INTEGRATED WASTE MANAGEMENT STRATEGY FOR LESOTHO

October 2024

Acknowledgements

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We welcome the GoL/UNDP/UNEP partnership under the Project; "Strengthening Partnerships in Sustainable Plastic Life-Cycle Management in Lesotho".

We also wish to recognize commendable work done by the Coordination Team and good cooperation demonstrated by the Consultant who was engaged to conduct this assignment.

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Foreword

This report on integrated waste management is one of the outputs from the Project: "Strengthening Partnerships in Sustainable Plastic Life-Cycle Management in Lesotho. Its implementation by all the stakeholders reflected in the study will go a long in addressing the challenges cited in the study as well as gaining leverage on the opportunities thereof.

The approach used in the compilation of this document was through both direct (face-to-face) and indirect (virtual) interaction with the key stakeholders in order to tap from their wealth of knowledge regarding waste management issues and how they could be tackled.

It is disheartening to find populated areas particularly in urban areas of Lesotho still experiencing littering which results in environmental pollution. Previous studies indicate that problem of litter in Lesotho emanates from a number of factors like: low environmental awareness of the populace, lack of collection services in many Urban Councils including Maseru City Council, wrong attitudes or perceptions from people towards cleanliness coupled with mushrooming of unplanned settlements which complicates delivery of services.

It is envisaged that the remedy for environmental ills mentioned above will be through the implementation of this Strategy which provides a detailed roadmap through policy, technical as well as administrative direction to be followed if successful results are desired. Its effectiveness will be assessed and cross-checked through a monitoring and evaluation process that will be set-up. It is intended that this document should be regarded as a guiding document that will be reviewed from time to time.

The Strategy articulates national issues documented in the National Strategic Development Plan II in relation to control of littering and prevention of water pollution which can lead to poor water quality and proliferation of disease vectors thereby compromising sanitation and hygiene standards. On the international front, the Strategy speaks to Sustainable Development Goals (SDGs) in particular: SDG6 on Clean Water and Sanitation; SDG11 on Sustainable Cities and Communities; SDG12 on Responsible Production and Consumption; SDG13 on Climate Action; SDG14 on Life below Water; SDG15 on Life on Land and SDG17 on Partnerships to achieve the Goal.

Central to the achievement of this multi pronged goal are some prerequisites not limited to the following: presence of strong political-will providing hands on support; a sound coordination mechanism with diverse technical know-how; massive awareness raising campaigns, effective law enforcement and progressive and all inclusive community participation.

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ACRONYMS AND ABBREVIATIONS

3R	Recycle, Reuse and Reduce
BoS	Bureau of Statistics
CBD	Central Business District
C&D	Construction and Demolition waste
CE	Circular Economy
CHEMAC	Chemical Management Committee
COVID 19	Coronavirus disease caused by the SARS-CoV-2 virus
COWMAN	Committee on Waste Management
CPA	Consumer Protection Association
CSOs	Civil Society Organisations
EPR	Extended Producer Responsibility
E-waste	Electronic waste
GDP	Gross Domestic Product
GSP	Generation Source Perspective
HDPE	High-Density Polyethylene
HS Codes	Harmonised System Code
HCWM	Health Care Waste Management
HW	Hazardous Waste
IGO's	Inter-Governmental Organisations
IMF	International Monetary Fund
IWM	Integrated Waste Management
IWMS	Integrated Waste Management Strategy
LCA	Life Cycle Assessment
LCP	Life Cycle Perspective
LDF	Lesotho Defence Force
LDM	Letseng Diamond Mining
LDPE	Low-Density Polyethylene
LHDA	Lesotho Highlands Development Authority
LMPS	Lesotho Mounted Police Service
LRA	Lesotho Revenue Authority

SDGs	Sustainable Development Goals
SMP	Stakeholder/Management Perspective
ToRs	Terms of Reference
UN	United Nations
UNDP	United Nations Development Programme
UNEP	United Nations Environmental Programme
WASCO	Water and Sanitation Company
WHO	World Health Organisation

MCC	Maseru City Council
MSME	Micro Small Medium and Enterprises
MAFS	Ministry of Agriculture, Food and Security
MCST	Ministry of Communication, Science and Technology
MDP	Ministry of Development Planning
MET	Ministry of Education and Training
MEL	Ministry of Employment and Labour
MoF	Ministry of Finance
MoH	Ministry of Health
MLCAHR	Ministry of Law and Constitutional Affairs and Human Rights
MLGC	Ministry of Local Government and Chieftainship
MoM	Ministry of Mining
MoPWT	Ministry of Public Works and Transport
MTEC	Ministry of Tourism, Environment and Culture
MTI	Ministry of Trade and Industry
MoW	Ministry of Water
MEAs	Multilateral Environmental Agreements
MIA	Minamata Initial Assessment
MSW	Municipal Solid Waste
NGOs	Non-governmental Organisations
NEP	National Environmental Policy
NIP	National Implementation Plan
NUL	National University of Lesotho
PET or PETE	Polyethylene Terephthalate
POPs	Persistent Organic Pollutants
PP	Polypropylene
PS or Styrofoam	Polystyrene
PVC or Vinyl	Polyvinyl Chloride
RBs	Returnable Bottles
SACU	Southern African Customs Union
SADC	Southern African Development Community

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CHAPTER 1

INTRODUCTION, BACKGROUND AND CONTEXT

1.1 INTRODUCTION

The United Nations Development Programme (UNDP) partnered with the United Nations Environment Programme (UNEP) and the Ministry of Tourism, Environment and Culture (MTEC) in the implementation of the project which aimed at strengthening partnerships on sustainable waste management (including plastics) in country. The support was geared to providing technical and financial resources in the development of a national integrated waste management strategy, policies and the necessary laws. One of the outputs of this support, was the development of Lesotho's Integrated Waste Management Strategy in order to address the current and future waste management opportunities and challenges.

Integrated solid waste management (ISWM) refers to the strategic approach to sustainable management of solid wastes covering all sources and all aspects covering generation, segregation, transfer, sorting, treatment, recovery and disposal in an integrated manner, with an emphasis on maximising resource use efficiency. Figure 1.1, shows that ISWM is both a function of stakeholders and factors and how these in combination affect waste system elements.

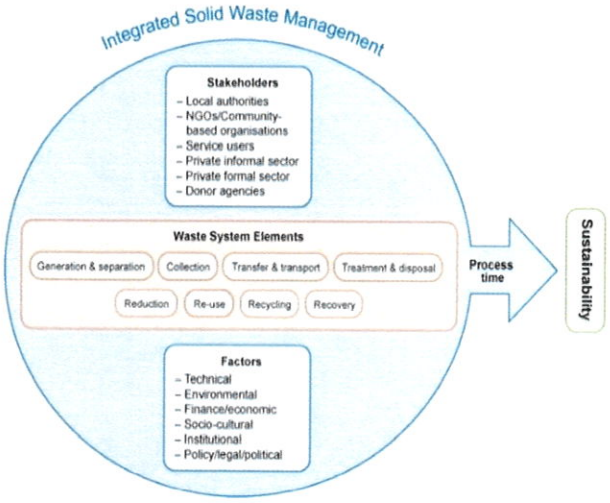


Figure 1.1: The integrated solid waste management model.
(Adapted from Van de Klundert and Anschütz, 2001)

The IWMS stipulates government policy and strategic interventions for the waste management sector and is aligned and responsive to the Sustainable Development Goals (SDGs) of the Agenda 2030 adopted by all the United Nations (UN) member states (UN 2015). The development of this strategy was a consultative process that took into account applicable feedback from the public and other relevant stakeholders. It also recognised the political, social, environmental and economic context within which the waste sector operated, as well as its impact. The IWMS provides a coherent approach and framework for the implementation of policy relating to waste management.

1.2 BACKGROUND

Lesotho is a small mountainous country of 30,355 square kilometres that is entirely encircled by South Africa. According to the 2016 national census, Lesotho has a population of 2,007,201 (Bureau of Statistics [BOS] 2018). Over 60% of the population live in the four districts that comprise the western corridor, where the bulk of the limited arable land is located and which has the best access to physical infrastructure, utilities and service delivery facilities. By ecological zones or regions, 47% of Basotho live in the lowlands, 23% in the foothills, 21% in the highlands and 11% in the Senqu River Valley. Around 34% of this population live in urban areas, thus implicitly indicating the rural nature of the country (BOS 2018).

The national average population density is 66 per square kilometre, ranging from 21 in Mokhotlong to 133 in Berea. Lesotho is undergoing a rapid demographic transition. Whereas the population grew rapidly in the first thirty years of independence (1966 to the 1990s), the population remained virtually the same from 1996 to 2006. It is now growing at a rate of 0.68% and is projected to grow by only 0.13% each year towards 2030. The steady increase in the country's population is driven by previous high fertility rates and rapid mortality decline (World Bank 2021).

Lesotho's economic development is framed by its central location in Southern Africa. It is a member of the Southern African Customs Union (SACU), Common Monetary Area (CMA) and the Southern African Development Community (SADC). South Africa remains Lesotho's main trading partner, supplying about 80% of imported goods and many services, as well

as buying approximately one-quarter of the country's exports. The country's Gross Domestic Product (GDP) grew at a real annual average rate of 4.0% between 1982/83 and 2010/11(International Monetary Fund [IMF] 2012). It is however expected to contract by 5.3% in 2021 due to the effects of the Coronavirus disease pandemic, an infectious disease caused by the SARS-CoV-2 virus (COVID-19), a contrast to the expected 0.4% growth that was expected prior to the pandemic (World Bank 2021).

In view of the foregoing, it is anticipated that Lesotho will have a rapid increase in volume and diversification of wastes generated mainly as a result of economic growth, urbanisation and industrialisation. However, unsustainable consumption and production patterns have severe impact on the global and local environment, natural resources, public health, local economy, and living conditions, and threatens the attainment of the SDGs. The inappropriate and often careless handling of both municipal and industrial wastes including those that are hazardous, has all too often created problems for human health and the environment (Glavič 2021).

There is a growing realisation of the negative impacts of wastes on the environment, land, human health and climate. The complexity, costs and coordination with which waste is managed in many countries has necessitated the need for a multi-stakeholder involvement in every stage of the waste stream. Many governments are now looking at waste as a business opportunity through:

- extraction of valuable resources contained within it that can still be used and;
- safely processing and disposing of wastes with a minimum impact on the environment.

The above scenario calls for an integrated approach to waste management. IWM has many benefits including:

- cleaner and safe neighbourhoods;
- higher resource use efficiency;
- resource augmentation;
- savings in waste management costs due to reduced levels of final waste for disposal;
- better business opportunities and economic growth;

- local ownership and responsibilities / participation.

The quantity of waste generated, with the ever changing characteristics, is increasing at an alarming proportion. It is a known fact in Lesotho, like in any other country, that household waste contains biodegradable waste (such as vegetables, leftover foods), non-biodegradable materials (such as plastics), and hazardous material (like used batteries and electronics); thereby rendering it a complex situation to handle and study.

1.3 CONTEXT OF THE STUDY

The development of the IWMS was conducted during the COVID-19 pandemic.

1.4 DEVELOPMENT OF THE STRATEGY

To develop an IWMS, a participatory stakeholder approach was critical because waste management cannot be undertaken by one or two institutions only. It is a shared responsibility. In the present context of Lesotho, strategic planning and stakeholder consultation assisted in developing institutions and organisational arrangements that were better equipped to cope with uncertainty, rapid change and the need for more integrated decisions. It also assisted in developing multi-agency networks incorporating the public, private and informal sectors.

1.4.1 Stakeholder engagement

The stakeholder engagement was free of manipulation, interference, coercion and intimidation, and was conducted on the basis of timely, relevant, understandable and accessible information in a culturally appropriate format. It involved interactions with identified stakeholders so as to accord the said stakeholders with an opportunity to raise their concerns and opinions (such as by way of face to face or virtual meetings), and ensured that their input was taken into consideration when compiling the IWMS.

1.4.2 Core values employed in stakeholder engagement

The stakeholder engagement was informed by a set of principles that defined our core values underpinning our interactions with all stakeholders. The common principles employed, based on international best practice included the following:

- **Commitment** - need to understand, engage and identify the stakeholder. This was recognised and acted upon early in the process;
- **Integrity** - engagement was conducted in a manner that fostered mutual respect and trust;
- **Respect** - the rights, cultural beliefs, values and interests of stakeholders were recognised;
- **Transparency** - concerns were responded to in a timely, open and effective manner;
- **Inclusiveness** - broad participation was encouraged and supported by the Client and appropriate participation opportunities availed to all stakeholders; and
- **Trust** - was achieved through open and meaningful dialogue that respected and upheld the stakeholder's beliefs, values and opinions.

1.4.3 Stakeholder analysis

At the onset of the development of the IWMS, a stakeholder analysis was carried out. Through the stakeholder analysis, identification and selection of the right stakeholders was done and this was of fundamental importance since each stakeholder had different types of information, perceptions, interests and influences of an issue and not all of them would have been useful in a specific context. Based on the above, IWMS was considered from two perspectives and these are elaborated further, below:

Life-cycle Perspective: The Life-cycle Perspective (LCP) includes consideration of the environmental aspects of an organisation's activities, products and services that it can control or influence. Stages in a life cycle include acquisition of raw materials, design, production, transportation/delivery, use, end of life treatment and final disposal.

LCP can be used to benefit the environment in areas where the organisation has control or influence and also prevents environmental impacts from being unintentionally shifted elsewhere within the life cycle.

Figure 1.2: Life-cycle Perspective model

Life-cycle Perspective

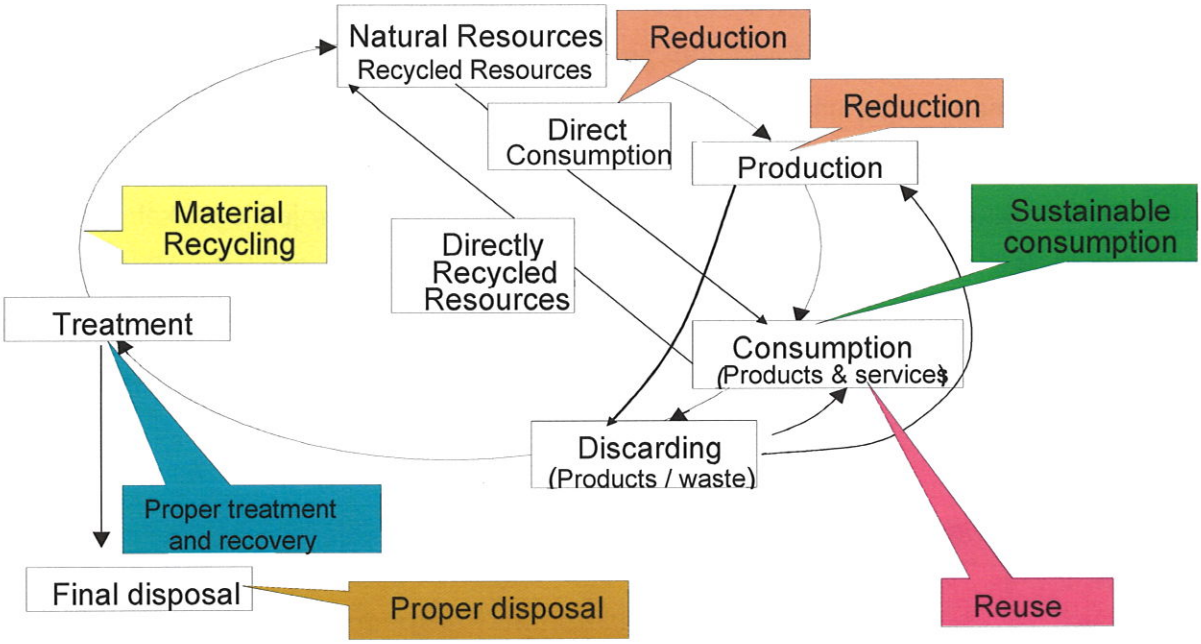


Figure 2.1 shows the following stages:

a) **Natural resources extraction** – acquisition of raw materials such as metal, plastic, fabric and other such materials that are necessary for the development of a particular product;

b) **Production** – design, production and manufacturing of products is another important part of the life cycle stage. Designers, engineers, and manufacturers can exercise a lot of control on how sustainable a product will be by using advanced designs, recycled materials and sustainable energy sources;

c) **Consumption** – the product is put into the hands of end users. Steps that can improve sustainability in this step include designing products that are easy to repair or are very durable and last a long time thus reducing the need to buy replacements;

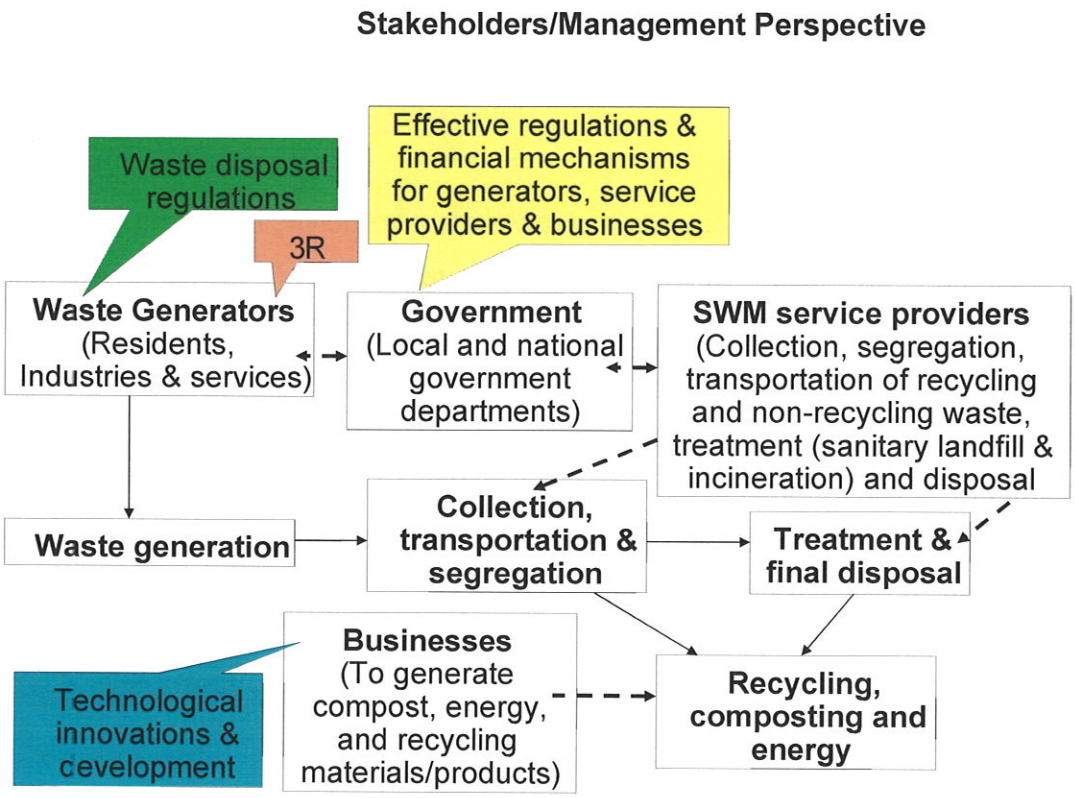
d) **Treatment** – the product's hazardous nature or characteristic is reduced or eliminated prior to disposal or recycling / reuse / repurposing;

e) **Final disposal** – This is when the product is discarded into a landfill, recycled, reprocessed or otherwise disposed of.

The other perspective used in the development of this strategy was the Stakeholders/Management perspective and it is discussed below.

Stakeholders/Management Perspective: The Stakeholders/Management Perspective (SMP) places people at the centre of both projects and project management. It gives to the project management community a helpful, innovative, stakeholder-centred approach to increase projects' delivered value and success rate. It acts as the reference point in a structured path to effectiveness. Starting from the analysis of a project's stakeholders as figure 1.3 shows below, the model integrates both rational and relational innovative approaches. Its continuous focus on stakeholder requirements and expectations helps to set a proper path as well as to maintain it, in order to target success and to achieve goals in a variety of projects with different size and complexity.

Figure 1.3: Stakeholders/Management Perspective model



The process requires that the public relations function first identifies key stakeholders, describe their stakes in the organisation and determine if those stakes are significant. When these steps have been accomplished, opportunities and challenges must be evaluated and the organisation's responsibility to the stakeholder determined. Lastly, based on the aforementioned steps, relationship strategies will then be created.

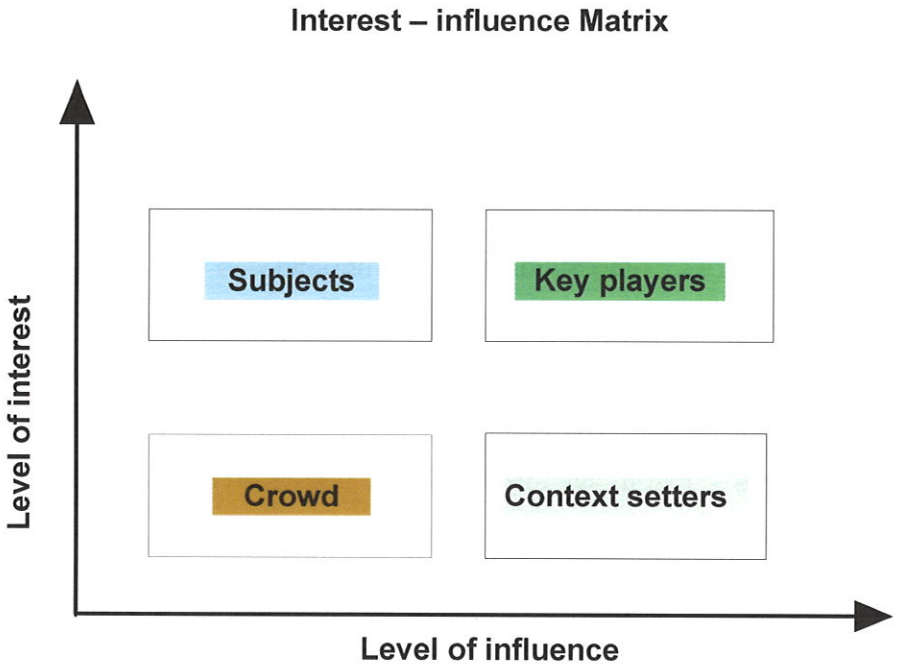
The three stage process employed after conducting a Stakeholders/Management Perspective were as follows:

a) ***Identify the stakeholders:*** All the relevant stakeholders were identified prior to any engagement. The preliminary list of stakeholders for the study was developed, however, as the process was consultative, the list was amended and modified based on the information that was coming from the engagements.

b) ***Analyse the stakeholders:*** Stakeholders were analysed and profiled so as to devise approaches and methods to engage them properly and effectively. The analysis was done on the basis of interest, influence, expertise, orientation, vulnerability, capacity and trust.

c) ***Map the stakeholders:*** Mapping of stakeholders generates a visual analysis that can further determine which stakeholders will be the most useful to engage with. Mapping allows the evaluation of stakeholders by using consistent criteria. In this study the approach used was to consider the relative interest of a stakeholder being considered versus their level of influence. This was done by using an interest-influence matrix depicted in Figure 1.4.

Figure 1.4: Interest – influence Matrix



(Adapted from Mendelow's power-interest matrix)

Using the interest-influence matrix, the stakeholders were then classified as key players, context setters, subjects and the crowd. Stakeholders with high levels of interest and influence are termed key players, and it is argued by some that priority should be given to engaging actively with this group to affect change. Context setters are highly influential, but have little interest in the particular project. However, because of their influence, they may have significant influence over the success of the particular project, but may be difficult to engage with. Due to this, particular effort may be necessary to engage this group in the project.

Some of the subjects have high levels of interest in the particular project but low levels of influence. Therefore, although by definition they are supportive, they are unlikely to be able to play a significant role in supporting the implementation of the project outcomes. However, it has to be kept in mind that the subjects may become influential in a later stage by forming alliances with other more influential stakeholders. Subjects are often the marginal stakeholders that may also be considered 'hard to reach' and that may warrant special

attention to secure their engagement and to empower them to engage as equals in the Project with more influential stakeholders.

The crowd are stakeholders who have little interest or influence on the outcomes of the particular project. Though there is little need to consider them in much detail or to engage with them, it has to be kept in mind that, as with the case of subjects, the influence or the interest of the crowd may change with time.

In Chapter Two, this mapping process is clearly shown in relation to how it was applied to stakeholders in Lesotho during this study.

CHAPTER 2

POLICY, LEGAL AND INSTITUTIONAL FRAMEWORK

2.1 POLICY FRAMEWORK

There are a number of government policies, programs and projects, strategies, guidelines and best practices on waste management that were relevant to waste management. The documents identified and their goals and objectives are summarised in Table 2.1.

Table 2.1: Government policies have a bearing on waste management

No.	Policy/Strategy	Goals and objectives and their linkage to waste management
1	Plant Protection Policy for Lesotho, 2015	• To develop a sound plant health system that prevents the introduction, establishment and spread of plant pests in accordance with international standards to enhance improved agricultural production and promote fair trade • Promotion of strategic partnerships and linkages with all stakeholders and institutions at national, regional and international level
2	Pesticide Control Bill, 2020	• To provide for the control of all aspects of a pesticide lifecycle in order to protect the environment, human health, animal health and plant health • To facilitate multidisciplinary approaches to pesticide management. It also provides for the disposal of pesticides and pesticide waste
3	Environmental Health Strategic Plan, 2017-2022	• To minimise the adverse impacts of health care waste on the environment and on public health in a sustainable way that will reflect the balance of the economic, social and ecological needs of Lesotho
4	National Environmental Health Policy, 2019	• Promote primary prevention of diseases and/or conditions through the control of all environmental factors that impact or may have deleterious effects on public health • Healthcare waste should be well handled and treated separately. Incinerators and other healthcare waste equipment should conform to the relevant international standards • Inter-sectorial collaboration in Health Care Waste Management (HCWM) should be strengthened at all levels while maintaining regulatory control of private HCWM service contractors
5	National Strategic Development Plan II, 2018-2023	• Promotion of environmental health • Commitment to improve coordination and enforcement of laws, information and data for environmental planning and increased public knowledge and protection of the environment
6	Lesotho Science and Technology Policy 2006-2011	• Support the national growth targets, in terms of increased contribution to local added value,

		employment, manufacturing value added, export production and earnings, direct, indirect and self-employment opportunities, gender equity in Science and Technology (S&T) participation and increased use and integration of indigenous technologies. • Recognise the key role of S&T watchdog to protect, preserve and promote the balanced use of our natural and renewable resources
7	Nation Vision 2020 for Lesotho	• Provides a roadmap for the nation for a good environment that will be underlain by a good environmental management premised on good national policies, laws and multilateral environmental agreements that Lesotho is a party to
8	Health Care Waste Management Policy 2010	• Policy recognises the role that environmental conventions must play in the management of the healthcare waste especially for transboundary movement • Recognises that there may be vulnerable groups when matters of healthcare waste are considered
9	National Environment Policy (NEP),1998	• Overall goal of the NEP is to achieve sustainable livelihoods and development for Lesotho • Put in place comprehensive environmental regulatory measures to stimulate sustainable economic and social development • Development complemented by social and economic incentives to influence positive behaviour towards the environment
10	National Climate Change Policy, 1998	• Promote climate-resilient, social, economic and environmental development that is compatible with, and mainstreamed into, national development planning and national budget-setting processes
11	Solid Waste, Water and Sanitation, 2012	• Overview of waste and sanitation challenges in Lesotho
12	Lesotho Water and Sanitation Policy, 2007	• To enhance protection of water resources against various forms of pollution and to minimise the risk of over-exploitation and to ensure integration of environmental and other inter-sectoral issues into water resources programmes and activities
13	Gender and Development Policy 2018 – 2030	• The promotion and provision of national guidelines for institutionalizing gender equity and equality as an integral component of social, economic and political development.

To assist the development of an IWMS for Lesotho, a review of international and regional policies, programmes and projects, strategies, guidelines and best practices that have a bearing on waste management was done. Table 2.2 outlines these goals and objectives/ policy recommendations.

Table 2.2: International policies that have a bearing on waste management

No.	Policy	Goals and objectives/ Policy Recommendations that Lesotho may adopt
1	Integrated Waste Management in Africa - Focus on Circularity	Reports on how: • Capacity development and knowledge sharing should be expanded to cover appropriate technologies and practices in alternative waste treatment and resource recovery technologies • Capacity development should be extended to government officials focusing on governance and the policy environment to support the private sector • Effective partnerships and collaboration between government, civil society, private sector, academia, and development partners can exploit the potential benefits in the IWM sector and address the policy, legal and regulatory environment
2	SADC Climate Change Strategy and Action Plan, 2015	• Provides a regional framework for collective action and enhanced cooperation in addressing climate change issues in order to improve local livelihoods, achieve sustainable economic growth and contribute fairly towards preserving a global good. This includes policies and regulatory frameworks that enhance resource use efficiency and cleaner production in industry and green principles in waste management
3	Green Economy Strategy and action plan for sustainable development, 2015	• Outlines the strategies for the building and maintenance of wastewater and solid waste management facilities, strengthen control on hazardous and e-waste disposal and promote waste recycling • Provides support for the improvement and regional harmonisation of municipal solid waste management schemes and promotion of waste recycling, reuse and reduction (3R)
4	SADC Regional Indicative Strategic Development Plan	• Provides the region's priority intervention areas and maps out general goals and targets for the next fifteen years. The goals include science and technology, environment and sustainable development, as well as private sector development. • Plan gives a path to sound environmental management through pollution control, waste management and environmental education; and to ensure effective implementation of multi-lateral environmental agreements and gender mainstreaming
5	Africa review report on waste management, 2009	• The report concludes that policies and comprehensive waste and hazardous waste management strategies, (integrated waste management) should include basic elements like waste collection, waste treatment, waste recycling, disposal sites etc, should be in place. • The report also shows that Integrated waste management plans have to support pro-poor involvement in waste management as a source of employment and hence income generation
6	Ghana, Environmental and Sanitation Action Plan (NESSAP), 2010	• The plan shows the need for raising awareness for changing the sanitation-behaviour of people by changing our attitudes towards all types of wastes as

		our life-styles and waste streams undergo inevitable change
7	Ghana, National Environmental Sanitation Policy (Revised), 2010	• Emphasises the need to ensure systematic collection of data on wastes from all sectors of the economy to support relevant research and development to meet the challenges of managing wastes associated with our growing economy and rapidly changing lifestyles. • Policy supports building partnership both at international and local levels and with the private sector within an expanded network of actors through effective public sector facilitation and coordination.
8	Kenya, National-Solid-Waste-Management-Strategy, 2015	• The Strategy shows how to achieve zero waste as a guiding principle
9	Zambia, National Solid Waste Management Strategy, 2004	• The strategy shows how to encompass cleaner production technologies; polluter pays principle, integrated life cycle principle, source reduction principle, precautionary principle and the principle of cooperation.
10	Botswana Waste Management Strategy, 1998	• The strategy provides examples of how to minimise and reduce waste in industry, commerce and private households, maximise environmentally sound waste reuse/recycling and promote environmentally sound waste collection, treatment and disposal
11	South Africa Integrated Waste Management Strategy, 2020	The strategy shows how to: • Prevent waste, and where waste cannot be prevented ensure – 40% of waste from diverted from landfill within 5 years; 55% within 10 years; and at least 70% within 15 years leading to Zero-Waste going to landfill; • All South Africans live in clean communities with waste services that are well managed and financially sustainable; and • Mainstreaming of waste awareness and a culture of compliance resulting in zero tolerance of pollution, litter and illegal dumping

2.2 LEGAL FRAMEWORK

2.2.1 Constitution of Lesotho 1993

The Constitution of Lesotho is the supreme law of the country. Section 36 of the constitution prescribes the mandate for the country to address the issue of sound and safe environment for the health and well-being of its citizens. It reads as follows:

> *"Lesotho shall adopt policies designed to protect and enhance the natural and cultural environment of the country for the benefit of both present and future generations and shall endeavour to assure all citizens a sound and safe environment for their health and well-being."*

This clause confers upon the government, a mandate to promulgate laws and policies that aim to protect the environment and human health of the nation.

2.2.2 Environment Act 2008

The Environment Act is the framework law on environment in Lesotho. It has provisions dealing with issues related to toxic and hazardous chemicals, wastes and mercury management. This Act identifies the Department of Environment under the Ministry of Tourism, Environment and Culture (MTEC) as the principal authority responsible for supervision and management of toxic and hazardous chemicals and wastes management.

2.2.3. Hazardous (health care) Waste Management Regulations 2012

These Regulations are developed under Section 113 of the Environment Act 2008. They provide for environmentally sound management of medical or healthcare waste. These Regulations facilitate the implementation of the Healthcare Waste Management Policy 2010.

2.2.4 Labour Code Order 1992

This law deals with all places of employment or apprenticeship excluding public service. It serves to provide occupational safety. It is supported by the Chemicals Safety Regulations 2003 that have been developed under it. Regulation 16 of the Labour Code (Chemicals Safety 2003) has a provision for training and information dissemination to workers.

It provides that *"an employer shall take appropriate measures to ensure that workers in the place of work receive sufficient and appropriate training on a continuous basis in light of all available information, in particular in the form of appropriate information and instruction concerning (i) potential risks to health and safety due to chemical they handle, including additional risks due to other factors that may promote such risks, (ii) precautions and technical measures to be observed to prevent exposure to chemicals substances and the precautions."*

2.2.5 Mines and Mineral Act 2005

This Act covers all mining activities in Lesotho. Section 58 refers to environmental obligation such as an obligation to prevent and to promptly treat pollution and contamination of the environment.

2.2.6 *Public Health Order 1970*

This Order establishes the Ministry of Health (MoH) which is charged with the health issues in the country. Included in its scope of work is matters related to environmental health. The procurement and management of health products that have an impact on human health and the environment is a key aspect of health care management under the MoH.

2.2.7 *Import and Export Control Act 1984*

The Act controls the export and import of goods into Lesotho. "Goods" are defined in the Act as including wares, articles, merchandise, animals, currency, matter or things. Lesotho imports most of its goods that are consumed on the local market. This fact renders this law one of the most important arms or tools which can be used in IWM in the country.

2.2.8 *Import Restrictions Regulations 1988 as amended in 2009*

Through these regulations, certain goods of a specified class or kind, or goods other than goods of specified class or kind which appear in Schedule 2 are prohibited from being imported into Lesotho unless the importer is issued with a permit by the Commissioner of Trade under the Ministry of Trade and Industry (MoTI). The regulations can be a vehicle through which the management of certain products and their wastes of concern may be banned or prohibited from importation into Lesotho.

2.2.9 *Local Government Act 1997*

The purpose of the Act is to establish local authorities for the purpose of local government. The local authorities are charged with powers to make among others, public health by-laws, by-laws on supervision of licences for vendors and by-laws on regulation or prohibition of sale of any article in any specified place.

2.2.10 *Water Act 2008*

The Act provides for the management, protection, conservation, development and sustainable utilisation of water resources. This Act provide for the management of wastewater and effluent from industrial facilities and sewage treatment plants.

2.2.11 Town and Country Planning Act 1980

The Act takes the Commissioner of Lands with preparation of development plan indicating the manner in which are the area in question shall be used in developed. In terms of the Act the permission is required for depositing refuse or waste materials on land where the height of the deposit exceeds the level of the land adjoining the site.

2.2.12 Business Licensing and Registration Act 2019

The Business Licensing and Registration Act 2019 is administered by the Ministry of Trade and Industry. The Act regulates businesses set out in Schedule I by licence system. Before issuing a business licence for businesses set out in Schedule I, the licensing officer must take into account the recommendations of the environment, public health, or energy Ministries.

2.3 INSTITUTIONAL FRAMEWORK

2.3.1 Government Ministries

Consultation with government ministries served two main purposes:

a) involvement of the ministries, departments and committees in each step of the development of the IWMS to build consensus and ownership; and
b) identification of the governance framework for socio-economic development and environmental management.

Tables 2.3 and 2.4 below show the potential role, interest and influence of each of the target government ministries and agencies captured during the consultative process in as far as the mandate, history of involvement, resources and authority in development of an IWMS for Lesotho is concerned.

Table 2.3: Stakeholder Government Ministries

Government			
Stakeholder	**Mandate / Involvement in the process**	**Interest**	**Influence**
• **Ministry of Tourism Environment and Culture**	• Responsible for establishing the program and implementing the access component • Perform quality assurance and approve payments for completed house connections	High	High

• **Ministry of Local Government and Chieftainship**	• Provide oversight and control for land use, waste management and pollution control through all the districts of the country	High	High
• **Ministry of Health**	• Manages health impact of chemicals on the general public. The Ministry is also responsible for public education and raising awareness on all health-related issues	High	High
• **Ministry of Development Planning**	• Provide leadership and coordination in all matters pertaining to the national development planning and implementation	Low	High
• **Ministry of Trade and Industry**	• Responsible for setting up a conducive environment for the manufacturing sector in the country. It is also responsible for regulating imports and exports; issuing of trading licenses, manufacturing, import and export licenses and issuing permits.	Low	Low
• **Ministry of Education and Training**	• To improve access, quality, efficiency and equity of education and training at all levels and that the curricula and materials are relevant to the needs of Lesotho	High	Low
• **Ministry of Communication, Science and Technology**	• To be a provider and reservoir of technological know-how through research and development, coordination of innovation, to accelerate economic growth and improve quality of life.	Low	Low
• **Ministry of Agriculture and Food Security**	• Responsible for regulation of pesticides and importation of agro-chemicals that are used for pest control and veterinary services. It is also responsible for importation of fertilisers and chemicals used for seed dressing	High	Medium
• **Ministry of Law and Constitutional Affairs and Human Rights**	• Responsible for legislative drafting; legal advice to government including its ministries and departments	High	Low
• **Ministry of Water**	• Responsible for monitoring and protection of water resources against pollution. Furthermore, it oversees water quality and quantity in Lesotho	High	Low
• **Ministry of Mining**	• Responsible for the regulation of ownership and acquisition of mineral rights, prospecting licenses and mining leases as well as ensuring that mining operations follow environmentally sound mining practices	Low	Low
• **Ministry of Finance**	• Responsible for budget allocation for all the ministries	Low	High
• **Ministry of Employment and Labour**	• Responsible for the welfare, health and occupational safety of workers. It is the ministry responsible for the safety of the workplace environment	Low	Low
• **Ministry of Energy and Meteorology**	• Responsible for management of ozone depleting substances. It administers Ozone Depleting Substances Regulations 2012 and Liquefied Petroleum Gas (Trade and Handling) Regulations 1997.	Low	Low

• **Ministry of Public Works and Transport**	• Responsible for licensing transportation of goods. It administers Road Transport Act 1983	Low	Low
• **Ministry of Employment and Labour**	• Responsible for health and welfare and safety of workers. It administers Labour Code 1992 and Labour Code (Chemicals Safety Regulations) 2003.	Low	Low

2.3.2 Government Agencies

Table 2.4: Stakeholder Agencies

Government agencies			
Stakeholder	**Potential Involvement in the project**	**Interest**	**Influence**
• Lesotho Revenue Authority	• Works together with other Ministries to check on importation of goods and confiscate banned goods	Low	Low
• Bureau of Statistics	• Mandated to set up a system for national official statistics on economic, social, demographic and environmental areas in relation to the development needs of Lesotho	Low	Low
• Water and Sewerage Company (WASCO)	• Responsible for potable drinking water and waste water management in the country	High	Low
• Traditional Authorities /Chiefs	• Local community leaders acting as representatives of their local community • Involved in the resolution of community conflicts and land disputes at community level	High	High
• Lesotho Mounted Police Service	• They are responsible for keeping law and order	Low	Low
• National University of Lesotho – Faculties of Health Sciences and Science and Technology	• Addresses issues of the sustainability and sound management of the environment	High	Low

2.3.3 Non-governmental Organisations (NGOs)

The implementation of the IWMS in Lesotho will impact local communities. Non-governmental Organisations (NGOs) have long been known to reach communities and thus are able to provide information and guidance to ensure that even marginalised groups in the communities are considered and involved in both the development and implementation of the IWMS for Lesotho.

2.3.4 Vulnerable/disadvantaged groups

At the stage of stakeholder consultations, vulnerable/disadvantages groups were determined. However, more of such groups will be identified during the implementation of the strategy. Particular attention will be paid during implementation to the adverse impacts

on Vulnerable/ disadvantaged groups who, because of their social position, may be vulnerable to changes brought about by the strategy and may thus be excluded from its benefits. This group includes the following:

- physically disabled persons;
- women-headed households;
- child/orphan-headed households;
- households below the poverty line; and
- the youth.

The involvement of community and traditional leaders will be needed to encourage effective representation of Vulnerable /disadvantaged groups in the implementation of the strategy.

CHAPTER 3

OVERVIEW OF WASTE MANAGEMENT

3.1 SOURCES OF WASTE

Waste is generated from households, industries, hospitals, mining, commercial and administrative establishments throughout the ten districts of Lesotho. Due to a number of factors with the current waste management system, there is no credible way of asserting the true quantities of waste generated by type or by sum total.

3.2 COMPOSITION OF WASTE

Waste composition data are very important in developing any IWMS. Their analysis offers an important outlook to the form, quantity and quality of different components of the city's solid waste stream and provides important leads for selecting appropriate technologies for their handling, processing and treatment. The composition of waste can be classified into two main categories, namely; Municipal Solid Waste (MSW) and hazardous waste.

3.2.1 Municipal Solid Waste

Municipal Solid Waste (MSW) is all solid waste material generated by households, institutions, commercial establishments and industries, and discharged from their premises for collection, including kitchen waste, garden waste, sand, ashes, paper, cardboard, food waste, plastic packaging, glass, tin cans, construction or demolition debris and bulk waste (including large appliances, machines, furniture, and other bulky items); all litter and clandestine piles of such wastes; street sweepings, drain clearings and dead animals but not including hazardous waste. The various categories of municipal solid waste are discussed below.

a) **Domestic waste:** This category of waste comprises mainly of wastes that are generated from household activities. This normally includes such materials as waste paper, plastics, and wood off cuts, kitchen waste and yard waste. Currently there is no separation of the various types that constitute this category. The waste components are usually mixed and dumped in places that are not designated for disposal. Much of this type of waste is generated from residential areas and at the moment less than 10% on average of

residential areas in the country are serviced as regards waste management. The percentage could be a little higher in Maseru due to industrial activities. The waste management situation in Maseru is much more defined as compared to other towns in the country. There is however need to streamline the system to ensure that there is increased coverage.

b) **Commercial waste:** This is the waste stream that is generated from commercial and business houses and will normally compose of such materials as discarded office paper, cardboard, plastic and general packaging waste. The management of this type of waste, similar to domestic waste is also not well defined. This is exhibited by the presence of piles of uncollected waste in most of the central business districts.

c) **Industrial waste:** This is waste that is generated from industrial production processes. Types in this category include such wastes as industrial sludge from factories, manufacturing facilities, and refineries. It also includes food processing waste, and water treatment filter cake sludge. Other types would include ash from industrial combustion processes. Industrial activities most common include textiles. The waste stream generated by textile factories consists of sludge, blasting sand, pumice stone and ash as well as bags that used to contain the sand, ash and stone. Most of the primary residual wastes generated in the textile industry are non-hazardous. These include fabric and yarn scrap, off-spec yarn and fabric and packaging waste such as paper and plastic.

d) **Construction and Demolition waste:** Waste composed of non-decomposing (non-rotting) material, generally originating from demolition and construction works.

e) **Liquid waste:** Liquid waste any waste in liquid form. The composition of liquid waste, also known as wastewater, is highly varied and depends principally on its source. In towns and cities, the three main sources are residential, commercial and industrial areas.

f) **Plastic waste:** A group of cured resins, non-halogenated and fluorinated polymers; mixtures of plastic wastes consisting of polyethylene (PE), polypropylene (PP) or polyethylene terephthalate (PET). They also include wastes extracted and/or separated

from other waste streams that have plastic components or consist partially of plastic (e.g. Waste Electrical and Electronic Equipment (WEEE), waste vehicles, cables, lead-acid batteries and synthetic textiles.

3.2.2 Hazardous waste

This is the type of waste with characteristics such as flammability, irritability, ignitability, corrosivity and toxicity. Examples include; hazardous industrial waste products containing heavy metals such as lead and chromium, polychlorinated biphenyls (PCBs), asbestos and ink sludge. Other types include, lead acid batteries, health care waste and used oils. This category also includes wastes such as sharps, swabs, and pathological and cytotoxic wastes from hospitals and other healthcare facilities. The various categories of hazardous waste are discussed below.

a) **Health care Waste:** Health care waste (HCW) is one stream that is becoming of major concern in the area of waste management. Given the rising number of private clinics, the amount of waste generated from this sector is exceptionally high. Despite great strides made in improving health care waste management, there are currently no adequate facilities for waste minimisation, treatment and disposal of healthcare waste. The urgency to implement measures to manage healthcare waste emanates from the potential of infection from objects contaminated with Human Immuno-deficiency Virus (HIV) and Hepatitis viruses B and C.

b) **E-waste:** Waste of electronic and electrical equipment (WEEE) or E-waste is defined as whole items or parts or residuals from electrical and electronic equipment (EEE) discarded by the consumers before or at the end of their service life.

c) **Mine waste:** Waste generated from mining activities takes a number of forms. The subtypes associated with mine waste as briefly discussed below are overburden, waste rock, tailings and slag.

i) Overburden: The overburden comprises near-surface soils and rock from open pit stripping operations. Overburden material is normally stockpiled above ground close to the open cast mine or used for in pit backfilling.

ii) Waste rock: Waste rock is generated in underground shaft mining. Waste rocks are normally stockpiled above ground close to the open cast or underground mine.

iii) Tailings: These are waste materials that are produced from mineral concentrates content of less than 1%. As a result, large quantities are generated every year.

iv) Slag: Slag is waste material that is produced from smelting of metal concentrates. Slag is generally delivered for disposal in molten or granulated state.

d) Used oil: This category includes any petroleum-based semi-solid or liquid used oil product consisting of mineral oil or synthesised hydrocarbons, oily residues from tanks, oil-water mixtures and emulsions, which through use or handling, has become unsuitable for its original purpose due to the presence of impurities or contaminants or loss of original properties. PCB contaminated waste oils are also considered separately as a special category.

e) Waste tyres: A tyre is a continuous pneumatic covering made of natural rubber or synthetic rubber or a combination of natural and synthetic rubber encircling a wheel, whether new, used or retreaded. A waste tyre is any new, used, retreaded, or un-roadworthy lyre, not suitable to be retreaded, repaired, or sold as a part warn lyre and not fit for its original intended use.

f) Agricultural Waste: This category of waste consists of discarded materials from agricultural activities. The major component of this type is the organic portion. Examples of this type include remains from vegetables. Other wastes from agricultural activities are pesticide containers and obsolete pesticides which are classed as hazardous. Data for both non-hazardous and hazardous agricultural waste is not readily available in Lesotho.

g) Other hazardous waste streams: As alluded to above, other streams of hazardous waste such as sewer sludge, radioactive waste, agrochemical and other chemical wastes

do not have available data. There is, therefore, need to address this lack of available data in the implementation of the strategy.

3.3 MANAGEMENT OF WASTE

Lesotho is faced with a range of environmental problems stemming from industrialisation and rapid population growth (concentrated largely in unplanned, urban and peri-urban settlements) which has led to a significant increase in the quantity of waste generated, particularly in the densely populated capital of Maseru.

3.3.1 Waste generation

The Maseru City Council (MCC) is the only municipality with a City status. MCC is responsible for the provision of waste collection services in the City but the collection services are inadequate in terms of coverage as well as frequency. The poor coverage rate is attributed to poor planning and poor land allocation of households, which did not have street names and clear addresses to facilitate follow-up to check whether or not households have paid for waste removal services. In terms of operational costs, the Council recovers 22% of waste management operation costs from fees paid by waste generators. Containers used for storage of domestic waste range from 85 litre bins to 210 litre drums. The other nine councils across the country generate substantial quantities of waste but this waste has never been quantified due like of a formalised system of waste management.

3.3.2 Waste storage and collection services

The Councils across Lesotho have over the years adopted two main methods for the purpose of waste storage and collection services. It is mainly done through door-to-door waste collection services and subsequent disposal by the municipal solid waste management personnel. In other instances, the collection services are out-sourced and subsequent disposal at dump-sites is done by a private company. The remaining waste which amounts to around seven to ten percent is handled at various stages by rag-pickers, sweepers hired by households, informal sector waste collectors and a minute fraction of households using home compost bins.

Councils handle the collection of fees for waste disposal and manage the public collection of waste. These collection services are, however, limited in their scope due in large part to the lack of financial and human resources. They are also responsible for managing contracts with private waste collection companies, all of which must pay a fee to the local council. Community-based collection strategies, which range by location, supplement both the private and public collection services and generally operate in areas not regularly serviced by the formal collectors. Further, informal waste collectors, which are important contributors to the local economy, public health, and environmental sustainability, are part of the system in Maseru and Maputsoe.

A number of Heath Care Waste (HCW) collectors do not have personal protective clothing and have not been trained regarding safe waste handling practices. Inappropriate containers are used to store HCW. Since there is no proper segregation, all HCW is rendered hazardous. A number of storage areas where HCW is stored prior to incineration are not secured against unauthorised access. Similarly they are not secured from pets such as dogs and cats, and other pests such as rodents.

Other wastes, such as domestic and packaging materials, are stored in skips and collected for disposal. The sludge generated by industries is stockpiled on sites until it is transferred to Ha Tikoe where it is kept temporarily until it can be taken to a facility that can handle hazardous waste. As for textile waste, in particular that from industrial operations, fabric off-cuts are used by some industries to feed boilers for generating steam. However, some industries still dispose of their cloth off-cuts in dongas, open space and in illegal sites. The other types of hazardous waste like used oil, lead acid batteries and e-waste find themselves in MSW and are disposed of as general waste.

3.3.3 Waste Treatment and Recycling Services

There is no local authority that provides waste treatment services. They only provide collection and disposal services. A number of firms and hospitals are known to treat their own waste. Health facilities use incinerators to treat their waste, while the majority use open space/pit burning to treat their HCW.

There are no recycling facilities in Lesotho. The closest activity towards waste reduction is waste re-use. While many institutions take initiative in managing their own waste, these initiatives are insignificant and have little impact at nation level.

Informal pickers recycle almost as much three percent of the total recyclable waste. It is estimated that waste pickers perform 50-100% of ongoing waste collection. By selling the recovered recyclable materials to formal businesses, as well as individuals and informal enterprises, they are able to derive some economic benefit while also cutting costs for the municipality.

However, waste pickers are not included in any of the aforementioned legal frameworks and therefore are not recognised as part of the formal municipal waste systems. Despite this, waste pickers are recognised as "the major force behind existing recycling efforts" (Scheinberg et al., 2007)

At the moment, there is only one company in Lesotho that is collecting e-waste. It collects end-of-life computers from the corporate sector for repair and dismantling in the local facility and then transporting the different fractions to their partners in South Africa for recycling. The company has been making efforts to diversify the devices it collects beyond computers to include many household devices such as mobile and landline phones, kettles, microwaves, televisions, radios, printers and so on.

3.3.4 Waste Disposal Methods

Despite numerous attempts to have an engineered landfill constructed in Lesotho for the disposal of both general and hazardous waste, no such landfill exists. All sorts of places, including open spaces, dongas and/or burned in the open borrow pits and along the banks of rivers, are used for waste disposal in both urban and rural areas. These sites are inappropriate, poorly developed, badly managed and unprotected. In most cases they are selected haphazardly, with little consideration given to their location and/or the impacts on the receiving environment and affected communities. None of these sites are operating with regulatory mechanisms, e.g. user-fees and operating licenses. These sites are used for

dumping all kinds of waste, e.g. domestic, hazardous and HCW without the application of cover.

The pollution of the air, land, groundwater, springs and surface water is an unavoidable consequence. For Maseru, it being the highest generator in waste, the only legal disposal site is Tšosane dumpsite. The site is positioned less than a kilometre from residential areas and within the catchment area of the Maqalika reservoir.

There are no existing facilities for disposal of hazardous industrial waste in Lesotho. In all districts, industrial waste produced by industries, except sludge, blasting sand and pumice stone, is disposed at local disposal sites including Tšosane dumpsite in Maseru. Textile waste in particular, is supposed to be disposed of at disposal sites is also dumped indiscriminately.

Another form of disposal of waste in Lesotho is the use of furnace-like structures (incinerators) for burning paper. This practice is mostly common among government departments and certain industries.

The findings indicate that there is no policy framework on the management of HCW from both government owned and private healthcare facilities. Incineration seems to be the preferred mode of disposal for various types of HCW, either to reduce its volume or to render it less harmful. In much of the health care facilities across the country, HCW, in particular clinical/pathological waste, is incinerated using burning chambers (traditional incinerators) that do not meet environmental and health standards. HCW is also disposed of in open pits, pit latrines, open dongas or left in-situ after open pit burning.

Although e-waste collection from the corporate sector several years ago, only a small amount was being collected. Most of the companies were not involved in the collection scheme and the e-waste that is being generated by the government and the public is not included. The government e-waste is stockpiled in the ministries and departments while that from the general public tends to be dumped with the general waste in dumpsites throughout the country. The government e-waste is stockpiled because of the bureaucratic decision-

making process that needs to be followed before any equipment that belongs to government can be transferred to another party or even disposed of. Given this lengthy process, the obvious tendency is simply to stockpile these obsolete and broken devices in some dark corner or office and simply ignore or disposed of with MSW.

3.4 OPPORTUNITIES AND CHALLENGES FOR WASTE

Lesotho has multiple opportunities arising from waste management including generation of monetary gain, job creation and contribution to reduced pollution in Lesotho. There are however, key challenges that need to be addressed if these benefits are to be realised. The need for financial support, broad resource constraints, behavioural changes, marketing, a supportive policy environment, and the burden of compliance with SCP practices are among the challenges facing the waste management arena in Lesotho. The opportunities and challenges are discussed in detail below.

3.4.1 Opportunities

The opportunities for Lesotho in relation to waste management are discussed in detail below:

a) **Market opportunities:** Waste management presents a number of market opportunities for the country. In the waste management process, waste minimisation and recycling play a pivotal role in creating these marketing opportunities. The waste resource materials generated in the waste management process present market opportunities for Lesotho and these are summarised in Table 3.1 below:

Table 3.1: Summary table – Waste Minimisation and Recycling markets

No.			Market		Destination	
	Resource Type	Material	Informal	Formal	Local	Export
1	Plastic	PET				
2		HDPE				
3		PVC				
4		LDPE				
5		PP				
6		PS				
7		Other				
8	Paper	Cardboard				
9		White Paper				
10		Newspaper				

11		Magazines				
12		Composite cartons				
13	Metal	Steel				
14		Aluminium				
15		Copper				
16		Other non-ferrous				
17	Glass	Returnable Bottles				
18		Non-RBs				
19		Cullet				
20	Organic	Food				
21		Garden				
22		Lignin(Woody)				
23		Agricultural				
24	E-waste	Electronics				
25		Used vehicles				
26	Textile	Offcut textile waste				
27		Old Clothing				
		Sludge				
28	Rubber	Used Tyres				
29	Hazardous waste	Health care waste				
30		Used pesticide containers				
31		Obsolete pesticides				
32		Used oil				
33		Used batteries				
34	Liquid waste	Wastewater				
35	Other	Solid waste				

b) Industrial Symbiosis: Industrial Symbiosis (IS) refers to the industrial relationship where two or more traditionally separate enterprises engage in mutual and beneficial partnerships. This includes the use of waste or by-products from one firm as input to another firm (Chertow, M., Ashton, W. and Kuppalli, R. (2004). IS may also be seen as an industrial relationship where two or more enterprises engage in mutual and beneficial partnerships to build a collective competitive advantage through resource exchanges including the physical exchange of materials, energy, water, and by-products. As can be seen from Case Study 1 below, Mauritius has been diverting large amounts of waste from landfills using IS. This provides lessons for Lesotho in the use of IS for some the types of waste that they generate. The success of IS projects starts with the mapping of potential MSMEs to determine potential waste or resource exchange synergies to facilitate the implementation of IS.

Case Study 1: Industrial Symbiosis in Mauritius

In Mauritius, for example, through IS, 4,387 tons of waste have been diverted from the landfill annually, and this has resulted in reducing the greenhouse gas emission by 92 tons of CO2eq and an annual saving of MUR10, 985,800.

Lesson for Lesotho
In Lesotho, IS may be implemented in the textile waste, MSW, agricultural used pesticide containers, plastic and paper, sewage waste and glass.

E-waste management: Over the last few decades, electrical and electronic equipment (EEE) has become an indispensable part of global life. The demand for newer, sophisticated, and more efficient technology has shortened the lifespan of most electronic products. Consequently, older and outdated electronic equipment is disposed of, creating a major development challenge of managing e-waste. Lesotho like many other African and other developing countries, does not host many direct manufacturers of electric and electronic equipment.

The environmental challenges occasioned by unsustainable e-waste management are considered a critical environmental and development priority. They thus present a host of opportunities for many countries including Lesotho. The case of Ghana as illustrated in Case Study 2 illustrates how Ghana has harnessed the opportunities that the recycling of e-waste presents to waste management and income generations for many Ghanaians living in Accra.

E-waste contains precious and special metal such as gold, silver, palladium and platinum, as well as toxic substances such as lead, mercury, cadmium and beryllium, presenting opportunities and threats in equal measure. To this list can be added used vehicles and their carcases that dotted across the districts of Lesotho. The case of Ghana provides lessons for Lesotho in that mechanisms can be put in place to recycle EEE and E-waste within the country. Additionally, it provides an opportunity for various income generating activities centred on sustainable e-waste management.

Case Study 2: E-waste in Ghana

In Ghana an e-waste model was implemented for a one-stop business and establishment of eco-innovative MSMEs. The Government of Ghana built an e-waste recycling plant at Agbogbloshie in 2018. Government also passed the Hazardous and Electronic Waste Control and Management Act, Act 917 (2016), to provide the enabling policy environment for e-waste in Ghana.

This initiative contributed to the recycling of 20,000 tonnes of e-waste benefiting directly and indirectly about 2,100 Ghanaians living in Accra. Before this initiative, burning e-waste to extract metals and illegal dumping was the norm and resulted in serious environmental pollution and clogging of drainage systems. The project also spearheaded the establishment of 25 main collection centres for e-waste aggregation and transport and formation of three scrap dealers' associations.

Lesson for Lesotho
In Lesotho attempts have been made to have an e-waste collection system and export to South Africa without value addition including refurbishment and thus reuse of such EEE. This IWMS proposes the management of EEE and E-waste at source before a consideration is made for export. Policy and legal instruments for waste minimisation for e-waste have been put in place. These include a requirement for non-importation of EEE of a certain age and packaging condition.

c) **Waste to compost:** Waste recovery through transformation of municipal waste to composting/production of organic fertiliser and recycling is part of sustainable waste management. The implementation of this intervention involves the capacity building, promotion of green entrepreneurship, awareness creation and sensitisation of households and communities on the process of composting/production of organic fertiliser.

Case Study 3: Composting in Burkina Faso

In three provinces of Burkina Faso (Yatenga, Loroum, and Zondoma), waste to compost project, focused on supporting MSMEs and proved a success. The project focused on supporting MSMEs on waste recovery through composting/ production of organic fertilizer and recycling. The main interventions involved capacity building and promotion of green entrepreneurship, awareness creation and sensitization of households and communities on sustainable waste management, and networking activities.

Lesson for Lesotho
The implementation and success of this requires the full involvement of local municipal authorities, NGOs/CBOs.

d) **Waste to energy:** Biogas is a clean and renewable form of energy that can be generated from available organic waste. The support and technical involvement of science and

technology bodies is key to actualising the processing of waste into renewable energy in the form of biogas. Countries such as Ghana and Uganda (see Case Study 4) have been implementing various biogas projects including that of biogas briquettes. As Lesotho is in the initial stages of implementing sustainable waste management mechanisms, the country can take a leaf from Ghana by supporting business activities in charcoal briquetting.

Case Study 4: Biogas in Ghana and Uganda

Similar projects have been implemented in Ghana (biogas technologies) and Uganda (biogas charcoal briquettes) project.

Lesson for Lesotho
Lesotho can have renewable energy businesses in charcoal briquetting and biogas.

e) **Municipal waste management services:** The involvement of local community in waste management cannot be overemphasised. Studies have shown that the involvement of MSMEs and CBOs in waste minimisation collection and transportation results in a clean and healthy environment. Projects that involve MSMEs and CBOs have been implemented in some countries. It has been implemented successfully in Burkina Faso, as can be seen in Case Study 5. The ingredients to this are capacity building, awareness campaigns, business support, and networking and collaboration, especially with municipal authorities and CBOs. This provides a lesson for Lesotho where the involvement of the MSMEs and CBOs is very limited. Its adoption and implementation has the potential to minimise waste thus resulting in a clean and healthy environment.

Case Study 5: Waste management in Burkina Faso and Ghana

The NEERE project, implemented by Groupe de Recherche et d'Analyse Appliquées pour le Développement (GRAAD) Burkina in Communes of Dédougou and Koudougou in Burkina Faso, and SEED, implemented by Adelphi Research in Ghana. NEERE is derived from a local language meaning pretty or clean. The NEERE project mainly involved MSMEs and CBOs working in waste collection and transportation (Figure 4.2). The key activities that were implemented include capacity building, awareness campaigns, business support, and networking and collaboration, especially with municipal authorities and CBOs.

Lesson for Lesotho
The involvement of MSMEs and CBOs in waste minimisation collection and transportation results in a clean and healthy environment.

3.4.2 Challenges of waste management

Waste management in Lesotho is affected by several major problems. They include:

a) **Inadequate national policy and support:** National policies and strategies are not adequately harmonised with the needs and capabilities of the government. The existing policies and national strategies have no serious attempt to assist the local authorities to build their internal capacities. Local authorities are handicapped by inadequate financial and technical support from national and provincial level governments.

b) **Absence of participatory mechanisms:** The country does not have adequate institutional mechanisms to engage the residents, public organisations, NGO and other stakeholders on a regular basis to assist in decision making and programme implementation. The role that these stakeholders can play in educating the masses and mobilizing their communities has not been adequately recognised. Waste management at district level is viewed solely as an engineering responsibility of collection and disposal. It needs social, fiscal and administrative solutions as well. Additionally, the country is characterised by a lack of NGO/CSO's that have an environmental focus to drive the waste management agenda.

c) **Non-recognition of the role of informal service sector:** The informal sector service providers such as the rag-pickers and their agents remove a considerable quantity of

daily waste from the city streets. Together, they make an enormous contribution to waste management. Lesotho needs to begin to recognise this contribution by facilitating frameworks to support their work.

d) **Lack of institutional capacity:** The country lacks financial resources as well as the required human resources to ensure the efficiency and effectiveness of the IWM.

e) **Lack of partnerships:** The engagement of the participation and services of the private sector in waste management has shown to have positive results.

f) **Lack of cooperation:** The average resident in many districts view waste management as a local authority responsibility. The general public carries a negative perception of the role played by the local authority mainly because of the conspicuous quantities of waste that lie uncollected in communities for many days. The lack of civic awareness and public cooperation has always plagued many local council's efforts to keep their districts clean.

g) **Lack of database and record keeping:** The Country does not have a functional record keeping method to assess the volumes of waste generated and managed in the country or at district level. As a result, even the officially stated figures are estimates.

h) **Conventional approach:** The country's current approach to waste management stresses on collection and disposal and not waste minimisation and reuse. This approach does not encourage the residents to enter into any obligatory social partnership with the local authorities. 'We dump – they collect' is the general attitude that has been cultivated among the citizens by this approach over a long period.

CHAPTER 4
THE STRATEGY

4.1 THE NEED FOR THE STRATEGY

The Strategy is necessary to ensure that Lesotho develops and establishes a coordinated approach to IWM. Various industries including Micro Small and Medium Enterprises (MSMEs) produce a variety of wastes that are both hazardous and non-hazardous. A strategy which will lead to improvements in the management of waste encompassing all streams is therefore desired. A lot of domestic and industrial waste lies uncollected especially in urban and peri-urban areas. Limited financial capacity, lack of trained human resource, inadequate infrastructure and recycling facilities have made it almost challenging for the local authorities to fulfil their obligations concerning waste management. Given the above, solutions to deal with the current problem of poor waste management need to be formulated. However, whilst the government is advocating for environmentally sound waste management, the solutions should also be cost effective.

4.2 THE VISION FOR THE STRATEGY

The implementation of the strategy must meet the needs of the citizens by way of it being incorporated in the national socio-economic development plans. Changes will be made in the way waste is managed, so that waste minimisation is the cornerstone of all interventions so as to safeguard human health and the environment. The framework provided by the IWMS will improve significantly the provision of waste management services, through increased investment in equipment, infrastructure and capacity building. It is envisaged that various instruments, including bans, restrictions and taxations will be employed to deal with specific waste streams that cannot be minimised.

4.3 OBJECTIVES OF THE STRATEGY

The objectives of the IWMS are to:

i) Minimise generation of waste;

ii) Maximise the collection efficiency of waste;

iii) Reduce the volume of waste requiring disposal and maximise the economic value of waste; and

iv) Develop and adopt environmentally sound treatment and disposal methods/practices.

4.4 SCOPE

The Strategy is envisaged to address all the sectors of the economy that lead to the generation of waste. Being a national document, it will provide guidance on waste management for all stakeholders in government, industry and business, private sector, nongovernmental organisations, learning and research institutions, and the community. The Strategy outlines the principles to be adopted in the management of all streams of waste.

4.5 GOAL OF STRATEGY

The overall goal of the IWMS for Lesotho is to improve the environmental quality of the environs through the development and implementation of an efficient and sustainable waste management system.

4.6 GUIDING PRINCIPLES

The Strategy is anchored on the waste management hierarchy (figure 1.1) with waste minimisation as the most favoured option.

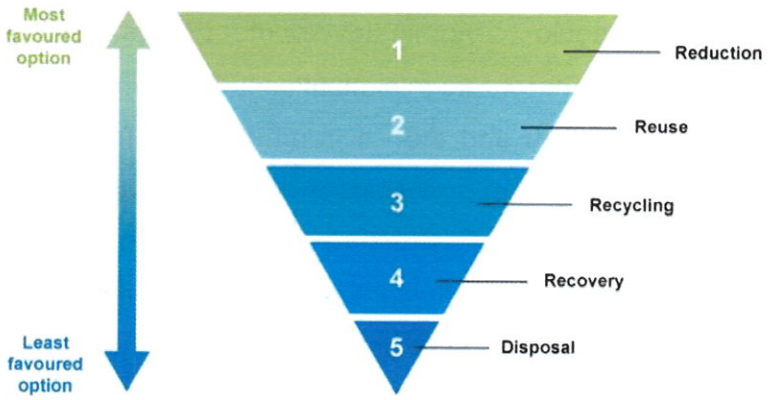


Figure 4.1: The waste hierarchy.

The Strategy is also guided by five other key principles. These are:

a) ***Develop stakeholder partnerships:*** Waste management will be easier and more effective only if the government develops institutional mechanisms to promote

sustainable partnerships with different stakeholders such as the residents, civil society organisations (CSO) and the private sector. The Strategy also acknowledges that waste management is not limited to being a public health concern and responsibility. Rather, it is a much wider task that must be seen in the context of comprehensive planning and management of the whole environment. As part of the partnership, the informal sector is a critical part of the whole waste management system and its presence, assistance and facilitation is important.

b) ***Peoples' participation:*** Public awareness is an important element of this strategy. It recognises public education as an important corollary in the context of current socio-economic pressures and complexities. It also envisages creating institutional methods to engage the public in planning and decision making. The strategy will mobilise CSOs and NGOs as partners in this regard.

c) ***Don't waste 'Waste and Landfill' is only the last resort:*** Waste is money. The collection and disposal of recyclable material is a colossal waste of marketable resources. The strategy, therefore, treats waste as raw material and an income source for the country. Alternative techniques to reduce, reuse and recycle the optimum possible quantum of waste at the point of generation will be promoted.

d) ***Free services are less sustainable:*** Government cannot provide waste collection services free of charge. In addition to being financially unsustainable, free services permit careless and unrestrained anti-social behaviour which is also a moral hazard. Moreover, free waste collection and disposal is also a discriminatory practice because the bulk producers of waste are treated in the same manner as those who generate less. The proposed strategy is based on the premise that generators of waste must share the costs of waste management according to the volume they generate. However, despite local authorities spending considerable percentage of their annual budgets on waste management, the reason for poor waste management is more a problem of strategy and administration than a lack of finances.

e) ***Documentation is important:*** The Country's information management on environment and waste management in particular is weak or non-existent. The implication is that

decision makers and planners cannot make policy decisions on waste management that are informed by data.

4.7 THE STRATEGIC ELEMENTS

This Strategy emphasises the use of an affordable mix of appropriate technical and sociological options and thus will cease to depend solely on the conventional collection and disposal method. The proposed strategy proposes to employ a multi-pronged approach that revolves round the '4R' participatory principle of Reduce, Reuse, and Recycle & Reject. The Strategy employs three main elements and these are: waste minimisation and promoting public-private partnerships; stakeholder involvement and policy, legislative and institutional strengthening; and enforcement, awareness raising and Information management. The three strategic elements are expounded below.

4.7.1 Prioritise waste minimisation and promote public-private partnerships

The best method to deal with waste is centred on a broadly accepted **"Hierarchy of waste management"** which gives a priority listing of the technical and sociological options of waste management available to the authorities. The hierarchy gives general guidelines on relative desirability of the different management options (figure 4.2).

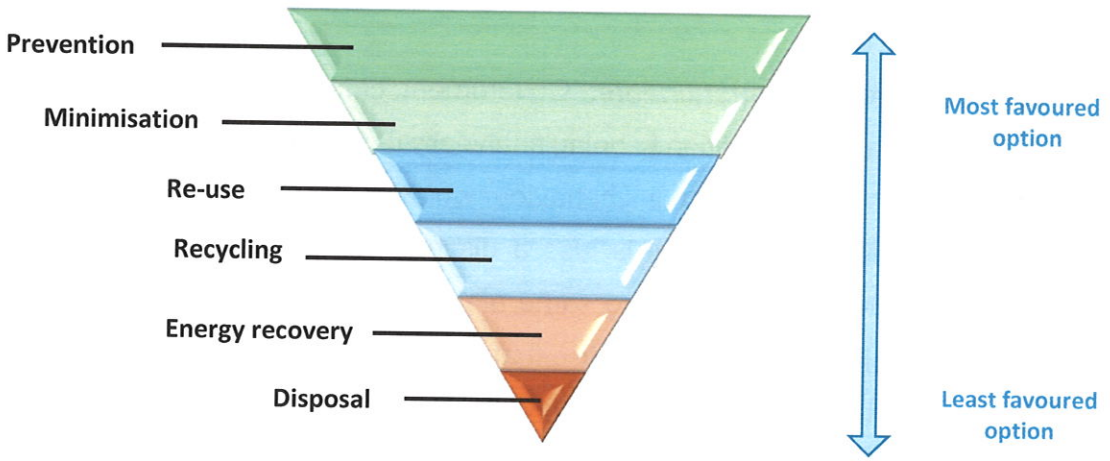


Figure 4.2: Hierarchy of integrated solid waste management

The highest and most preferred rank of this IWM hierarchy is waste prevention or waste minimisation at source, which aims at reducing the amount of the waste produced. It is the

most effective way to reduce the quantity of disposable waste, the cost associated with its handling and its adverse environmental impacts. Reuse, recycling and energy recovery technologies then follow as moderately suitable technologies. Landfilling is the last option of the hierarchy that involves controlled interment of the residual waste which has no further use on or in the earth's mantle. This is the most common practice in many countries. The strategic interventions to actualise this strategic area are detailed in Table 4.1 below.

Table 4.1: Strategic Framework No.1

No.	STRATEGIC	*PRIORITISE WASTE MINIMISATION AND PROMOTE PUBLIC-PRIVATE PARTNERSHIPS*
	Strategic Intervention	**Strategic Activities**
1	**Create environmental friendly, eco-sensitive zones**	• Identify and demarcate eco-sensitive zones • Set up community-based composting yards on suitable locations • Withdraw large waste bins from streets and public places as an integral part of the Zero Waste approach. • Revive the practice of providing litter-bins for pedestrians and commuters on busy roads and lanes • Create roadside tree planting and place aprons around each such tree to act as a receptacle for dry leaves
2	**Prioritise waste reduction at the source of generation**	• Mobilise citizens to apply the basic principles of 4Rs and minimise waste • Ban the use of polythene and plastic carrier bags and single use containers • Issue guidelines to reduce waste generation through reuse/recycling of packaging materials. • Encourage the use of ceramics crockery and cloth napkins • Support the grinding and reuse of construction rubble
3	**Separate waste at the source of generation**	• Segregate waste at the point of origin i.e., house, office, school or institution, will be a non-negotiable and critical element of the strategy • Charge a special levy to households that don't segregate their waste or dispose wet waste • 'No separation-No collection' policy to be adopted
4	**Promote the return of recyclable material to the market**	• Register Informal sector involved in waste collection/recycling • Encourage recycling as a livelihood and facilitate area-based waste recycling enterprises, coordinate the recyclers and help improve their capacity • Recognise CBO's networks and other resident level waste recycling agents • Allocate resources for Research and Development purposes for experimentation of alternative technologies to recycle different types of waste • Increase the number of waste collection centres

5	**Encourage composting and home-gardening**	• Compost bio-degradable matter from residences and small scale generators at the point of origin • Compost biodegradable waste from large scale generators at decentralised composting plants with simple technologies. • Encourage households to use compost bins • Allocate resources on setting up medium size eco-centres that do vermiculture and composting • Formulate standards on the nutrient quality of home-based compost • Market compost and other waste-borne products. • Encourage residents to do home gardening
6	**Research in4to anaerobic digestion**	• Promote small scale anaerobic digestion at school premises, child care institutions and elders' homes etc. • Collect source-separated organic waste from markets, hotels, restaurants and send it through a biomethanation process to produce methane rich biogas energy • Introduce bio-gas that permit daily intake of market waste in large quantities • Explore designs that can produce saleable liquid gas in marketable cylinders keeping in view the costs and technical viability • Encourage private sector collaborations to establish a chain of bio-gas and composting centres to turn waste into usable products and thus into money • Introduce small-scale domestic bio-gas units that can treat kitchen waste and toilet waste simultaneously
7	**Adopt sound handling of health care and other hazardous wastes**	• Develop norms and standards for the management and disposal of HCW from HCFs • Place special containers at sorting stations, recyclables collecting centres or other public places for the deposit of hazardous waste • Encourage households to store their hazardous household waste (batteries, aerosol cans, razor blades and tube lights) for separate disposal on specific publicised days • Strengthen waste processing and disposal facilities licensing and authorisation procedure
8	**Encourage door-to-door collection of household waste**	• Promote household collection system while encouraging segregation and recycling • Promote use of compost bins or compost beds as part of the recycling effort. • Introduce a phased-out, two-year plan of 'no segregation - no collection' policy, ably backed by an efficient system of daily collection. • Financially assist and equip for the purpose, community-managed primary collection system preferably managed by CBOs such as residents' associations and welfare societies. • Provide CBOs with uniforms and implements to help collect and transport the waste from lanes and byroads and hand it over to the collection vehicles. • Provide CBOs with carts/tricycles, other basic implements, uniforms, identity cards and health insurance to the extent that resources would permit • Identify and enclose small parcels of land, away from conspicuous locations, in each locality to help waste collectors and CBOs to bring and segregate the waste
9	**Ensure the use of waste disposal sites is the last resort**	• Have large composting yards within the waste disposal sites • Compost bio-degradable items and landfill only the non-degradable balance

		• Fence existing waste disposal sites and follow standard land-fill management and monitoring procedures related to daily covers and leachate treatment
10	**Facilitate Private-Public Partnerships**	• Encourage strong Public-Private Partnership Forum with the view of enlisting partnerships in environment planning and management • Privatise environmental services appropriately with linkages with the informal service sector so as to prevent marginalisation of the poor. • Continued mobilisation and partnership with the private sector through engagement of more than one such partner to promote healthy competition and self-assessment. • Beautification of the major roads and streets with trees and floral beds by contractors entrusted with the tasks. • Provide all possible assistance and incentives for industries that recycle waste such as plastics, paper and aluminium to expand their production capacity and also to ensure proper and adequate treatment and reuse of their waste including waste water • Strengthen the EIA process for all construction plans to ensure that they have adequate provisions for treatment and reuse of their waste, both solid and liquid. • Strengthen contractual agreements for performance contracts.
11	**Ensure non-negotiable emphasis on waste reduction**	• Optimise possible cost recovery through separation and recycling of waste.

4.7.2 Promote stakeholder involvement and strengthen policy, legislative and institutional regime

Stakeholder participation is the fulcrum of the strategy. It is built on the premise that IWM is not a mere public health engineering exercise. It requires the participation of every single resident and user of facilities. Lesotho will use the following approaches to mobilise their cooperation and support as detailed in Table 4.2 below.

Table 4.2: Strategic Framework No.2

No.	STRATEGY	*PROMOTE STAKEHOLDER INVOLVEMENT AND STRENGTHEN POLICY, LEGISLATIVE AND INSTITUTIONAL REGIME*
	Strategic Intervention	**Strategic Activities**
1.	**Create strong institutional mechanisms**	• Create the necessary institutional mechanisms to hold regular consultations and working groups at appropriate levels to enlist regular involvement of main stakeholders in the implementation of this strategy.
2	**Establish District level Environment Management Committees (EMC)**	• Set up an Environment Management Committees (EMC) in each municipality to engage public participation and collaboration in the district. • Attach EMC to a religious institution and function under the leadership of its chief incumbent priest. • EMC to mobilise public participation in environment improvement actions and directly supervise and monitor the lane committees described below.
3	**Create Constituency Committees for Environment**	• Identify and encourage a Residents' Association, Constituency Committee or any other existing Community Based Organisation (CBO) in each locality to take responsibility for participatory local area management.
4	**Adopt comprehensive environmental management approach**	• Design institutional arrangements to manage the total environment and not only the waste problem.
5	**Promote urban horticulture**	• Promote horticulture and home gardening at household level.
6	**Recognise and facilitate private informal sector participation**	• Recognise and work closely with informal service providers such as waste pickers, their associations and the merchandisers of recyclable waste
7	**Stimulate and facilitate NGOs and CBOs involvement**	• CBOs and NGOs engaged in a consultative group and meet regularly in order to advise and assist in the implementation of the strategy
8	**Provide policy and programme support**	• Development and regular update of waste management guidelines and where necessary issue complementary rules to ensure optimum technical and administrative standards • Strengthen existing Research and Development programs in order to adopt new and updated technologies waste minimisation and recycling
9	**Review and restructure institutional arrangements**	• Propose a new three tier management structure organogram at district and constituency levels. • Set up two programme units, one for WM and the other for general Environment.
10	**Implement decentralisation of municipal operations**	• Decentralise the operations and management into district and constituency areas. • Restructure the existing waste collection, disposal and processing system into a single system with private sector, informal sector and the community as active partners.
11	**Strengthen Municipal Standing Committees**	• Co-opt subject matter specialists and stakeholders in statutory committee systems such as the one on Health and Sanitation (Environment) to enlarge its scope and coverage within the municipal system to oversee and improve WM

4.7.3 Improve enforcement, awareness raising and information management

This Strategy aims at helping Lesotho implement IWM in a manner that suits the local conditions. It derives power from the National Environment Act and the Environmental Policy. Lesotho will use the following approaches to ensure enforcement, raise awareness and support its waste information management system as detailed in Table 4.3 below.

Table 4.3: Strategic Framework No.3

No.	STRATEGY	*IMPROVE ENFORCEMENT, AWARENESS RAISING AND INFORMATION MANAGEMENT*
	Strategic Intervention	**Strategic Activities**
1	**Create an Environmental Management Agency**	• Set up an Environmental Management Agency to ensure the sustainable management of natural resources and protection of the environment, and the prevention and control of pollution
2	**Ensure equitable and consistent enforcement of laws and policies**	• Assess the existing legal and policy provisions and propose appropriate revisions • Enforce an effective punitive action process as a deterrent to those that do not follow outlined rules, guidelines and processes • Make adequate arrangements for utilisation of degradable waste for composting and bio-energy retrieval
3	**Conduct community-based civic education programs**	• Organise regular mass communication campaigns to educate the residents, the occupiers of commercial establishments and public institutions on the strategy, rules and guidelines • Door-to-door education by official teams on conscientisation and awareness-raising • Establish School Environment Societies as a partnership
4	**Support staff mobilisation, training and education**	• Develop a technical guideline detailing the sound management of waste from generation to disposal for use to train waste management staff at municipal level
5	**Publicise annual report on Status of Environment**	• Produce an Environmental Status Report annually with special reference to actions taken during the year to improve WM quality and coverage.
6	**Promote strategy Implementation**	• District councils to submit for approval an Implementation Plan to operationalise the proposed IWM strategy
7	**Improve public relations**	• Implement successful and sustainable municipal-public interaction and cooperation • Environmental Environment Committee undertake and monitor implementation of improved public relations.
8	**Develop regular process-documentation system**	• Documentation of process and progress as an integral part of the administration and decision making process. • Put in place necessary mechanisms to obtain regular reports and datasheets on WM issues.
9	**Develop a computerised Waste Information Management System**	• Set up a waste management information system as part of the consolidated environmental management information system for Lesotho. • Provide and online complaints and licensing system accessible to the general public
10	**Provide for Public education to enhance environmental awareness**	• Conduct national public education activities periodically • Organise annual competitions and rewards to recognise eco-friendly residents and institutions • Use recyclable material for beautification of premises, localities and public locations

11	**Revitalise School Environment Committees**	• Mobilise primary and secondary level students to perform public awareness raising functions. • Activate Environment Societies of the schools to promote a litter free school environment; segregation of waste both at school and home
12	**Publicise waste collection schedules**	• Publicise on a regular basis the waste collection schedule in each district/constituency • Educate residents on the waste collection schedule and thus discourage the illegal disposal of waste undesignated places.

CHAPTER 5

MONITORING AND EVALUATION FRAMEWORK

The IWMS will be monitored and evaluated using a framework of means and measures.

5.1 MONITORING

The monitoring of implementation of this strategy will be done at three different levels and will be coordinated by the MTEC. At the national level, the Standing Committee on Environment will continually review the implementation progress which will meet monthly. At the district level, the progress will be monitored and supervised by the Environment Committee which will meet monthly or more regularly when needed. At the Constituency level, Constituency Committees will be responsible for the management and supervision of waste collection and disposal. It will also promote and monitor household level compliance with the 4R principle. It will also keep the municipal functionaries informed of the non-arrival or delay of the required heavy equipment such as compactors and other heavy vehicles that may affect their service provision.

The formal constitution of the Chemical Management Committee (CHEMAC) and Committee on Waste Management (COWMAN) under the MTEC as a national working groups will provide the oversight to the government and the necessary support to the Zero Waste initiative. The Working Groups will be set up making it mandatory to meet regularly, preferably monthly. The Director of Environment at the MTEC and the Commissioner at the MLGA will co-chair the Groups.

An annual Environment Status Report (ESR) with a series of achievable SWM milestones will published by the MTEC to monitor and review its implementation progress. Where necessary, the set targets and activities will be adjusted based on new information or new developments within each respective strategic pillar. All districts through the officer of their respective Town Clerk will provide the MTEC and the MoDP with annual progress reports on the implementation of the IWMS at district level.

Through the Environmental Management and Information system, the MTEC will monitor and record the nation-wide compliance and enforcement activities. The government through the MTEC will monitor the activities of industry through EMPs and external audits. The industries will monitor their own activities through internal audits, EMPs and other means. However, the MTEC will work with industry to identify and address unnecessary regulatory barriers related to the challenges that industry may experience.

Several ministries, government agencies, NGOs and CBOs have a significant role to play in the implementation plan of the IWMS. The MTEC will establish the relevant institutional mechanism for ongoing engagement with all the identified stakeholders and where required, will develop MoUs to provide for transparent reporting and cooperation around the relevant aspects of the IWMS.

5.2 EVALUATION

The evaluation of the IWMS will focus on assessing the progress of implementing the required improvements and how far the objectives are being achieved through government, private sector and civil society. This review will be undertaken periodically, every 2-3 years.

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PWM

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KINGDOM OF LESOTHO

RFP 80699:

CONSULTANCY SERVICES FOR THE DEVELOPMENT OF AN INTEGRATED WASTE MANAGEMENT STRATEGY FOR LESOTHO

PHASE IN OPERATIONAL PLAN FOR THE INTRODUCTION AND IMPLEMENTATION OF THE INTEGRATED WASTE MANAGEMENT STRATEGY FOR LESOTHO

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ACRONYMS AND ABBREVIATIONS

4R	Reduce, Reuse, Repurpose and Recycle
CHEMAC	Chemical Management Committee
COWMAN	Committee on Waste Management
CBOs	Community Based Organisations
EPR	Extended Producer Responsibility
HCWM	Health Care Waste Management
HW	Hazardous Waste
IWM	Integrated Waste Management
IWMS	Integrated Waste Management Strategy
LDF	Lesotho Defence Force
MAFS	Ministry of Agriculture, Food and Security
MCST	Ministry of Communication, Science and Technology
MDP	Ministry of Development Planning
MoET	Ministry of Education and Training
MEL	Ministry of Employment and Labour
MoF	Ministry of Finance
MoH	Ministry of Health
MJLCAHR	Ministry of Justice, Law and Constitutional Affairs and Human Rights
MLGC	Ministry of Local Government and Chieftainship
MoM	Ministry of Mining
MoPW	Ministry of Public Works
MSDC	Ministry of Small Business Development and Cooperatives
MTEC	Ministry of Tourism, Environment and Culture
MTI	Ministry of Trade and Industry
MoW	Ministry of Water
MSW	Municipal Solid Waste
NGOs	Non-governmental Organisations
SDGs	Sustainable Development Goals
UN	United Nations

UNDP	United Nations Development Programme
UNEP	United Nations Environmental Programme

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CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

The Ministry of Tourism, Environment and Culture (MTEC) partnered with the United Nations Development Programme (UNDP) and the United Nations Environment Programme (UNEP) in the implementation of this project which was aimed at strengthening partnerships on sustainable waste management (including plastics) in country. The support was geared to providing technical and financial resources in the development of a national integrated waste management strategy, policies and the necessary laws. One of the outputs of the project was the development of Lesotho's Integrated Waste Management Strategy.

Integrated solid waste management (ISWM) refers to the strategic approach to sustainable management of solid wastes covering all sources and all aspects covering generation, segregation, transfer, sorting, treatment, recovery and disposal in an integrated manner, with an emphasis on maximising resource use efficiency. Figure 1.1, shows that ISWM is both a function of stakeholders and factors and how these in combination affect waste system elements.

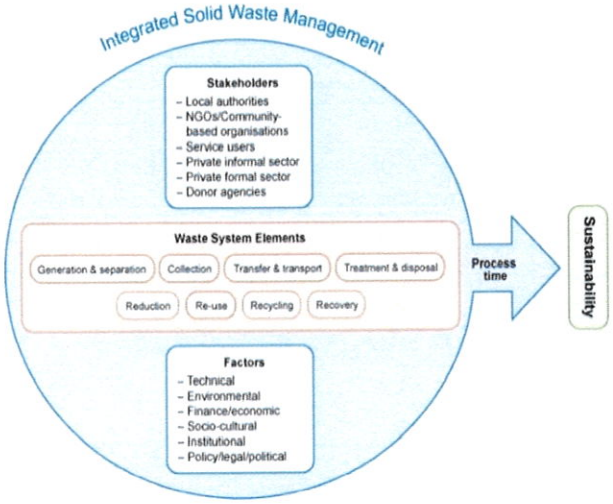

Figure 1.1: The integrated solid waste management model.
(Adapted from Van de Klundert and Anschütz, 2001)

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The IWMS for Lesotho stipulates government policy and strategic interventions for the waste management sector and is aligned and responsive to the Sustainable Development Goals (SDGs) of the Agenda 2030 adopted by all the United Nations (UN) member states (UN 2015). The development of this strategy was a consultative process that took into account applicable feedback from the public and other relevant stakeholders. It also recognised the political, social, environmental and economic context within which the waste sector operated, as well as its impact. The IWMS provides a coherent approach and framework for the implementation of policy relating to waste management.

To realise the objectives of the strategy, an operational and implementation plan was necessary to provide for roles and responsibilities for the various stakeholders as well as provide for measurable and achievable indicators and timelines. This report has thus been developed to spell out a clear framework for the implementation of the strategy.

CHAPTER 2

PHASE IN OPERATIONAL AND IMPLMENTATION PLAN

2.1 PHASE IN OPERATIONAL PLAN

The formal constitution of the Chemical Management Committee (CHEMAC) and Committee on Waste Management (COWMAN) under the MTEC as national working groups will provide the oversight to the government and the necessary support for the phased in operationalization of the strategy. The process will commence following the approval and publication of the strategy by government.

The working groups under the two committees will convene meetings regularly to allow a smooth roll-out of the strategy in the country. The Director of Environment at the MTEC chair the Committees.

2.2 IMPLEMENTATION PLAN

Table 2.1 provides a summary of the strategic frameworks and their interventions. In tables 2.2 – table 2.4, the strategic frameworks and their interventions are examined in detail and the responsibilities for implementation assigned with applicable milestones and timelines.

At the onset, an annual Environment Status Report (ESR) with a series of achievable SWM milestones will be published by the MTEC to monitor and review its implementation progress. Where necessary, the set targets and activities will be adjusted based on new information or new developments within each respective strategic pillar. All districts through the offices of the respective Town Clerks will provide the MTEC and the MDP with annual progress reports on the implementation of the IWMS at district level.

Through the Environmental Management and Information system, the MTEC will monitor and record the nation-wide compliance and enforcement activities. The government through the MTEC will monitor the activities of industry through EMPs and external audits. The industries will monitor their own activities through internal audits, EMPs and other means. However, the MTEC will work with industry to identify and address unnecessary regulatory barriers related to the challenges that industry may experience.

Several ministries, government agencies, NGOs and CBOs have a significant role to play in the implementation plan of the IWMS. The MTEC will establish the relevant institutional mechanism for ongoing engagement with all the identified stakeholders and where required, will develop framework agreements to provide for transparent reporting and cooperation around the relevant aspects of the IWMS.

Table 2.1: Summary – Phase in operational and implementation plan

No.	STRATEGIC FRAMEWORK	STRATEGIC INTERVENTION	IMPLEMENTATION TIMEFRAME
I	*PRIORITISE WASTE MINIMISATION AND PROMOTE PUBLIC-PRIVATE PARTNERSHIPS*	• Create environmental friendly, eco-sensitive zones	2023-2030
		• Prioritise waste reduction at the source of generation	2023-2030
		• Separate waste at the source of generation	2023-2030
		• Promote the return of recyclable material to the market	2023-2030
		• Encourage composting and home-gardening	2023-2030
		• Research into anaerobic digestion	2023-2030
		• Adopt sound handling of health care and other hazardous wastes	2023-2030
		• Encourage door-to-door collection of household waste	2023-2030
		• Ensure the use of waste disposal sites as the last resort	2023-2030
		• Facilitate Private-Public Partnerships	2023-2030
		• Ensure non-negotiable emphasis on waste reduction	2023-2030
II	*PRMOTE STAKEHOLDER INVOLVEMENT AND STRENGTHEN POLICY, LEGISLATIVE AND INSTITUTIONAL REGIME*	• Create strong institutional mechanisms	2023-2030
		• Establish District level Environment Management Committees (EMC)	2023-2030
		• Create Constituency Committees for Environment	2023-2030
		• Adopt comprehensive environmental management approach	2023-2030
		• Promote urban horticulture	2023-2030
		• Recognise and facilitate private informal sector participation	2023-2030
		• Stimulate and facilitate NGOs and CBOs involvement	2023-2030
		• Provide policy and programme support	2023-2030
		• Review and restructure institutional arrangements	2023-2030
		• Implement decentralisation of municipal operations	2023-2030
		• Strengthen Municipal Standing Committees	2023-2030
III	*IMPROVE ENFORCEMENT, AWARENESS RAISING AND INFORMATION MANAGEMENT*	• Create an Environmental Management Agency	2023-2030
		• Ensure equitable and consistent enforcement of laws and policies	2023-2030
		• Conduct community-based civic education programs	2023-2030
		• Support staff mobilisation, training and education	2023-2030
		• Publicise annual report on Status of Environment	2023-2030
		• Promote strategy Implementation	2023-2030
		• Improve public relations	2023-2030
		• Develop regular process-documentation system	2023-2030
		• Develop a computerised Waste Information Management System	2023-2030
		• Provide for public education to enhance environmental awareness	2023-2030
		• Revitalise School Environment Clubs	2023-2030
		• Publicise waste collection schedules	2023-2030

PHASE IN OPERATIONAL AND IMPLEMENTATION PLAN FOR THE STRATEGY

Table 2.2: Detailed Strategic framework with Implementation timeframe

	STRATEGIC	**PRIORITISE WASTE MINIMISATION AND PROMOTE PUBLIC-PRIVATE PARTNERSHIPS**				
	OUTCOME 1:	**Integrated and fully financially sustainable waste management system with minimal waste generation requiring disposal**				
No.	**Strategic Intervention**	**Strategic Activities**	**Performance indicator**	**Target**	**Implementing Agency**	**Implementation timeframe**
1	**Create environmental friendly, eco-sensitive zones**	• Identify and demarcate eco-sensitive zones	Number of eco-sensitive zone demarcated	Five eco-sensitive zone demarcated	MLGC	2023-2030
		• Set up community-based composting yards on suitable locations	Number of community based compositing yards set up	Five community based compositing yards set up	MLGC	2023-2030
		• Revive the practice of providing litter-bins for pedestrians and commuters on busy roads and lanes	Number of litter-bins placed for pedestrians and commuters on busy roads and lanes provided	200 litter-bins for pedestrians and commuters on busy roads and lanes provided	MLGC	2023-2030
		• Create roadside tree planting and place aprons around each such tree to act as a receptacle for dry leaves	Number of roadside trees planted and aprons placed around each such tree	100 roadside tree planted and aprons placed around each such tree	MLGC	2023-2030
2	**Prioritise waste reduction at the source of generation**	• Mobilise citizens to apply the basic principles of 4Rs and minimise waste	Number of citizens mobilised to apply the basic principles of 4Rs and minimise waste	Number of citizens mobilised to apply the basic principles of 4Rs and minimise waste	MTEC and MLGC	2023-2030
		• Ban the use of polythene and plastic carrier bags and single use containers	A regulation banning the use of polythene and plastic products carrier bags and single use containers enacted	A regulation banning the use of polythene and plastic products carrier bags and single use containers enacted	MTEC and MJLCAHR	2023-2030
		• Issue guidelines to reduce waste generation through reuse/recycling of packaging materials.	Number of guidelines issued to reduce waste generation through reuse/recycling of packaging materials	Two guidelines issued to reduce waste generation through reuse/recycling of packaging materials.	MTEC	2023-2030
		• Encourage the use of ceramics crockery and	Number of facilities in the hospitality industry using	Number of facilities in the hospitality industry using	MLGC	2023-2030

PHASE IN OPERATIONAL AND IMPLEMENTATION PLAN FOR THE STRATEGY

		cloth napkins in the hospitality industrial	ceramic crockery and cloth napkins	ceramic crockery and cloth napkins		
		• Support the grinding and reuse of construction rubble	Quantity of construction rubble ground and reused	Two facilities for the grinding and reuse of construction rubble	MLGC	2023-2030
3	**Separate waste at the source of generation**	• Segregate waste at the point of origin i.e., house, office, school or institution, will be a non-negotiable and critical element of the strategy	Number of households segregating waste at the point of origin	30 percent of households segregate waste at the point of origin	MLGC	2023-2030
		• Charge a special levy to households that don't segregate their waste or dispose wet waste	Number of by-laws enacted by municipalities to levy households that don't segregate their waste or disposal wet waste	Number of by-laws enacted by municipalities to levy households that don't segregate their waste or disposal wet waste	MLGC	2023-2030
		• Adopt 'No separation-No collection' policy	Policy of no separation-no collection enacted	Policy of no separation-no collection enacted	MTEC	2023-2030
4	**Promote the return of recyclable material to the market**	• Register Informal sector involved in waste collection/recycling	Number of informal sector in waste collection/recycling registered	Ten informal sector organisations in waste collection/recycling registered	MLGC	2023-2030
		• Allocate resources on setting up medium size eco-centres that do vermiculture and composting	Amount of resources allocated for setting up medium size eco-centres that do vermiculture and composting	100,000 Maloti allocated for setting up medium size eco-centres that do vermiculture and composting	MLGC	2023-2030
		• Encourage recycling as a livelihood and facilitate area-based waste recycling enterprises	Number of area-based waste recycling enterprises established	20 area-based waste recycling enterprises established	MLGC	2023-2030
		• Coordinate the recyclers and improve their capacity	Number of recyclers that are coordinating and have their capacity improved	Ten recyclers that are coordinated and have their capacity improved	MTEC	2023-2030
		• Recognise CBO's networks and other	Number of CBO networks and other resident level	20 CBO networks and other resident level waste	MLGC	2023-2030

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		resident level waste recycling agents	waste recycling agents recognised	recycling agents recognised		
		• Allocate resources for Research and Development (R&D) purposes for experimentation of alternative technologies to recycle different types of waste	Amount of resources allocated for R&D purposes for the experimentation of alternative technologies to recycle different types of waste	100, 000 Maloti allocated for R&D purposes for the experimentation of alternative technologies to recycle different types of waste	MCST	2023-2030
		• Increase the number of waste collection centres	Number of waste collection centres increased	Waste collection centres increased by 50 percent	MLGC	2023-2030
5	**Encourage composting and home-gardening**	• Compost bio-degradable matter from residences and small- scale generators at the point of origin	Number of composting bins, vermin-culture and other appropriate and low-cost technologies used to compost bio-degradable matter to generate energy or manure	Number of composting bins, vermin-culture and other appropriate and low-cost technologies used to compost bio-degradable matter to generate energy or manure	MTEC, MLGC and MCST	2023-2030
		• Compost biodegradable waste from large scale generators at decentralised composting plants with simple technologies.	Quantity of compost biodegradable waste from large scale generators being processed at composting plants with simple technologies	Establish five decentralised composting plants with simple technologies where large-scale generators can compost biodegradable waste	MTEC, MLGC and MCST	2023-2030
		• Encourage households to use compost bins	Increase in households using compost bin	All the ten districts have households using compost bins	MLGC	2023-2030
		• Formulate standards on the nutrient quality of home-based compost	Number of standards on nutrient quality and home based compost formulated	One standard on nutrient quality and home based compost formulated	MTEC, MAFS and MTI	2023-2030
		• Market compost and other waste-borne products.	Rise in demand and use of compost and waste-borne products	Increase in the use of compost and waste-borne products	MLGC	2023-2030

			Increase in public awareness of availability and uses for compost and other waste-borne products			
		• Encourage residents to do home gardening	Number of residents engaging in home gardening	Increase in the number of residents engaging in home gardening	MLGC, MAFS	2023-2030
6	**Research into anaerobic digestion**	• Promote small scale anaerobic digestion at school premises, child care institutions and elders' homes etc.	Number of small-scale anaerobic digestion taking place at school premises, child care institutions and elders' homes etc.	Increase in small scale anaerobic digestion taking place at school premises, child care institutions and elders' homes etc.	MTEC, MLGC and MCST	2023-2030
		• Collect source-separated organic waste from markets, hotels, restaurants and send it through a biomethanation process to produce methane rich biogas energy	Number of source-separated organic waste being processed through bio-methanation in order to produce methane rich biogas energy	Ten biogas processing plants established Increase in source-separated organic waste being processed through bio-methanation in order to produce methane rich biogas energy	MLGC	2023-2030
		• Introduce bio-gas that permits daily intake of market waste in large quantities	Number of bio-gas facilities that permits daily intake of market waste in large quantities introduced	At least one bio-gas facility that permits daily intake of market waste in large quantities is introduced	MTEC, MLGC and MCST	2023-2030
		• Explore designs that can produce saleable liquid gas in marketable cylinders keeping in view the costs and technical viability	Number of designs that can produce saleable liquid gas in marketable cylinders keeping in view the costs and technical viability approved	Five designs that can produce saleable liquid gas in marketable cylinders keeping in view the costs and technical viability approved	MTEC, MLGC and MCST	2023-2030
		• Encourage private sector collaborations to establish a chain of bio-gas and	Number in private sector collaborations to establish a chain of bio-gas and composting centres to turn	Increase in the number of private sector collaborations	MTEC, MLGC and MCST	2023-2030

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		composting centres to turn waste into usable products and thus generate income	waste into usable products and thus into money	to establish a chain of bio-gas and composting centres to turn waste into usable products and thus generate income		
		• Introduce small-scale domestic bio-gas units that can treat kitchen waste and toilet waste simultaneously	Number of small-scale domestic bio-gas units that can treat kitchen waste and toilet waste simultaneously	Increase in small-scale domestic bio-gas units that can treat kitchen waste and toilet waste simultaneously	MTEC, MLGC and MCST	2023-2030
7	**Adopt sound handling of health care and other hazardous wastes**	• Develop norms and standards for the management and disposal of HCW from HCFs	Number of norms and standards for the management and disposal of HCW from HCFs developed	Two norms and standards for the management and disposal of HCW from HCFs implemented	MoH, MTEC and MTI	2023-2030
		• Place special containers at sorting stations, recyclables collecting centres or other public places for the deposit of hazardous waste	Number of special containers placed at sorting stations, recyclables collecting centres or other public places for the deposit of hazardous waste	Increase in the number of special containers placed at sorting stations, recyclables collecting centres or other public places for the deposit of hazardous waste	MTEC and MLGC	2023-2030
		• Encourage households to separate and store their hazardous household waste (batteries, aerosol cans, razor blades and tube lights) for disposal on specific publicised days	Number of awareness campaigns on storage of hazardous household waste for separate disposal	Increase awareness campaigns on storage of hazardous household waste for discharge Increase in the number of households storing hazardous waste separately for separate disposal	MTEC and MLGC	2023-2030
		• Strengthen waste processing and disposal facilities, licensing and authorisation procedure	Capacity of waste processing and disposal facilities Licensing and authorisation procedure	Increase in capacity of waste processing and disposal facilities Enforce licensing and authorisation procedure	MTEC and MLGC	2023-2030

8	**Encourage door-to-door collection of household waste**	• Promote household collection system while encouraging segregation and recycling	Number of household collection of waste while encouraging segregation and recycling	Increase in household collection of waste while encouraging segregation and recycling	MLGC	2023-2030
		• Promote use of compost bins or compost beds as part of the recycling effort.	Number of compost bins or compost beds as part of the recycling effort.	Increase in the use of compost bins or compost beds as part of the recycling effort.	MLGC	2023-2030
		• Introduce a phased-out, 'no segregation - no collection' policy, ably backed by an efficient system of daily collection.	Draft a policy and guidelines stipulating phased-out, 'no segregation - no collection' policy, ably backed by an efficient system of daily collection.	Initiate the implementation of a phased-out, 'no segregation - no collection' policy, ably backed by an efficient system of daily collection.	MTEC and MLGC	2023-2030
		• Financially assist and equip for the purpose of community-managed primary collection system preferably managed by CBOs such as residents' associations and welfare societies	Funding for community-managed primary collection systems preferably managed by CBOs such as residents' associations and welfare societies	Increased budget allocations towards community-managed primary collection systems	MLGC	2023-2030
		• Provide CBOs with uniforms and implements to help collect and transport the waste from lanes and by-roads and hand it over to the collection vehicles	CBOs with uniforms and implements to help collect and transport the waste from lanes and by-roads and hand it over to the collection vehicles	Increased number of CBOs with uniforms and implements to help collect and transport the waste from lanes and by-roads and hand it over to the collection vehicles	MLGC	2023-2030
		• Provide CBOs with carts/tricycles, other basic implements, uniforms, identity cards and health insurance to the extent	Number of CBOs provided with carts/tricycles, other basic implements, uniforms, identity cards and health insurance to the extent that resources would permit	30 CBOs provided with carts/tricycles, other basic implements, uniforms, identity cards and health insurance	MLGC	2023-2030

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		that resources would permit				
		• Identify and enclose small parcels of land, away from conspicuous locations, in each locality to waste collectors and CBOs to bring and segregate the waste	Number of parcels of land in each district established and use commenced to help the waste collectors and CBOs to bring and segregate the waste	Establish and commence use at least one small parcel of land in each district, away from conspicuous locations, in each locality to help the waste collectors and CBOs to bring and segregate the waste	MLGC	2023-2030
9	**Ensure the use of waste disposal sites is the last resort**	• Have large composting yards within the waste disposal sites	Number of waste disposal sites having composting yards	Ten waste disposal sites having composting yards	MLGC	2023-2030
		• Compost bio-degradable items and landfill only the non-degradable balance	Quantity of compost from bio-degradable items not landfilled	Increase in the quantity of compost from bio-degradable items	MLGC	2023-2030
		• Fence existing waste disposal sites and follow standard land-fill management and monitoring procedures related to daily covers and leachate treatment	Number of waste disposal sites fenced and lined and that follow the standard land-fill management and monitoring procedures related to daily covers and leachate treatment	Ten waste disposal sites fenced and lined and follow the standard land-fill management and monitoring procedures related to daily covers and leachate treatment	MLGC	2023-2030
10	**Facilitate Private-Public Partnerships**	• Encourage strong Public-Private Partnership Forum with the view of enlisting partnerships in environment planning and management	Public-Private Partnerships in environment planning and management	Increase in the number of Public-Private Partnerships in environment planning and management Improved Public-Private Partnership relationships in environment planning and management	MTEC, MLGC and MDP	2023-2030
		• Privatise environmental services appropriately	Private entities involved in environmental services	Increase in the number of private entities involved in	MTEC and MLGC	2023-2030

		with linkages with the informal service sector so as to prevent marginalisation of the poor	with linkages with the informal service sector so as to prevent marginalisation of the poor	environmental services with linkages with the informal service sector		
		• Continue mobilisation and partnership with the private sector through engagement of more than one such partner to promote healthy competition and self-assessment.	Engagement with the private sector for continued mobilisation and partnership thus promoting healthy competition and self-assessment	Increase in the number of engagements with the private sector for continued mobilisation and partnership	MTEC and MLGC	2023-2030
		• Beautification of the major roads and streets with trees and floral beds by contractors entrusted with the tasks.	Number of trees and floral beds on major roads and streets	Increase in the number of trees and floral beds on major roads and streets	MTEC, MLGC and MoPW	2023-2030
		• Provide all possible assistance and incentives for industries that recycle waste such as plastics, paper and aluminium to expand their production capacity and also to ensure proper and adequate treatment and reuse of their waste including waste water	Number of incentives for industries that recycle waste to expand their production capacity and also to ensure proper and adequate treatment and reuse of their waste including waste water provided	At least one incentive for industries that recycle waste to expand their production capacity and also to ensure proper and adequate treatment and reuse of their waste including waste water provided	MTEC, MLGC MoW and MoF	2023-2030
		• Strengthen the EIA process for all construction plans to ensure that they have adequate provisions for treatment and reuse of their waste, both solid and liquid	Establishment of guidelines for the enforcement of the EIA process for all construction plans to ensure that they have adequate provisions for treatment and reuse of	Enforce at all times the EIA process for all construction plans to ensure that they have adequate provisions for treatment and reuse of their waste, both solid and liquid.	MTEC and MLGC	2023-2030

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			their waste, both solid and liquid			
		• Strengthen contractual agreements for performance contracts.	Number of performance contracts strengthened	Implement mechanisms to strengthen contractual agreements for performance contracts.	MLGC	2023-2030
11	**Ensure non-negotiable emphasis on waste reduction**	• Optimise possible cost recovery through separation and recycling of waste.	Amount of funds saved through separation and recycling of waste	Amount of funds saved through separation and recycling of waste	MTEC, MLGC and MoF	2023-2030

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Table 2.3: Detailed Strategic framework with Implementation timeframe

No.	STRATEGY	*PROMOTE STAKEHOLDER INVOLVEMENT AND STRENGTHEN POLICY, LEGISLATIVE AND INSTITUTIONAL REGIME*				
	OUTCOME 2:	*Fully involved stakeholder society living in a sustainable* and predictable policy, legal and institutional regime				
	Strategic Intervention	Strategic Activities	Performance indicator	Target	Implementing Agency	Implementation timeframe
1	**Create strong institutional mechanisms**	• Create the necessary institutional mechanisms to hold regular consultations and working groups at appropriate levels to enlist regular involvement of main stakeholders in the implementation of this strategy.	Initiate the creation of the necessary institutional mechanisms to hold regular consultations and working groups at appropriate levels to enlist regular involvement of main stakeholders in the implementation of this strategy	Establish institutional mechanisms to hold regular consultations and working groups at appropriate levels to enlist regular involvement of main stakeholders in the implementation of this strategy.	MTEC and MLGC	2023-2030
2	**Establish District level Environment Management Committees (EMC)**	• Set up an Environment Management Committees (EMC) in each municipality to engage public participation and collaboration in the district.	Initiate the establishment of Environment Management Committees (EMC) in each municipality to engage public participation and collaboration in the district.	Have Environment Management Committees (EMC) in each municipality to engage public participation and collaboration in the district.	MTEC and MLGC	2023-2030
		• Attach EMC to a religious institution and function under the leadership of its chief incumbent priest	Instigate the attachment of EMCs to religious institutions and functions under the leadership of their incumbent priests	Increase in the number of attachments of EMCs to religious institutions and functions under the leadership of their incumbent priests	MTEC and MLGC	2023-2030
		• Mobilise public participation in environment improvement actions and directly supervise and monitor the lane committees	Number of people participating in environment improvement actions and directly supervise and monitor the lane committees	Increase in the number of people participating in environment improvement actions and directly supervise and monitor the lane committees	MTEC and MLGC	2023-2030

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3	**Create Constituency Committees for Environment**	• Identify and encourage a Residents' Association, Constituency Committee or any other existing Community Based Organisation (CBO) in each locality to take responsibility for participatory local area management.	Number of Residents' Association, Constituency Committee or any other existing Community Based Organisation (CBO) in each locality to take responsibility for participatory local area management.	Increase in number of Residents' Association, Constituency Committee or any other existing Community Based Organisation (CBO) in each locality to take responsibility for participatory local area management.	MLGC	2023-2030
4	**Adopt comprehensive environmental management approach**	• Design institutional arrangements to manage the total environment and not only the waste problem	Assess current municipal institutional framework and propose restructuring	Streamlined municipal institutional organogram and other arrangements that responds to comprehensive environmental management	MLGC	2023-2030
5	**Promote urban horticulture**	• Promote horticulture and home gardening at household level.	Increase in horticulture and home gardening at household level.	Increase in horticulture and home gardening at household level.	MLGC	2023-2030
6	**Recognise and facilitate private informal sector participation**	• Recognise and work closely with informal service providers such as waste pickers, their associations and the merchandisers of recyclable waste	Mainstream and collaborate with the informal sector so as to facilitate their work in sustainable waste management	Increase in collaboration with informal service providers such as waste pickers, their associations and the merchandisers of recyclable waste	MTEC, MLGC, MSDC and MTI	2023-2030
7	**Stimulate and facilitate NGOs and CBOs involvement**	• CBOs and NGOs engaged into a consultative group and meet regularly in order to advise and assist in the implementation of the strategy	Organised CBOs and NGOs formally consulted on a regular basis and engaged as part of the strategy implementation	List of CBOs and NGOs part of organised consultative forum as part of the strategy implementation	MTEC and MLGC	2023-2030
8	**Provide policy and programme support**	• Development and regular update of waste management guidelines and where necessary issue complementary rules to ensure optimum	Number of waste management guidelines developed or updated to ensure optimum technical and administrative standards	Number of waste management guidelines developed or updated to ensure optimum technical and administrative standards	MTEC and MLGC	2023-2030

		technical and administrative standards				
		• Strengthen existing Research and Development programs in order to adopt new and updated technologies waste minimisation and recycling	Number of Research and Development programs adopted for waste minimisation and recycling	Number of Research and Development programs adopted for waste minimisation and recycling	MTEC, MLGC and MCST	2023-2030
9	**Review and restructure institutional arrangements**	• Propose a new three tier management structure organogram at district and constituency levels.	Implement a new three tier management structure organogram at district and constituency levels.	A new three tier management structure organogram at district and constituency levels functional	MTEC and MLGC	2023-2030
		• Set up two programme units, one for WM and the other for general Environment	Implement two programme units at district level; one for WM and the other for general Environment	Implement two programme units at district level; one for WM and the other for general Environment	MTEC and MLGC	2023-2030
10	**Implement decentralisation of municipal operations**	• Decentralise the operations and management into district and constituency areas	Initiate the planning of the decentralisation process of the operations and management into district and constituency areas	Implement the decentralisation of the operations and management into district and constituency areas.	MLGC	2023-2030
		• Restructure the existing waste collection, disposal and processing system into a single system with private sector, informal sector and the community as active partners	Initiate the restructuring of the existing waste collection, disposal and processing system into a single system with private sector, informal sector and the community as active partners	Fully restructured waste collection, disposal and processing system functional	MTEC and MLGC	2023-2030

11	**Strengthen Municipal Standing Committees**	• Co-opt subject matter specialists and stakeholders in statutory committee systems such as the one on Health and Sanitation (Environment) to enlarge its scope and coverage within the municipal system to oversee and improve WM	Number of subject matter specialists co-opted in statutory committees of municipalities	At least one subject matter specialists co-opted in statutory committees of municipalities so as to oversee and improve WM	MTEC and MLGC	2023-2030

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Table 2.4: Detailed Strategic Framework with Implementation timeframe

	STRATEGY	IMPROVE ENFORCEMENT, AWARENESS RAISING AND INFORMATION MANAGEMENT				
	OUTCOME 3:	*Compliance to environmental laws and tolerance of pollution and an informed and educated public society*				
No.	**Strategic Intervention**	**Strategic Activities**	**Performance indicator**	**Target**	**Implementing Agency**	**Implementation timeframe**
1	**Create an Environmental Management Agency**	Set up an Environmental Management Agency to ensure the sustainable management of natural resources and protection of the environment, and the prevention and control of pollution	Enactment of the law establishing an Environmental Management Agency	Environmental Management Agency fully establishment and functional	MTEC, MoF and MJLCAHR	2023-2030
2	**Ensure equitable and consistent enforcement of laws and policies**	• Assess the existing legal and policy provisions and propose appropriate revisions	Assessment and revision of the existing environmental laws and policies	Existing environmental legal and policy provisions revised	MTEC and MJLCAHR	2023-2030
		• Enforce an effective punitive action process as a deterrent to those that do not follow outlined rules, guidelines and processes	Number of persons/entities that do not follow outlined rules, guidelines and processes	Reduction in number of persons/entities not following outlined rules, guidelines and processes	MTEC, EMA and MLGC	2023-2030
		• Make adequate arrangements for utilisation of degradable waste for composting and bio-energy retrieval	Number of households/entities using degradable waste for composting and bio-energy retrieval	Increase in number of households/entities using degradable waste for composting and bio-energy retrieval	MTEC and MLGC	2023-2030
3	**Conduct community-based civic education programs**	• Organise regular mass communication campaigns to educate the residents, the occupiers of commercial establishments and public institutions on the strategy, rules and guidelines	Number of mass communication campaigns to educate the residents, the occupiers of commercial establishments and public institutions on the strategy, rules and guidelines	Increase in the number of mass communication campaigns to educate the residents, the occupiers of commercial establishments and public institutions on the strategy, rules and guidelines	MTEC and MLGC	2023-2030
		• Door-to-door education on conscientisation and awareness-raising	Number of door-to-door education on	Increase in the number of door-to-door education on	MTEC and MLGC	2023-2030

PHASE IN OPERATIONAL AND IMPLEMENTATION PLAN FOR THE STRATEGY

			conscientisation and awareness-raising	conscientisation and awareness-raising		
		• Establish School Environment Clubs partnership	Number of School Environment Clubs established	Establish in all municipalities, School Environment Clubs	MTEC and MET	2023-2030
4	**Support staff mobilisation, training and education**	• Develop a technical guideline detailing the sound management of waste from generation to disposal for use to train waste management staff at municipal level	Number of staff trained using the technical guideline on the sound management of waste from generation to disposal	Staff trained in the sound management of waste from generation to disposal using the technical guideline developed	MTEC and MLGC	2023-2030
5	**Publicise annual report on Status of Environment**	• Produce an Environmental Status Report annually with special reference to actions taken during the year to improve WM quality and coverage.	To record actions taken during the year to improve WM quality and coverage that will be used to produce an annual Environmental Status Report	To produce an annual Environmental Status Report annually with special reference to actions taken during the year to improve WM quality and coverage	MTEC	2023-2030
6	**Promote strategy Implementation**	• District councils to submit for approval an Implementation Plan to operationalise the proposed IWM strategy	Drafting by district councils of an implementation plan to operationalise the proposed IWM strategy to be submitted for approval	Have all district councils to submit for approval an Implementation Plan to operationalise the proposed IWM strategy	MTEC and MLGC	2023-2030
7	**Improve public relations**	• Implement successful and sustainable municipal-public interaction and cooperation	Improved sustainable municipal-public interaction and cooperation	Reduced negative feedback from the public in relation to waste management issues	MLGC	2023-2030
		• Environmental Committee to undertake and monitor implementation of improved public relations.	Improved public relations	Regular monitoring and implementation of various activities to improve public relations	MLGC	2023-2030
8	**Develop regular process-documentation system**	• Documentation of process and progress as an integral part of the administration and decision-making process	Initiate documentation of process and progress as an integral part of the administration and	Have documentation of process and progress as an integral part of the	MTEC and MLGC	2023-2030

			decision-making process	administration and decision-making process		
		• Put in place necessary mechanisms to obtain regular reports and datasheets on WM issues.	Initiate formulation of mechanisms to obtain regular reports and datasheets on WM issues	Establish detailed mechanisms to obtain regular reports and datasheets on WM issues.	MTEC and MLGC	2023-2030
9	**Develop a computerised Waste Information Management System**	• Set up a waste management information system as part of the consolidated environmental management information system for Lesotho.	Procure an electronic waste management information system as part of the consolidated environmental management information system for Lesotho.	Initiate use of the electronic waste management information system as part of the consolidated environmental management information system for Lesotho.	MTEC	2023-2030
		• Provide an online complaints and licensing system accessible to the general public	Access by the public to an online complaints and licensing system accessible to the general public	Increase in number of members of public using the online complaints and licensing system	MTEC and MLGC	2023-2030
10	**Provide for Public education to enhance environmental awareness**	• Conduct national public education activities periodically	Number of national public education activities periodically	Increase in the number of national public education activities held periodically	MTEC, MLGC and MET	2023-2030
		• Organise annual competitions and rewards to recognise eco-friendly residents and institutions	Number of annual competitions and rewards to recognise eco-friendly residents and institutions	Establish and specify categories of annual competitions and rewards to recognise eco-friendly residents and institutions	MTEC and MLGC	2023-2030
		• Use recyclable material for beautification of premises, localities and public locations	Number of recyclable material used for beautification of premises, localities and public locations	Increase in the use of recyclable material for beautification of premises, localities and public locations	MTEC and MLGC	2023-2030
11	**Revitalise School Environment Committees**	• Mobilise primary and secondary level students to perform public	Number of primary and secondary level students performing public awareness	Increase in the number of primary and secondary level students performing public awareness	MTEC and MET	2023-2030

		awareness functions on environmental issues	functions on environmental issues	functions on environmental issues		
		• Activate School Environment Clubs to promote a litter free school environment; segregation of waste both at school and home	Number of School Environment Clubs at schools that promote a litter free school environment; segregation of waste both at school and home	Initiate all schools Environment Clubs at schools that promote a litter free school environment; segregation of waste both at school and home	MTEC and MET	2023-2030
12	**Publicise waste collection schedules**	• Publicise on a regular basis the waste collection schedule in each district/constituency	Regular publicising of the waste collection schedule in each district/constituency	Make information in various formats readily available on the waste collection schedule in each district/constituency	MLGC	2023-2030
		• Educate residents on the waste collection schedule and thus discourage the illegal disposal of waste at undesignated places.	Number of activities done to educate residents on the waste collection schedule and thus discourage the illegal disposal of waste at undesignated places.	Reduction in cases of illegal disposal of waste in undesignated places as a result of increase in education activities.	MTEC and MLGC	2023-2030

CHAPTER 3

MONITORING AND EVALUATION FRAMEWORK

The IWMS will be monitored and evaluated using a framework of means and measures.

3.1 MONITORING

The monitoring of implementation of this strategy will be done at three different levels and will be coordinated by the MTEC. At the national level, the Standing Committee on Environment will continually review the implementation progress and will meet monthly. At the district level, the progress will be monitored and supervised by the Environment Committee which will meet monthly or more regularly when needed. At the Constituency level, Constituency Committees will be responsible for the management and supervision of waste collection and disposal. It will also promote and monitor household level compliance with the 4R principle. It will also keep the municipal functionaries informed of the non-arrival or delay of the required heavy equipment such as compactors and other heavy vehicles that may affect their service provision.

3.2 EVALUATION

The evaluation of the IWMS will focus on assessing the progress of implementing the required improvements and how far the objectives are being achieved through government, private sector and civil society. This review will be undertaken periodically, every 2-3 years.