



TITLE OF THE PRESENTATION: Integrated Coastal Zone Management Plan

Authors: Stelica Hagi^{a,b,*}, Carmen Maftai^{b,c}

^a Ovidius University of Constanta, Doctoral School of Applied Sciences, 58 Ion Vodă Street, Constanta, Romania

^b Dobrogea-Litoral Water Basin Administration, 127 Mircea cel Bătrân street, Constanța, Romania

^c Transilvania University of Brasov, Faculty of Civil Engineering, 5 Turnului Street, Brasov, Romania

* Corresponding author: stelica.hagi@abadi-rowater.ro

1. INTRODUCTION

States with a maritime tradition consider that coastal areas are fundamental for the development of the national economy. But the effects of the interaction of socio-economic activities with the coastal areas are beginning to become obvious as a result of globalization and climate change. For a sustainable development of the coastal areas, an integrated and inter-sectorial approach is needed to be used at the decisional levels. It is the reason why the EU proposes an integrated maritime policy (COM 2007) based on five action domains.

- (i) Maximization of sustainable utilization of the seas and oceans;
- (ii) The building of an innovation and knowledge base in the coastal regions;
- (iii) Ensuring of the best living conditions in the coastal areas;
- (iv) Promotion of the EU's position as leader in the international maritime affairs;
- (v) Improving of the visibility of maritime Europe.

In order to put this policy into practice, the implementing of an ICZM is necessary (Integrated Coastal Zone Management), as it results from the EU ICZM recommendation, 2004/413/EC.

The integrated coastal zone management (ICZM) is "a process of administering the usage, development and protection of the coastal area and its resources regarding the objectives that have been agreed upon in a democratic manner" (Post and Lundin, 1996).

Its role is that of maintaining an equilibrium between the protection of the valuable ecosystems and the development of economic activities that depend on the coastal area, and creating a mechanism that reduces or solves conflicts between the various stakeholders. ICZM comprises of a legal and institutional frame, undergoing of the multitude of sectorial activities, different institutions at a national, regional and local level as well as the interests of involved parties.

ICZM has the purpose of promoting the sustainable management of coastal areas and has to run dynamically, continuously and interactively.

In this paper we will discuss about the necessity of implementing ICZM in the littoral of the Black Sea, between Midia and Vama Veche.

2. MATERIAL AND METHODS

The study area is the southern unit of the Romanian littoral by the Black Sea, between Midia and Vama Veche localities. This is divided into 7 sectors according to the characteristics of the littoral sediment transport and the division of observations made by the Dobrogea-Litoral Water Basin Administration within the "Romanian Waters" National Administration. These are (figure 1.):

- I. Constanta sector (linear length of approximately 19.0 km);
- II. Eforie sector (linear length of approximately 7.7km);
- III. Tuzla sector (linear length of approximately 7.5km);
- IV. Costinesti sector (linear length of approximately 2.6km);
- V. 23 August sector (linear length of approximately 4.9km);
- VI. Mangalia sector (linear length of approximately 11.6km);
- VII. Limanu sector (linear length of approximately 5.9km).

The seven sectors are, in turn, divided in 20 sub-sectors, mentioned in figure 1, considering the continuity of the topographic characteristics of the beaches and considering the littoral sediment transport. The area between the Midia cape and the breakwater in the south of the Midia port as well as the port areas of Constanta and Mangalia are excluded from the study area because they have no erosion related problems. Total length of the seven sectors is approximately 59km.

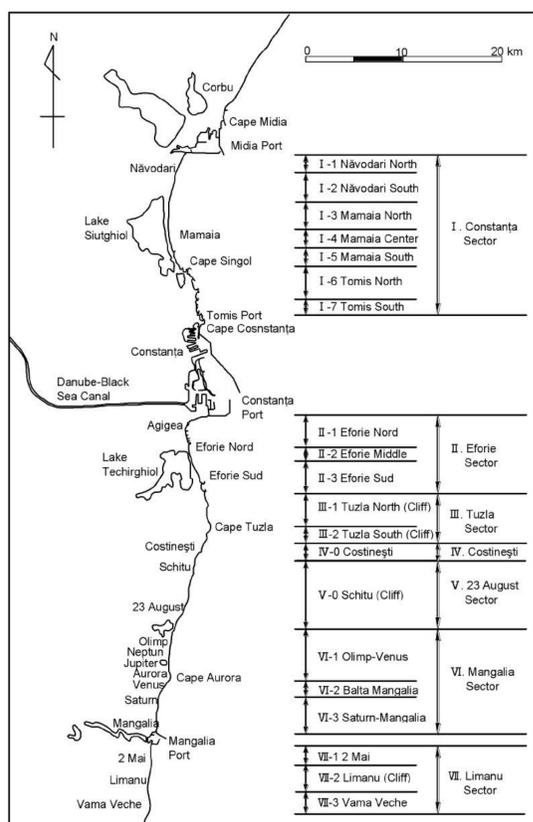


Figure 1. Sectors and sub-sectors division of the study area.

The methodology applied in this study refers to an analysis of the results of Jica and Halcrow studies.

3. CONCLUSIONS

The study made by the Japan International Cooperation Agency (JICA) between June 2004 and August 2006, was initially made for the following of social and economic aspects in Romania, based on existing studies. Subsequently an analysis was carried out regarding the geologic and geomorphologic characteristics, meteorologic conditions, sea levels, normal and extreme waves. The team also made a reconnaissance on the field of all shore sectors examining the geomorphologic characteristics.

The analysis of the wave climate offshore from Constanta was made with the help of input data of wave parameters through numeric modelling resulting in the modification of the shoreline, in both variants, respectively the project is implemented or not.

The results of this study were objectified synthetically in the following points:

- the establishment of a coastal protection Project Implementing Unit within water management institutions;
- first management schemes for coastal protection in the southern unit were developed;
- the sediment transport mechanisms were studied on the numeric modelling of the shoreline, as well as the long-term influence of water level oscillations;
- The gaining of experience in the domain of coastal engineering in Romania.

In the end, a coastal protection and rehabilitation strategy resulted establishing the basis for the making of the Coastal Area Master Plan, a strategic document for the action of the Romanian state regarding the dynamics of the shoreline.

The necessity of making a coastal area Master Plan came from the alarming situation caused by the advancing erosion in certain areas along the Romanian shoreline. The Master Plan settled the strategic vision for the management of the entire Romanian coast. This ensures a sustainable, long-term, approach for managing and tackling of the consequences and implications regarding the environment, the marine ecosystems and socio-economic values of the coastal area. The coastal Master Plan focused on both the restoration of the beach and the consolidation of the existing line of coastal protection, considering the interactions between all functions of the coastal area.

The Master Plan includes the evaluation of the priorities in the implementation process regarding both urgent measures and long-term measures for coastal rehabilitation and protection as well as establishing a plan of action for the integration of structural and non-structural measures for the management of the erosion and the reduction of negative consequences.

The coastal area Master Plan has the scope of configuring the strategic vision regarding the management of erosion related risks throughout the entire Romanian coast taking into account the interactions occurring between various functions situated in the area and various factors that have an impact upon it. The coastal Master Plan focuses on the improvement of the environment both through the restoration of the beach and consolidation of the existing coastal defense line.

The general objective of the Master Plan is that of protection and improvement of the quality of the environment and living standards of the communities along the Romanian Black Sea shoreline and improving safety in the southern part of the coast which is under serious threat by the destructive effects of the process of coastal erosion.

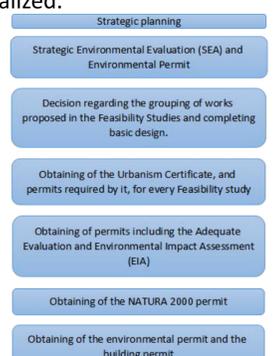
The Master Plan for the coastal zone represents the superior stage regarding the costal diagnosis and shoreline protection solutions considering the JICA study, and is necessary in the funding procedures. Approaches additionally the entire coastal zone of Romania, analyzes solutions based on the strategic environmental evaluation and details the engineering proposals considering the JICA study. It has a major contribution within the ICZM strategy.

The specific objectives of the Master Plan are:

- The development of a program and the works that ensue regarding the protection of the coast from the effects of coastal erosion with the aim of rehabilitation and protection of the shoreline, nearby lands and marine and land ecosystems;
- Protection of economic and social infrastructure endangered by the marine erosion processes;
- Implementing of an integrated program for the monitoring of the coastal zone that helps the maintenance works and operations on a medium and long term (30 years);
- Implementing of an integrated coastal zone management system (ICZM);
- Revision of the development and land use plans that reflects the most recent information regarding the coastal area;
- Avoidance of new developments in areas that are exposed to the risk of erosion;
- Acknowledgement of priorities and the needs for the economic development and investments for the coastal zone, including tourism, ports and fisheries, in line with the principles of ICZM;
- Opportunities for consulting and education of the public.

A key element is ensuring that the necessary processes for the evolution of works identified within the investment plan for the medium and long term are finalized.

The general process can be described in brief:



References:

- [1] COM (2007) 575 – An integrated maritime policy for the European union;
- [2] JICA- Study regarding the protection and rehabilitation of the Romanian Black Sea Coast;
- [3] Halcrow – Master Plan "The protection and rehabilitation of the coastal area"