



Coastal Zone Management and sustainability indicators: an holistic approach

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The European Commission, identified a group of expert on ICZM in order to help member states to respond to the EU ICZM recommendation; the experts, recognising the importance of indicators, had in turn established an “indicators and data” working group (WG-ID). The WG-ID proposed a core set of 27 indicators to measure sustainable development of the coastal zone and a further indicator was proposed in order to measure the implementation progresses of ICZM. The WG-ID decided, with the support of the EU Expert Group, to realise an INTERREG project (DEDUCE) with the aim to validate the 27 indicators set as standardized method to implement ICZM programmes, and to verify if data and measurements could be compared amongst countries, regions and at local scale. Even if the DEDUCE set is considered essential and it is shared by experts, its applicability and its employment by the end users remains, as for others similar indicators set, still difficult.

In this context, LIFE “PHAROS” project, leaded by the Ligurian Region and carried out by a group of partners including Local Authorities, marinas and playground private owners and Universities, will be analyzed as a model to organize and make more comprehensible indicators information. In this framework we studied the relations between a marina and corresponding coastal zone. Following the ICZM principles, the proposed methodology foresees three main steps.

- 1) The first analysis is based on a use-use matrix and the definition of a specific indicators set for the evaluation of the interactions between uses.
- 2) Elaboration of a specific use-environment matrix and of specific environmental indicators.
- 3) The final step is represented by the application of a SWOT analysis in order to summarise results in an analytical but “easy-friendly” and communicative way. By the application of a simple

methodology, as the SWOT analysis, the information arising from the indicators set is easily arranged and all strengths, weaknesses and risks to approach the coastal zone management are synthetically and efficiently identified.

The second example deals with the integration of information deriving from different indicators and their employment in order to support decision-makers. The SABBIA project was developed in three phases. The first phase was characterized by the collection of all the existing data and by the integration with the lacking information collected through some focused surveys. A qualitative SWOT analysis was carried out in order to summarise the information. In the third phase, the set of indicators and the sub-themes were used for the formulation of a quantitative SWOT model. The final output of the model is a successful example of integration of information arising from indicators in a management perspective. The evaluation carried out through the use of the quantitative indicators led to a single value for Strengths and for Weaknesses, expressed respectively in terms of % of quality / vulnerability with respect of the optimum.

As the coastal zone is considered as a complex environmental system, we developed a sustainability analysis by the application of holistic indicators. This methodology represents a complementary analysis able to integrate the classic ones. This topic was developed by the project BEACHMED-e, approved within the European INTERREG IIC programme. The results from this analysis allow to quantify the demand of an area in terms of different kinds of resources. In this context a comparison among emergy and DEDUCE indices has been achieved. The comparison highlighted a non-redundancy of the two different approaches and suggested a need for their integration as a key point for their true comprehension and interpretation.

In conclusion, these methodologies represent, by means of their systemic approach, a chance to obtain relevant contributions to understand the functioning of the environmental system "coastal zone".