



REPUBLIC OF LEBANON
MINISTRY OF ENVIRONMENT

National Integrated Solid Waste Management Strategy of Lebanon

Strategy Update – Executive Summary

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In collaboration with



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MINISTER'S FOREWORD



The persistent challenges in Lebanon's solid waste sector stem not from a lack of technical capacity, but from fragile governance, weak management, and limited oversight. In line with the government's reform agenda, the Ministry of Environment has addressed these gaps through a systemic shift from fragmented responses to an integrated and sustainable framework—updating the national strategy, restructuring the cost recovery draft law and its mechanisms, and launching the recruitment of the National Solid Waste Management Authority.

The updated National Integrated Solid Waste Management Strategy (NISWMS) reflects the profound changes Lebanon has faced since 2019, including economic collapse, institutional strain, and the 2024 war. It recalibrates national planning to current socio-economic realities while aligning with international best practices in integrated solid waste management, circular economy, and Extended Producer Responsibility (EPR). The Strategy strengthens attention to priority waste streams—construction and demolition waste, recyclables, and hazardous waste—and reinforces decentralization with a coherent national oversight framework.

Financial sustainability is a cornerstone of the reform. Improved cost recovery mechanisms, the introduction of EPR schemes, and structured Public-Private Partnerships aim to reduce reliance on public funding while ensuring continuity and long-term viability. The Strategy is designed as a living framework, grounded in data, accountability, and coordinated action among national institutions, local authorities, and development partners.

The updated NISWMS was approved by the Council of Ministers, alongside the appointment of the Board and Director of the National Solid Waste Management Authority—marking a critical step toward consolidating governance and eliminating institutional fragmentation within the sector and operationalizing the sector's central regulatory and oversight body for the first time. While the Strategy was technically finalized prior to the enactment of the Cost Recovery Law, the reinvented draft law, finally enacted (Law No. 38 of January 5, 2026, amending Article 28 of Law No. 80/2018), provided essential legal and fiscal clarity and strengthened the framework for transparent investment in the solid waste sector.

Together, these measures establish a coherent institutional and financial foundation for the sector, fulfill the Ministry's reform commitments since February 2025 and mark the completion of a comprehensive package of mutually reinforcing structural reforms. In parallel, international financing has been mobilized to address remaining implementation gaps by supporting the expansion and establishment of treatment facilities in selected districts, ensuring that institutional reforms are complemented by tangible improvements on the ground.

The Ministry of Environment entrusts this Strategy to local authorities and the National Solid Waste Management Authority as the referential national roadmap—defining responsibilities, setting measurable standards, and affirming a shared commitment to a solid waste sector that is effective, transparent, resilient, and financially sustainable.

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Executive Summary

1.1 Strategy Rationale and Guiding Principles

Lebanon's National Integrated Solid Waste Management Strategy – Update 2025 (NISWMS 2025) provides a focused, realistic roadmap to overhaul the solid waste sector amid compounded national crises. Building on the original framework, this update refines and operationalizes the strategy to respond to the country's current institutional, financial, and conflict-related constraints. It is firmly anchored in Lebanon's development vision, climate change commitments, and the legal framework (notably Law 80/2018), ensuring alignment with national policies and international obligations.¹

Crucially, the strategy update is evidence-based: a comprehensive baseline assessment of waste quantities, composition, infrastructure capacity, and financial constraints underpins all targets. This approach avoids overly aspirational goals and enables adaptive management in the face of shocks. For instance, the September 2024 Israeli war on Lebanon generated unprecedented construction debris and damaged key facilities, underscoring the need for realistic planning. Accordingly, the updated strategy defines phased, measurable targets that are time-bound and linked to concrete implementation measures, with clear Key Performance Indicators (KPIs) and monitoring protocols to track progress, allow course corrections, and ensure accountability. It moves beyond policy statements to implementation mechanisms by specifying roles and mandates and introducing practical instruments, such as cost-recovery systems, Extended Producer Responsibility (EPR) schemes, Pay-As-You-Throw (PAYT) usage-based fees, and public-private partnerships (PPPs), that translate strategic principles and targets into on-the-ground action.

The updated NISWMS is grounded in globally recognized solid waste management (SWM) principles that shape every aspect of system design and decision-making. While these principles were already embedded in the original strategy, the strategy update explicitly reaffirms and operationalizes them through concrete measures, targets, and governance arrangements. It places sustainability at its core, evaluating each intervention for environmental soundness, social acceptability, and economic viability to ensure long-term success. The strategy fully adopts the waste management hierarchy as its guiding framework, prioritizing action in alignment with the waste hierarchy.

This hierarchy directs infrastructure planning and performance targets so that Lebanon's waste system shifts upward from heavy reliance on landfilling and open dumping towards

¹ Based on key international frameworks and guiding instruments, including: the Rio Declaration on Environment and Development (UNCED, 1992); the EU Waste Framework Directive (Directive 2008/98/EC, as amended by Directive (EU) 2018/851); the 2030 Agenda for Sustainable Development and its SDGs (UNGA, 2015); the OECD Recommendation on the Polluter-Pays Principle (1972); the EU Circular Economy Action Plans (European Commission, 2015 & 2020); the OECD Guidance Manual on Extended Producer Responsibility (2001; updated 2016); the UNEP International Guidelines for Integrated Solid Waste Management; the Basel Convention on hazardous waste control (1989); and the Paris Agreement under the UNFCCC (2015).

maximum resource recovery. Complementing the hierarchy, the strategy embraces a circular economy principle, treating waste as a resource to be looped back into the economy.

Measures like design-for-recycling, material valorization, and market creation for secondary materials (supported by new EPR programs) aim to “close the loop” and integrate waste management with sustainable production and consumption systems.

The polluter-pays principle is reinforced to achieve financial sustainability: the updated strategy places stronger emphasis on cost-recovery mechanisms that can be implemented under current municipal and economic conditions, whereby waste generators and producers bear an equitable share of management costs via new user fees, EPR obligations, and other cost-recovery instruments. This ensures the sector’s financing is robust and fair, while maintaining affordability and transparency for the public.

Finally, decentralization and subsidiarity are key governance principles. The strategy update clarifies and strengthens the decentralization approach, with waste management responsibility devolved to the lowest effective administrative level (municipalities or unions), with the central government (through a reactivated National Solid Waste Management Authority, NSWMA) providing policy guidance, oversight, and technical support. This approach promotes local accountability and responsiveness, engaging communities and the private sector in stewardship of waste services. Together, these principles of sustainability, waste hierarchy, circular economy, polluter-pays, and decentralization form the value foundation of NISWMS 2025, ensuring every initiative is strategically consistent and actionable. Each principle is tied to rationalized objectives and measurable indicators, enhancing accountability for results.

1.2 Waste Streams and System Design

The updated strategy classifies waste into regular and special streams, in line with Law No. 80/2018, to ensure appropriate handling, treatment, and regulatory control. Clear waste typologies are essential for designing efficient, sustainable, and financially viable SWM systems, as they directly inform infrastructure planning, cost-recovery mechanisms, and policy instruments across the waste value chain.

Waste is analyzed along two intersecting dimensions:

1. Source of generation (household vs. non-household), and
2. Type of waste stream (regular vs. special), each with different environmental risks and management needs.

Regular waste streams consist mainly of commingled, mixed waste that is difficult to segregate at source and typically managed through standard municipal collection and disposal systems.

Special waste streams include waste types that can be segregated at source and require dedicated collection, treatment, or disposal pathways. These streams arise predominantly from non-household sources, though they may also be generated in small quantities at the household level. Special streams often have higher recovery potential but may also carry higher environmental or health risks.

Both regular and special streams may contain hazardous fractions, though in different proportions. Regular waste typically includes only minor hazardous items, while several special streams, such as healthcare, industrial, chemical, and electronic waste, have a significantly higher hazardous content and require stricter regulatory oversight.

For operational planning purposes, the update strategy further details special waste streams in Lebanon, including construction and demolition waste, end-of-life vehicles, used tires, oils and lubricants, e-waste, batteries, bulky waste, organic waste from large generators, agricultural and green waste, healthcare waste, chemical process waste, sludge, and emerging streams. In the absence of a national waste catalogue, these categories are derived from existing studies, surveys, and field experience.

Overall, this functional classification underpins the application of the waste hierarchy and supports the development of targeted, compliant, and resource-efficient waste management solutions aligned with national priorities and international best practices.

1.3 Current Situation of the Solid Waste Management System in Lebanon

Lebanon's SWM system is operating under severe and compounding pressures resulting from prolonged economic collapse, institutional fragility, and successive crises. Since 2019, the country has experienced one of the most severe economic contractions globally, further aggravated by the COVID-19 pandemic, the Beirut Port explosion in 2020, and the 2024 Israeli war on Lebanon. These shocks have significantly weakened public institutions, depleted municipal financial resources, damaged infrastructure, and undermined the delivery of essential services, including solid and hazardous waste management.

Population dynamics further complicate waste planning and service delivery. While official demographic data dates to 2017, Lebanon's population is currently estimated at approximately 5.86 million. Refugees and internally displaced persons exert substantial additional pressure on waste generation and collection systems, with earlier estimates indicating an increase of approximately 324,000 tons per year, equivalent to about 15–16% of total municipal waste. However, displaced populations are not systematically integrated into national waste data,

projections, or cost-recovery mechanisms, undermining the accuracy of planning assumptions and infrastructure sizing.²

Municipal solid waste generation in Lebanon remains dominated by mixed waste streams combining household and non-household sources. Prior to the economic crisis, waste generation was estimated at approximately 7,300–7,400 tons per day, equivalent to around 2.7 million tons per year. By 2022, waste generation declined by approximately 25%, reaching about 5,600 tons per day, reflecting reduced consumption and economic activity. Recent assessments indicate a partial rebound, with current waste generation estimated at approximately 6,300 tons per day. Despite these estimates, the absence of a centralized national waste information and monitoring system means that data remain fragmented, project-based, and weakly disaggregated by region, source, and waste type.

Special waste streams, including hazardous waste, healthcare waste, electronic waste, construction and demolition waste, sludge, used tires, and other emerging streams, remain largely unmanaged in a systematic manner. Hazardous waste generation has been estimated at approximately 72,000 tons per year, yet Lebanon lacks a national hazardous waste inventory, classification system, and dedicated treatment or disposal infrastructure. Healthcare facilities generate approximately 5,100 tons per year of infectious waste from hospitals, in addition to smaller quantities from clinics and dispensaries, with around 80% of healthcare waste still landfilled untreated. Cytotoxic and pharmaceutical waste is generated at roughly 100 tons across major hospitals, with only limited quantities exported for safe destruction.³

Electronic waste generation has increased rapidly, reaching approximately 46,000 tons per year, while less than 1% is properly collected.⁴ Construction and demolition waste represents one of the largest waste streams, with Israeli war-related damage generating an estimated 20–32 million tons of rubble nationwide, including 2–4 million tons in Beirut's southern suburbs alone.⁵ Used tire waste is estimated at approximately 20,000 tons per year, while sludge generation from wastewater treatment plants is projected to increase from around 86,500 tons per year in 2025 to over 110,000 tons per year by 2030.⁶ Most of these special streams

² MoE/UNDP/UNHCR/UNICEF, 2020. Lebanon State of the Environment and Future Outlook: turning the Crises into Opportunities.

³ EU/LDK Consultants, 2020. TaDWIR Scoping Report – Solid Waste Management Portfolio: Support and Evaluation Mission (Ref: ENI/2018/396–926).

⁴ UNDP/UNITAR, 2022, National E-waste Monitor, The National E-waste Monitor Lebanon 2022 – E-Waste Monitor (ewastemonitor.info)

⁵ Data from CNRS-L rubble estimates (2024–2025), and MoE, 2025: Sustainable Rubble Management following the 2023–2024 War in Lebanon, Summary Note. September 2025.

⁶ MoE/UNDP, 2020, SOER report: Lebanon State of the Environment and Future Outlook: Turning the Crisis into Opportunities, SOER_Report_EN.pdf (unicef.org)

are either mixed with municipal waste, informally managed, or temporarily stockpiled without systematic treatment pathways.

Waste collection coverage is nominally high, approximately 99% coverage in rural areas. However, service quality, frequency, and efficiency vary significantly across regions.⁷ Collection remains predominantly mixed, with limited implementation of source segregation despite existing legal requirements.⁸ Collection frequency ranges from daily service in central urban zones to as little as twice per month in peripheral areas. Aging vehicle fleets, lack of weighing and tracking systems, fuel shortages, and delayed payments to contractors further undermine performance and accountability.

Waste treatment capacity in Lebanon is critically underutilized. Although sorting and composting facilities were established across the country over the past two decades, the majority are currently operating at minimal capacity or have ceased operations altogether. Less than 10% of municipal waste is currently treated, with only about 8% passing through sorting or composting facilities in recent years. Composting activities are largely non-operational despite the high organic content of waste, while material recovery facilities operate intermittently due to contaminated inputs, lack of maintenance, and insufficient operational funding. Treatment options for special waste streams remain extremely limited, fragmented, or entirely absent, with only infectious healthcare waste partially managed under regulated conditions.

Therefore, disposal remains the dominant endpoint of the waste management system. In 2018, approximately 77% of the waste generated was disposed of in landfills or dumps; by 2022, this share had increased to nearly 99%. Lebanon currently operates six sanitary landfills, receiving approximately 3,200 tons per day, all of which exceed their original design capacity. An additional 2,300–2,400 tons per day are disposed of in open dumps. More than 1,000 uncontrolled dumpsites are estimated nationwide, many located near rivers and coastal areas. Open dumping and open burning remain widespread despite legal prohibitions, while access to engineered disposal facilities remains uneven across regions. Hazardous and special wastes are frequently co-disposed with municipal waste, increasing risks of soil, groundwater, and air contamination, as well as public health impacts.

Institutional and financial constraints further aggravate system underperformance. Responsibilities for SWM remain fragmented among national authorities, municipalities, and service providers, resulting in overlapping

⁷ CDR, MoE & World Bank, 2024. Final National Integrated Solid Waste Management Strategy.

⁸ MoE/World Bank, 2023, Lebanon Solid Waste Roadmap for 2023–2026

mandates, weak accountability, and inconsistent enforcement. The absence of a fully operational national coordinating authority limits technical guidance, standardization, and performance monitoring. At the same time, the lack of sustainable cost-recovery mechanisms has left municipalities financially overburdened, with SWM costs consuming a large share of limited local budgets. Revenues from recycling and composting are negligible, while inflation and currency depreciation continue to drive operational costs upward, discouraging private sector engagement and long-term investment.

Overall, Lebanon's SWM system remains heavily disposal-oriented, reactive, and financially fragile. While basic infrastructure, legal provisions, and institutional foundations exist, their potential remains largely unrealized due to weak data systems, lack of source segregation, underperforming treatment capacity, overreliance on disposal, and unsustainable financing. These conditions underscore the urgent need for a coordinated, data-driven, and financially viable transition toward an integrated waste management system that progressively shifts waste flows up the hierarchy and strengthens environmental and public health protection nationwide.

1.4 Priority Interventions and Financial Sustainability

To kick-start implementation, the NISWMS 2025 outlines Immediate Strategic Interventions, a set of Priority Early Actions that are high-impact and feasible under current conditions. These priority actions form an integrated reform package intended to deliver visible improvements, build public trust, and generate momentum for the broader strategy. The four priority early actions are: (1) Decentralization of SWM governance, (2) Implementation of Extended Producer Responsibility, (3) Management of special and hazardous waste streams, and (4) Diversification of waste treatment technologies. Each is briefly outlined below:

- **Strengthen Decentralization:** Accelerate the transfer of waste management functions and decision-making to local authorities (municipalities and unions), in line with Law 80/2018. This involves clarifying mandates through ministerial directives, activating the NSWMA as a coordinating (not operational) body, and establishing direct funding channels to municipalities for waste services. By empowering municipalities with control over budgeting, planning, and contracts, and by reducing bureaucratic overlaps, this reform aims to improve service responsiveness and accountability at the local level. A decentralized model, coupled with national oversight, will address current inefficiencies caused by centralized contracting and political delays, while fostering community participation in waste solutions.
- **Implement Extended Producer Responsibility (EPR):** Establish EPR frameworks for priority waste streams. This entails enacting the necessary decrees under Law 80/2018 to mandate that producers/importers finance the collection and treatment of their products at end-of-life. Setting up Producer Responsibility Organizations (PROs) and

reporting systems will create a dedicated funding stream for recyclables and hard-to-manage wastes, easing the financial burden on municipalities. EPR is a cornerstone of moving toward a circular economy, it incentivizes waste reduction and design for recyclability, and it internalizes the costs of waste management into product pricing (applying the polluter-pays principle). Early implementation of EPR in Lebanon is expected to improve recycling rates, reduce litter and dumping of items like plastics and electronics, and provide more stable financing for waste operations at the local level.

- **Target Special and Hazardous Waste Streams:** Develop immediate programs to properly handle waste streams that are currently neglected or managed unsafely, such as C&D debris, healthcare waste, industrial hazardous waste, and e-waste. This includes creating an inventory and tracking system for special/hazardous wastes, licensing specialized service providers, and investing in interim solutions (e.g. designated storage, pretreatment, or export of hazardous wastes) until permanent facilities are established. By prioritizing these streams, the strategy addresses pressing public health and environmental risks, for example, preventing toxic healthcare or industrial waste from being co-disposed in municipal landfills or openly dumped.
- **Diversify Waste Treatment Technologies:** Begin introducing and piloting a broader range of waste treatment and resource recovery technologies beyond the conventional approaches. In the near term, this may involve assessing the feasibility of small-scale organic waste valorization or material recovery innovations and preparing the groundwork for potential energy recovery projects. The strategy recognizes that Lebanon's exclusive reliance on basic landfilling is unsustainable; diversification is needed for long-term resilience and to handle waste streams that cannot be effectively managed with current methods. Diversification, pursued in parallel with waste reduction and recycling efforts, will increase the system's overall sustainability and climate benefits over time.

Underpinning these priority interventions is the introduction of robust financial and regulatory instruments to ensure the reforms are sustainable and resilient. The strategy emphasizes establishing a sound financial basis for the waste sector through cost-recovery mechanisms and new funding streams. In practice, this means implementing user-pays fees for waste services and fully operationalizing the pending Cost Recovery Law under Law 80/2018. It also involves the rollout of the EPR programs, which will generate industry contributions for managing specific waste streams, and other economic incentives for waste reduction and recycling. Together, these measures put the sector on a path to financial viability, reducing over-reliance on government budgets or donors. To complement domestic financing, the strategy encourages leveraging public-private partnerships to attract private investment and expertise for infrastructure development and service provision. Standardized PPP models and contracts will be adopted to ensure transparency and accountability in private sector engagements. By diversifying funding sources and enforcing the "polluter pays" approach, Lebanon's waste management system can achieve long-term financial stability and be better insulated against economic turbulence.

1.5 Strategic Objectives

While the priority interventions focus on immediate stabilization and high-impact reforms, they are designed to initiate a broader transformation of the SWM system. These early actions directly support the achievement of the Strategy's long-term strategic objectives, which define the structural, institutional, and behavioral changes required to move Lebanon decisively up the waste hierarchy

In response, NISWMS 2025 articulates four strategic objectives to drive an integrated, efficient, and resilient waste management system that closes these gaps:

1. **Complete, Upgrade and Operate Integrated SWM Infrastructure** – Finalize and improve the nationwide network of waste facilities (from collection and sorting centers to treatment plants and sanitary landfills) and ensure they are all functioning optimally. This objective addresses the physical infrastructure deficit: many facilities remain unfinished, underperforming, or absent in certain regions. Upgrading infrastructure will enable environmentally sound processing of all waste streams and eliminate the country's dependence on open dumping. Key results include achieving full coverage of collection services, adequate sorting/composting capacity for recyclables and organics, and safe final disposal for residuals in engineered landfills.
2. **Enhance Community and Private-Sector Stewardship toward a Circular Economy** – Actively involve citizens, businesses, and industry in waste reduction, source separation, and recycling initiatives. This objective seeks to cultivate a culture of waste responsibility and innovation. It includes public awareness campaigns, incentives for waste reduction and reuse, and partnerships with the private sector to develop recycling value chains and green jobs. Extended Producer Responsibility programs and polluter-pays instruments fall under this goal, shifting the mindset from waste disposal to resource circularity. By boosting community engagement and corporate accountability, Lebanon can significantly reduce landfill volumes and integrate into global circular economy trends.
3. **Enable an Effective Governance Framework for ISWM** – Establish the institutional, legal, and regulatory conditions for successful strategy implementation. This objective tackles the governance and capacity gaps: it involves clarifying and streamlining roles among agencies, operationalizing the NSWMA as a national regulator/coordinator, and empowering local authorities. It calls for strengthening municipal capacities (through training, technical assistance, and stable funding mechanisms) so that municipalities and unions can manage services to standard. It also includes enforcing regulations and improving transparency and accountability in the sector. The outcome will be a consistent governance structure with clear accountability, capable institutions at all levels, and effective enforcement of waste management laws and standards.
4. **Strengthen National Resilience of ISWM in Times of Crisis** – Build preparedness and response capacity for managing waste during emergencies, disasters, and conflicts. Given Lebanon's vulnerability to crises, this new strategic objective ensures the waste sector can withstand and quickly recover from shocks. It entails developing contingency

plans, emergency protocols, and coordination mechanisms for crisis waste management. This includes creating temporary waste storage and treatment capacity that can be activated in disasters, establishing inter-agency coordination for debris clearance and hazardous waste handling, and integrating disaster risk scenarios into waste infrastructure planning. By institutionalizing crisis-response capabilities, Lebanon's waste system will be more resilient to events like war damage, massive explosions, pandemics, or natural disasters that can generate sudden surges of waste. This objective reflects lessons learned from events such as the 2020 Beirut Port explosion and the 2024 conflict, which produced huge volumes of rubble, hazardous debris, and medical waste that overwhelmed existing facilities. Going forward, the waste management strategy explicitly addresses these contingencies to protect public health and the environment even under emergency conditions.

Each strategic objective is accompanied by specific targets and performance indicators, phased across short-term (1–5 years), medium-term (6–10 years), and long-term (11–20 years) milestones. All proposed measures, including their phased timelines and associated key performance indicators (KPIs), are detailed in the tables presented below.

1.5.1 Strategic Objective 1: Complete, Upgrade & Operate ISWM Infrastructure

MEASURES	RESPONSIBLE ENTITY(IES)	TIME-SCHEDULE	TARGETS ST (1-5 YEARS) & MT (6-10 YRS)	TARGETS LT (11-20 YEARS) ⁹	INDICATORS	BASELINE (2025)	CALCULATION METHOD
STRATEGIC OBJECTIVE 1: COMPLETE, UPGRADE & OPERATE ISWM INFRASTRUCTURE							
Sub-Objective 1.1: Establish an Effective Waste Collection and Transportation System							
1.1.1. Design and implement a waste collection and transportation system based on waste segregation	MoE / NSWMA / Local Authorities	2026-2046	- Achieve equitable and reliable collection coverage across all urban and rural areas (≥70%) at ST - Introduce separate collection in ≥30% of municipalities for household waste (MT) - Introduce separate collection in ≥50% for non-household waste (MT) - Replace/upgrade outdated vehicles and equipment in ≥50% of service zones (MT)	- Achieve equitable and reliable collection coverage across all urban and rural areas (100 %) - Complete the separate collection in ≥50% of municipalities for household waste - Complete the separate collection in ≥70% for non-household waste - Complete the replacement/upgrading outdated vehicles and equipment in ≥100% of service areas	- Collection coverage (% of households and non-household served) - Separate collection coverage (% of households and non-household) - Collection frequency consistency (% of areas meeting planned collection schedule)	- Coverage is uneven, with quasi- full service in urban areas, but many rural and remote areas underserved (collection frequency varies from daily to twice a month). - Limited separate collection system in place	- Coverage = (Households served/ Total households) × 100 - Coverage = (non-household served /Total Non-households) × 100 - Household waste quantity (t/yr or t/d) = Total generated waste - non-household waste quantity - Separate collection = (Households with segregation system/Total households) × 100 - Separate collection = (non-households with segregation system/ Total non-households) × 100 - Frequency consistency = (Areas with regular collection/ Total areas) × 100
1.1.2. Design, construct, O&M Transfer Stations	MoE / NSWMA / Local Authorities	2026-2046	- Conduct national mapping and to identify regional sites for transfer stations for special streams (ST) - Construct and operationalize the needed regional transfer stations (100% of national service zones) (MT) - Establish transparent O&M and cost recovery mechanisms. (MT) - Integrate all transfer stations into a digital logistics management system for route optimization	Enforce transparent O&M and cost recovery mechanisms	- Number of functional transfer stations % of waste passing through transfer stations	- No dedicated transfer stations for waste handling in most areas; waste is directly transported to final disposal. - No integrated logistics system for optimizing routes and collection points.	- Functionality = (Operational transfer stations /Planned stations) × 100 - Flow coverage = (Tons of waste handled by transfer stations/Total collected waste tons) × 100
1.1.3. Design and implement a hazardous waste collection system for household and non-household	MoE / NSWMA / Local Authorities	2026-2046	- Develop and adopt a national hazardous waste (HW) management plan (ST) - Study a HW national baseline (ST) - Prioritize HW collection stream (ST) - Establish HW collection plan for all of HW streams (ST) - Achieve 40% HW collection for non-household for prioritized streams (MT)	- Achieve 70% HW collection of non-households for all HW streams - Achieve 30% HW collection of households for all HW streams	- HW Collection System Coverage (% of regions with HW collection points) OR % of identified HW generation sources covered by a functional HW collection and tracking system - HW collected vs. generated (% traceability)	- Limited dedicated HW collection system in place. Most HW is either improperly disposed of or handled informally. - Limited regulated infrastructure for safe collection, handling, or disposal.	- Coverage = (Number of collected HW streams/ Total HW Streams) - Traceability = (HW collected through system / Total HW generated) × 100

⁹ According to Law 80/2018, the NISWMS should be amended after a maximum of 10 years

MEASURES	RESPONSIBLE ENTITY(IES)	TIME-SCHEDULE	TARGETS ST (1-5 YEARS) & MT (6-10 YRS)	TARGETS LT (11-20 YEARS) ⁹	INDICATORS	BASELINE (2025)	CALCULATION METHOD
Sub-Objective 1.2: Establish Reuse, Recycling¹⁰, Material Recovery Facilities, Treatment for Separately Collected Waste							
1.2.1. Design, construct, O&M Drop Off, Reuse and Repair centers for non-hazardous special streams of waste	MoE / NSWMA / Local Authorities	2026-2046	- Conduct national mapping to identify local sites for drop-off/reuse/repair centres in alignment with the transfer station mapping (ST) - Establish the needed local sites for drop-off/reuse/repair centres to cover 100% of national service zones (ST/MT) - At least 20% by weight for household waste (MT) - At least 50% by weight for non-household waste (MT)	- At least 50% by weight for household waste - At least 80% by weight for non-household waste (MT)	% of municipal waste diverted to reuse and repair channels - Number of operational drop-off/reuse/repair centres	- Limited and unorganised municipal drop-off, reuse and repair centres - Informal and other limited, small-scale private/ non-governmental initiatives - Reuse and recycling rate is negligible	- Diversion= (Tons collected at drop-off centres/Total municipal waste generated in the same area) × 100 - Operational centres=(Total functioning centres/Total planned centres) × 100
1.2.2. Design, construct/upgrade, O&M Material Recovery Facilities for non-hazardous special streams of waste	MoE / NSWMA / Local Authorities	2026-2046	- Rehabilitate and re-commission existing clean MRFs to restore 50% of theoretical capacity to cover 40% of waste generation (ST) - Achieve at least 80% operational functionality to reach 70% of waste generation (MT)	Maintain ~~reach~~ a sustainable national network of functional clean MRFs covering 70% of waste generation, operating under sound O&M and cost recovery models.	% of theoretical clean MRF capacity restored and operational % of clean MRFs operational (continuous operation ≥80% of scheduled days) - Material recovery rate (%) % of municipal waste processed in functional clean MRFs	Limited clean MRFs;	- Infrastructure = (Number of MRFs restored and operational/Total existing MRFs) × 100 - Capacity = (total capacity of operational MRFs/total capacity of all existing MRFs) × 100 - Operational MRFs = (Number of MRFs operating ≥80% of scheduled days/Total number of MRFs) × 100 - Material Recovery = (Tons of recyclables recovered and sold/ Total tons of waste entering the MRF) × 100 - Coverage = (Tons of municipal waste processed by functional MRFs /Total waste generated) × 100
1.2.3. Design, construct/upgrade, O&M biowaste valorization with climate smart investments ¹¹	MoE / NSWMA / Local Authorities	2026-2046	- Conduct national mapping and to identify regional sites for biowaste waste valorisation (ST) - Implement/Operate at least 1 biowaste valorisation facility within each service zone in alignment with the conducted mapping (ST) - Expand to cover 30% of biowaste (MT)	Achieve national biowaste valorisation facilities capacity covering at least 50% of biowaste.	- Number of new operational biowaste valorisation facilities % of biowaste treated through biowaste valorisation facilities	- One operational anaerobic digestion plant in Saida (MoE/ UNDP/ UNICEF/ UNHCR, 2020) - Most of composting facilities currently operational generate compost like output, while a limited number generates compost	- Infrastructure = (Number of operational facilities/Total number of facilities planned) × 100 - Treatment coverage = (Tons of biowaste treated at facilities/Total estimated biowaste generated) × 100
1.2.4. Design, construct/upgrade, O&M HW Management and Treatment Facilities – HWRF	MoE / NSWMA	2026-2046	Establish HW management and treatment facilities for prioritised of HW streams (ST/MT)	- Establish HW management and treatment facilities for all HW streams (MT/LT) - Operate/maintain functional HW management and treatment for at	- Number of operational HW management and treatment facilities. % of identified HW generation sources	No national HW management and treatment system; only small-scale or project-based initiatives for	Infrastructure = (Number of HW management and treatment facilities operational/Number of facilities planned) × 100

¹⁰ According to Law 80/2018, “recycling” is the process of recovering materials that are contained in solid waste. These materials can be reused as substitutes for raw materials used in a manufacturing process or the properties of these materials can be used for the recycling of those materials or the manufacture of other materials. The process excludes the direct use of the energy recovered from these wastes.

¹¹ Refers to the allocation of financial resources towards projects, initiatives, and technologies that aim to mitigate the impacts of climate change and promote the transition to a low-carbon, sustainable economy.

MEASURES	RESPONSIBLE ENTITY(IES)	TIME-SCHEDULE	TARGETS ST (1-5 YEARS) & MT (6-10 YRS)	TARGETS LT (11-20 YEARS) ⁹	INDICATORS	BASELINE (2025)	CALCULATION METHOD
			Achieve 40% priority HW treatment through licensed facilities or services. (MT)	least 70% of identified HW generation sources through licensed facilities or services.	- covered by licensed management and treatment facilities or services % of HW diverted from landfill or open dumping	certain streams (e-waste, batteries, healthcare waste). Arcenciel's infectious waste treatment regional facilities, Abbassiyeh Municipality's autoclave, unlicensed pyrolysis facility in Choueifat; Ecoserv's E-waste and battery waste processing facility; IMC sarl and Arayby Co. as lead recycling facilities, etc.	Recovery = (Tons of HW managed or treated at licensed facilities / Total tons of HW generated nationally) × 100
Sub-Objective 1.3: Establish Climate-Smart Waste Treatment and Energy Recovery Facilities							
1.3.1. Design, construct/upgrade, O&M Commingled Municipal Waste Treatment ¹² and Energy Recovery Facilities – MWTF	MoE / NSWMA / Local Authorities	2026-2046	- Rehabilitate and re-commission existing wet MRFs to restore 50% of theoretical capacity to cover 40% of waste generation (ST) - Achieve at least 80% operational functionality to reach 70% of waste generation (MT) - Establish energy recovery capacity to accommodate 50% of the service zones needs in alignment with waste hierarchy and masterplan	- Reach a sustainable national network of functional wet MRFs covering 70% of waste generation, operating under sound O&M and cost recovery models. - Establish energy recovery capacity to accommodate 100% of the service zones needs in alignment with waste hierarchy and masterplan	% of planned waste treatment and energy recovery facilities constructed, upgraded, or operational % of municipal solid waste (MSW) generation covered by waste treatment and energy recovery facilities service areas % of commingled MSW recovered or treated at waste treatment and energy recovery facilities % of MSW diverted from landfilling or open dumping due to waste treatment and energy recovery facilities operations - Energy recovered from energy recovery facilities operations (MWh/year) as % of potential recoverable energy from MSW	- One energy recovery facility in in the Bekaa (SICOMO - capacity of ~200 tons/day) (MoE/ UNDP/ UNICEF/ UNHCR, 2020). - More than 18+ wet MRFs exist, ¹³ ; most non-operational or operating below design capacity.	- Infrastructure= (Number of MWTFs constructed, upgraded, or operational / Total number of MWTFs planned) × 100 - Coverage = (Tons of MSW generated within MWTF service areas / Total tons of MSW generated nationally) × 100 - Recovery/Treatment = (Tons of MSW recovered or treated at MWTFs/ Total tons of MSW received by MWTFs) × 100 - Diversion= (Tons of MSW treated or recovered at MWTFs / Total tons of MSW previously disposed in landfills or dumpsites) × 100 - Energy recovery (MWh of energy generated from MWTF operations /Total potential MWh recoverable from treated MSW) × 100

¹² According to Law 80/2018, “waste treatment” refers to the processes for the transformation of waste using any of the following technologies: recycling, composting, biodegradation and/or thermal disintegration.

¹³ Sources: Draft ISWM Strategy, 2019 and MoE/CDR/ELARD, 2020 (Business Plan for Combating Pollution of the Lower Litani River Basin)

MEASURES	RESPONSIBLE ENTITY(IES)	TIME-SCHEDULE	TARGETS ST (1-5 YEARS) & MT (6-10 YRS)	TARGETS LT (11-20 YEARS) ⁹	INDICATORS	BASELINE (2025)	CALCULATION METHOD
1.3.2. Design, construct, O&M Sludge Treatment Facilities-STF	MoE / NSWMA / Local Authorities	2026-2046	- Plan, build and operate STF to cover 20% national sludge treatment capacity (ST) - Plan, build and operate STF to cover 50% national sludge treatment capacity (MT)	Plan, build and operate STF to cover 80% national sludge treatment capacity	% of planned STF constructed, or operational % of WWTPs connected to operational STF or equipped with on-site sludge treatment % of generated sludge treated at licensed STF facilities % of sludge diverted from uncontrolled disposal	No sludge treatment capacity	- Infrastructure= (Number of STF constructed, , or operational/Total number of STF planned) × 100 - Coverage=(Number of WWTPs with access to STF services / Total number of WWTPs generating sludge) × 100 - Treatment/Recovery= (Tons of sludge treated at STF/ Total tons of sludge generated nationally) × 100 - Diversion= (Tons of sludge treated, at STF /Total tons of sludge previously disposed in uncontrolled sites) × 100
1.3.3. Design, construct/upgrade, O&M Agricultural Waste Treatment Facilities - AWTF	MoE / NSWMA / Local Authorities	2030-2046	At least 20 % of planned AWTF capacity established and operational within 10 years (MT)	At least 40 % of national agricultural waste generation managed through operational AWTF within 20 years.	% of planned AWTF constructed, upgraded, or operational % of agricultural waste generation covered by AWTF service areas % of agricultural waste treated or recovered at licensed AWTF % of agricultural waste diverted from open burning or uncontrolled dumping % of treated agricultural waste converted to beneficial products (e.g., compost, briquettes, etc.)	Agricultural waste largely unmanaged; no systematic recovery or treatment facilities in place.	- Infrastructure = (Number of AWTF constructed, upgraded, or operational / Total number of AWTF planned) × 100 - Coverage = (Tons of agricultural waste generated within AWTF service areas / Total tons of agricultural waste generated nationally) × 100 - Treatment/recovery = (Tons of agricultural waste treated or recovered at AWTF / Total tons of agricultural waste generated) × 100 - Diversion = (Tons of agricultural waste treated or recovered at AWTF / Total tons of agricultural waste previously disposed through uncontrolled means) × 100 - Resource utilization = (Tons of agricultural waste converted to beneficial use / Total tons of agricultural waste treated) × 100
Sub-Objective 1.4: Establish Climate-Smart Final Disposal Facilities and Close/Rehabilitate Open Dumps							
1.4.1. Design, construct/upgrade, O&M Municipal Sanitary Landfills (MWSL), including landfill gas utilization where financially viable	MoE / NSWMA / Local Authorities	2026-2046	- Achieve 100% sanitary landfill coverage for residues of municipal waste requiring final disposal (MT) - Divert up to 25% of total MSW from engineered sanitary landfills while progressively increasing it and implement gas recovery where applicable.	Divert up to 60% of total MSW from engineered sanitary landfills while progressively increasing it and implement gas recovery in all sanitary landfills	% of MSW generation covered by operational sanitary landfills % of MSW disposed of in engineered sanitary landfills % of MSW diverted from landfilling through recovery, recycling, or treatment % of sanitary landfills with operational landfill gas capture and utilization systems	8 operating sanitary landfills, receiving approximately 3,182 tons/day, which exceeds original design capacity, leading to overfilling, shortened service life, and increased leachate emissions.	- Coverage = (Tons of MSW generated within areas covered by sanitary landfills / Total tons of MSW generated within area) × 100 - Controlled disposal = (Tons of MSW disposed in sanitary landfills / Total tons of MSW generated) × 100 - Landfill Gas Utilization = (Number of sanitary landfills with active gas utilization/Total number of operational sanitary landfills) × 100

MEASURES	RESPONSIBLE ENTITY(IES)	TIME-SCHEDULE	TARGETS ST (1-5 YEARS) & MT (6-10 YRS)	TARGETS LT (11-20 YEARS) ⁹	INDICATORS	BASELINE (2025)	CALCULATION METHOD
1.4.2. Design, construct/upgrade, O&M CDW Sanitary Landfills	MoE / NSWMA / Local Authorities	2026-2046	- Plan, construct and operate CDW sanitary landfills in prioritised service zones (ST) - Achieve at least 30% of total non-recoverable CDW disposed in engineered CDW sanitary landfills (ST) - Plan, construct and operate CDW sanitary landfills to cover all service zones (MT) - Achieve at least 50% of total non-recoverable CDW disposed in engineered CDW sanitary landfills (MT)	Achieve 80% of total non-recoverable CDW generation disposed in engineered CDW sanitary landfills	% of planned CDW sanitary landfills constructed, or operational % of national CDW generation covered by sanitary landfill % of service zones areas served by operational CDW sanitary landfills	CDW mostly dumped or mixed with MSW; no dedicated engineered sites operational.	- Infrastructure= (Number of CDW landfills constructed, , or operational / Total number of CDW landfills planned) × 100 - Controlled disposal= (Tons of CDW disposed in sanitary landfills ÷ Total tons of CDW generated nationally) × 100
1.4.3. Close and rehabilitate uncontrolled dumpsites (ST/MT)	MoE / NSWMA / Local Authorities	2026-2046	- Achieve 100% closure and of all identified uncontrolled dumpsites (MT) - Achieve rehabilitation of at least 30% of identified uncontrolled dumpsites (MT)	- Achieve rehabilitation of at least 60% of identified uncontrolled dumpsites - Maintain rehabilitation and gradual restoration of closed sites	% of identified uncontrolled dumpsites closed % of closed dumpsites rehabilitated or under environmental restoration % of waste previously disposed in uncontrolled dumpsites redirected to compliant facilities % of rehabilitated dumpsites under active post-closure monitoring and maintenance	Over 1,500 illegal dumps persist nationwide with 2,346 waste tons/day disposed of in open dumps.	- Closure implementation = (Number of uncontrolled dumpsites officially closed / Total number of uncontrolled dumpsites identified) × 100 - Rehabilitation progress = (Number of dumpsites rehabilitated or under rehabilitation/Total number of closed dumpsites) × 100 - Disposal substitution = (Tons of waste redirected to compliant disposal or treatment facilities / Total tons of waste previously disposed in uncontrolled dumpsites) × 100 - Post-closure monitoring = (Number of rehabilitated dumpsites with ongoing monitoring / Total number of rehabilitated dumpsites) × 100
1.4.4. Design, construct, O&M HW Disposal Sites	MoE / NSWMA / Local Authorities	2026-2046	- Plan, construct and operate hazardous sanitary landfills to cover all service zone needs (MT) - Achieve at least 50% of national hazardous waste disposal capacity established and operational prioritizing industrial zones and major urban centers. (MT)	Achieve 80% national coverage of compliant hazardous waste disposal capacity, integrated with HW collection, treatment, and tracking systems.	% of planned HW disposal sites constructed, or operational % of national HW generation covered by operational disposal facilities % of hazardous waste disposed of at licensed disposal sites % of hazardous waste diverted from uncontrolled disposal, open dumping, or co-disposal with municipal waste	No disposal sites dedicated to HW	- Infrastructure= (Number of HW disposal sites constructed, or operational / Total number of HW disposal sites planned) × 100 - Controlled disposal= (Tons of HW disposed at licensed disposal sites / Total tons of HW generated nationally) × 100 - Diversion from uncontrolled disposal= (Tons of HW managed through compliant treatment or disposal facilities / Total tons of HW previously disposed in uncontrolled or mixed sites) × 100
1.4.5. Close and rehabilitate areas contaminated with HW and existing/historical	MoE / NSWMA / Local Authorities	2026-2046	Complete national inventory and risk assessment of contaminated and historical HW disposal sites (ST).	Achieve 70% closure and rehabilitation of all identified contaminated HW sites ensuring	Mapping of contaminated or historical HW sites identified and assessed	Survey needed to identify contaminated sites	Closure and rehabilitation implementation= (Number of HW-contaminated sites closed, contained, or remediated / Total

MEASURES	RESPONSIBLE ENTITY(IES)	TIME-SCHEDULE	TARGETS ST (1-5 YEARS) & MT (6-10 YRS)	TARGETS LT (11-20 YEARS) ⁹	INDICATORS	BASELINE (2025)	CALCULATION METHOD
HW disposal sites after conducting any needed inventory			- Initiate closure and containment of high-risk priority sites. (ST) - Achieve closure, containment, or remediation of at least 30% of identified contaminated or historical HW sites based on environmental risk prioritization (MT)	long-term monitoring and prevention of recontamination.	% of identified HW-contaminated sites closed, contained, or remediated % of total contaminated land area remediated or under rehabilitation % of rehabilitated HW sites under long-term environmental monitoring programs	- No comprehensive national inventory - Scattered contamination known at legacy waste sites - Informal HW disposal areas.	- number of HW-contaminated sites identified) × 100 - Area-based rehabilitation= (Total area of HW-contaminated land rehabilitated or under remediation / Total area of HW-contaminated land identified) × 100 - Post-closure monitoring= (Number of rehabilitated HW sites under active monitoring plan / Total number of rehabilitated HW sites) × 100

1.5.2 Strategic Objective 2: Enhance Community and Private Sector Stewardship Towards a Circular Economy

MEASURES	RESPONSIBLE ENTITY(IES)	TIME-SCHEDULE	TARGETS ST (1-5 YEARS) & MT (6-10 YRS)	TARGETS LT (11-20 YEARS) ¹⁴	INDICATORS	BASELINE (2025)	CALCULATION METHOD
STRATEGIC OBJECTIVE 2: ENHANCE COMMUNITY AND PRIVATE SECTOR STEWARDSHIP TOWARDS A CIRCULAR ECONOMY							
Sub-Objective 2.1: Engage Community in Waste Reduction and Sorting at Source							
2.1.1. Develop a plan for waste reduction – including marine, coastal and street litter prevention (ST) and implement measures such as reducing packaging materials, reducing single-use plastic use, promoting reusable products	MoE / NSWMA	2026–2046	- develop and adopt a National Waste Reduction and Litter Prevention Plan addressing both marine and street litter, with targeted measures promoting packaging reduction and plastics reuse (ST) - Achieve at least 3% reduction in per-capita municipal waste generation through waste prevention and reuse initiatives (MT)	Achieve at least 6% reduction in per-capita municipal waste generation through waste prevention and reuse initiatives (MT)	- Existence of an approved National Waste Reduction and Marine Litter Prevention Plan % reduction in per-capita MSW generation compared to baseline year % reduction in single-use plastic products placed on the market % reduction in packaging materials used or marketed nationally % of products or packaging replaced by	Not in place	- Waste generation reduction = ((Per-capita MSW generation in baseline year – Per-capita MSW generation in reporting year) / Per-capita MSW generation in baseline year) × 100 - Single-Use Plastic reduction= ((Quantity of single-use plastic products in baseline year – Quantity in reporting year) / Quantity in baseline year) × 100 - Packaging Materials reduction= ((Tons of packaging material placed on the market in baseline year – Tons in reporting year) / Tons in baseline year) × 100 - Marine litter prevention= ((Items of litter recorded in baseline surveys – Quantity items recorded in current

MEASURES	RESPONSIBLE ENTITY(IES)	TIME-SCHEDULE	TARGETS ST (1-5 YEARS) & MT (6-10 YRS)	TARGETS LT (11-20 YEARS) ¹⁴	INDICATORS	BASELINE (2025)	CALCULATION METHOD
					reusable alternatives (by volume or units) % reduction in coastal and marine litter items recorded in monitoring surveys % reduction in street litter items recorded in monitoring surveys		surveys) / Number in baseline surveys) × 100 Street litter prevention = ((Litter density (items/100 m) recorded in baseline surveys - Litter density (items/100 m) recorded in reporting year) / (Litter density (items/100 m) recorded in baseline surveys × 100
2.1.2. Promote home composting	MoE / Local Authorities	2026-2046	- Launch national awareness and pilot home composting initiatives (ST) - Achieve at least 5% diversion of household biowaste through home composting (MT)	Achieve at least 10% diversion of household biowaste through home composting (LT).	% of municipalities conducting awareness or training programs on home composting % of households using home composting bins through municipal or national initiatives % of household biowaste diverted from collection and disposal through home composting	Not common	- Composting programs= (Number of municipalities conducting home composting programs / Total number of municipalities) × 100 - Equipment distribution= (Number of households receiving composting bins / Total number of households targeted) × 100 - Household participation= (Number of households practicing home composting / Total number of households generating organic waste) × 100 - Diversion= (Tons of biowaste composted at home / Total tons of household biowaste generated) × 100
Sub-Objective 2.2: Integrate the Informal Sector in the ISWM System							
2.2.1. Develop a study to identify the modalities for the integration of the informal sector (options/recommendations)	MoE	2026-2031	Complete a national study on the informal waste sector, including mapping of actors, socio-economic assessment, and proposed integration modalities and recommendations (ST).		- Issuance of national study on informal sector integration % of municipalities or regions covered by the informal sector mapping	- Informal sector not integrated - No integration study available	Coverage = (Number of municipalities included in the study/ Total number of municipalities) × 100
2.2.2. Implement recommendations for the integration of the informal sector	MOE / NSWMA / Local Authorities	2026-2046	Gradual implementation of integration recommendations, prioritizing formalization pilots, capacity building, and social protection mechanisms (ST/MT).	Advanced integration of informal sector actors into formal ISWM value chains, through licensing, cooperatives, or contractual arrangements.	% of identified informal sector workers integrated into formal ISWM systems % of municipalities/contractors formally engaging informal workers in waste collection, sorting, or recycling service	- Informal sector not integrated - No integration study available	- Integration= (Number of informal workers formally registered, contracted, or organized into cooperatives / Total number of informal workers identified) × 100 - Service inclusion = (Number of municipalities/contractors with formal engagement mechanisms / Total number of municipalities) × 100

MEASURES	RESPONSIBLE ENTITY(IES)	TIME-SCHE DULE	TARGETS ST (1-5 YEARS) & MT (6-10 YRS)	TARGETS LT (11-20 YEARS) ¹⁴	INDICATORS	BASELINE (2025)	CALCULATION METHOD
Sub-Objective 2.3: Promote Private Sector Participation and Investment in Waste Management							
2.3.1. Prepare guidelines for PPP tender documents and contract conditions (e.g. Service Contracts, Management Contracts, Leases, Facility Concessions)	MoE	2026-2031	- Prepare and approve standardized PPP guidelines including incentive schemes, model tender documents, and contract templates for waste management projects, ensuring alignment with national PPP law and procurement regulations. (ST) - Assess PPP feasibility and prioritize waste streams and value-chain segments for PPP investment (ST).	Review, assess, and update national waste management guidelines and templates, as needed to remain aligned with evolving regulatory and operational requirements	- Issuance of PPP guidelines for waste management % of waste management subsectors (collection, transfer, treatment, disposal) covered by PPP model documents	No unified official tender documents and contracts	Sector coverage= (Number of subsectors with PPP model documents developed/total number of targeted subsectors) × 100
2.3.2. Provide increased Return of Equity in order to make the PPP approach attractive to the private sector for the investment in the waste management value chain	MoE / NSWMA / Ministry of Economy	2026-2046	Improvement of financial and risk-sharing mechanisms (e.g. increased RoE, viability gap funding, feed-in tariffs for RDF/energy recovery) to enhance private sector participation.	Adoption of financially attractive PPP models ensuring sustainable private investment across all major waste management infrastructure categories.	% increase in average RoE for PPP waste management projects % of total waste management investments financed or co-financed by the private sector	Low RoE resulting from the economic crisis	- Private sector participation= (Value of private investments in waste projects / Total investment value in waste management sector) × 100 - Investor confidence= ((Number of private bidders in reporting period – Number of bidders in baseline period) / Number of bidders in baseline period) × 100
2.3.3. Provide incentives for the design, construction, O&M of Recycling Infrastructure	MoE / NSWMA / Ministry of Economy / Ministry of Industry	2026-2036	- Develop standards to ensure reliable recycling feedstock (ST). - Implementation of incentive mechanisms to promote private sector investment in specialized recycling infrastructure (MT)		% of planned financial or fiscal incentives for recycling infrastructure established and operational % increase in private investment in targeted recycling sectors	Non existent	- Incentives mechanism implementation= (Number of incentive schemes operational / Total number of incentive schemes planned) × 100 - Private sector uptake= ((Private investment in reporting year – Private investment in baseline year) / Private investment in baseline year) × 100
Sub-Objective 2.4: Enhance Public Awareness and Education							
2.4.1. Develop an ISWM Public Awareness and Education Program covering reduction; reuse; sorting at source; separate collection of various waste streams; recycling/recovery; waste treatment and safe disposal vs. littering, open dumping & burning	MOE / NSWMA / Local Authorities/ Ministry of Education	2026-2036	- Develop and adopt a National ISWM Public Awareness and Education Program, including objectives, key messages, stakeholder mapping, and implementation plan (ST) - Ensure 100% coverage, i.e., the program is fully operational at national and local levels and integrated into ISWM planning and municipal outreach (MT).	Evaluate and update the National ISWM Public Awareness and Education Program	- Issuance of ISWM Public Awareness and Education Program % of ISWM thematic areas (reduction, reuse, sorting, recycling, treatment, disposal) included in the program % of targeted stakeholder groups (households, schools, industries, NGOs) represented in the awareness program	Non existent	- Program development= (Status of program approval [1 = approved, 0 = not approved]) - Topics coverage= (Number of ISWM themes included / Total number of targeted themes) × 100 & (Number of themes with detailed key messages, tools, and materials / Total number of themes included) × 100 - Stakeholder engagement= (Number of stakeholder groups engaged / Total number of targeted groups) × 100
2.4.2. Implement the ISWM Public Awareness & Education Program	MOE / NSWMA / Local Authorities	2026-2036	100% implementation, ensuring full rollout of national and local campaigns, training activities, and public outreach tools under the	Carry out regular, measurable assessments to track changes in cultural behavior (MT/LT)	% of planned awareness and education activities implemented	Non existent	Implementation progress= (Number of awareness activities implemented / Number of awareness activities planned) × 100

MEASURES	RESPONSIBLE ENTITY(IES)	TIME-SCHE DULE	TARGETS ST (1-5 YEARS) & MT (6-10 YRS)	TARGETS LT (11-20 YEARS) ¹⁴	INDICATORS	BASELINE (2025)	CALCULATION METHOD
			- approved ISWM Awareness and Education Program. - Design and Establish partnerships with community groups, businesses, and media to support continuous outreach in alignment with the developed education and awareness program (ST/MT)		% of population reached by awareness and education activities % of schools incorporating ISWM topics into curricula or extracurricular activities		- Population reach= (Estimated population reached through campaigns / Total national population) × 100 - Schools= (Number of schools implementing ISWM education activities / Total number of schools) × 100
2.4.3. Conduct national and local dialogues on specific issues related to ISWM, such as sanitary landfilling, paying for ISWM services, energy recovery, etc.	MOE / NSWMA / Local Authorities	2026-2036	- Prepare a communication plan that lays out an action plan for events and dialogues (ST) - Achieve 100% implementation, ensuring all targeted ISWM issues are discussed with active multi-stakeholder participation (MT).	Continuously review and re-assess dialogue approaches to evaluate their impacts	% of planned events conducted % of governorates or municipalities hosting ISWM dialogue sessions % of targeted stakeholder categories participating (citizens, municipalities, private sector, NGOs, academia, etc.) % of dialogue recommendations reflected in ISWM planning or decision-making	Non existent	- Events held= (Number of dialogue events held / Number of events planned) × 100 - Geographic coverage = (Number of governorates-municipalities with eventss / Total number of governorates-municipalities) × 100 - Stakeholder participation= (Number of stakeholder categories represented / Total number of targeted categories) × 100 - Policy uptake= (Number of recommendations adopted in ISWM policy / Total number of recommendations generated) × 100
2.4.4. Implement education and awareness campaigns for hazardous waste producers with emphasis on their responsibilities and technological evolutions in waste management and hazardous waste prevention	MOE / NSWMA / Local Authorities	2026-2046	- Strengthen national capacity for responsible hazardous waste generation and management by ensuring that all major producer sectors receive consistent and authoritative guidance (ST) - Build long term partnerships with industry groups, health institutions, and research bodies to embed hazardous waste prevention into routine operations (MT) 100% implementation of awareness and training campaigns targeting HW producers (industrial, healthcare, institutional) on their legal obligations, safe practices, and prevention technologies (MT)	Establish a culture of accountability among hazardous waste producers by raising awareness of responsibilities, liabilities, and sustainability expectations	% of planned HW producer awareness campaigns conducted % of identified HW-producing sectors reached by awareness or training programs % of licensed HW generators participating in awareness/training activities	Non existent	- Sector coverage= (Number of sectors covered / Total number of HW-producing sectors identified) × 100 - Participation= (Number of participating HW generators / Total number of licensed HW generators) × 100
2.4.5. Collaborate with Universities, , and other national research institutions to mainstream ISWM concepts into academic programs. Incl. developing or updating curricula, establishing	MOE / MoEHE /NSWMA / Local Authorities	2026-2036	- At least 50% of higher education institutions (HEIs) integrate updated ISWM-related modules into existing environmental engineering, public health, biology, chemistry, and policy programs (ST) - A national ISWM curriculum framework is jointly developed by MoE, MoEHE, and a consortium of universities (ST)		% of HEIs integrating ISWM-related curriculum content into relevant academic programs. - Status of National ISWM curriculum framework preparation and endorsement.	Non existent	- ISWM Module Integration= (Number of HEIs that have integrated updated ISWM modules / Total number of HEI targeted) × 100 - Curriculum framework status= (Status of program approval [1 = approved, 0 = not approved]) - Mandatory ISWM Course Adoption= (Number of universities adopting a

MEASURES	RESPONSIBLE ENTITY(IES)	TIME-SCHEDULE	TARGETS ST (1-5 YEARS) & MT (6-10 YRS)	TARGETS LT (11-20 YEARS) ¹⁴	INDICATORS	BASELINE (2025)	CALCULATION METHOD
mandatory foundational courses on waste management, promoting applied research on reduction, recycling, and hazardous waste compliance, and fostering partnerships between academia, municipalities, and the private sector for innovation and capacity development.			- A mandatory introductory ISWM or environmental compliance course included in undergraduate programs across 50% of universities (MT) - Operational academic-municipal research partnerships established in at least three regions to pilot innovative waste management practices (MT)		% of universities adopting a mandatory introductory ISWM or compliance course % of targeted thematic ISWM subjects integrated into each updated curriculum % of municipalities engaged in cooperation with academic institutions on ISWM topics		mandatory ISWM/compliance course ÷ Total number of HEI targeted) × 100 - Curriculum Topic Coverage= (Number of ISWM thematic subjects incorporated into curricula / Total identified priority themes) × 100 - Municipal Partnership Coverage= (Number of regions with active academic-municipal ISWM partnerships / Total number of municipalities) × 10

1.5.3 Strategic Objective 3: Enable an Effective Governance Framework to Implement the ISWM System

MEASURES	RESPONSIBLE ENTITY(IES)	TIME-SCHEDULE	TARGETS ST (1-5 YEARS) & MT (6-10 YRS)	TARGETS LT (11-20 YEARS) ¹⁵	INDICATORS	BASELINE (2025)	CALCULATION METHOD
STRATEGIC OBJECTIVE 3: ENABLE AN EFFECTIVE GOVERNANCE FRAMEWORK TO IMPLEMENT THE ISWM SYSTEM							
Sub-Objective 3.1: Establish and Operationalize the National Solid Waste Management Authority (NSWMA)							
3.1.1. Complete and endorse the Decrees on the NSWMA bylaws, operating and recruiting procedures, wage and salary scale and NSWMA Board of Directors appointment (Art. 13 of Law 80/2018)	MoE	2026-2027	All decrees on NSWMA governance framework (bylaws, recruitment, remuneration, and Board appointment) are, endorsed. (ST)		% of required NSWMA bylaws and decrees adopted and published % of internal regulatory and procedural instruments approved (operating, recruitment, wage/salary, HR procedures) - Status of NSWMA Board of Directors appointment	NSWMA not established	- Bylaws adoption = (Number of bylaws/decrees adopted / Total number of required bylaws/decrees) × 100 - Institutional framework = (Number of approved internal instruments / Total number of instruments required) × 100
3.1.2. Provide staff for the National Solid Waste Management Authority	MoE	2026-2027	NSWMA fully staffed according to its approved organizational structure and functional requirements.(ST)		% of approved staff positions filled % of female staff in NSWMA workforce % of NSWMA departments operational with assigned personnel	NSWMA not established	- Staffing= (Number of staff recruited / Total number of approved positions in NSWMA structure) × 100 - Gender = (Number of female staff/Total staff) × 100

MEASURES	RESPONSIBLE ENTITY(IES)	TIME-SCHEDULE	TARGETS ST (1-5 YEARS) & MT (6-10 YRS)	TARGETS LT (11-20 YEARS) ¹⁵	INDICATORS	BASELINE (2025)	CALCULATION METHOD
							Functional readiness= (Number of operational departments/ Total number of departments planned) × 100
3.1.3. Provide Technical Assistance to support the National Solid Waste Management Authority	MoE	2026-2028	Ensure NSWMA's institutional capacity, systems development, and initial implementation support. (ST)		% of planned technical assistance activities initiated % of deliverables produced under TA (e.g., procedures, manuals, databases, templates)	NSWMA not established	- TA mobilization= (Number of TA activities initiated / Total number of TA activities planned) × 100 - TA delivered= (Number of TA deliverables completed / Total number of TA deliverables planned) × 100
Sub-Objective 3.2: Establish and Implement Cost Recovery System and the Extended Producer Responsibility (EPR)							
3.2.1. Adopt and enforce the draft law (and regulations as needed) on financial instruments and cost recovery	MoE / MoF	2026-2036	- Draft law on cost recovery and financial instruments adopted and entering into force; implementation decrees (ST) - Develop guidelines for implementing the cost recovery law to ensure that local authorities clearly understand the law and how to apply it effectively. (ST) - Deliver a series of trainings and facilitated dialogues with local authorities to strengthen their understanding of the law, improve their technical and administrative capacities, and support consistent and effective implementation across all municipalities (ST/MT) - At least 40% of municipalities and service providers apply functional cost recovery mechanisms that align with national guidelines. (MT)	Full implementation of cost recovery mechanisms nationwide,	- Status of adoption of cost recovery law and regulations % of municipalities applying approved cost recovery mechanisms % of total waste management costs recovered through user charges, service fees, or producer contributions % of waste service users (households, businesses, institutions) covered by established tariff systems - Ratio of cost recovery revenues to operational and maintenance (O&M) costs of ISWM system	Cost recovery system non existent	- Municipal coverage = (Number of municipalities implementing cost recovery mechanisms / Total number of municipalities) × 100 - Cost recovery coverage = (Total revenues collected from cost recovery mechanisms / Total cost of waste management services) × 100 - Tariff implementation= (Number of service users billed under cost recovery system / Total number of service users) × 100 - Financial sustainability index = (Annual cost recovery revenue / Annual O&M costs of ISWM) × 100
3.2.2. Prepare guidelines for the full cost accounting of waste management activities and related tariffication schemes	MoE / MoF	2026-2036	- National guidelines on full cost accounting and tariffication schemes developed, validated, and disseminated along with training materials and toolkits that simplify key concepts for non-technical users (ST) - Full cost accounting guidelines applied by at least 40% of municipalities, unions, and waste service providers (MT)	Full implementation of cost recovery mechanisms nationwide,	- Status of preparation and endorsement of full cost accounting and tariffication guidelines % of municipalities or unions applying full cost accounting guidelines % of NSWMA and local authorities trained in cost accounting and tariff formulation % of municipalities with established and approved waste management tariffs based on full cost accounting	Cost recovery system non existent	- Coverage = (Number of municipalities/unions using full cost accounting guidelines / Total number of municipalities/unions) × 100 - Capacity = (Number of trained entities trained in cost accounting and tariff formulation / Total number of targeted entities) × 100 - Tariff system development = (Number of municipalities with full cost accounting -based tariffs / Total number of municipalities) × 100

MEASURES	RESPONSIBLE ENTITY(IES)	TIME-SCHEDULE	TARGETS ST (1-5 YEARS) & MT (6-10 YRS)	TARGETS LT (11-20 YEARS) ¹⁵	INDICATORS	BASELINE (2025)	CALCULATION METHOD
3.2.3. Develop, implement and enforce regulations and guidance documentation on the EPR system for packaging waste and special waste stream(s)	MoE / NSWMA	2026-2046	- Draft the EPR regulatory text (Law/Decree), initiate national consultations, and conduct a prioritization study to identify which packaging waste streams will enter EPR first (ST). - Develop and adopt the EPR regulatory and operational frameworks for the prioritized waste streams, including PRO design options (product-specific or multi-material) (ST/MT). - Develop and publish EPR guidelines, reporting templates, and compliance procedures, and conduct national capacity-building and training programs (MT). - Pilot and test EPR implementation on the selected priority waste streams to assess technical, institutional, and financial readiness (MT). - Establish at least one operational PRO per waste stream and ensure 40% coverage of identified priority streams by EPR systems (MT).	60 % implementation and enforcement of EPR systems across all priority waste streams, achieving effective collection, recovery, and recycling performance in line with circular economy targets. - All PROs fully operational, submitting compliance and financial reports to NSWMA and functioning under a harmonized national monitoring and auditing framework. - EPR rolled out to additional special waste streams, based on performance of the initial priority streams. - EPR system fully integrated into national solid waste planning, with cost coverage ensured through producer contributions and transparent financial reporting.	% of priority waste streams covered by EPR mechanisms - Number of established and operational PROs per waste stream % of PROs submitting compliance and financial reports to NSWMA % of EPR-covered waste collected, recovered, or recycled % of EPR system operational costs covered through producer contributions % increase in recovery and recycling rates for EPR waste streams relative to baseline	EPR legislation and Systems not available	- EPR integration = (No. of priority streams under EPR systems / Total identified) × 100 - PRO establishment = (No. of operational PROs / Total required PROs) × 100 - PRO reporting compliance = (No. of PROs submitting reports / Total operating PROs) × 100 - Cost coverage = (Producer contributions / Total operational costs) × 10 - Circularity = ((Current recovery rate – Baseline rate) / Baseline rate) × 100
Sub-Objective 3.3: Complete and Enforce the Waste Management Legislative Framework							
3.3.1. Draft/ adopt the decree on non-financial incentives for Solid Waste Management (Article 29 of Law 80/2018) and the ministerial decisions identified in the ISWM Law and which have not been adopted yet ¹⁶	MoE	2026-2036	- Drafting, consultation, and adoption of all pending decrees and ministerial decisions under Law 80/2018 completed (ST) - All decrees and ministerial decisions in force and operational, supporting implementation of the ISWM Law (ST/MT)		% of pending decrees and ministerial decisions drafted and adopted % of legal instruments with implementation mechanisms (guidelines, procedures) developed	Incentives not available and decisions not in place	- Legal completion= (Number of decrees/decisions adopted / Total number of decrees/decisions required under Law 80/2018) × 100 - Implementation readiness= (Number of instruments with supporting mechanisms / Total number of adopted instruments) × 100
3.3.2. Develop and execute an ISWM training and capacity building program to strengthen capacity of central and local	MoE / NSWMA	2026-2036	ISWM training and capacity building program developed and launched and supported by a dedicated communication and outreach plan to engage central and local authorities (ST)		- Status of ISWM training and capacity-building program development % of targeted central and local authorities participating in training	Central and local authorities capacities in waste management require building	- Institutional coverage = (Number of authorities trained/ Total number of targeted authorities) × 100 - Participant coverage = (Number of participants trained / Total number of targeted personnel) × 100

MEASURES	RESPONSIBLE ENTITY(IES)	TIME-SCHEDULE	TARGETS ST (1-5 YEARS) & MT (6-10 YRS)	TARGETS LT (11-20 YEARS) ¹⁵	INDICATORS	BASELINE (2025)	CALCULATION METHOD
authorities involved in waste management			Program fully implemented covering all relevant authorities and ensuring measurable improvement in capacity (MT)		% of targeted personnel trained across institutions % of planned training sessions or workshops conducted % of women participants in ISWM training activities		- Training delivery = (Number of sessions conducted / Total number of sessions planned) × 100 - Gender inclusion = (Number of women participants / Total number of participants) × 100
3.3.3. Improve capacities and mechanisms within MoE to ensure proper compliance control and enforcement of hazardous and non-hazardous waste management legal framework	MoE / NSWMA	2026-2036	- Strengthen MoE's internal structures and procedures for compliance monitoring and enforcement (ST). - Achieve full operational enforcement mechanisms ensuring effective control over hazardous and non-hazardous waste management (MT)	Full deployment of a national compliance information system that enables real time monitoring and data driven decision making (LT)	% of permitted facilities inspected annually % of identified violations followed by enforcement actions % of MoE inspectors trained on waste legislation and enforcement protocols % of enforcement data and inspection reports entered the MoE compliance database	Current capacities (mainly human resources and funds) not sufficient	- Compliance monitoring = (Number of facilities inspected / Total number of permitted facilities) × 100 - Enforcement actions = (Number of enforcement actions taken / Total number of violations identified) × 100 - Capacity building = (Number of trained inspectors / Total number of inspectors) × 100 - Data reporting = (Number of inspection reports uploaded in MoE database / Total number of inspections conducted) × 100
Sub-Objective 3.4: Complete and Implement the Planning Framework at the National and Local Level							
3.4.1. Develop the Local Waste Management Plans	Local Authorities	2026	Prepare, consult upon, finalize, and submit local Waste Management Plans (LWMPs) to the MoE/NSWMA for review and approval within 3 months from updated NISWMS endorsement	Local Waste Management Plans (LWMPs) regularly reviewed, updated, and reapproved to reflect changes in waste generation, technologies, and local priorities	% of LWMPs drafted % of LWMPs formally approved and adopted by the competent authorities % of national population covered by approved LWMPs % of total waste quantities covered by approved LWMPs	Plans not in place and law 80/2018 not properly enforced	- Plan preparation = (Number of LWMPs drafted / Total number of LWMPs required) × 100 - Plan adoption = (Number of LWMPs adopted / Total number of LWMPs required) × 100 - Population coverage = (Population served under approved LWMPs / Total national population) × 100 - Waste quantity coverage = (Tons of waste generated within service zones covered by approved LWMPs / Total tons of waste generated nationally) × 100
3.4.2. Develop action plans for priority waste streams	MoE / NSWMA	2026-2031	Prepare sector-specific action plans for all identified priority waste streams (ST)		% of priority waste stream action plans drafted % of action plans approved % of national priority waste streams with an operational action plan	Plans currently under development under EU and WB initiatives	- Action plan development = (Number of action plans drafted / Total number of priority waste streams identified) × 100 - Action plan adoption = (Number of action plans approved / Total number of action plans required) × 100 - Waste streams coverage = (Number of waste streams covered by approved action plans / Total number of national priority waste streams) × 100
Sub-Objective 3.5: Establish and Operationalize a Waste (including Hazardous Waste) Management Information System (WMIS)							

MEASURES	RESPONSIBLE ENTITY(IES)	TIME-SCHEDULE	TARGETS ST (1-5 YEARS) & MT (6-10 YRS)	TARGETS LT (11-20 YEARS) ¹⁵	INDICATORS	BASELINE (2025)	CALCULATION METHOD
3.5.1 Draft/adopt the ministerial decision/guidelines related to the WMIS (Art. 18 of Law 80/2018)	MoE	2026-2031	Draft, consult on, and formally adopt the ministerial decision and accompanying technical guidelines related to WMIS (ST)		% of WMIS legal and technical documentation drafted % of WMIS documents officially approved and published % of relevant institutions and stakeholders consulted during drafting	Guidelines related to WMIS not available	- Drafting progress= (Number of WMIS regulatory and technical documents drafted / Total number of required documents) × 100 - Adoption status= (Number of WMIS documents adopted / Total number of required documents) × 100 - Stakeholder engagement= (Number of consulted institutions / Total number of relevant institutions identified) × 100
3.5.2. Establish & implement the WMIS through a training program on the use of the WMIS (registry and reporting, storing, verifying, analysing, evaluating and providing data & information, reporting & monitoring)	MoE	2026-2031	- Design, establish, and deploy a fully functional national WMIS covering both household and non-household (ST) - Ensure that 100% of targeted institutions and operators are trained (ST) - Ensure that 60% of trained local authorities and service providers are using the WMIS for reporting and analysis (MT)	Ensure that 100% of trained local authorities and service providers are using the WMIS for reporting and analysis (LT)	% of targeted institutions (MoE, municipalities, facilities) connected to and using WMIS % of national waste quantities recorded in the WMIS % of obligated entities submitting data within required reporting periods	WMIS not in place	- System development= (Number of institutions using WMIS / Total number of targeted institutions) × 100 - Data coverage= (Tons of waste reported in WMIS / Total tons of waste generated nationally) × 100

1.5.4 Strategic Objective 4: Strengthen National Resilience for Solid Waste Management in Time of Crisis

MEASURES	RESPONSIBLE ENTITY(IES)	TIME-SCHEDULE	TARGETS ST (1-5 YEARS) & MT (6-10 YRS)	TARGETS LT (11-20 YEARS) ¹⁷	INDICATORS	BASELINE (2025)	CALCULATION METHOD
STRATEGIC OBJECTIVE 4: STRENGTHEN NATIONAL RESILIENCE FOR INTEGRATED SOLID WASTE MANAGEMENT IN TIMES OF CRISIS							
Sub-Objective 4.1: Ensure Continuity of Essential Waste Services During Emergencies							
4.1.1. Develop and operationalize contingency plans for waste collection, transfer, and disposal continuity during crisis	MoE / DRMU / Local Authorities / Private Operators / LAF / MoF	2026-2036	- Develop and test contingency plans in all service zones (ST) - Establish emergency contracting mechanisms (ST) 100 % of national service zones integrated into crisis-response network (MT)		% of service zones with validated contingency plans	None	Validated contingency plan coverage = (Number of service zones with plans / total number of service zones) × 100
4.1.2. Pre-position emergency resources (fuel, PPE, mobile units)	MoE / DRMU / Civil Defense	2026-2036	- Establish national emergency resource stockpiles (MT) - Ensure coverage of all high-risk areas (MT)	Maintain a fully resourced and updated national crisis-response pool	% of critical areas covered by emergency assets		Emergency asset coverage = (number covered zones / total zones) × 100

¹⁷ According to Law 80/2018, the NISWMS should be amended after a maximum of 10 years

MEASURES	RESPONSIBLE ENTITY(IES)	TIME-SCHEDULE	TARGETS ST (1-5 YEARS) & MT (6-10 YRS)	TARGETS LT (11-20 YEARS) ¹⁷	INDICATORS	BASELINE (2025)	CALCULATION METHOD
Sub-Objective 4.2: National Disaster Waste Management Contingency System							
4.2.1. Create a permanent national command & coordination structure for disaster waste	MoE / MoIM / MoPH / LAF / Civil Defense / Local Authorities	2026–2036	- Define roles and responsibilities for all crisis stakeholders (ST) - Conduct annual emergency response simulations (MT)		- Existence of Functional National Disaster Waste Coordination Platform (NDWCP) % of crisis-response stakeholders with defined and approved roles & responsibilities		- NDWCP status= [1 = fully functional, 0 = not functional] - Stakeholder role definition = ((Total number of identified stakeholders / Number of crisis stakeholders with approved roles-responsibilities / Total number of identified stakeholders) x 100
4.2.2. Designate emergency landfill cells and temporary debris storage areas	MoE / Municipal Unions / Private Sector	2026–2036	Identify and design at least three regional emergency waste zones (MT)		% of regions with designated emergency waste zones - Number of designated emergency landfill cells and temporary debris storage areas % of designated emergency zones meeting minimum readiness standards (preparedness, access, equipment) % of emergency zones validated through field inspections		- Emergency zone coverage = (Number of regions with at least one designated emergency waste zone / total number of regions) x 100 - Designated emergency zones progress= (Number of emergency zones designated / Target number (3)) / 100 - Readiness = (Number of designated emergency zones meeting all readiness standards / Total number of designated emergency zones) x 100 - Validation = (Number of designated zones validated through official inspection / Total number of designated emergency zones) x 100
Sub-Objective 4.3: Protect Public Health and the Environment							
4.3.1. Develop and enforce emergency environmental and occupational safety standards	MoE / MoPH / Civil Defense	2026–2036	- Approve and implement standards for temporary sites (MT) - Deploy mobile treatment units when required (MT)		- Existence and official approval of emergency environmental & OHS standards % temporary sites compliant with approved emergency standards		- Standards approval status= [1 = approved, 0 = not approved] - Compliance = (number of compliant sites / total temporary sites) × 100
Sub-Objective 4.4: Strengthen Legal and Institutional Readiness							
4.4.1. Adopt legal provisions enabling rapid activation of emergency protocols	MoE / Council of Ministers	2026–2029	Draft and approve legal amendments for emergency waste operations (ST)		Legal instruments adopted		Legal instruments approval status= [1 = approved, 0 = not approved]
4.4.2. Establish mobile environmental inspection and reporting units	MoE / NSWMA / MoIM	2026–2036	Deploy minimum 1 pilot mobile inspection units (MT)		Number of mobile inspection units		Units Deployed=Count of mobile inspection units operational
Sub-Objective 4.5: Coordination, Communication, and Public Engagement							

MEASURES	RESPONSIBLE ENTITY(IES)	TIME-SCHEDULE	TARGETS ST (1-5 YEARS) & MT (6-10 YRS)	TARGETS LT (11-20 YEARS) ¹⁷	INDICATORS	BASELINE (2025)	CALCULATION METHOD
4.5.1 Implement national emergency communication campaigns	MoE / Media / Local Authorities	2026–2036	Roll out at least 3 major national emergency waste campaigns covering all service zones (MT)		- Existence of approved national communication campaign plan (Yes/No) % of planned campaigns implemented annually		- Campaign status= [1 = approved, 0 = not approved] - Campaign implementation=(Number of campaigns conducted/Planned number of campaigns)x100
Sub-Objective 4.6: Build National Resilience (Capacity, Resources, Data)							
4.6.1. Establish Emergency Waste Fund and equipment pools	MoE / MoF / Donors / Municipal Unions	2026–2036	Establish the fund and secure initial capitalization (MT)	Ensure annual funding sustainability and equipment renewal	- Fund establishment and capitalization status - Annual fund utilization and sustainability		- Fund status= [1 = established, 0 = not established] - Sustainability= (annual funding secured / annual funding required) × 100
4.6.2. Develop national training programs & crisis data systems	MoE / Civil Defense / Training Centers	2026–2036	- Train municipal and operational teams nationwide - Establish real-time crisis waste information system aligned with NWMIS		% of municipal and operational teams trained - Existence and operational status of real-time crisis waste information system		- Training coverage = (number of trained teams / total number of target teams) × 100 - Crisis data system status= [1 = established, 0 = not established]

1.5.5 Overview of Implementation Time-Schedule

MEASURES	TIME-SCHEDULE	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046
STRATEGIC OBJECTIVE 1: COMPLETE, UPGRADE & OPERATE ISWM INFRASTRUCTURE																						
Sub-Objective 1.1: Establish an Effective Waste Collection and Transportation System																						
1.1.1 Waste collection and transportation system based on waste segregation	2026–2046																					
1.1.2 Transfer Stations	2026–2046																					
1.1.3 Hazardous waste collection system	2026–2046																					
Sub-Objective 1.2: Establish Reuse, Recycling, Material Recovery Facilities, Treatment for Separately Collected Waste																						
1.2.1 Drop Off, Reuse & Repair centers	2026–2046																					
1.2.2 Material Recovery Facilities	2026–2046																					
1.2.3 Biowaste valorisation	2026–2046																					
1.2.4 HW Management & Treatment Facilities	2026–2046																					
Sub-Objective 1.3: Establish Climate-Smart Waste Treatment and Energy Recovery Facilities																						
1.3.1 MWTF	2026–2046																					
1.3.2 Sludge Treatment Facilities	2026–2046																					
1.3.3 Agricultural Waste Treatment Facilities	2030–2046																					
Sub-Objective 1.4: Establish Climate-Smart Final Disposal Facilities and Close/Rehabilitate Open Dumps																						
1.4.1 Municipal sanitary landfills	2026–2046																					
1.4.2 CDW sanitary landfills	2026–2046																					
1.4.3 Close & rehabilitate uncontrolled dumpsites	2026–2046																					

MEASURES	TIME-SCHEDULE	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046
1.4.4 HW disposal sites	2026-2046																					
1.4.5 Rehabilitate HW contaminated areas	2026-2046																					
STRATEGIC OBJECTIVE 2: ENHANCE COMMUNITY AND PRIVATE SECTOR STEWARDSHIP TOWARDS A CIRCULAR ECONOMY																						
Sub-Objective 2.1: Engage Community in Waste Reduction and Sorting at Source																						
2.1.1 Waste reduction plan	2026-2046																					
2.1.2 Home composting	2026-2046																					
Sub-Objective 2.2: Integrate the Informal Sector in the ISWM System																						
2.2.1 Informal sector study	2026-2031																					
2.2.2 Implement informal sector recommendations	2031-2046																					
Sub-Objective 2.3: Promote Private Sector Participation and Investment in Waste Management																						
2.3.1 PPP tender guidelines	2026-2031																					
2.3.2 Return of Equity for PPP	2026-2046																					
2.3.3 Incentives for recycling infrastructure	2026-2036																					
Sub-Objective 2.4: Enhance Public Awareness and Education																						
2.4.1 Public awareness program development	2026-2036																					
2.4.2 Public awareness implementation	2026-2036																					
2.4.3 National/local ISWM dialogues	2026-2036																					
2.4.4 HW producers awareness	2026-2046																					
2.4.5 Academic & research ISWM integration	2026-2036																					
STRATEGIC OBJECTIVE 3: ENABLE AN EFFECTIVE GOVERNANCE FRAMEWORK TO IMPLEMENT THE ISWM SYSTEM																						
Sub-Objective 3.1: Establish and Operationalize the National Solid Waste Management Authority (NSWMA)																						
3.1.1 NSWMA decrees	2026-2027																					
3.1.2 Staffing NSWMA	2026-2027																					
3.1.3 Technical assistance NSWMA	2026-2028																					
Sub-Objective 3.2: Establish and Implement Cost Recovery System and the Extended Producer Responsibility (EPR)																						
3.2.1 Cost recovery law	2026-2036																					
3.2.2 Full cost accounting guidelines	2026-2036																					
3.2.3 EPR system regulations	2026-2046																					
Sub-Objective 3.3: Complete and Enforce the Waste Management Legislative Framework																						
3.3.1 SWM legal incentives decree	2026-2036																					
3.3.2 ISWM capacity building program	2026-2036																					
3.3.3 MoE compliance strengthening	2026-2036																					
Sub-Objective 3.4: Complete and Implement the Planning Framework at National and Local Level																						
3.4.1 Local Waste Management Plans	2026																					
3.4.2 Action plans for priority streams	2026-2031																					
Sub-Objective 3.5: Establish and Operationalize a WMIS																						
3.5.1 WMIS legal decision	2026-2031																					
3.5.2 WMIS implementation	2026-2031																					
STRATEGIC OBJECTIVE 4: STRENGTHEN NATIONAL RESILIENCE FOR SOLID WASTE MANAGEMENT IN TIMES OF CRISIS																						
Sub-Objective 4.1: Ensure Continuity of Essential Waste Services During Emergencies																						
4.1.1 Contingency plans for essential services	2026-2036																					
4.1.2 Pre-position emergency resources	2026-2036																					
Sub-Objective 4.2: National Disaster Waste Management Contingency System																						
4.2.1 Disaster waste coordination structure	2026-2036																					
4.2.2 Emergency landfill & debris areas	2026-2036																					
Sub-Objective 4.3: Protect Public Health and the Environment																						
4.3.1 Emergency OHS and environmental standards	2026-2036																					
Sub-Objective 4.4: Strengthen Legal and Institutional Readiness																						

MEASURES	TIME-SCHEDULE	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046
4.4.1 Legal provisions for emergency protocols	2026–2029																					
4.4.2 Mobile inspection units	2026–2036																					
Sub-Objective 4.5: Coordination, Communication, and Public Engagement																						
4.5.1 Emergency communication campaigns	2026–2036																					
Sub-Objective 4.6: Build National Resilience (Capacity, Resources, Data)																						
4.6.1 Emergency Waste Fund	2026–2036																					
4.6.2 Training programs & crisis data systems	2026–2036																					



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