An economic analysis of the use of the Dutch North Sea continental shelf - NL

1. Policy Objective & Theme

- SUSTAINABLE ECONOMIC GROWTH: Balancing economic, social, cultural development whilst enhancing environment

2. Key Approaches

- Ecosystems based approach

3. Experiences that can be exchanged

Analysing the social and economic development of the Dutch continental shelf has indicated not only the value of the different sectors but how the use of the sea will change by 2015. It indicates that spatial planning of the North Sea will have to be done with a view to multi-use of the area since the area required for the economic activities outstrips the area available.

4. Overview of the case

The Netherlands have performed an economic and social analysis of the Dutch part of the North Sea as part of its obligations to the Marine Strategy Framework Directive. It presents data for the situation in 2004 and the expected trends until 2015 on production value, added value and employment for various economic activities.

5. Context and Objectives

a) Context

The Dutch continental shelf of the North Sea comprises 58,000km2 or about 10% of the total North Sea area. This is about 1.5 times greater than the land mass of the country. Three Provinces border the North Sea with a population of over 6.5 million inhabitants which is almost half of the total population. The harbour of Rotterdam, the largest in Europe, has its entrance on this coastline. There are also five nature protection zones in this area of the North Sea totalling 20% of the surface area. It is one of the busiest shipping areas of the North Sea and additionally is home to 3,700 km of pipelines, 4000km of cables and 130 gas and oil platforms. The Ministry of Defence owns or uses 7% (4000 km2) of the North Sea.

Shipping is without doubt the most important economic activity with a direct value of €2.6 billion in 2004 and more than 12,000 employed. Offshore oil and gas is the second most important activity with a direct value of €1.5 billion and 1800 employed. Other important sectors are fisheries (€108 m), wind energy and tourism & recreation (7 million visitors/yr). The central ambition of the government is a sustainable development of its North Sea.

b) Objectives

The goal of the exercise was to give a brief description of the economic importance of the different functions of the Dutch continental shelf. In addition, the report also intended to give insight into any knowledge gaps and uncertainties regarding the economic description and identify how robust is the available knowledge.

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

a) Management

The Ministry of Traffic and Waterways commissioned reports on the 'Exploration of economic and spatial developments of the North Sea' and an 'Economic analysis on the use of the North Sea" which were published in 2008 and 2009 respectively. The former report was produced by a consultancy company and the latter was internal.

b) ICZM tools

The economic analysis was completely based on already existing reports. The chief one was the report produced in 2008 entitled 'Exploration of economic and spatial developments of the North Sea'. The economic importance of the different user-functions of the Dutch continental shelf was determined in terms of production, added value and employment. Wherever possible the trends, both historic and future, were looked at as well as the space occupied by the different sectors considered. These were shipping, gas and oil exploitation, sand and gravel extraction, wind energy, fisheries, tourism & recreation, dredge and spoils dumping, cables & pipelines, nature and defence.

The study showed that in 2015, shipping will remain the most important economic activity in the Dutch North Sea. Its added value is expected to increase by 40% in relation to 2004. This is in sharp contrast to the offshore oil and gas industry which is expected to undergo a serious decline by more than 50%. Fisheries are also expected to substantially decline, by as much as 50%, not only due to over-capacity but also to restrictions of fishing and the use of more sustainable fishing methods e.g. beam trawling being phased out. By 2015, it is also anticipated that wind energy will have increased significantly. In 2004, there were no wind farms, at the moment there are two (capacity 228 MW) but the government has a target of 6000 MW by 2020 (10% of total Dutch energy use). This will require 1000 km2 surface area. By 2015, the capacity should be between 1300-3000 MW. Sand and gravel extraction is also expected to double to cope with the necessary flood protection measures. Annually, 25 million m3 of sand is currently extracted from the Dutch continental shelf in permitted areas of 443 km2 although in reality only 10% of this area is actually used. Tourism is expected to increase ca. 2.6%/year to 2015. Dredge and spoils dumping is an important user of the North Sea. In order to keep shipping lanes deep enough, ca. 30 million m3 of mud are transported for dumping in the North Sea. This is not expected to change up to 2015.

One of the major consequences of these changing economic activities will be that the surface of the North Sea that is required will increase significantly. One of the major reasons for this is the obstacle-free zones which are required around wind turbines. Increased shipping lanes are another. However, another significant claim will be made by the reservation of some 20% as nature reserves. In fact, all the claims being made, together, by all the sectors is likely to be in excess of the amount of surface area available. In 2004, the use of the North Sea only lay between 40 – 70% of the area available, in 2015 it is expected to be up to 120%.This increase in usage would, therefore, mean that the Dutch part of the North Sea will not be large enough to accommodate the development of all the economic activities. Whilst this could give rise to conflicts of interest, as well as safety concerns, it will certainly necessitate multiple use of the available space and carefully considered spatial planning e.g. first mining sand and then building wind turbines at that location.

7. Cost and resources

The costs of producing the reports is not known.

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

The report shows that the Dutch part of the North Sea is of great economic importance and worth many billions of Euros as well as providing considerable employment opportunities and that this will remain so. The report was not able to take into account the consequences of the 2008-09 economic crisis and the effects that they could have on the further development of, and in, the North Sea.

9. Success and Fail factors

Some of the data had to be interpolated based upon various assumptions. There were problems analysing the economics of

the North Sea fisheries because figures available are for the total fishing fleet irrespective of where the fishing occurs. It was assumed that the North Sea contributed 28% of the total fish catch.

10. Unforeseen outcomes

The lack of specific data for the North Sea raised questions as to whether a specific data base was required for North Sea activities. This would help policy makers and make decision making more transparent. Inevitably, government policies may change between now and 2015 following elections e.g. some studies have indicated that it may be better to phase in the wind energy targets by 2030 rather than 2020.

11. Prepared by

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12. Verified by

It has not been possible to verify this case.

13. Sources

- Verkenning van economische en ruimtelijke ontwikkelingen op de Noordzee (2008) Royal Haskoning & Rebel Group.
- Economische analyse van het gebruik van de Noordzee (2009) X. Keijser and R. van der Veeren. Ministerie van Verkeer en Waterstaat [not yet available electronically]

Verkenning van economische en ruimtelijke ontwikkelingen op de Noordzee (4.51 MB)