



# INSEA

Data Integration System for Eutrophication Assessment in Coastal Waters

## MODELLING SYSTEMS FOR COASTAL MANAGEMENT

INSEA focuses on the development of integrated tools for coastal eutrophication assessment combining models, satellite remote sensing and in-situ measurements, capable to act as supporting tools for management and policies implementation.

INSEA will provide to users, in particular to local decision makers, valuable information for assessing coastal eutrophication problems. The data delivery system behind INSEA will be supported by state of the art numerical tools, for simulating the complexity associated with these ecosystems, and the most recent information technology tools for supporting data delivery and storage.

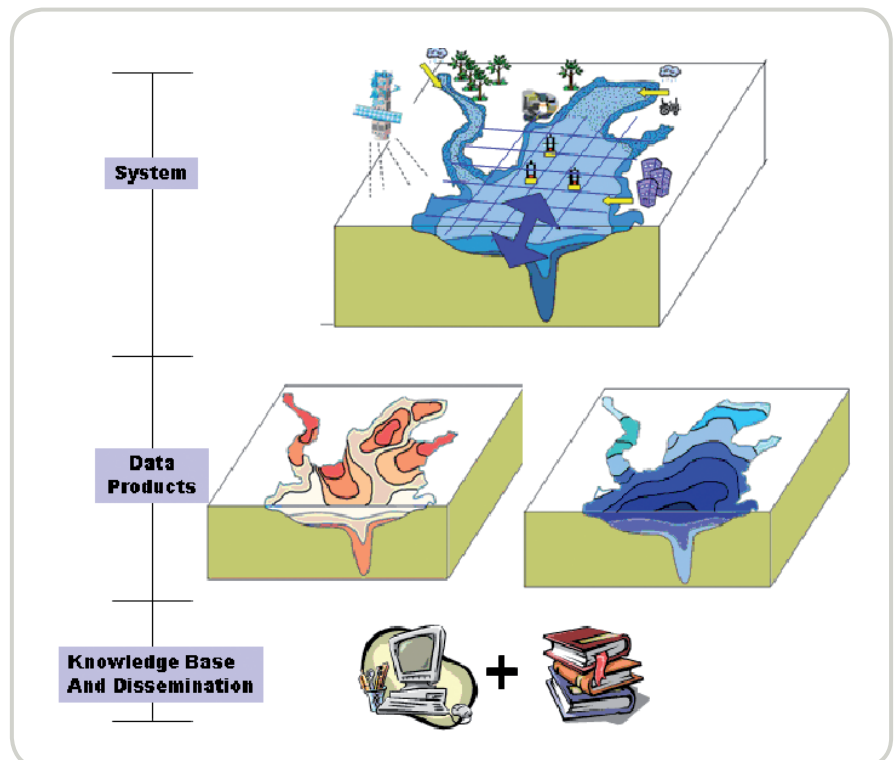
## INSEA SPECIFIC OBJECTIVES

- Downscaling physics from global to regional models and assimilating remote sensing data.
- Improve and develop new tools for real-time in situ measurements.
- Improve and develop new tools for processing and using remote sensing data.
- Improve and validate the ecological models of the areas under investigation, with a special emphasis on eutrophication related parameters.
- Demonstrate the potential of the combination of Earth Observation data, numerical modelling and in-situ data for assessing eutrophication in coastal areas.
- Explore the forecasting capabilities of the modelling system.

INSEA aims at setting-up and validating numerically robust ecological modelling systems in order to describe biogeochemical cycling of carbon and nutrients occurring under different hydrographical and trophic regimes, and to explore the system capabilities in a forecast mode to support coastal zone management issues.

As supported by the Global Monitoring for Environment and Security initiative, environmental services must use those data sources that best meet user needs; in most cases this means that EO data, in-situ data and models must be used together to establish an integrated decision-support capability that is of practical use for policy and decision makers.

The EU Water Framework Directive states that the results of the systems operated by each Member State shall be expressed as ecological quality ratios for the purposes of classification of ecological status. These ratios shall represent the relationship between the value of the biological parameters observed for a given body of surface water and the value for these parameters in the reference conditions applicable to that body. INSEA supports this objective which is translated through the development of methodologies to downscale physics from large scale data systems to regional models.



Source: INSEA

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Data Integration System for Eutrophication  
Assessment in Coastal Waters



## LIST OF PARTNERS

- Instituto Superior Técnico, Portugal
- Hidromod, Modelação em Engenharia, Lda, Portugal
- Comsine, Ltd,UK
- Marine Information Service B.V., The Netherlands
- Université Paul Sabatier, France
- Centre National de Recherche Scientifique, France
- Noveltis, France
- Hellenic Centre for Marine Research, Greece
- National and Kapodistrian University of Athens, Greece

## COORDINATOR

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## PROJECT INFORMATION

INSEA: Data Integration System for Eutrophication  
Assessment in Coastal Waters  
Specific Targeted Research Project  
Contract no: SST4-CT-2005-012336  
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Duration: 36 months  
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