FEDERAL GOVERNMENT OF SOMALIA

MINISTRY OF LABOUR AND SOCIAL AFFAIRS

Template Medical Waste Management

DECEMBER 2025

1.0 Introduction

The BOOST-YOU Project will implement activities in social protection and youth employment, which include components related to health and social service delivery. Health facilities engaged in these interventions are expected to generate medical and hazardous waste, including but not limited to sharps, syringes, contaminated personal protective equipment (PPE), and expired or unused pharmaceuticals.

Improper management of medical waste can pose significant risks to public health, worker safety, and the environment, including the transmission of infectious diseases, needle-stick injuries, chemical exposure, and contamination of air, soil, and water. In line with the World Bank Environmental and Social Framework (ESF), particularly **Environmental and Social Standard 3 (ESS3): Resource Efficiency and Pollution Prevention and Management**, and in accordance with **World Health Organization (WHO) guidelines** and national regulations, this Medical Waste Management Plan (MWMP) provides a comprehensive framework for the safe segregation, collection, storage, transport, treatment, and disposal of medical waste.

The MWMP aims to:

This plan serves as a mandatory reference for all project stakeholders involved in the generation, handling, or disposal of medical waste under the BOOST-YOU Project, ensuring that health and environmental risks are effectively managed in accordance with the World Bank ESF.

1. Minimize risks to project workers, health facility staff, patients, and surrounding communities.
2. Ensure compliance with relevant national laws and regulations regarding medical waste management.
3. Promote environmentally sound and resource-efficient practices in the handling of both hazardous and non-hazardous medical waste.
4. Integrate monitoring, reporting, and capacity-building measures to strengthen medical waste management throughout the project lifecycle.

Objectives of the MWMP

The primary objectives of this Medical Waste Management Plan (MWMP) are to:

1. **Ensure safe management of medical waste** – Cover all stages including segregation, collection, storage, transportation, treatment, and final disposal of both hazardous and non-hazardous medical waste in compliance with national regulations and international best practices.
2. **Protect health and safety** – Prevent and minimize occupational exposure and associated health risks for healthcare workers, patients, waste handlers, and community members.
3. **Achieve compliance with regulatory and ESF requirements** – Align medical waste management practices with national legislation, World Bank Environmental and Social Framework (ESS3: Resource Efficiency and Pollution Prevention and Management)**,** and relevant WHO guidelines.

4. **Clarify roles and responsibilities** – Define clear responsibilities at all levels of project implementation for effective planning, execution, and supervision of medical waste management activities.
5. **Facilitate monitoring and reporting** – Develop a standardized Waste Management Monitoring Form to systematically track and document waste types, quantities, handling procedures, disposal methods, and safety measures. This tool will:
    - Support coordination with municipal and regional waste management authorities.
    - Ensure compliance with environmental health standards.
    - Contribute to broader public health and sanitation initiatives led by the Federal Member States and Benadir Regional Administration.

Types of Waste

Type of waste	Examples/Descriptions
Sharps	cutting or puncturing, such as needles, scalpels, blades, knives, infusion sets, and broken glass.
Microorganisms	Any living or non-living biological entities capable of replication or transferring genetic material
Infectious Waste	materials suspected to contain disease-causing microorganisms, such as used swabs and tissues, items contaminated with blood or body fluids, tubing, catheters, live or weakened vaccines, and soiled bandages or plasters from infected patients.
Genotoxic Waste	Waste that contains substances harmful to genetic material, including cytotoxic drugs and other genotoxic chemicals
Pharmaceutical Waste	expired, unused, or contaminated medicines and their packaging materials, such as bottles, vials, and boxes.
Waste containing heavy metals	Includes batteries, broken thermometers, blood pressure gauges, and other items containing heavy metals like mercury.
Pressurized Containers	Gas cylinders, cartridges, and aerosol cans that contain pressurized gases.
General Solid Waste	Ordinary waste produced from offices, kitchens, and storage areas, such as packaging materials and paper
Liquid Waste	Contaminated liquid waste from laboratories, dialysis, or medical procedures. Examples: blood, urine, body fluids, laboratory effluents.

2.0 Waste Management Plan

Waste Minimization, Reuse, and Recycling

To minimize waste generation, healthcare facilities shall implement procedures that reduce waste while maintaining high standards of patient safety and hygiene, in line with **World Bank ESS3** and **WHO guidance**. Key measures include:

- **Procurement and product selection:** Choose products with minimal packaging, prioritize suppliers that accept returnable containers, and select reusable equipment (e.g., washable tableware instead of disposables).
- **Safe reuse:** Encourage reuse of equipment wherever safe, after proper sterilization and disinfection, to reduce the need for new materials.
- **Environmentally safer alternatives:** Purchase mercury-free devices (thermometers, BP gauges), safe injection or blood sampling systems with auto-retractable needles, and less toxic cleaning/disinfecting products to minimize hazardous waste.
- **Resource efficiency:** Avoid unnecessary use of materials during patient care, cleaning, or laboratory processes.
- **Auto-disable Syringes:** Auto-disable syringes may be utilized to avoid transfer of infections.

These measures reduce environmental pollution, minimize occupational health risks, and align with **ESF ESS3 principles on resource efficiency and pollution prevention**.

Waste Segregation and Disposal

All medical waste shall be **segregated at the point of generation** into clearly labelled and color-coded bins, following **WHO and ESF ESS3 guidance**. Segregation ensures safe handling, transport, and disposal, protecting workers, patients, and the environment.

The table below summarizes the recommended **color-coding system and disposal methods**:

Color Code / Container	Type of Waste	Examples	Disposal Method
Yellow (infectious)	Infectious and pathological	Soiled dressings, swabs, human tissues, sharps in safety boxes	Incineration or autoclaving followed by disposal in sanitary landfill
Red (sharps)	Sharps	Needles, syringes, scalpels, lancets	Autoclaving or chemical disinfection, then puncture-proof container disposal
Blue / White (recyclable)	Non-infectious recyclable	Paper, cardboard, plastics	Segregated collection and recycling
Black (general waste)	Non-hazardous waste	Food scraps, packaging, office waste	Regular municipal solid waste disposal

Color Code / Container	Type of Waste	Examples	Disposal Method
Green (chemical / pharmaceutical)	Chemical & pharmaceutical	Expired drugs, disinfectants, lab reagents	Return to manufacturer, chemical neutralization, or controlled disposal per national regulations
Brown (cytotoxic / hazardous)	Cytotoxic / hazardous	Chemotherapy residues, contaminated PPE from cytotoxic handling	Incineration at high-temperature facility
Purple / Special	Radioactive / e-waste	Diagnostic isotopes, broken electronic devices	Specialized disposal per regulatory requirements

Waste Handling, Storage, and Transportation Procedures

Waste Handling

To minimize risks to healthcare workers, waste handlers, and the public, medical waste must be handled safely in accordance with **World Bank ESS3**, **WHO guidance**, and national regulations:

- Seal and replace waste bags or containers when they are approximately three-quarters full to prevent overfilling and spillage.
- Immediately replace any full bags or containers to maintain hygiene and safety standards.
- Clearly label and identify all waste bags and containers before removal from the collection point, indicating type, hazard class, point of origin, and destination.
- Transport waste using designated trolleys or carts that are regularly cleaned and disinfected to prevent contamination.

Waste Storage Requirements

On-site storage areas must be located within the facility, sized according to the volume of waste generated, and designed to meet the following standards:

1. Constructed with a hard, impermeable floor with proper drainage, suitable for cleaning and disinfection, and supplied with water.
2. Securely locked with access restricted to authorized personnel (e.g., cleaning staff, licensed waste collectors).
3. Protected from direct sunlight and inaccessible to animals or rodents.
4. Equipped with adequate lighting and ventilation.
5. Separated from food storage and preparation areas to prevent contamination.
6. Stocked with protective clothing, spare waste bags, and containers for staff use.

Special Waste Storage Guidelines

- **Mercury waste:** Store separately in sealed, non-permeable containers in a secure location.

Transportation and Safe Handling

Transportation and treatment of biomedical waste must be undertaken by a **licensed biomedical waste management contractor**. Key requirements include:

1. **Proper Packaging of Infectious Waste:** Use watertight inner containers made of metal or plastic with secure, leak-proof seals.
2. **Adequate Outer Packaging:** Outer containers must be strong and appropriately sized for the type and quantity of waste.
3. **Puncture-Proof Sharps Containers:** Sharps must be placed in puncture-resistant containers to prevent injuries and leaks.
4. **Clear Waste Labelling:** Each package must indicate waste type, hazard symbols, substance class, quantity, point of origin, and intended destination.
5. **Licensed Waste Handlers:** Engage contractors duly licensed by national authorities, authorized to handle, transport, and treat biomedical waste at approved facilities.
6. Cemented pits may be used to dispose-off medical waste produced at sites including but not limited to syringes, vials, unused/ expired vaccines etc,

Trainings and Responsibilities

Effective implementation of the Medical Waste Management Plan (MWMP) requires that all relevant staff are **adequately trained and sensitized** to enhance knowledge, strengthen skills, and promote lasting behavioral change regarding safe waste management. Training should be informed by a **baseline assessment** to identify knowledge gaps and specific training needs. On-site training should include practical demonstrations and simulations to reinforce safe practices.

Key training components should include:

1. **Handling of Pathogenic and Hazardous Materials** – Safe collection, segregation, transport, and disposal of infectious, chemical, cytotoxic, and radioactive waste.
2. **Safe Work Practices** – Proper hygiene, waste minimization techniques, and adherence to standard operating procedures to reduce occupational and environmental risks.
3. **Use of Personal Protective Equipment (PPE)** – Correct selection, use, removal, and disposal of PPE to prevent exposure to hazardous materials.
4. **Environmental Health Guidelines** – Compliance with national regulations, WHO guidance, and World Bank **ESS3** requirements for pollution prevention and resource efficiency.
5. **Occupational Health and Safety** – Identification and mitigation of risks to healthcare workers, waste handlers, and the public.
6. **Biosafety and Biosecurity** – Measures to prevent the accidental release or misuse of infectious agents and hazardous materials.
7. **Emergency Preparedness and Response** – Procedures for dealing with spills, exposures, accidents, or other hazardous incidents, including notification, containment, and reporting mechanisms.

Responsibilities:

- Project management, health staff and facility supervisors are responsible for ensuring staff participation and adherence to safe practices.
- Waste handlers must strictly follow MWMP procedures, use PPE appropriately, and report any incidents promptly.
- The Environmental Health and Safety (EHS) focal point shall monitor training effectiveness, provide refresher courses, and ensure compliance with **ESF ESS3** standards throughout the project lifecycle.

Roles and responsibilities

Role	Responsibilities
Management	Approve and monitor implementation of the waste management plan
Safety Officer	Oversee waste segregation, compliance, and reporting
Cleaners	Collect, transport, and record waste quantities
Waste Contractor	Ensure safe and compliant final disposal or recycling

Monitoring and Reporting

Monitoring is a key component of the Medical Waste Management Plan (MWMP) and is undertaken to assess the plan's implementation against established performance indicators, ensuring compliance with World Bank Environmental and Social Standard 3 (ESS3), national laws, and international best practices.

Objectives of Monitoring

The objectives of monitoring medical waste management are to:

- **Assess compliance** with the MWMP, national regulatory requirements, WHO guidelines, and World Bank ESF standards.
- **Identify and address** any emerging or unforeseen environmental, health, or safety impacts.
- **Evaluate the effectiveness** of mitigation and management measures, recommending improvements where necessary.
- **Confirm that waste management practices** are being properly implemented, documented, and sustained across all project-supported health facilities.

Key Monitoring Indicators

Monitoring will focus on both qualitative and quantitative indicators, including but not limited to:

- Availability of trained healthcare personnel with demonstrated knowledge in medical waste management.
- Existence of systems and mechanisms for safe waste segregation, handling, treatment, and disposal.
- Proper segregation of waste at the point of generation using color-coded containers.
- Availability, adequacy, and condition of waste bins, containers, and collection equipment.
- Frequency and timeliness of waste removal from generation points.
- Accuracy and completeness of records on medical waste generation, storage, transport, and final disposal.
- Verification of licensing and compliance of waste management contractors and transporters.
- Conformance with occupational health and safety procedures and PPE usage.
- Compliance with safe transportation conditions and approved waste routes.
- Proper operation and maintenance of treatment facilities such as incinerators, autoclaves, and secure disposal sites (e.g., sanitary landfills).

Roles and Responsibilities

Designated facility personnel, under the supervision of the Environmental Health and Safety (EHS) focal point, shall:

- Maintain **detailed records** on waste quantities, collection schedules, treatment, and disposal methods.
- Conduct **regular internal monitoring and evaluation** of MWMP implementation.
- Facilitate **periodic external audits** or third-party monitoring to verify compliance with **ESF ESS3** and national environmental standards.
- Prepare and submit **quarterly and annual monitoring reports** to the Project Coordination Unit (PCU) and relevant environmental and health authorities.

Regular monitoring and transparent reporting will ensure accountability, enable continuous improvement, and sustain environmentally sound and safe medical waste management practices throughout the project lifecycle.

3.0 Environmental and Social Risk Management

The implementation of medical waste management activities may pose environmental and social risks if not properly managed. In line with the **World Bank Environmental and Social Framework (ESF)**—specifically **ESS1: Assessment and Management of Environmental and Social Risks and Impacts**, **ESS3: Resource Efficiency and Pollution Prevention and Management**, and **ESS4: Community Health and Safety**—these risks must be systematically identified, mitigated, and monitored throughout the project lifecycle.

Key Potential Risks:

- **Air Pollution:** Emissions from poorly operated or low-efficiency incinerators, including particulate matter, dioxins, and furans.
- **Soil and Water Contamination:** Leakage or improper disposal of untreated medical waste leading to contamination of soil or groundwater.
- **Occupational Health and Safety Risks:** Exposure of healthcare and waste management workers to infectious or hazardous materials, needle-stick injuries, or chemical exposure.
- **Community Health Risks:** Accidental exposure of nearby communities due to open dumping, burning, or unauthorized scavenging of medical waste.
- **Gender-Based and Social Risks:** Unequal access to protective equipment, lower pay, or unsafe working conditions among female waste workers; risk of harassment or gender-based violence (GBV) in waste handling environments.
- **Nuisance Impacts:** Odors, noise, and unsightly waste storage areas affecting nearby residents or facility users.

Mitigation Measures:

- **Adopt Cleaner Treatment Technologies:** Prioritize environmentally sound methods such as autoclaving or controlled incineration with emission controls to reduce air pollution.
- **Ensure Safe Handling and Storage:** Provide PPE and hygiene facilities; enforce standard operating procedures for waste segregation, transport, and disposal.
- **Implement Occupational Health and Safety Protocols:** Conduct regular safety training, immunization programs (e.g., Hepatitis B, tetanus), and health surveillance for workers.
- **Strengthen Community Health and Safety Measures:** Maintain secure waste storage sites, limit public access, and conduct community awareness campaigns on medical waste hazards.
- **Promote Gender Equality and Inclusion:** Ensure equal opportunities, fair remuneration, and gender-sensitive work environments; include GBV prevention and reporting mechanisms in training programs.
- **Monitor Emissions and Waste Practices:** Conduct periodic environmental monitoring and audits to ensure compliance with national standards and World Bank ESS3 requirements.
- **Emergency Preparedness and Response:** Develop and regularly test spill response and fire safety procedures, ensuring coordination with local emergency services.

All mitigation and monitoring measures shall be integrated into the project's Environmental and Social Management Plan (ESMP) and reported through regular E&S performance reviews.

4.0 Budget and Resource Allocation

Adequate budgetary provision is essential to ensure effective and sustainable implementation of the Medical Waste Management Plan (MWMP). The project and implementing partners shall allocate sufficient financial and human resources to cover all stages of medical waste management in compliance with national regulations, World Health Organization (WHO) guidelines, and the **World Bank Environmental and Social Framework (ESF)**—particularly **ESS1 (Assessment and Management of Environmental and Social Risks and Impacts)**, **ESS3 (Resource Efficiency and Pollution Prevention and Management)**, and **ESS4 (Community Health and Safety)**.

Budget components should include (but not be limited to):

- **Training and Capacity Building:** Costs for initial and refresher training on medical waste handling, segregation, occupational health and safety, emergency preparedness, and ESF compliance.
- **Procurement of Personal Protective Equipment (PPE):** Adequate supply of gloves, masks, aprons, boots, and other safety gear for all personnel involved in waste handling and disposal.
- **Procurement of Waste Management Materials:** Purchase of color-coded bins, liners, sharps containers, labels, disinfectants, and cleaning supplies in line with WHO standards.
- **Monitoring, Supervision, and Reporting:** Costs related to internal monitoring, data management, and preparation of environmental and social performance reports.
- **External Audits and Third-Party Monitoring:** Engagement of qualified external auditors or independent monitors to assess ESF compliance, waste management effectiveness, and environmental performance.
- **Emergency Response and Contingency Funds:** Allocation for spill response, accidental releases, or unforeseen environmental and social incidents.

A **dedicated budget line** for medical waste management shall be integrated into the overall project budget and periodically reviewed to ensure adequacy. The implementing agency shall maintain transparent financial records, and expenditures shall be tracked and reported as part of regular ESF performance reporting.

5.0 Stakeholder Engagement

Effective stakeholder engagement is a critical component of the Medical Waste Management Plan (MWMP) and ensures transparency, inclusivity, and accountability in the management of medical and hazardous waste. In alignment with the **World Bank Environmental and Social Framework (ESF)**—specifically **ESS10 (Stakeholder Engagement and Information Disclosure)**—the Project shall ensure meaningful, continuous, and culturally appropriate consultation with all relevant stakeholders throughout the planning, implementation, and monitoring of waste management activities.

Key Stakeholders and Engagement Approaches:

- **Local Authorities:** Engage municipal councils, environmental regulators, and health departments to coordinate waste transportation, treatment, and final disposal in compliance with national and local waste management regulations.
- **Health Workers and Facility Management:** Conduct regular consultation and training sessions with doctors, nurses, cleaners, and waste handlers to ensure safe waste segregation, storage, and occupational health practices.
- **Workers' Unions and Associations:** Engage staff unions and worker representatives in discussions on labor conditions, safety protocols, and grievance redress related to waste handling and exposure risks.
- **Waste Contractors and Service Providers:** Collaborate with licensed waste management companies to ensure adherence to environmental, social, and occupational safety standards, and to verify compliance through audits and inspections.
- **Nearby Communities:** Conduct awareness and sensitization campaigns for surrounding communities on the importance of proper waste management, the risks of unauthorized waste scavenging, and available reporting mechanisms for unsafe practices.

Information Disclosure and Communication Channels:

- Disseminate key information about waste management practices, safety procedures, and potential risks through posters, public meetings, and community radio or SMS announcements in local languages.
- Display contact information for waste focal persons and grievance channels at healthcare facilities and waste storage sites.
- Maintain open communication with stakeholders through periodic meetings, consultations, and feedback sessions.
- Ensure timely disclosure of relevant MWMP updates and performance summaries, including audit findings, in accessible formats.

6.0 Grievance Redress Mechanism (GRM):

A functional GRM shall be established and integrated with the project's broader ESF grievance framework to allow stakeholders—including community members, workers, and contractors—to raise concerns or complaints related to waste management, occupational safety, or environmental impacts.

- Grievances may be submitted verbally, in writing, via hotline, email, or suggestion boxes placed in facilities.
- All grievances shall be recorded, acknowledged, assessed, and resolved promptly, with feedback provided to the complainant.
- Sensitive grievances (including those related to gender-based violence or harassment) shall be handled confidentially and in line with survivor-centered principles.

Documentation and Reporting:
Records of stakeholder consultations, feedback received, and actions taken shall be maintained and reported as part of the MWMP monitoring framework and project's Environmental and Social Performance Reports.

7.0 Record Keeping and Documentation

Accurate and up-to-date record keeping is essential for ensuring accountability, traceability, and continuous improvement in medical waste management. Health facilities and implementing partners shall maintain comprehensive records to demonstrate compliance with the Medical Waste Management Plan (MWMP), national regulatory requirements, and the World Bank Environmental and Social Framework (ESF).

Records to be maintained include:

- **Waste Generation and Disposal Logs:** Detailed records of the quantity, type, and source of medical waste generated, treated, and finally disposed of, including dates, methods, and locations of treatment/disposal.
- **Training and Capacity Building Records:** Attendance sheets, training materials, and evaluation reports for staff trained in medical waste management, occupational health, and safety.
- **Incident and Accident Reports:** Documentation of spills, injuries, or non-compliance incidents, including root cause analysis and corrective or preventive actions taken.
- **Contractor and Service Provider Documentation:** Copies of valid licenses, permits, and contracts for all waste collection, transportation, and disposal service providers, ensuring they are authorized by competent authorities.
- **Equipment Maintenance and Calibration Logs:** Regular inspection and maintenance records for waste management infrastructure and equipment (e.g., autoclaves, incinerators, waste bins, and trolleys).
- **Monitoring and Audit Reports:** Internal monitoring forms and external audit reports verifying compliance with ESF, WHO, and national waste management standards.

All records should be stored securely, easily retrievable, and made available to relevant authorities and the World Bank upon request. Facilities should also maintain electronic backups where feasible to ensure data integrity and continuity.

8.0 Occupational Health and Safety (OHS)

The safe handling and disposal of medical waste are essential to protecting the health and well-being of healthcare workers, waste handlers, patients, and surrounding communities. In accordance with the **World Bank Environmental and Social Framework (ESF)**—specifically **ESS2**, **ESS3**, and **ESS4**—this section outlines measures to prevent occupational exposure to hazardous and infectious materials and to promote a safe working environment across all healthcare and waste management operations.

OHS Objectives:

- Prevent injury, illness, or exposure arising from contact with infectious, chemical, or radioactive medical waste.
- Promote the consistent use of personal protective equipment (PPE) and adherence to safety procedures.
- Ensure rapid and effective response to workplace accidents and emergencies.
- Foster a culture of safety, accountability, and continuous improvement among all staff.

1. Risk Assessment and Hazard Control

- Conduct regular **OHS risk assessments** to identify potential exposure pathways and determine appropriate control measures.
- Establish and maintain a **hierarchy of controls**—including engineering controls (e.g., sealed storage areas), administrative controls (e.g., work rotation and restricted access), and PPE use—to minimize risks.
- Maintain updated **Material Safety Data Sheets (MSDS)** for all hazardous substances handled within the facility.

2. Personal Protective Equipment (PPE)

- Provide appropriate PPE such as gloves, masks, aprons, boots, eye protection, and face shields to all staff handling waste.
- Ensure **availability, proper fitting, regular replacement, and safe disposal** of PPE after use.
- Supervisors shall enforce compliance with PPE use and ensure that staff are trained on correct donning and doffing procedures.

3. Health Surveillance and Vaccination

- Implement a **preventive vaccination program** for all healthcare and waste management personnel, including **Hepatitis B, Tetanus, and other regionally recommended vaccines.**
- Conduct **periodic medical check-ups** for staff exposed to infectious or hazardous waste.
- Maintain confidential health records for monitoring staff fitness and follow-up care.

4. First Aid and Post-Exposure Management

- Establish accessible and fully equipped **first aid stations** in all facilities handling medical waste.
- Implement **post-exposure protocols** for needle-stick injuries, chemical burns, or other incidents, including immediate wound care, medical evaluation, prophylaxis, and incident reporting.
- Record all accidents and corrective actions in OHS logbooks, and analyze data to prevent recurrence.

5. Emergency Preparedness and Response

- Develop and implement a **Medical Waste Emergency Response Plan** covering scenarios such as spills, leaks, fires, explosions, or transportation accidents.
- Conduct **regular emergency drills** and ensure that all staff are trained in spill response, fire safety, and evacuation procedures.
- Maintain spill kits, fire extinguishers, and emergency contact lists at all relevant locations.
- Coordinate with local emergency services and public health authorities to ensure prompt and effective response.

6. Continuous Training and Monitoring

- Provide periodic OHS refresher training covering infection control, ergonomics, safe waste handling, and stress management.
- Assign an **OHS focal person** in each facility to oversee implementation, monitoring, and reporting of safety measures.
- Regularly evaluate OHS performance indicators such as incident frequency, PPE compliance rate, and response effectiveness.

All OHS measures shall be integrated into the facility's broader Environmental and Social Management System (ESMS) and subject to periodic review to ensure continuous alignment with World Bank ESF and national occupational health and safety legislation.

Emergency Preparedness and Response

- Develop **emergency protocols** for:
  - Spills and leaks
  - Needle-stick injuries
  - Equipment malfunction
  - Fire or explosion
- Include **contact lists** for emergency responders and local health authorities.