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MedSea

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National and Kapodistrian  
University of Athens

## GROWTH AND INNOVATION IN OCEAN ECONOMY GAPS AND PRIORITIES IN SEA BASIN

### OBSERVATION AND DATA

### THE MEDITERRANEAN SEA

A project funded by:  
EUROPEAN COMMISSION, DIRECTORATE-GENERAL FOR MARITIME AFFAIRS AND FISHERIES,  
MARITIME POLICY ATLANTIC, OUTERMOST REGIONS AND ARCTIC

<http://www.emodnet-mediterranean.eu/>

### **Objectives**

The main aims are to examine the current data collection, observation and data assembly programs in the Mediterranean Sea basin, to analyze how they can be optimized, and to deliver the findings to stakeholders through an internet portal.

These can be broken down into secondary objectives:

- Carry out a **literature survey** on existing EU marine programs, outlining the data sources, primary producers and intermediaries
- Produce **indicators of the quality** of present marine data systems as well as **specific outputs per challenge**
- Produce an **assessment of the quality**, extract the synergies, and identify the gaps in the monitoring system in view of the challenges (Data Adequacy Reports)
- **Develop and operate a Portal** that will publish all project outputs and identify whether the present observation infrastructure is the most effective possible and whether it meets the needs of public or private users.

In particular, AM&WFG of the University of Athens leads the Work Package 2 (Wind Farm Siting) with main goals to:

- **Determine the suitability of sites for wind farm development in particular:**
  - ✓ on border between Spanish and French waters
  - ✓ on border between French and Italian waters
- **Evaluate the accuracy and the suitability of the available data via statistical analysis and assessment of the confidence limits of the high resolution data sets**



## **Expected Outcomes**

The practical outputs of the project will be:

- A **literature survey** summarizing the monitoring characteristics of the system
- Two **Data Adequacy Reports (DARs)** to provide an overview of how fit for purpose the monitoring effort is, in view of the challenge of product development
- Two **expert panel reports**
- A **final report** indicating how the EMODnet Med-Sea checkpoint portal could operate once the project has finished
- Specific products from available primary and assembled datasets for each challenge in synthesis:

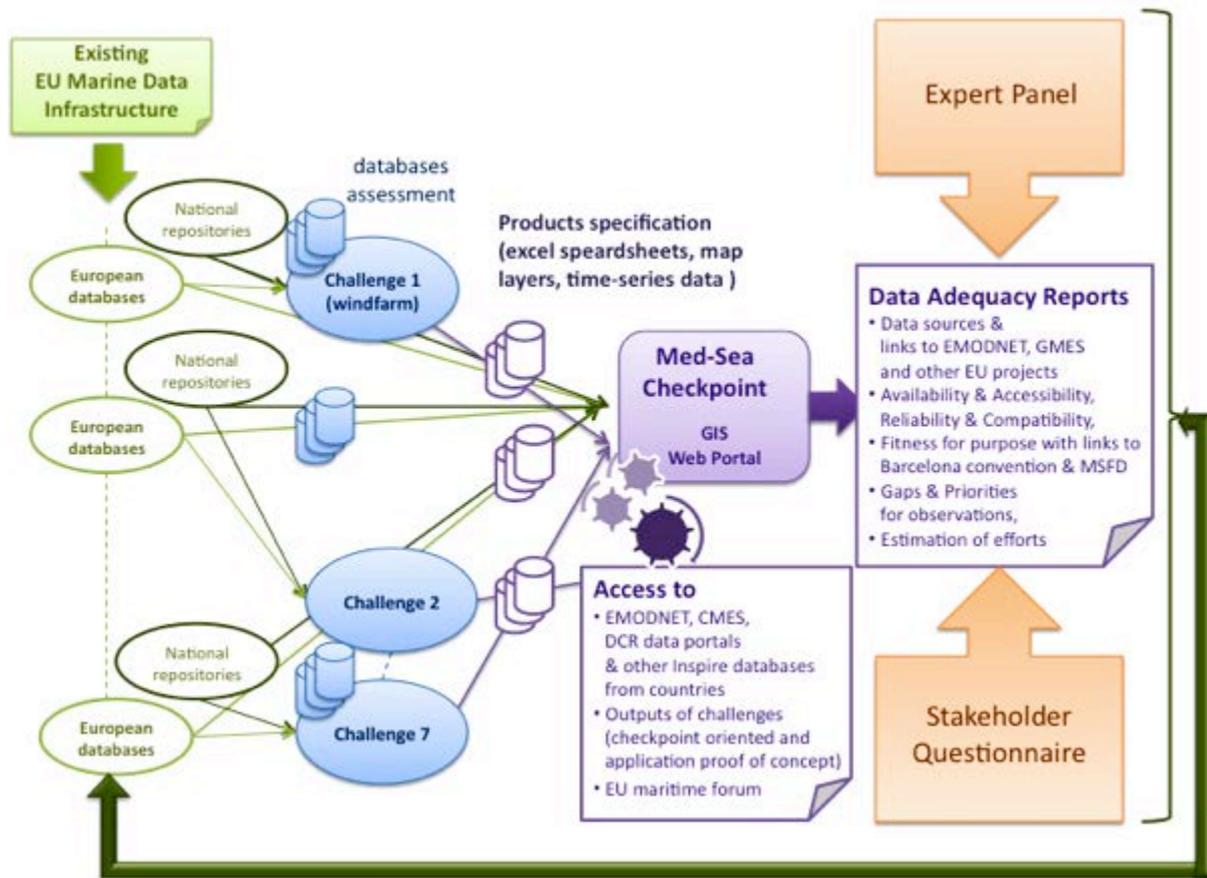
<b>Wind Farm Siting</b>	Determine the suitability of wind farm development in the northwestern Mediterranean Sea
<b>Marine Protected Areas</b>	Analyse the existing Mediterranean network of marine protected area (national and international sites)
<b>Oil Platform Leak</b>	Issue a Bulletin within 24 hours to determine the fate and transport of oil from a platform leakage
<b>Climate and Coastal Protection</b>	Document in several ways sea level changes, water column annual mean temperature changes and sediment mass changes
<b>Fishery Management</b>	Collect mass and number of fish landings, discards and bycatch (of fish, mammals, reptiles and seabirds) by species and year
<b>Marine Environment</b>	Seasonal averages and changes of eutrophication in the basin over the past ten years
<b>River Inputs</b>	Time series of all river water discharges, sediment loading, total nitrogen and phosphates loads, number of eels

For Wind Farm Challenge, in particular the expected outcomes will be:

- **An analysed data set for wind farm siting available that will provide information supporting operations for offshore energy installation**
- **A high resolution wind-wave-tides database for the North-Western Mediterranean area**
- **Statistical analysis of the database including the confidence limits of all data sets for the test region**

## Methods

The project sets out a methodology to collect existing data, to analyze them regarding seven areas of application or 'challenges', and to make the outputs available through a web portal in order to improve the design and assess the information flow:



Wind Farm Sitting Challenge, led by AM&WFG-NKUA, focuses on

- **Task 1. Database building**

- Hindcast model results from high resolution simulations obtained within the FP7 MARINA project will be used:
- 10-year (2001-2010) atmospheric, wave, tidal and ocean currents data
- high spatial and temporal resolution (0.05x0.05 degree horizontal resolution, 1-hour time resolution, 5-vertical levels at 10, 40, 80, 120, 180 m)
- The wave parameters are co-located with the meteorological output fields

- For preselected points in the North Western Mediterranean (Spain-France-Italy areas) directional wave spectra will be available.

- **Task 2. Database analysis and assessment for windfarm siting**

- North-Western Mediterranean: The sea borders between Spanish-French and French-Italian waters: Lon: 2 – 10.5 E, Lat: 41 – 44.5 N
- These data are being stored in a Structured Query Language (SQL) database
- Resource mapping based on a variety of statistical approaches