National Strategic Roadmap on Integrated Waste Management

Keep Sierra Leone Clean, Play your Role for Change

Government of the Republic of Sierra Leone
Ministry of Health and Sanitation (MoHS)

August 2014 – Third Draft
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List of Acronyms

INWMSP = Integrated National Waste Management Strategic Plan
INWMP = Integrated National Waste Management Policy
IWM = Integrated Wastes Management
WM = Wastes Management
LW(M) = Liquid Waste (Management)
IW(M) = Industrial Waste (Management)
HHCW(M) = Hazardous Health Care Wastes (Management)
MSW(M) = Municipal Solid Waste (Management)
SWM = Solid Waste Management (incorporating IW, HHCW & MSW)
LC = Local Council
EPA = Environmental Protection Agency
MoHS = Ministry of Health and Sanitation
EHD = Environmental Health Department (Department of Ministry of Health and Sanitation)
MLGRD = Ministry of Local Government and Rural Development
NGO = Non-Governmental Organisation
CBO = Community Based Organisation
PPE = Personal Protective Equipment
1. Introduction

This National Strategic “Roadmap” on Integrated Waste Management has been developed to provide a consolidated and user-friendly version of the original Ministry of Health and Sanitation - Integrated National Waste Management Strategic Plan (INWMSP) 2012-2016.

The objective of this strategic roadmap is to follow on from the overarching sector policies identified in the National Policy Roadmap on Integrated Waste Management to identify strategic steps that mobilize stakeholders, people and resources towards the intended goal.

This includes information on strengthening the client function to plan, manage and monitor the management system and enable sustainable private sector participation in delivering services.

This strategic roadmap covers issues relating to:

- Hazardous Healthcare Waste Management (HHWM);
- Municipal Solid Waste Management (MSWM);
- Industrial Waste Management (IWM); and
- Liquid Waste Management (LWM)

It should be read in conjunction with the Policy Roadmap and other initiatives which articulate how the goals and objectives identified within this document are to be achieved.

This Strategic Roadmap has been produced with technical support from the Resources & Waste Advisory Group, and with funding from UK Aid.

1.1. Background

The waste management situation in Sierra Leone is close to crisis level with the management of Hazardous Health Care Waste (HHCW) and Liquid (Sanitary) Wastes, posing the greatest challenges to public health and the environment due to the risk of disease transmission.

For health workers, community members in cities and towns, household members, industrial workers, and other vulnerable groups, ill health due to poor waste management is not only a personal tragedy but also an economic burden that reinforces poverty nationally.

Waste issues fundamentally affect individual productivity (in businesses, homes, in health institutions and industrial facilities) and is therefore the proper management of all wastes is a critical input for long-term development of the country. However the provision of services is currently plagued by inefficiencies and scarce government resources.

The issues surrounding the need to improve the waste management sector in Sierra Leone are not new. In 2008 UNDP identified several issues that remain to be addressed, including indiscriminate disposal of waste (solid waste, liquid waste, industrial waste and healthcare waste); lack of disposal equipment and technologies; insufficient waste collection containers; lack of public awareness and
understanding of wastes and its management; lack of data and information on the waste characteristics and generation rate; and lack of systematic management systems.

In response to the increasing challenges within the waste management sector, the Ministry of Health and Sanitation launched the “Keep Sierra Leone Clean, Play your Role for Change” initiative and produced the Integrated National Waste Management Policy (INWMP) and Integrated National Waste Management Strategic Plan (INWMSP) 2012 - 2016.

The INWMSP provides the framework that guides the efforts of the MoHS and its partners in the wastes and resources management sector in attaining the goals identified in the GoSL Poverty Reduction Strategy Paper (PRSP) “The Agenda for Prosperity”.

It reflects the Ministry’s fundamental belief that waste management and sanitation is a measure of human health and poverty. The Government of Sierra Leone has the goal to assure waste management services become accessible to all Sierra Leoneans. The priority is to improve waste management with the aim of progressively moving towards universal service coverage, reducing the burden of communicable diseases and creating new businesses and jobs.

1.2. Target Audience

The target audience for this roadmap are municipal mayors, their senior teams and Environmental and Social units, the MoHS, Environmental Protection Agency, the Ministry of Local Government and Rural Development, and SALWACO.

This document will be of direct importance/interest for ministerial level and potential development partners, and practitioners on the ground (including waste managers, municipal officials, public, CBOs, NGOs, etc.).
2. Strengthening Strategic Pillars

The National Integrated Waste Management Strategic Plan is developed around strengthening of six key pillars, namely:

1. Leadership and governance
2. Service delivery
3. Human resources
4. Equipment and technologies
5. Financing; and
6. Information systems

A series of activities, grouped under each of these strategic pillars, aim to deliver on the promise of a new waste management system for Sierra Leone. A series of actions required under each activity are grouped according to implementation timeline priority.

**Pillar 1: Leadership and governance**

**Strategic objective:** Develop the government (National (MoHS, EPA, MLGRD) and local (LC, EPA, MoHS)) core competences in integrated waste management

This objective shall be achieved through strengthening the policy-making and regulatory functions of government so that development effectively balances economic, financial and social considerations.

The Ministry of Health and Sanitation (MoHS) shall collaborate with the Environmental Protection Agency (EPA) to establish and chair a National Waste Management Working Group (NWMWG) - that may in time evolve to become a specific inter-disciplinary department focused on governing waste management. The NWMWG will be staffed and/or advised by professionals from all stakeholder groups (NGOs, donors, private sector, etc.) in the sector and will:

**Immediate-term (1 – 12 months)**

- Support rolling out and monitoring uptake of the national integrated waste management policy and strategy;
- Drive national level coordination of public, private and donor initiatives on waste management in the country.
- Support and drive the expansion and implementation of the Expanded Sanitary Inspection and Compliance (ESICOME) programme and associated Public Health aides’ sanitary enforcement mandate.
- Create a task force for HHCW management to review and enhance capacities among health care institutions

**Medium-term (1 – 2 years)**

- Promote the development of the resources and capacities of the waste management sector, including coordinating stakeholder waste management initiatives, promoting collaborations to achieve economies of scale (e.g. linking individual recycling initiatives etc.) and encouraging private sector investment.
- Prepare a financing plan, secure and allocate sufficient budget and investment to kick-start programs to implement policy and strategic priorities.
- Develop a set of benchmarking indicators in order to measure progress in implementing integrated waste management services – including municipal waste, hazardous healthcare waste (HHCW), liquid sanitary waste and industrial waste.
- Incorporate sector policy measures into law, in order to underpin and support the development of the sector, in particular establishing a legal requirement for local (including regional) authorities to prepare waste management plans.

**Longer-term (2 – 5 years)**

- Establish and maintain a national program for providing planning assistance, technical assistance, and financial assistance to local governments for municipal solid waste management.
- Continuously update and refine policy principles, objectives and/or targets, as well as the means through which they will be implemented, monitored and enforced.
- Coordinate the sector to strengthen institutional capabilities and open up development potentials within the waste management sector.
- Compile a national information system that collects, analysis and disseminates waste sector data and information.
- Enable flexibility in arrangements at the local level, including establishing an enabling national framework for private sector participation in waste management services delivery.

Local authorities shall:

**Immediate-term**

- Introducing service performance specifications, and service performance monitoring (building upon the work of the ESICOME programme), regardless of whether services are carried out by the local authority or by the private sector.

**Medium-term**

- Establish a legal framework for the functioning of the system (develop and enact appropriate bye-laws) incorporating and further legitimising the work Public Health aides in sanitary enforcement.
- Encourage and oversee private sector participation in the delivery of front-line waste management services.

**Longer-term**

- Centralise waste management, monitoring and planning functions into one specialised department of the local council.
Pillar 2: Service delivery

Local Councils shall prepare and implement waste management plans specifying how services shall be delivered along the entire management chain (see box 1).

Immediate-term

- Focus resources on providing a basic minimum reliable and affordable service to the greatest population possible.
- Focus on strengthening the waste management infrastructure in reverse of material flow. For example, ensure that there is an authorised, functional well-managed final disposal site, the use of which can be enforced before investing efforts in improving transport, providing additional skips for waste or enforcement personnel. This will ensure that there is always an authorised location for each actor in the waste management chain to take waste too. This enables monitoring and enforcement of an established system to take place.
- Support and expand the Expanded Sanitary Inspection and Compliance (ESICOME) programme and associated Public Health aides.

Medium-term

- Coordinate with local communities through local WM Committees and Public Health aides to provide community bins at appropriate locations and ensure the provision of a regular and reliable waste collection service to remove the waste from these locations.
- Encourage community organisations to play a formal role in monitoring and overseeing waste management service delivery through collaborations with the ESICOME programme.
- Empower community based and private sector participation in waste management service delivery. CBOs, NGOs, informal sector and other private sector shall be encouraged to enter into the waste management service sector. Service providers shall compete for contracts/licenses for waste collection (primary and/or secondary), recycling, and street sweeping services through open and transparent bidding processes. Contracts shall be performance based with clear enforcement mechanisms engaging the likes of the Public Health aides of the ESICOME program. Contracts will be awarded with a clearly defined, enforced and regular re-tendering schedule.

Longer-term

- Promote waste segregation and waste recycling in conjunction with emphasising market-based incentives and market development for recycled products.
- Develop segregation, storage collection and transportation procedures and systems for hazardous healthcare waste (HHCW) from all sources including: hospitals, health care centres, individual doctors, dentists and veterinary clinics. It is unlikely that small generators, such as clinics and GPs will be able to provide suitable final disposal options such as steam-sterilization or incineration. Therefore, systems shall be developed whereby HHCW from small generators is regularly transported to disposal facilities within a central location, such as a main hospital. A fee shall be charged by the central facility for the use of this final disposal service – thus enabling the benefits of economy of scale to encourage investment in improved central treatment technologies along with reliable management of one facility over many.
Box 1: Illustrative waste management chain components

Reduce, Reuse, Recycle, Recover

R1: Bio-solids recovery and composting toilets at point of use/waste generation
R2: Recovery / composting at household level  
R3: Recovery / recycling at community level  
R4: Recovery / recycling at district level  
R5: Recovery / recycling at city or regional level

Liquid and Municipal Solid Waste

1. Sewage collection by sewerage pipe or suction tanker with removal to effluent treatment plant.
2. Direct collection with direct haul to final treatment (R3) or disposal site.
3. Direct collection to transport to transfer station or intermediary treatment (R2).
4. Block collection - Producer takes waste to mobile collection worker who transfers it to static community container, R1, transfer station or R2.
5. Communal bin collection - Producer takes waste directly to static community container, R1 or transfer station.
6. Door-to-door collection by handcart, tricycle or small vehicle to static community container, R1 or transfer station – ideal for densely populated areas with limited vehicle access.
7. Secondary collection – waste collected from community container site and taken to transfer station or intermediary treatment (R2) – connects from options 3, 4 and 5.
8. Secondary collection – waste collected from community container site and taken directly to final treatment (R3) or disposal - connects from options 3, 4 and 5 when large containers, trailers or vehicles are used at communal bin site for secondary collection.

Hazardous Waste Management

9. Hazardous waste must be separated from the municipal waste stream at point of production.
10. If no capacity exists to treat hazardous wastes effectively and efficiently on-site, employ a dedicated vehicle to remove it from generating facility for treatment at centralised facility.
11. Ensure treated and inactive waste residues from the treatment of hazardous wastes (i.e. autoclaved and macerated materials) are disposed of at an authorised landfill facility.
Any of the components in the waste management service chain presented in Box 1 can be undertaken by the public (Local Council directly) or by the private sector (including CBOs, informal sector, NGOs, private individuals, companies etc.). Section 3 of this Roadmap provides an action plan for delegating the delivery of front-line services.

**Pillar 3: Human resources for waste management**

Government and other stakeholders shall invest in the professional capacity of staff within all institutions at all levels.

The waste management sector requires people with technical, scientific, economic, logistical, organisational, marketing, legal, diplomatic and communication skills. It is an important professional sector of the economy which is yet to be developed.

- **Immediate-term**
  - The MoHS will create a competency matrix for all Local Council staff positions to identify existing skill sets and support professional training.

- **Medium-term**
  - Establish exchange and networking programs with other municipalities, both domestic and international, through the National Wastes Management Working Group (NWMWG).
  - Encourage CBOs and the informal sector to establish cooperatives and associations to represent collective interests, access networking in knowledge development and information sharing.

- **Longer-term**
  - Promote business management skills and training for the private sector (micro enterprises service providers, community/youth groups, banks/financing institutions etc.) by establishing business incubators with assistance from the local banking sector, chamber of commerce, local business associations and universities.

**Pillar 4: Waste management equipment and technologies**

1. Urgent action must be taken to ensure hazardous waste is separated at source, contained in appropriate containers, and adequately and safely handled, managed, treated and disposed of.

- **Immediate-term**
  - Train health care personnel and other hazardous waste producers on the risks associated with their waste products along with the correct procedures for the safe segregation, storage, transportation, treatment and final disposal.
  - Evaluate and promote the most appropriate options for safe storage, collection, transport and final disposal of hazardous waste.
**Longer-term**

- Determine and compare costs and performance of technologies for the safe disposal of hazardous waste – in the case of HHCW steam sterilization/autoclaving should be evaluated as an option to incineration – the latter of which frequently causes serious problems with smoke generation and the generation of hazardous ash. Hospitals should ideally have their own dedicated disposal infrastructure on-site to minimise risks associated with transportation and handling of large quantities of HHCW. Small generators of HHCW shall regularly transport their waste to the local central facility within the local hospital and shall pay an agreed fee for this service.

2. Encourage private investment in waste collection, recycling and recovery equipment and technologies.

**Immediate to Medium-term**

- Open the market to private sector participation in the waste management service through the development and rigorous implementation of open, transparent and accountable bid processes.
- Encourage existing associations, and promote the establishment of new associations, to offer waste management services and to invest in appropriate equipment and technologies to collect and treat wastes.

**Longer-term**

- Establishing ‘WASH business incubators’ could ensure the resources (e.g. information; guidance; seed-funding; tendering, bidding, and contracting assistance; improved / streamlined access to markets; marketing assistance; business management training; facility and materials; etc.) are made available to fledgling businesses willing to operate in the sector.

3. Upgrade and/or close existing disposal sites.

**Immediate-term**

- Identify and map (with GPS coordinates) all existing disposal sites (both legal and illegal).
- Introduce a simple system of recording waste streams entering the site – including, on a daily basis: type and volume of waste, source, vehicle registration, date and time.
- Identify, cost and review closure/remediation requirements to minimise public health and environmental risks caused by these sites.
- Decide on which ‘strategic landfill sites’ shall continue to operate, and which others shall be closed. In deciding upon such, take into consideration distance from waste producers (distance should be less than 10km from main waste producers with well maintained road access to limit fuel and vehicle maintenance costs and vehicle operating times. Consider use of transfer stations if no appropriate site can be found.

**Medium-term**

- Upgrade the operations at strategic landfill sites to comply with minimum requirements and permanently close all other sites.
Where appropriate, design and implement a collection/transfer point at closed dumpsites – possibly by placing large community containers at their entrances.

**Longer-term**

- Establish a waste transfer ticketing system for delivering waste to the official landfill whereby waste haulers only receive payment based on landfill waste acceptance receipts.
- Define, monitor and implement a penalty system for those citizens who persist with the illegal dumping of wastes.

**Pillar 5: Waste management financing**

**Immediate-term**

1. Local governments and national agencies shall determine the full cost of providing storage, collection, transport, separation, treatment, recycling, and disposal of waste in an environmentally safe manner, and issue guidance on financial sustainability;

**Medium-term**

2. Develop a costs database related to the operation of the waste management system.
   - Record and forecast the costs related to the waste management system
   - Design a control system to monitor the expenditures related to the waste management system – and to provide a comparison for expenditure against budget to identify areas of “over-spend” in a timely fashion.

**Longer-term**

3. Develop a sustainable, efficient, effective financial system that guarantees the functioning of the solid waste management system.
   - Work with local CBOs and Private Sector to establish a differentiated fee/tariff system for different waste streams based on the “Polluter Pays Principle”
   - Improve the tariff/fee collection system through innovative solutions (e.g. linking waste fees to utility bills such as electricity and/or water).
   - Establish and implement a financial management plan for the operation of the present and future waste management system

4. Engage the local/national financial sector in solid waste services.
   - Establish a micro-finance facility (Waste Venture type, e.g. co-loans, seed funding, guarantee funds, subsides and alike).
   - Rationalise contractual modalities that would support regular loan payments such as contract durations, specifications, and payment guarantees etc.).

**Pillar 6: Waste management information systems**

**Immediate-term**

- Key government agencies shall seek to pool/harmonize their financial and human resources to deliver clear, coordinated messages to the public utilizing all communication tools available
(television, radio, printed press, internet etc.) to raise the existing level of public education and awareness.

**Medium-term**

- Promote the education of the general public and the training of municipal solid waste professionals to ensure that all parties understand their responsibilities and roles; to reduce the generation of solid waste and ensure appropriate handling, treatment and disposal of all waste streams.
- Raise the general level of awareness of the tangible links between poor sanitation and ill-health and the costs associated with medical treatment, inability to work as compared to payment for basic waste services.

### 3. Roadmap Action Plan

The tasks associated with improving waste management services in Sierra Leone are enormous and require time and resources (physical, financial and intellectual).

No single stakeholder can achieve this task in isolation and must instead collaborate with other sector stakeholders to identify the critical priorities, implement strategies and start the chain of events that will eventually lead to reaching the desired goals.

The overall strategy to meet the sector goals is to progressively implement change. As illustrated in figure 1, this starts by identifying and prioritising quick initial investments in the core components of the waste management chain that to establish a basic level of service.

If there is a system in place, and all stakeholders are informed, knowledgeable and participate in that system, then enforcement of authorised activities is made easier which in turn can lead to rapid improvement in services.

![Figure 1: Big picture waste management services sector improvement strategy](image-url)
The following strategic actions are designed to guide intervention within this overall strategy. Each action should be implemented with due regard for applying the sector policies as presented in the National Policy Roadmap on Integrated Solid (SWM) and Liquid (LWM) Waste Management.

**Strategic Action 1: Develop and execute a local initial action plan to establish a basic level of service.**

1. Authorise a single disposal site (controlled dumpsite / landfill) for solid waste and a single wastewater reception zone for faecal sludge wastes.
2. Provide resources to ensure the disposal site is controlled/managed and is not a wild dumpsite.
3. Ensure waste collection vehicles are fixed, functioning and maintained, and designate vehicles to specific routes and collection schedules.
4. For SWM, decide where community bins and waste collection/transfer points shall be located - focus on select communities (those in highest need) first, thus stimulating demand in others.
5. For LWM, actively enforce standards on conservancy tanks and their emptying as well as promoting proven alternatives to conventional flush toilets (e.g. composting toilets, etc.).
6. For SWM, know and communicate where community composting, recovered material markets, and recycling centres are/or shall be located.
7. For HWM, know what hazardous wastes are, how they must be handled, segregated, stored and transported, and how and where they must be disposed of.
8. Keep itemised records of all service activities costs.
9. Establish minimum service standards on how waste collection operators and toilet facility operators (public or private) must provide services.
10. Enable the private sector (including the informal sector) to participate in service delivery (solid waste collection, leasing of bins and toilet facilities, management of waste treatment and toilet facilities, etc.). Utilise the minimum service standards to draft contracts and monitor and enforce in-house (public sector) and private sector operator activities.

Once this basic service plan is established and the waste management chain components are in place (see example in Figure 2), it must be effectively communicated to the public. This shall involve training staff, communities and enforcement officers on the desired service arrangements, roles and responsibilities. T

This strategy does not require heavy investment; rather it seeks to mobilise existing assets through organisation, authorisation, education, enforcement and stakeholder acceptance and participation.

Keep the process simple and highly visible. The more complex it is the more education on the system is required (which is costly) and the less people understand it, the less they will use it.
Strategic Action 2: Raise and popularise demand for services

Once a basic level of service is established, it is essential to sustain it and enforce it in order to stimulate demand for system improvements and trust in improvements being possible.

1. Develop and implement a public and stakeholder communications strategy to popularise the knowledge in what the waste management system components are, engage public health aides in this process.

2. Empower Chiefdom and community/neighbourhood organisations with the knowledge on how the system operates, how much it costs to provide and the benefits (reduced health risks etc.).

3. Empower these groups to provide monitoring with defined and functioning feedback loops (complaints and recommendations service) to the local council and service providers.

4. Sensitise the population to pay for service from the start, even if a subsidised fee is introduced to begin with, ensure that service recipients always appreciate that this is a service that they are required to pay for.

5. Utilise word of mouth as a key communications strategy by motivating people to talk about the system through establishing events and activities around the service provision.

Strategic Action 3: Establish Cost Recovery

1. In order to recover costs, the cost of operating the system must first be known. Ensure that all costs required delivering the waste management system and the costs for future improvements are identified and factored in. Establish and implement a financial management plan for the operation of the present and future waste management system.
2. Engage the local financial sector in solid waste services – to try to facilitate access to funds (e.g. micro-loans) for local businesses and entrepreneurs.
3. Work with local CBOs and Private Sector to establish a differentiated fee/tariff system for different waste streams based on a “Polluter Pays Principle”
4. Improve the tariff/fee collection system through innovative solutions (e.g. linking waste fees to utility fees such as electricity and/or water bills).
5. Consider other fee collection approaches, such as allowing private contractors to collect fees directly from households without needing funds to pass to the local authority / SALWACO first or allowing private sector to lease toilet facilities to communities directly.
6. Develop a transparent registration system of the costs related to the operation of the waste management system.

**Strategic Action 4: Utilise collected revenues to continually improve services.**

1. Utilise revenues received by the government to continually increase and improve the geographical extent and quality of waste services.
2. Establish a micro-finance product (Waste Venture type, e.g. co-loans, seed funding, guarantee funds, subsides and alike), with guarantees based on improved revenue records, to provide the sector with capital to invest in equipment to improve services.

**Additional core requirements:**

1. Maintain openness and fairness between stakeholders and balance representation from different stakeholder groups in all decisions and activities.
2. Make working in the sector attractive to both public servants and private enterprises through awards (i.e. the Sierra Leone Environmental Excellence Awards program) and incentive schemes (e.g. provide free health care to waste sector employees etc.).
4. Stakeholder Roadmap

<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Initial Investment to establish services to a basic level</th>
<th>Strategies for continuous service improvements</th>
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</table>
| MoHS (EHD)  | 1. Establish a core policy making team, staffed and/or advised by professionals in the sector.  
2. Chair and coordinate the National Wastes Management Working Group (NWMWG)  
3. Develop and disseminate technical guidelines and standards on wastes and resources management.  
4. Provide the Terms of Reference for engaging competent consultants or educational institutions (i.e. Njala University) to provide technical expertise and training on WM to key stakeholders | 1. Ensure sufficient funding is available for investment in waste management equipment and supporting practices.  
2. Develop, expedite approval and disseminate national regulations and legislation for WM  
3. Enhance the legal framework on WM  
4. Execute control and monitoring activities including establishing benchmark indicators that will be used to measure the efficiency and effectiveness of the WM system  
5. Collect, compile and publish statistics on national WM activities and trends |
| MoHS - District Health Management Teams | 1. In cooperation with the local councils, coordinate the establishment and functioning of a local WM working group along with the provision of training for participants. Implement this by building upon the ESICOME programme. | 1. Monitor and regulate WM in Local Council jurisdictions – initiating corrective measures where necessary, including prosecution of offending parties.  
2. Collect, compile and publish statistics on local WM – including the monthly publication of a “name and shame” list of offending institutions. |
| EPA | 1. Cooperate with Local Councils and other stakeholders to identify and confirm suitable locations for authorised waste management facilities.  
2. In cooperation with Local Councils and MoHS EHD, Map and register all unauthorised waste contaminated sites and develop closure and remediation plans.  
3. Ensure facility operators understand their legal requirements and receive appropriate facility operating permits in a timely manner and that all conditions are complied with. | 1. Regularly monitor and regulate all waste facilities/companies  
2. Investigate a regional IWM approach of robust centralised treatment technology for use by a number of health facilities.  
4. Ensure that the advantages of steam-sterilization (autoclaving) as compared to incineration are factored in when evaluating final disposal options for HHCW.  
5. Use legal mandate to close and eliminate illegal / inappropriate waste dump sites.  
3. Promote waste hierarchy |
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<tr>
<th><strong>MLGRD and DecSec</strong>&lt;br&gt;(Decentralisation secretariat)</th>
<th><strong>Local Councils</strong>&lt;br&gt;(incl. FCC)</th>
<th><strong>SALWACO</strong></th>
<th><strong>Health Facilities</strong>&lt;br&gt;(Waste Generators)</th>
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<tr>
<td>1. Enact, in cooperation with the Attorney General, certification of bye-laws submitted by local councils on waste management</td>
<td>1. Develop and execute a local initial investment plan to establish a basic level of service for all waste streams. 2. Create local Bye-laws on appropriate WM (including HHCWM) and submit to MLGRD with follow-up. 3. Ensure HHCW is treated appropriately and does not enter the MSW stream 4. Participate in training, monitoring and evaluation of WM services for all waste streams 5. Street sweeping and waste collection services to be overseen and administered by city/municipal councils. 6. Promote appropriate health and safety practices – including the provision and use of personal protective equipment (PPE) to all sanitation workers, whether engaged by the public or private sector, in conjunction with bi-annual health check-ups and inoculations. 7. Waste treatment and disposal services, demand more of a district councils or inter-municipal approach - place under the administrative control of district councils.</td>
<td>1. Actively promote the adoption of - and disseminate experience from pilot projects using – proven alternatives to conventional flush toilets, including composting and similar waterless toilets. 2. Where mandated by local councils to provide services, develop local plans and educate staff on standards and local practices for the management of liquid wastes.</td>
<td>3. Identify one senior member of the management team as being ultimately responsible for all waste management issues within the facility, and communicate, and reinforce, the fact. 4. Allocate appropriate funding and staff for wastes management</td>
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<td>3. Identify and establish self-sustaining cost recovery mechanisms – applying the “polluter pays principle”. 4. Develop and implement technical guidelines and procedures for HHCWM (including waste avoidance strategies) and clearly</td>
</tr>
<tr>
<td></td>
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<td>1. Establish, chair and coordinate local WM &amp; HHCW working groups 2. Assume the client function and engage appropriate operators with specifically defined and enforceable operating standards to deliver appropriate WM 3. Routinely check whether the day-to-day operations are being carried out in accordance with the required specifications. Specifically, whether the streets are being cleaned, whether waste is collected as the agreed frequency, and whether operational management standards are adhered to. 4. Build upon the ESICOME sanitary enforcement initiatives to establish contract-monitoring units within the local authority, or contract out the day-to-day monitoring activities to an independent organisation (NGO, CBO, ESCIMOME or equivalent).</td>
<td>1. Where mandated by local councils to provide services, identify capital financing for procurement of community/household toilet solutions and provide to population on a lease/“pay as you go” financing solution to enable long-term use at reasonable cost. 2. Educate and sensitise population on liquid waste issues.</td>
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5. In conjunction with appropriate signage, provide proper containers at strategic locations to separately collect: Hazardous Sharps Waste; Hazardous Waste; Municipal Waste (recyclables and residuals)
6. Ensure HHCW is kept separate from MSW and dealt with in an appropriate manner immediately
7. Train all facility staff on proper handling and segregation of waste materials
8. Ensure waste collection staff (whether outsourced or in-house) are trained on safe and appropriate handling practices for all segregated waste streams
9. Assume the client function and engage appropriate operators with defined and enforceable operating standards to deliver appropriate HHCWM services

**Private Sector**

1. Secure the initiative, training and funding to invest in and establish dedicated WM infrastructure (collection and/or treatment, disposal services)
2. Contract with the LC or waste generators directly to establish and maintain appropriate WM management infrastructure
3. Contract with health facilities to establish and maintain appropriate HHCW management infrastructure
4. Engage with the client to understand needs and required service standards

**NGOs & CBOs**

1. Work with Local Councils, EPA, health facilities and other stakeholders to monitor services and to inform, educate stakeholders on WM issues
2. Secure the initiative, training and funding to assist establish dedicated MSW and HHCW collection and/or treatment service

**NGOs & CBOs**

1. Act, in collaboration with Public Health aids and the ESICOME program, as independent oversight monitors and community regulators on WM practices
2. Sustain information and education initiatives to sensitize communities to the public health and environmental impacts of poor waste management
3. Assist in establishing “Wash Business Incubators” or similar initiatives to train and equip local businesses and entrepreneurs; support capacity development of the council;
<table>
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<tr>
<th><strong>Sierra Leone Police</strong></th>
<th>Educate the public; and help formalise the informal sector (e.g. waste picker associations etc.)</th>
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<tr>
<td>1. Understand, and where appropriate assist with the Public Health aides and ESICOME programme in implementation of, HHCW and MSW management standards, authorised practices, and enforcement tools (local bye-laws, licencing procedures, education sources, etc.).</td>
<td>1. Work with sector regulators to enforce standards and punish illegal actions.</td>
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<tr>
<td>2. Establish training program for police personnel on these issues.</td>
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<td>3. Engage with the judiciary to ensure that contraventions of appropriate bye-laws receive appropriate levels of support and prioritisation.</td>
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<tr>
<th><strong>Banks and Financing Institutions</strong></th>
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<tbody>
<tr>
<td>1. Support private initiatives and partnerships in WM with micro-financing and banking to assist establish initial operations and infrastructure development.</td>
<td>1. Continue to support private sector growth with business planning and development advice</td>
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<tr>
<td>2. Work with other stakeholders in the client role to develop appropriate contract documents paying specific attention to matters such as contract duration, payment terms and frequency, financial guarantees etc.</td>
<td>2. Study the sector and identify opportunities for investment</td>
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<th><strong>International Development Partners</strong></th>
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<tr>
<td>1. Work with key stakeholders, including Ministries, Local Councils, large health facilities to rapidly establish appropriate services without distorting the market for successful private sector participation</td>
<td>1. Continue to fund education and studies on HHCWM</td>
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<td>2. Provide appropriate training and education programs to stakeholders</td>
<td>2. Publish statistics on MSW, LW, IW &amp; HHCWM activities and trends</td>
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<td>3. Promote participation of the private sector in service delivery. Support initiatives for raising capacity of the private sector through training workshops on: identifying operational costs; completing bid documents; fleet and vehicle maintenance; access to and management of funding; Health and safety; etc.</td>
<td>3. Supply technical expertise to improve IWM strategies and activities</td>
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<td>4. Provide seed funding to NGOs / Private sector to establish waste management services.</td>
<td>4. Assist in funding sector needs assessments; development of waste management plans; trainings; and infrastructure for waste management</td>
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<tr>
<td>Informal sector</td>
<td>Universities:</td>
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<td>5. Ensure that the advantages of steam-sterilization (autoclaving) are factored into the decision making process when evaluating final disposal options for HHCW.</td>
<td>1. Organise into associations capable of providing specific services to health facilities.</td>
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<td></td>
<td>1. To be educated about the dangers and prohibited from picking through HHCW materials</td>
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<td></td>
<td>2. Utilised to collect and recover recyclable MSW materials</td>
</tr>
<tr>
<td></td>
<td>3. Link with NGOs / Private Sector / Chamber of Commerce to identify, develop and realise the business opportunities associated with waste and it’s management.</td>
</tr>
<tr>
<td>related management of waste and protection of public health and environment.</td>
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NATIONAL STRATEGIC ROADMAP ON INTEGRATED WASTE MANAGEMENT
Government of the Republic of Sierra Leone
Ministry of Health and Sanitation (MoHS)

"Keep Sierra Leone Clean. Play your role for change."

STRATEGIC ACTION: Develop and execute a local initial investment plan to establish a basic level of service.

Step 1:
Authorise a single disposal site (controlled dumpsite/landfill) - and publicise its location.

Step 2:
Provide resources to improve the site and ensure the disposal site is controlled and is not a dumpsite.

Step 3:
Ensure all vehicles are properly maintained and operated, including designating vehicles to specific routes and times - and publicise this information.

Step 4:
Establish where community bins and waste transfer points will be located, ensure their collection - and publicise it.

Step 5:
Know where community composting, recovered material markets, and recycling centres can be located - and publicise it.

Step 6:
Know what hazardous wastes are, how they must be handled, stored and transported, and where they must be disposed off – and publicise it.

Step 7:
Keep itemised records of all service activities costs - and publicise it.

Step 8:
Establish benchmark indicators and minimum service standards on how waste collection operators must provide services - and publicise them.

Step 9:
Enable the private sector (including the informal sector) to participate in service delivery. Utilise the minimum service standards to draft contracts and monitor and enforce in-house (public sector) and private sector operator activities.