

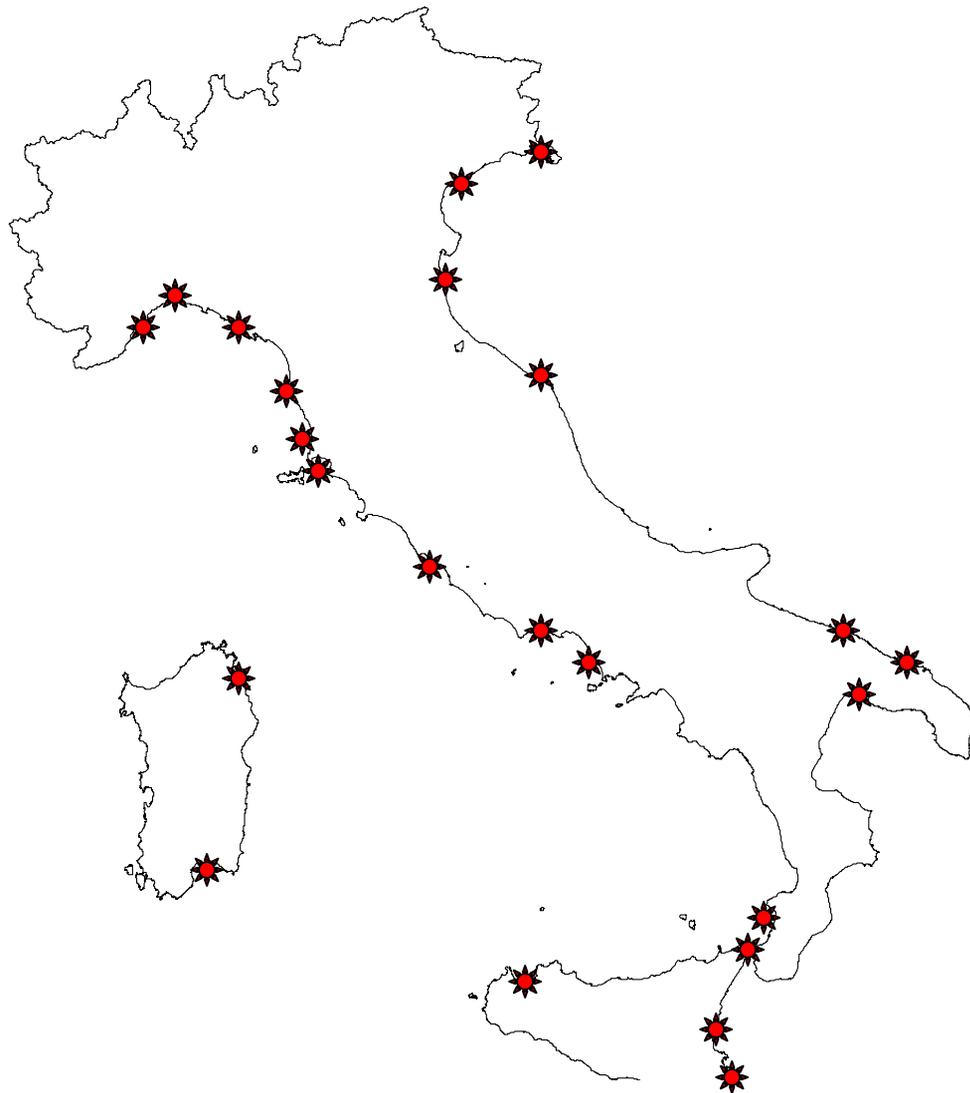
European Union Projects: The “Eco Information” and the “ECOPORTS” projects

Eco Informations in European Ports

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23 Port Authorities (P.A.)
 More than 200 other ports

P.A. is a board which has his own economic autonomy and is composed by a president, a committee, a general secretariat, and a general auditor.

Requirements:
 In the last 3 years
 3 millions t of goods handled
 or 200.000 TEU's

23 Port Authorities were set up by the national law 84/94

- better management of port activities
- great development of port of relevant interest, especially for Port in the South of Italy

Nowadays some modification to the law 84/94 is requested from Port Authorities in order to make Ports more efficiently structured and more competitive with respect to other Ports of Mediterranean Sea and Ports of the Northern Europe.

Port development should always be promoted at the same rate of environmental protection.

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The project

Eco Info was born from a spontaneous cooperation among European Ports.

The aim of the project was to share experiences and competences about environmental topics, so that each Port could learn from the experiences gained by other Ports.

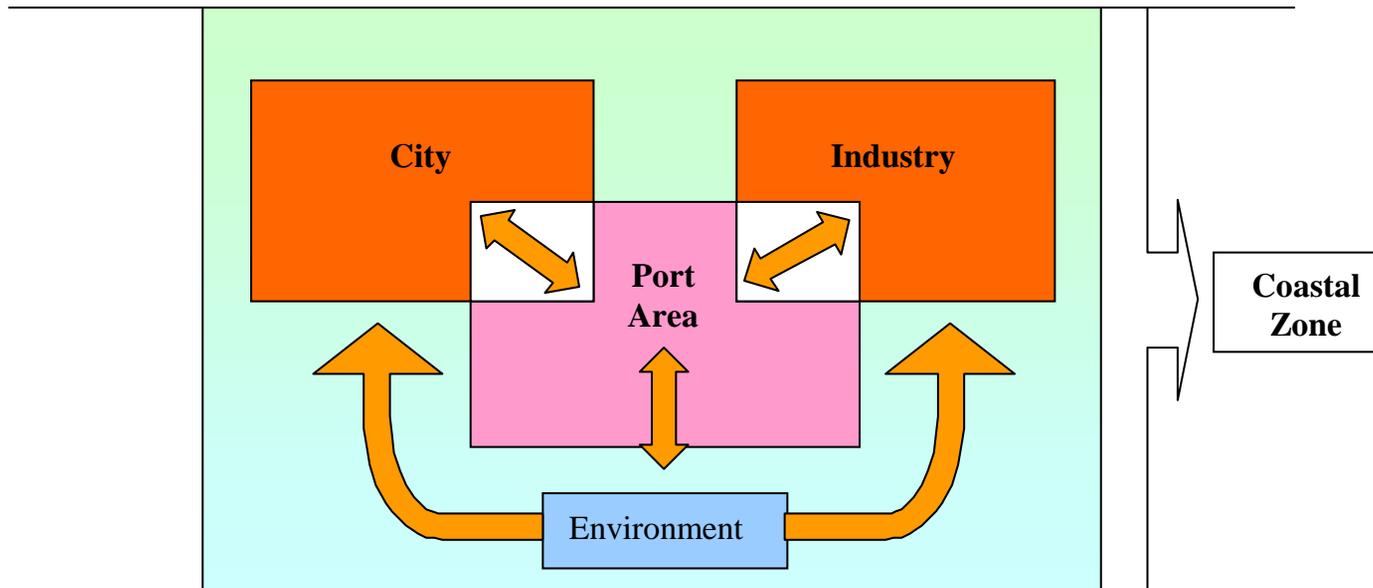
To make Eco Info to be developed correctly, several tools have been created on purpose, such as:

- A format where to record all the experiences gain by ports afferent to the Eco info projects
- A database where to store all the experiences gain by ports
- A web site to host the database and make it accessible to all ports partners
- A tool to evaluate the environmental performance of the port (SDM-Self Diagnosis Method)
- Guide lines for both monitoring and management of environmental aspects in Ports Areas

The aim of this project is the definition of a methodology driving the managers of port activities towards the sustainability with the respect to the environment.

The Port management after United Nations Conference on Environment and Development (UNCED, 1992) must be involved in the sustainable development models.

ECOINFO project is the first step in this direction. It allows an integrated approach for the port management taking into account every situation due to the city-port relationships, in terms of people health protection, of protection of the waters, the soil and the atmosphere.

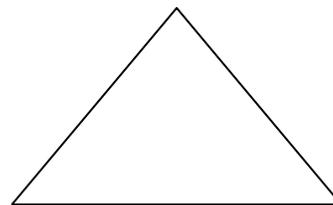


Environmental objectives:

- Ecosystem integrity
- Biodiversity
- Local and global environmental changes

Social objectives:

- Participation
- Social cohesion
- Cultural identity
- Institutional development



Economic objectives:

- Growth
- Efficiency
- Total Quality

General information about Ports

A Port can produce a high environmental impact, involving both the facilities inside the harbour line and outside the wharves and other structures. The impact in both cases is quite different according to the variety of the components to be affected.

- Harbour in the town, i.e. city port structures having effects in the area composed from the urban waterfront (port, city, industry) or activities having particular social effect, i.e. damages on public health.
- Harbour outside of the town, i.e. port structures having environmental effects on the wide surrounding environment.

Each of both categories of Ports can be classified in 4 functional types:

1. Commercial ports.
2. Industrial ports.
3. Mixed activity (commercial and industrial) ports.
4. Marinas.

The **commercial** ports impact comes from three different factors due to:

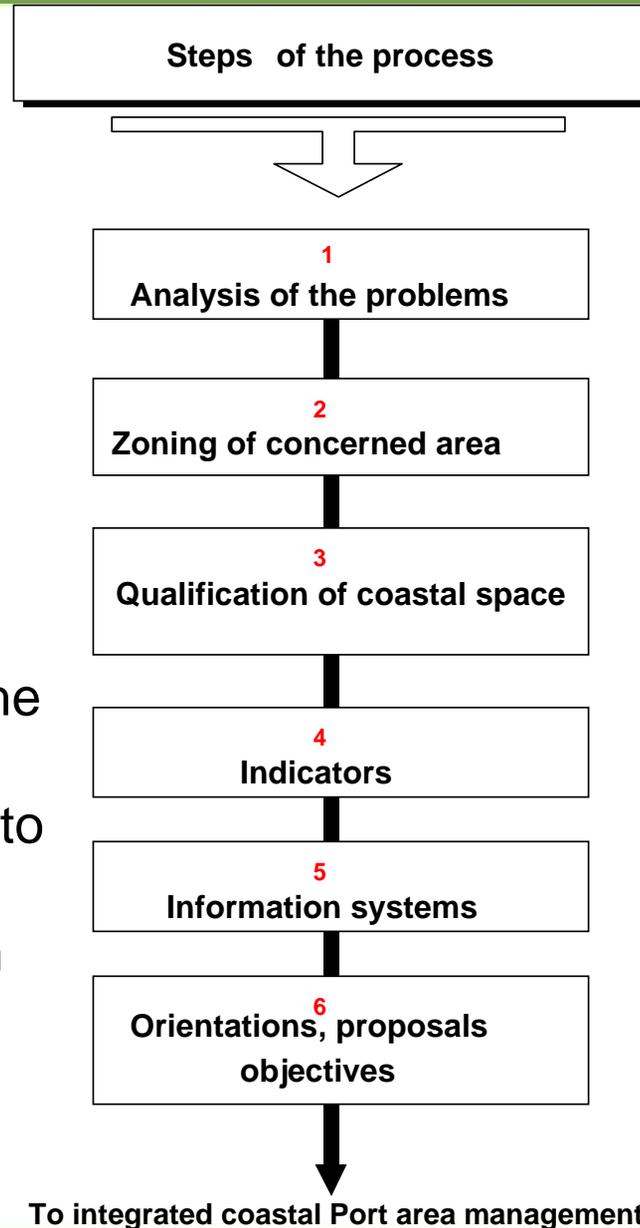
- the kind of goods shipped (bulk materials, liquid materials, containers);
- the kind of cargo ship and terrestrial vectors involved in transport;
- the kind of harbour facilities.

The **industrial** and the **mixed activity** ports impact come from both the harbour activities and from the industrial activities.

The **marinas** have a lower impact, restricted normally on organic marine pollution in the harbour waters.

The general procedure which constitute the methodology is structured along a step by step process.

This architecture composed of 6 steps is the central body of the guide that port managers have to follow in order to tackle environmental concern in port areas.



The help brought by such methodology represents the upstream actions to achieve **before** the establishment of any management plan.

Methodology

1) Analysis of the problems

- general configuration
 - physical features
 - biological features
 - socio-economic features
 - actors
 - regulations
 - environmental problems (SDM)
 - management problems

2) Zoning of the concerned area

The delimitation of the coastal territory, where environmental problems are identified in the port area, is of high concern.

From this step, the zoning operation will precise **the best scale** to approach environmental problems and to propose also a coherent area where coastal actors are really concerned by the problems and their management.

At the **local** level, various zonings are defined by regulations (administrative and economic) or knowledge (environmental).

At the **global** level, some ones exist but generally less than the local level especially regarding zonings dedicated to management objectives. This zoning level is the most important with regards to the environmental management.

3) Parameters for the qualification of the defined zone

The aim of this step is to **characterise** and **qualify** the delimited space. It will be achieved from a complete inventory on the necessary and useful information requested for environmental management, followed by the collect of the whole set of data.

A “check-list” of parameters is proposed in order to cover the main components of the environment, natural and human ones. They are organised under bio-physical and anthropogenic criteria. A certain number of parameters have been grouped together in grids to provide an evaluation of these different criteria.

Criterion	Themes	Parameters
Physical criterion	Geomorphology	Geometry Type of coast Nature of coast
	Coastal oceanography	Swell Tide Currents Sedimentary dynamics
	Coastal climatology	Winds Precipitations General parameters
	Hydrography	Catchment area Sedimentology
	Surface hydrology	Fluvial volumes Hydric status Zoning Hydrodynamic parameters
	Hydrogeology	Reserves Flows Hydrochemistry
	Geochemistry	Mineral elements

4) Building of indicators specifying the environmental situation

To characterise the status of any environment, natural or human, observations and measurements are necessary to supply an objective system of information and evaluation.

As a result of the complexity of the environment, there is a limited choice of specific indicators (levels of nitrates, mercury or lead, etc., the presence of species of bird, diversity of the flora, etc.) or more global indicator which incorporate a range of information.

What is most important here is to define a trend more than a precise situation.

Indicators should highlight the status of the environment and the nature of the pressure brought on it. Depending on the themes handled, indicators determine the range of acceptability beyond which the environment is in danger or irreversibly condemned. The role of the indicators is fundamental for the messages to pass to the decision-making or public levels.

5) Structural and functional elements of an information system as a support for decision making

The optimal and durable management of the information necessary for decision-making requires adapted tools as Geographic Information Systems (GIS).

The GIS allows several options as for instance:

- the acquisition of spatial and thematic data composing a base of geographical information;
- the archival storage of information in the form of rapidly accessible thematic covers;
- the analysis of data using spatial parameters and operators which provide original information;
- the display and representation of the results obtained in various forms (tables, reports, maps and on-screen consultation).

The GIS will facilitate the management of the environmental information related to the industrial facilities as for example the monitoring (sampling stations, results, quality maps) or the integration of various impacts coming from different disturbing sources.

The identification of areas of conflicts and of interest is therefore possible, thanks to the feasibility of simulations.

It appears essential that such system should be connected to the ECO-INFO data base in order to have advantage of the detailed information existing on the environmental problems raised by industrial activities.

6) Formalisation of management objectives and solutions proposals

To define orientations and to fix objectives for a better management of the port area, a good approach should comply the following stages:

- Identification of the problems to be solved in priority and analysis of the causes of these problems
- Designation of a geographical area concerned by the management plan
- Identification of the appropriate management modes to solve these problems
- Identification of the institutional arrangements and the administrative procedures necessary for the implementation of a management plan
- Provide feedback

