



# Establishing a stakeholder cooperation and coordination platform for implementing Ecosystem-Based Integrated Coastal Zone Management (EB-ICZM) in Kneiss Islands Nature Reserve (Tunisia)

## First Workshop

### INTRODUCTION to the project and main steps to establish the EB-ICZM

Authors:



D. Baldassarri and E. Scepi.

**Amici Della Terra - ONLUS** - [www.amicidellaterra.it/](http://www.amicidellaterra.it/)



F. Pella

**UNDP** – [www.undp.org/content/undp/en/home.html](http://www.undp.org/content/undp/en/home.html)



M. Falcetta

**Proges – Progetti di sviluppo s.r.l.** - <http://www.progesconsulting.it/>



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## INTRODUCTION

The **MED4EBM** (Mediterranean Forum For Applied Ecosystem-Based Management<sup>1</sup>) initiative is a partnership project funded by the ENI CBC MED Programme 2014-2020.

## THE PROJECT SPANS FOUR COUNTRIES

### ITALY

- AdT: *Amici della Terra* ONLUS
- PROGES - *Progetti di Sviluppo* - s.r.l.

### JORDAN

- UNDP: United Nations development programme, Jordan Country Office.
- JREDS: Royal Marine Society of Jordan.

### LEBANON

- TCNR: Tyre Coast Natural Reserve.

### TUNISIA

- INSTM: *Institut National des Sciences et Technologie de la Mer*.

## AIMS OF THE MED4EBM PROJECT

The Project aims at enhancing capacities of various stakeholders and institutional actors involved in the management of coastal and marine areas, and at establishing a cooperation and coordination platform for them to effectively implement Ecosystem-Based Integrated Coastal Zone Management (EB-ICZM). Ecosystem Management uses scientific knowledge and effective monitoring to recognize the connections, integrity and biodiversity within an ecosystem. Institutions and other interested parties in Integrated Ecosystem Management will be able to use this platform as a support to make rational decisions on the planning and management of coastal and marine resources, coordinating effectively on the ground. The Project is developed in four Mediterranean countries (Jordan, Lebanon, Tunisia and Italy); the project's area of interest in Tunisia is the Kniess Islands Nature Reserve.

## WHAT OPPORTUNITIES DOES THE MED4EBM PROJECT OFFER?

MED4EBM proposes the use of innovative tools to address the main issues that often limit the effective application of Ecosystem Management integrated in coastal-marine areas (EB-ICZM). The major difficulties faced by political decision makers and stakeholders involved in the application of EB-ICZM often derive from some types of critical issues:

(1) Need for intense and continuous efforts to coordinate management actions across a wide range of stakeholders (e.g. administrative bodies and government agencies; international programs and projects; social programs and projects and economic associations) and application sectors (e.g. fishing, tourism, transport, biodiversity, conservation);

(2) Intense work by the group of professionals who implement the EB-ICZM, with particular reference to the adaptation of the models available to the specificities of the different ecological orientations and socio-economic systems, as well as in making them operational for their effective application in areas of interest;

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<sup>1</sup> [MED4EBM | ENI CBC Med](#)

(3) Need to collect and manage a significant amount of data through complex databases.

### THE AVAILABLE TOOLS IN THE MED4EBM PROJECT

MED4EBM intends to provide tools to overcome the critical aspects mentioned above, proposing an innovative land and sea management tool based on specific analytical methods and software, which make EB-ICZM much easier for the professional team, interested parties and institutional decision makers involved.

This innovative tool, developed by PROGES and called Integrated Spatial Planning (PROGES-ISP), involves the use of specific software and a series of methodological, procedural and organizational tools, to plan, implement and monitor the dynamics of Ecosystem Management through a participatory and evidence-based approach supported by objective data.

The PROGES-ISP software<sup>2</sup> allows the real-time analysis of a large amount of spatial and tabular data and the redaction of advanced reports, through an interface that facilitates the visualisation and the management of large amounts of data, that they could differ from each other by type, time scale and geographical extension.

The methods and procedural and organizational tools proposed<sup>3</sup> make it possible to manage analytical processes with a multi-stakeholder approach to Integrated Ecosystem Management of coastal areas, through a step-by step procedures based on deterministic methods, ecological analyses and socio-economic assessments. This approach allows project managers and stakeholders to quantitatively assess the relationships between ecosystem components, functions and services, along with associated human activities.

This lays the foundations for the definition of integrated ecosystem management interventions of multi-stakeholder coastal areas.

#### INTEGRATED COASTAL ZONE MANAGEMENT AND ECOSYSTEM-BASED MANAGEMENT

The Integrated Coastal Zone Management<sup>4</sup> (ICZM) is a dynamic, multidisciplinary and iterative process of planning and coordination that deals with sustainable development and coastal resources and which focuses on the land / water. It covers the entire cycle of information gathering, planning (in the broadest sense of the term), decision making, management and monitoring of implementation.

The Ecosystem-Based Management<sup>5</sup> (EBM) is an interdisciplinary approach that balances ecological, social and governance principles at appropriate time and spatial scales in a distinct geographic area to achieve sustainable use of resources; it recognizes the full range of interactions within an ecosystem, including humans, rather than considering individual problems, species or ecosystem services in isolation. EBM uses an approach that integrates all sectors to manage species and habitats, economic activities, contrasting uses and sustainability of resources, allowing to consider the resources that help protect and sustain diverse and productive ecosystems and the services they provide.

### MAIN STEPS TO ESTABLISH THE EB-ICZM: summary of the procedures

This paragraph will be focused on summarising the next activities of the MED4EBM project where the stakeholders will be involved and in which their contributions is crucial.

For all the details about the development of the MED4EBM project, its methodological references and operational frameworks, please see the references at the bottom of the document or in [www.enicbcmed.eu/projects/med4ebm](http://www.enicbcmed.eu/projects/med4ebm) -> Library -> Documents.

<sup>2</sup> [Discover Our Technology - PROGES ISP60 - YouTube video](#)

<sup>3</sup> [www.progesconsulting.it/EBM\\_DSS.aspx](http://www.progesconsulting.it/EBM_DSS.aspx)

<sup>4</sup> [Integrated Coastal Management - Environment - European Commission \(europa.eu\)](http://IntegratedCoastalManagement-Environment-EuropeanCommission.europa.eu)

<sup>5</sup> [The Ecosystem Approach | UNEP MAP \(unenvironment.org\)](http://TheEcosystemApproach|UNEPMAP.unenvironment.org)

A significant part of the MED4EBM project, called Work Package 3 (WP3), aims at establishing one Ecosystem-Based ICZM Decision Support System (EB-ICZM-DSS) in each of the project's target areas. During the following phase, WP4, an Ecosystem-Based ICZM governance protocol in each of the Project target areas will be developed.

The deployment of WP3 and WP4 will be carried out through the execution of two multidisciplinary analytical phases:

### 1) Ecosystem Context Analysis (included in the Phases 2-4 of the project)

### 2) System Cause-Effect Analysis (included in the Phase 5 of the project)

1) The expected outcomes of the **Ecosystem Context Analysis** are: Matrices and Diagrams (phase 2), Indicators (phase 3), Data (phase 4).

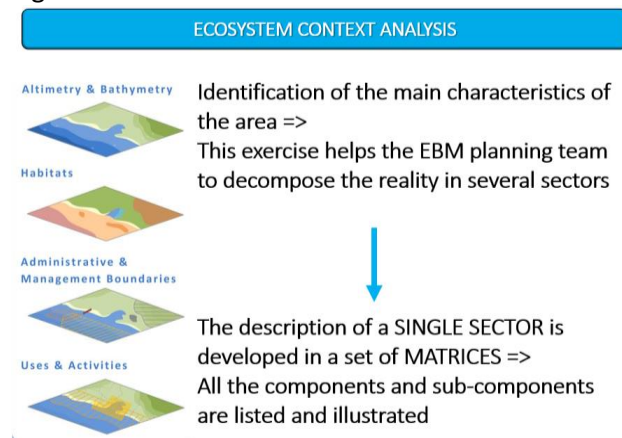
#### Matrices:

Once the key actors – the stakeholders - are involved, with the aim to establish a multidisciplinary group, the next step is the creation of an inventory of biophysical and anthropic systems (Figure 1).

This phase will be achieved filling the Matrices, which are comparable to Excel tables. The description of a single sector is initially developed in a set of system-matrices, or tables where all the components are listed and described.

The system-matrix also includes a brief description of all the components.

Figure 1



#### Diagrams:

The information in the matrices will be used by the stakeholders to identify the interactions between the components. The ISP software is the project's tool in which they, with the EBM team assistance, draw the relations between the components. The outcome will be a diagram, where arrows represent the relations between the components and boxes represent the components (Figure 4, letter A).

#### Indicators:

In the third step of the *Ecosystem Context Analysis* the stakeholders suggest a set of indicators and indexes to quantitatively characterize each component of the system-diagram. The contribution of the stakeholders is important because they can provide information about indicators already used in the area, as well as others that are relevant and efficient. Participating in the indicators' development and selection, the stakeholders can take in consideration the sustainability of the monitoring protocols to collect the data necessary to identify the indicators, based on their experience of human and financial resources.

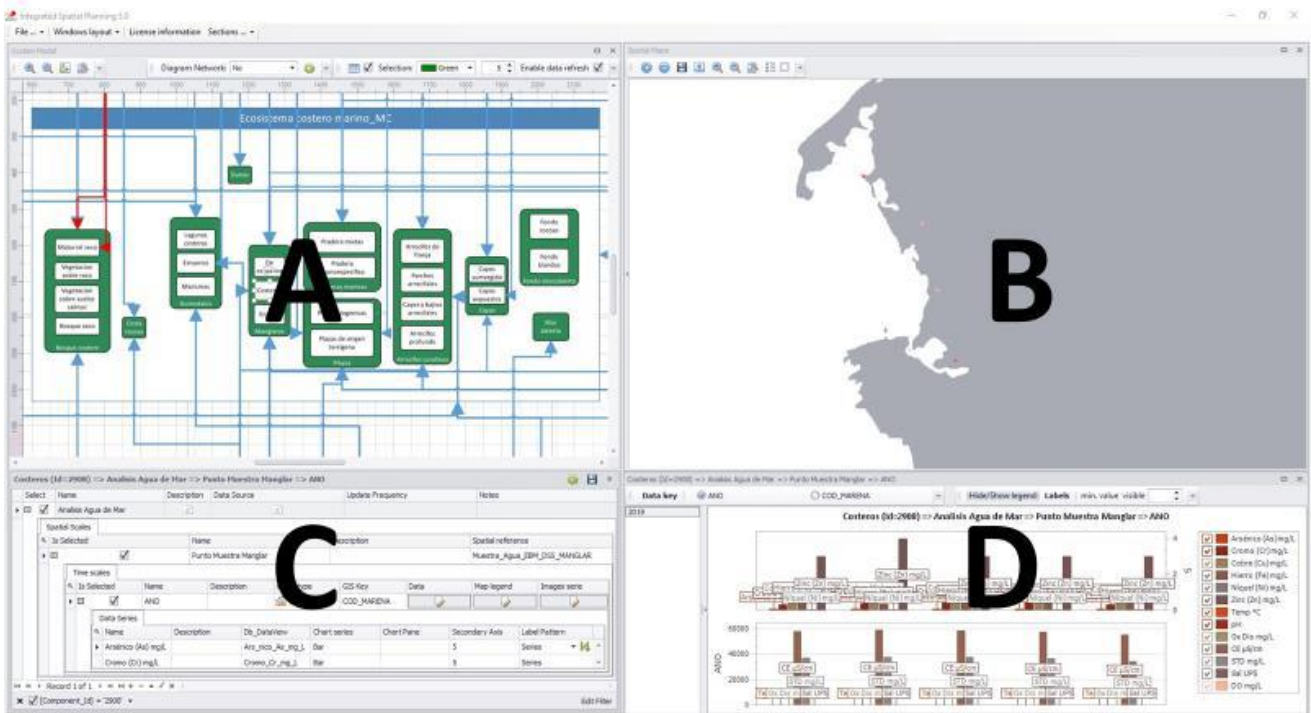
#### Data gathering:

The processes of collection, selection, standardisation, and transformation of the data are carried out through the stakeholders' contributions. Some of the stakeholders provide the data, some others know where to find the information or if the repository institutions require official inter-institutional agreements

for data sharing. Procedures for the data sharing and collection should be established as a priority, in fact one of the more critical parts is collecting the necessary data to full fill the EBM-DSS indicators.

**2) System Cause-Effect Analysis.** In this phase the stakeholders define a coherent and integrated set of management measures, led and helped by using the ISP software, the system-diagram and the indicators resulting from the Ecosystem Context Analysis. The figure 4 is showing the expected outcome of the ISP. Once that the components are linked with data and indicators and entered in the Integrated Spatial Planning, all the information will be visualised as showed in Figure 4 here below. Section A is devoted to the interaction with the System Diagram, the physical representation of the system to be managed; Section B (GIS Viewer) visualise all the spatial reference of each indicators/data inserted into the EB-ICZM-DSS system allowing to identify geographically and spatially the values to be analysed. Section C contain the settings of all the chosen indicators with all the relevant information concerning temporal and spatial scale as well as technical information about data source and the update times. Section D is specifically developed to allow the view of all the data contained in the system in both tabular and chart format.

Figure 4  
Screenshot of the ISP software



Other information about the MED4EBM Project, the methodology and the ISP software:

[Discover Our Technology - PROGES ISP60 - YouTube](#)

[Technical and methodological references and operational framework July 2020](#)

[Technical Report on activities executed and deliverables produced December 2020](#)