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## **RAPID Task Order 1 (Policy and Design) Activity**

### **Development of a Landfill in Maseru**

## **Report on Assessment of Needs for Landfill Development**

by  
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**Submitted by:  
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## **List of Acronyms**

AGOA	African Growth and Opportunities Act
COWMAN	Committee on Waste Management
DWA	Department of Water Affairs
GOL	Government of Lesotho
LNDC	Lesotho National Development Corporation
MCC	Maseru City Council
MDP	Ministry of Development Planning
MoLG	Ministry of Local Government
MTEC	Ministry of Tourism Environment and Culture
NES	National Environment Secretariat
USG	United States Government
WASA	Water and Sewage Authority

## 1.0 Introduction

Waste management has always been a major problem in Lesotho with no real collection and disposal system in place. The Maseru City Council (MCC) struggles to deal with domestic and industrial waste with no regular waste collection service in place. Due to frequent breakdowns of vehicles, only intermittent service is provided to the city where an average 10-15% of households are provided with regular waste collection. Industrial concerns and institutions such as hospitals are provided with skips (containers) for refuse disposal that are supposed to be emptied regularly. These also remained unattended to because of transport problems. As a result of this, waste is usually dumped illegally in open spaces or burnt, resulting in widespread pollution.

Problems are also experienced with the disposal of solid waste and sludge that is generated from the factories that have been established as a result of the boom in the textile industry. There is also the dumping of liquid effluent into rivers resulting in the pollution of an international watercourse (Caledon River). Tests carried out in these rivers indicate a build up of heavy metals but there is no clear indication of what these chemicals and metals are. Concern has been expressed regarding possible cumulative effects of pollution. Already aquatic life forms are showing signs of being adversely affected. The Ladybrand Municipality has also already raised the issue of pollution with authorities in Maseru. The need to develop a landfill site for the disposal of waste from both domestic and industrial sources in Maseru and the rest of the country can therefore not be overemphasised.

Currently the City of Maseru uses a dumping site at Ha-Tsosane within the city limits. This is an open dumping site located within a residential area. There is no management system in place at the site resulting in dumping of all type of waste. The dumpsite is always on fire due to spontaneous combustion. This poses serious hazards to people who live around the site. The site is also located upstream of Maseru City's main water supply reservoir. Leachate from the site poses a threat to this important resource.

Recent investments in the textile industry have created a new source of both solid and liquid waste. Some of the factories will generate up to two tons of liquid and solid waste per day when they are fully operational. This waste needs to be disposed of properly. Already, there is evidence of illegal dumping of sludge from some factories on the outskirts of the City of Maseru. The chemical composition of the sludge is not known therefore the nature of pollutants being discharged into watercourses is not known.

It is with this background that the Lesotho Minister of Environment Tourism and Culture approached the United States Embassy in Maseru with a request for assistance with the development of a landfill site for the proper disposal of waste being generated from the City of Maseru. The author of this report visited Lesotho between May 24 and May 27, 2004 to consult with primary stakeholders on the issue of waste disposal and recommend the possible assistance that the government of the United States could provide to Lesotho towards the development of the Landfill.

## 2.0 Institutional and Legislative Framework

Waste management involves a broad range of stakeholders including communities that generate domestic waste and are usually affected by poor collection and disposal systems, commerce and industry that generate the bulk of the waste, especially in urban settings, and government institutions that develop policies and legislative and institutional frameworks for waste management.

Huge strides have been made in the development of legal and policy instruments for environmental management in Lesotho. The country has acceded to a variety of international conventions and protocols that have been adapted and used to shape national laws. Some of the principal legal and policy instruments that guide waste management processes in Lesotho are detailed in the table below:

**Table 1. Legal and Policy Provisions for Waste Management**

<b>Legal Instrument</b>	<b>Purpose</b>
Local Government-Model Sanitary and Public Health By-Laws 1963 (GN No 45 of 1963)	Provisions for sanitary services to be applied and implemented to secure public health.
Local Administration Act 1969 (GN No 13 of 1996)	Provides for local administration.
Sanitary Services and refuse Removal Regulations 1972 (LN No 36 1972)	Regulate rules for removal of waste from private premises.
Public Health Order 1970 (Order No 12 of 1970)	Provides for dealing with problems from waste disposal on private premises.
The Urban Government Act of 1983 (Act No 3 of 1983)	Establishes local authorities-municipal and urban councils
The Land Act of 1979 (Act No 17 of 1979)	Provides for allocation of leases of land for purposes other than agriculture, including waste disposal and treatment sites outside urban areas.
Town and Country Planning Act 1980 (Act No 11 of 1980)	Provides for and governs the establishment of waste disposal sites.

Source: Adapted from COWMAN: Waste Management in Maseru City Action Plan 2000/1

A major issue that requires attention is the status of implementation of these legal and policy provisions for waste management. There is a general lack of political will to enforce these instruments, hence the widespread pollution that now affects the country.

The majority of the population of Lesotho has up until recently resided in the rural areas, with the City of Maseru being the only major urban centre in the country. Recent trends towards urbanisation have resulted in increased population movements to Maseru and other large centres around the country. This trend has resulted in increased pressures on services such as waste management and disposal. Domestic waste currently lies uncollected forcing residents to illegally dump or burn it, resulting in serious environmental pollution.

Industrial developments have also taken place at a fairly rapid pace, especially following the country gaining access to the United States markets for textiles and apparels under the Africa Growth and Opportunities Act (AGOA). Tremendous growth in industrial activity has been recorded in Lesotho as a result of this development. Maseru has experienced most of this growth although other centres such as Maphutso in the northern district have also attracted investments. At full production levels, the textile industry is set to generate large volumes of both liquid and solid waste that will need to be managed. It was in anticipation of this that the Ministry of Trade and Industry entered into an agreement with investors in this sector committing the Government of Lesotho (GOL) to the development of a Landfill to accommodate projected outflows of waste.

A number of government institutions are responsible for waste management and disposal in Lesotho. These are detailed in Table 2 below:

**Table 2 Institutions responsible for Waste Management in Lesotho**

<b>Institution</b>	<b>Responsibilities</b>
Ministry of Tourism, Environment and Culture (MTEC)	Formulation of national legislation and policies for environmental management. Coordination of environmental programs through national Environment Secretariat (NES).
Ministry of Local Government (MoLG)	Local administration including municipalities, urban and rural district councils that are responsible for collection and disposal of waste. Parent ministry for Maseru City Council which is the executing agency for the landfill project.
Ministry of Development Planning (MDP)	Coordination and consolidation sectoral planning programmes into national plans. Responsible for identification of funding sources for development programs.
Ministry of Natural Resources	Parent Ministry for Department of Water Affairs (DWA) and Water and Sewage Authority (WASA). DWA is responsible for monitoring quantity and quality of surface and groundwater resources and enforcement of regulations. WASA is responsible for supply of water and disposal of wastewater in Maseru and 15 other centres around the country.
Ministry of Health	Promotion of Environmental Health programs.
Ministry of Trade and Industry	Promotion of environmentally sustainable investment in Lesotho. Signed MOU with industry for development of Landfill. Parent Ministry for Lesotho National

	Development Corporation that markets Lesotho as an investment destination and develops infrastructure for industry.
Committee on Waste Management (COWMAN)	Technical advisory services to NES on Waste Management and Pollution Control.

Source: Adapted from: Ministry of Local Government, 2000: Project Proposal for Solid Waste Management in Lesotho/Construction of a Modern Landfill.

Primary responsibility for waste management in Lesotho rests with the Ministry of Local Government. Waste collection and disposal is managed through urban and rural councils established in terms of the Local Government Act of 1969. The National Environment Secretariat (NES) coordinates environmental management services in Lesotho and operates as the nation's environmental watchdog. The Ministry of Natural Resources supervises water resources management while the Ministry of Health is responsible for the promotion of human health.

Although there seems to be an elaborate institutional set up for environmental management and waste management and disposal in Lesotho, the arrangement is fraught with major problems that militate against effective service delivery. The Ministry of Local Government suffers from serious budgetary and staff capacity limitations that have made it difficult for the Ministry to assist responsible local authorities with the implementation of programs. With regards to the development of the landfill for example, the Ministry has been unable to obtain funding from central treasury to pass on to the Maseru City Council over the past two years. Policy development within the Ministry itself is also unclear. The Ministry promulgated the Local Government Act of 1996 that is supposed to spell out the tasks and responsibilities of local level institutions such as development councils and urban councils. The Ministry however still performs tasks that are supposedly reserved for local authorities, pointing to the need for clear separation of roles and responsibilities between the Ministry and these institutions.

In terms of policy, Maseru City Council is responsible for waste management within the City of Maseru limits. The Maseru City Council is therefore ultimately responsible for the development of the proposed Landfill. The council faces a number of institutional problems that make it almost impossible for them to act. These are detailed below:

- There is unclear division of responsibilities between the City Council and the parent Ministry resulting in confusion as to who does what. The identification of a landfill site is a good example where the Ministry has gone ahead and identified a site without involving the Council;
- Inadequate financial base. Maseru City Council operates on budgetary allocations from the Ministry of Local Government. Its own revenue base is limited to rates on property that it is failing to collect. Limited budgetary allocations from the parent Ministry seriously hamper the operations of the council. Their inability to manage and collect waste is as direct result of this. It is therefore unlikely that the City will be able to develop the proposed landfill from their own resources;

- The city suffers from serious capacity constraints, both human and technical, which limit their ability to implement programs.

Although the Ministry of Tourism, Environment and Culture is responsible for coordinating all environmental matters in Lesotho through the NES, their role is strictly advisory as they have no enforcement authority. The current situation where waste is being dumped indiscriminately in and around Maseru points to the ineffectiveness of NES as an environmental watchdog.

The Department of Water Affairs of the Ministry of Natural Resources is concerned with monitoring of water quality and quantity around the country. In pursuance of this, the department has developed an Industrial Wastewater Management Policy and a Framework for Industrial Wastewater Management Policy Implementation Plan. Although these plans have been developed in consultation with other stakeholders, it is not clear what the institutional framework for their implementation is. Local Government was not even aware of these important policy developments. It is therefore doubtful whether these important initiatives will ever be implemented. This is a serious issue given the potential for increased pollution as industry develops.

There are major problems related to financial, human and technical capacity within the institutions responsible for waste management in Lesotho. Another major issue relates to poor coordination of the efforts that are being made to address waste management with some institutions taking unilateral actions to decide on critical matters affecting waste management.

### **3.0 Initiatives Towards Effective Waste Management**

GOL has acknowledged the need for waste management and pollution control over the years and has initiated a number of actions in an effort to address the problem. A number of studies have been commissioned in recent years. These have increased the level of understanding of the nature and extent of the problem of solid waste management in Lesotho. NZA Associates (1987), COWMAN (1999), Mhlanga and Guliati (1997) and Sehlohoholo (1998) all provided information regarding waste types and rates of generation. In addition to these, Khalema and Moteetee (1979), and CSIR (1999) carried out studies on liquid waste highlighting the major sources of waste. The NES has also conducted a series of studies on liquid and hazardous waste in Lesotho.

With specific reference to solid waste management, in 2000 the Ministry of Local Government produced a project proposal for management of solid waste and the construction of a modern landfill in Lesotho for submission to the Danish Cooperation for Environment and Development (DANCED). Although the proposal did not indicate specific sites for the proposed landfill it highlighted the need to establish a new site from the current site at Ha-Tsosane. The proposal was however not funded.

The Committee on Waste Management Task Force produced an Action Plan for Waste Management in Maseru City (Waste Management in Maseru City; Action Plan 2000/01) whose overall objective was: *“to improve the general cleanliness in Lesotho, in particular Maseru City”*. The Action Plan was also intended to provide a framework for the control of illegal dumping of waste; to prevent and control

littering; to provide infrastructure for disposal of human waste; and to provide for proper management of hazardous waste, among other specific objectives. The Action Plan emphasises the need to move to action in waste management if pollution problems affecting the country are to be resolved.

GOL has identified up to seven potential sites for the development of a landfill for Maseru. These sites have been screened to establish their suitability for developing a landfill. The sites initially identified and the results of the screening are detailed in the table below:

**Table 3 Results of Screening of Potential Sites for Landfill**

<b>Potential Site</b>	<b>Screening Results</b>	<b>Distance from Maseru</b>
Ha Tikoe	Unsuitable. Water Table too close to surface.	10km
Ha-Pena Pena	Unsuitable. Too close to river system. Potential flows to international river.	10-15km
Ha-Sofonia	Unsuitable. Proximity to school and in headwaters of river. Long distance for constructing road.	20km
Popa Ha-Maama (Roma)	Potential thermal inversions in winter resulting in localised concentration of pollution. Little scope for expansion should need arise.	36km
Rhote	Potentially suitable site. Problems with bird habitat nearby. Prime agricultural land. Site also close to major north-south trunk route linking Morija, which is fast becoming a major cultural centre, and other districts in the south to Maseru. Local Government considers the site unsuitable.	36-43km
Tsoeneng	Preferred site as there are less conflicts. Only four kilometres from main road and other utilities such as water and electricity.	40-52km

Hlalele	Unsuitable. Close to villages. Area also susceptible to temperature inversions in winter, which could result in serious, localised pollution. Utilities far away and need to build up to five bridges across rivers to get to site.	18km
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Source: Preliminary Assessment of Waste Disposal Sites Report and Field Visit

The two sites that are candidates for the ultimate development of the landfill are Rhote and Tsoeneng. The concerns expressed about proximity of the Rhote site to a major road expressed by Local Government are being contested by NES who feel that this is a more suitable site from a cost perspective. Experience from other countries also indicate that proximity to major trunk roads is not necessarily a constraint as both visual and physical impacts of landfills can be mitigated with proper management systems. Environmental and hydro-geological assessments that still have to be carried out will confirm which site between the two is most suitable. The situation is now clouded however because a political decision to proceed with the development of the Tsoeneng site seems to have been made with Ministry of Government having already compensated families that are set to lose their land with the development of the proposed landfill in the area before these important assessment studies are carried out. This again points to lack of coordination among government entities working on the same issue.

The Maseru City Council is also seeking support from donors for the development of the landfill with potential investors from Italy having shown some interest. Whatever agreement comes out of this will need to be negotiated with the Ministry of Local Government.

In the meantime, the Lesotho National Development Corporation (LNDC) has contracted consultants to investigate possibilities of exporting sludge from textile factories to Bloemfontein in South Africa for processing pending the construction of a landfill in Maseru. This is in response to pressure from industrialists who are asking government to provide a site for them to dump sludge from the factories as provided for in the MOU signed with the Ministry of Trade and Industry.

#### **4.0 Requirements for Landfill Development**

Commendable efforts have been made by GOL in developing a system for waste management. There is however a need to provide an overarching policy and regulatory framework for waste management for the country. Out of this national policy would flow specific policy to guide operations of local authorities such as Maseru City Council that are battling to deal with major waste management problems within their areas of jurisdiction.

Attempts have already been made at developing solid waste and wastewater management policies and action plans. These now need to be integrated into a comprehensive national waste management strategy for the country. This strategy

would indicate specific responsibilities for institutions involved and indicate funding arrangements that would assist in “moving plans to action” as highlighted in the Action Plan for Waste Management in Maseru.

The strategy would also include specific provisions for monitoring solid and liquid waste generation trends, the results of which would be fed back into the strategy. The Department of Water Affairs suffers capacity limitations especially in laboratory equipment needed to test effluent. Properly equipping the department’s water pollution control laboratory to bring it to international standards will allow for accreditation of the laboratory and recognition of the monitoring it carries out. There is also need for coordinated approaches to pollution monitoring among all sectors concerned. These include Water Affairs, Environmental Health, National Environmental Secretariat and Water and Sewage Services. An immediate requirement in this connection is that the Thetsane water treatment works be upgraded to include treatment of industrial waste.

It is clear from the interviews and consultations held that little capacity exists in Lesotho in the development of landfills. Technical assistance in the development of a landfill site for Maseru as well as other growing centres such as Maphutso is urgently required. Both of these should be developed as regional landfill sites to take both industrial and domestic waste.

Cost estimates for the development of a landfill site for Maseru were in the range of M48 million (US\$ 7,5million) two years ago. It is the responsibility of the GOL to ensure that the economic gains being realised from developments in the textile sector are sustainable in the long term. One area of concern is that of environmental security. Negotiations need to be initiated with GOL to encourage them to invest in waste management. The USG however also has a responsibility to ensure that the investments and growth that they have engendered through AGOA do not result in unwarranted environmental and socio-economic impacts in Lesotho.

## **5.0 Recommended Actions for USG**

Political commitment to manage waste has increased in recent years due to the results of accession to AGOA. This commitment needs to be marshalled to good effect. The United State has had extensive experience with the development of anti-pollution policies and legislation. It is recommended that assistance be provided for the development of a comprehensive national waste management policy. Resources at USG entities such as National Environment Protection Agency could be harnessed in this effort.

Assistance also needs to be provided for the development of a national waste management strategy for Lesotho. This would entail providing technical assistance to assist NES come up with the strategy. There are experts in the region that have worked on similar projects who could be drafted to assist GOL with this process.

It was unclear during the consultations whether GOL has adequate capacity to carry out Environmental Impact Assessments on the two sites that are subject of discussion leading to final choice of site for the landfill. Consideration could be given to providing technical assistance to work with staff at NES and other GOL institutions

to carry out the requisite studies. It is important to ensure that, as far as possible, such technical assistance is sourced from the southern African countries where similar projects have been developed. South Africa and Botswana have developed similar projects.

Lesotho has a responsibility develop a landfill. The excuse that has been given for the lack of progress is shortage of funds. It is claimed that Lesotho now enjoys import cover of up to five months as a result of revenues being realised from textiles. Gross revenues from this sector for 2003 stood at an estimated US\$ 200 million. It is not asking too much that some of this revenue be deployed towards ensuring the sustainability of the textile industry into the future. This is particularly important given the pending end of special dispensations under AGOA that will mean that the industry in Lesotho will have to compete with players elsewhere in the world. It is recommended that the USG engage with the GOL to encourage them to invest in the development of the landfill.

## References

1. Ministry of Local Government, 2000: Project Proposal for Solid Waste Management and Construction of a Modern Landfill
2. NES, 2002: Preliminary Assessment of Waste Disposal Sites
3. COWMAN, 2000: Action Plan for Waste Management in Maseru City.
4. Ministry of Natural Resources, 2002: Framework for Industrial Wastewater Management Policy Implementation Plan.
5. Ministry of Natural Resources, 2002: Draft Industrial Wastewater Management Policy.

## **Annex 1. PEOPLE CONSULTED**

### **MINISTRY OF LOCAL GOVERNMENT**

<b>NAME</b>	<b>POSITION</b>
Mr. Masasa	Director of Planning
Mabuti Buti	Commissioner of Lands
Mr. T. Mohlomi	Town Clerk (a.i) Maseru City
Mr. M. Phaila	Chief Planner (a.i) Maseru City
Ms. K. Lethunya	Economic Planner
Mr. M. Monethi	Chief Economic Planner
Mrs. Malane M.P. Green	Physical Planner
Ms. Masetori Makheta	Chief Physical Planner

### **MINISTRY OF ENVIRONMENT, TOURISM AND CULTURE/NES**

<b>NAME</b>	<b>POSITION</b>
Mr. S. M. Damane	Director, National Environment Secretariat
Mrs. Nthabiseng Majara	Principal Land Use Planner
Mr. Thabo Tsasanyane	Senior Env. Officer (Pollution Control)
Ms. Polo Cheti	Assistant Environment Officer
Ms. Matseliso Tsewo	Assistant Environment Officer
Ms. Bernice Khoachele	Principal Environment Officer
Ms. Maihato Rammoko	Environment Officer
Ms. Makhiba Tjela	Principal Env. Officer (Legal)
Mrs. N. J. Malephane	Principal Env Officer (Outreach)
Mrs. L.M. Sekhamane	Senior Env. Officer (Outreach)
Mr. Lira Molapo	Senior Env. Officer (Data)
Ms. R. Sethathi	Environment Officer (EIA)

## **MINISTRY OF DEVELOPMENT PLANNING**

<b>NAME</b>	<b>POSITION</b>
Ms. Anne Rasethuntsa	Senior Economist

## **MINISTRY OF NATURAL RESOURCES**

<b>NAME</b>	<b>POSITION</b>
Mr. M. Mojakisane	Director, Water Affairs
Ms. M. George	Senior Env. Officer (Wetlands)
Mrs. W. Damane	Hydrologist, Water Rights
Mr. E. M. Mokuoane	Senior Engineer, Hydrology
Mr. M. Lesupi	Principal Hydrologist
Mrs. V. M. Mongake	Hydrologist, Water Rights

## **MINISTRY OF TRADE AND INDUSTRY**

Met with Principal Secretary and members of the Industrialisation Committee

## **MEETING AT LESOTHO NATIONAL DEVELOPMENT CORPORATION**

The Chief Executive Officer	
Mr. W. Smith	Lesotho Fancy Knitting
Mr. J. Lin	Formosa Textiles
Mr. Tony Ling	CAM Group