	Revenue Dept, Environment Dept	% revenue collected vs target
Enforcement	Strengthen compliance	Patrols (Thindigua, Kiamumbi, Ruaka, Gachie), penalties	Immediate (0–2 yrs)	Enforcement Unit	Number of enforcement actions
Private Sector Engagement	Strengthen PPPs	Contracting, licensing, monitoring	Short–Mid term (0–5 yrs)	Municipality	Number of active private operators
Informal Sector Integration	Formalize informal actors	Registration, training, PPE provision	Short-term (0–3 yrs)	Municipality	Number of registered informal workers
Public Awareness	Enhance participation	Community outreach, school programs	Continuous	Municipality, CBOs	Increased public participation
Institutional Capacity	Strengthen systems	Staff training, resource allocation	Continuous	Municipality, County Govt	Improved service delivery
Financing	Improve sustainability	Diversify revenue, PPPs, cost recovery	Continuous	Municipality	Reduced funding gaps
Monitoring & Evaluation	Track performance	Data collection, reporting, reviews	Continuous	Municipality	Regular reports produced

Policy Area	Key Action	Specific Activities	Timeframe	Responsible Entity	Key Outputs/Indicators
Technology Adoption	Digitize systems	Revenue systems, GIS mapping	Short–Mid term (0–5 yrs)	Municipality	Improved efficiency and data accuracy

REFERENCES

The preparation of this Solid Waste Management Policy was informed by the following legal instruments, policy frameworks, and reference materials:

- Constitution of Kenya, 2010.
- Environmental Management and Coordination Act (EMCA), Cap 387, and subsidiary regulations.
- Urban Areas and Cities Act, 2011.
- County Governments Act, 2012.
- Public Health Act, Cap 242.
- Relevant Kiambu County spatial, sectoral, and environmental plans.
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