

# **SOLID WASTE MANAGEMENT POLICY**

**DEPARTMENT OF ENVIRONMENT**

**DRAFT**

**MURANG'A  
MUNICIPALITY**

Social lifestyles, waste management practices and production determine how we dispose of our waste. Accumulation of waste has stagnated development of some societies due to their inadequate waste management leading to degradation of environment, proliferation of diseases and ultimately impact on livelihoods. Further, improper waste management poses a threat to climate change and eventually in the achievement of sustainable development. Waste being one of the contributors of greenhouse gases, affects climate change and it is for this reason that as a county, we should develop sustainable waste management technologies and initiatives to curb this growing municipality challenge.

Against this background, this Policy proposes a broad range of measures and actions responding to key solid waste management issues and challenges. It seeks to provide the framework for a sound environmental management entailing use of waste reduction technologies in production, sustainable product design, resource efficiency and waste prevention, reusing products where possible and recovering value from products. It recognises that elimination of waste may not be entirely feasible, but systematic application of modern waste management systems could be explored and implemented. This policy also recognises that waste management affects every person and institution in our community. Therefore, measures set out cannot be undertaken without collective approach to waste challenges and the involvement of a broad range of stakeholders.

**His Excellency Governor Mwangi Wa Iria**  
**County Government of Murang'a**

## **ACKNOWLEDGEMENTS**

The environment is an essential feature of Murang'a municipality's development trajectory. As a result, the county government through the department of environment has embarked on designing this policy to ensure coordinated waste collection, transportation, disposal sites and licensing of waste transporters. This document will present participatory information from a wide range of individuals and institutions in the private sector, academia, civil society and government agencies that will participate in the process

The document has six (6) chapters as follows;

**Chapter One** underscores the importance and contribution of Sound solid waste management to the county economy, people's livelihoods, health and environmental sustainability. This section also highlights the existing policy instruments and the reasons that have necessitated the formulation of the policy.

**Chapter Two** reviews the status of solid waste management in Murang'a municipality and highlights the key environmental issues and challenges.

**Chapter Three** spells out the goal, objectives and guiding principles of this Policy.

Chapter Four identifies Murang'a County Government's waste types and proposes measures to enhance solid waste management.

**Chapter five** deals with institutional linkages including partnerships, human resource development, capacity building, funding mechanism as well as monitoring and evaluation of the sector.

**Chapter six** outlines strategies and actions that will ensure effective implementation of this Policy.

Finally, it is our hope that this policy will provide the guide line required for legislation work and the framework in the planning and implementation of solid waste management undertakings.

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**Acronyms**

**CEC** County Environment Committees

**CC** Climate Change

**CBOs** **Community Based Organizations**

**CEC** **County Environment Committees**

**DECs** District Environment Committees

**EEEs** Electrical and Electronic Equipment's

**EMCA** Environment Management and Conservation ACT

**GHG** Green House Gases

**GMR** Garbage Management Regulation

**NGOs** Non-Government Policy

**NEP** National Environment Policy

**NIMBY** Not in My Back Yard

**PPP** Public Private Partnerships

**SWM** Solid waste management

# **MURANG'A SOLID WASTE MANAGEMENT POLICY**

## **1.0. INTRODUCTION**

1.1 Definition; Solid waste management is proper management of waste generated from human activities to protect human health and environment while enhancing aesthetics.

1.2 Inefficient production processes, low durability of goods and unsustainable consumption and production patterns lead to excessive waste generation. Despite efforts to encourage reuse, recycling and recovery, the amount of solid waste generated remains high and appears to be on the increase. Other categories of wastes that require special consideration is electronic waste, and wastes from the hospitals and other health facilities. 1.3 Protecting the environment is not an alternative to economic growth. It is a pre-condition of efficient of efficient economic development.

1.4 EMCA 1999 establishes the District Environment Committees (DECs) which are now known as the County Environment Committees (CECs) to contribute to the decentralization of environmental management and enable participation of local communities.

1.5 The proposed policy on solid waste management shall be enacted which shall outline requirements for handling, storing, transporting and treatment/disposal of all waste categories generated in the county

1.6. It is the responsibility of the county government through the department responsible for environmental issues to ensure that policies are reviewed and formulated to meet the aspirations of the Environmental Management and Coordination Act of 1999, Environmental Management and Coordination (Waste Management Regulations of 2006), National Environment Policy (NEP), National Solid Waste Management Strategy (NSWMS) and emerging issues in the management of the environment for prosperity. This policy therefore aims at providing a holistic framework to guide the solid waste in Murang'a. It will further ensure that solid waste management is integrated in all related government sector policies in order to facilitate and realise sustainable development in the county

## **2.0 Situation analysis**

Murang'a county like many other counties generate various types of waste which include but not limited to hazardous materials, Food waste, agricultural waste, papers, hospital waste, dead animals, glasses, plastics etc. Challenges in waste management in Murang'a have remained a major challenge due to diverse factors. This range from problems associated with waste management systems, limited knowledge, attitude and practices, technical and inadequate financial resources. The amount of solid waste generated remains high and appears to be on the increase. The challenge of waste management affects every person and institution in Murang'a municipality. The measures set out in this policy cannot be undertaken without a collective approach to waste challenges, and the involvement of a broad range of stakeholders in their implementation. This municipality Solid Waste Management policy seeks to establish a common platform for action between stakeholders to systematically improve waste management in Murang'a. The policy will focus more on behaviour change than criminalization. Every person in Murang'a municipality is entitled to a clean and healthy environment. This makes the government take up the duty and obligation to safeguard and enhance the Environment for the good of Murang'a people. The Environment Management and Coordination Act 1999 is guided with among others the principle of public participation in the development of policies, plans and

processes for the management of the environment. The principle of intergenerational equity, and the precautionary principle will be the focus of this policy so that the youth will play a transformative role. This is in alignment with the vision 2030 which recognized that efficient and sustainable waste management systems are required as Murang'a develop efficient garbage management systems by 2030.

There is limited awareness and knowledge on the importance of a clean and healthy environment. This has led to poor practices by the public towards waste management which has led to environmental pollution. As such there is poor handling of waste at the household level including lack of segregation, reuse, reduce and recycling. In addition, negative attitude towards waste management and failure to take individual responsibility has contributed to poor practices such as littering, illegal dumping and open burning.

The department of environment has developed this policy towards compliance with the Environmental Management and Coordination Act of 1999 and Environmental Management and Coordination (Waste Management Regulations of 2006) in order to ensure a clean and healthy environment for all and keeping in line with the Article 42, of the Constitution of Kenya 2010. It is Murang'a municipality government conviction that this policy will enhance the capacity of the county government to deal with waste management systems and approaches applicable to Murang'a municipality.

**2.1** This backdrop provides the justification for this Solid Waste Management Policy.

It gives the framework to guide the county's efforts in addressing the ever-growing solid waste management issues and challenges such as:

### **2.1.1 Challenges in Waste Management**

Waste management in Murang'a has remained a major challenge due to diverse factors. This range from problems associated with waste management systems, limited knowledge, attitude and practices, political will, technical and financial resources.

- a) **Lack of awareness and knowledge:** There is **limited** awareness and knowledge on the importance of a clean and healthy environment. This has led to poor practices by the Public towards waste management which has led to environmental pollution. As such there is poor handling of waste at the household level including lack of segregation, reuse, reduce and recycling. In addition, negative attitude towards waste management and failure to take individual responsibility has contributed to poor practices such as littering, illegal dumping and open burning.
- b) **Disposal sites: Availability, siting and management.** The availability of public land for the purpose of a disposal site is not challenge in the county. In situations where the land is available, the neighbouring communities are however opposed to it being in their backyard. This is as a result of poor management of the existing sites.
- c) **Funding:** The municipality has allocated the resources for garbage management However, the funds are not adequate especially in the garbage transport system which requires a lot of funds. There is need to strategize how the available funds can be utilized efficiently and effectively to ensure the management of the entire waste management cycle (collection, transportation and disposal).

- d) **Lack of segregation:** There is lack of waste segregation at source leading to mixed wastes which are collectively disposed of in the dumpsites. Where sorting is done, the problem is compounded by the lack of bins and chambers for hence all garbage is mixed during transportation. This hampers material recovery, reuse, and recycling **Limited technical competencies:** As a municipal, we are faced by limited technical competencies in waste management. This has led to poor management of our waste management facilities and equipment and their failure to attain optimal operating capacities.
- e) **Slow adoption of modern technological options:** Although there are many waste management technologies available which the county can invest in, there has been low adoption. This is as a result of diverse factors including inadequate financial resources to purchase the equipment's, lack of incentives including t resistance to change and lack awareness.

### 3.0 Policy Goal, Objective and Guiding Principle

#### 3.1 Goal

To reduce exposure of Murang'a residents to the hazards of solid waste hence protect them from human and environmental health and promote efficient waste management.

#### 3.2 Objectives

This policy is to be implemented through five (4) key objectives

1. To inform legislations instruments to reduce waste quantities
2. To inculcate responsible public behaviour on waste management
3. To promote waste segregation at source
4. To establish environmentally sound infrastructure and systems for waste management.

#### 3.3 Guiding principle

Through the government commitment to sustainable development, Murang'a municipality aims to balance the broader economic and social challenges of development and environmental protection. For this reason, the county subscribes to the vision of a prosperous and equitable society living in harmony with our natural resources. This is also reinforced in the constitution under the fundamental right to a clean and health environment. Sound environmental management entails use of waste reduction technologies in production, sustainable product design, resource efficiency, waste prevention and re-using products where possible. Although, elimination of waste entirely may not be feasible, systematic application of modern waste management systems shall be explored and implemented. Inefficient garbage management affect the achievement on the sustainable development due to the costs realized such as;

##### 3.3.1 Environment costs

Inappropriately managed waste can attract rodents and insects, which can harbor parasites, and other microorganisms. If the waste is burned in the open air it can cause various other diseases including cancers. Toxic waste materials can contaminate surface water, groundwater, soil, and air which causes more problems for humans, other species, and ecosystems. Waste once burnt produces significant greenhouse gas (GHG) emissions, notably methane, which are contributing significantly to climate change.

### **3.3.2 Social costs**

Waste management is a significant environmental justice issue. Many of the environmental burdens cited above are more often borne by the Murang'a community. NIMBY (not in my back yard) is the attitude that lead to opposition of residents to a proposal for efficient disposal of garbage until it is gets close to them. However, the need for expansion and siting of waste treatment and disposal facilities is increasing as the residents fear diseases which are associated with solid waste. Due to the advocacy on waster segregation youth have now than ever before appreciated there is business in garbage recycling and this will increase segregation.

### **3.3.3 Economic costs**

The economic costs of managing waste are high, and are often paid for by the county government. Money will be saved with more efficiently designed collection routes, sufficient vehicles, and with public education. Environmental policies such as decentralization of garbage collection and management to the sub counties will reduce the cost of management and reduce waste quantities. Waste recovery, recycling and reuse (3Rs) is a good strategy to reduce economic costs because it avoids transporting raw materials and often cuts transportation costs. The location of proposed waste treatment and disposal facilities also reduces property values due to noise, dust, pollution, unsightliness, and negative stigma. This is more so where there are no provisions for buffer zones between the treatment plant site and the neighboring farms.

## **4.0 Types of waste in Murang'a County**

There are various wastes generated in Murang'a municipality which can be categorized as domestic, municipal, industrial and hazardous wastes. Other emerging waste streams, such as e-waste, and waste tyres are as a result of growing industrialization and growth of ICT. The composition of general waste varies considerably between households, businesses and industries.

### **4.0.1 Domestic waste:**

Domestic waste is also referred to as garbage, refuse or trash. It consists mainly of biodegradable waste which is food and kitchen waste, green waste paper and non-biodegradable such as plastics, glass bottles, cans, metals and wrapping materials. The composition of the domestic waste streams is a function of income, consumption patterns and recycling opportunities.

### **4.0.2 Waste Tyres:**

Waste tyres is an emerging waste stream that has reached their end of life due to wear or damage and cannot be recycled or reused.

### **4.0.3 Construction and demolition waste:**

This is waste that is generated as a result of new construction works, remodelling or demolition. Construction waste comprises debris, steel, timber, iron sheets, tiles and ceramics among others. Although construction and demolition waste is not classified as hazardous, it is a mixed waste source that requires separation into component parts for the purposes of recycling.

### **4.0.4. Asbestos Waste**

Demolition wastes may include asbestos which is hazardous and can present a significant health risk when improperly disposed or reused.



#### **4.0.5 Biomedical /Clinical Waste**

Biomedical waste also referred to as medical waste refers to waste generated in health facilities or during immunization of human beings and animals. It's classified into; Infectious waste, sharps, pharmaceutical wastes, chemical waste and pathological waste. Biomedical wastes pose risks to human health due to its pathogenic characteristics and hence require prior treatment before disposal.

#### **4.0.6 E-waste:**

Electronic waste is an emerging waste stream arising from Electrical and Electronic Equipment's (EEEs) becoming obsolete at the end of life. These include the mobile phones, non-functional, radios, TVs and computers.

#### **4.0.7 Batteries:**

Batteries can either be alkaline (dry cells) or acid based which support domestic and industrial applications. The acid based (rechargeable and silver oxide) batteries contain heavy metals such as mercury and cadmium which are classified as hazardous substances.

#### **4.0.8 Fluorescent Lamps:**

Fluorescent lamps are used for illumination and contain a small amount of mercury. The mercury is a neurotoxin and can be harmful even in small quantities.

#### **4.0.9 Pesticide Waste:**

Pesticides are chemicals used to control pests. Pesticide waste consists of expired and contaminated pesticides as well as the used containers.

#### **4.0.10 Used Oil and Sludge:**

Used Oil and Sludge arises from the use of petroleum products. This contains potentially hazardous compounds such as poly-aromatic hydrocarbons that have carcinogenic and mutagenic properties.

#### **4.0.11 Sewage Sludge:**

Sewage sludge is a sediment material that accumulates over time in the sewage treatment plants and ponds. The widespread disposal of industrial effluent via sewage treatment works results in contamination of sewage sludge with hazardous chemicals, thereby posing particular challenges for its disposal. Sewage sludge that is contaminated by heavy metals from industrial effluent can severely contaminate agricultural land to which it is applied.

### **4.1 Proposed Measures to ensure Solid Waste Management**

#### **4.1.1 Waste Generation**

Most of the waste is generated at household, market places, cities, towns, institutions and industrial zones.

#### **Policy Statements**

The County Government will:

1. Ensure the community shall be sensitized to minimize waste by reducing, reusing waste.
2. Encourage adoption of behaviour change after sensitization provided for in this policy
3. Ensure that all waste generated shall be segregated at source.

4. Provide colour coded bins at the urban centres as per the NEMA guidance for the segregated waste.

#### **4.1.2 Waste Collection**

Waste collection will be the main point of interface between the public and waste management service providers who are currently the County Government but may in future be gradually taken up by the private sector as and when need arises. There is lack of waste segregation at source leading to mixed wastes which are collectively disposed of in the dumpsites. Where sorting is done, the problem is compounded by the lack of compartmentalized vehicles for transportation of the sorted waste leading to the remixing. This hampers material recovery, reuse, and recycling. The sorting has largely been relegated to the lowly in society such as the waste pickers and street boys.

#### **Policy Statements**

The County Government in conjunction with the municipal will:

1. Ensure that collection centres /transfer stations will be established at strategic areas within the urban centres and municipalities.
2. Ensure timely and regular collection of all solid wastes either through door to door collection or from centralized collection points;
3. Ensure waste collection facilities such as skips, bulk containers and waste cubicles are regularly emptied and do not become eye-sores;
4. Ensure that there will be fully equipped with waste bins which shall either be colour coded or labelled with the specific waste stream to promote waste segregation.
5. Ensure that all waste collection centres will be zoned/designated by the County Government.
6. Flag opportunities associated with garbage. This will change the perception. Some youths will take up the business of sorting at source the glasses and plastic.

Link up the youths with the manufacturers or encourage cottage industry of solid waste than can be recycled.

#### **4.1.3. Waste Transportation**

Waste transportation in the county is largely rudimentary using open trucks

#### **Policy Statements**

The County Government will:

1. The County Government will provide adequate transport for all the sub counties and the municipalities.
2. Ensure that the waste transportation trucks shall be closed and suitable for the transportation of the various waste streams to the waste dumping designated site and any future proposed landfills.
3. Ensure the waste trucks shall be regularly serviced and maintained to avoid littering of waste.
4. All waste transportation vehicles shall be authorized by the County Government to operate.

#### **4.1.4 Disposal sites**

Most of the town and domestic waste generated is disposed of in open dumpsites across the county. Although this is not a recommended practice it is the most common practice. Biomedical waste is largely disposed through incineration and rudimentary kilns; Condemned, damaged or expired goods are disposed through incineration or in the cement kilns

#### **Policy Statements**

The municipal and county government will:

1. Designate waste disposal sites/facilities within the municipal.
2. Ensure neighbouring sub counties host a dumpsite where there are challenges of land availability.
3. Ensure that where neighbouring communities are opposed to a dumpsite that it is regularly disinfected of lies and odours.
4. Ensure environment compliance and that no garbage is dumped in sensitive areas such as river banks, forests and wetlands.
5. Ensure the roads leading to the dump sites are accessible all the year round mitigating inaccessibility, lack of collection leading to illegal dumping in undesignated areas such as streams, rivers and highways.

#### **5.1.1. Requirement for licensing**

This is a move to ensure that the municipality is fully compliant to embracing environmentally friendly waste management practices.

#### **Policy Statements**

The municipal in conjunction with the County Government will:

1. Ensure that waste transportation vehicles have NEMA licences
2. Issue licences to operate waste disposal sites.

### **5.0 Institutional Linkages and Partnerships**

Partnerships, by their very nature, represent a sustained commitment to move forward together to reach a higher common objective. To ensure an inclusive partnership and stakeholder involvement in decision making, ways must be found to (a) ensure wide representation from across the private sector and civil society organisations and (b) ensure that community voices are brought forward. This is because private sector, civil society actors and communities play a central role in solid waste management. Strategic alignment and collaboration of the environment department with other departments in the county government as well as CSOs, NGOs and the private sector can improve effectiveness of solid waste management groups in waste management through the PPP approach in the county.

#### **Policy Statements**

The County Government in conjunction with the municipal will:

1. Partner with the public/citizens for change in solid waste management attitude and practice advocacy for behavioural change through media campaigns, barazas and other public avenues
2. Work with the private sector on corporate social responsibility (CSR) on solid waste management

3. Link youth with youth polytechnics to incubate income generating ventures in solid waste management initiatives.

### **5.1 Human Resource Development and Capacity Building**

Weak enforcement of solid waste management compliance is attributed to inadequate technical capacities, monitoring, infrastructure and inadequate trained staff in enforcement institutions. Building a cadre of professionals in environment and natural resource management is an investment for the future that requires immediate and long term approach. Whereas short term training and targeted courses are important for skills and managerial development, the long term training in specific areas enhances specialisation.

#### **Policy Statements**

The County Government will

1. Support and promote the development of expertise in government agencies, the private sector and civil society organisations in various areas of environmental management through targeted short and long term courses and awareness creation.
2. Develop a wide range of training opportunities and modules in solid waste management.
3. Enhance and promote networking between centres of excellence in solid waste management at county, national, regional and international levels.

### **5.2 Funding Mechanism**

The sources of funding for the implementation plan will be from the County Government of Murang'a, Municipality, Public Private Partnerships, waste generators and the development partners. The funding must be self-sustaining in the long run and strategically integrated in all facets of the waste management system. Inadequate funding has resulted in low adoption of modern technological options. It suggests that by levying taxes as disincentives for landfilling to encourage source reduction, could consider providing incentives for waste recyclers, preferential use of recovered materials over virgin materials, minimize generation of waste at source, improve collection and transportation systems as well as managing the disposal of waste that cannot be recycled or reused.

#### **Policy Statements**

The County Government in conjunction with the municipal will:

1. Allocate adequate resources to ensure waste is collected regularly.
2. Invest in waste management facilities and equipment's.
3. Include the fuel allocation, ensuring the transport facilities are in good condition and the payment of the loaders on daily basis.
4. Adopt disincentives to encourage disposal and encourage recycling.

### **5.3 Monitoring and Evaluation**

Environmental monitoring will be a key component of this policy. This is because poor solid waste management has direct and indirect effects to the public health and the environment and must be monitored. Essential parameters will be developed to monitor the quality of the environment and provide basic information on the levels of deviation on the set standards of environmental quality.

## **Policy Statements**

The County Government in conjunction with the municipal will:

1. Regularly collect of information of waste generation and disposal rates in each sub county.
2. Link solid waste generation and disposal rates to population trends, economic growth and other social monitoring parameters.
3. Plan for future waste management needs by linking social waste generation, disposal rates, population trends and economic growth.

## **6.0 Strategies and Actions that will ensure Effective Implementation**

Through strategic alignment and recognition of partners in public private partnership this policy proposes that there be:

1. Introduction of incentives in the waste management cycle (generation, segregation, collection, transportation, treatment and disposal)
2. Introduction of extended producer responsibility and public awareness campaigns and education;
3. Establishment of efficiency and value addition in the waste management cycle
4. Compliment the input from Community Based Organizations(CBO's) and other private public activities.
5. Establishment of waste operational zones
6. Upscale the activities of the informal sector to link up with the existing formal recycling industries.
7. Establishment of infrastructure and systems for residual waste through a stepwise phasing out of illegal dumpsites.

The main responsibility for following up this county solid waste management policy goal and objectives and ensuring their realization rests with the county government. The proposed implementation actions pre suppose participation of stakeholders at all levels. In this regard, the department of environment and climate change will develop a plan of activities which will lead to the implementation of this policy.

Implementation of this policy involves many different groups including county government agencies at local and county levels, private sectors, local communities and the public. A key element is defining the roles and the responsibility of the various groups.

## **GLOSSARY OF TERMS**

**Recycling** refers to processing of waste material into a new product of similar chemical composition.

**Re use** refers to use of waste with or without cleaning or repair.

**Solid waste** refers to waste in solid form which is deposited in the environment in such volumes and composition likely to cause an alteration of the environment.

**Solid waste management** refers to activities administrative or operational that are used in the handling, packaging, treatment, conditioning, reducing, recycling, reuse, storage and disposal of solid waste so as to protect the environment against possible resultant adverse effects.

**Transport** means the transfer of solid waste from any point but not limited to generation, intermediate, handling and collection points and final disposal.

**Waste** refers to any substance material generated from various human activities and which is normally disposed of as useless and unwanted.

**Zone** refers to a section into which the county is divided for the purposes of solid waste management.

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