General guidelines for the implementation of ICZM principles for coastal erosion management and control – CY

1. Policy Objective & Theme

- SUSTAINABLE USE OF RESOURCES: Preserving coastal environment (its functioning and integrity) to share space
- SUSTAINABLE ECONOMIC GROWTH: Balancing economic, social, cultural development whilst enhancing environment

2. Key Approaches

- Integration
- Knowledge-based
- Ecosystems based approach
- Socio-economic
- Technical

3. Experiences that can be exchanged

When a strategy is developed according to the local conditions and needs, it has great potential to be successful. ICZM has to be “calibrated” to actual local conditions and erosion management has to be a result of a “local” ICZM approach. An updating mechanism should be inherent part of any sustainable development strategy, in order to keep it up-to-date and thus effective.

4. Overview of the case

The economy of Cyprus depends more and more on tourist development. Coastal areas concentrate the 90% of tourism activities. There is a growing pressure for the exploitation of the coastal zone, for the creation of beaches suitable for tourist development, especially since coastal erosion is a major problem for the 60% of Cyprus coastline. Fragmented decisions and actions in the past, such as construction of hard coastal structures, usually ignore environmental considerations.

5. Context and Objectives

a) Context

In the early 1990’s, the government of Cyprus realised that coastal erosion threatened an important natural and financial resource: the coast. There was a need for a coherent strategy on erosion management within the framework of ICZM. Thus, the Coastal Unit was created under the Ministry of Communication and Works (Public Works Department) in order to cope with the need for combating coastal erosion. At the same time, studies have been procured to support the Unit and the government of Cyprus for efficient and effective erosion management (e.g the study Coastal Zone Management for Cyprus (1993-1995) by Delft Hydraulics (NL) in cooperation with the Coastal Unit).

b) Objectives

The basic objective of this concerted action of the Government of Cyprus was to find the proper methods to protect the coastline and improve the quality of the beaches where this was considered necessary, without serious consequences to the environment. A partial objective was to develop a technically sound and environmentally safe strategy for coastal protection

and maintenance, based on thorough knowledge of the underlying physical and environmental processes.

6. Implementation of the ICZM Approach (i.e. management, tools, resources)

a) Management

The authority responsible for the technical part of erosion management in Cyprus is the Coastal Unit of the Ministry of Communications and Works. The competent authority for licensing coastal structures is the District Officer of each District (under the Ministry of Interior). 7 Governmental Departments are involved in the decision making process for coastal policies, planning, and development.

b) ICZM tools

In the early 1990's, very little was known in Cyprus about the natural system of the coast, erosion mechanisms, sediment transport and wave dynamics. It was important to understand the system, in order to proceed with solutions. The approach to cope with coastal erosion, was thus, structured in targeted phases:

- Problem definition
- Data collection
- Set-up a system of field measurements (coastal profiles, sediment characteristics, photographic surveys etc.

Based on the data already available and that newly collected, with the support of the Study "Coastal Zone Management for Cyprus", by 1995 the Government of Cyprus had, in hand, a set of important ICZM tools:

- General Policy Guidelines for Coastal Protection
- Coastal Defence Structures (options and methods)
- Master Plans for Coastal protection and improvement works for three coastal areas in Cyprus which were characterized as priority areas (the coasts of Limassol, Pafos and Larnaca)

General policy Guidelines referred to:

- giving priority to "soft" protection, such as beach nourishment using sand or gravel, where this is possible,
- using "hard" or "rigid" coastal defence structures only when absolutely necessary. Even in those cases, proceeding with environmental friendly design of the geometric characteristics of the structures, i.e. low crest, keep a distance from the coast in order to minimize aesthetic impacts etc.,
- when applicable, prefering to apply retreat management,
- introducing the "do nothing option" in the decision making process,
- organising an ad hoc committee, with the participation of representatives of all the stakeholders. This Committee would actively participate in all the steps of the shoreline management study, so the final decision would have social consensus.

7. Cost and resources

The cost of this approach is a running cost, since the Coastal Unit is in operation, the monitoring system is also effective and studies by external experts are still carried on when and where needed.

8. Effectiveness (i.e. were the foreseen goals/objectives of the work reached?)

The setting up of the technical "Coastal Team" in Cyprus and the development of the first ICZM tools focused on erosion management, was a very fast, well structured and efficient work. It only took 3 years to become operational. The same structure still applies for erosion management. It was the first time that Cyprus had an ICZM approach for coastal erosion. The government adopted it, although this meant to stop the construction of hard coastal structures. This was not an easy decision,

since contractors and local authorities strongly resisted: they wanted, for their own reasons, the construction of offshore breakwaters everywhere. For more than ten years (1995- 2005) very few hard structures have been constructed in Cypriot coastlines.

9. Success and Fail factors

The strategy and the Master Plans that have been adopted by the government of Cyprus as official policy documents, are still in force. They were successful mainly because they were the result of on-the-spot technical work, actual field data and of integration of local needs and available resources.

Coastal tourism development is very rapidly expanding in Cyprus. So, several of the provisions of the strategy/ guidelines and the solutions in the three areas with the Master Plans, are now out-of-date. There should be a built-in process of updating those decision support ICZM tools in given time intervals (e.g every three years), according to the new conditions, in order to keep up-dated the management capabilities to plan, control and improve on time the coastal infra-structural works in an environmentally sound way.

10. Unforeseen outcomes

Coastal erosion is still not included in the planning of coastal tourism development. So, it is very usual to have contradicting needs e.g. the erosion strategy suggested soft coastal interventions for agricultural. However, the new tourist land uses needed urgently to alter erosion. The seeming inefficiency of the “soft” strategy worked as an excuse for the Authorities to ignore those “soft” guidelines and, after 2005, new studies were presented which suggested the construction of hard coastal structures in several tourism coastal areas in Cyprus would be a better solution. Local societies were also more satisfied as infra-structures and investment of money in an area is always welcome by locals. The construction of a series of offshore breakwaters in two coastal areas, therefore, started since summer 2009.

11. Prepared by

Xenia I. Loizidou, Coastal Engineer, ISOTECH Ltd, Cyprus

12. Verified by

Xenia I. Loizidou, Coastal Engineer, ISOTECH Ltd, Cyprus

13. Sources

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