

Lebanon

Integrated Coastal Zone Management Strategy

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Integrated Coastal Zone Management Strategy in Lebanon

Updated ICZM Strategy for the Lebanese Coastal Zone

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List of Acronyms

CAMP	Coastal Area Management Program of the Mediterranean Action Plan
CAS	Central Administration of Statistics
CDR	Council for Development and Reconstruction
CNRS	Council for Scientific Research
CP	Child Project
DAR	Integrated Diagnostic Analysis Report
DGUP	Directorate General of Urban Planning
DRM	Disaster Risk Management
EIA	Environmental Impact Assessment
ELARD	Earth Link & Advanced Resources Development
ERML	Environmental Resources Monitoring in Lebanon
GoL	Government of Lebanon
HCUP	Higher Council for Urban Planning
ICZM	Integrated Coastal Zone Management
IMAC	Integrated Management of East Mediterranean Coastlines
IMC	Inter-ministerial Committee
ISF	Internal Security Forces
IUU	Illegal, unreported, and unregulated fishing
LAF	Lebanese Armed Forces
LARI	Lebanese Agricultural Research Institute
LCZ	Lebanese Coastal Zone
LPA	Lebanese Petroleum Administration
MCDA	Multi-Criteria Decision Analysis
MCR-IOE-UOB	Marine and Coastal Resources Program-Institute of the Environment-University of Balamand
MEHE	Ministry of Education and Higher Education
MoA	Ministry of Agriculture
MoC	Ministry of Culture
MoD	Ministry of Defense
MoE	Ministry of Environment
MoET	Ministry of Economy and Trade
MoEW	Ministry of Energy and Water
MoF	Ministry of Finance
MoFA	Ministry of Foreign Affairs
MoI	Ministry of Industry
MoIM	Ministry of Interior and Municipalities
MoJ	Ministry of Justice
MoL	Ministry of Labor
MoPWT	Ministry of Public Works and Transport
MoSA	Ministry of Social Affairs

MoT	Ministry of Tourism
MoU	Memorandum of Understanding
MPA	Marine Protected Area
MPD	Maritime Public Domain
MSP	Marine Spatial Plan
NCMS	National Center for Marine Sciences
NGOs	Non-Governmental Organizations
NGT	Nominal Group Technique
NIS	Non-Indigenous Species
NPMPLT	National Physical Master Plan
OECMs	Other Effective Area-Based Conservation Measures
PAP/RAC	Priority Actions Programme / Regional Activity Centre
PPP	Public–Private Partnerships
SEA	Strategic Environmental Assessment
SME	Small and Medium Enterprise
SO	Strategic Objective
TVET	Technical and Vocational Education and Training

I. Introduction

A. Context of the Project

As part of the Mediterranean Sea Programme (MedProgramme) "Enhancing Environmental Security" and its Child Project (CP) 2.1 "Mediterranean Coastal Zones: Water Security, Climate Resilience and Habitat Protection", effort is being invested in the update and official adoption of the 2015 Integrated Coastal Zone Management (ICZM) Draft Law and Strategy, developed under the "National consultancy for the identification of legal, policy and institutional gaps and policy reforms drafted for marine and coastal biodiversity protection" project for the Lebanese Coastal Zone (LCZ). This initiative is funded by the Global Environment Facility, and executed by the Priority Actions Programme/Regional Activity Centre (PAP/RAC), and implemented by Earth Link & Advanced Resources Development (ELARD) and the Marine and Coastal Resources Program at the Institute of the Environment, University of Balamand (MCR-IOE-UOB), with the support of, and for the benefit of Lebanon's Ministry of Environment (MoE).

B. What is an Integrated Coastal Strategy?

An Integrated Coastal Strategy provides a forward-looking framework for managing coastal zones by comprehensively assessing natural resources, socio-economic activities, and community needs while identifying challenges and opportunities. It enables government institutions to understand past and present trends, evaluate future scenarios, and make informed decisions that ensure long-term sustainability. The strategy relies on systematic data collection, transparent dialogue, stakeholder engagement, and cross-sectoral negotiation to define priorities and guide coordinated action.

A key feature of an Integrated Coastal Strategy is coordination. It promotes collaboration across sectors, institutions, and governance levels, ensuring that planning and decision making are aligned and inclusive. This includes engaging government agencies, local communities, scientists, private stakeholders, and civil society in the management process. Given the coastal zone's complexity and competing uses, ICZM requires a dedicated, formally mandated ICZM Unit acting as a lead agency to harmonize policies and ensure balanced participation of all affected sectors. The strategy must remain adaptive, periodically reviewed to respond to evolving environmental conditions, climate impacts, and societal needs. Its core purpose is to establish an integrated, ecosystem-based management system that safeguards biodiversity, sustains renewable resources, enhances community resilience, and mitigates risks from natural hazards and uncoordinated development. Through multi-sector planning and rigorous sustainability criteria, the ICZM Strategy prevents resource degradation, promotes the perpetuation of biodiversity, socio-economic improvement, security from natural hazards and secures equitable, long-term benefits for present and future generations

These central purposes within the context of the current document are articulated as a set of "Strategic Objectives" (SOs) (The ICZM Draft Strategy) to be addressed under the "Vision" that reflects the desires of coastal communities within the confines of sustainable development.

C. Definition of National Coastal Area Boundaries

Based on Decree 144 (1925) the Lebanese coast is delineated by the highest waterline during the winter months, including sand and gravel beaches. Considered part of Lebanon's maritime domain, the territorial sea extends 12 nautical miles from the coastline. The public maritime domain consists of the sea, including the sea bed, the sea floor and the coast.

While Lebanese legislation does not yet provide a clear definition of the coastal zone, the ratification of the ICZM Protocol will enable Lebanon to establish a more precise delineation aligned with the Protocol's framework. The proposed ICZM Draft Law introduces a new definition that accounts for both landward and seaward boundaries. Accordingly, the strategy will adopt the coastal zone boundaries as defined by the ICZM Draft Law once officially adopted.

Furthermore, the Protocol defines the CZ in its Article 2 as: "Coastal zone" means the geomorphologic area either side of the seashore in which the interaction between the marine and land parts occurs in the form of complex ecological and resource systems made up of biotic and abiotic components coexisting and interacting with human communities and relevant socio-economic activities.

As for geographic coverage, Article 3 states the following:

1. The area to which the Protocol applies shall be the Mediterranean Sea area as defined in Article 1:

    (a) the seaward limit of the coastal zone, which shall be the external limit of the territorial sea of Parties; and

    (b) the landward limit of the coastal zone, which shall be the limit of the competent coastal units as defined by the Parties.

2. If, within the limits of its sovereignty, a Party establishes limits different from those envisaged in Paragraph 1 of this Article, it shall communicate a declaration to the Depositary at the time of the deposit of its instrument of ratification, acceptance, approval of, or accession to this Protocol, or at any other subsequent time, in so far as:

    (a) the seaward limit is less than the external limit of the territorial sea;

    (b) the landward limit is different, either more or less, from the limits of the territory of coastal units as defined above, in order to apply, inter alia, the ecosystem approach and economic and social criteria and to consider the specific needs of islands related to geomorphological characteristics and to take into account the negative effects of climate change.

As for "Estuary", the Strategy adopts the definition of the RAMSAR Convention to which Lebanon is a signatory (https://www.ramsar.org/sites/default/files/documents/library/info2007-01-e.pdf) that states:

- Under Article 1.1 of the Convention, wetlands are defined as: "areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six meters". In addition, for the purpose of protecting coherent sites, Article 2.1 provides that wetlands to be included in the Ramsar List of internationally important wetlands: "may incorporate riparian and coastal zones adjacent to the wetlands, and islands or bodies of marine water deeper than six meters at low tide lying within the wetlands". Five major wetland types are generally recognized:
    - Marine (coastal wetlands including coastal lagoons, rocky shores, and coral

reefs);
- Estuarine (including deltas, tidal marshes, and mangrove swamps);
- Lacustrine (wetlands associated with lakes);
- Riverine (wetlands along rivers and streams); and
- Palustrine (meaning “marshy” - marshes, swamps and bogs).

D. How was the Strategy Prepared?

Building on earlier initiatives, including Coastal Area Management Program (CAMP) (2005); Integrated Management of East Mediterranean Coastlines (IMAC) (2007); and the draft ICZM Strategy (2015) which was developed through extensive stakeholder consultations, as well as the ICZM Protocol and comparable ICZM strategies implemented across the Mediterranean region (e.g. Montenegro and Morocco), and drawing on the reports and analytical outputs produced under the present action, this process has contributed to the identification of the key pillars for the integrated management of the coastal zone. The Strategy development was further informed by a structured participatory process, including three national stakeholder workshops held in July and October 2025 and in February 2026, as well as a dedicated meeting of the ICZM Advisory Team in February 2026. The 2025 consultations contributed primarily by strengthening the technical foundation of the draft Strategy and ensuring that it was built on a robust, evidence-based understanding of Lebanon’s coastal challenges. Two complementary consultation tracks were undertaken during that period. The first, held under the Climagine process, served as a technical foresight exercise aimed at moving from broad diagnosis to structured scenario development. This workshop was designed as a bridging step between the initial diagnostic phase and the final strategic planning phase. Rather than validating final priorities, it focused on deepening technical understanding of priority issues, refining sustainability indicators, identifying methodological and data gaps, and preparing the groundwork for the “Band of Equilibrium” exercise that would later define acceptable thresholds and desired targets for coastal sustainability. The second consultation track of the 2025 workshops complemented the Climagine process by grounding the ICZM Strategy in practical planning and governance realities. Its main contribution to the national ICZM process was to connect local-scale integrated planning with national coastal governance reform. The workshop highlighted the need to align biodiversity conservation, spatial planning, and coastal governance within a broader sustainable development framework. It emphasized the importance of updating national and local spatial plans, clarifying coastal boundaries, strengthening enforcement, addressing illegal encroachments, and improving public participation in coastal decision making. These recommendations directly informed the strategic and governance components of the draft ICZM Strategy, particularly with respect to spatial planning, institutional coordination, and public access.

By February 2026, the consultation process had advanced from diagnosis and technical framing to strategic consolidation. The 3rd Consultation on the National ICZM Strategy and Law played a critical role in transforming the analytical outputs of previous consultations into a more structured and actionable draft Strategy. Unlike the 2025 workshops, which focused on scenario development and indicator refinement, the February 2026 consultation focused on validating, refining, and prioritizing the measures proposed under the draft ICZM Strategy and on collecting stakeholder input on key provisions of the draft ICZM Law. The Climagine process concluded by translating the results of the three workshops into clear strategic, legal, and institutional implications, thereby directly informing the structure and content of the draft ICZM Strategy. It helped the consolidation and prioritization of sustainability indicators into a reduced, decision-relevant framework, identifying a subset of key

indicators and applying the "Band of Equilibrium" (BoE) approach to define acceptable thresholds and desired targets for Lebanon's coastal zone[1]. A major contribution of the 2026 consultation was the application of a Multi-Criteria Decision Analysis (MCDA) methodology to rank and prioritize strategic measures (Annex I: Multi-Criteria Decision Analysis Methodology.

To facilitate a systematic and quantitative comparison between measures, qualitative categories were converted into numerical scores. Specifically:

- Priority levels were assigned scores of 3 for high priority, 2 for medium priority, and 1 for low priority.
- Cost categories were scored inversely to reflect implementation feasibility, whereby low-cost measures (<250,000 USD) received a score of 3, medium-cost measures (between 250,000 and 1 million USD) a score of 2, and high-cost measures (>1 million USD) a score of 1.
- Implementation timeframe was scored according to the expected duration of execution, with short-term measures (1–5 years) assigned a score of 3, medium-term measures (6–10 years) a score of 2, and long-term measures (10–20 years) a score of 1.

Following this conversion, an overall MCDA score was calculated for each measure by averaging the scores of the three criteria (priority, cost, and timeframe). The resulting score, ranging from 1 to 3, was used to classify measures into implementation priority categories, where:

- Scores between 2.5 and 3.0 were considered high priority,
- Scores between 1.8 and 2.4 represented medium priority, and
- Scores between 1.0 and 1.7 indicated low priority. This approach provided a transparent and standardized basis for comparing and ranking measures according to their relative feasibility and importance.

Through this process, stakeholders identified the highest-priority actions under each strategic objective, thereby helping to sequence interventions and clarify which measures should form the core of the draft ICZM Strategy.

Moreover, another prioritization exercise was conducted in the February 2026 workshop. This prioritization was operationalized through a structured, facilitated exercise that applied a Nominal Group Technique (NGT)–based approach to systematically rank ICZM measures across the six SOs of the draft Strategy and Law. For each SO, stakeholders individually selected priority measures, justified their choices, participated in a moderated collective discussion, and then voted to determine the final rankings. This process was repeated in six consecutive NGT rounds, one per SO, allowing both individual judgment and group deliberation to shape outcomes. Although a comprehensive, fully participatory formulation of prioritization criteria was constrained by time and the number of attendees, participants were guided by a structured set of criteria derived from the methodological framework, including urgency, risk reduction potential, environmental and socio-economic benefits, feasibility, cost-effectiveness, and governance considerations. The exercise identified the top three priority measures for each SO[2]; however, the final prioritization adopted in the Strategy was based on the MCDA, reflecting the larger number and greater diversity of stakeholders involved in that process.

[1] https://planbleu.org/wp-content/uploads/2026/04/MedP-CP-2.1_ICZM-Strategylaw-Lebanon_Climagine-WS-3_compressed.pdf

[2] Prioritization Exercise within the frame of the 3rd Consultation on the Lebanese Integrated Coastal Zone Management & Law

To further refine the prioritization of measures under the draft ICZM Strategy, the same scoring exercise applied during the February 2026 consultation workshop was subsequently circulated to members of the ICZM Advisory team members and a selected group of technical experts. This additional round of scoring was designed to complement the outcomes of the participatory workshops and strengthen the final prioritization framework through a more balanced integration of institutional, participatory, and technical perspectives. The objective was to combine a policy-driven scenario, reflecting the strategic and institutional priorities of the ICZM Advisory team, with the participatory outcomes generated through the stakeholder working groups, while also incorporating targeted expert judgment.

A comparison between the MCDA and NGT prioritization results was subsequently conducted. Measures were organized in descending order according to their scores, with measures obtaining identical scores grouped within the same ranking category to reflect equal ranking. Differences in ranking largely reflected methodological perspectives, quantitative weighting under MCDA and stakeholder-driven prioritization under NGT, rather than fundamental divergence in strategic direction.

Strategies need to emphasize alignment with national policies, legal frameworks, and political priorities, making them appropriate for situations requiring rapid approval and strong institutional ownership. Therefore, in order to ensure a balanced weighting of these three main groups consulted, the final aggregation approach assigned 35% to ICZM Advisory team, 35% to workshop participants and thematic working groups, and 30% to technical experts. This weighting was intentionally designed to preserve strong institutional ownership and stakeholder legitimacy, while recognizing that expert input was already substantially embedded in the process through the design of the methodology, facilitation of the working groups, and preparation of the draft technical and strategic documents. As such, expert scoring served as a complementary calibration layer rather than the dominant influence, helping to consolidate a final prioritization framework that is technically sound, institutionally grounded, and broadly supported by stakeholders.

To assess the robustness and consistency of the prioritization process, the ranking of measures generated through the MCDA methodology was compared with the prioritization outcomes of the NGT exercise. Finally, extensive background research into the national and regional initiatives covering environmental, sociological, and economic aspects of coastal zone issues in Lebanon was performed to support the development of a Strategy that meets national needs and aligns with international requirements. This Strategy aligns with regional frameworks, including the Strategy for the Water-Energy-Food-Ecosystems (WEFE) Nexus in the Mediterranean Source-to-Sea Continuum[3,4] which emphasizes the interconnected management of natural resources and coastal systems. This background research was mainly based on the following:

- Draft ICZM Strategy of 2015[5]
- ICZM Protocol for the Mediterranean[6]
- National Strategy for Integrated Coastal Zone Management Montenegro[7]
- Environmental Resources Monitoring in Lebanon (ERML) Project, 2012, produced the following related reports:

[3] Demonstrating the WEFE Nexus Policy Advancements at national level - WEFE Nexus Background Report.pdf
[4] Med WEFE Nexus Strategy - Final.pdf
[5] 2015 - Final Updated ICZM Draft Strategy.pdf
[6] eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:22009A0204%2801%29
[7] National ICZM Strategy Montenegro.pdf

    - Improved Understanding, Management, and Monitoring in the Coastal Zone[8].
    - Situational Analysis of the current land use of the coastal zone, particularly in terms of socio-economic activities[9].
    - Analysis of the Institutional and Legal Frameworks Related to Management and Monitoring of Coastal and Marine Areas[10].
- Lebanon State of the Environment and Future Outlook: Turning the Crises into Opportunities of 2020[11]
- IMAC project, 2009 produced the following related reports:
    - The coast of North Lebanon: Grasping the opportunities. A strategic action plan for wise use[12].
    - Economic valuation of the coastal zone of the Mohafaza of North Lebanon[13].
    - Assessment of the Institutional and Legal Setting for Coastal Zone Management in Lebanon[14].
    - Assessment Report for the coastal zone of North Lebanon[15].
- CAMP of the Mediterranean Action Plan, 2005[16].
- Sustainable Development Goals (SDGs)[17]
- Global Biodiversity Framework Targets (GBF)[18]
- Lebanon national contribution to support the Post-2020 SAP BIO elaboration[19]
- Policy/literature Review Relevant to Coastal Zone Management (2023)[20]
- Stakeholder Analysis Relevant to Coastal Zone Management (2023)[21]
- MedProgramme Child Project 2.1 BASELINE AUDIT QUESTIONNAIRE (OCTOBER 2023)[22]
- GEF MedProgramme CP 2.1 (2023) project produced the following reports:
    - Initial Recommendations Report (IRR)[23]
    - Initial Recommendations Report for the ICZM Draft Law in Lebanon[24]
    - Integrated Diagnostic Analysis Report (DAR)[25]

[8] 2012 - ERML A(i) Improved Understanding, Management and Monitoring in the Coastal Zone.pdf
[9] 2012 - ERML-B(i)-Situational and Scocio-economic analysis of the current land use of the coastal zone -Final Report.pdf
[10] 2012 - ERML-A(ii) Analysis of the Institutional and Legal Frameworks. Coastal Zone. Final Report.pdf
[11] Lebanon State of the Environment and Future Outlook: Turning the Crises into Opportunities | United Nations Development Programme
[12] 2009 - IMAC-Strategy arabic.pdf
[13] 2007 - IMAC-Economics Study.pdf
[14] 2007 - IMAC-Assessment of the institutional and Legal setting for CZM in Lebanon.pdf
[15] 2007 - IMAC - Status report
[16] 2005 - MAP CAMP LEBANON FINAL INTEGRATED REPORT
[17] THE 17 GOALS | Sustainable Development
[18] Indicators for the Kunming – Montreal Global Biodiversity Framework | Indicator Repository
[19] 2020 - Post Sap Bio Lebanon - Report.pdf
[20] 2023 - ICZM - Policy-Literature Review.pdf
[21] 2023 - ICZM - Stakeholder Analysis.pdf
[22] 2023 - ICZM Questionnaire - Updated report.pdf
[23] Draft Initial Recommendations Report - IRR.pdf
[24] Initial Recommendations Report - Draft Law.pdf
[25] ICZM-Diagnostic Analysis Report.pdf

II. Coastal Zone Diagnosis Overview and the ICZM Protocol for the Mediterranean

A. DESCRIPTION OF THE LEBANESE COASTAL ZONE

The Lebanese coastline extends over approximately 220 km from Arida in the north to Ras Al-Naqoura in the south, although GIS analyses indicate a highly indented shoreline ranging from about 298 km (1962) to 371 km (2010) (Figure 1). The coast is composed predominantly of rocky shores (~80%) and sandy beaches (~20%), featuring bays, headlands, and river deltas. The continental shelf varies significantly, being wide in the north and south but very narrow in central Lebanon, where steep underwater slopes descend rapidly.



Figure 1: Rivers of Lebanon (Source: Fanack water)

The coastal environment is strongly influenced by freshwater systems, with 16 perennial rivers discharging into the Mediterranean and contributing sediments and nutrients, though significant water abstraction and groundwater over-extraction have reduced flows and caused aquifer salinization. Marine

conditions are characterized by strong seasonal temperature variation (17–30°C), relatively high salinity, and exposure to wave action driven mainly by south-westerly winds. Tides are weak, while coastal currents generally follow a northeastward circulation with localized sediment-transporting eddies.

Lebanon's hydrographic system includes 40 rivers and streams and major basins such as the Litani, the largest in the country. River flow is highly seasonal, concentrated in winter and spring. Coastal estuaries, though limited in size, are ecologically important habitats, some of which are legally protected from fishing and identified for conservation. Groundwater is a critical resource, supplying most domestic and irrigation needs, but is heavily overexploited, leading to declining water tables and increasing seawater intrusion. Major karst aquifers dominate hydrogeology and are increasingly under stress. The coastal and marine ecosystems are highly biodiverse, hosting hundreds of species across planktonic, benthic, fish, and marine mammal groups, including dolphins, turtles, and the endangered Mediterranean monk seal. However, deep-sea ecosystems remain poorly studied, with recent surveys revealing high habitat diversity and previously unrecorded species in submarine canyons. Lebanon has established a limited but growing number of Marine Protected Areas, including the Palm Islands Nature Reserve, Tyre Coast Nature Reserve, and Abbassieh Coast Nature Reserve, alongside proposed and planned sites identified through national and regional strategies. Additional ecologically and culturally sensitive coastal areas have been prioritized for protection, reflecting the overlap between natural heritage and human settlements. Efforts to restore degraded marine habitats include the deployment of artificial reefs, which have shown encouraging biodiversity colonization and potential benefits for fisheries and ecotourism. However, ongoing pressures from urbanization, resource extraction, pollution, and coastal modification continue to threaten the ecological integrity of the Lebanese coastal zone.

B. ASSESSMENT OF THE CURRENT STATE AND KEY PRESSURES OF THE LEBANESE COASTAL ZONE

The LCZ is a highly dynamic and densely utilized socio-ecological system that concentrates a disproportionate share of the country's population, infrastructure, economic activity, and natural capital. It supports key national functions including urban development, industry, transport, tourism, fisheries, and agriculture, while hosting ecologically significant marine and coastal habitats. However, the LCZ is under severe and growing pressure from fragmented governance, unregulated development, environmental degradation, infrastructure deficits, and climate change, all of which are undermining its ecological integrity, economic productivity, and social resilience.

i. Governance, Legal Framework, and Coastal Management

The governance of Lebanon's CZ remains fragmented, outdated, and weakly enforced. Although Lebanon acceded to the ICZM Protocol in 2017, its provisions have not yet been fully transposed into national law, and the draft ICZM law remains un-adopted. Coastal management continues to rely on a patchwork of outdated, often contradictory legal instruments, many dating back decades, with overlapping mandates across ministries and limited coordination among institutions. The absence of a legally adopted and operational definition of the coastal zone, coupled with ambiguity in jurisdictional boundaries and enforcement responsibilities, has hindered integrated planning and weakened regulatory control. This institutional fragmentation is compounded by chronic underfunding, weak political commitment, corruption, limited technical and enforcement capacity, and the lack of effective implementation mechanisms for key legal instruments, including Law 444/2002 and associated decrees. As a result, coastal governance remains largely reactive, sectoral, and unable to address cumulative pressures in an integrated manner.

ii. Maritime Public Domain and Coastal Access

The Maritime Public Domain (MPD) has undergone extensive legal and illegal occupation, resulting in progressive privatization and loss of public access. Legal loopholes, weak enforcement, and repeated regularization of violations have enabled the long-term encroachment of private developments, tourist resorts, landfills, and infrastructure onto the public coastline. Illegal occupations now exceed legal ones in both number and area, and public access to the coast has been severely restricted in many locations. Despite legal provisions protecting free access and coastal continuity, enforcement remains weak and violations are frequently tolerated or retroactively legalized, prioritizing revenue generation over ecological protection and public rights. This has significantly reduced the availability of accessible public shoreline, fragmented coastal habitats, and intensified social inequities in access to coastal resources.

iii. Land Use, Urbanization, and Coastal Development

The Lebanese coast is experiencing rapid and largely unregulated urbanization, driven by demographic concentration, real estate expansion, economic centralization, and the coastal clustering of services and infrastructure. Built-up areas continue to expand at the expense of natural and semi-natural lands, with significant conversion of agricultural land, open spaces, wetlands, and coastal habitats into urban and artificial land cover. This transformation has accelerated habitat fragmentation, ecosystem degradation, and the loss of coastal landscape continuity. Urban sprawl is compounded by weak land-use planning, outdated or absent master plans, poor enforcement of zoning and setback regulations, and widespread non-compliance with construction standards. Coastal development is further characterized by encroachment on sensitive habitats, privatization of public space, and the proliferation of hard infrastructure that reduces ecological resilience and increases exposure to coastal hazards.

iv. Water Resources, Groundwater, and Aquifers

The LCZ is highly dependent on increasingly stressed freshwater and groundwater systems. Coastal rivers, springs, and aquifers remain essential to domestic supply, irrigation, and ecosystem functioning, yet are under mounting pressure from excessive abstraction, poor watershed management, infrastructure losses, and pollution. Groundwater, particularly in coastal aquifers, is heavily overexploited through legal and illegal wells, resulting in declining water quality, saline intrusion, and reduced long-term recharge capacity. Surface water flows have also been significantly altered by upstream diversions, dams, and excessive abstraction, reducing freshwater inputs to the coast and weakening estuarine and nearshore ecological processes. These pressures are compounded by increasing water demand, weak regulation of extraction, deteriorating infrastructure, and limited wastewater reuse, placing both water security and coastal ecosystem health at increasing risk.

v. Rivers, Estuaries, and Wetlands

Rivers, estuaries, and wetlands remain among the most productive and ecologically valuable components of the LCZ, yet they are also among the most degraded. River systems are heavily modified by abstraction, damming, pollution, and encroachment, reducing flow, sediment transport, and ecological connectivity between inland and marine systems. Estuaries, despite their limited extent, serve as critical nursery grounds, biodiversity hotspots, and hydrological buffers, but are increasingly threatened by urban expansion, wastewater discharge, solid waste accumulation, and land conversion. Coastal wetlands, already limited in extent, are under severe pressure from drainage, reclamation, pollution, and habitat fragmentation, leading to continued ecological degradation and reduced ecosystem service provision.

vi. Marine and Coastal Ecosystems

Lebanon's coastal and marine ecosystems remain biologically rich but increasingly degraded. The LCZ supports important marine habitats, including rocky reefs, sandy bottoms, estuaries, submarine canyons, seagrass assemblages, and remnant coastal wetlands, all of which sustain significant biodiversity and ecosystem services. However, these systems are under growing stress from pollution, coastal construction, habitat fragmentation, overexploitation, sediment starvation, invasive species, and cumulative anthropogenic disturbance. Coastal and marine habitats are becoming increasingly simplified and degraded, with declining ecological connectivity and resilience. Deep-sea ecosystems remain insufficiently studied, but available evidence confirms their ecological significance and vulnerability to emerging pressures, including offshore industrial development. MPAs provide an important conservation foundation, but they currently remain limited in spatial coverage, fragmented, and insufficiently resourced to ensure effective ecological protection.

vii. Fisheries and Marine Living Resources

The fisheries sector remains socially and culturally important but is under increasing ecological and economic strain. Coastal fisheries are characterized by overexploitation, weak regulation, limited enforcement, and declining productivity, compounded by habitat degradation, pollution, and the degradation of nursery and spawning grounds. Unsustainable fishing practices, inadequate fisheries governance, and insufficient monitoring of stocks have increased pressure on already stressed marine resources. The sector is further constrained by poor infrastructure, limited institutional support, and growing competition over coastal space. As marine habitats degrade and fish stocks decline, the long-term viability of artisanal fisheries and associated livelihoods is increasingly at risk.

viii. Agriculture and Coastal Rural Production

Agriculture remains an important land use and livelihood system in parts of the LCZ, but it is under increasing pressure from land conversion, water scarcity, salinization, and pollution. Productive agricultural lands along the coast are being progressively lost to urbanization, infrastructure expansion, and real estate development. Remaining agricultural areas face growing stress from groundwater depletion, declining water quality, seawater intrusion, and unsustainable irrigation practices. Agricultural runoff also contributes to nutrient loading and pollution in coastal waters, reinforcing land-sea pressures and contributing to the degradation of downstream marine ecosystems.

ix. Industry, Energy, and Maritime Activities

A significant share of Lebanon's industrial base is concentrated along the coast, where industries exert substantial pressure on land, water, and air quality. Industrial development is often poorly planned and weakly regulated, with inadequate treatment of effluents, direct discharge into marine waters, and significant emissions of pollutants and greenhouse gases. Coastal energy infrastructure, including thermal power generation and fuel-related activities, contributes to air pollution, thermal stress, and marine contamination, while chronic electricity shortages have increased reliance on decentralized diesel generation with additional environmental costs. Maritime activities including ports, shipping, dredging, and coastal transport infrastructure, further intensify pressures through habitat alteration, pollution, sediment disruption, and coastal artificialization.

x. Waste Management and Pollution

Pollution remains one of the most severe and pervasive pressures affecting the LCZ. Inadequate solid and liquid waste management continue to drive widespread contamination of coastal land, rivers, groundwater, and marine waters. Municipal solid waste is still poorly managed, with continued

dependence on open dumping, coastal landfills, uncontrolled disposal, and burning, all of which generate chronic pollution and degrade coastal ecosystems. Wastewater remains one of the most significant sources of marine pollution, with untreated or partially treated domestic and industrial effluents discharged directly into rivers and coastal waters. Additional pollution loads stem from industrial discharge, agricultural runoff, landfill leachate, maritime activities, and diffuse urban sources, contributing to eutrophication, microbial contamination, habitat degradation, and public health risks.

xi. Tourism and Recreation

Tourism remains a major economic function of the LCZ, but its development has been heavily concentrated in coastal resort infrastructure, often at the expense of public access, habitat integrity, and landscape quality. Tourism growth has largely followed an extractive and privatized model centered on beach resorts and shoreline occupation, contributing to MPD encroachment, habitat loss, seasonal pressure on infrastructure, and exclusionary access. While ecotourism and nature-based opportunities exist, they remain underdeveloped relative to the scale of conventional coastal tourism. This limits the sector's sustainability and reduces its potential contribution to environmentally friendly local development.

xii. Social Conditions, Infrastructure, and Service Provision

The LCZ concentrates population growth, employment, infrastructure, and service provision, but this concentration has intensified social and environmental stress. Rapid urban growth, migration, displacement, and rising poverty have increased pressure on already overstretched infrastructure and public services, including water supply, sanitation, transport, healthcare, energy, and housing. Infrastructure deficits remain acute, particularly in wastewater, electricity, and mobility systems, contributing directly to environmental degradation and reduced quality of life. Coastal communities are increasingly exposed to unequal access to services, reduced access to public space, environmental health risks, and growing livelihood insecurity linked to ecological decline and economic instability.

xiii. Climate Change and Coastal Risk

Climate change is amplifying existing pressures across all coastal sectors and increasing the vulnerability of the LCZ to long term environmental and socio-economic disruption. Rising temperatures, declining precipitation, prolonged droughts, sea-level rise, and increased frequency of extreme events are already affecting water availability, coastal stability, ecosystem resilience, and human health. These changes are accelerating coastal erosion, saline intrusion, habitat loss, flooding, and infrastructure exposure, while intensifying pressure on freshwater resources, fisheries, agriculture, and public health systems.

III. Vision for the Lebanese Coastal Area

The Lebanese Coastal Zone (LCZ) is a resilient and sustainably managed area in which integrated, ecosystem-based planning protects marine and coastal ecosystems, enhances climate resilience, and supports inclusive socio-economic development within an effective, transparent, and participatory governance that safeguards natural and cultural heritage, ensures public access to the maritime public domain, and aligns coastal development with long-term environmental sustainability and community well-being.

IV. The ICZM Draft Strategy

This Strategy has been developed in alignment with the IRR[23] and the Report on Stakeholder Perspectives on ICZM in Lebanon[26] in addition to all information generated within the scope of the current action. It is informed by an inclusive consultation process involving national and international experts, parliamentarians, governmental institutions, scientific bodies, and civil society representatives. Drawing on these consultations, targeted interviews, the assessment of the current state of the LCZ (DAR[25]), the ICZM Protocol, and relevant Mediterranean ICZM experiences, the Strategy defines a set of SOs and associated implementation parameters to guide the effective operationalization of ICZM in Lebanon.

The Strategy is structured around the following SOs:

- Governance and legal integration
- Environmental and biodiversity protection
- Climate adaptation and resilience
- Socio-economic sustainability
- Social equity and participation
- Integrated spatial planning

For each Strategic Objective, measures were developed and assessed using a common set of characterization criteria and validated through dedicated stakeholder roundtables. The values reflect priorities as assessed during the development of the current Strategy and are to be adjusted in the future to reflect evolving conditions. The measure characterization criteria include:

- **Timeframe:** estimated duration to achieve the main outcomes of the measure (Short: 1–5 years; Medium: 6–10 years; Long: 10–20 years).
- **Cost:** indicative level of investment required for national or multi-sectoral implementation (Low: < USD 250,000; Medium: USD 250,000–1,000,000; High: > USD 1,000,000).
- **Lead Agency:** the public authority holding policy ownership and a formal national mandate, responsible for coordination, decision-making, and accountability.
- **Implementing Bodies:** public institutions responsible for on-the-ground execution of measures; one or more bodies may be designated.
- **Partner institutions:** partner institutions provide technical, financial, or implementation support to deliver the main outcomes of the measure; one or more partner institutions may be designated.

An MCDA was then applied to organize, compare and prioritize measures within each SO. This analysis allowed the development of an “Implementation Framework”, bringing together the measures proposed under each SO and translating them into a practical outline for action, indicating who might lead each measure and providing a broad sense of timing and effort.

[26] Stakeholder Perspectives on Integrated Coastal Zone Management (ICZM) in Lebanon.pdf

A. Governance and Legal Integration

i. Definition

This objective aims to establish a coherent governance system for Lebanon's CZ. It entails continuously updating and harmonizing fragmented coast-related laws and decrees, clarifying institutional mandates, and improving implementation of existing laws and national plans as well as the coordination among ministries and local authorities mandated over coastal sectors such as land use, environment, fisheries, tourism, and infrastructure. A key outcome is the creation of a functional inter-ministerial coastal coordination mechanism, such as the ICZM Inter-ministerial Committee (IMC)[27] and the enactment of a national ICZM Draft Law. Achieving this objective will provide the legal and administrative foundation needed to ensure consistency, accountability, and long-term sustainability in all coastal management actions.

ii. Objective

Strengthen institutional coordination, legal coherence, enforcement capacity, and participatory governance to ensure integrated, transparent, and effective coastal zone management in Lebanon, in line with ecosystem-based approaches, climate resilience, and public interest.

iii. Measures

A total of nine measures were identified for the SO "Governance and Legal Integration" (Section VI – Sub-Section SO1 – Governance and Legal Integration):

1. **Establish a national ICZM governance framework** (Table 1: SO1.1)
2. **Ensure full legal alignment with the ICZM protocol and international commitments** (Table 2: SO1.2)
3. **Build judicial, institutional, and technical capacity** (Table 3: SO1.3)
4. **Strengthen policy coherence and integrated planning** (Table 4: SO1.4)
5. **Promote decentralized and participatory coastal governance** (Table 5: SO1.5)
6. **Enhance enforcement, compliance, and accountability mechanisms** (Table 6: SO1.6)
7. **Promote Public–Private Partnerships (PPP) and sustainable financing** (Table 7: SO1.7)
8. **Strengthen the legal framework for sustainable coastal development** (Table 8: SO1.8)
9. **Integrate climate resilience into governance and laws** (Table 9: SO1.9)

[27] ICZM Interministerial Committee Proposal

iv. Prioritization of Measures

The table below presents a comparison of the prioritization of measures for SO1 based on the MCDA and NGT workshop exercises.

SO1 - Governance and Legal Integration	
MCDA	**NGT**
1. Establish a national ICZM governance framework	1. Promote Public–Private Partnerships (PPP) and sustainable financing
2. Ensure full legal alignment with the ICZM protocol and international commitments	2. Establish a national ICZM governance framework
3. Build judicial, institutional, and technical capacity	3. Strengthen policy coherence and integrated planning

While the prioritization of individual measures differs slightly between the two methodologies, both approaches indicate a clear convergence on the core governance and legal priorities under SO1. The results consistently highlight the need to strengthen institutional frameworks, enhance policy coherence, and reinforce the legal and operational foundations required for effective ICZM implementation. Across both methodologies, particular importance is given to establishing a national ICZM governance framework, strengthening coordination through integrated planning, and building institutional and technical capacity.

Overall, the two methodologies show strong alignment in identifying the key measures required to advance governance and legal integration, confirming the consistency and reliability of the prioritization process.

B. Environment and Biodiversity Protection

i. Definition

This objective aims to conserve and restore Lebanon's coastal and marine ecosystems by safeguarding remaining natural habitats and rehabilitating degraded areas. It prioritizes the expansion and effective management of marine and coastal protected areas, the recovery of critical ecosystems, and the integration of biodiversity considerations into spatial planning and development decisions. Pollution prevention, waste reduction, and sustainable water management are core elements of this objective, contributing to the halt of biodiversity loss, the preservation of ecosystem services, and the long-term ecological integrity of Lebanon's coastal zone.

ii. Objective

Safeguard and restore Lebanon's coastal and marine ecosystems through ecosystem-based management, biodiversity conservation, pollution control, and sustainable resource use. It aims to strengthen climate resilience, safeguard public health, and sustain ecosystem services, while supporting the long-term social and economic well-being of coastal communities.

iii. Measures

A total of nine measures were identified for the SO "Environment and Biodiversity Protection" (Section VI – Sub-Section SO2 – Environment and Biodiversity Protection):

1. **Establish a national coastal and marine environmental monitoring system** (Table 10: SO2.1)
2. **Integrate environmental sustainability into tourism and coastal development** (Table 11: SO2.2)
3. **Promote sustainable fisheries and ecosystem-based marine resource use** (Table 12: SO2.3)
4. **Strengthen water resource protection and coastal water quality** (Table 13: SO2.4)
5. **Reduce marine and coastal pollution and improve waste management** (Table 14: SO2.5)
6. **Prevent and manage biological invasions and ecosystem degradation** (Table 15: SO2.6)
7. **Strengthen protection, management, and connectivity of coastal and marine areas** (Table 16: SO2.7)
8. **Conserve and restore critical and climate-sensitive ecosystems** (Table 17: SO2.8)
9. **Strengthen research, knowledge generation, and science-based decision-making** (Table 18: SO2.9)

iv. Prioritization of Measures

The table below presents a comparison of the prioritization of measures for SO2 based on the MCDA and NGT workshop exercises.

SO2 - Environment and Biodiversity Protection	
MCDA	**NGT**
1. Establish a national coastal and marine environmental monitoring system	1. Strengthen research, knowledge generation, and science-based decision-making
2. Integrate environmental sustainability into tourism and coastal development	2. Reduce marine and coastal pollution and improve waste management
3. Promote sustainable fisheries and ecosystem-based marine resource use	3. Strengthen water resource protection and coastal water quality and 4. Strengthen protection, management, and connectivity of coastal and marine areas

Although there are minor differences in how individual measures are prioritized, both methodologies point to a clear convergence in the overall strategic direction under SO2. The results consistently highlight the need to strengthen environmental management systems, enhance ecosystem protection, and promote more sustainable use of coastal and marine resources. Across both approaches, strong emphasis is placed on improving environmental monitoring and knowledge generation, addressing pollution and water quality challenges, and advancing ecosystem-based management practices.

Taken together, the two methodologies show a high level of coherence in identifying priority actions for environment and biodiversity protection, confirming the robustness of the prioritization process and supporting a consistent strategic direction for SO2.

C. Climate Adaptation and Resilience

i. Definition

This objective aims to strengthen the resilience of Lebanon's CZ to climate change impacts by systematically integrating climate risk assessments into national and local planning processes. It promotes the adoption of nature-based solutions and climate-responsive measures across coastal sectors, ensuring that adaptation and mitigation considerations are embedded in development and infrastructure decisions. Through this approach, the objective seeks to reduce vulnerability, protect coastal communities and assets, and sustain critical ecosystem functions under evolving climatic conditions.

ii. Objective

Strengthen the resilience of Lebanon's CZ, ecosystems, infrastructure, and communities to climate change through ecosystem-based adaptation, low-carbon development, risk-informed planning, and sustainable energy systems, ensuring long-term environmental integrity, social equity, and economic stability.

iii. Measures

A total of eight measures were identified for the SO "Climate Adaptation and Resilience" (Section VI – Sub-Section SO3 – Climate Adaptation and Resilience):

1. **Conduct comprehensive coastal climate risk and vulnerability assessments** (Table 19: SO3.1)
2. **Strengthen Awareness, Capacity Building, and Behavioral Change** (Table 20: SO3.2)
3. **Integrate climate adaptation into ICZM, MSP, and development planning** (Table 21: SO3.3)
4. **Strengthen coastal disaster risk reduction and early warning systems** (Table 22: SO3.4)
5. **Accelerate renewable energy deployment and energy transition in coastal zones** (Table 23: SO3.5)
6. **Address coastal salinization and enhance groundwater recharge** (Table 24: SO3.6)
7. **Promote Ecosystem-Based Adaptation and Nature-Based Solutions** (Table 25: SO3.7)
8. **Reduce anthropogenic heat and urban climate stress in coastal cities** (Table 26: SO3.8)

iv. Prioritization of Measures

The table below presents a comparison of the prioritization of measures for SO3 based on the MCDA and NGT workshop exercise.

SO3 - Climate Adaptation and Resilience	
MCDA	**NGT**
1. Conduct comprehensive coastal climate risk and vulnerability assessments	1. Integrate climate adaptation into ICZM, MSP, and development planning
2. Strengthen Awareness, Capacity Building, and Behavioral Change	2. Promote Ecosystem-Based Adaptation and Nature-Based Solutions
3. Integrate climate adaptation into ICZM, MSP, and development planning	3. Strengthen Awareness, Capacity Building, and Behavioral Change

While slight variations appear in the prioritization of individual measures between the two methodologies, both approaches point to a clear convergence around the core priorities for climate adaptation and resilience under SO3. The results highlight a shared emphasis on embedding climate considerations within planning frameworks, strengthening awareness and institutional capacity, and advancing ecosystem-based responses to climate risks.

In particular, both methodologies underscore the importance of integrating climate adaptation into ICZM and development planning processes, while also reinforcing the role of capacity building and behavioral change in supporting long-term resilience. This is complemented by a strong focus on nature-based and ecosystem-based adaptation measures, reflecting a common recognition of their role in addressing climate impacts across coastal systems.

Collectively, the two approaches demonstrate a high level of coherence in identifying priority actions for climate adaptation and resilience, confirming the robustness of the prioritization process despite minor differences in ranking.

D. Socio-Economic Sustainability

i. Definition

This SO seeks to promote inclusive economic growth and job creation at the local level that depend on Lebanon's coastal and marine resources, while ensuring their long-term environmental sustainability. It supports the transition toward a sustainable blue economy in which sectors such as fisheries, aquaculture, tourism, and related activities operate within ecological limits and enhance community resilience. It emphasizes eco-tourism development, sustainable fisheries management, and circular economy practices that reduce waste and pollution. Overall, it aims to strengthen, diversify, and future-proof coastal livelihoods.

ii. Objective

Promote resilient, inclusive, and environmentally responsible coastal economies by strengthening sustainable livelihoods, enhancing value chains, supporting small and medium enterprises, and integrating ecosystem services and climate risks into development planning, ensuring equitable benefits for coastal communities and future generations.

iii. Measures

A total of nine measures were identified for the SO "Socio-Economic Sustainability" (Section VI – Sub-Section SO4 – Socio-Economic Sustainability):

1. **Internalize ecosystem services and climate costs in economic decision-making** (Table 27: SO4.1)
2. **Promote inclusive and equitable coastal development** (Table 28: SO4.2)
3. **Strengthen sustainable fisheries and marine-based livelihoods** (Table 29: SO4.3)
4. **Promote climate-smart and sustainable coastal agriculture** (Table 30: SO4.4)
5. **Promote sustainable and diversified coastal tourism** (Table 31: SO4.5)
6. **Incentivize green/blue production and circular economy practices** (Table 32: SO4.6)
7. **Support Small and Medium Enterprises (SMEs) and Green Coastal Enterprises** (Table 33: SO4.7)
8. **Strengthen digital, telecommunications, and market infrastructure** (Table 34: SO4.8)
9. **Enhance employment, skills retention, and local economic resilience** (Table 35: SO4.9)

iv. Prioritization of Measures

The table below presents a comparison of the prioritization of measures for SO4 based on the MCDA and NGT workshop exercise.

SO4 - Socio-Economic Sustainability	
MCDA	**NGT**
1. Internalize ecosystem services and climate costs in economic decision-making	1. Internalize ecosystem services and climate costs in economic decision-making
2. Promote inclusive and equitable coastal development	2. Promote inclusive and equitable coastal development and 3. Promote climate-smart and sustainable coastal agriculture
3. Strengthen sustainable fisheries and marine-based livelihoods	

Despite some variation in the ordering of individual measures, both methodologies indicate a strong convergence around the key priorities for socio-economic sustainability under SO4. The results consistently emphasize the importance of integrating environmental and climate considerations into economic decision-making, while promoting inclusive and equitable development in coastal areas. Across both approaches, particular weight is given to internalizing ecosystem services and climate-related costs within economic systems and ensuring that coastal development pathways are socially inclusive and equitable.

When considered together, the two methodologies demonstrate a high level of coherence in identifying priority actions for advancing socio-economic sustainability, reinforcing the consistency and robustness of the prioritization process.

E. Social Equity and Participation

i. Definition

This SO emphasizes participatory, inclusive, and transparent decision-making in the management of Lebanon's CZ. It seeks to empower municipalities, local communities, women, and youth to actively engage in coastal planning, monitoring, and management processes. Through regular stakeholder consultations, awareness initiatives, and targeted capacity-building programs, the strategic objective ensures that diverse perspectives—particularly those of vulnerable and underrepresented groups—are meaningfully integrated into coastal policies, investments, and development planning.

ii. Objective

Promote inclusive, equitable, and participatory coastal development in Lebanon by empowering municipalities, local communities, women, youth, and marginalized groups, strengthening human capital and access to essential services, and ensuring that all stakeholders meaningfully contribute to and benefit from transparent, sustainable management of coastal and marine resources.

iii. Measures

A total of eight measures were identified for the SO "Social Equity and Participation" (Section VI – Sub-Section SO5 – Social Equity and Participation):

1. **Ensure inclusive participation in coastal governance and decision-making** (Table 36: SO5.1)
2. **Improve environmental health, water, and sanitation in coastal communities** (Table 37: SO5.2)
3. **Strengthen awareness, education, and public engagement on ICZM** (Table 38: SO5.3)
4. **Empower women and promote gender equality in coastal economies** (Table 39: SO5.4)
5. **Promote cultural heritage, sustainable tourism, and community-based enterprises** (Table 40: SO5.5)
6. **Enhance access to quality education in coastal areas** (Table 41: SO5.6)
7. **Strengthen skills development and workforce capacity for the blue economy** (Table 42: SO5.7)
8. **Strengthen community resilience and rural coastal revitalization** (Table 43: SO5.8)

iv. Prioritization of Measures

The table below presents a comparison of the prioritization of measures for SO5 based on the MCDA and NGT workshop exercise.

SO5 - Social Equity and Participation	
MCDA	**NGT**
1. Ensure inclusive participation in coastal governance and decision-making	1. Improve environmental health, water, and sanitation in coastal communities
2. Improve environmental health, water, and sanitation in coastal communities	2. Strengthen skills development and workforce capacity for the blue economy and 3. Ensure inclusive participation in coastal governance and decision-making
3. Strengthen awareness, education, and public engagement on ICZM	

Both methodologies reveal a strong convergence in the core priorities under SO5. The results consistently highlight the importance of strengthening social inclusion, improving living conditions in coastal communities, and enhancing participation in governance processes. Across both approaches, particular emphasis is placed on improving environmental health, water, and sanitation services, while also ensuring inclusive participation in coastal governance and decision-making. Complementary priorities include strengthening skills development and workforce capacity, as well as promoting awareness, education, and public engagement in ICZM.

As a whole, the two methodologies show a balanced combination of alignment on core social priorities and complementarity in supporting measures. This reflects the integration of both governance-focused participation and socio-economic empowerment dimensions, strengthening the overall prioritization framework for advancing social equity and participation.

F. Spatial Planning Integration

i. Definition

The final objective focuses on achieving balanced and coordinated use of coastal and marine spaces. It entails developing integrated coastal plans and a comprehensive MSP that harmonize development activities to minimize conflicts and optimize resource use. These plans will be guided by scientific data, environmental assessments, and stakeholder input, and will be implemented progressively until it covers the whole Lebanese CZ. The aim is to establish a coherent spatial framework that promotes sustainable land/sea interactions, reduces user conflicts, and preserves coastal landscapes and public access for all.

ii. Objective

Ensure coherent, climate-resilient, and ecosystem-based spatial planning across Lebanon's coastal zone by integrating terrestrial and marine planning systems, safeguarding public access and natural assets, managing urban growth, and guiding sustainable development patterns that reduce risk, conflict, and environmental degradation.

iii. Measures

A total of eight measures were identified for the SO "Spatial Planning Integration" (Section VI – Sub-Section SO6 – Spatial Planning Integration):

1. **Update and operationalize the National Physical Master Plan for the Lebanese Territory** (Table 44: SO6.1)
2. **Develop and implement a national MSP framework** (Table 45: SO6.2)
3. **Establish coastal setback zones, buffers, and development controls** (Table 46: SO6.3)
4. **Promote climate-resilient and nature-based urban design** (Table 47: SO6.4)
5. **Modernize land administration and spatial data systems** (Table 48: SO6.5)
6. **Manage urban growth and reduce coastal overcrowding** (Table 49: SO6.6)
7. **Ensure sustainable tourism and coastal infrastructure development** (Table 50: SO6.7)
8. **Enhance public access, walkability, and sustainable mobility** (Table 51: SO6.8)

iv. Prioritization of Measures

The table below presents a comparison of the prioritization of measures for SO6 based on the MCDA and NGT workshop exercise.

<table>
<tr><th colspan="2">SO6 - Spatial Planning Integration</th></tr>
<tr><th>MCDA</th><th>NGT</th></tr>
<tr><td>1. Update and operationalize the National Physical Master Plan for the Lebanese Territory</td><td>1. Develop and implement a national Marine Spatial Planning (MSP) framework</td></tr>
<tr><td>2. Establish coastal setback zones, buffers, and development controls</td><td rowspan="2">1. Update and operationalize the National Physical Master Plan for the Lebanese Territory and
2. Promote climate-resilient and nature-based urban design</td></tr>
<tr><td>3. Develop and implement a national MSP framework</td></tr>
</table>

While there are differences in the prioritization of individual measures, both methodologies indicate a clear convergence in the strategic priorities under SO6. The results consistently highlight the importance of strengthening spatial planning frameworks and promoting more integrated, forward-looking approaches to land and marine use management.

Across both approaches, strong emphasis is placed on advancing national-level planning instruments, particularly through the operationalization of the NPMPLT and the development of an MSP framework. Additional priorities include the introduction of spatial controls, such as coastal setback zones, and the promotion of climate-resilient and nature-based design approaches.

When considered together, the two methodologies demonstrate a high degree of alignment in identifying the key measures required to strengthen spatial planning integration, reinforcing the consistency and robustness of the prioritization process.

V. How will the Strategy be implemented?

The implementation of the National ICZM Strategy will be guided by an integrated institutional and participatory framework consistent with the principles of the ICZM Protocol requirements on coordination and governance (Articles 6(c), 7, and 15), ensuring coherence across sectors, continuity over time, and alignment with national priorities and international commitments (Figure 2). As a prerequisite for effective implementation, a dedicated IMC and an ICZM Advisory Council shall be established through legal provisions to serve as permanent technical, administrative and advisory structures responsible for coordinating implementation of the Strategy and overseeing its periodic update.

This Strategy defines the strategic framework and priority measures. Detailed timelines, budgets, and performance indicators will be defined in the National ICZM Action Plan. Once the decision to implement the Strategy is undertaken, the defined SOs shall be translated into concrete and operational measures through a renewed participatory process. In accordance with the Protocol's provisions on participation and stakeholder involvement (Articles 6(d) and 14), the Strategy shall be circulated to relevant public authorities, local actors, civil society organizations, and other stakeholders for review, feedback, and refinement (or participatory workshops organized with relevant stakeholders). This iterative process will enable stakeholders to validate proposed measures, contribute to the elaboration of detailed action plans, and clarify institutional roles and responsibilities, thereby strengthening ownership, transparency, and accountability.

Given that the full set of measures cannot be implemented simultaneously, the Government of Lebanon (GoL) will be responsible for determining implementation priorities and sequencing. This prioritization is to be guided by national development needs, feasibility considerations, institutional capacity, and available financial and technical resources, in line with the principles of sustainable development and rational use of resources set out in the Protocol (Articles 6(a) and 6(e)). The resulting priorities and phasing shall be formalized within the action plans accompanying the Strategy, ensuring consistency between strategic objectives and operational delivery.

Prior to implementation, the Strategy shall be reviewed through the formal ICZM governance mechanisms. The IMC, supported by the ICZM Advisory Council will constitute the primary coordination body responsible for ensuring that decisions affecting the CZ are coherent, science-based, and aligned with national policies and international obligations. By fostering inter-ministerial collaboration and addressing institutional fragmentation, the IMC fulfills the coordination and integration functions required under Articles 6(b), 7, and 15 of the ICZM Protocol.

Following review by the IMC, the Strategy will be submitted to the ICZM Advisory Council, which functions as an Advisory Council reporting directly to the Prime Minister. Operating under a flexible governance model that allows for ad hoc participation of experts based on thematic relevance, the Council provides strategic guidance and reinforces informed decision-making, consistent with the Protocol's emphasis on knowledge-based governance and appropriate institutional arrangements (Articles 6(c) and 15).

In parallel with these formal governance structures, civil society organizations and non-governmental actors are invited to play a key supporting role in implementation. In particular, Non-Governmental Organizations (NGOs) working on the coastal and marine environment such as the Lebanese Coastal Forum shall function as multi-stakeholder platforms facilitating dialogue among public institutions, academia, community-based organizations, and private-sector actors engaged in coastal issues. By

supporting the dissemination of the Strategy, reconciling competing interests, raising public awareness, and acting as a conduit between communities, experts, and the IMC, the ICZM Advisory Council, NGOs will contribute directly to the participatory and awareness-raising objectives of the ICZM Protocol (Articles 6(d), 6(f), and 14), thereby strengthening inclusiveness, transparency, and long-term legitimacy of the ICZM process.

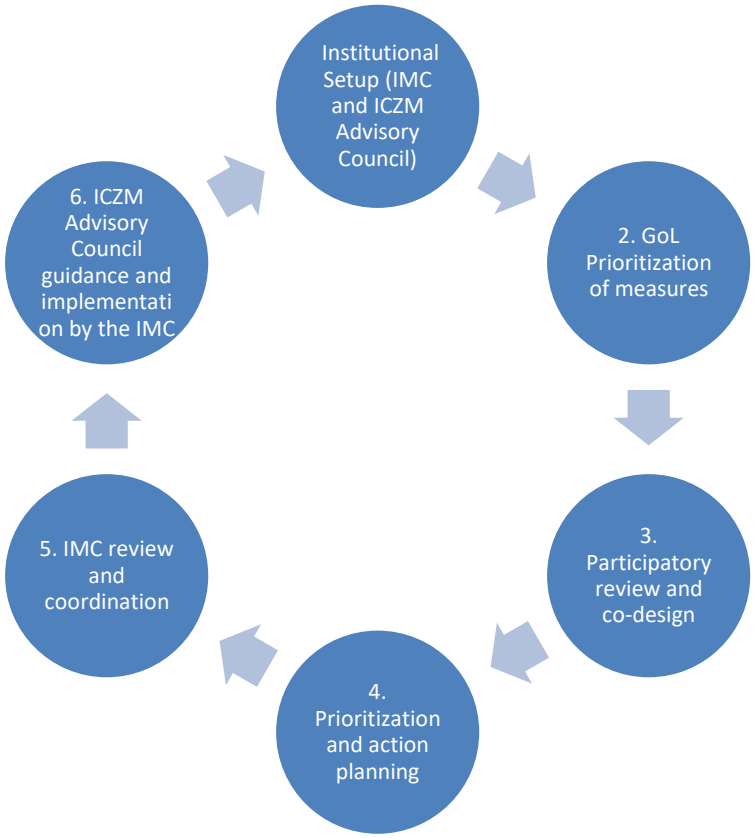


Figure 2: Cyclical Framework for the Implementation of the National ICZM Strategy in Lebanon

VI. Action Plan

The ICZM Action Plan—including timeframe, cost, and overall priority, was developed using the MCDA methodology (Annex I: Multi-Criteria Decision Analysis Methodology). This approach applied a balanced weighting scheme across three stakeholder categories: the ICZM Advisory Team (35%), thematic Working Groups (35%), and Experts (30%). ensuring that institutional priorities, sectoral perspectives, and technical inputs were adequately reflected in the final scoring. The prioritization of measures reflects the combined outcomes of the MCDA and the stakeholder consultation process (Annex II: Participatory Approach Results). The identification of lead agencies, implementing bodies, and partner institutions was undertaken separately from the MCDA scoring. These roles were defined through a synthesis of stakeholder inputs with lead agencies determined based on majority agreement, and implementation arrangements reflecting consolidated contributions across participating institutions. Overall, the action plan represents an integrated outcome of advisory, technical, and participatory inputs. Furthermore, the selection of indicators was aligned with internationally recognized frameworks, particularly the SDGs[17] and GBF Targets[18] indicators, ensuring coherence with global sustainability and biodiversity objectives.

SO1 – Governance and Legal Integration

The institutional framework for the implementation of SO1 is structured as follows:

- **Lead Agency:** Ministry of Public Works and Transport (MoPWT)
- **Implementing Bodies:** Ministry of Interior and Municipalities (MoIM); MoE; Ministry of Foreign Affairs (MoFA); Ministry of Justice (MoJ); Ministry of Defense (MoD); Ministry of Finance (MoF); Ministry of Tourism (MoT); Ministry of Culture (MoC); Ministry of Industry (MoI); Ministry of Agriculture (MoA); Ministry of Social Affairs (MoSA); Ministry of Economy and Trade (MoET); Ministry of Energy and Water (MoEW); General Directorate of Land and Maritime Transport; Internal Security Forces (ISF); Bar Association; Council for Scientific Research (CNRS); Municipalities; External Experts; Lebanese Petroleum Administration (LPA); Central Administration of Statistics (CAS); PPP/Privatization Unit; Council for Development and Reconstruction (CDR); Directorate General of Urban Planning (DGUP); Higher Council for Urban Planning (HCUP); and Lebanese Armed Forces (LAF).
- **Partner Institutions:** NGOs; cooperatives (fisheries and agriculture); universities; research centers; academic institutions; public institutions and local communities; Lebanese Agricultural Research Institute (LARI); and incubators (e.g., Berytech).

Table 1: SO1.1

Measure	**1. Establish a national ICZM governance framework**			
Description	**Expected Outcomes**	**Timeframe**	**Expected cost**	**Priority**
Create a coordinated national system for ICZM through the designation of a lead authority, the establishment of clearly mandated coastal management units at national and sub-national levels, and the institutionalization of ICZM.	1. Improved coordination and clearer mandates 2. More sustainable and consistent coastal planning and enforcement 3. Enhanced resilience of coastal ecosystems and communities	Short	Low	High
Indicators	1. Official creation of a national ICZM lead authority (SDG Indicator 17.14.1, and GBF Indicator D.1)			
	2. Number of operational coastal management units established at national/subnational levels (SDG Indicator 11.3.2, and GBF Indicator 1.1)			
	3. Number of coordination meetings (SDG Indicator 17.14.1, and GBF Indicator D.1)			

Table 2: SO1.2

Measure	**2. Ensure full legal alignment with the ICZM protocol and international commitments**			
Description	**Expected Outcomes**	**Timeframe**	**Expected cost**	**Priority**
Translate all relevant obligations of the ICZM Protocol into national legal and regulatory instruments, especially the formal adoption of a national definition and spatial delineation of the Lebanese CZ in accordance with Articles 2 and 3 of the Protocol.	1. Officially adopted limits for the coastal zone 2. Clear and harmonized legal framework for coastal management 3. Improved compliance mechanism with international and regional obligations	Medium	Low	High
Indicators	1. ICZM Law enacted (SDG Indicators 14.c.1 and GBF Indicator 1.1) 2. Legal adoption of coastal zone definition and delineation (SDG Indicators 14.2.1, and GBF Indicator 1.1)			

Table 3: SO1.3

Measure	**3. Build judicial, institutional, and technical capacity**			
Description	**Expected Outcomes**	**Timeframe**	**Expected cost**	**Priority**
Build national capacity for effective ICZM by providing continuous legal, environmental, and ICZM specific training to relevant authorities, strengthening the role of universities and research centers in policy and data support, and developing national guidelines and operational manuals to standardize implementation, enforcement, and inter agency coordination.	1. Enhanced institutional and technical capacities at public institutions for ICZM implementation 2. Improved consistency in coastal decision-making and enforcement 3. Increased role of universities and research centers in policy support and decision-making processes	Medium	Medium	High
Indicators	1. Number of training programs conducted for public institutions on ICZM (SDG Indicator 17.9.1, and GBF Indicator D.4) 2. Number of universities and research centers supporting ICZM policies and decision-making processes (SDG Indicator 9.5.1, and GBF Indicator D.5) 3. Number of published national ICZM guidelines/manuals (SDG Indicator 16.10.2 and GBF Indicator D.7)			

Table 4: SO1.4

Measure	**4. Strengthen policy coherence and integrated planning**			
Description	**Expected Outcomes**	**Timeframe**	**Expected cost**	**Priority**
Adopt a National ICZM Action Plan, embedding Environmental Impact Assessment (EIA) and Strategic Environmental Assessment (SEA) in coastal decision-making and ensuring alignment with land-use planning, climate adaptation, disaster risk reduction, and sectoral policies.	1. Integrated action planning across sectors 2. Systematic integration of EIA and SEA into coastal governance 3. Reduced conflicts between development and environmental objectives	Medium	Medium	High
Indicators	1. Adoption of the National ICZM Action Plan (SDG Indicators 17.14.1 and GBF Indicator 1.1) 2. Number of coastal plans applying SEA/EIA procedures (SDG Indicator 14.2.1, and GBF Indicator 1.1) 3. Percent reduction of conflicts between development and environmental objectives (SDG Indicator 17.14.1 and GBF Indicator 1.1)			

Table 5: SO1.5

Measure	**5. Promote decentralized and participatory coastal governance**			
Description	**Expected Outcomes**	**Timeframe**	**Expected cost**	**Priority**
Promote inclusive and transparent coastal management by institutionalizing stakeholder participation platforms with broad societal representation and ensuring public access to coastal information and decision-making processes to strengthen transparency and social accountability.	1. Greater involvement of local authorities and communities 2. Improved transparency and access to coastal information 3. Institutionalized stakeholder participation mechanisms	Medium	Low	Medium
Indicators	1. Number of institutionalized platforms established (SDG Indicator 11.3.2, and GBF Indicator D.1) 2. Public access to coastal planning data (SDG Indicator 16.10.2, and GBF Indicator D.7)			

Table 6: SO1.6

Measure	**6. Enhance enforcement, compliance, and accountability mechanisms**			
Description	**Expected Outcomes**	**Timeframe**	**Expected cost**	**Priority**
Strengthen coastal compliance and oversight by enhancing inspection and permitting systems, applying environmental legislation, and strengthening the capacity and coordination of the Internal Security Forces (ISF) and other environmental enforcement bodies.	1. Stronger enforcement of coastal and environmental regulations 2. Reduced illegal activities and coastal encroachments 3. Increased transparency and accountability in governance	Medium	Medium	High
Indicators	1. Operationalized coordination mechanisms (joint task forces, Memorandums of Understanding (MoU), coordination meetings) (SDG Indicator 17.14.1 and GBF Indicator D.1) 2. Frequency of updates of permitting systems related to coastal developments (SDG Indicator 16.6.1 and GBF Indicator D.1) 3. Number of enforcement actions (fines, closures, etc.) applied (SDG Indicator 16.3.1 GBF Indicator D6)			

Table 7: SO1.7

Measure	**7. Promote Public–Private Partnerships (PPP) and sustainable financing**			
Description	**Expected Outcomes**	**Timeframe**	**Expected cost**	**Priority**
Promote sustainable coastal investment by establishing PPP frameworks for monitoring, resilience, and restoration infrastructure, and by integrating economic equity instruments, such as progressive taxation, social protection mechanisms, and polluter pay principles, into coastal governance frameworks.	1. Increased private sector engagement in coastal management 2. Improved availability of sustainable financing mechanisms 3. Improved environmental accountability of economic actors	Long	Medium	Medium
Indicators	1. Number of PPP agreements signed for coastal projects (SDG Indicator 17.17.1 and GBF Indicator D.3) 2. Amount of sustainable financing mobilized for ICZM (SDG Indicator 17.3.1 and GBF Indicator D.3) 3. Percent change of documented coastal environmental violations (SDG Indicator 16.3.1 and GBF Indicator D.6)			

Table 8: SO1.8

Measure	**8. Strengthen the legal framework for sustainable coastal development**			
Description	**Expected Outcomes**	**Timeframe**	**Expected cost**	**Priority**
Strengthen the national legal basis for coastal resilience by updating the Environment Protection Law No. 444/2002 to incorporate climate related coastal risks and by revising maritime public domain (MPD) regulations to close loopholes on occupation, privatization, and encroachment.	1. Stronger legal protection of coastal resources and public access 2. Strengthened regulation of MPD 3. Improved integration of sustainability and climate risks in legislation	Medium	Medium	Medium
Indicators	1. Number of legal reforms addressing coastal sustainability and climate risks (SDG Indicator 13.2.1 and GBF Indicator 1.1) 2. Number of new or amended legal provisions addressing climate-related coastal risks on the MPD (SDG Indicator 13.2.1 and GBF Indicator 1.1)			

Table 9: SO1.9

Measure	**9. Integrate climate resilience into governance and law**			
Description	**Expected Outcomes**	**Timeframe**	**Expected cost**	**Priority**
Integrate climate resilience into coastal decision-making by mainstreaming adaptation requirements across all permitting and assessment processes and by ensuring the legal recognition of setback zones, buffer areas, and nature-based solutions in coastal protection frameworks.	1. Climate adaptation is integrated into coastal policies and regulations 2. Reduced vulnerability of coastal assets and communities 3. Legally recognized coastal setback and buffer zones	Medium	Medium	Medium
Indicators	1. Number of coastal policies integrating climate adaptation measures (SDG Indicator 13.2.1 and GBF Indicator D.2) 2. Number of legally enforced setback zones (SDG Indicator 11.3.1and GBF Indicator 1.1) 3. Area of coastal zones managed under setback regulations annually (SDG Indicator 11.3.1and GBF Indicator 1.1)			

SO2 – Environment and Biodiversity Protection

The institutional framework for the implementation of SO2 is structured as follows:

- **Lead Agency:** MoE
- **Implementing Bodies:** MoIM; MoE; MoFA; MoJ; MoD; MoF; MoT; MoC; MoI; MoA; MoSA; MoET; MoEW; General Directorate of Land and Maritime Transport; ISF; Bar Association; CNRS; Municipalities; External Experts; LPA; CAS; PPP/Privatization Unit; CDR; DGUP; LIBNOR; and HCUP.
- **Partner Institutions:** NGOs; cooperatives (fisheries and agriculture); universities; research centers; academic institutions; public institutions and local communities; LARI; incubators (e.g., Berytech); CNRS; and external experts.

Table 10: SO2.1

Measure	**1. Establish a national coastal and marine environmental monitoring system**			
Description	**Expected Outcomes**	**Timeframe**	**Expected cost**	**Priority**
Establish an integrated national coastal and marine monitoring system by implementing a harmonized, multi-parameter framework that strengthens and mobilizes the National Center for Marine Sciences (NCMS) and academic institutions as research and monitoring hubs, while standardizing environmental indicators in line with Mediterranean and international benchmarks to support evidence-based ICZM implementation.	1. Established national monitoring framework	Short	High	High
	2. Strengthened role of NCMS and academia			
	3. Standardized environmental indicators aligned with international benchmarks			
Indicators	1. Existence of an operational national coastal monitoring system (SDG Indicator 14.1.1 and GBF Indicator 21.1)			
	2. Number of coastal and marine environmental indicators (SDG Indicator 14.1.1 and GBF Indicator 21.1)			
	3. Number of monitoring reports produced annually (SDG Indicator 14.1.1 and GBF Indicator 21.1)			

Table 11: SO2.2

Measure	**2. Integrate environmental sustainability into tourism and coastal development**			
Description	**Expected Outcomes**	**Timeframe**	**Expected cost**	**Priority**
Integrate sustainability into coastal tourism by establishing and enforcing environmental standards and carrying-capacity guidelines, embedding environmental education and awareness within tourism services, and monitoring and mitigating tourism-related impacts to ensure compliance with ICZM and protected-area regulations.	1. Reduced environmental impacts from coastal tourism and development 2. Integrated environmental education in tourism services 3. Established environmental standards for coastal tourism	Medium	Medium	High
Indicators	1. Percentage of coastal tourism operators complying with established environmental standards (SDG Indicator 12.b.1 and GBF Indicator 16.1) 2. Percentage of coastal tourism sites with defined and enforced carrying capacity limits (SDG Indicator 8.9.1 and GBF Indicator 16.1)			

Table 12: SO2.3

Measure	**3. Promote sustainable fisheries and ecosystem-based marine resource use**			
Description	**Expected Outcomes**	**Timeframe**	**Expected cost**	**Priority**
Promote sustainable fisheries by identifying and legally protecting key spawning, nursery, and feeding grounds through Marine Spatial Planning (MSP) and ICZM zoning, while enforcing responsible fishing regulations, strengthening monitoring and control systems, and combating illegal, unreported, and unregulated (IUU) fishing.	1. More sustainable use of marine resources and reduced overexploitation 2. Identification and protection of critical fish habitats and stocks through MSP and ICZM zoning 3. Improved monitoring, control, and surveillance systems	Short	Medium	Medium
Indicators	1. Area of spawning, nursery, and feeding grounds legally designated and managed under MSP/ICZM zoning (SDG Indicator 14.5.1 and GBF Indicator 3.1) 2. Number of inspections and violations recorded annually (SDG Indicator 16.3.1 and GBF Indicator D.6) 3. Percent reduction of IUU fishing incidents detected and acted upon annually (SDG Indicator 14.6.1 and GBF Indicator 5.1)			

Table 13: SO2.4

Measure	**4. Strengthen water resource protection and coastal water quality**			
Description	**Expected Outcomes**	**Timeframe**	**Expected cost**	**Priority**
Strengthen coastal water security by enhancing groundwater and aquifer monitoring by soliciting the support of academic institutions and expanding the NCMS-led national coastal water quality program to cover potable, bathing, and marine waters, and promoting sustainable water use and conservation practices across households, industry, agriculture, and tourism.	1. Enhanced water quality and public health protection 2. Increased adoption of sustainable water use practices 3. Strengthened role of NCMS and academic institutions	Medium	Medium	High
Indicators	1. Percentage of coastal areas covered by water quality monitoring programs (SDG Indicator 14.1.1 and GBF Indicator 7.1) 2. Percentage of households, businesses, and agricultural users implementing water-saving measures (SDG Indicator 6.4.1 and GBF Indicator 7.2) 3. Percentage of monitored sites meeting national water quality standards (SDG Indicator 6.3.2 and GBF Indicator 7.1)			

Table 14: SO2.5

Measure	**5. Reduce marine and coastal pollution and improve waste management**			
Description	**Expected Outcomes**	**Timeframe**	**Expected cost**	**Priority**
Reduce land-based and marine pollution by implementing integrated waste and wastewater management approaches, upgrading treatment infrastructure in coastal hotspots, promoting decentralized and circular-economy solutions, and establishing systematic monitoring of marine litter, microplastics, and hazardous substances to protect ecosystem health, public well-being, and sustainable coastal use.	1. Reduced pollution loads, including marine litter and plastic pollution affecting coastal and marine environments 2. Improved waste and wastewater management systems 3. Adoption of circular economy and decentralized solutions	Medium	High	High
Indicators	1. Percentage of wastewater in coastal areas that is adequately treated before discharge (SDG Indicator 6.3.1 and GBF Indicator 7.1) 2. Percentage of municipalities, industries, and tourism facilities implementing integrated waste management and circular economy solutions (SDG Indicator 12.5.1 and GBF Indicator 7.2) 3. Concentration of key pollutants in coastal and marine waters (SDG Indicator 14.1.1 and GBF Indicator 7.1)			

Table 15: SO2.6

Measure	**6. Prevent and manage biological invasions and ecosystem degradation**			
Description	**Expected Outcomes**	**Timeframe**	**Expected cost**	**Priority**
Prevent and manage ecological risks by establishing a national early-warning and monitoring system for Non-Indigenous Species (NIS) and implementing risk-based prevention and control measures, while strengthening biosecurity across ports, marinas, aquaculture facilities, and ballast water management systems to protect ecosystem integrity, fisheries, and long-term coastal resilience.	1. Strengthened biosecurity and ballast water management at entry points 2. Improved protection of native biodiversity and ecosystem stability 3. Established national NIS early warning system	Medium	Medium	Medium
Indicators	1. Existence of a national early-warning system for invasive species (SDG Indicator 15.8.1 and GBF Indicator 6.1) 2. Number of NIS under active management/monitoring programs (SDG Indicator 15.8.1 and GBF Indicator 6.1) 3. Percentage of entry points implementing approved biosecurity and ballast water management measures (SDG Indicator 14.1.1 and GBF Indicator 6.1)			

Table 16: SO2.7

Measure	**7. Strengthen protection, management, and connectivity of coastal and marine areas**			
Description	**Expected Outcomes**	**Timeframe**	**Expected cost**	**Priority**
Strengthen coastal and marine conservation by completing ecosystem-based habitat mapping and establishing a coherent, connected network of Marine Protected Areas (MPAs) and Other Effective Area-Based Conservation Measures (OECMs), supported by effective management plans integrating monitoring, enforcement, and community engagement to ensure long-term biodiversity protection and ecological connectivity.	1. Comprehensive ecosystem-based habitat mapping completed 2. Established Network of MPAs and OECMs 3. Enhanced conservation outcomes and biodiversity protection	Medium	High	Medium
Indicators	1. Percentage of designated MPAs and OECMs that are formally integrated into the national MPA Network (SDG Indicator 14.5.1 and GBF Indicator 3.1) 2. Percentage of coastal and marine areas mapped (SDG Indicator 14.2.1 and GBF Indicator 1.1) 3. Area of coastal and marine zones covered by legally designated MPAs and OECMs (SDG Indicator 14.5.1 and GBF Indicator 3.1)			

Table 17: SO2.8

Measure Description	**8. Conserve and restore critical and climate-sensitive ecosystems**			
	Expected Outcomes	**Timeframe**	**Expected cost**	**Priority**
Integrate ecosystem conservation and restoration into coastal decision-making by protecting and rehabilitating blue carbon habitats, safeguarding ecologically and biologically significant areas critical to fisheries, and mainstreaming nature-based solutions within erosion control, flood risk reduction, and shoreline stabilization frameworks	1. Improved health and extent of critical coastal and marine ecosystems 2. Enhanced ecosystem resilience and services 3. Protection of blue carbon ecosystems	Medium	High	High
Indicators	1. Area of blue carbon habitats protected and/or restored (SDG Indicator 14.5.1 and GBF Indicator 2.1) 2. Percentage of coastal projects and plans that incorporate nature-based solutions (SDG Indicator 13.1.1 and GBF Indicator 8.1) 3. Number of ecosystems restored (SDG Indicator 15.3.1 and GBF Indicator 2.1)			

Table 18: SO2.9

Measure Description	**9. Strengthen research, knowledge generation, and science-based decision-making**			
	Expected Outcomes	**Timeframe**	**Expected cost**	**Priority**
Strengthen the scientific foundation for coastal management by investing in long-term ecological research and ecosystem valuation, fostering partnerships among academic institutions, public agencies, and civil society for applied coastal science, and establishing national protocols for data sharing, reporting, and evidence-based planning.	1. Improved ecosystem valuation and economic integration 2. Strengthened multi-stakeholder scientific collaboration between science, policy, and stakeholders 3. Increased use of evidence in coastal planning	Medium	High	Medium
Indicators	1. Number of publications (scientific and grey literature) addressing ecosystem service valuation (SDG Indicator 9.5.1 and GBF Indicator 21.1) 2. Number of national protocols officially adopted for coastal data sharing, reporting, and evidence-based planning (SDG Indicator 17.18.1 and GBF Indicator 21.1) 3. Number of formal partnerships or joint projects (e.g., MoUs, research collaborations) established between academic institutions, government agencies, and coastal and marine civil society organizations (SDG Indicator 17.6.1 and GBF Indicator D.5)			

SO3 – Climate Adaptation and Resilience

The institutional framework for the implementation of SO3 is structured as follows:

- **Lead Agency:** MoE
- **Implementing Bodies:** MoIM; MoE; MoFA; MoJ; MoD; MoF; MoT; MoC; MoI; MoA; MoSA; MoET; MoEW; General Directorate of Land and Maritime Transport; ISF; Bar Association; CNRS; Municipalities; External Experts; LPA; CAS; PPP/Privatization Unit; CDR; DGUP; and HCUP.
- **Partner Institutions:** NGOs; cooperatives (fisheries and agriculture); universities; research centers; academic institutions; public institutions and local communities; LARI; incubators (e.g., Berytech); lenders; CNRS; and external experts.

Table 19: SO3.1

Measure	**1. Conduct comprehensive coastal climate risk and vulnerability assessments**			
Description	**Expected Outcomes**	**Timeframe**	**Expected cost**	**Priority**
Assess climate risks across the Lebanese coast by conducting national vulnerability studies, developing climate risk maps and decision-support tools, and establishing a national coastal climate observatory that integrates scientific data, local knowledge, and Mediterranean climate systems	1. National assessment of coastal climate vulnerabilities including risk maps completed 2. Regular, publicly accessible coastal climate reports, maps, and datasets 3. National coastal climate observatory established and operational	Short	Medium	High
Indicators	1. Number of coastal climate reports published annually (SDG Indicator 13.2.1 and GBF Indicator 21.1) 2. Operational status of the national coastal climate observatory (SDG Indicator 13.2.1 and GBF Indicator 21.1) 3. Number of decision-support tools used by relevant institutions (SDG Indicator 17.18.1 and GBF Indicator 21.1)			

Table 20: SO3.2

Measure	**2. Strengthen Awareness, Capacity Building, and Behavioral Change**			
Description	**Expected Outcomes**	**Timeframe**	**Expected cost**	**Priority**
Enhance societal resilience by implementing public awareness campaigns on climate-resilient practices, strengthening technical capacity among municipalities and coastal professionals, and mainstreaming climate-resilience principles into education, tourism, and community-based programs.	1. Strengthened technical capacity of municipalities and coastal professionals 2. Climate resilience integrated into educational programs and learning materials 3. Tourism sector adoption of climate-resilient and environmentally sustainable practices	Short	Medium	Medium
Indicators	1. Percentage of municipalities applying climate resilience approaches, tools, or practices in planning, projects, or operations (SDG Indicator 13.1.3 and GBF Indicator 8.1) 2. Inclusion of coastal and climate resilience topics in Lebanon's official national curricula (SDG Indicator 13.3.1 and GBF Indicator 21.1) 3. Percentage of coastal tourism establishments adopting climate-resilient and environmentally sustainable practices (SDG Indicator 12.b.1 and GBF Indicator 16.1)			

Table 21: SO3.3

Measure	**3. Integrate climate adaptation into ICZM, MSP, and development planning**			
Description	**Expected Outcomes**	**Timeframe**	**Expected cost**	**Priority**
Integrate climate adaptation into coastal governance by enforcing climate-resilient setback zones and coastal zoning, and embedding adaptation priorities into national and municipal planning, infrastructure strategies, and tourism development frameworks.	1. Climate adaptation principles systematically integrated into national and municipal coastal governance frameworks 2. Climate-resilient setback zones and coastal zoning regulations established, updated, and enforced in vulnerable coastal areas 3. Adoption of sustainable and climate-informed tourism practices	Short	Medium	High
Indicators	1. Number of national policies, municipal plans, zoning regulations, and/or coastal governance instruments integrating climate adaptation and resilience measures (SDG Indicator 13.2.1 and GBF Indicator 1.1) 2. Extent of coastal areas covered by climate-resilient setback zones (SDG Indicator 11.3.1 and GBF Indicator 1.1) 3. Percentage of coastal tourism establishments officially adopting national or local climate-resilient guidelines or standards (SDG Indicator 12.b.1 and GBF Indicator 16.1)			

Table 22: SO3.4

Measure	**4. Strengthen coastal disaster risk reduction and early warning systems**			
Description	**Expected Outcomes**	**Timeframe**	**Expected cost**	**Priority**
Strengthen coastal resilience by developing integrated disaster-risk-management plans for storms, flooding, heatwaves, and erosion, upgrading early-warning and evacuation systems, and mainstreaming climate-risk insurance and social protection mechanisms for vulnerable coastal communities.	1. Integrated coastal Disaster Risk Management (DRM) systems developed 2. Early warning and evacuation systems upgraded 3. Expanded access to affordable climate risk insurance and social protection	Short	High	High
Indicators	1. DRM system developed (SDG Indicator 13.1.2 and GBF Indicator 8.1)			
	2. Number of coastal hazard early warning and evacuation systems operational (SDG Indicator 13.1.2 and GBF Indicator 8.1)			
	3. Number of affordable climate risk insurance products available in coastal areas (SDG Indicator 1.5.3 and GBF Indicator D.3)			

Table 23: SO3.5

Measure	**5. Accelerate renewable energy deployment and energy transition in coastal zones**			
Description	**Expected Outcomes**	**Timeframe**	**Expected cost**	**Priority**
Accelerates the coastal energy transition by promoting solar, wind, and other renewables across sectors, establishing financial incentives for clean-energy investment, and integrating climate-resilience standards into coastal energy infrastructure.	1. Increased adoption of renewable energy solutions across coastal sectors 2. Improved financial incentives and policy support for clean energy investment in coastal areas 3. Climate resilience standards integrated into coastal energy infrastructure planning and development	Short	High	High
Indicators	1. Percentage of entities across sectors using renewable energy solutions in coastal areas (SDG Indicator 7.2.1 and GBF Indicator 8.1)			
	2. Number of financial incentives supporting clean energy investment in coastal areas (SDG Indicator 7.a.1 and GBF Indicator D.3)			
	3. Percentage of coastal energy infrastructure projects integrating climate resilience standards (SDG Indicator 13.2.1 and GBF Indicator 8.1)			

Table 24: SO3.6

Measure	**6. Address coastal salinization and enhance groundwater recharge**			
Description	**Expected Outcomes**	**Timeframe**	**Expected cost**	**Priority**
Reduce coastal salinization by establishing monitoring and early-warning systems, piloting groundwater recharge and nature-based infiltration solutions, and integrating salinization risk management into water permitting, land-use planning, and agricultural practices.	1. Coastal salinization monitoring and early-warning systems established and operational 2. Groundwater recharge and nature-based infiltration solutions implemented 3. Salinization risk management successfully integrated	Medium	High	High
Indicators	1. Operational status of coastal salinization early-warning systems (SDG Indicator 13.1.2 and GBF Indicator 8.1) 2. Number of nature-based solutions for groundwater recharge implemented (SDG Indicator 6.4.1 and GBF Indicator 8.1) 3. Percentage of permits integrating salinization risk management measures (SDG Indicator 13.2.1 and GBF Indicator 1.1)			

Table 25: SO3.7

Measure	**7. Promote Ecosystem-Based Adaptation and Nature-Based Solutions**			
Description	**Expected Outcomes**	**Timeframe**	**Expected cost**	**Priority**
Advance climate-resilient coastlines by restoring and conserving critical ecosystems, prioritizing nature-based solutions over hard engineering, and integrating ecosystem restoration into disaster-risk-reduction and climate-adaptation financing frameworks.	1. Critical coastal ecosystems restored and conserved in vulnerable coastal areas 2. Nature-based solutions prioritized over hard engineering 3. Ecosystem restoration integrated into disaster risk reduction and climate adaptation financing frameworks	Medium	High	Medium
Indicators	1. Area of coastal ecosystems restored and conserved through nature-based solutions (SDG Indicator 15.3.1 and GBF Indicator 2.1) 2. Percentage of coastal projects implementing nature-based solutions instead of hard engineering measures (SDG Indicator 13.1.3 and GBF Indicator 8.1) 3. Number of financing frameworks that explicitly include ecosystem restoration (SDG Indicator 15.a.1 and GBF Indicator D.3)			

Table 26: SO3.8

Measure	**8. Reduce anthropogenic heat and urban climate stress in coastal cities**			
Description	**Expected Outcomes**	**Timeframe**	**Expected cost**	**Priority**
Reduce climate-induced urban heat by promoting low-emission mobility and green corridors, expanding cooling and shading infrastructure, and introducing coastal heat-management standards into urban design, zoning, and building codes.	1. Establishment and integration of climate-friendly mobility networks and green corridors 2. Cooling and shading infrastructure increased 3. Coastal heat management standards integrated into urban design and zoning regulations	Medium	High	Medium
Indicators	1. Percentage of municipal area covered by low-emission mobility infrastructure integrated with green corridors (SDG Indicator 11.2.1 and GBF Indicator 1.1) 2. Number of cooling and shading interventions implemented (SDG Indicator 11.7.1 and GBF Indicator 8.1) 3. Percentage of municipal urban planning and design regulations that integrate coastal heat management measures (SDG Indicator 13.2.1 and GBF Indicator 1.1)			

SO4 – Socio-Economic Sustainability

As an exception to the other SOs, and given the cross-cutting nature of socio-economic issues, three lead agencies were identified through the three stakeholder categories involved in the participatory process. Depending on the sector addressed by each measure, the corresponding ministry assumes the lead role in implementation, as follows:

- **MoA:**
  (1) Strengthen sustainable fisheries and marine-based livelihoods;
  (2) Promote climate-smart and sustainable coastal agriculture.
- **MoET:**
  (3) Support small and medium enterprises (SMEs) and green coastal enterprises;
  (5) Promote sustainable and diversified coastal tourism;
  (7) Strengthen digital, telecommunications, and market infrastructure;
  (8) Enhance employment, skills retention, and local economic resilience;
  (9) Promote inclusive and equitable coastal development.
- **MoF:**
  (4) Internalize ecosystem services and climate costs in economic decision-making;
  (6) Incentivize green/blue production and circular economy practices.

- **Implementing Bodies:** MoIM; MoE; MoFA; MoJ; MoD; MoF; Ministry of Labor (MoL); Ministry of Education and Higher Education (MEHE); MoT; MoC; MoI; MoA; MoSA; MoET; MoEW; LPA; CAS; PPP/Privatization Unit; CDR; DGUP; HCUP; General Directorate of Land and Maritime Transport; ISF; Bar Association; CNRS; Municipalities; and external experts.
- **Partner Institutions:** NGOs; cooperatives (fisheries and agriculture); universities; research centers; academic institutions; public institutions and local communities; LARI; incubators (e.g., Berytech); lenders and donors; L-CNRS; and external experts.

Table 27: SO4.1

Measure	**1. Internalize ecosystem services and climate costs in economic decision-making**			
Description	**Expected Outcomes**	**Timeframe**	**Expected cost**	**Priority**
Internalize environmental and climate externalities by institutionalizing coastal and marine ecosystem valuation in ICZM planning, public investment, and regulatory impact assessments, and by integrating natural-capital accounting into sector policies, budgeting, and infrastructure appraisal processes.	1. Coastal and marine ecosystem valuation is systematically integrated into ICZM planning 2. Public and private investment and regulatory decision-making in coastal areas systematically incorporate environmental and climate externalities 3. Incorporation of natural capital values into sectoral policies, planning and strategic priorities (e.g., tourism, fisheries, infrastructure)	Short	Low	High
Indicators	1. Percentage of ICZM plans that include marine ecosystem valuation (SDG Indicator 15.9.1 and GBF Indicator D.2)			
	2. Percentage of implemented projects that include mitigation or compensation measures for environmental and climate externalities (SDG Indicator 12.4.2 and GBF Indicator 7.1)			
	3. Number of sector strategies and/or plans integrating natural capital accounting into priorities or objectives (SDG Indicator 15.9.1 and GBF Indicator D.2)			

Table 28: SO4.2

Measure	**2. Promote inclusive and equitable coastal development**			
Description	**Expected Outcomes**	**Timeframe**	**Expected cost**	**Priority**
Promote equitable coastal development by ensuring women, youth, marginalized groups, and small-scale producers benefit from economic opportunities, strengthening participatory stakeholder engagement in ICZM planning and investment prioritization, and advancing transparent, accountable governance that balances economic growth with environmental and social safeguards.	1. All coastal groups benefit from equitable access to economic opportunities and resources 2. Diverse stakeholders are actively involved in coastal planning and decision-making processes 3. Coastal management processes are more open, traceable, and accountable to the public	Short	Medium	Medium
Indicators	1. Number of programs or initiatives reported by municipalities that support equitable access to coastal economic opportunities for women, youth, and marginalized groups (SDG Indicator 10.2.1 and GBF Indicator 22.1) 2. Number of stakeholder groups represented in ICZM planning processes (SDG Indicator 11.3.2 and GBF Indicator D.1) 3. Number of coastal plans and public feedback mechanisms (complaints, inquiries) publicly disclosed and addressed by coastal authorities (SDG Indicator 16.10.2 and GBF Indicator 21.1)			

Table 29: SO4.3

Measure	**3. Strengthen sustainable fisheries and marine-based livelihoods**			
Description	**Expected Outcomes**	**Timeframe**	**Expected cost**	**Priority**
Strengthen sustainable fisheries and coastal livelihoods by implementing a National Fisheries Management Plan grounded in centralized data and ecosystem-based assessments, co-managed with fishing communities and supported through training, gear transition, finance, and market access to reduce overfishing and illegal practices.	1. Evidence-based National Fisheries Management Plan implemented 2. Co-management of extractable marine resources streamlined 3. Fishing communities benefiting from programs targeting regulated gear, quotas, and methods, through training, incentives, and alternative livelihood options	Short	High	High
Indicators	1. National Fisheries Management Plan implemented (SDG Indicator 14.7.1 and GBF Indicator 5.1) 2. Percentage of fisher cooperatives actively engaged in co-management of extractable marine resources (SDG Indicator 14.b.1 and GBF Indicator 5.1) 3. Percentage of fishing communities benefiting from development programs that adopt regulated fishing gear, quotas, or methods (SDG Indicator 14.4.1 and GBF Indicator 5.1)			

Table 30: SO4.4

Measure	**4. Promote climate-smart and sustainable coastal agriculture**			
Description	**Expected Outcomes**	**Timeframe**	**Expected cost**	**Priority**
Promote climate-smart coastal agriculture by mainstreaming water efficiency, soil conservation, and salinity management into the National Agricultural Strategy, expanding access to climate-resilient finance, insurance, crops, and extension services, and strengthening value chains, cold storage, and local processing to enhance food security and coastal incomes.	1. Water efficiency, soil conservation, salinity management and climate-resilient agricultural practices embedded in national agricultural policy 2. Increased access of coastal farmers to climate-resilient finance and insurance 3. Reduced post-harvest losses with increased value addition and market access for coastal producers	Medium	High	High
Indicators	1. Adoption status of National Agricultural Strategy provisions addressing water efficiency, soil conservation, climate-resilient agricultural practices and salinity management (SDG Indicator 2.4.1 and GBF Indicator 10.1) 2. Percentage of coastal farmers accessing climate-resilient finance and insurance products (SDG Indicator 17.3.1 and GBF Indicator D.3) 3. Number of operational coastal value-chain facilities linked to producers or cooperatives (SDG Indicator 9.3.1 and GBF Indicator 10.1)			

Table 31: SO4.5

Measure	**5. Promote sustainable and diversified coastal tourism**			
Description	**Expected Outcomes**	**Timeframe**	**Expected cost**	**Priority**
Diversify blue and green coastal tourism by developing and regulating eco-tourism, cultural heritage, maritime recreation, agri-tourism, and community-based products, setting environmental standards and carrying-capacity guidelines, and enabling community and SME market access through training, branding, and destination development.	1. Diversified portfolio of sustainable, alternative coastal tourism products 2. Environmental sustainability embedded in coastal tourism planning based on carrying-capacity limits 3. Improved market access for coastal communities and SMEs	Medium	Medium	Medium
Indicators	1. Number of eco-tourism, cultural, maritime, agri-tourism, and community-based tourism products formally recognized (SDG Indicator 12.b.1 and GBF Indicator 16.1) 2. Adoption status of environmental standards based on carrying-capacity limits for coastal tourism (SDG Indicator 8.9.1 and GBF Indicator 16.1) 3. Number of community members or SMEs trained with access to formal tourism markets or platforms (SDG Indicator 8.3.1 and GBF Indicator D.4)			

Table 32: SO4.6

Measure	**6. Incentivize green/blue production and circular economy practices**			
Description	**Expected Outcomes**	**Timeframe**	**Expected cost**	**Priority**
Accelerate blue and green production by providing targeted incentives for clean manufacturing, renewable energy, water efficiency, and waste reduction, advancing circular economy models in fisheries by-products, food processing, construction materials, and packaging, and fostering public–private partnerships for recycling, resource recovery, and sustainable manufacturing hubs.	1. Increased adoption of clean and resource-efficient production practices in coastal areas 2. Strengthened circular value chains through valorization of by-products and waste in coastal production systems 3. Increased support to local economies through public–private collaboration in sustainable manufacturing and recycling hubs	Medium	High	Medium
Indicators	1. Number of incentive schemes supporting clean manufacturing, renewable energy, water efficiency, or waste reduction (SDG Indicator 12.1.1 and GBF Indicator 16.1) 2. Number of circular economy initiatives implemented in fisheries, food processing, construction materials, or packaging (SDG Indicator 12.5.1 and GBF Indicator 7.2) 3. Number of public–private partnerships established for sustainable manufacturing and recycling hubs (SDG Indicator 17.17.1 and GBF Indicator D.3)			

Table 33: SO4.7

Measure	**7. Support Small and Medium Enterprises (SMEs) and Green Coastal Enterprises**			
Description	**Expected Outcomes**	**Timeframe**	**Expected cost**	**Priority**
Support green coastal enterprise growth by incentivizing SMEs and startups in eco-tourism, sustainable fisheries, renewable energy, recycling, and nature-based solutions, while advancing eco-labels, preferential procurement, and access to finance and technical assistance for women-, youth-, and community-led ventures.	1. Expanded green coastal SMEs and startups adopting environmentally sustainable business practices 2. Stronger market recognition and demand for eco-labeled, sustainably sourced coastal products 3. Inclusive green coastal entrepreneurship enabled through improved access to finance	Medium	High	Medium
Indicators	1. Number of SMEs and startups receiving incentives for green coastal activities (SDG Indicator 8.3.1 and GBF Indicator D.3) 2. Number of coastal products certified under eco-label schemes (SDG Indicator 12.6.1 and GBF Indicator 16.1) 3. Number of women-, youth-, and community-led ventures receiving finance for green coastal activities (SDG Indicator 5.a.1 and GBF Indicator 22.1)			

Table 34: SO4.8

Measure	**8. Strengthen digital, telecommunications, and market infrastructure**			
Description	**Expected Outcomes**	**Timeframe**	**Expected cost**	**Priority**
Strengthen inclusive coastal economies by modernizing and decentralizing digital and telecom infrastructure for enterprises, tourism, fisheries monitoring, e-commerce, and disaster response, while promoting competition, innovation, and digital literacy among SMEs, farmers, fishers, and coastal operators.	1. Expanded use of digital infrastructure for coastal economic activities and public services 2. Improved digital literacy and skills among coastal economic actors 3. Increased competitiveness and productivity of coastal enterprises through digital transformation	Medium	High	Medium
Indicators	1. Percentage of coastal enterprises and public services using digital platforms (SDG Indicator 9.c.1 and GBF Indicator 21.1) 2. Percentage of SMEs, farmers, fishers, and coastal operators trained in digital skills or technologies (SDG Indicator 4.4.1 and GBF Indicator D4) 3. Percentage of SMEs, farmers, fishers, and coastal operators reporting increased sales or market reach following adoption of digital solutions (SDG Indicator 8.2.1 and GBF Indicator D3)			

Table 35: SO4.9

Measure	**9. Enhance employment, skills retention, and local economic resilience**			
Description	**Expected Outcomes**	**Timeframe**	**Expected cost**	**Priority**
Enhance coastal employment and resilience by retaining skilled labor and reduce outward migration through targeted programs, expanding vocational education and skills across fisheries, tourism, renewable energy, maritime services, and environmental management, and promoting local hiring and community-benefit coastal projects.	1. Improved retention of skilled labor through enhanced attractiveness of coastal areas for employment and livelihoods 2. Improved availability of sector-specific skills in coastal economies 3. Strengthened linkages between coastal projects and local labor markets	Long	High	Medium
Indicators	1. Net change in the number of skilled jobs located in coastal areas (SDG Indicator 8.5.2 and GBF Indicator D.3) 2. Number of individuals vocationally trained in coastal priority sectors (SDG Indicator 4.4.1 and GBF Indicator D.4) 3. Percentage of coastal projects applying local hiring (SDG Indicator 8.3.1 and GBF Indicator 22.1)			

SO5 – Social Equity and Participation

The institutional framework for the implementation of SO5 is structured as follows:

- **Lead Agency:** MoSA
- **Implementing Bodies:** MoIM; MoE; MoJ; MoD; MoF; MoT; MoC; MoI; MoA; MoSA; MoET; MoEW; MYS; MEHE; MoL; General Directorate of Land and Maritime Transport; ISF; Bar Association; L-CNRS; Municipalities; external experts; LPA; CAS; PPP/Privatization Unit; CDR; DGUP; HCUP; and National Commission for Lebanese Women.
- **Partner Institutions:** NGOs; cooperatives (fisheries and agriculture); universities; research centers; academic institutions; public institutions and local communities; LARI; incubators (e.g., Berytech); lenders and donors (e.g., World Bank, UNDP, WFP, USAID); external experts; and CNRS.

Table 36: SO5.1

Measure	**1. Ensure inclusive participation in coastal governance and decision-making**			
Description	**Expected Outcomes**	**Timeframe**	**Expected cost**	**Priority**
Institutionalize inclusive coastal governance by establishing participatory planning and community-consultation platforms, elevating the roles of local communities, youth, women, fishers, and marginalized groups within ICZM, MSP, and protected-area bodies, and ensuring transparent access to information, grievance-redress mechanisms, and social-accountability tools.	1. Institutionalized participatory platforms for coastal planning and decision-making 2. Increased representation of diverse stakeholder groups in coastal governance bodies 3. Improved transparency of coastal governance information and decisions	Medium	Medium	Medium
Indicators	1. Number of formal participatory planning or consultation platforms established (SDG Indicator 11.3.2 and GBF Indicator D.1) 2. Percentage of ICZM, MSP, and protected-area bodies that include representatives from women, youth, fishers, or marginalized groups (SDG Indicator 16.7.1 and GBF Indicator 22.1) 3. Number of coastal datasets publicly disclosed through official platforms (SDG Indicator 16.10.2 and GBF Indicator 21.1)			

Table 37: SO5.2

Measure	**2. Improve environmental health, water, and sanitation in coastal communities**			
Description	**Expected Outcomes**	**Timeframe**	**Expected cost**	**Priority**
Enhance coastal community well-being by integrating water quality, wastewater, solid waste, sanitation, and marine-pollution management with strengthened community engagement in water conservation and groundwater protection, particularly in climate-vulnerable coastal zones.	1. Improved water quality and reduced marine pollution in climate-vulnerable coastal zones 2. Strengthened protection of coastal groundwater resources through integrated management 3. Enhanced community engagement in water conservation and environmental stewardship	Medium	High	High
Indicators	1. Percentage of coastal municipalities implementing improved wastewater, sanitation, or solid waste services (SDG Indicator 6.2.1 and GBF Indicator 7.1) 2. Percentage of coastal municipalities applying groundwater protection and seawater intrusion management measures (SDG Indicator 6.6.1 and GBF Indicator 7.1) 3. Percentage of coastal municipalities with active community engagement mechanisms related to water and pollution management (SDG Indicator 6.b.1 and GBF Indicator D.1)			

Table 38: SO5.3

Measure	**3. Strengthen awareness, education, and public engagement on ICZM**			
Description	**Expected Outcomes**	**Timeframe**	**Expected cost**	**Priority**
Build broad societal support for ICZM in Lebanon by delivering national and local awareness campaigns on marine conservation, climate resilience, and sustainable coastal living, strengthening partnerships with NGOs, academia, media, and the private sector, and fostering youth leadership, volunteerism, and citizen-science/citizen-based-monitoring for coastal stewardship.	1. Greater public support for ICZM objectives and coastal protection measures 2. Increased collaboration between non-state actors in support of ICZM outreach and advocacy 3. Expanded youth engagement in coastal conservation through citizen-based monitoring	Medium	High	High
Indicators	1. Percentage of coastal municipalities holding awareness campaigns on ICZM and coastal protection (SDG Indicator 13.3.1 and GBF Indicator 21.1) 2. Number of joint ICZM outreach or advocacy activities implemented by non-state actors (SDG Indicator 17.17.1 and GBF Indicator D.5) 3. Number of youth participating in citizen-based monitoring initiatives implemented in coastal areas (SDG Indicator 13.3.1 and GBF Indicator 21.1)			

Table 39: SO5.4

Measure	**4. Empower women and promote gender equality in coastal economies**			
Description	**Expected Outcomes**	**Timeframe**	**Expected cost**	**Priority**
Strengthen gender equity in Lebanon's ICZM by scaling women-led coastal enterprises through finance and mentoring, enforcing gender-responsive labor standards, and institutionalizing partnerships with women's organizations to ensure women's meaningful participation in coastal governance and decision-making.	1. Increased access of women entrepreneurs to finance and business support 2. Reduced gender-based inequalities in coastal employment 3. Institutionalized collaboration with women's organizations in coastal decision-making	Medium	Medium	Medium
Indicators	1. Percentage of supported coastal enterprises led by women (SDG Indicator 5.5.2 and GBF Indicator 22.1) 2. Difference in access to employment opportunities between women and men in coastal sectors (SDG Indicator 5.1.1 and GBF Indicator 22.1) 3. Percentage of formal partnerships with women's organizations supporting ICZM or coastal governance (SDG Indicator 17.17.1 and GBF Indicator 22.1)			

Table 40: SO5.5

Measure	**5. Promote cultural heritage, sustainable tourism, and community-based enterprises**			
Description	**Expected Outcomes**	**Timeframe**	**Expected cost**	**Priority**
Align tourism in the CZ with community priorities by embedding local culture and heritage in destination strategies, supporting community-based and eco-tourism through training, finance, and market access, and monitoring social impacts to ensure equitable benefit-sharing and community well-being.	1. Local culture and heritage are systematically reflected in coastal tourism planning and destination branding 2. Local communities have improved capacity to develop and manage community-based and eco-tourism initiatives 3. The distribution of tourism benefits among local communities is regularly monitored and assessed to ensure equity	Medium	High	High
Indicators	1. Number of tourism products, events, or attractions that feature local culture or heritage (e.g., festivals, guided tours, cultural centers) (SDG Indicator 11.4.1 and GBF Indicator 22.1) 2. Percentage of community-based and eco-tourism initiatives supported through training, financing, or technical assistance (SDG Indicator 12.b.1 and GBF Indicator D.4) 3. Percentage of coastal tourism initiatives that report on benefit-sharing arrangements with local communities (SDG Indicator 10.2.1 and GBF Indicator 22.1)			

Table 41: SO5.6

Measure	**6. Enhance access to quality education in coastal areas**			
Description	**Expected Outcomes**	**Timeframe**	**Expected cost**	**Priority**
Expand equitable learning in Lebanon's CZ by upgrading education infrastructure and access in underserved communities, mainstreaming ICZM, marine conservation, and climate literacy in curricula, and advancing inclusive education for girls, persons with disabilities, displaced populations, and other vulnerable groups.	1. Access to quality education in underserved coastal communities is improved through enhanced education infrastructure and learning facilities 2. ICZM, marine conservation, and climate change topics are integrated into formal and non-formal education curricula 3. Reduced barriers to participation in education	Long	High	High
Indicators	1. Percentage of education facilities in underserved coastal communities meeting basic functionality standards (e.g., classrooms, sanitation, electricity, learning materials) (SDG Indicator 4.a.1 and GBF Indicator 21.1) 2. Percentage of schools and other academic institutions implementing ICZM or marine-related educational activities (SDG Indicator 13.3.1and GBF Indicator 21.1) 3. Number of reported barriers (e.g., accessibility, cost, safety) addressed through targeted interventions (SDG Indicator 4.5.1 and GBF Indicator 21.1)			

Table 42: SO5.7

Measure	**7. Strengthen skills development and workforce capacity for the blue economy**			
Description	**Expected Outcomes**	**Timeframe**	**Expected cost**	**Priority**
Build a skilled coastal workforce by delivering targeted Technical and Vocational Education and Training (TVET) for priority blue-economy sectors, mainstreaming ICZM, sustainability, and climate-resilience across TVET and higher-education curricula, and leveraging public–private partnerships to align skills development with labor-market demand.	1. TVET programs are aligned with priority blue economy sectors in coastal zones 2. Educators and trainers are equipped to deliver ICZM- and climate-related content 3. Public–private partnerships effectively align skills development with labor market demand in coastal zones	Medium	High	High
Indicators	1. Number of TVET programs explicitly designed for priority blue economy sectors (e.g., fisheries, coastal tourism, marine services, renewable energy) (SDG Indicator 4.4.1 and GBF Indicator 21.1) 2. Percentage of TVET and higher education institutions with at least one educator trained in ICZM or climate-related topics (SDG Indicator 13.3.1 and GBF Indicator 21.1) 3. Number of formal PPPs established between training institutions and employers in coastal and blue economy sectors (SDG Indicator 17.17.1 and GBF Indicator D.5)			

Table 43: SO5.8

Measure Description	**8. Strengthen community resilience and rural coastal revitalization**			
	Expected Outcomes	**Timeframe**	**Expected cost**	**Priority**
Revitalize Lebanon's coastal villages by incentivizing return-to-rural pathways, youth engagement, and local entrepreneurship, while supporting community-led stewardship initiatives that protect coastal resources and cultural heritage.	1. Youth engagement in rural pathways, and local economic and social activities in coastal villages is strengthened 2. Community-led initiatives actively contribute to the protection of coastal ecosystems	Long	High	Medium
Indicators	1. Number of households benefiting from return or rural livelihood incentive schemes (SDG Indicator 1.4.1 and GBF Indicator 22.1)			
	2. Number of community-led environmental stewardship initiatives implemented (e.g., clean-ups, habitat protection, monitoring) (SDG Indicator 11.3.2 and GBF Indicator D.1)			
	3. Number of coastal sites managed or monitored by community groups (SDG Indicator 14.5.1 and GBF Indicator 3.1)			

SO6 – Spatial Planning Integration

The institutional framework for the implementation of SO6 is structured as follows:

- **Lead Agency:** MoPWT
- **Implementing Bodies:** MoIM; MoE; MoFA; MoJ; MoD; MoF; MoT; MoC; MoI; MoA; MoSA; MoET; MoEW; LPA; CAS; PPP/Privatization Unit; CDR; DGUP; HCUP; General Directorate of Land and Maritime Transport; ISF; Bar Association; CNRS; Municipalities; and external experts.
- **Partner Institutions:** NGOs; cooperatives (fisheries and agriculture); universities; research centers; academic institutions; public institutions and local communities; LARI; and incubators (e.g., Berytech).

Table 44: SO6.1

Measure	**1. Update and operationalize the National Physical Master Plan for the Lebanese Territory**			
Description	**Expected Outcomes**	**Timeframe**	**Expected cost**	**Priority**
Strengthen territorial planning in Lebanon by updating the National Physical Master Plan (NPMPLT) to integrate climate risks, ecosystem services, and ICZM principles, aligning municipal urban plans with the revised framework, and establishing compliance and technical-support mechanisms for effective local implementation.	1. Updated NPMPLT integrates land–sea cross-sectoral approaches, including climate risks, ecosystem services, and ICZM principles 2. Municipal urban plans aligned with the updated NPMPLT 3. Compliance with coastal planning standards is strengthened at local level	Short	High	High
Indicators	1. Number of sectoral strategies formally aligned with the updated NPMPLT (SDG Indicator 17.14.1 and GBF Indicator 1.1)			
	2. Percentage of municipal urban plans aligned with the updated NPMPLT (SDG Indicator 11.3.1 and GBF Indicator 1.1)			
	3. Percentage of municipalities complying with coastal planning standards (SDG Indicator 11.3.2 and GBF Indicator D.1)			

Table 45: SO6.2

Measure	**2. Develop and Implement a national MSP framework**			
Description	**Expected Outcomes**	**Timeframe**	**Expected cost**	**Priority**
Establish a coherent national MSP system in Lebanon by adopting a legally binding MSP strategy and zoning plan for key coastal and marine uses, and institutionalizing participatory and conflict-resolution processes throughout MSP development and implementation.	1. A legally binding national MSP strategy is formally adopted	Medium	High	High
	2. Conflict identification and management are embedded within MSP processes			
	3. Participatory processes, transparency and accountability in coastal and marine spatial decision-making are institutionalized			
Indicators	1. National MSP strategy and zoning plan officially adopted (SDG Indicator 14.2.1 and GBF Indicator 1.1)			
	2. Existence of a formal conflict identification and resolution mechanism within MSP (SDG Indicator 17.14.1 and GBF Indicator 1.1)			
	3. Existence of formally adopted procedures or guidelines for stakeholder participation and transparency in coastal and marine spatial planning (SDG Indicator 16.10.2 and GBF Indicator 21.1)			

Table 46: SO6.3

Measure	**3. Establish coastal setback zones, buffers, and development controls**			
Description	**Expected Outcomes**	**Timeframe**	**Expected cost**	**Priority**
Protects coastal ecosystems and public access by legally designating setback and buffer zones based on hazard and ecological criteria, embedding these regulations into planning and permitting systems, and ensuring strong enforcement against encroachment and illegal shoreline construction.	1. Coastal setback and buffer zones are legally designated based on hazard and ecological criteria	Medium	Medium	High
	2. Coastal permitting processes apply setback and buffer zone requirements			
	3. Enforcement actions are applied consistently against violations in setback and buffer zones			
Indicators	1. Percentage of coastline covered by legally designated setback and buffer zones (SDG Indicator 11.3.1 and GBF Indicator 1.1)			
	2. Percentage of approved coastal permits compliant with setback and buffer requirements (SDG Indicator 14.2.1 and GBF Indicator 1.1)			
	3. Percentage of identified violations that receive enforcement action (SDG Indicator 16.3.1 and GBF Indicator D.6)			

Table 47: SO6.4

Measure	**4. Promote climate-resilient and nature-based urban design**			
Description	**Expected Outcomes**	**Timeframe**	**Expected cost**	**Priority**
Advance sustainable coastal cities by promoting green infrastructure and nature-based solutions, such as living shorelines, dunes, permeable surfaces, and urban wetlands, and by developing technical guidelines for climate-resilient coastal design and shoreline management.	1. Green infrastructure and nature-based solutions are integrated into coastal urban development 2. National technical guidelines for climate-resilient coastal design are developed and adopted 3. Existence of officially adopted technical guidelines for climate-resilient coastal design	Medium	High	High
Indicators	1. Percentage of coastal urban projects incorporating green infrastructure or NbS (e.g., living shorelines, dunes, urban wetlands) (SDG Indicator 13.2.1 and GBF Indicator 8.1) 2. National technical guidelines officially adopted for climate-resilient coastal design (SDG Indicator 13.2.1 and GBF Indicator 1.1) 3. Number of shoreline projects modified to improve climate resilience following technical review (SDG Indicator 13.2.1 and GBF Indicator 8.1)			

Table 48: SO6.5

Measure	**5. Modernize land administration and spatial data systems**			
Description	**Expected Outcomes**	**Timeframe**	**Expected cost**	**Priority**
Modernize coastal governance by digitizing land records, cadastral systems, and zoning maps, establishing an integrated terrestrial–marine geospatial platform for ICZM and MSP, and promoting open access to spatial data for public institutions, municipalities, researchers, and citizens.	1. Land records, cadastral systems, and zoning maps in coastal areas are digitized 2. An integrated terrestrial–marine geospatial platform supporting ICZM and MSP is established 3. Public institutions, municipalities, researchers, and citizens use the platform	Medium	High	High
Indicators	1. Percentage of coastal land or cadastral records digitized (SDG Indicator 17.18.1 and GBF Indicator 21.1) 2. Establishment of an operational national terrestrial–marine geospatial platform (SDG Indicator 17.18.1 and GBF Indicator 21.1) 3. Number of registered users accessing the platform (SDG Indicator 17.18.1 and GBF Indicator 21.1)			

Table 49: SO6.6

Measure	**6. Manage urban growth and reduce coastal overcrowding**			
Description	**Expected Outcomes**	**Timeframe**	**Expected cost**	**Priority**
Guide sustainable settlement patterns by implementing land-use controls and incentives to limit sprawl and ribbon development, and by integrating coastal hazard-risk mapping into urban expansion and housing-development programs.	1. Land-use controls to limit urban sprawl and ribbon development are established and applied 2. Incentive mechanisms promote compact and planned settlement patterns in coastal areas 3. Urban expansion and housing programs systematically incorporate coastal hazard risk mapping	Long	High	High
Indicators	1. Percentage of municipalities applying land-use controls targeting sprawl or ribbon development (SDG Indicator 11.3.1 and GBF Indicator 1.1) 2. Number of development projects benefiting from compact-development incentives (SDG Indicator 11.3.1 and GBF Indicator 1.1) 3. Number of urban expansion or housing plans that explicitly reference coastal hazard risk maps (SDG Indicator 13.1.1 and GBF Indicator 8.1)			

Table 50: SO6.7

Measure	**7. Ensure sustainable tourism and coastal infrastructure development**			
Description	**Expected Outcomes**	**Timeframe**	**Expected cost**	**Priority**
Ensure environmentally responsible coastal development by enforcing eco-tourism and environmental-performance standards, requiring EIAs and climate-risk screening for major coastal tourism and infrastructure projects, and promoting low-impact, culturally grounded, community-based development models.	1. EIAs and climate risk screening are systematically applied to coastal projects 2. Environmentally harmful coastal developments are prevented or modified through regulatory review 3. Low-impact and community-based coastal development models are promoted and supported	Medium	High	Medium
Indicators	1. Percentage of coastal projects undergoing EIAs and climate risk screening (SDG Indicator 13.2.1 and GBF Indicator 1.1) 2. Percentage of coastal development proposals modified following EIA or environmental review (SDG Indicator 14.2.1 and GBF Indicator 1.1) 3. Percentage of coastal development projects applying low-impact or community-based design principles (SDG Indicator 11.3.2 and GBF Indicator 1.1)			

Table 51: SO6.8

Measure Description	**8. Enhance public access, walkability, and sustainable mobility**			
	Expected Outcomes	**Timeframe**	**Expected cost**	**Priority**
Improve inclusive coastal mobility by protecting and expanding public access corridors to shorelines, promenades, beaches, and greenways, promoting walkable and transit-oriented coastal cities, and limiting car-dominated shoreline road expansion in favor of sustainable mobility and high-quality public spaces.	1. Public access corridors to coastal spaces are expanded and improved 2. Walkability is prioritized in coastal urban planning and design 3. Shoreline space is reallocated to sustainable mobility and public use	Medium	High	Medium
Indicators	1. Percentage of coastal municipalities implementing new or upgrading access corridors to beaches (SDG Indicator 11.7.1 and GBF Indicator 1.1) 2. Length of pedestrian-friendly streets or promenades created or upgraded in coastal municipalities (SDG Indicator 11.2.1 and GBF Indicator 1.1) 3. Length of shoreline road space prioritizing sustainable mobility over vehicle traffic (SDG Indicator 11.2.1 and GBF Indicator 8.1)			

VII. Conclusion

Lebanon's CZ remains a vital national asset, underpinning economic activity, social well-being, and ecological integrity, yet it faces chronic and escalating pressures from uncoordinated development, governance fragmentation, environmental degradation, and climate change amongst many other anthropogenic pressures. Embedded in the ICZM Protocol for the Mediterranean, this ICZM Strategy, coupled with the expected ICZM Draft Law, and through its six SOs and associated measures, provides a coherent, integrated, and participatory framework to address these challenges in line with Lebanon's commitments under the ICZM Protocol. By strengthening governance, aligning sectoral policies, protecting ecosystems, enhancing climate resilience, and promoting inclusive socio-economic development, the Strategy establishes a clear pathway toward sustainable coastal management. Its effective implementation will require sustained political commitment, institutional coordination, stakeholder engagement, and adaptive management. If fully operationalized, the Strategy can safeguard Lebanon's coastal and marine resources while securing long-term benefits for present and future generations.

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IX. Annex I: Multi-Criteria Decision Analysis Methodology

This annex describes the detailed methodology used to assess and prioritize the measures under each Strategic Objective. The approach combines qualitative inputs from stakeholders with a structured Multi-Criteria Decision Analysis (MCDA) scoring framework.

1. Data Extraction

For each Strategic Objective, all information was extracted from the compiled tables, including:

- Measures
- Timeframe (Short / Medium / Long)
- Cost Category (Low / Medium / High)
- Priority (High / Medium / Low)
- Lead Agency
- Implementing Bodies
- Partner Institutions
- Notes and comments

The Lead Agency, Implementing Bodies, and Partner Institutions were not scored. They were listed only, and the most frequently appearing institutions across the measures were highlighted to indicate central roles in implementation.

2. Parameters Included in MCDA Scoring

Three parameters were selected for the MCDA scoring system:

- Timeframe - reflects urgency and expected delivery period
- Cost - reflects financial intensity of the measure
- Priority - reflects stakeholder-defined importance

These parameters were chosen because they represent measurable differences between measures, reflect urgency, feasibility, and stakeholder relevance, and allow standardized comparison across six Strategic Objectives.

3. Converting Categories into Numeric Scores

To enable quantitative comparison, qualitative categories were converted into numeric scores as follows:

- Priority (High = 3; Medium = 2; Low = 1)
- Cost (Low cost = 3; Medium cost = 2; High cost = 1)
- Timeframe (Short (1–5 years) = 3; Medium (6–10 years) = 2; Long (10–20 years) = 1)

This conversion allows measures with different attributes to be evaluated consistently.

4. Weighing Process

Different weights (%) were assigned to the three categories of stakeholders:

- ICZM Advisory team: 35%
- Working Groups: 35%
- Experts: 30%

Weights were assigned to reflect the balanced importance of institutional coordination (ICZM Advisory Team), sectoral input (Working Groups), and technical expertise (Experts).

5. General Prioritization Process

The MCDA methodology applied a hierarchical aggregation approach. For each measure, per Strategic Objective (SO), scores provided by each stakeholder category were averaged for each parameter (timeframe, cost, and priority), with the three parameters treated with equal importance within each stakeholder group. The three parameters were then averaged to produce a composite score per measure and per stakeholder group, and the resulting group score was multiplied by the assigned weights (0.35, 0.35 and 0.30) to reflect its contribution to the overall evaluation. Final scores for each measure were

obtained by summing the weighted scores across all contributor groups, ensuring that group weights collectively sum to 100%.
This produces a final score between 1 and 3, representing:

- 3.0 – 2.5 → High General Priority
- 2.4 – 1.8 → Medium General Priority
- 1.7 – 1.0 → Low General Priority

6. Parameter Specific Prioritization

For each evaluation parameter (timeframe, cost, and priority), scores provided by contributors within each stakeholder group were first averaged to obtain a group-specific value. These group-level scores were then weighted according to their assigned importance (0.35, 0.35 and 0.30) and aggregated using a weighted sum to derive a final score for each parameter. This approach ensures balanced representation of stakeholder inputs while reflecting the relative importance attributed to each group within the MCDA framework.
For each measure, the scores represent the following:
Priority:

- 3.0 – 2.5 → High Priority
- 2.4 – 1.8 → Medium Priority
- 1.7 – 1.0 → Low Priority

Cost:

- 3.0 – 2.5 → Low cost
- 2.4 – 1.8 → Medium cost
- 1.7 – 1.0 → High cost

Timeframe:

- 3.0 – 2.5 → Short timeframe
- 2.4 – 1.8 → Medium timeframe
- 1.7 – 1.0 → Long timeframe

7. Interpretation of Lead Agency, Implementing Bodies, and Partner Institutions

Although not included in MCDA scoring, these institutional elements were analyzed based on frequency: all institutions were counted based on the number of measures they appeared in, the most frequently recurring institutions were highlighted in the tables. This provides insight into institutional load, capacities, and cross-sectoral linkages.
This analysis supports planning but is kept separate from MCDA scoring.

The MCDA results were used to identify high-priority measures within each Strategic Objective, support transparent comparison between measures with different characteristics, provide objective input to decision-making and sequencing, and complement, rather than replace, stakeholder judgment.

X. Annex II: Participatory Approach Results

SO1 – Governance and Legal Integration

The scoring results highlight the continued importance of establishing a national ICZM governance framework, which emerges as the most prioritized measure, alongside strong progress in legal alignment with international frameworks and in building institutional and technical capacity as key enabling pillars. Measures related to participatory governance, policy coherence, enforcement, and accountability occupy a solid intermediate range, reflecting their role in consolidating and operationalizing the governance system as it matures. Relatively lower scores are observed in areas such as sustainable financing, public–private partnerships, strengthening the legal framework for coastal development, and integrating climate resilience into governance, indicating that these dimensions are still evolving and require further reinforcement. This distribution of scores suggests an ongoing transition from foundational governance establishment toward broader system integration, while still reflecting a phased progression in which core institutional and legal structures underpin more advanced financial and climate-related components. Overall, Governance and Legal Integration continue to stand as a fundamental prerequisite for effective, coherent, and sustainable ICZM implementation in Lebanon (Figure 3).

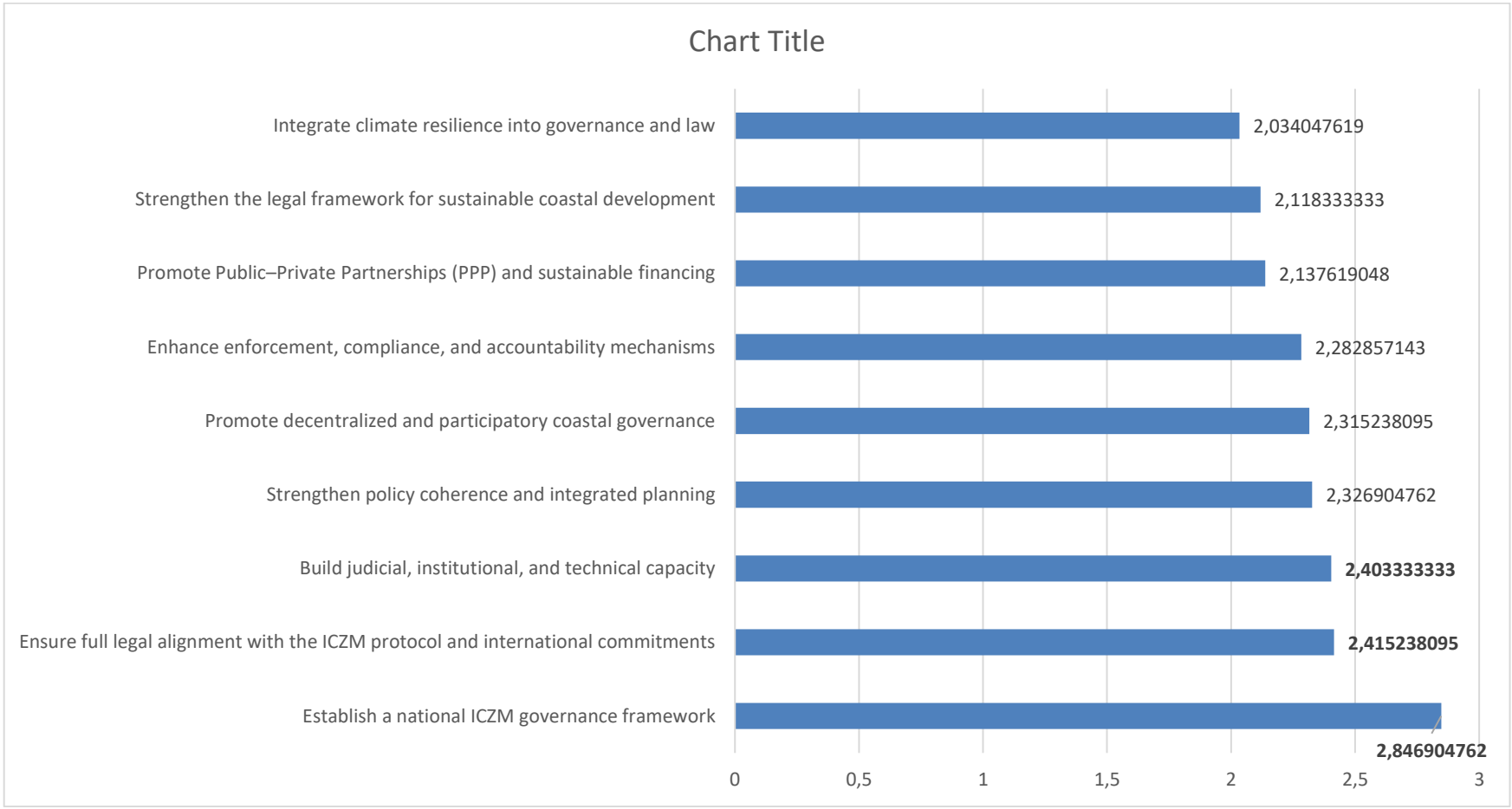


Figure 3: Overall scores of Governance and Legal Integration measures (SO1) based on the MCDA methodology

SO2 - Environment and Biodiversity Protection

The scoring results prioritize establishing a national coastal and marine environmental monitoring system and integrating environmental sustainability into tourism and coastal development, which are among the most important actions. Solid scores are also evident for promoting sustainable fisheries and ecosystem-based marine resource use, as well as for strengthening water resource protection and improving coastal water quality, reflecting growing attention to resource management and environmental safeguards. Measures related to pollution reduction, waste management, and the prevention of biological invasions and ecosystem degradation occupy a consistent intermediate range, indicating steady implementation and consolidation of environmental management practices. Slightly lower, yet still robust, scores are observed for conserving and restoring critical and climate-sensitive ecosystems and for strengthening research and science-based decision-making, suggesting that these areas require a long-term commitment. Overall, the distribution of scores reflects a broad and balanced advancement across environmental priorities, with monitoring, sustainable use, and integration into development leading the way, while ecosystem restoration and knowledge generation continue to evolve as essential components of a comprehensive and effective environmental management framework (Figure 4).

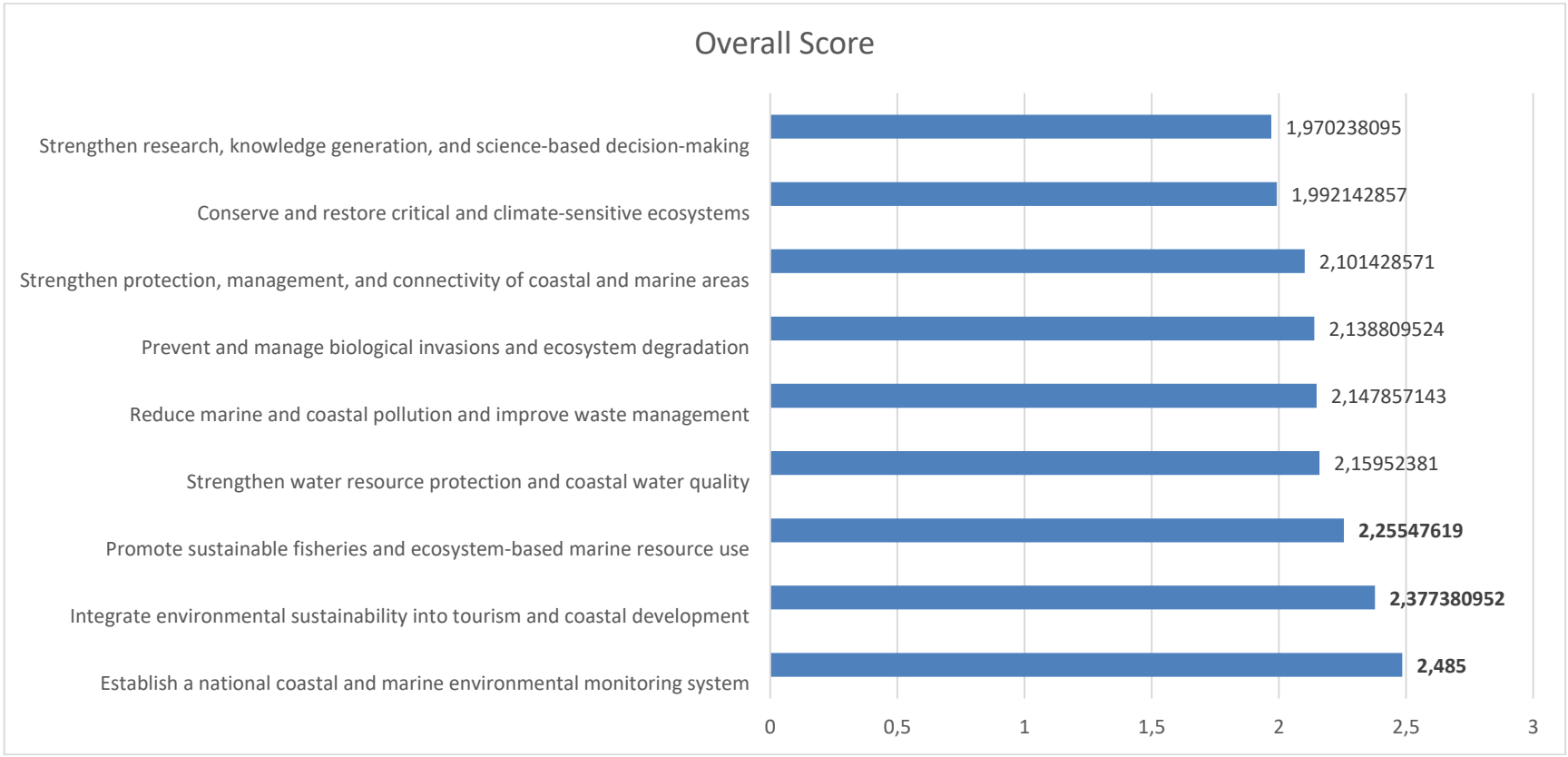


Figure 4: Overall scores of Environment and Biodiversity Protection measures (SO2) based on the MCDA methodology

SO3 – Climate Adaptation and Resilience

The scoring results strongly emphasize advancing climate adaptation and resilience measures, with particularly high priority also observed in conducting comprehensive coastal climate risk and vulnerability assessments, as well as in strengthening awareness, capacity building, and behavioral change. Closely following are measures related to integrating climate adaptation into ICZM, marine spatial planning, and broader development processes, together with strengthening coastal disaster risk reduction and early warning systems, reflecting a solid foundation for mainstreaming climate considerations into planning and risk management. Intermediate scores are observed for accelerating renewable energy deployment and addressing coastal salinization and groundwater recharge, indicating steady progress in linking climate adaptation with resource management and energy transition. Slightly lower scores are associated with reducing anthropogenic heat and urban climate stress in coastal cities and promoting ecosystem-based adaptation and nature-based solutions, suggesting that these approaches, while recognized, are still in a phase of further development and uptake. Overall, the distribution of scores points to a coherent advancement of climate resilience actions, with strong foundations in risk assessment, planning integration, and capacity development, while highlighting the need to further strengthen implementation of nature-based and urban-focused adaptation measures within a comprehensive ICZM framework (Figure 5).

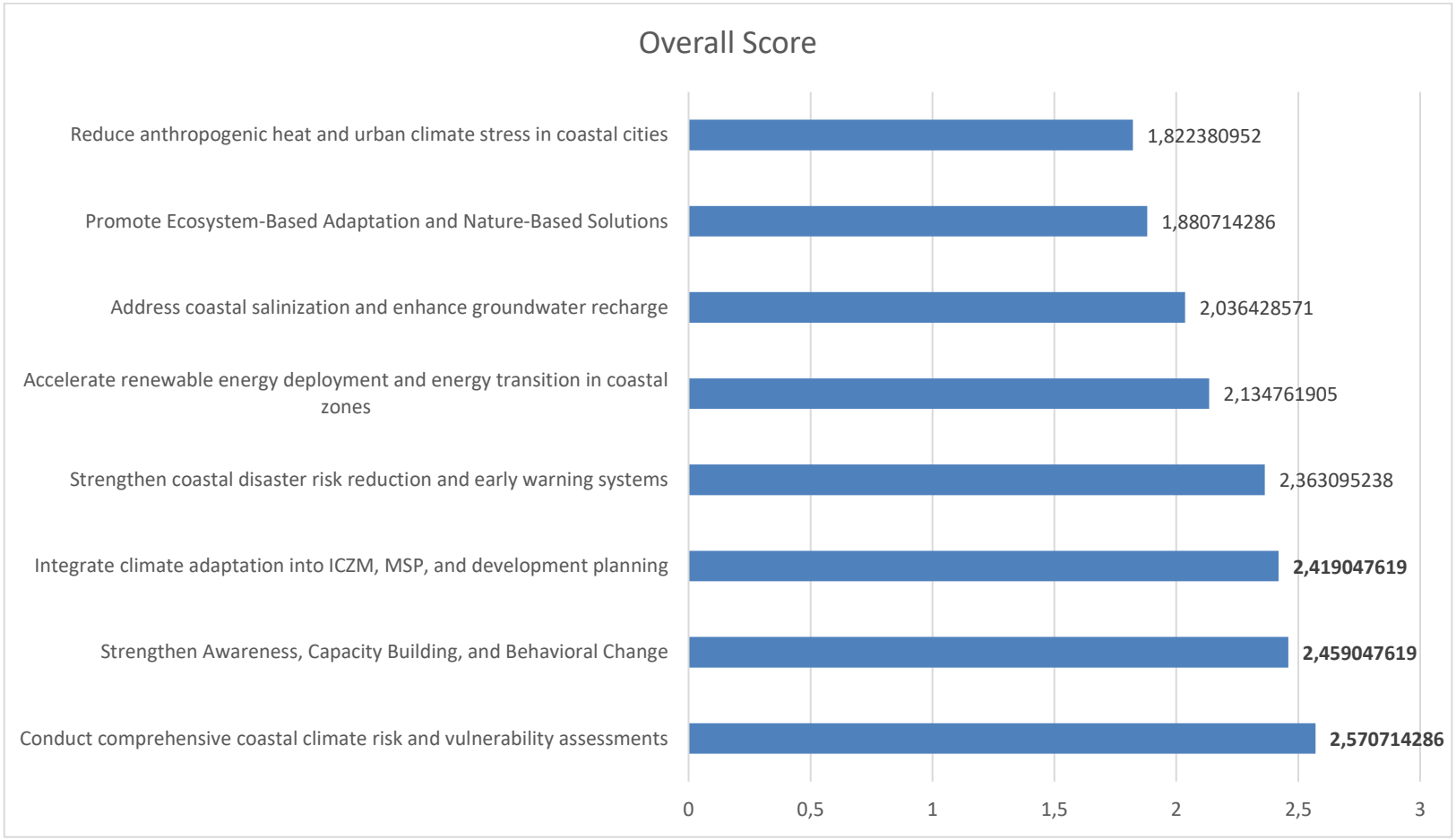


Figure 5: Overall scores of Climate Adaptation and Resilience measures (SO3) based on the MCDA methodology

SO4 - Socio-Economic Sustainability

The scoring results highlight the particular importance of internalizing ecosystem services and climate costs into economic decision-making, as well as in promoting inclusive and equitable coastal development, which are the most prioritized measures. High scores are also evident for strengthening sustainable fisheries and marine-based livelihoods and supporting climate-smart coastal agriculture, reflecting growing attention to linking economic development with environmental sustainability. Intermediate scores characterize measures such as promoting sustainable and diversified coastal tourism and incentivizing green and circular economy practices, indicating steady progress in transitioning toward more sustainable economic models. Relatively lower scores are observed for enhancing employment, skills retention, and local economic resilience, strengthening digital, telecommunications, and market infrastructure, and supporting small and medium enterprises, suggesting that these enabling conditions, while recognized, require further reinforcement to fully support inclusive economic growth. Overall, the distribution of scores reflects a progressive shift toward integrating sustainability principles within coastal economies, while highlighting the need to further strengthen supporting economic structures and capacity to ensure resilient, inclusive, and long-term socio-economic development within the ICZM framework (Figure 6).

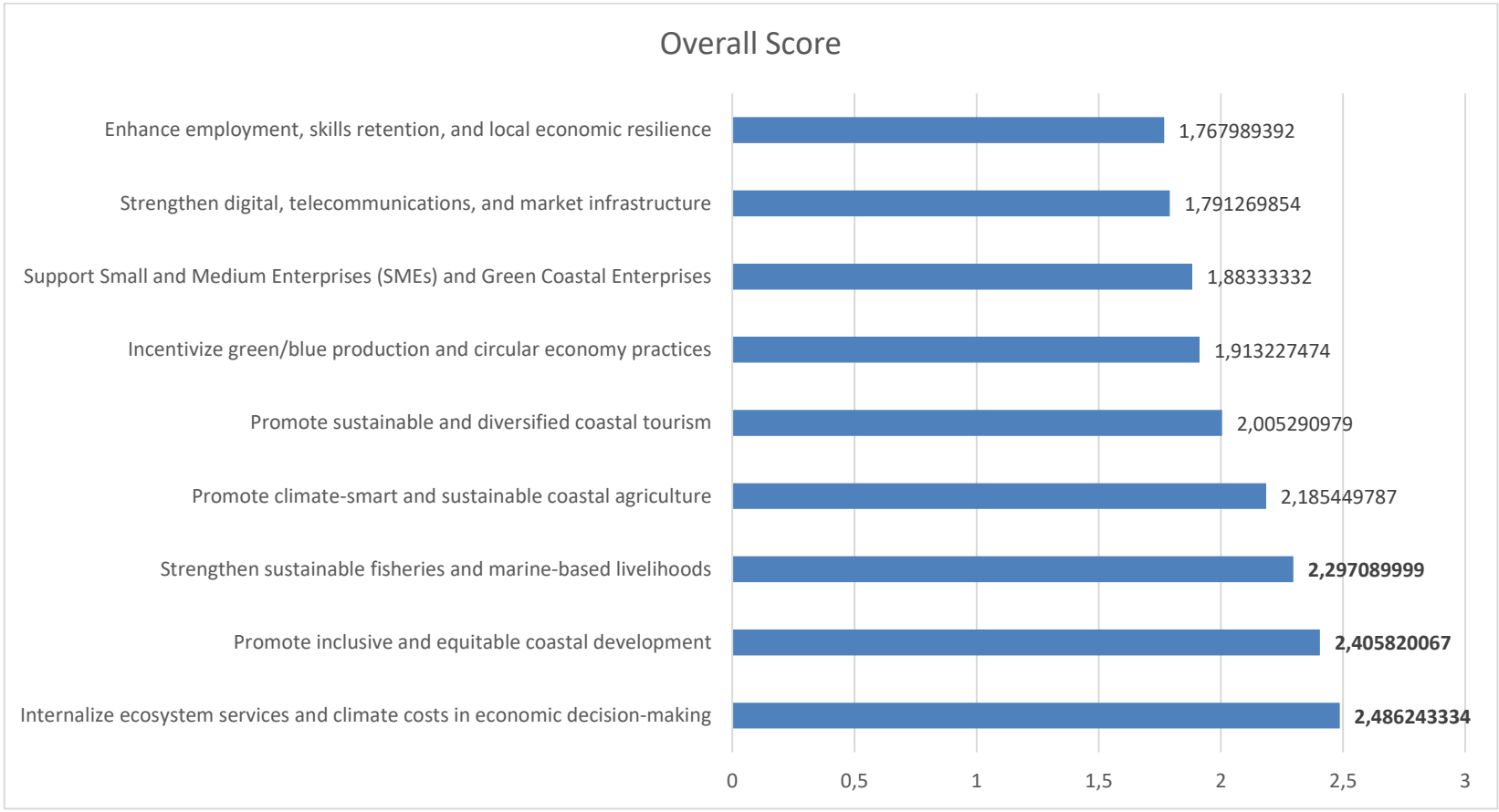


Figure 6: Overall scores of Socio-Economic Sustainability measures (SO4) based on the MCDA methodology

SO5 - Social Equity and Participation

The scoring results showed relatively higher importance in ensuring inclusive participation in coastal governance and decision-making, as well as in improving environmental health, water, and sanitation in coastal communities, which emerge among the most prioritized actions. Strong scores are also evident in strengthening awareness, education, and public engagement on ICZM, alongside empowering women and promoting gender equality in coastal economies, reflecting an increased emphasis on inclusiveness and social empowerment within coastal development processes. Intermediate scores characterize measures such as promoting cultural heritage and community-based enterprises and enhancing access to quality education in coastal areas, indicating steady progress in linking social development with local economic opportunities. Relatively lower scores are observed in strengthening community resilience and rural coastal revitalization, as well as in developing skills and workforce capacity for the blue economy, suggesting that these areas require further support to fully underpin inclusive growth. Overall, the distribution of scores reflects a growing integration of social equity considerations into coastal management, while highlighting the need to further strengthen community-level resilience and capacity to ensure inclusive and participatory ICZM implementation (Figure 7).

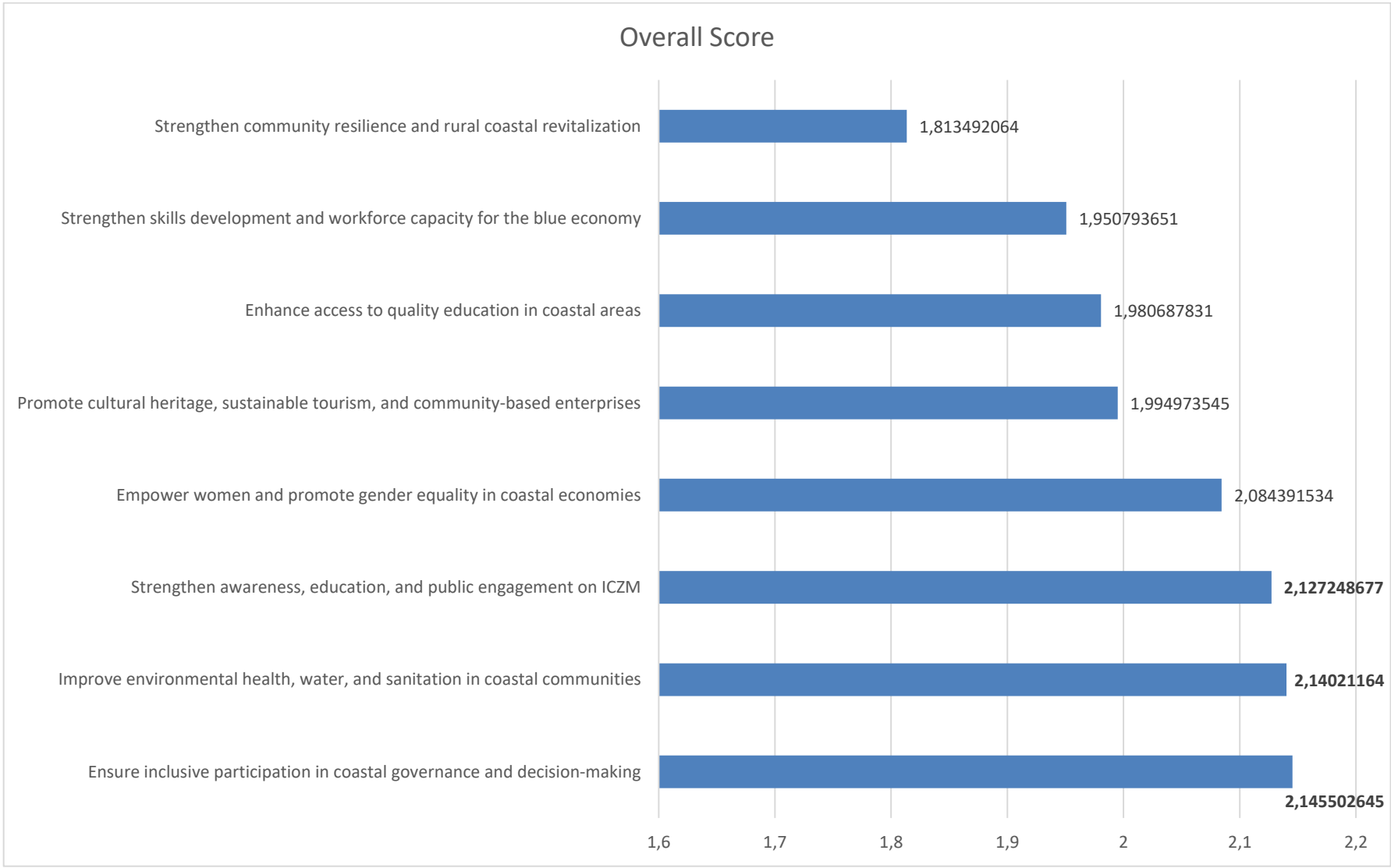


Figure 7: Overall scores of Social Equity and Participation measures (SO5) based on the MCDA methodology

SO6 - Spatial Planning Integration

The scoring results highlight updating and operationalizing the National Physical Master Plan for the Lebanese Territory as the most prioritized action. High scores are also evident in establishing coastal setback zones, buffers, and development controls, as well as in advancing a national marine spatial planning framework, reflecting a clear emphasis on strengthening regulatory and planning instruments. Measures related to promoting climate-resilient and nature-based urban design and modernizing land administration and spatial data systems occupy a solid intermediate range, indicating growing integration of resilience and data-driven planning approaches. Slightly lower scores are observed for managing urban growth, ensuring sustainable tourism and infrastructure development, and enhancing public access, walkability, and sustainable mobility, suggesting that these components, while progressing, require further reinforcement to fully support integrated spatial development. Overall, the distribution of scores reflects an ongoing transition toward more structured and integrated spatial planning systems, while highlighting the need to further strengthen implementation and coordination to achieve coherent and sustainable coastal development (Figure 8).

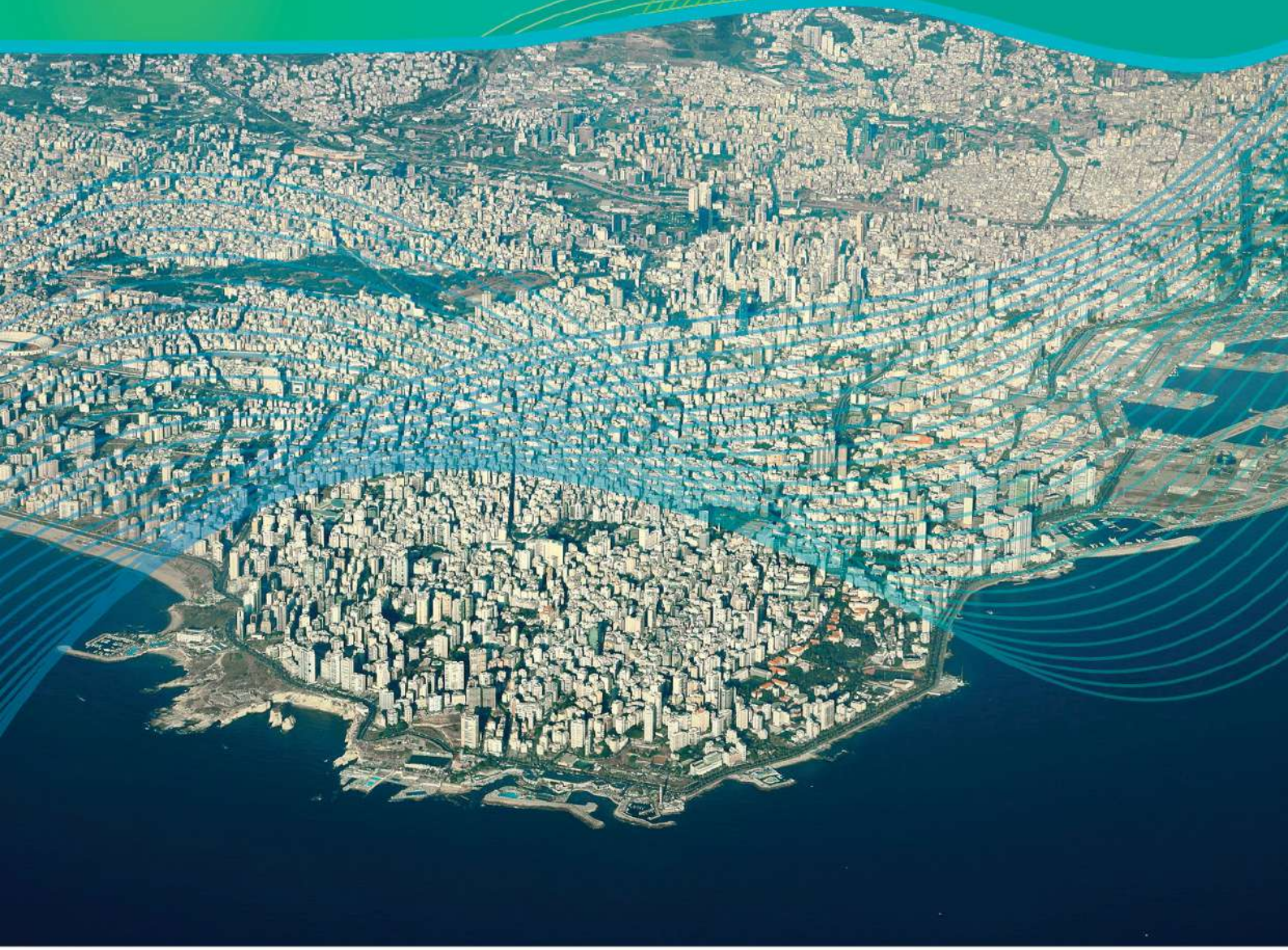


Figure 8: Overall scores of Spatial Planning Integration measures (SO6) based on the MCDA methodology

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