



Sea-Use Map Of Lazio: GIS Supporting a Sustainable Marine Resources Management

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In Italy, with more than 7000 km of densely populated coasts, the continental shelf is always affected by a lot of fundamental anthropic activities.

The coastal zone is besides characterised by the simultaneous presence of physical and ecological conditions favourable to the multiple use of natural resources.

In addition to the impacts risen from the local uses, it is necessary to add those which are produced by remote uses of other natural resources: in particular, the coastal sea is subject to local and remote trouble, both from the open sea and from the land use.

For all these reasons it is necessary to face coastal system problems looking to minimize reciprocal impacts of the uses which are in conflict.

This situation generates a conflict between the different use interests and so the most brittle resources and uses suffer and can also be deleted (Marcelli M., 2003 in progress).

The necessity of an interdisciplinary approach finds one's statements on these concepts. Oceanography, ecology, geology, biology, meteorology have to be components (Brondi et al, 2008) of an integrated knowledge able to support the decision through GIS and scenario's simulation.

The aim of this work is to minimize the conflict between different uses, creating a work instrument able to support the decision, in order to select the best use for a determinate marine area.

Present work represents a pilot project for integrated management of coastal and marine zone where all informations, concerning a specific stretch of coast, are gathered inside of a system of management and data improvement. This system integrates environment data, collected by monitoring, socio-economic data, coming from coastal zone uses, simulations of mathematical models and geographic informative platform. It includes some informations which are fundamental for the planning of some activities connected to coastal zone.

This work is the design of a Sea-Use Map of an Italian sea area for characterized by different values and uses of marine resources, useful to explore further marine uses, such as suitable sites for energy production, marine culture, etc. For these reasons the creation of an integrated GIS database, in which all the information are conveyed in a Geo-referenced system, is a fundamental tool. The Sea-Use Map (SUM) of Italy is a key database, in which coastal uses are integrated with environmental data (bathymetry, waves, currents, fauna, flora, etc). A further integration between data and numerical model simulations is allowing to define the most promising and environmentally acceptable areas for such resource exploitation.

Preliminary results demonstrate that such a Sea-Use Map could make us able to an a sustainable coastal marine resources management.