

Environmental Impact Study vs engineering solutions for combating coastal erosion, Hrysohou Bay - CY

1. Policy Objective & Theme

- SUSTAINABLE USE OF RESOURCES: Preserving coastal environment (its functioning and integrity) to share space
- SUSTAINABLE USE OF RESOURCES: Sound use of resources and promotion of less resource intensive processes/products
- SUSTAINABLE ECONOMIC GROWTH: Balancing economic, social, cultural development whilst enhancing environment

2. Key Approaches

- Integration
- Participation
- Knowledge-based
- Socio-economic
- Technical

3. Experiences that can be exchanged

Non-traditional actions of erosion management and control using “soft” methods, as well as ICZM, are still unfamiliar to people and frequently resisted. Civic engagement has to be activated within the process of ICZM for the success of the implementation of sustainable and acceptable solutions in eroding beaches. Awareness-raising coupled with appropriate policy decisions should be strengthened. Coastal erosion needs a policy perspective, pro-active and integrated approaches, not just engineering solutions.

4. Overview of the case

In 1998, the Public Works Department of the Ministry of Communication and Works launched the study for the protection and improvement of the coast of Hrysohou Bay. The contract included the execution of an Environmental Impact Study (EIS) from an independent consulting office, in parallel and in consecutive and inter-related phases with a coastal engineering study, so the final decision of the type of coastal protection and improvement works would be based on sound environmental parameters.

5. Context and Objectives

a) Context

Hrysohou Bay is located at the north-west part of Cyprus. It is a bay with 38 km coastline length, with rather low tourist development until now, but with a very high potential and trends for future development. The only coastal structure in the entire bay was a small fishing shelter, located at the centre of the bay. The western 10 km of the bay, belongs to the protected Akamas peninsula, with high ecological importance. No structure is permitted within the peninsula. Hrysohou area is a very important ecological area (nesting beaches of *Caretta caretta*, corridor for migrating species etc.) and an exceptional archaeological site (the ancient Kingdom of Marion) with a rich Byzantine heritage. The central part of the bay has suffered from coastal erosion most probably due to sand mining and river damming.

b) Objectives

The objective of the study was to prepare an environmentally sound Master Plan for the entire coastline of Hrysohou Bay, and detailed designs for a priority area (the central part of the bay), for combating erosion and develop amenity uses in the area. The parallel and interactive execution of the EIS guaranteed this objective.

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

a) Management

The Public Works Department is the authority responsible for the execution of the works, while the “owner” is the Local Authority – the Municipality of Hrysohou. The EIS is submitted to the “client” in this case the engineers, and then, if the “client” agrees, it is submitted to the Environmental Committee for approval.

b) ICZM tools

The coastal engineers proposed the construction of hard coastal structures – chains of breakwaters, revetments and groynes along most part of the bay. The Environmental Impact Study questioned the engineering solutions. The EIS suggested to re-consider this “hard” approach since the area is a very important ecological and historical site, and indicated that several studies were missing, such as a coastline evolution study etc. The EIS stressed also that the aesthetic impact of the suggested solution was significant and should be considered.

The Technical Environmental Committee, chaired by the Environment Service and members from 10 governmental departments, was blocked by these conclusions and could not proceed with a suggestion to license the proposed structures. This created conflicts with the coastal engineers, the local authority, the local community and the competent authorities and decision makers, since the implementation of the coastal works was delayed and for some time unsure. However, three years later, the Board of Ministers suggested the construction of the breakwaters. Now (2009) the first four offshore breakwaters are under construction.

7. Cost and resources

The cost of the study, both the engineering and the EIS, was undertaken by the Public Works Department. However, the engineers were responsible to indicate the EIS consultants and pay them.

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

9. Success and Fail factors

Social perception had an important role in this case. People, locals and decision-makers believe that hard structures are the only solution if they want to have a nice beach, attractive for tourism. The strong evidence that questioned the “hard structures” approach, was introduced through the environmental study. People were not ready to accept the possibility of adopting another development model for their area, more environmental friendly, more sustainable. For years people, including decision-makers, have been persuaded that breakwaters are the only solution for the well being of their area. Social perception and environmental considerations seem in this case to have a serious conflict. Local Authority and local people felt that they are going to miss a chance for an important tourist infrastructure. So they attacked the EIS group through radio, newspapers and in meetings. Another problem was that the budget of the EIS was below the budget of the coastal engineers. This created a dependency of the EIS, to avoid conflict with the coastal engineers. When the EIS questioned the engineering solutions, the engineers denied payment for the EIS study. The Board of Ministers, in Cyprus, can provide a license through a process that does not necessarily need to be in line with any Environmental or other study. The process is called a “notwithstanding process”.

10. Unforeseen outcomes

The example of Hrysohou became a “case-study” for several studies, mainly strategic, that aim to promote public participation and stakeholder involvement. The need to create the infrastructure, which includes technical support of Local Communities, came up for discussion in Cyprus although little has been done since.

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13. Sources

- Environmental Impact Study for Coastal Protection Works in Hrysohou Bay, 500 p., Nicosia, 2002, PROPLAN Ltd



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