

# Managed realignment to create a Nature area and give an economic stimulus in Perkpolder - NL

## 1. Policy Objective & Theme

- ADAPTATION TO RISK: Managing impacts of climate change and safeguarding resilience of coasts/coastal systems
- ADAPTATION TO RISK: Preventing and managing natural hazards and technological (human-made) hazards
- 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
- Ecosystems based approach
- Technical

## 3. Experiences that can be exchanged

Managed realignment is a new way of thinking about improving safety against flooding and creating new environments for Nature and human activities. This method of flood defence creates space - inter-tidal environments such as saltmarsh and mudflats – in which the sea can safely move. This can contribute to the EU Habitats Directive. It can also help in the long term strategy of adapting to sea level rise through natural, inter-tidal mechanisms.

## 4. Overview of the case

The plan to renovate the old ferry port of Perkpolder has, at its heart, a managed realignment scheme that will create a new Nature area of 75 ha. A new dyke will be built landward of the present dyke with the old dyke maintained but breached. The economy will be strengthened and the quality of life improved.

## 5. Context and Objectives

### a) Context

Until a few years ago, Perkpolder was a busy ferry port on the Westerschelde estuary (southwest Netherlands). Since 2003, the ferry has no longer been used and the port has become deserted. The hinterland is agricultural polders protected from sea flooding by 9-10m high dykes.

### b) Objectives

Innovative flood defence is being used to increase safety as well as provide an economic stimulus to the area and improve the standard of living of the community (e.g. aquaculture). It anticipates the option of a primary dike which is resistant to wave splash-over in the future (>50 years) Residential units and recreational areas will be developed against a background of natural saltwater in an area of reduced tidal amplitudes.

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

## **a) Management**

Rijkswaterstaat (Directorate-General for Public Works and Water Management) together with the Municipality of Hulst, the Province of Zeeland and the District Water Board were responsible for the ICZM approach. The Dutch Forestry Commission, Department for Rural areas and the private sector were also involved. The Municipality of Hulst and the Province of Zeeland (together with the private sector) are now the lead responsible parties for the commercial parts of the area development of Perkpolder.

## **b) ICZM Tools**

The partners have, together, developed an integrated plan for Perkpolder. There was a great effort made to use new methods for flood protection as part of an integrated, regional, development plan. It embraces three main elements. A new landward dyke will be built west of the current dyke. This latter dyke will then be breached and the area between the two dykes (the Eastern Perkpolder) will be subject to the full tidal flow of the Western Scheldt. This will create a new, brackish, tidal environment (75 ha) which will act as a buffer in front of the new sea-dyke. The old dyke will, therefore, also act as a breakwater for the new dyke. Due to deposition of sediments the height of the salt marsh can keep up with the pace of sea level rise. Thus the sea defences will be strengthened using natural processes.

The old harbour square will be raised to a height of 10m, creating a hill, on which new properties will be built with a view of the Western Scheldt. This area will be safe from currently predicted, rising sea level for the next 200 years. A further, broad flood protection zone, the Western Perkpolder, will be developed on the inland side of the actual dyke. Holiday residential units will be built on artificial hills and the newly developing natural landscape and a golf course provides an opportunity for the possibility of future tolerance to seawater washover instead of raising the dyke.

These new defence measures will also allow choices for further, future safety measures e.g. raising the dyke or strengthening it, to be deferred.

New, entrepreneurial, socio-economic opportunities due to the salt water intrusion will have the time to develop e.g. aquaculture, growing salt-loving vegetables, using floating greenhouses with their own supply of freshwater, growing worms for sea fisheries. It is expected that commercial interests will determine whether these types of activities become popular once it is seen that there is practical, financial gain to be made.

There was stakeholder participation and communication with the local community and relevant stakeholders from the outset. They were involved from the initial, shared analysis through to the final Plan development. Five workshops were held with an independent chairperson. All the parties originally agreed to put their sectoral interest on one side and work with open minds making the process very creative. It was also felt that the public bodies complemented the private organisations well.

There was a cost-benefit analysis carried out which helped the public sector bodies to take the relevant decisions. Work is due to start in 2009 and be completed in 2012.

## **7. Cost and resources**

Costs are estimated at €125m.

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

This type of coastal defence system has marked advantages over the more common, single line dyke defence system as it allows multi-functional usage.

## **9. Success and Fail factors**

It was felt that all the parties working together from the beginning was a major success factor. The parties also took the time required for a multi-party, decision-making process and to recognise their different, organisational (cultural) differences.

The development plan was well integrated with new residential units being situated in attractive naturalised, landscapes. This included reserving space for the future since the dyke system has to prevail for 200 years.

The cost-benefit analysis made it clear that the intended development of Nature areas would add to the value of the residential units and recreational opportunities. New jobs would be created in the region. In other words, a broad flood protection zone with a variety of uses would result in a positive balance for society.

Communication with the local community and relevant stakeholders from the outset was also deemed to be significant to the success of the work.

## 10. Unforeseen outcomes

None as yet although the time scale would mitigate against seeing such changes at this stage of implementation.

## 11. Prepared by

Alan Pickaver, Coastal & Marine Union (EUCC), NL.

## 12. Verified by

Leo Adriaanse, Rijkswaterstaat, NL.

## 13. Sources

- ComCoast flood risk management schemes (2007) Rijkswaterstaat, Netherlands.
- ComCoast project Perkpolder (2007) Rijkswaterstaat, Netherlands
- Hulst Perkpolder bestemmingsplan (2008) van Aalst T. C. M. C. RBOI Middleburg.
- [www.perkpolder.nl](http://www.perkpolder.nl)



ComCoast project Perkpolder (811.54 KB) 



Comcoast - Flood\_risk\_managment\_schemes (9.04 MB) 



Hulst Perkpolder bestemmingsplan (1.88 MB) 