

Application of sand from an offshore bank for beach nourishment: pursuing the precautionary principle - LT

1. Policy Objective & Theme

- ADAPTATION TO RISK: Preventing and managing natural hazards and technological (human-made) hazards

2. Key Approaches

- Technical

3. Experiences that can be exchanged

This case study exchanges experience about how a shoreline, which is threatened by an ever-increasing storm surge, can be managed in a precautionary way combining shore nourishment with environmental impact assessment, care for the coastal and aquatic NATURA 2000 habitats and respect for economic interests of coastal communities.

4. Overview of the case

The growing demand of sand needed for beach nourishment works and limitations concerning land-based aggregates has initiated the offshore exploration of the sand deposits in Lithuania. The first attempt to extract the sandy aggregates in the Lithuanian marine zone was performed in 2008. Many countries are considering beach nourishment as an effective and environmentally-friendly tool. The High Level Commission established by the Government of Republic of Lithuania concerning the sand extraction from the offshore deposit and beach nourishment stated that no negative effect on environment will be made.

5. Context and Objectives

a) Context

Lithuania possesses a short coastline: only 90.66 km. Its greater part – 51.03 km – lies along the Curonian Spit, whereas the remaining part – 38.49 km – spreads further north of Klaipėda. The types of coastline are also quite different – from almost wild nature to areas of high urbanisation. Key problems and issues which have to be addressed are twofold: Firstly, the planned offshore dredging site is located next to the Kuršių nerija national park. Secondly, the process of sediment dumping and the turbulence of the bottom at the nourishment sites might inflict losses to a dozen local small-scale fishermen which use the Baltic foreshore as their fishing ground.

b) Objectives

The specific objectives to be achieved are to investigate possibilities for application of sand from an offshore bank for beach nourishment. Pursuing a precautionary principle in the case of the coastal zone which is threatened by an ever-increasing storm surge. Timescale associated with implementation and goals achievement of this pilot study is 2008-2009.

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

a) Management

In 2003, the Ministry of Environment of Lithuania approved the National Shoreline Management Programme. The responsibility of implementing the Programme was assigned to the Klaipeda County Governor's Administration. It is responsible for the programme the main aim of which is to restore and to maintain the Baltic Sea coastline. Also, in the process of application of sand from an offshore bank for the beach nourishment, a close co-operation among Neringa, Klaipeda and Palanga municipalities, and the Kuršių nerija national park administration is crucial.

b) ICZM tools

This case study witnesses a complex approach towards ICZM comprising policy, legislative, spatial planning and technical tools. According to Lithuanian legislation, all coastal management issues, including coastal defence, development and/or coastal conservation are integrated into the general physical planning and management framework. Requirements exist to prepare territorial planning documents for shoreline management and assess environmental impact of the planned solutions. The Klaipeda County Master Plan was adopted in 2002. It is compulsory according to the Law on Territorial Planning, and some issues of ICZM might be regarded as state policy as Klaipeda County covers the whole coastal area of Lithuania. It aims to provide clear guidelines for sustainable and integrated development priorities of the Klaipeda county until the year 2020. It is to become a key part of the state spatial planning system and a guide for other plans. The main principles of the National Shoreline Management Strategy are integrated into the Klaipeda County Master plan.

An EIA scoping study has to be done prior to a full-scale EIA process and EIA conclusions should be approved by the Government prior to any coastal or offshore activities started. All Lithuanian territory, including the sea, falls under the Law of Territorial Planning. It is the task of the Klaipeda County Governors' Administration to prepare a special plan for offshore dredging and spatial planning document for pertinent areas. There is no united permitting system developed but many of the key elements exist and only slight amendments to the existing legislation are needed. Rights to use the seabed are not regulated yet and seem to be the most difficult issue.

The environmental impact, especially in the sand, needed for these activities, extraction sites, is one of the main issues. In order to ensure that exploitation of sand from an offshore bank will not cause considerable negative effect, especially on the sensitive near shore zone of the Curonian Spit, the High Level Commission was established by Government of Republic of Lithuania. By the decision of the Commission concerning the sand extraction from the offshore deposit and beach nourishment was positive, stating that neither a negative effect on the environment nor sediment dynamics on the near shore zone will be made.

7. Cost and resources

€1.65 million annually.

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

The objectives of the pilot stage of this case study (2008-2009) have been achieved in the timescale defined. The extraction of the sandy bars of the Juodkrante-Preila area could in a long term provide 11.6 million m³ of sand suitable for beach nourishment without any harm to the environment. Regarding process efficiency we should consider how effectively a chosen strategy mitigates the corrupted natural conditions of the coastal dynamic equilibrium, or how effectively a chosen strategy is able to reduce the negative impacts of global climate change. In this respect the nourishment of the mainland foreshore using extracted or dredged bottom deposits might appear to be the only truly effective in a long-term coastline management strategy.

9. Success and Fail factors

Continuous funding is critically important for the success of the programme. It is a rather costly strategy, unless the foreshore nourishment costs are internalised either into the Klaipeda seaport operational costs or into the costs of coastal leisure services.

10. Unforeseen outcomes

Both, positive and negative impacts that resulted from, or were influenced by, the implementation and approach and are linked to the context of ICZM are related to an increased public attention on the problems of the shoreline management in

Lithuania. The positions of proponents and opponents of the 'soft' shoreline management options became even more polarised due to the launched pilot programme of application of sand from an offshore bank for the beach nourishment.

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13. Sources

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Preila beach nourishment-2 (4.94 MB) 