A daunting survey about the management of environmental information in Italian ports

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Abstract

The environmental performance of shipping and port sectors have become increasingly important and now affect the reputation of the port areas and thus the social acceptability of their activities and development. Despite this commitment, the environmental information collected by the Port Authorities is rarely managed by geographic information systems.
The paper presents data from a survey carried out on the Italian port authorities testifying a huge backwardness in the collection and organization of data, even in cases where an EMS is actually operating.
This makes it impossible to use simple or complex decision support systems in the processes of spatial planning or strategic environmental assessment.

Keywords

Volunteered geographic information, Collaborative mapping, Participatory GIS

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Introduction

The most important Italian ports for freight traffic and passengers are governed by 24 Port Authorities (PA), responsible for spatial planning and environmental management of port areas.
In the last decade Port Authorities have worked hard to improve the environmental performance of activities, also thanks to legislative and voluntary, international and European, initiatives.
Environmental Management Systems (EMS) are increasingly being used to manage the ordinary environmental management, while the management of the environmental effects of the transformations is instead addressed through the Strategic Environmental Assessment (SEA) of the development port master plan. Nonetheless, the environmental information collected by the Port Authorities is rarely managed by geographic information systems (GIS).

The survey

The aim of the work was to trace the state of the art of territorial planning and environmental assessment in Italian port areas. Procedures of planning and environmental assessment should be public and publicized, but materials available on the websites of Port Authorities, municipalities and regions are in general rarely exhaustive and complete. Therefore information was collected through telephone interviews to the Port Authorities' office manager, conducted form December 2014 to June 2015.
For each port the survey has detected dating, compliance with current port goals, authors of Port Master Plan in force, concluded or on-going variants (dating, relevance),

public availability of port master plan and its format (paper, digital, web publishing), environmental assessment on the current or on-going PMP, use of GIS for spatial and environmental information management.
Most significant element were detected by telephone interviews. First of all, most of the port plans are prior to the current L84/1994, which has defined the nature and content of the PMP of new generation. The port plans before 1994 appear collecting a list of projects of public works rather than a strategic plan. Only 11 ports - out of 29 - have a new PMP successive to L84/1994.
As a result of the average old dating, most of the port master plans have never been subjected to an environmental assessment; in some cases the Port Authorities have developed an EIA for a single project but the overall environmental effects of port activities have never been assessed.
As regards the most recent 11 PMPs, 8 were subjected to environmental Impact Assessment (EIA) according to an old concept of the problem, and 3 were subjected to Strategic Environmental Assessment (SEA).
Port Plan variations that have concluded the procedures are 5, while 17 are still pending; such data are very important for two reasons:
- port authorities are trying to approve a new port plan or a variation to the plan in force because such plans don't any longer comply to the development needs of the port;
- the on-going variations are definitely subjected to environmental assessment and their approval would allow an update on planning of port areas.
Processing of new port plans is almost everywhere very long and difficult, both where it is successfully completed and where it is still on-going; it has been described as tortuous and uncertain because of difficult relationships

between port and town planning, reliefs in environmental assessment procedures or, sometimes, litigation.
Lastly, interviews found that there a virtuous relationship between ordinary environmental management of port areas and environmental assessment of port master plans can hardly be found; the reason is obvious but unfortunately serious: the two issues are often handled by different offices within the same institution, and often the lack of communication creates a difficult partnership.

Port authorities and GIS

The survey investigated also the use of GIS as a support of territorial decisions by Port Authorities.
Use of GIS in spatial planning is now widely recognized and accepted at all levels, thanks to its enormous potential, so that, in some Italian Regions, local authorities (municipalities, provinces, regions themselves) are obliged to adopt an Information System. This requirement, however, does not apply to Port Authorities.
The present research has shown that old port master plans were drawn on paper and only later digitized; today they are used as images or in DWG format, while new port master plans are drawn in DWG format and are not managed on GIS.
Only some environmental data - in some cases - are geo-referenced (e.g. dredging) but yet not included in an overall platform.
The Port of Venice and the Port of Bari have a Port Community System (PCS), an electronic platform that connects the multiple systems operated by a variety of organisations that make up a seaport community.
LogIS is the Port of Venice's Port Community System. It is a web-based IT system. Its applications enable the

management of all ship-related documents and are divided into modules. It doesn't concern environmental information or port development plans.
The Levante Port Authority (Bari, Barletta, Monopoli) uses the Port Community System GAIA (Generalized Automatic Exchange of Information port area), a platform that enables the exchange of information between public and private operators of the maritime cluster; the PCS optimizes, automates and manages the port services and logistics by creating efficient processes, reducing procedure time and minimizing the use of paper documents.
Environmental and planning information are not usually loaded into a PCS, but this would be possible to develop specific modules of the platform.

Conclusions

Environmental Assessment and GIS are used to inform and involve relevant stakeholders and the whole community.
The absence of EA and GIS testifies a probable lack of information and probable difficulties to access environmental information from the affected communities.
In recent months, the debate on the reform of the port authorities is in progress; the proposed reforms do not contain any reference to the use of GIS.
Data collected by the survey testify a huge backwardness in the collection and organization of data, even in cases where there an EMS is active and actually operating: almost no Italian Port Authority manages its environmental data by a GIS, almost no Italian Port Authority manages its development plans by a GIS.

This makes it impossible to use simple or complex decision support systems in the processes of spatial planning or strategic environmental assessment.
Such a daunting scenario cannot be ignored or disregarded while working on developing methods and techniques of analysis and evaluation.

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