

CLIMAGINE Workshop I Report

Integrated Coastal Zone Management (ICZM) Strategy and Law for Lebanon
GEF MedProgramme, Child Project 2.1.

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Mediterranean
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2.1
Mediterranean
Coastal Zones Climate
Resilience Water Security
and Habitat Protection

DIRECTOR OF PUBLICATION

Mr. Robin Degron

AUTHOR

Mr. Hussam Hawwa, Difaf SAL, Plan Bleu/RAC Consultant  and Ms. Éloïse Leguérinel, Plan Bleu/RAC

REVIEWER

Ms. Éloïse Leguérinel (Plan Bleu/RAC), Ms. Insa Behrens (Plan Bleu/RAC) and M. Ante Ivcevic (PAP/RAC).

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1 Introduction

1.1 THE GEF MEDPROGRAMME AND THE NEW INTEGRATED COASTAL ZONE MANAGEMENT (ICZM) STRATEGY AND LAW

The Global Environment Facility (GEF) [MedProgramme](#), spearheaded by [United Nations Environment Programme Mediterranean Action Plan \(UNEP/MAP\)](#) and its regional partners, has initiated a transformative process to bolster Lebanon's response to the mounting environmental and socio-economic pressures affecting its coastal and marine zones. Historically, Lebanon's coastlines have faced persistent challenges such as urban sprawl, habitat loss, pollution, unsustainable resource extraction, unregulated development, and insufficient waste management, all of which have undermined ecosystem integrity and community well-being. While significant groundwork was undertaken in the past—including the extensive 2015 ICZM draft strategy—the absence of an officially approved and actionable national framework has limited progress toward sustainable management. This has been compounded by fragmented institutional responsibilities, gaps and duplication in legislation, and a lack of systematic stakeholder engagement.

In direct response to these gaps and leveraging the momentum generated by Lebanon's ratification of the [ICZM Protocol under the Barcelona Convention](#), the MedProgramme's Child Project 2.1, "Mediterranean Coastal Zones: Water Security, Climate Resilience, and Habitat Protection", provides the impetus, expertise, and technical support required to develop a new, robust and integrated National ICZM Strategy and accompanying draft law — with [PAP/RAC](#), [Plan Bleu/RAC](#), and [GWP-Med](#). The objective is not simply to update previous documents, but to co-design, with national and local stakeholders, an ambitious forward-looking strategy fully aligned with international commitments and best practices.

The new National ICZM Strategy and law aim, for the first time, to comprehensively define and manage the Lebanese coastal zone based on ecosystem boundaries that include the interface between land and sea, adjacent territorial waters, estuaries, wetlands, and river mouths—as recommended by the ICZM Protocol. This ecosystem-based, spatially explicit approach allows for better recognition of the overlapping pressures, such as climate change impacts, loss of biodiversity, and incompatible land and water uses, that threaten the coast's long-term sustainability. Central to the strategy is the development of a shared vision for Lebanon's coast—one that emerged through extensive national consultations with public institutions, the private sector, NGOs, scientific bodies, and local communities. This vision promotes the responsible use of the coast's natural and cultural richness as a foundation for thriving and resilient communities, free public access to beaches, effective transport, and a diversified sustainable economy. It is grounded in the principles of intergenerational equity and wise resource stewardship.

Strategically, the new ICZM framework rests on major pillars: enhancing community well-being by safeguarding coastal quality of life and social equity; elevating environmental standards and nature conservation by protecting habitats and ecosystem services; fostering economic productivity through sustainable development models that respect ecological limits; implementing integrated land use and marine spatial planning to prevent degradation and conflicts; and institutionalizing stakeholder engagement and transparency as cornerstones of sustained, adaptive management.

A major innovation of this process is the embedded participatory approach, enabled by methodologies such as *Climagine*, which facilitate scenario-building, foresight analysis, and the meaningful involvement of national and local actors, including women and marginalized groups. This encourages the co-development of solutions that are context-sensitive, gender-responsive, and climate-resilient.

Institutionally, the MedProgramme-supported process seeks to establish a clear "lead agency" or ICZM unit within government, capable of convening and overseeing integrated coastal governance across ministries and sectors—a measure long identified as crucial but never fully realized. By aligning Lebanon's new National ICZM Strategy and Law with the objectives and principles of the Mediterranean ICZM Protocol of the Barcelona Convention and the Sustainable Development Goals (SDGs), particularly in relation to climate action, gender, and ecosystem restoration, the current MedProgramme intervention aims to deliver a genuinely transformative and actionable framework. This will guide future management of Lebanon's coasts, ensure ecological integrity, enhance resilience to climate risks, and unlock opportunities for sustainable growth and social well-being.



1.2 CLIMAGINE AND THE NEW INTEGRATED COASTAL ZONE MANAGEMENT (ICZM) STRATEGY AND LAW

In the framework of the GEF MedProgramme's Child Project 2.1, the [Climagine methodology](#) has been deliberately adapted to guide and enrich the national participatory process for developing Lebanon's new Integrated Coastal Zone Management (ICZM) Strategy and Law. Building on Plan Bleu's established expertise in Mediterranean foresight and stakeholder dialogue, Climagine brings an innovative, scenario-based approach that transforms traditional planning into a dynamic, inclusive, and forward-looking exercise. While Climagine had previously been applied mainly at sub-national and transboundary scales—in regions such as Tangier-Tetouan-Al Hoceima in Morocco and Kotor Bay in Montenegro—its application in Lebanon marks the first time the methodology has been scaled up to the national level, with the explicit objective of supporting the adoption of an actionable and widely-owned national ICZM framework.

Climagine begins by carefully establishing the national context, clarifying key issues, and mapping the full spectrum of stakeholders whose expertise, interests, and aspirations will ultimately shape Lebanon's coastal future. In this initial phase, participants are invited to collectively reflect on the past and present state of coastal sustainability, drawing on scientific evidence, policy reviews, and local knowledge to identify the most urgent challenges, opportunities, and gaps. Particular attention is given to building a shared vision for Lebanon's coast, rooted in the aspirations of coastal communities, the preservation of natural and cultural assets, and the pursuit of sustainable, inclusive development. Through a sequence of structured workshops, Climagine places every participant at the center of the process, recognizing each as an expert at their own level. The dialogue is designed to provoke open, science-informed conversations, in which visions for the future are translated into concrete scenarios and measurable indicators. Participants work together to define priority domains—for example, environmental quality, economic vitality, community well-being, and access to coastal resources—and to propose relevant sustainability indicators for each domain, drawing on guidance from Plan Bleu, PAP/RAC, and the wider ICZM community.

As the process advances, workshop groups propose and debate minimum and maximum thresholds for these indicators, forming a "band of equilibrium" that represents the safe operating space for Lebanon's coastal systems. These elements are visualized using tools such as amoeba diagrams, allowing for the comparison of business-as-usual trajectories with pathways that achieve long-term coastal sustainability. This stepwise refinement not only anchors the strategy in robust, locally relevant metrics, but also provides a means to track progress and adapt management actions over time. Throughout the Climagine process, transversal themes such as governance reform, climate change risks and adaptation, gender responsiveness, education, and landscape restoration are actively mainstreamed. There is a strong focus on identifying data needs and existing gaps, as well as generating practical, future-proof solutions. The participatory dialogue extends beyond indicator definition to recommend specific strategic objectives and policy measures that can be integrated directly into the new ICZM Strategy and Law. Moreover, feedback and learning from Climagine workshops feeding into the draft national strategy are reciprocally used to inform sub-national planning, such as the Integrated Management Plan (IMP) process in the Damour River Basin, further strengthening coherence between national and local initiatives. This participatory and evidence-based approach ensures that the new ICZM Strategy and Law developed under the MedProgramme are not only ambitious but also realistic, actionable, and broadly endorsed.

However, the national application of Climagine is not without its challenges. The complex regional landscape, logistical and political constraints, and the need to ensure the effective engagement of a wide array of institutions have required both flexibility and innovation in the design and delivery of workshops.

Figure 1. Steps of Climagine methodology



Plan Bleu

STEP I: set the stage / establish and understand the local and regional context / agree on the key issues and priorities / identify sustainability dimensions / map stakeholders' vision of the area / begin forming a local group of experts / map missing stakeholders.

STEP II: engage in Diagnosis, Vision and Future Scenarios by proposing sustainability indicators for the recognized issues / propose minimum and maximum values for these indicators to determine thresholds of sustainability / set priorities for the Coastal Management Plan.

STEP III: determine the Plan's priority issues and strategic objectives / elaborate the Band of Equilibrium and Amoeba diagrams / validate the indicators and identify missing indicators / identify climate change adaptation measures.

STEP IV: final validation of the indicators/diagrams and integration into the Coastal Management Plan.

STEP V: Approval of the Coastal Management Plan and final regional Climagine workshop on ICZM in the Mediterranean's coastal zones.

2 Workshop summary

2.1 PART 1: INTRODUCTION

The first session of the participatory Climagine workshops dedicated to the Integrated Coastal Zone Management (ICZM) Law and National Strategy was held in Beirut on July 3rd, 2025, gathering a broad spectrum of stakeholders representing national ministries, local authorities, scientists and academic institutions, non-governmental organizations, and international partners. This convening represented an important step towards building consensus and operationalizing integrated coastal governance in Lebanon, under the framework of the ICZM Protocol and in line with the Barcelona Convention. The agenda was shaped with the objective of articulating a shared vision for Lebanon's diverse and highly pressured coastal areas, and aligning policy responses to urgent environmental, social, and economic challenges.

The opening session featured welcoming addresses from high-level representatives, including the MP H.E. Dr. Najat SALIBA, the Director of Water at the Ministry of Energy and Water, Eng. Mona Fakih, the Director of UNESCO's Regional Office in Beirut, Mr. Paolo Fontani, the MedProgramme Coordination Unit at UNEP/MAP, Mr. Mohamad Kayyal, GWP-Med, Ms. Barbara Tomassini, and PAP/RAC, Ms. Daria Povh Skugor. The session provided an overview of the MedProgramme's objectives and the importance of integrated resource management in the Damour area, emphasizing the Source-to-Sea approach and the WEFE (Water-Energy-Food-Ecosystems) Nexus. Introductory presentations by experts from GWP-Med, Ms. Barbara Tomassini, UNESCO-IHP, Mr. José Luis Martin Bordes, PAP/RAC, Mr. Ante Ivčević, and Plan Bleu, Ms. Éloïse Leguérinel, set the stage for the workshop by highlighting the need for coordinated governance, conjunctive management of surface and groundwater, and the integration of ICZM principles.

2.2 PART 2: CLIMAGINE WORKSHOP



The workshop began with a technical briefing that outlined the legal, scientific, and policy background of the ICZM Law and Strategy, highlighting key governance, ecological, and socio-economic issues as documented in recent national reports and international technical assistance projects. The participants were made aware of Lebanon's progress and outstanding gaps, such as fragmented land use, persistent pollution, coastal ecosystem degradation, and weak enforcement of public domain and environmental regulations. The facilitators, Éloïse Leguérinel (Plan Bleu) and Hussam Hawwa (Difaf), introduced the Climagine participatory approach, emphasizing the importance of integrating diverse local expertise, data-driven scenario building, and consensus-based indicator development.

The Climagine workshop merged several initial stages of its methodology to accommodate for a challenging regional context and the evolving nature of stakeholder participation, ensuring that the process remained flexible and inclusive. Although the original plan had provided for six working groups—each addressing a specific ICZM priority sector—last-minute changes due to participant departures led to the organization of four composite groups, each covering themes identified as strategic for Lebanon's coastal future. Despite these logistical adjustments, the workshop maintained its core participatory spirit, allowing stakeholders to express expertise and perspectives in a constructive environment.

The four groups each addressed one of the following composite domains:

- Urban-Spatial Planning and Land Use + Waste & Pollution Management
- Natural Resource Management

- Coastal Risks and Climate Change + Sustainable Blue Economy & Socioeconomic Development
- Governance, Institutions, and Enabling Environment

During the workshop sessions, each group was primarily tasked with reviewing the pool of sustainability indicators that had already been proposed for their sector, drawing upon the structured framework of the Climagine participatory approach. Building on a thorough presentation of existing sectoral challenges—such as urban expansion, land reclamation, water resource management, disaster risk, waste and pollution control, and the enabling environment—participants analyzed the indicators in light of current environmental, institutional, and socio-economic data. Rather than starting from scratch, the objective was to evaluate the relevance and adequacy of these pre-identified indicators, amending or supplementing them where necessary in order to better capture the specific conditions and priorities of Lebanon’s coastal zone. This process involved open discussion on whether existing indicators sufficiently addressed the major issues within each sector, including public access to coastal spaces, urban sprawl, biodiversity conservation, climate adaptation, fisheries sustainability, legal frameworks, and stakeholder engagement.



Guided by facilitators, all groups used the RACER criteria—assessing the Relevance, Acceptable, Clarity, Ease of Monitoring, and Robustness of each indicator. Candidates were considered not only based on their conceptual fit but also on their practicality for integration into Lebanon’s future ICZM legal and planning instruments. Where gaps were noted, groups proposed additional indicators or reformulated existing ones to better align with emerging data or stakeholder insights.

A common structure was followed throughout: groups discussed the sustainability dimensions most pertinent to their theme, listed all relevant indicator options, and then collectively selected three indicators judged to be the most representative and impactful for monitoring sectoral progress under the ICZM framework. These selections were then justified within each group, with an emphasis on actionable and measurable outcomes, and presented to the other groups for feedback and refinement.

Special attention continued to be devoted to cross-cutting aspects such as transparent governance, the integration of knowledge-sharing and capacity-building mechanisms, and ensuring that gender considerations were reflected in both the indicator selection process and projected monitoring activities. After group deliberations, participants presented their findings, proposed indicators, and sectoral priorities in a plenary session. This presentation phase encouraged active listening, feedback, and constructive debate, allowing for the consolidation of ideas and the identification of synergies between sectors.

The outputs of this session—a set of priority sustainability indicators and a preliminary vision for each sector—will serve as a foundation for the next phases of the ICZM Strategy and Law, ensuring that the process remains grounded in local realities and stakeholder aspirations.

The workshop encouraged active and inclusive participation, facilitating dialogue on sectoral interdependencies and the need for an integrated approach to coastal zone management. The main outcomes of the discussions are detailed below (all sector-specific indicators are provided in the annex):

Groups 1 + 4: Urban-Spatial Planning & Land Use Management + Waste & Pollution Management						
Key Challenges Highlighted						
- Rapid, unregulated urban expansion and land reclamation (including sea filling) threaten natural coastal habitats, reduce public access, and cause ecosystem degradation. - Widespread unauthorized construction encroaching on the maritime public domain. - Governmental institutions (central and local) face fragmented spatial planning and lack enforcement capacity, leading to the proliferation of informal settlements and illegal infrastructure. - Insufficient waste management services, characterized by: - low coverage of functional solid waste collection systems, - poor sanitary disposal practices, - prevalence of illegal dumpsites, - incomplete recycling programs. - Inadequate financing and planning for environmental protection and sustainable waste management, lacking cost-recovery systems and often driven by contract-based projects with high profit motives. - Weak institutional coordination between ministries, local authorities, and stakeholders, making integrated governance and monitoring efforts more difficult.						
Sustainable Dimensions Addressed						
- Regulation, spatial planning, and financing mechanisms to control urban sprawl and sustain public coastal spaces. - Integrated land use and coastal zone management to preserve ecological integrity. - Improved waste management infrastructure (sorting at source, decentralized collection, resource recovery, recycling, circular economy). - Enforcement of laws to prevent illegal construction and pollution. - Enhanced public engagement and awareness. - Capacity building for governance bodies, introduction of cost-recovery mechanisms. - Focus on measurable impacts: pollution reduction, environmental quality, ecosystem health, and equitable coastal access.						
Key Indicators (selected with RACER criteria) – Urban-Spatial Planning & Land Use Management						
Indicator	Unit	Rationale	DPSIR Link	Key Parameters to Measure/Monitor	Technical Feasibility & Comments	Sources
Rate of urban expansion in coastal zones	Option 1: % increase per year Option 2: km ² /year	Tracks pressure of land transformation on coastal ecosystems.	Pressure	GIS analysis of land cover change, coastal buffer zones (e.g., 1km inland band).	High feasibility with annual database updates and ongoing inter-agency coordination.	CAS land use datasets, CNRS-L, GIZ/CAMP, CDR, MoPWT
Rate of land reclamation (sea filling)	Option 1: Hectares/year Option 2: % increase/km ² /year	Critical for coastline change and marine habitat loss.	Pressure & State	Cadastral, satellite, and LIDAR data, project counts.	Annual database updates, requiring high-resolution imagery and baseline standardization.	CNRS-L satellite imagery, UN-Habitat, MoE
Net change of unauthorized coastal constructions	Count (with % net change per year or monitoring period)	Indicates enforcement effectiveness and potential loss or recovery of public coastal	Pressure/Response	Illegal structure counts, enforcement agency records, civil society reports.	Measurement is based on the net number of unauthorized coastal structures recorded each monitoring period,	MoPW, MoIM, MoE, CDR, legal records, public land registry

		access. ¹			including new constructions and removals.	
Proportion of coastal zones covered by master plan	% of coast covered or plans per district	Shows spatial planning coverage, regulatory effort.	State	% area by land use type; master plans cross-referenced with GIS coastal delineations.	Feasible via archives; some plans outdated, overlapping, or unpublished.	DGA/MoIM registries, urban master plans, UN-Habitat, ministries
Key Indicators (selected with RACER criteria) – Waste & Pollution Management						
Indicator	Unit	Rationale	DPSIR Link	Key Parameters to Measure/Monitor	Technical Feasibility & Comments	Sources
Proportion of coastal municipalities with functional waste collection systems	%	Reflects the quality and capacity of waste collection services, which influence health risks and pollution control effectiveness. ²	State	Coverage percentage considering both the size and operational quality of collection routes and sites. Use population thresholds or district-level aggregation to capture regional disparities and system differences..	Moderate; needs updated, disaggregated municipal or district data for better regional assessment using population size or district-level stratification.	OMSAR, MoE, municipal reports, CDR, UNDP
Proportion of coastal municipalities with sorting activities at source vs at waste management facilities	%	Critical for assessing service coverage and pollution control effectiveness. ³	State	Percentage by type of sorting activity (source separation vs facility-based) Consideration of population thresholds or district-level data to address spatial heterogeneity.	Data gaps exist particularly for small-scale initiatives; triangulation with donor or operational records required.	MoE, CDR, OMSAR, UNDP, municipal records
Percent of materials that are recycled,	%	Reflects adoption of circular	Response	Percentage of waste recycled, properly	Practices and terminology vary widely. ⁴	Municipal reports, MoE

¹ While the indicator focuses on the number of unauthorized coastal constructions, the size or scale of these projects could be a significant factor to better assess their impact. Including metrics such as average project size or total built area would provide a more comprehensive understanding of the pressure on coastal zones. However, this information may be difficult to obtain consistently due to data limitations, and should be included only when reliable size data are available.

² To better capture regional variations, this indicator can be calculated for all coastal municipalities or limited to those above a certain population threshold (e.g., >20,000 inhabitants), or alternatively at the district level.

The exact spatial scope and coastal zone delimitation (including inland and maritime boundaries) should be defined through collective expert discussions or workshops.

³ Similar to waste collection, coverage can be reported for all coastal municipalities, restricted by population size, or aggregated by district to reflect regional variations.

⁴ Therefore, a standardized, technical definition specifying the end result—such as minimum percentage of material composition required to qualify as recycled—is essential for comparability and accuracy. Also, clear technical definitions establishing criteria for what constitutes “recycled” and “properly disposed” waste are needed to ensure consistent terminology across reporting entities.

landfilled (properly disposed), or otherwise treated		economy principles and effectiveness of waste valorization.		landfilled, or treated by other methods (incineration, composting, etc.).		records
Cross-cutting Aspects Integrated						
- Strong governance, multi-level coordination, and transparent institutional roles. - Capacity-building and knowledge-sharing among stakeholders. - Inclusion of gender and vulnerable groups in monitoring and decision-making. - Promotion of sustainable finance, including cost recovery for waste and urban services.						
Key Stakeholders and Data Providers						
Ministry of Environment (MoE), Council for Development and Reconstruction (CDR), National Council for Scientific Research Lebanon (CNRS-L), Ministry of Interior & Municipalities (MoIM), Ministry of Public Works and Transport (MoPWT), Office of Municipal Services & Urban Recycling (OMSAR), NGOs, academic institutions, municipalities and local unions, United Nations Development Programme (UNDP), MED Sustainable Development and Environment Agencies (Plan Bleu/PAP-RAC)						

Group 2: Natural Resource Management (including biodiversity, ecosystems, and water)						
Key Challenges Highlighted						
- Groundwater over-abstraction and declining aquifer recharge (risk of saltwater intrusion and shortage) - Decreasing average river flows and seasonal variability due to drought and climate change - Persistent water body pollution and insufficient water quality monitoring - Coastal and wetland habitat loss, declining biodiversity hotspots, poor ecosystem conservation - Increased land-use change from natural to built-up zones (including habitat fragmentation) - Lack of continuous, integrated monitoring (water, air quality, coastal changes) - Weak enforcement of environmental protection and insufficient conservation coverage						
Sustainable Dimensions Addressed						
- Surface and groundwater resource security - Conservation and protection of biodiversity and critical ecosystems - Pollution reduction and systematic monitoring (water, air, coastal/marine) - Land-use management balancing ecological integrity and local development - Strengthening of governance, law enforcement, monitoring capacity - Adaptation to climate change and reduction of ecosystem degradation - Stakeholder education and participation in resource stewardship						
Key Indicators (selected with RACER criteria)– Water & Agriculture						
Indicator	Unit	Rationale	DPSIR Link	Key Parameters to Measure/Monitor	Technical Feasibility & Comments	Sources
Groundwater level trends in coastal aquifers	cm/year	Assesses aquifer health and long-term extraction impacts.	State	Well monitoring (long-term loggers/manual readings).	Start with public wells monitoring	MoEW, MoA, MoE
Average annual flow of coastal rivers	m ³ /s	Reflects annual fresh surface water reaching the coast and trends under climate variability.	State	Annual flow data at key gauging stations per basin or estuary.	Requires maintenance/calibration of stations or new ones.	MoEW, LRA
Percentage of farms along coastal zone rivers applying	%	Measures uptake of eco-friendly farming methods aimed at reducing	Response	Sustainable/unsustainable practices by farm type. Sustainable practices currently include organic	Data disaggregated by practice; requires collaboration with agricultural extension	MoA, LARI, agricultural extension units

sustainable versus conventional agriculture		non-point source pollution from agricultural runoff in coastal river areas. ⁵		farming and compliance with international Good Agricultural Practices (GAP) standards (FAO).	units.	
Incidence of saltwater intrusion in monitored coastal zone wells	Average annual salinity level (mg/L or $\mu\text{S/cm}$) and % change compared to previous year	Highlights ecological impacts of over-extraction and climate change.	Impact	Salinity threshold and annual average change (%) in monitoring wells. Seasonal fluctuations, pumping rates, geographic location (coastal vs. inland), and irrigation practices should be considered.	Starting with public wells; requires regular testing.	MoEW, MoA, MoE
Key Indicators (selected with RACER criteria) – Biodiversity & Ecosystems						
Indicator	Unit	Rationale	DPSIR Link	Key Parameters to Measure/Monitor	Technical Feasibility & Comments	Sources
Area of coastal zone under conservation (including MPAs and terrestrial protected areas within the coastal zone, protected vs unprotected)	km ² or %	Measures the extent of formal conservation coverage of sensitive coastal ecosystems and biodiversity hotspots, including both marine and adjacent terrestrial protected areas.	State.	GIS analysis; overlay of marine protected areas, terrestrial protected areas within the coastal zone, and hotspot data.	Feasible using periodic registry updates; data may occasionally be outdated.	MoE, UNESCO MAB, CNRS-L, MAPAMED
Percentage annual loss of ecologically important habitats for biodiversity in sensitive areas (including dunes, reefs, estuaries, wetlands, and islands).	%	Measures habitat decline caused by both climate impacts and human activities.	Impact	Mapping and quantification of percentage habitat loss compared to baseline conditions.	Based on field surveys and habitat mapping; integral to Integrated Coastal Zone Management (ICZM) reports.	MoE, CNRS-L
Number of biodiversity hotspots protected vs unprotected	Count	Tracks biodiversity hotspots identified through a standardized formal process, ensuring comparability between	State	Areas identified as biodiversity hotspots based on defined biological, ecological, and conservation criteria, distinguished by their protection status.	Requires a formalized identification protocol applied consistently at the national level, supported by an updated registry of protected areas and recognized informal sites.	MoE, UNESCO MAB

⁵ Eco-friendly farming includes organic farming and compliance with international Good Agricultural Practices (GAP) standards (FAO). Further definition of sustainable agricultural practices (e.g., use of fewer fertilizers, agroforestry) should be clarified according to the Lebanese agricultural strategy.

		protected and unprotected areas.				
Ratio of formally designated Marine Protected Areas (MPAs) to marine sensitive zones without formal designation or with informal/conflicting protection status	%	Compares legally protected MPAs to marine sensitive zones lacking formal recognition or having informal/conflicting status ⁶ . A higher ratio indicates a stronger formal conservation framework.	State	Extent of legally designated MPAs. Areas identified as sensitive but lacking legal protection or having informal/conflicting status.	Monitoring relies on spatial data comparing formal MPAs and sensitive zones without clear legal status. Informal areas are those recognized ecologically but without formal legal protection, often with limited data.	MAPAMED, MoE, BLI, CEPF
Number of invasive species detected and monitored	Count	Indicates shifts in ecosystem health and risk from biological invasions.	State	Species detection and coordinated information sharing.	Requires systematic data and coordinated reporting.	Research institutions, academia, MoE, IUCN
Cross-cutting Aspects Integrated						
- Robust governance and cross-sectoral/ministerial collaboration (MoEW, MoE, CNRS-L, CDR, LRA, UNESCO MAB) - Stakeholder engagement, educational outreach, participatory management - Gender equity and inclusion in planning/monitoring - Financing, resources for monitoring/implementation, links to partners and technical agencies						
Key Stakeholders and Data Providers						
Ministry of Environment (MoE), Ministry of Energy and Water (MoEW), Lebanese Agricultural Research Institute (LRA), CNRS-L, CDR, Local authorities, NGOs, UNESCO MAB program, academic/research institutions						

Groups 3+5: Coastal Risks & Climate Change + Sustainable Blue Economy & Socioeconomic Development

Key Challenges Highlighted

- Accelerating sea level rise and coastal erosion causing habitat loss, infrastructure damage, beach loss
- Increased frequency and intensity of climate-related disasters (storms, flooding)
- Declining resilience of coastal communities and ecosystems to extreme events
- Insufficient coastal protection infrastructure and flood risk mapping
- Loss of coastal wetlands, dunes, marine biodiversity; invasive species expansion, vermetid reef damage
- Limited data-sharing, poor coordination for risk assessment, gaps in research and capacity
- Economic vulnerability of blue economy sectors with declining traditional livelihoods
- Inequitable access to coastal resources and declining ecosystem services for local populations
- Deficient environmental quality monitoring (physical, chemical, biological parameters)
- Lack of investment in innovative adaptation, conservation, green jobs
- Lack of awareness and enforcement regarding coastal and maritime public domain protection

Sustainable Dimensions Addressed

- Increasing climate resilience and adaptation capacity of coastal communities
- Integrated management of marine and coastal biodiversity and ecosystem health
- Promotion and diversification of sustainable blue economy sectors (fisheries, aquaculture, tourism)
- Equitable economic opportunity and livelihood security for coastal populations
- Improved disaster risk reduction and early warning through science-based monitoring
- Data-driven planning and multi-sector stakeholder cooperation

⁶ e.g., Tyre Palestinian coastal camps

- Strengthening legal, institutional, and financial frameworks for adaptation, conservation, risk management - Enhancement of public and stakeholder awareness, education, and participation						
Key Indicators (selected with RACER criteria) – Coastal Zone Risk & Climate Change						
Indicator	Unit	Rationale	DPSIR Link	Key Parameters to Measure/Monitor	Technical Feasibility & Comments	Sources
Coastal erosion (shoreline retreat)	ha/year	Quantifies shoreline retreat with impacts on protection and land loss.	State	Satellite imagery, aerial photos, field surveys.	High feasibility.	CNRS, Ministry of Public Works and Transport
Occurrence rate of climate-related disasters	Events/year	Captures climate risk exposure and disaster risk reduction effectiveness.	Impact	Count of floods, storms, heatwaves, coastal emergencies.	Highly actionable; data centralized.	CNRS, Ministry of Prime Minister – Disaster Risk Dept.
Average annual sea surface temperature deviation	°C/year	Tracks ocean warming driving marine ecosystem changes and species stress.	Pressure	Yearly temperatures at specific locations.	Medium feasibility – limited local monitoring.	CNRS, NOAA, Ministry of Environment
Number or investment volume of coastal protection infrastructure projects	Count (number of projects) or annual investment amount	Indicates both the extent and the financial commitment to climate and erosion adaptation.	Response	Government permits, municipal and financial records.	High feasibility – data on project counts and investment amounts are generally accessible.	Ministry of Public Works and Transport, Ministry of Environment
Rate of coastal land-use change (Ratio of natural to built-up areas)	ha of natural land converted / ha of built-up land gained per year	Indicates habitat loss, fragmentation, and ecological pressure.	Pressure	Measured as the ratio of coastal land area converted from natural to built-up areas. Land-use data from urban planning departments.	Feasible.	Ministry of Public Works and Transport, Urban Planning Department
Key Indicators (selected with RACER criteria) – Sustainable Blue Economy & Socioeconomic Development						
Indicator	Unit	Rationale	DPSIR Link	Key Parameters to Measure/Monitor	Technical Feasibility & Comments	Sources
Compliance rate of fishing regulations or Statistical risk index of Illegal, Unreported, and Unregulated (IUU) fishing	% or IUU Fishing Index	Assesses sustainable resource use and regulatory effectiveness by measuring compliance and/or evaluating IUU fishing risk through vulnerabilities and risk factors.	State	IUU Fishing Index data, enforcement records, fisheries monitoring, expert assessments.	Feasible.	Ministry of Agriculture, Coast Guard, relevant fisheries and marine monitoring authorities
Percentage of coastal population	%	Tracks economic diversification and	State	Socio-economic census, employment	Available in national labor	CAS, Ministry of Labor

employed in new blue economy activities (segregated by age and gender)		dependency on blue economy sectors, with gender and age breakdown to capture demographic employment patterns.		statistics by gender and age.	and sector surveys with demographic breakdowns.	
Length of publicly accessible beaches	km	Measures public equity and access to coastal resources.	State	Annual measurement and change tracking.	Feasible.	Ministry of Public Works and Transport, CNRS-L
Number of local ecotourism and green initiatives promoting coastal zone management sustainability	Count	Reflects green jobs, sustainable tourism, and economic resilience.	Response	NGO reports, project listings.	Data scattered, no unified registry.	Civil society NGOs, Municipalities
Annual catch volume by small-scale fishing	Tons/year	Key for monitoring resource use and fisheries sustainability.	Pressure	Catch registration and cooperative reports.	Low registration compliance; possible underreporting.	Ministry of Agriculture, FAO
Cross-cutting Aspects Integrated						
- Joint risk assessment and adaptation planning by environment, economy, and civil protection sectors - Scientific data sharing, research partnerships, common repositories - Education and capacity-building in coastal risk management and blue economy innovation - Gender and youth inclusion in adaptation, employment, and monitoring programs - Financial mechanisms for green jobs, ecosystem resilience, and community-based adaptation						
Key Stakeholders and Data Providers						
Ministry of Environment (MoE), Ministry of Agriculture (MoA), Ministry of Labor (MoL), Ministry of Public Works and Transport (MoPWT), Ministry of Tourism (MoT), CNRS-L, NDMA, UNDRR, NGOs, academic institutes, local authorities, FAO, Plan Bleu, PAP/RAC, CAS, CRI-MED project partners, private sector						

Group 6: Governance, Institutions & Enabling Environment
Key Challenges Highlighted
- Lack of enabling environment including prevalence of cultural norms and missing promotion strategies - Fragmented institutional mandates and overlapping responsibilities among ministries, agencies, municipalities - Slow adoption and weak enforcement of updated laws, decrees, and ICZM strategies - Insufficient integration of ICZM into local planning frameworks; few municipalities have local ICZM plans - Limited public consultation and stakeholder engagement in coastal decision-making - Inadequate funding and budget allocation for ICZM implementation and monitoring - Weak mechanisms for data sharing, transparency, and adaptive management - Lack of regular coordination meetings and integrated capacity-building - Incomplete or outdated marine spatial plans; limited interoperability between databases and information portals - Legal and procedural gaps inhibiting effective surveillance and sanctions against coastal law violations - Insufficient monitoring of performance, outcomes, and compliance for governance effectiveness
Sustainable Dimensions Addressed
- Up-to-date, enforceable legal and policy framework for ICZM - Effective, coordinated, and transparent multi-level governance

- Stakeholder engagement and participatory decision-making in all policy and implementation phases - Accountability through regular monitoring and public reporting - Integrated, cross-sector coastal management (national and local levels) - Mainstreaming of ICZM into municipal and sectoral policies - Adaptive management and transparent access to information - Gender and social inclusion in participatory forums - Financial sustainability and resource mobilization for coastal governance						
Key Indicators (selected with RACER criteria)						
Indicator	Unit	Rationale	DPSIR Link	Key Parameters to Measure/Monitor	Technical Feasibility & Comments	Sources
Number and quality of laws/decrees adopted or amended related to ICZM since 2015	Option 1: Count of laws/decrees adopted or amended Option 2: Quality score (0 to 1 scale) based on predefined legal criteria	Measures progress in legal reform for ICZM by considering not only the quantity but also the effectiveness and strength of laws and decrees, reflecting the legal framework's real impact.	Response / State	Number of laws/decrees adopted or amended at national and local levels; assessment of legal quality/strength (clarity, enforceability, alignment with ICZM principles).	Requires access to official gazettes and legal records; quality assessment may need expert scoring; updates aligned with parliamentary sessions or as laws change.	Official gazettes, ICZM protocol registry, Judiciary reports, MoE, MoJ, MoA, MoIM, MoPWT, MoEW
Number of public consultations on coastal issues	Count/year	Measures inclusiveness and legitimacy of the governance process. ⁷	Response	Official agendas, reports, attendance, minutes; number of participants reached.	Requires standardized reporting; triangulated with civil society records; Include data on total persons reached if available.	MoE, relevant ministries, civil society organizations
Existence of a public coastal data platform at national level and by region for Lebanon	Yes / No	Reflects transparency and accessibility of information for stakeholders at both national and regional scales, enabling targeted decision-making and monitoring.	Response / State	Operational website/portal presence at national level and for each administrative coastal region; coverage completeness; user accessibility; frequency and regularity of data updates.	Evaluated by CNRS-L and MoE. Platform(s) must be public and include key ICZM indicators relevant at both scales.	CNRS-L, Ministry of Environment (MoE)
Ratio of budget/funding allocated to ICZM	%	Captures financial prioritization and capacity for implementation.	Response / Impact	Budget allocations and expenditure reports.	Feasible if finance ministries cooperate.	Ministry of Finance (MoF), EU Delegation
Cross-cutting Aspects Integrated						

⁷ It would be interesting to also capture how many persons have been reached during these consultations

- Fostered coordination between all levels of government, civil society, and private sector
- Mainstreamed adaptive management practices and regular evaluation
- Prioritized participatory approaches and gender/social inclusion
- Promoted transparency and public access to coastal governance data
- Anchored financial strategies for long-term implementation

Key Stakeholders and Data Providers

Ministry of Environment (MoE), Ministry of Justice (MoJ), Ministry of Agriculture (MoA), Ministry of Interior & Municipalities (MoIM), Ministry of Public Works and Transport (MoPWT), Council for Development and Reconstruction (CDR), CNRS-L, PAP/RAC, EU delegation, Judiciary, Municipalities, NGOs, coastal user associations

During this first Climagine workshop, participants engaged in open discussions that highlighted several important issues, such as balancing urban development with the protection of natural habitats, enforcing regulations against illegal activities, and integrating climate and gender considerations into the chosen indicators. The feedback from different stakeholders helped to refine the set of sustainability indicators, ensuring they are practical and reflect the realities faced on the ground. The process involved careful consideration and debate to agree on indicators that are meaningful and manageable for future monitoring. Also, the discussions and feedback gathered in this workshop form an important step in an ongoing process, with future sessions planned to revisit and further refine the indicators and priorities. This approach will ensure that the strategy continues to evolve based on stakeholder input and emerging data, helping to build a shared and well-supported foundation for Lebanon's coastal management.

Gender Inclusiveness at the First Climagine Workshop

Promoting gender equality and gender-responsive governance is a core pillar of the MedProgramme, as articulated in its Gender Mainstreaming Strategy. In line with this commitment, the ICZM Law Climate Workshop was designed and implemented with attention to inclusivity and gender balance—both in its participatory methodology and in the composition of attendees.

The event brought together a dynamic and interdisciplinary group of professionals from across Lebanon, including representatives from national ministries (Energy and Water, Environment, Public Works and Transport, Internal Affairs, Agriculture, Industry, Tourism), local authorities (including the Municipality of Damour), academia and research centres (such as the Lebanese University, CNRS, LARI, University of Balamand), international and regional cooperation programmes (UNESCO, FAO, UN/ESCWA, GWP-Med, Plan Bleu), as well as NGOs, consultants, and civil society actors.

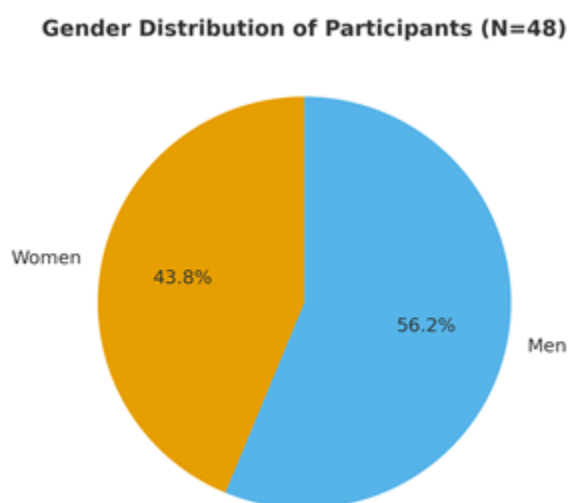
Among the participants, women played a significant and visible role, representing expertise in technical, scientific, legal, and managerial domains. Notable female participants included Mona Fakhri (Director of Water at the Ministry of Energy and Water), Ghada Baliis (Director General of Hydraulic and Electric Resources), and Nisrine Ghattas (Acting Head of Programs and Monitoring, MEW), among others. Several women also contributed to facilitation, communications, legal analysis, governance, spatial planning, environmental monitoring, and scientific research.

Gender Statistics for the ICZM Law Climagine Workshop

Total number of participants with gender identified: 48

- Women: 21
 - Percentage of women: 43,7%
- Men: 27
 - Percentage of men: 56,3%

Figure 2. Gender Distribution of Participants for the First ICZM Law Climagine Workshop



This near-parity in gender representation demonstrates progress toward inclusive coastal policy development in Lebanon. Women’s participation was reflected in both decision-making roles and technical discussions across all thematic axes of the workshop.

Beyond representation, gender was acknowledged as a cross-cutting theme during several group sessions, particularly where issues related to equitable access to coastal resources, community engagement, and capacity-building were addressed. However, as several participants highlighted, challenges remain regarding the systematic integration of sex-disaggregated data and the need to better reflect gender-differentiated impacts in coastal planning, waste management, environmental monitoring, and infrastructure development.

In this regard, participants emphasized the importance of:

- Strengthening institutional mechanisms for gender mainstreaming within coastal governance.
- Including gender-sensitive indicators in ICZM planning, monitoring, and evaluation frameworks.
- Improving awareness and capacity among both technical experts and policymakers to consider gender implications, especially in vulnerable shoreline communities affected by climate change or spatial exclusion.

The workshop reinforced that achieving long-term environmental sustainability cannot be decoupled from the promotion of social equity. Recognizing and amplifying the roles of women—as environmental leaders, scientists, engineers, project managers, and community protectors—will be essential in the implementation of a holistic and inclusive ICZM Law in Lebanon.

3 Conclusion and next steps

The series of Climagine workshops held within the framework of the GEF MedProgramme's Child Project 2.1 represent a significant milestone in the co-creation process of Lebanon's new Integrated Coastal Zone Management (ICZM) Strategy and Law. Over the course of multiple sessions, the participatory foresight approach enabled inclusive dialogues among national authorities, technical experts, local actors, and civil society representatives, fostering mutual understanding and generating shared ownership of the emerging strategy. These interactions confirmed the important role of stakeholder engagement in anchoring the process in local reality while ensuring alignment with international sustainability standards and the ICZM Protocol for the Mediterranean.

This participatory effort helped shape a first set of sustainability indicators and paved the way for a coordinated national vision that reflects the diversity of challenges faced by Lebanon's coastal zones—ranging from urban expansion, ecosystem fragmentation, and pollution to institutional fragmentation and climate vulnerability. It also underscored the importance of integrating cross-cutting priorities such as climate change adaptation, gender equity, disaster risk reduction, and nature-based solutions into every phase of coastal governance.

Looking ahead, two additional national Climagine workshops will be organized to support the remaining steps of the methodology and further guide the strategic design of the new ICZM Strategy and Law. The next workshop will focus on defining the "Band of Equilibrium" for each key indicator, aiming to establish science-based thresholds that reflect both environmental constraints and the social and economic aspirations of coastal communities. These thresholds will help determine safe operating limits for Lebanon's marine and coastal ecosystems and serve as a foundation for long-term monitoring and adaptive governance.

In tandem, efforts will be intensified to close critical data gaps, particularly in relation to climate change risks, gender dynamics, and institutional performance. Targeted data collection, stakeholder mapping, and cross-sectoral coordination mechanisms will be put in place to strengthen evidence-based decision-making and align the strategy with the SDGs and the future Climagine Guide for ICZM Practitioners (2026). The process will also remain flexible and responsive, taking into account the evolving needs of national institutions, local governments, and coastal populations.

Ultimately, the success of the new National ICZM Strategy and Law will depend on the continued engagement of a wide range of actors, under the leadership of the Ministry of Environment of Lebanon and with support from UNEP/MAP, PAP/RAC, Plan Bleu, and national partners such as DIFAF. Drawing on the momentum of this collaborative process, the next phases will focus on refining strategic objectives, formalizing governance structures, and formulating actionable policy recommendations that can guide Lebanon toward a resilient, sustainable, and inclusive coastal future.

4 Annexes

4.1 INDICATOR ASSESSMENT & PRIORITIZATION METHODOLOGY

This methodology aims to guide the evaluation and selection of sustainability indicators within the framework of Lebanon's new National Integrated Coastal Zone Management (ICZM) Strategy and Law, ensuring a systematic, transparent, and pragmatic approach. It is based on the RACER framework, complemented with practical prioritization and feasibility criteria.

Criterion	Description
Relevant	Does the indicator measure the right aspect? Is it useful for understanding the current status and future development of the priority sector as a whole?
Acceptance	Acceptance by stakeholders and end-users. (To be validated later through workshops and the ICZM Committee.)
Credibility (with non-experts)	The indicator should be unambiguous and understandable by non-specialists. This will be confirmed during workshops.
Ease of Monitoring	Availability of data at national or coastal levels, frequency of updates, and technical capacity to monitor. This is a critical criterion at this stage.
Robustness	Is the indicator resistant to manipulation? Are the data traceable, reliable, and reproducible? Preferably based on publicly accessible data.

Evaluation Criteria for Indicators: The RACER Framework

Additional Prioritization Criteria

- Degree of Importance/Fitness
 - Considers social, environmental, and economic impacts and urgency related to the indicator's focus.
 - Scoring:
 - 1 = Low
 - 2 = Medium
 - 3 = High
- Frequency of Reporting
 - Ideal frequency for data collection and dissemination to efficiently track the indicator.
 - Monthly (M)
 - Yearly (Y)
 - Every 5 years (5Y)
 - Every 10 years (10Y)
- Financial Cost
 - Estimated costs for data collection, processing, and monitoring over the reporting period.
 - Low (0 - 25,000 US\$; Lo)
 - Medium (25,000 - 100,000 US\$; Me)
 - High (> 100,000 US\$; Hi)

Principles for Final Selection of Priority Indicators

- Focus on an optimal combination of:
 - Degree of importance/fitness (impact and urgency)
 - Frequency of reporting (appropriate frequency for effective and realistic monitoring)
 - Financial cost (budget suitability over the reporting period)
- Limit priority indicators to no more than 5 per thematic area to ensure manageable, high-quality monitoring.
- Adjust values and categories according to local context, expert feedback, and real data availability.

Next Steps Suggested

- Hold a short technical meeting with relevant experts to refine this framework and balance criteria per thematic sector.
- Integrate finalized indicators in upcoming ICZM workshops for collective validation.
- Establish a continuous evaluation protocol to confirm acceptance and applicability of selected indicators.

4.2 INDICATOR DATA SHEET PER SECTOR

Urban-Spatial Planning & Land Use Management Indicators						
Indicator	Unit	Rationale / Objective	DPSIR Link	Key Parameters to Monitor	Technical Feasibility & Comments	Main Data Sources
Rate of urban expansion in coastal zones	Option 1: % increase per year Option 2: km ² /year	Tracks pressure of land transformation on coastal ecosystems.	Pressure	GIS analysis of land cover change, coastal buffer zones (e.g., 1km inland band).	High feasibility with annual database updates and ongoing inter-agency coordination.	CAS land use datasets, CNRS-L, GIZ/CAMP, CDR, MoPWT
Net change of unauthorized coastal constructions	Count (with % net change per year or monitoring period)	Indicates enforcement effectiveness and potential loss or recovery of public coastal access.	Pressure/Response	Illegal structure counts, enforcement agency records, civil society reports.	Measurement is based on the net number of unauthorized coastal structures recorded each monitoring period, including new constructions and removals.	MoPW, MoIM, MoE, CDR, legal records, public land registry
Proportion of zoned coastal plots (master planning)	% of coast covered or plans per district	Shows spatial planning coverage, regulatory effort.	State	% area by land use type; master plans cross-referenced with GIS coastal delineations.	Feasible via archives; some plans outdated, overlapping, or unpublished.	DGA/MoIM registries, urban master plans, UN-Habitat, ministries
Rate of land reclamation (sea filling)	Option 1: Hectares/year Option 2: % increase/km ² /year	Critical for coastline change and marine habitat loss.	Pressure & State	Cadastral, satellite, and LIDAR data, project counts.	Annual database updates, requiring high-resolution imagery and baseline standardization.	CNRS-L satellite imagery, UN-Habitat, MoE
Low elevation occupation on coastal zones	% or count	Exposure to flood/erosion hazards, risk assessment.	Pressure/State	Elevation data, land use mapping.	Feasible with GIS and hazard assessment; requires integration with land use data.	CDR, CNRS-L, MoE
Length of coastline with	km	Captures enforcement	Response	Compliance data, regulation	Requires updated	MoPWT, MoE

enforced building setback regulations		of spatial planning controls.		enforcement records.	regulatory boundaries and enforcement reporting.	
Number of approved Environmental Impact Assessments (EIA/SEA) for new establishments	Count	Measures application of environmental safeguards.	Response	Approved EIA/SEA documents, planning approvals.	Depends on enforcement and documentation practice.	MoE, Local Authorities
Proportion of green/public space to urban built-up area	%	Reflects urban livability and environmental equity.	State	Spatial land use ratios from GIS.	May vary in update frequency; dependent on detailed land use mapping.	CDR, CNRS-L

Waste & Pollution Management Indicators						
Indicator	Unit	Rationale / Objective	DPSIR Link	Key Parameters to Monitor	Technical Feasibility & Comments	Main Data Sources
Proportion of coastal municipalities with functional waste collection systems	%	Reflects the quality and capacity of waste collection services, which influence health risks and pollution control effectiveness.	State	Coverage percentage considering both the size and operational quality of collection routes and sites. Use population thresholds or district-level aggregation to capture regional disparities and system differences.	Moderate; needs updated, disaggregated municipal or district data for better regional assessment using population size or district-level stratification.	OMSAR, MoE, municipal reports, CDR, UNDP
Proportion of coastal municipalities with sorting activities at source vs at waste management facilities	%	Critical for assessing service coverage and pollution control effectiveness.	State	Percentage by type of sorting activity (source separation vs facility-based) Consideration of population thresholds or district-level data to address spatial heterogeneity.	Data gaps exist particularly for small-scale initiatives; triangulation with donor or operational records required.	MoE, CDR, OMSAR, UNDP, municipal records
Percent of materials that are recycled, landfilled (properly disposed), or otherwise treated	%	Reflects adoption of circular economy principles and effectiveness of waste valorization.	Response	Percentage of waste recycled, properly landfilled, or treated by other methods (incineration, composting, etc.).	Practices and terminology vary widely.	Municipal reports, MoE records

Percentage of solid waste safely disposed in engineered landfills	%	Indicates reduction of open dumping and pollution.	Response	Waste disposal reports, landfill data.	Dependent on reliability of municipal reports and landfill monitoring.	MoE, SWEEPNET
Percentage of solid waste recycled annually	%	Reflects circular economy adoption and waste valorization.	Response	Recycling rates, municipal waste reports.	Data availability varies; terminology may differ.	Municipal Reports, MoE
Number of illegal dumpsites identified and remediated per year	Count/year	Measures enforcement and cleanup effectiveness.	Response	Dump site identification and remediation records.	Requires continuous monitoring and reporting.	MoE, UNDP
Frequency of public reporting or complaints on waste mismanagement	Reports/year	Gauges public awareness and identifies system gaps.	Pressure	Number and types of complaints/reports.	Subject to variable citizen engagement and reporting channels.	Municipal Portals, NGOs
Percentage of marine litter transported by inland river systems vs coastal zone sources	%	Assesses source contributions to marine litter; guides mitigation.	Impact	Marine litter mapping, seasonal monitoring.	Requires targeted studies and mapping during rainy seasons.	MoE, NGOs, UN bodies
Percentage of domestic wastewater treated vs untreated emptying into coastal river basins	%	Tracks water pollution discharged into coastal systems.	Pressure/State	Treatment plant data, river basin monitoring.	Data may be patchy, requires coordination among utilities.	Water utilities, MoE
Percentage of domestic wastewater treated vs untreated from coastal zone wastewater treatment plants	%	Evaluates infrastructure coverage and treatment performance.	Response	WWTP operational data, discharge volumes.	Data gaps may exist for illegal or unconnected discharges.	MoE, MoPWT, Municipalities
Percentage of wastewater treated vs untreated from coastal zone area	%	Measures overall regional wastewater treatment performance.	State/Response	Aggregated wastewater treatment statistics.	Combination of facility reports, regional surveys.	MoE, CDR, Water Agencies

Water & Agriculture Indicators						
Indicator	Unit	Rationale / Objective	DPSIR Link	Key Parameters to Monitor	Technical Feasibility & Comments	Main Data Sources
Groundwater level trends in coastal aquifers	cm/year	Assesses aquifer health and long-term extraction impacts.	State	Well monitoring (long-term loggers/manual readings).	Start with public wells monitoring.	MoEW, MoA, MoE

Average annual flow of coastal rivers	m ³ /s	Reflects annual fresh surface water reaching the coast and trends under climate variability.	State	Annual flow data at key gauging stations per basin or estuary.	Requires maintenance/calibration of stations or new ones.	MoEW, LRA
Percentage of farms along coastal zone rivers applying sustainable versus conventional agriculture	%	Measures uptake of eco-friendly farming methods aimed at reducing non-point source pollution from agricultural runoff in coastal river areas.	Response	Sustainable/unsustainable practices by farm type. Sustainable practices currently include organic farming and compliance with international Good Agricultural Practices (GAP) standards (FAO).	Data disaggregated by practice; requires collaboration with agricultural extension units.	MoA, LARI, agricultural extension units
Incidence of saltwater intrusion in monitored coastal wells	Average annual salinity level (mg/L or μ S/cm) and % change compared to previous year	Highlights ecological impacts of over-extraction and climate change.	Impact	Salinity threshold and annual average change (%) in monitoring wells. Seasonal fluctuations, pumping rates, geographic location (coastal vs. inland), and irrigation practices should be considered.	Starting with public wells; requires regular testing.	MoEW, MoA, MoE
Annual abstraction volume vs recharge in coastal aquifers	Ratio	Key for groundwater sustainability; indicates overuse and saltwater intrusion risk	Pressure	Annual abstraction data compared with recharge rates	Currently not feasible due to irregularities and lack of policy enforcement	MoEW, LRA, CNRS, LARI
Percentage of coastal rivers with continuous water quality monitoring	%	Tracks monitoring system robustness and preventive capacity.	Response	Systematic sampling and data reports.	Possibly unachievable currently due to high investment needs.	MoEW, CNRS-L
Number of pollution-related incidences at coastal zone related to river pollution	Count/year	Pollution incidences (eutrophication) related to nutrient/sediment transport.	Impact	Reports of incidents per year.	Requires systematic sampling and correlation with sources; lacks centralized DB.	MoE, Judiciary, NGOs, MoPH
Percentage of coastal rivers with continuous water quality monitoring vs none	%	Tracks robustness of monitoring system.	State	Systematic sampling and data reports.	Possibly unachievable currently due to high investment needs.	MoEW, MoE

Biodiversity & Ecosystems Indicators						
Indicator	Unit	Rationale / Objective	DPSIR Link	Key Parameters to Monitor	Technical Feasibility & Comments	Main Data Sources
Area of coastal zone under conservation (including MPAs and terrestrial protected areas within the coastal zone, protected vs unprotected)	km ² or %	Measures the extent of formal conservation coverage of sensitive coastal ecosystems and biodiversity hotspots, including both marine and adjacent terrestrial protected areas.	State.	GIS analysis; overlay of marine protected areas, terrestrial protected areas within the coastal zone, and hotspot data.	Feasible using periodic registry updates; data may occasionally be outdated.	MoE, UNESCO MAB, CNRS-L, MAPAMED
Percentage annual loss of ecologically important habitats for biodiversity in sensitive areas (including dunes, reefs, estuaries, wetlands, and islands).	%	Measures habitat decline caused by both climate impacts and human activities.	Impact.	Mapping and quantification of percentage habitat loss compared to baseline conditions.	Based on field surveys and habitat mapping; integral to Integrated Coastal Zone Management (ICZM) reports.	MoE, CNRS-L
Number of biodiversity hotspots protected vs unprotected	Count	Tracks biodiversity hotspots identified through a standardized formal process, ensuring comparability between protected and unprotected areas.	State	Areas identified as biodiversity hotspots based on defined biological, ecological, and conservation criteria, distinguished by their protection status.	Requires a formalized identification protocol applied consistently at the national level, supported by an updated registry of protected areas and recognized informal sites.	MoE, UNESCO MAB
Ratio of formally designated Marine Protected Areas (MPAs) to marine sensitive zones without formal designation or with informal/conflicting protection status	%	Compares legally protected MPAs to marine sensitive zones lacking formal recognition or having informal/conflicting status. A higher ratio indicates a stronger formal conservation framework.	State	Extent of legally designated MPAs. Areas identified as sensitive but lacking legal protection or having informal/conflicting status.	Monitoring relies on spatial data comparing formal MPAs and sensitive zones without clear legal status. Informal areas are those recognized ecologically but without formal legal protection, often with limited data.	MAPAMED, MoE, BLI, CEPF
Number of invasive species detected and monitored	Count	Indicates ecosystem health shifts and risk from invasions.	State	Species detection and coordinated information sharing.	Requires systematic data gathering and coordinated	Research institutions, academia, MoE, IUCN

					reporting.	
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Coastal Zone Risk & Climate Change Indicators						
Indicator	Unit	Rationale / Objective	DPSIR Link	Key Parameters to Monitor	Technical Feasibility & Comments	Main Data Sources
Occurrence rate of climate-related disasters	events/year	Captures climate risk exposure and disaster risk reduction effectiveness.	Impact	Count of floods, storms, heatwaves, coastal emergencies.	Highly actionable; data centralized.	CNRS, Ministry of Prime Minister – Disaster Risk Dept.
Coastal erosion (shoreline retreat)	ha/year	Quantifies shoreline retreat with impacts on protection and land loss.	State	Satellite imagery, aerial photos, field surveys.	High feasibility.	CNRS, Ministry of Public Works and Transport
Annual exceedance rate of PM2.5 and NOx limits in coastal cities	%	Shows environmental pressure from transport and industry.	Impact	Quantifies air quality degradation affecting health and climate co-benefits.	Medium – Limited disaggregation for coastal zones.	MoE
Average annual sea surface temperature deviation	°C/year	Tracks ocean warming driving ecosystem changes.	Pressure	Yearly local temperature records.	Medium feasibility; limited local oceanographic infrastructure.	CNRS, NOAA, Ministry of Environment
Number or investment volume of coastal protection infrastructure projects	count (number of projects) or annual investment amount	Indicates both the extent and the financial commitment to climate and erosion adaptation.	Response	Government permits, municipal and financial records.	High feasibility – data on project counts and investment amounts are generally accessible.	Ministry of Public Works and Transport, Ministry of Environment
Rate of coastal land-use change (Ratio of natural to built-up areas)	ha of natural land converted / ha of built-up land gained per year	Indicates habitat loss, fragmentation, and ecological pressure.	Pressure	Measured as the ratio of coastal land area converted from natural to built-up areas. Land-use data from urban planning departments.	Feasible. Monitoring through satellite imagery, GIS, land cover classification.	Ministry of Public Works and Transport, Urban Planning Department, satellite data providers (e.g., Copernicus, NASA)
Coastal flood risk maps updated in last 5 years	Yes/No	Reflects flood hazard preparedness and decision support availability.	Response	Existence and update status of flood risk maps.	Data accessible from environmental agencies.	MoE, UNDRR
Surface of	% of coastline	Tracks	State	Protected area	Feasible	MoE, NGOs

pristine/coastal protected beaches		commitment to biodiversity conservation and habitat protection.		registries.	through government and NGO databases.	
Physical and chemical quality of coastal waters	Annual change in parameters	Essential for ecosystem and human health.	State	Key physical & chemical water quality markers.	Feasible via regular environmental monitoring.	MoE, CNRS-L
Number of air quality monitoring stations in coastal urban zones	Count	Measures infrastructure for air pollution tracking.	State	National environmental monitoring reports.		MoE

Sustainable Blue Economy & Socioeconomic Development Indicators						
Indicator	Unit	Rationale / Objective	DPSIR Link	Key Parameters to Monitor	Technical Feasibility & Comments	Main Data Sources
Percentage of coastal population employed in new blue economy activities (segregated by age and gender)	%	Tracks economic diversification and dependency on blue economy sectors, with gender and age breakdown to capture demographic employment patterns.	State	Socio-economic census, employment statistics by gender and age.	Available in national labor and sector surveys with demographic breakdowns.	CAS, Ministry of Labor
Number of local ecotourism and green initiatives promoting CZM sustainability	Count	Reflects green jobs, sustainable tourism, and economic resilience.	Response	NGO project lists, certifications.	Data scattered, no unified registry.	NGOs, Ministry of Tourism
Annual number of tourists in coastal heritage sites	Visitors/year	Monitors tourism pressure and cultural asset impacts.	Pressure	Tourism data and site visitation statistics.	Seasonal biases; data from ticketed and monitored sites.	Ministry of Tourism, Site Syndicates, UNESCO
Number of micro-enterprises in coastal areas	Count	Captures diversification and entrepreneurial innovation in coastal economies.	State	Business registrations, licenses.	Feasible; requires data integration.	Ministry of Economy and Trade, MoE
Annual catch volume by small-scale fisheries	tons/year	Key for monitoring resource use and fisheries sustainability.	Pressure	Catch registration and cooperative reports.	Low registration compliance; possible underreporting.	Ministry of Agriculture, FAO
Length of publicly	km	Measures public	State	Annual	Feasible.	Ministry of

accessible beaches		equity and access to coastal resources.		measurement and change tracking.		Public Works and Transport, CNRS-L
Compliance rate of fishing regulations or Statistical risk index of Illegal, Unreported, and Unregulated (IUU) fishing	% or IUU Fishing Index	Assesses sustainable resource use and regulatory effectiveness by measuring compliance and/or evaluating IUU fishing risk through vulnerabilities and risk factors.	State	IUU Fishing Index data, enforcement records, fisheries monitoring, expert assessments.	Feasible.	Ministry of Agriculture, Coast Guard, relevant fisheries and marine monitoring authorities
Number of local ecotourism and green initiatives promoting coastal zone management sustainability	count	Reflects green jobs, sustainable tourism, and economic resilience.	Response	NGO reports, project listings.	Data scattered, no unified registry.	Civil society NGOs, Municipalities
Proportion of tourism investments complying with ICZM	%	Measures institutional alignment with sustainable coastal tourism development.	Response	Inspection and certification records.	Data availability variable.	Ministry of Tourism, Ministry of Environment
Size safe recreational marine areas (swimming, fishing)	Count	Public health, ecosystem quality, local welfare.	State/Response	Marine zoning maps and coastal safety plans.	Lack of unified classification; safety data gaps.	MoE, MoT, Local Unions

Governance, Institutions & Enabling Environment Indicators						
Indicator	Unit	Rationale / Objective	DPSIR Link	Key Parameters to Monitor	Technical Feasibility & Comments	Main Data Sources
Number and quality of laws/decrees adopted or amended related to ICZM since 2015	Option 1: Count of laws/decrees adopted or amended Option 2: Quality score (0 to 1 scale) based on predefined legal criteria	Measures progress in legal reform for ICZM by considering not only the quantity but also the effectiveness and strength of laws and decrees, reflecting the legal framework's real impact.	Response / State	Number of laws/decrees adopted or amended at national and local levels; assessment of legal quality/strength (clarity, enforceability, alignment with ICZM principles).	Requires access to official gazettes and legal records; quality assessment may need expert scoring; updates aligned with parliamentary sessions or as laws change.	Official gazettes, ICZM protocol registry, Judiciary reports, MoE, MoJ, MoA, MoIM, MoPWT, MoEW
Number of public consultations on	count/year	Measures inclusiveness and	Response	Official agendas, reports, attendance,	Requires standardized	MoE, relevant ministries,

coastal issues		legitimacy of the governance process.		minutes; number of participants reached.	reporting; triangulated with civil society records; Include data on total persons reached if available.	civil society organizations
Existence of a public coastal data platform at national level and by region for Lebanon	yes / no	Reflects transparency and accessibility of information for stakeholders at both national and regional scales, enabling targeted decision-making and monitoring.	Response / State	Operational website/portal presence at national level and for each administrative coastal region; coverage completeness; user accessibility; frequency and regularity of data updates.	Evaluated by CNRS-L and MoE. Platform(s) must be public and include key ICZM indicators relevant at both scales.	CNRS-L, Ministry of Environment (MoE)
Update of ICZM law	Yes/No	Measures legal and policy progress in ICZM implementation and adaptation to new challenges.	Response	Latest version of ICZM law, legislative amendments.	Verifiable through official government gazettes and ministry records on legal updates; straightforward to monitor.	Ministry of Environment (MoE), Ministry of Justice (MoJ)
New EIA studies adopting ICZM regulations	Yes/No	Tracks environmental impact assessments that incorporate ICZM principles, ensuring sustainable project approvals in coastal zones.	Response	Number and status of EIA studies explicitly citing ICZM measures.	Monitoring requires access to environmental agency and EIA reports; depends on institutional reporting systems.	Environmental Impact Assessment agencies, Ministry of Environment (MoE)
Fisheries Law	Yes/No	Coastal aquaculture law needs to be activated; Tracks activation and enforcement of fisheries legislation.	State	Status of Fisheries Law adoption, enforcement measures.	Measured by legal ratification, promulgation, and enforcement data; requires cooperation between ministries and judiciary.	Ministry of Agriculture, Fisheries authorities
Ratio of budget/funding allocated to ICZM	%	Captures financial prioritization and capacity for implementation.	Response / Impact	Budget allocations and expenditure reports.	Feasible if finance ministries cooperate.	Ministry of Finance (MoF), EU Delegation
Number of coastal governance	Count/year	Measures institutional	Response	Meeting frequency, participants, agenda.	Trackable through ministry	MoE, Ministry of Public

coordination meetings/year		coordination and accountability.			records.	Works and Transport (MoPWT)
Number of institutions with clear coastal mandates	Count	Shows role clarity and administrative responsibility.	State	Official mandates and institutional roles.	Requires institutional documentation and verification.	MoE, MoPWT
Number of municipalities integrating ICZM in local plans	Count	Indicates local mainstreaming of ICZM priorities.	Response	Local planning documents include the ICZM.	Trackable through municipal planning reviews.	Ministry of Interior & Municipalities (MoIM), MoE
Frequency of updates to national marine spatial plans	Updates/year	Reflects adaptiveness and currency of spatial governance.	Response	Number of updates, content changes.	Requires coordination with planning agencies.	MoPWT, CNRS-L
Number of capacity-building trainings/year	Count/year	Tracks skills and knowledge-building for ICZM actors.	Response	Number of training conducted, participant feedback.	Requires training records and evaluation.	MoE, PAP/RAC
Number of fines against illegal occupation/activities	Count/year	Measures enforcement of coastal legal framework.	Response	Official fine records, type of violations.	Requires judicial and ministry legal records.	MoIM, MoE, Judiciary
Number of successful court cases against illegal activities	Count/year	Indicates effectiveness of compliance and legal follow-up.	Response	Court case outcomes.	Trackable through judiciary case records.	Judiciary, MoE

4.3 EVENT AGENDA



**1st Multi-stakeholder Consultation on the
Integrated Management Plan for the Damour Area from Source to sea
and coordination with efforts towards:**

- *Integrated Coastal Zone Management (ICZM) Strategy and Law*
- *Conjunctive Management of Surface Water and Groundwater*
- *Water-Energy Food-Ecosystems (WEFE) Nexus*

1 – 3 July 2025 (Beirut-Lebanon)

July 1 (Opening Session) - Radisson Blu Martinez Hotel

Google Maps location:

https://maps.app.goo.gl/PaSUTfVwSXfMjPgW8?g_st=com.google.maps.preview.copy

Zoom link to join remotely: <https://us02web.zoom.us/j/81062706961>

July 2 and 3 - UNESCO Regional Office

Google Maps location:

https://maps.app.goo.gl/3iN2cMsVBhTrst2F7?g_st=iw

Zoom link to join remotely on July 2:

<https://unesco-org.zoom.us/j/85601075725?pwd=gXnZLNucXnQpg1Vc8RkuUa2JFe0eH.1>

Zoom link to join remotely on July 3:

<https://unesco-org.zoom.us/j/89658359872?pwd=e1lBbSgJuGZpb0Phy7hSckFM40JbO.1>

Simultaneous interpretation available between Arabic and English

The event is carried out on a Hybrid mode

Draft Agenda

Day 1 - 1st July 2025

15.30 – 16.00 *Participant Registration and Coffee Reception*

16.00 – 17.30 OPENING SESSION

Chair: Eng. Mona Fakih – Director of Water, Ministry of Energy and Water

Welcoming Addresses

- Mr. Paolo Fontani, Director of UNESCO Regional Office in Beirut and Representative to Lebanon and the Syrian Arab Republic
- Mr. Mohamad Kayyal, MedProgramme Management Officer, United Nations Environment Programme Mediterranean Action Plan (UNEP/MAP)
- Mr. Dimitris Faloutsos, Deputy Regional Coordinator, Theme Leader on Transboundary, WEFE Nexus, and Environment - Global Water Partnership-Mediterranean (GWP-Med)
- Ms. Daria Povh Skugor, Director, Priority Actions Programme/Regional Activity Centre (PAP/RAC)
- Ministry of Energy and Water

Context of the Consultation event: Introductory presentations

- Ms. Barbara Tomassini, GWP-Med – Integrated natural resources management in the source to sea continuum and WEFE Nexus approach
- Mr. José Luis Martín Bordes, UNESCO-IHP – Coastal Aquifer Management
- Mr. Ante Ivčević, PAP/RAC – Integrated Coastal Zone Management (ICZM) Strategy and Law
- Ms. Eloïse Leguérinel, Plan Bleu/RAC – Participatory approach and stakeholder engagement

(group photo)

17.30 – 19.30 COCKTAIL RECEPTION and NETWORKING

Day 2 - 2nd July 2025***I. The development of an Integrated Management Plan for the Damour Area from source to sea (Damour IMP)*****9:00 – 10:00 SESSION 1: Overview and status of the Damour IMP development**

This session will present the preliminary findings from the work carried out by the various implementing organizations, along with the upcoming steps toward the development of the Damour IMP.

Moderator: Ms. Barbara Tomassini, Senior Programme Officer - GWP-Med

Key expert presentations:

- Findings from inception phase and governance analysis and way forward: Mr. Raji Maasri, MORES s.a.r.l.
- Damour ICZM and marine area: Mr. Andre Kammoun, Marine and Coastal Resources Program, Institute of the Environment – University of Balamand
- Rapid stakeholders' assessment : Mr Hussam Hawwa, Difaf SAL

10.00 – 10.30 Coffee break (group photo)**10:30 – 13:30 SESSION 2: Building a shared vision for the Damour area through the Climagine participatory approach**

This session aims to develop a shared vision for the Damour area from source to sea, serving as a foundation for the Damour Integrated Management Plan. Through the Climagine participatory approach participants will work collaboratively to establish the local context based on current data, identify key challenges, and determine priority issues to address.

Moderator: Ms. Eloïse Leguérinel, Plan Bleu/RAC

- Overview of the IMP Damour process and Climagine methodology, and workshop objectives (participatory engagement, visioning, defining sustainability indicators). (~10 min)
- Overview of Damour's priority sectors (tourism, agriculture, water, waste, infrastructure, environment,...) and introduction to sustainability indicators. (~20 min)
- Explanation of group work: developing "Business as Usual" vs. "Sustainability Vision" scenarios, setting indicator thresholds, and addressing cross-cutting themes (governance, gender, education). (~30 min)
- Around eight thematic groups identify key challenges, develop a shared vision, propose sustainability indicators with thresholds, discuss cross-cutting issues, and set priorities for the IMP. (~1h)
- Groups present their findings, proposed indicators, and priorities; open discussion for feedback and consolidation. (~1h)

13:30-14:30 Lunch

14:30 – 17:00	SESSION 3: Management recommendations for the Damour Coastal Aquifer and Conjunctive Management of Surface and Groundwater
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This session will present the key findings from the characterization and assessment of the Damour coastal aquifer, conducted by UNESCO. These findings will provide stakeholders with a clear understanding of the aquifer's current conditions and main challenges, serving as a basis for discussion. The session also aims to engage participants in identifying concrete actions - including conjunctive management approaches - to promote the sustainable management and protection of this critical groundwater resource.

Moderators: Georges Gharios, UNESCO and Nadim Farajalla, UNESCO expert

- Key expert presentation on Damour coastal aquifer characterization and assessment (~15min, as an introduction to the consultation): Mr. Michel Frem
- Key expert presentation on Damour coastal aquifer management options and recommendations for the IMP (~15min, as an introduction to the consultation): Dr. Abbas Fayad
- Key expert presentation on conjunctive management of surface and groundwater options for the Damour area (~15min, as an introduction to the consultation): Dr. Nadim Farajalla
- Stakeholder consultation (working groups and feedback in plenary) (90min)
- Conclusions and recommendations for the Damour Coastal Aquifer management plan and IMP (15min)

17.00 – 17.15	CLOSING OF DAY 2 and COFFEE STATION
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Day 3 - 3rd July 2025

II- Cross-sectoral coordination and spatial integration for enhanced natural resources management in Lebanon within the framework of MedProgramme

09:00 – 10:30	SESSION 4: What is new in the ICZM Strategy and Law
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This session will provide an overview of the key updates for the Lebanese National ICZM Strategy and Law and discuss the challenges of implementation that lie ahead.

Moderator: Dr. Manal Nader, University of Balamand

- **Key expert presentation on the project's achievements and status**
- **Panel discussion**
 - Eng. Adel Yacoub – Head of Protection of Natural Resources Department, Ministry of the Environment – PAP/RAC focal point
 - Dr. Josiane Yazbeck – Legal expert – ICZM Project
 - Dr. Serge Yazigi – Spatial Planning expert – ICZM Project
 - Dr. Naji Sfeir, Member of the Council of the Syndicate of Marine Establishments
- **Q/A**

10.30 – 11.00	Coffee break
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11:00 – 12:00 SESSION 5: Advancing integrated management of natural resources in the source to sea continuum through WEFE Nexus coordinated governance

Drawing on the WEFE Nexus initiatives implemented by GWP-Med in Lebanon, this session will explore how improved sectoral coordination and integrated planning can facilitate the prioritization of measures to address trade-offs among water, energy, food, and ecosystem preservation, as well as policy harmonization and multi-stakeholder collaboration.

Moderator: Ms. Barbara Tomassini, GWP-Med

- **Key introductory presentation**

- **Panel discussion**

- Eng. Mona Fakih, Director of Water, General Directorate of Hydraulic and Electric Resources, Ministry of Energy and Water
- Ms. Barbara Tomassini, GWP-Med Senior Programme Officer
- Dr. Abbas Fayad, GWP-Med Country advisor

- **Q/A**

12:00 – 13:00 SESSION 6: Conjunctive Surface Water and Groundwater management

This session will review the key findings and recommendations from the stakeholder consultation held during Session 3. It will also feature a panel discussion on the necessary conditions and enabling environment for implementing CWM in Lebanon.

Moderator: Georges Gharios, UNESCO

- **Panel discussion:**

- Eng. Mona Fakih, Director of Water, General Directorate of Hydraulic and Electric Resources, Ministry of Energy and Water
- Dr. Nadim Farajalla, UNESCO expert
- Dr. Abbas Fayad, UNESCO expert

- **Q/A**

13.00 – 14.00 Lunch
14:00 – 17:00 SESSION 7: Building a shared vision for the Lebanese coastal area through the Climagine participatory approach

This session aims to develop a shared vision for the Lebanese coastal areas to support on-going efforts for integrated coastal zone management in the country. Through the Climagine participatory approach participants will work collaboratively to establish the local context based on current data, identify key challenges, and determine priority issues to address.

Moderator: Ms. Eloïse Leguérinel, Plan Bleu/RAC

- Overview of workshop objectives, focusing on participatory engagement and sustainability monitoring for Lebanon's coastal management. (~10 min)

- Presentation of key sustainability dimensions and priority sectors for Lebanon's coastal zone; discussion on alignment with stakeholder-identified priorities and identification of any additional sectors. (~20 min)
- Group exercise to assess the current state of Lebanon's coastal areas using data and stakeholder knowledge, creation of a "rich picture" to visualize challenges and opportunities, and plenary sharing of findings. (~30 min)
- Introduction to Sustainability Indicators (SI) and RACER criteria; breakout group work to identify key issues, propose relevant indicators, and define minimum/maximum thresholds for each sector, supported by facilitators. (~50 min)
- Thematic groups develop "Business as Usual" and "Sustainability Vision" scenarios for Lebanon's coastal future, using visual tools (e.g., amoeba diagrams) to illustrate indicator trajectories and desired outcomes. (~50 min)
- Group reporters present their scenarios and proposed indicators; facilitated discussion to agree on preliminary indicators, refine sustainability thresholds, identify gaps, and collect participant feedback before closing. (~20 min)

17.00 – 17.15 CLOSING SESSION OF DAY 2 AND OF THE CONSULTATION and COFFEE STATION

4.4 LIST OF PARTICIPANTS

Title	First Name	Last Name	Organisation/Institution	Position / Fonction
Mr.	Ali	Ramadan	Directorate General of Urban Planning, MPWT	Executive/Legislature (MPs, DGs, Govt.)
Ms.	Amina	Basbous	CAS	Department of National Accounts and coordination
Mr.	Antoine	Waked	-	Climate Change expert
Mr.	Anwar	Kozah	Ministry of Agriculture	-
Mr.	Asaad Hassan	Zeiter	Ministry of Energy and Water	-
Ms.	Barbara	Tomassini	GWP-Med	International Cooperation
Mr.	Bashir	Aoun	Municipality of Damour	Lawyer
Mr.	Bassam	Jaber	-	Former Director of Exploitation at MEW / Water Expert
Ms.	Christelle	El Selfani	Plan Bleu / RAC	Head of communication
Ms.	Clara	El Khoury	Coastal Forum	-
Ms.	Dina	Sleiman	MoT	-
Ms.	Éloïse	Leguérinel	Plan Bleu / RAC	Project Manager
Mr.	Fadi	Doumani	-	Economist consulted
Ms.	Fatima	Hmede	LARI	-
Mr.	Georges	Gharios	UNESCO	National Programme Officer for Natural Sciences
Ms.	Ghada	Baliis	General Directorate of Hydraulic and Electric Resources	Director General
Ms.	Houra	Daher	CNRS	Researcher
Mr.	Hussam	Hawwa	Difaf	National Expert and Consultant
Mr.	Jean	Stephan	Lebanese University	Associate Professor
Ms.	Josiane	Yazbeck	-	Consultant/ Legal expert
Ms.	Kristelle	Azzi	Municipality of Damour	Interior Design
Mr.	Mahmoud	Termos	Mol	Department of Technical Affairs & Industrial Services
Mr.	Manal	Nader	Université de Balamand	Consultant
Mr.	Mazen	Saker	-	Maritime expert
Mr.	Michel	Frem	UNESCO IHP	Scientist/Consultant
Mr.	Mohammad	Amin	MEW	-
Ms.	Mona	Fakih	Ministry of Energy and Water	Director of Water
	Nadim	Kanaan	Municipality of Damour	-
Ms.	Nadine	Saade	CAS	National coordinator of the environment sector
Ms.	Najwa	Chaaya	Municipality of Damour	Lawyer

Ms.	Nancy	Awad	Council for Development and Reconstruction	-
Ms.	Nisrine	Ghattas	Ministry of Energy and Water	Civil Engineer / Acting head of programs and monitoring
Mr.	Raji	Maasri	MORES	Consulting
Mr.	Ramzi	Dobeissy	Electricité Du Liban (EDL)	Head of Transmission Network Department
Ms.	Samah	Termos	Remote Sensing Center	Surveying Engineer / Research Assistance
Mr.	Tony	Naufal	MORES	Junior Geologist
Ms.	Tracy	Zarour	UN/ESCWA	-
Mr.	Wissam	Kanj	Ministry of Energy and Water	Head of Irrigation Department
Mr.	Yousef	Bezri	FAO	-
Ms.	Youssra	Ghoussein	CNRS	Researcher
Ms.	Rawan	Al Jamal	University of Balamand (MCR-IOE-UOB)	Research Assistant
Mr.	Ramy	Bawadi	ACS Al-Shouf Cedar Society	Project coordinator
Mr.	Elie	Moussallem	Hariri Foundation for Sustainable Human Development	Sustainable Human Development Sustainability and Climate Action Program Technical Officer

4.5 LIST OF THE MISSING STAKEHOLDERS IDENTIFIED

- Ministry of Public Works and Transport (Ports and Coastal Infrastructure Unit): While the Directorate General of Urban Planning is represented, the key departments dealing specifically with maritime transport, port infrastructure, and coastal erosion management are missing.
- Ministry of Environment (MOE): Surprisingly, the Ministry of Environment, which plays a lead role in ICZM coordination, appears absent among participants despite being deeply involved in environmental governance and the ICZM Protocol implementation.
- Ministry of Culture (MoC): No representative from the Ministry of Culture was included, despite the ICZM Strategy's emphasis on preserving coastal cultural heritage.
- Ministry of Finance: Critical for economic planning, environmental accounting, and budget allocation for ICZM implementation, yet not represented in the workshop.
- Ministry of Education and Higher Education: Given the strategy's integration of education and public awareness, involvement from this ministry, particularly on environmental curricula and research collaboration, is key.
- Coastal Municipalities (outside Damour): While the municipality of Damour is well represented, other key municipalities such as Saida, Sour, Tripoli, Jbeil, and Batroun are not mentioned, though they manage significant stretches of the coast.
- Local NGOs and Community-Based Organizations (CBOs) active in coastal conservation and advocacy: Representation from national or local NGOs beyond ACS Al-Shouf Cedar Society appears minimal, despite their role in mobilizing communities and monitoring ecosystem health.
- Private Sector Representatives (e.g. tourism, industry, fisheries, real estate, port operators): There is a notable absence of private economic actors whose activities significantly affect coastal zones and whose engagement is critical for ICZM compliance and dialogue.
- Judiciary and Legal Enforcement Institutions: Although a consultant/legal expert is included, no formal representatives of the judiciary or enforcement agencies (e.g. environmental police, coastal patrol) are listed, which are necessary for ensuring legal compliance.
- Educational Institutions beyond the University of Balamand and Lebanese University: Broader academic representation across disciplines (e.g., social sciences, urban planning, marine biology) is limited to two universities, leaving out institutions such as AUB, USJ, LAU, etc.

- Media and Environmental Journalists: The strategy emphasizes awareness-raising and public engagement, yet there is no apparent participation from media professionals or communication specialists beyond Plan Bleu's communications officer.
- Women's Organizations or Gender Equality Focal Points: Despite "gender mainstreaming" being a declared priority, no specific actors representing women's rights, gender policy, or equality-focused networks are present.
- Youth Organizations / Environmental Education Initiatives: Young people are important agents in future ICZM implementation, but youth-led structures or educational NGOs appear to be missing.
- Disaster Risk Management (DRM) and Civil Defense Authorities: With Lebanon's coast threatened by extreme climate events and natural hazards, their participation is essential for integrating resilience into planning.

These missing stakeholders should be proactively engaged in the upcoming Climagine workshops and national ICZM strategy formulation steps, to ensure a comprehensive, multisectoral, and legitimate approach in line with the ICZM Protocol and the goals of the GEF MedProgramme.