Nature compensation for port development, Rotterdam - Netherlands

1. Policy Objective & Theme

- ADAPTATION TO RISK: Integrating coherent strategies covering the risk-dimension (prevention to response) into planning and investment
- SUSTAINABLE USE OF RESOURCES: Preserving coastal environment (its functioning and integrity) to share space
- SUSTAINABLE ECONOMIC GROWTH: Improving competitiveness

2. Key Approaches

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

3. Experiences that can be exchanged

Nature and recreation compensation from the destruction of natural areas due to, in this case, port development.

4. Overview of the case

Rotterdam harbour has run out of space to expand and has gained permission to re-claim another 2000 ha. from the North Sea. This expansion for the port's activities will see the development of 25,000 ha. of protected marine sea bottom and 750 ha. designated as protected land and recreational areas.

5. Context and Objectives

a) Context

The Maasvlakte is part of the harbour and industrial area of the city of Rotterdam, one of the biggest and most important in the world. It was created in the 1960s by reclaiming land from the North Sea and before completion the area was a sandbank, hazardous to shipping. The sand for the suppletion was largely taken from the North Sea and the Lake of Oostvoorne. In the harbour, there was little room for further expansion. Therefore, directly adjacent to the existing harbour and industrial area, it was decided to expand Rotterdam seawards creating a new location – the Maasvlakte 2. This new area will be ca. 2000 ha., with deep water (20m) channels for the larger container ships now being built. It will accommodate increased anchorage and channels (510 ha.), sea defences (230 ha.),harbour container storage space (615 hectare), distribution (175 hectare), chemical industry (190 hectare) and infra-structure (290 ha.). The expansion will make the harbour 20% larger. On completion, Rotterdam harbour will occupy 12,000 ha.

Sustainability is a high priority in the construction and use of Maasvlakte 2, both in terms of the creation of the area and the selection of the companies that may be established there. The selection criteria will go beyond just the financial performance. Environmental aspects, such as the air and noise pollution the company creates, will also be considered. Companies will only be sought for Maasvlakte 2 that conduct their activities in a sustainable manner.

b) Objectives

The Project Main Port Development Rotterdam (PMR) was initiated to find room for the growth of the harbour and industry in the main port of Rotterdam. In addition, it is intended to improve the living conditions in and around the harbour.

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

a) Management

Project Main Port Development Rotterdam is a collaboration of the Ministry of Transport, Public Works and Water Management, the Ministry of Economic Affairs, the Ministry of Finance, the Ministry of Housing, Spatial Planning and the Environment, the Ministry of Agriculture, Nature and Food Quality, the municipality of Rotterdam, the city region of Rotterdam, the Port of Rotterdam, the province of South Holland, and the province of Zeeland. The Port of Rotterdam is responsible for the construction of the new harbour area and the national government is responsible for the associated mandatory nature compensation. The province of South Holland has responsibility for the 750 hectares of nature and recreation area.

b) ICZM tools

Maasvlakte 2 will be built by constructing a sea-wall in the sea. Sand (600 m3) will then be sprayed into the enclosed area, creating new land. There will be about 4 km of hard structure dykes and about 8 kms of (recreational) beach and dunes. The new area has been designed to withstand a flood risk of 1 storm event in 10,000 years. It will not be built on all at once, but rather as there is demand from companies. Thus, there will be no investment in un-developed land.

A number of Environmental Impact Assessments had to be prepared to determine the effects of the newly created land and the sand extraction used to create it. They looked at the effects on the currents of the North Sea, particularly the effect on the Wadden Sea, and the best way to extract the required sand.

The construction will lead to a loss of marine habitat and to a reduction of the quality of the adjacent dunes. It is legally required that this loss be compensated. The loss of marine natural areas will be compensated through the establishment of a sea floor protection area of approximately 25,000 ha. off the adjacent coastline. Within this area, Nature will be given extra protection through the creation of a nature reserve 'The Voordelta' (Natura 2000). In addition, smaller bird resting areas will be designated.

To improve the quality of the living conditions in the inhabited area nearby the harbour, three new nature and recreation areas will be created: two areas on the northern edge of Rotterdam and one area to the south of the city: in total, 750 ha. The plans include space for parks and gardens as well as recreation areas. The southern nature area will be easily accessible from the city by bike or on foot and, therefore, a green connection route will be created. To the extent possible, the final plans will take into account the aspects of the area that are currently held in high regard such as the polder structure, the historic farms and other elements of cultural and historical importance. In the recreation areas, there will be forests and fields created so that the residents can enjoy activities such as biking, walking, hut building and horseback riding.

7. Cost and resources

€ 2,9 billion in total. In the first phase, 2008-13 costs of €1m. are anticipated .

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

The whole process of planning including research, scale modelling, economic reports, simulations, protests, objections, new plans being prepared took almost ten years before planning permission was finally granted.

9. Success and Fail factors

At different times in the process, the residents of the area were involved in discussions about the various plans and reports that were being produced.

For such a large project as this one, in the lead-up to the final decision-making, a careful process was conducted in which several stakeholders and organisations were consulted. The initial plan was rejected by the Council of State following objections on several grounds including inadequate habitat compensation. A revised plan has been accepted by the Parliament in 2006.

10. Unforeseen outcomes

None as yet but one important aspect is that if there are any unforeseen circumstances for residents or users of the area, compensation can be granted through an independent commission.

11. Prepared by

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12. Verified by

It has not been possible to verify this case.

13. Sources

- Beheerplan Voordelta Spelregels voor natuurbescherming (2008) Ministerie van Verkeer en Waterstaat, Provincie Zuid-Holland en Provincie Zeeland.
- Economische effecten van sluiting van het beoogdezeereservaat in de Voordelta voor het viscluster (2006) H. van Oostenbrugge, J. Powell, J. Smit, K. Taal, B. Vos en K. Poppe. LEI.
- Effects of Maasvlakte 2 on Wadden Sea – Track 1 (2005) Final report, M. van Ledden, Royal Haskoning.
- Impact of Maasvlakte 2 on the Wadden Sea and North Sea coastal zone: Effects in the context of the Birds and Habitats Directives (2005) F. Heinis, J.W. van der Vegte, J. de Vlas, M. van Ledden, Z. Jager, Royal Haskoning.
- Milieueffectrapport Aanleg Maasvlakte 2 Samenvatting (2007) R.J. Berkenbosch, Havenbedrijf Rotterdam N.V
- Natuurcompensatie Maasvlakte Twee in de Voordelta (2007) Ministerie van Verkeer en Waterstaat
- www.inspraakpunt.nl (The most up-to-date information on the Project Mainport Development Rotterdam)
- www.mainport-pmr.nl
- www.zuid-holland.nl/pmr (more information about the 750 ha. nature and recreation areas)

Maas vlakte - MER Samenvatting (3.51 MB)

Maas vlakte - economics (1.05 MB)

Maas vlakte - effects on coast (6.05 MB)

Maas vlakte - general (10.4 MB)

Maas vlakte - impact on birds and habitats (11.28 MB)

Maas vlakte Beheerplan Voordelta (2.59 MB)