



# Managing the Water-Energy-Food-Ecosystems Nexus in Lebanon

Information Note

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Mediterranean  
Action Plan  
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2.2

Mediterranean Coastal Zones:  
Managing the Water-Food-Energy  
and Ecosystem NEXUS



## 1. Introduction: The MedProgramme and its relevance to Lebanon

The MedProgramme represents the first GEF<sup>1</sup> multi-focal area initiative in the Mediterranean Sea aiming to carry out priority actions to reduce major transboundary environmental stresses in its coastal areas while strengthening climate resilience and water security and improving the health and livelihoods of coastal populations. The MedProgramme is implemented by various Executing Partners<sup>2</sup> in nine beneficiary countries sharing the Mediterranean basin: Albania, Algeria, Bosnia and Herzegovina, Egypt, Lebanon, Libya, Montenegro, Morocco and Tunisia. Its eight Child Projects cut across four different Focal Areas of the Global Environment Facility, namely International Waters, Biodiversity, Chemicals and Waste and Climate Change.

### Child projects 2.1 and 2.2 (CP 2.1 and CP 2.2): Activities relevant to Lebanon.

#### In particular:

- Under CP 2.1, with title “Mediterranean Coastal Zones: Water Security, Climate Resilience and Habitat Protection” an Integrated Coastal Zone Management (ICZM) Strategy for the country will be prepared by UNEP PAP/RAC. Moreover, climate change adaptation approaches will be integrated in ICZM planning (through the SCCF<sup>3</sup> Project) in collaboration with Blue Plan.
- Under CP 2.2 with title “Mediterranean Coastal Zones: Managing the Water-Energy-Food and Ecosystems Nexus” a set of activities are planned aimed at balancing competing water uses through water, energy, food and ecosystems integrated governance, to enhance environmental security and sharing of benefits. Along with the [Nexus Water-Energy-Food-Ecosystems approach](#), the “Source-to-Sea” approach will be used as well. Thus, the project will go beyond Environment and Water, the typical domains of action in water related projects, addressing also Energy and Agriculture considerations, facilitating sectoral and spatial integration through tracing the root causes and the solutions of interlinked challenges faced within and beyond the coastal zone.  
CP 2.2 is executed by the [Global Water Partnership-Mediterranean \(GWP-Med\)](#) and envisages to achieve its overall aim through activities structured in [4 Components](#):

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<sup>1</sup>The Global Environment Facility (GEF) supports developing countries to address pressing environmental issues particularly related to: biodiversity loss, chemicals and waste, climate change, international waters, and land degradation.

<sup>2</sup>GEF Lead Implementing Agency: UN Environment. Other GEF Implementing Agency: European Bank for Reconstruction and Development (EBRD). Leading Executing Agency: UN Environment/MAP. Executing partners: UNESCO International Hydrological Programme (IHP), European Investment Bank (EIB), Global Water Partnership – Mediterranean (GWP-Med), WWF Mediterranean Programme Office (WWF MedPO), IUCN, Priority Actions Programme Regional Activity Centre (PAP/RAC), Plan Bleu Regional Activity Centre (Plan Bleu), Specially Protected Areas Regional Activity Centre (SPA/RAC) and the Sustainable Consumption and Production Regional Activity Centre (SCP/RAC).

<sup>3</sup>Special Climate Change Fund “Enhancing regional climate change adaptation in the Mediterranean Marine and Coastal Areas”.

## Components of Child Project 2.2.

Component 1: Institutional Strengthening

Component 2: Addressing Nexus issues affecting the coastal zone in Lebanon

Component 3: Testing and upscaling Nexus solutions

Component 4: Consultation and outreach

More details about activities foreseen in Lebanon under CP 2.2. and its four Components implemented by GWP-Med are provided below.

### 2. Nexus-related activities and outputs in Lebanon in the context of the Integrated Coastal Zone Management Strategy

Traditionally in Lebanon – as in many other Mediterranean countries - Water, Energy, Food and the Environment “sectors” have been dealt with separately during the development of policies and strategies, their implementation and the planning of investments. However, it is being increasingly realized that through such fragmented approaches it is difficult - or even impossible - to achieve sustainable management of and security in any of these sectors.

Under the **Nexus Water-Energy-Food-Ecosystems approach** linkages among the relevant sectors are identified and existing or potential trade-offs/compromises are assessed. The main aim for doing so is to identify solutions that will enhance security of supply for these resources and efficiency in their use, while reducing impacts and risks on ecosystems.

As mentioned above the implementation of a Nexus approach in Lebanon (CP 2.2.) will be carried out in synergy with activities undertaken in the country towards the preparation of an Integrated Coastal Zone Management (ICZM) Strategy (under CP 2.1) and climate change adaptation approaches in ICZM planning.

The planned activities will address issues/challenges that are geographically extending to the **source-to-sea area**.

Moreover, planning documents like the National ICZM Strategy will be developed using to the maximum possible extent the **Integrative Methodological Framework**, a comprehensive methodology for the sustainable management of the Mediterranean ecosystems constituted by the coastal zones, river basins and coastal aquifers.

Here are additional details about the different components of CP 2.2 and their implementation in Lebanon:

## Component 1: Institutional Strengthening on the Nexus Water-Energy-Food-Ecosystems

This component includes the preparation of a Mediterranean Nexus study that will also contain information about Lebanon and the organisation of Regional Dialogue and Trainings to which Lebanese decision-makers will be invited to participate. The **Regional Dialogue** will help in understanding the **Nexus Water-Energy-Food-Ecosystems** and facilitate cross-fertilization among institutions, organizations and practitioners, while the **Trainings** will enhance capacities of targeted stakeholders, such as policy makers, managers at public administrations, civil society, members of the parliament and media etc. in addressing policy, managerial and selected technical issues.

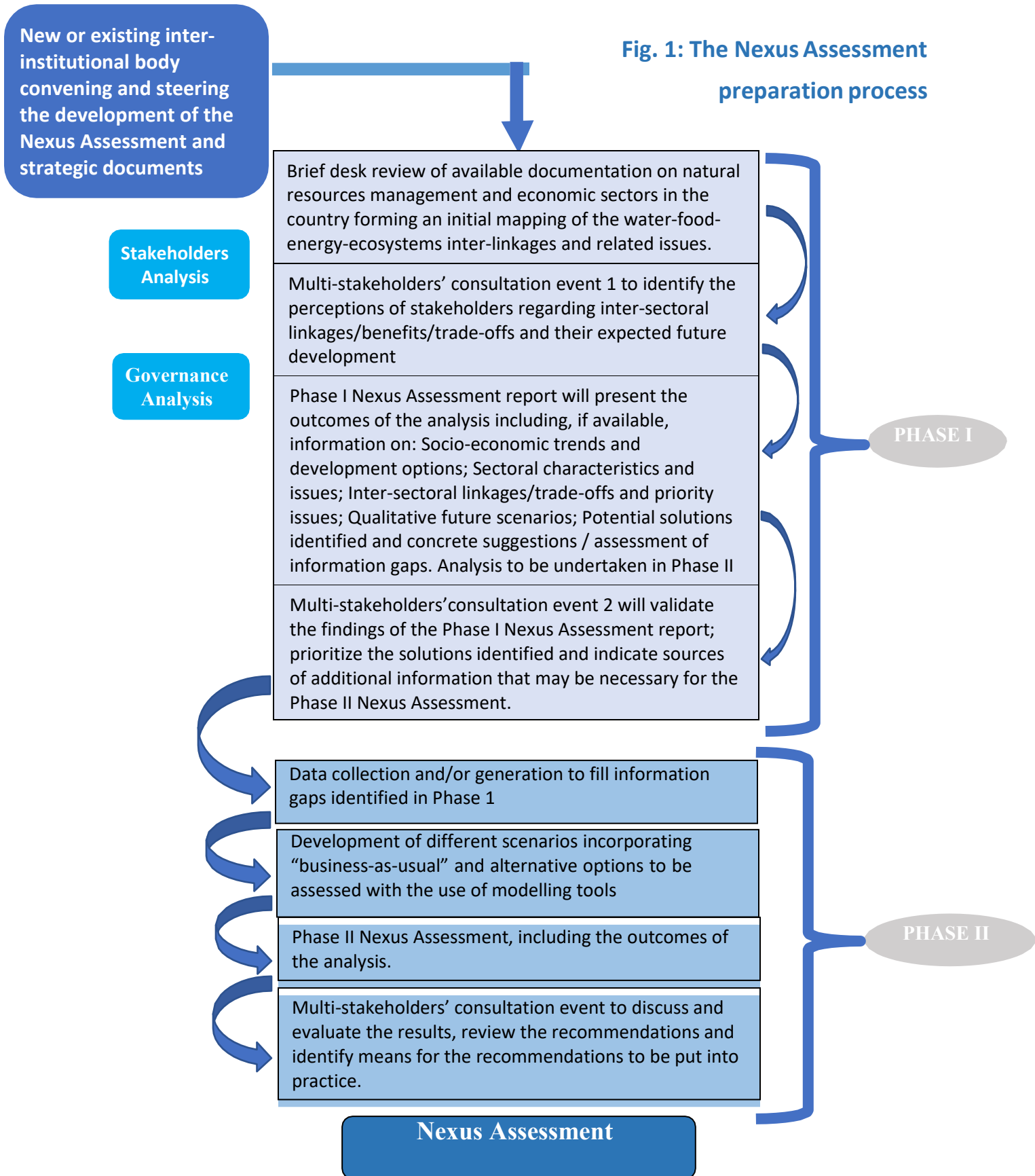
## Component 2: Addressing Nexus (Water-Energy-Food-Ecosystems) issues affecting the coastal zone in Lebanon

This is the key component of the Project. It includes as main activities the preparation of a Nexus Assessment for Lebanon related to the Water-Energy-Food-Ecosystems sectors and the organisation of related Nexus Policy Dialogues. These are tools enabling the application of the “Nexus approach”.

The Assessment is used to identify and study the linkages/benefits/trade-offs among the Water-Energy-Food-Ecosystems sectors and to indicate ways for the optimal use of natural resources. The outcomes of the Assessment are expected to facilitate coordination of policies and actions across the Water-Energy-Food-Ecosystems sectors and institutions in the country and reconciling conflictive coastal resources uses. They will possibly contribute and assist, as applicable, to the ICZM Strategy for Lebanon that will be prepared by PAP/RAC. A schematic representation of the Nexus Assessment preparation process is available in Figure 1 (see page 6).

Priority inter-sectoral concerns, i.e. among two or more of the Nexus sectors - namely the Water, Energy-Food and Ecosystems sectors - will be identified through consultation events (roundtables, workshops, etc.) involving relevant Lebanese stakeholders. This multi-stakeholder Policy Dialogue is expected to clarify the various goals, interests and drivers of stakeholders and offers a process to reconcile possible differences. Stakeholders Analysis and Governance Analysis will be used as basis for both the Nexus Water-Energy-Food-Ecosystems Assessment and the Policy Dialogue. The Policy Dialogue will involve institutional stakeholders from the Lebanese authorities directly related to the Nexus - the Ministries of Energy and Water, Agriculture, and Environment - as well as other relevant Ministries and governmental agencies and representatives of the private sectors, academia and NGOs. The Policy Dialogue will be guided by an inter-institutional Governance Body that will act as the Steering Committee (SC) of the Dialogue. A new inter-institutional body, in the form of an Interministerial Committee, will be established in case none of the existing bodies in Lebanon can undertake this role. The SC will:

- Discuss the developments, provide advice for the implementation of the Nexus Dialogue including the preparation of the Nexus Water-Energy-Food-Ecosystems Assessment, approve reports and other outputs etc.
- Discuss and assist in the formulation of a Nexus Water-Energy-Food-Ecosystems Strategy or Action Plan that will integrate the outcomes of the Nexus Dialogue.
- Discuss and decide on steps for the implementation of this Nexus Strategy or Action Plan.



### **Component 3: Testing and upscaling solutions relevant to the Water-Energy-Food-Ecosystems Nexus**

The Project will identify Nexus solutions that have been already applied in the Mediterranean or are at experimental stage (project demonstration and/or research activities) and are considered promising for their novelty and feasibility potential. Innovative as well as traditional solutions will be considered.

A small number of the solutions that showed benefits in more than one sector and contributed in reducing the pressure on the environment will be further assessed for their replication and upscaling feasibility.

Two (2) novel Nexus solutions among those identified will be tested directly by the Project, as means for demonstration and hands-on training of competent local stakeholders as well as for public awareness raising. These may be in the fields of agriculture/ ICT based precision irrigation, wastewater treatment for secondary purposes or potable water production with renewable energy, energy and resource recovery from waste water treatment, desalination with renewable energy, etc.

An analysis of the results will be performed for each case in relation to their efficiency along with an assessment of the feasibility for replication and upscaling.

One priority local Nexus intervention will be selected for Lebanon based on the feedback received by the Lebanese authorities and a project proposal/investment fiche will be prepared.

Fundraising options will be screened throughout the Project in order to increase the number and/or the scale of applied Nexus solutions, aiming at further impact as well as co-financing.

To achieve these, the Project will strive to attract a range of interested financing partners, public and private (including Corporate Social Responsibility partners), since its early stages.

### **Component 4: Consultation and outreach**

A Stakeholders' Engagement and Gender Mainstreaming Strategy – aimed at achieving a high level of involvement and participation – will be the basis of the planning and organization of consultation and involvement activities in Lebanon. The main project areas in which the stakeholders will be involved in through consultation processes include the:

- Regional Dialogue;
- Nexus Assessment
- Nexus Policy Dialogues