Marine Spatial Planning in the Netherlands Part of the North Sea

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Contents

Summary

The coast and territorial waters of the Netherlands form a part of the southern North Sea. The area is intensely used and for several of these uses considerable growth is forecast. This might lead to increasing conflicts with the environment and was the main reason for developing a vision for spatial planning. Recently the introduction of a new spatial planning framework was in response to an increasing interest in new developments and a growing demand for governmental coordination of these developments. This change in policy is necessary for the Netherlands to have a sea that can provide economic and ecosystem services for next generations.

A wind farm on the Netherlands' continental shelf of the North Sea, 20 miles west of IJmuiden.

The sustainable wind energy plans for 6,000 Megawatt of wind turbines require by 2020 at least 1,000 km² space. Integrated marine spatial planning provides clarity for the development and it prevents conflict of uses: the development of the wind farms without disturbing the busiest navigation route of Europe. (photo: //beeldbank.rws.nl, Rijkswaterstaat, Sander de Jong)

1. The need for Marine Spatial Planning in the Netherlands

The Netherlands' territorial waters of the North Sea cover an area of more than 57,000 km^2, approximately 1.5 times the surface of its total land area. As in other parts of the North Sea, the waters under Dutch jurisdiction are intensely used. Table 1 gives an overview of these uses.

Activity		area
Mining and mineral exploitation	Subsurface oil and gas	Approx. 130 platforms (130 km^2)
	Mining commercial sand,	20 million m^3/yr (10 km^2/yr)
	Land reclamation and	380 million m^3 in 2008 – 2012 (40 km^2)
	Beach nourishment	12 million m^3/yr (6 km^2/yr)
Dumping sites for dredged material	Designated sites for dumping of unpolluted sand and mud.	10 km^2
Cables and pipelines	Oil and gas pipelines	3000 km length, incl. safety zone 3000 km^2
	Undersea telecommunications and electricity cables	4000 km length, incl. maintenance zone 2000 km^2
Shipping and transportation	Shipping routes, traffic separation schemes, anchor sites	3600 km^2 shipping lanes for 260.000 ship movements per year
Military exercise area	Firing and practice ranges Ammunition depots	4200 km^2
Land reclamation	Land reclamation extension of Rotterdam Harbor II	20 km^2
Fishing and aquaculture	Beam trawlers for Herring, mackerel, and demersal fish	Whole EEZ
Wind energy	Two parks are built 2007/2008	220 MW realized (43 km^2);
	Proposals energy farms in the North Sea under consideration	Another 950 MW in progress (150 km^2); In 2020 6000 MW (600 - 1000 km^2)
Recreation areas	Beach and shoreline recreation and water-based recreation, e.g. yachting, wind surfing.	Along 250 km shoreline
Nature conservation	Ecologically sensitive areas, preservation of sea birds and marine fauna and flora.	11000 km^2 in five areas (Voordelta, NZ Kustzone, Doggersbank, Klaverbank, Friese Front)

Table 1: Demands for access and use of space in the Dutch part of the North Sea

While some uses will remain at their current level, considerable growth is forecast for surface mineral extraction, water sport recreation, wind farms, nature and possibly mariculture. This expected growth and the concern that this might lead to greater conflict between users was the main reason for the development of a spatial planning vision for the North Sea.

2. Development of Marine Spatial Planning

Integration of land and sea in national planning
The Dutch Ministry of Infrastructure and the Environment – I&M (former Ministry of Housing, Spatial Planning and Environment) is responsible for the development of national policy, which provides an overarching framework for decision making. In 2005 the Ministry published the National Spatial Planning Policy Document (2006). In this document, the land and sea are no longer separate entities in spatial planning terms. It thus offers a framework for the Dutch Part of the North Sea, in which relevant international agreements and obligations and national policies are taken into account. The primary objective is to enhance the economic importance of the North Sea, to maintain, and develop the international ecological features by harmonizing sustainable spatial-economic activities, as applied for instance during large land reclamation (Figure 1).
In 2008, a revised Land Use Planning Act included an extension into the North Sea.

Implementation of the spatial policy is elaborated in the Integrated Management Plan for the North Sea 2015 (2005). The overall objectives are:

- Management to foster a *healthy sea*: A natural, healthy ecosystem is the central aim of this theme. The objective of a healthy sea concentrates on the sustainable functioning of the North Sea and on protecting the natural ecosystem features. The policy is concerned with water quality (reducing discharges), maintaining biodiversity including site-specific ecological features in accordance with EU and international nature conservation agreements;
- Management to foster a *safe sea*: A safe sea refers to a safe use of the sea and protection of human beings for the dangers of the sea. It addresses policies such as coastal defence, safe shipping traffic, military use and quality of bathing water;
- Management to foster a *profitable sea*: A profitable sea refers to the economic function and potential of the sea. Activities that are addressed include shipping, sand extraction, oil and gas exploitation, wind energy (see photo above, recreation and fisheries. Economic growth is primarily regulated through sectoral policies.

The Integrated Management Plan for the North Sea has the status of a regulation and obliges all relevant central government ministries to act in accordance with the plan. The plan covers the period 2005-2015 and will be revised, updated and synchronised with other legal planning structures, after the first 5 years.

Usage zones
The Dutch government has opted for a spatial policy that provides the market (economic sectors & industries) considerable flexibility in developing offshore initiatives and projects. To limit the risks involved in complete market freedom, the spatial policy provides a guiding framework in which location-based uses (usage zones) and a number of exclusion policies are defined. The usage zones include shipping routes, military exercise zones, and areas with special ecological features.
Areas where growth can take place appear in more detail on so-called 'opportunity maps' (see Windfarm Opportunity map, Figure 2). Some of the anticipated conflicts (e.g. wind farms, water sport recreation or fisheries) are addressed and given a priority rating in the Integrated Management Plan.
The opportunity maps for protected areas are based on an ecological evaluation of the Dutch part of the North Sea. These areas (the Friese Front, the Klaverbank and the Doggersbank) meet the criteria for Marine Protected Areas under the OSPAR convention and the EU Bird and Habitat Directives and their coordinates have been officially sent to the European Commission in 2008.

3. Instruments to implement Marine Spatial Planning

A central aspect of Dutch marine spatial management is a system of permits to regulate offshore activities. Additionally, there are a set of other tools that provide an insight into potential problems associated with spatial development and if necessary ways of managing the use of space (see also websites of Noordzee loket and the Noordzee Atlas) :

- *Opportunity maps*
  These maps show areas where human activity is permitted within the current legislative and regulatory framework and where users believe it is most likely to develop. The government also aims to provide greater transparency on the individual claims for space between the sectors.

- *A Spatial monitoring and permit tracking system*
  This system facilitates the development of up-to-date pictures of current and anticipated uses of space, and the validation and applications of the various permits. It shows who has issued permits, for how long and for what area.
- *An Integrated (spatial) assessment framework for issuing permits*
  Each location-based activity that has a permit will need this assessment. The integrated assessment framework contains five elements, including (1) A definition of the spatial allocation, (2) Precautionary measures, (3) Usefulness and necessity of the activity (excluding activities explicitly permitted or encouraged by national policy), (4) Choice of location and evaluation of use of space, and (5) Mitigation and compensation for ecological impact. For activities that are potentially harmful to Special Areas of Conservation (SACs), supplementary protection provisions in addition to the integrated assessment framework are required.
- *Exploratory spatial studies for a specific activity*
  These studies allow adjustments in the management of one or more activities. This will be particularly relevant to avoid spatial problems in a specific area.
- *A disadvantage compensation*
  If a user believes that he is being harmed by another legal use, a disadvantage compensation can be claimed from the competent authority.
- *Joint initiatives*
  The government promotes and invites initiatives that combine functions and facilitate multipurpose use of space.

The Dutch Spatial Planning Act (in effect, July 2008) contains a basis for applying the specific instruments and powers to the exclusive economic zones (EEZ), if necessary. A new interdepartmental North Sea Management Network has been established to improve the coordination between the various authorities responsible for the implementation of the spatial planning for the North Sea.

4. The future of Marine Spatial Planning in the Netherlands

Three years after publishing the first national spatial planning document and its management plan, the expectations concerning the use of the North Sea had to be refined because of new objectives with regard to coastal protection, wind farms and the protection of the marine environment.

Marine Strategy
In 2008 the European Commission adopted the Strategy on the Protection and Conservation of the Marine Environment, which aims to achieve good environmental status of the EU's marine waters by 2020 and to protect the resource base upon which marine-related economic and social activities depend. The Marine Strategy will constitute the environmental pillar of the future maritime policy the European Commission is working on, designed to achieve the full economic potential of oceans and seas in harmony with the marine environment (see CCC I-1-1). The Netherlands' factsheet on EU Maritime Policy provides an overview of relevant coastal and maritime policies, vision documents, stakeholders, spatial planning and maritime governance (website: EU Maritime Policy – the Netherlands, 2009).

National Water Plan
The Dutch government published the 2009 draft 'National Water Plan' and the 2010 North Sea part of the Spatial Planning Policy Document. In this plan, the Cabinet is opting for uses that are sustainable and safe and make efficient use of space. At the same time, it should be in balance with the coastal and marine eco-system (as set out in the Water Framework Directive, the Marine Strategy Framework Directive, the OSPAR convention and the Bird and Habitat Directive).
Within international frameworks, the Cabinet is giving priority to the following activities that are of national importance for the Netherlands:

- Sand extraction and replenishment provide a way of enabling the coastal profile (the foundation zone, see CCC I-2-1) to keep pace with the rise in sea level. Where possible, this is to take place by distributing and transferring sand along the coast. In addition, the government is exploring the feasibility of extending the coastline, to provide more space for development and use. This requires appropriate planning to find areas where sand can be mined at low costs and with minor environmental impacts.
- Sustainable (wind) energy: providing space for 6,000 Megawatt of wind turbines by 2020 (requiring at least 1,000 km^2) and creating conditions for further (international) growth after 2020. Once the 1170 MW already built or in

the pipe line, the remaining 4800 MW will be allocated in so-called 'wind development areas'. Extensive stakeholder consultation and a Strategic Environmental Assessment will form the basis for designating these areas.

- Oil and gas field development: extracting natural gas and oil from the Dutch fields in the North Sea, at a relative high rate;
- Sea shipping: building a system of traffic separation schemes, clearways and anchoring areas allowing safe and prompt handling of shipping;
- Military Defence (exercise) areas at sea.

These priorities lead to specific, delineated zones for certain developments where other functions can take place so long as they do not conflict with the priority function. Therefore, spatial planning will play a greater role in future management of the Dutch part of the North Sea in which there will be a larger number of zones with accompanying criteria for specific uses (Resume map - National Spatial Strategy, Figure 3).

The National Water plan also aims to stimulate and provide room for innovation, such as combining functions in space or time in experimental areas with fewer restrictions. In the process of drafting the Plan, stakeholders were involved and neighbouring countries consulted. Information is provided for existing and potential new users about the availability of space for new activities and the conditions attached. The new National Water plan has a time horizon up to 2020. The Integrated Management Plan 2015 will be updated in conjunction with changes in the National Water plan in 2010.

5. Conclusions

For years, industrial freedom and market forces prevailed during discussions on marine spatial planning in the Netherlands. In 2005, this contributed to the drafting of the first national spatial plan for the North Sea and its associated management plan. The 2010 National Water Plan introduces a new spatial planning framework in response to the growing interest for development in the North Sea and a demand for governmental coordination of these developments. This change in policy is necessary to provide the Netherlands with a safe ocean that can provide economic and ecosystem services to next generations.

6. References:

- **Dutch Parliament, 2004 – 2005**: National Spatial Planning Policy Document, Doc. Nr. 29 435 - 154, The Hague, The Netherlands
- **Ministry of Housing, Spatial Planning and the Environment, Ministry of Agriculture, Nature and Food Quality, Ministry of Transport, Public Works and Water Management, Ministry of Economic Affairs, 2006:** "National Spatial Strategy; creating space for development"
- **Ministry of Transport, Public Works and Water Management, Ministry of Agriculture, Nature and Food Quality, Ministry of Housing, Spatial Planning and the Environment and Ministry of Economic Affairs, 2005:** Integrated Management Plan for the North Sea 2015
- **Ministry of Transport, Public Works and Water Management, 2008:** "National Water Plan" ;Final version published December 2009.

PDF reports:

- **EU Recommendation concerning the Implementation of Integrated Coastal Zone Management in Europe; Report on Implementation in the Netherlands 2005** (Ministry of Transport, Public Works and Water Management, Ministry of Housing, Spatial Planning and the Environment, Ministry of Agriculture, Nature and Food Quality and Ministry of Economic Affairs): http://ec.europa.eu/environment/iczm/evaluation/iczmdownloads/nl_2005.pdf
- **Integrated Management Plan for the North Sea 2015:** http://www.noordzeeloket.nl/Images/IBN2015%20managementsamenvatting%20(engels)_tcm14-2236.pdf
- **National Spatial Strategy – Creating Space for Development - Eng. Summary – 2006:** http://www.postbus51.nl/nl/home/publicaties/overheid-en-democratie/organisatie-van-de-overheid/rijksoverheid/summary-national-spatial-strategy-creating-space-for-development-part-iv-endorsed-by-parliament.html

- **National Water Plan 2009-2015 :**
  http://www.noordzeeloket.nl/Images/National%20Waterplan%202009-2015_tcm14-4380.pdf
- **Policy Document on the North Sea (background document to National Water plan)**
  http://www.noordzeeloket.nl/Images/Policy%20Document%20on%20the%20North%20Sea%202010-2015_tcm14-4375.pdf

Websites:

- **EU Framework Directive Strategy on the Protection and Conservation of the Marine Environment**: (http://ec.europa.eu/environment/water/marine/index_en.htm).
- **EU MARITIME POLICY - COUNTRY INFORMATION - THE NETHERLANDS – 2009,** provides information on coastal and maritime policies, vision documents, stakeholders, spatial planning and maritime governance: http://ec.europa.eu/maritimeaffairs/memberstates/factsheet_netherlands.pdf
- **EU-Maritime Policy actions:**
  http://ec.europa.eu/maritimeaffairs/subpage_mpa_en.html
- **Noordzee Atlas -**
  http://www.noordzeeatlas.nl/en/index.html
- **Noordzee Loket** provides overview of Activities, Themes and Information on legislation, organisations etc. (in Dutch)**:** http://www.noordzeeloket.nl

Figure 1: ***Artistic view of the extension of Rotterdam*** *Harbour, Maasvlakte -2: 2000 ha land reclamation, 2008 - 2013. (source: Rotterdam Port Authority)*

Opportunity map wind farms - 2005

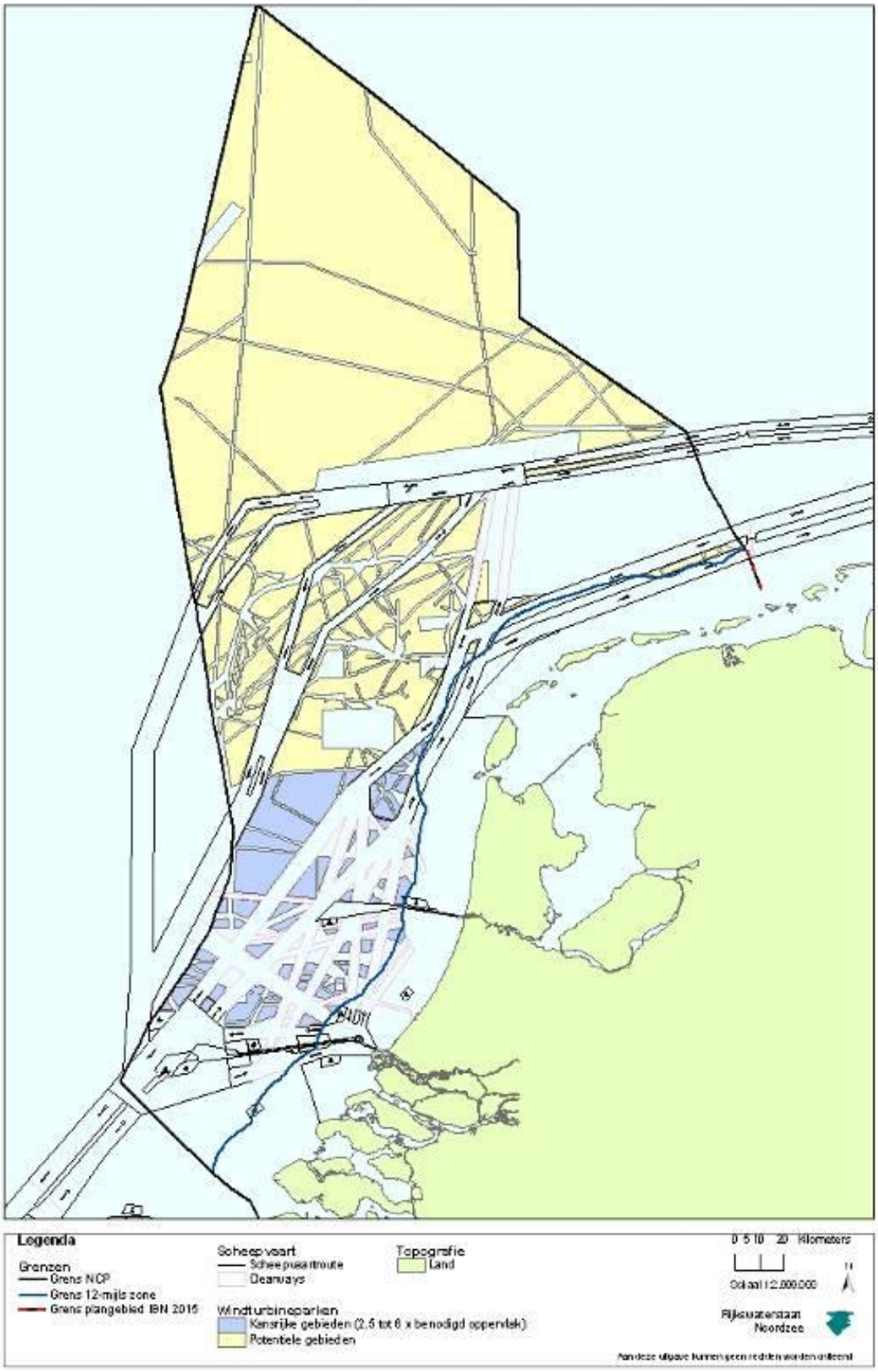

Figure 2: ***Opportunity map wind farms*** *- blue: favourable areas, yellow: potential areas (source: Policy Document on the North Sea (background document to National Water plan) 2009-2015, December 2009, adapted)*

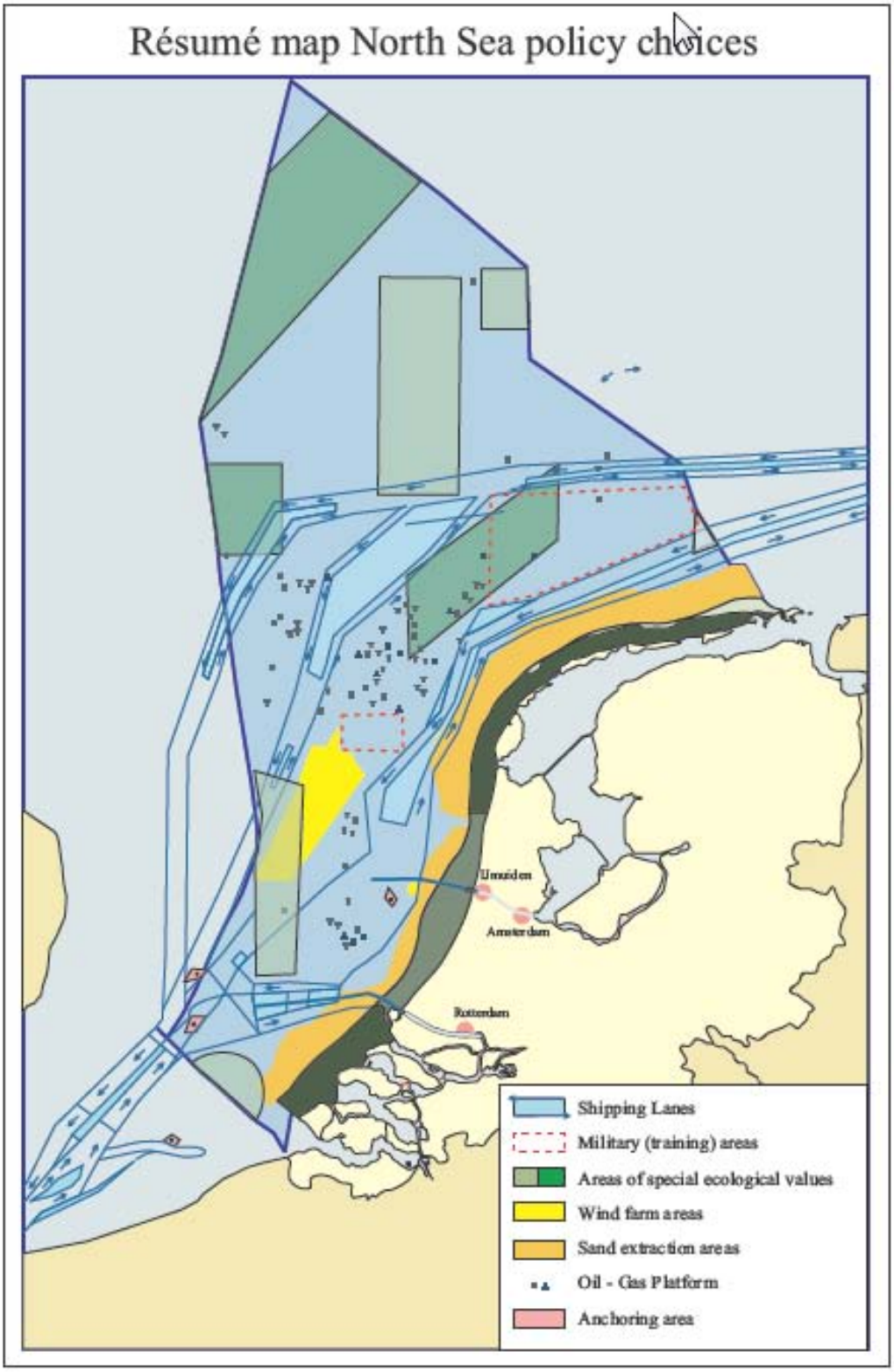

Figure 3: ***Resume map North Sea,*** *showing a number areas with specific uses.*
(source: Policy Document on the North Sea (background document to National Water plan) 2009-2015, December 2009, adapted)

One of the 130 oil / gas platforms *on the Netherlands' continental shelf of the North Sea. (photo://beeldbank.rws.nl, Rijkswaterstaat)*

Regular nourishment *of beaches and fore shores, here on Scheveningen, The Hague. (photo://beeldbank.rws.nl, Rijkswaterstaat)*