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Best Practice in Marine Spatial Planning Description of four Case Studies in Europe and Overseas

Final Report



PAP/RAC
Wedel/Hamburg, September 2007



This project has been financially supported by the European Union

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List of Acronyms

BPNS – Belgium Part of the North Sea
BSH – Federal Maritime and Hydrographic Agency
CMAs – Coastal Management Areas
DEFRA – Department for Environment, Food and Rural Affairs
EEZ – Exclusive Economic Zone
e.g. – <i>Exempli Gratia</i> ; (For Example)
EIA – Environmental Impact Assessment
ESSIM – Eastern Scotian Shelf Integrated Management
EU – European Union
ICZM – Integrated Coastal Zone Management
LOMAs – Large Ocean Management Areas
MMMO – Marine Management Organisation
MSP – Marine Spatial Planning
MV – Mecklenburg Western-Pomerania
nm – nautical miles
p.a. – per annum
RIA – Regional Impact Assessment Procedure
ROG – Federal Regional Planning Act (Germany)
SEA – Strategic Environmental Assessment
UK – United Kingdom

Preface

Marine Spatial Planning is a relatively new issue for the planning profession and most countries are in the process of planning/creating/writing, or have just finished a marine spatial framework. Driving force, therefore, is an increasing spatial demand on the marine environment, making it an integral part of international, European, as well as national policies.

For a better understanding of the preceding theoretical part, and as suggestion for the planning practice, case studies in the context of Marine Spatial Planning will be presented. Four different areas in the United Kingdom, Canada, Belgium and Germany were chosen. The examples were selected for reasons of actuality and to obtain a variety in the planning areas (Territorial Waters and Exclusive Economic Zone) as well as in planning approaches (formal or informal).

1. United Kingdom – Irish Sea Pilot Project Marine Spatial Planning

In 2004 the pilot project of Marine Spatial Planning (MSP) was initiated by the British Department for Environment, Food and Rural Affairs (DEFRA). It builds up on the data collection and formulated development objectives of the previous Irish Sea pilot project 2002-2004.

For project processing a planning consortium has been commissioned to research opportunities for developing, implementing and managing a MSP system in the UK. Thereby the project covers the Territorial Waters and the Exclusive Economic Zone (EEZ) in the area. The final report was published in 2006. Hence the result of the project is not to have a final plan but to have knowledge about how MSP could be implemented in the UK.

1.1 Area of the Case Study

The Irish Sea is situated between the British and Irish Islands. With about 58,000 km² it is one of the smaller regional seas of the north-east Atlantic. It has the form of a flat shallow basin with depths ranging from 20-100 m. About 6 million people live within 10 km of the coastline. Beside men the region offers habitat for a wide range of benthic species, sea birds (sea duck, common scoter or visitor). However, only few species of marine mammals (grey seal, porpoise) and fish (cod, whiting or herring) are represented in significant numbers. Nature and landscape provide thereby opportunities for tourism and fishery, as well as mariculture.

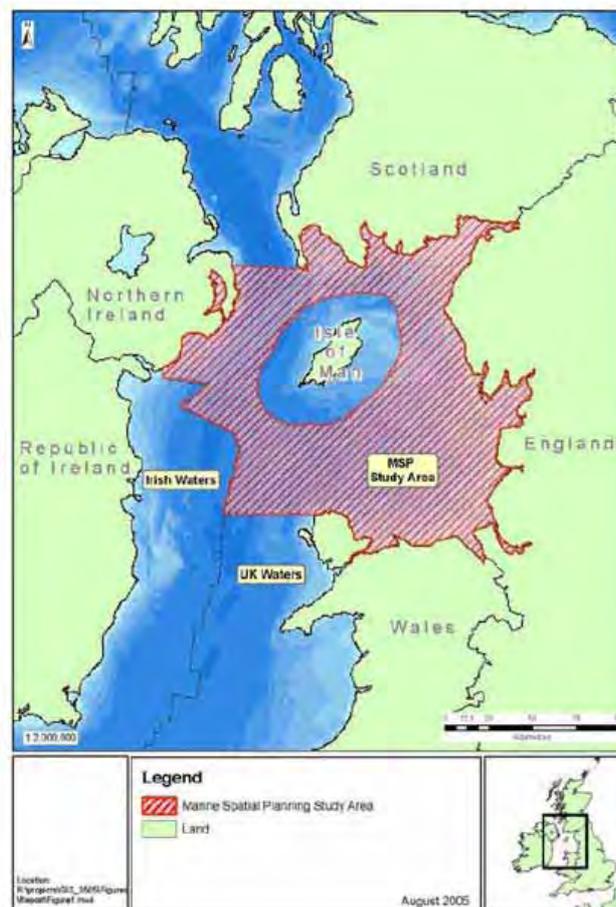


Figure 1: MSP Study Area Irish Sea

Non-living marine resources of the area are, in particular:

- Wrecks and archaeological structures on the seabed and the coastline as cultural heritage.
- Gas and oil resources, with a contribution to total UK production with 13.6% and 2.8%, respectively.
- Suitable areas for renewable energies, especially wind and tidal stream.
- Mineral extraction, notably for sand.

Despite differences in depth, population or resources the area is very similar to other regional marine regions overlying the continental shelf, like the North Sea or the eastern Celtic Sea.

For the pilot project a territory in the North of the Irish Sea was selected. The main reason for this choice was that this way the waters from the four devolved administrations (England, Northern Ireland, Scotland and Wales) of the UK are included, because marine functions are divided among the regional and national institutions. The officials of the Isle of Man decided not to participate. Consequently their territorial waters are excluded.

1.2 Uses and Conflicts in the Irish Sea

The existing uses of the Irish Sea, based on the environmental resources described above, are multifaceted. They are tourism and recreation, oil and gas extraction, ports and shipping, naval defence, renewable energy, fishery, mariculture, and mineral extraction. The economic contribution of these sectors is estimated at €9 billion p.a. Main part of this is gained through tourism, the oil- and gas industry, as well as the naval defence sector. Some sectors, primarily the renewable energies, will grow substantially during the next years.



Figure 2: Fishing Areas Overlaid on Potential Offshore Wind Farm Development Areas

In the pilot project the uses are divided into two groups, according to their requirements of the marine space. On one hand there are some which are localised, e.g. wind parks or infrastructure for oil and gas production, while other uses spread over a wide area, e.g. fishing or sea tourism.

These different uses and their partial growth cause an increasing pressure on the marine environment. Besides this influence on nature, different conflicts between human activities have or will occur. The situation in the Irish Sea will be illustrated by means of two examples:

- With the extensive growth of offshore wind parks a conflict arises, especially with the needs of the fishery industry. As the figure 2 shows, most of the area potentially exploitable by wind parks is also subject to the fishing sector. Also, further subordinated conflicts could appear, e.g. with shipping, marine tourism or the location of wreck sites.
- The extraction of marine aggregates overlaps with different other uses in the Irish Sea, in particular with the Special Area of Conservation for nature protection. Beside this conflict mineral extraction also coincides, amongst others with telecom cables, military activities or oil/gas exploration and their pipelines.

1.3 Legal Basis for Marine Spatial Planning

There exists no holistic MSP framework in the UK. The current situation and the proposed approach will be considered accordingly.

Current Situation

In the UK a wide range of statutory (binding) and non-statutory (non-binding) plans already have influence on the marine environment. For example, these are the establishment of marine nature reserves, strategic framework for Scottish mariculture, and the electricity act for renewable energy. Common to these policies is that dealing with conflicts between overlapping uses has generally been avoided or decided separately from one case to another.

Proposals

At the moment a marine bill is under consideration. Key objectives of the draft law are to establish a new Marine Management Organisation (MMO), a new system of marine planning, a more efficient and transparent licensing system, a new mechanism for nature conservation, as well as a modernisation of the inshore fishery management. Thereby the MMO, as a new single independent body, would have the task to carry out the most demanding marine functions with the aim of reaching synergies between them.

Plan making will therefore base on a two-stage approach. In a first step a joint vision of marine policy will be developed and agreed on by all UK Government departments and involved administrations. In a second step marine plans for the implementation of the policy will be created, similar to the terrestrial spatial planning. This implies the need for a planning authority so that a formal adoption of the plan is possible.

Presently, terrestrial regional planning is in the competence of the regional planning agencies as well as of the State Department for Communities and Local Government. However, marine issues are competence of the DEFRA. The former has its emphasis on economic development pursuit, the latter a more ecological approach. Hence the implementation of a MMO may lead to conflicts.

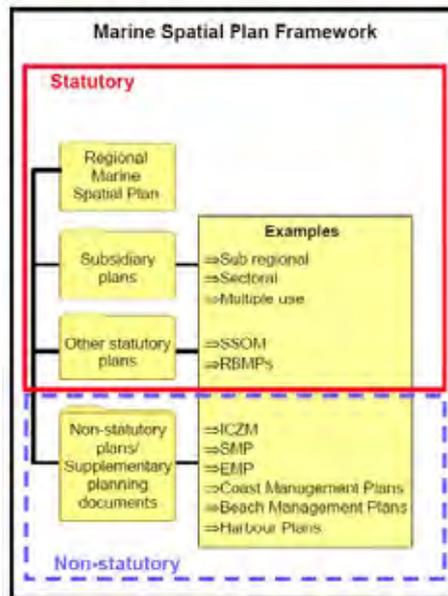


Figure 3: Proposed Planning Scheme

Furthermore, the draft law proposes to have a framework of different marine spatial plans, to clarify their relationships and to have a variety of options. For that reason the framework should include the area from the mean high water mark to the EEZ, and take into consideration the different levels of uses in the ocean. Also, it provides an approach for linking the terrestrial and marine planning through supplementary planning documents.

Also, new ideas are to concentrate the licensing at the MMO in order to reduce the number of required permits, to introduce a marine conservation zone in order to provide protection for species and habitats in addition to the European environmental policy, or to simplify legislation covering fishery.

1.4 Planning Process

The pilot project defines MSP as a process by which a sustainable use of marine resources can be planned and managed. As a result, the making and implementation of the plan is not the final outcome. It mainly offers a framework for future decision-making.



Figure 4: Plan Production Process

The plan making process starts with the definition of goals and objectives, goes over the data and analysis phase, to the implementation and review. This process is influenced, on one hand, by the community and institution involvement, and on the other by the requirements of the Strategic Environmental Assessment (SEA).

Goals and Objectives

To produce a plan guidelines are needed to provide an overarching framework. In this planning process the guidelines are deduced from the hierarchy of policies and objectives that relate to the marine environment, resulting from international, European and national levels. For example, these are the International Maritime Organisation conventions, the European Water Frame Directive and the UK Sustainable Development Strategy. Also, regional and local policies and strategies, e.g. the Wales Spatial Plan, have to be taken into account. On this basis the core principles for the marine environment protection were formulated in the “Sea of Change” consultation paper of the British Government. In detail these are:

- to conserve and enhance the overall quality of our seas, their natural processes and their bio-diversity;
- to use marine resources in a sustainable and ecologically sensitive manner in order to conserve ecosystems and achieve optimum environmental, social and economic benefit from the marine environment;
- to promote and encourage environmentally sustainable use of natural resources to ensure long term economic benefits and sustainable employment;
- to increase our understanding of the marine environment, its natural processes and our cultural marine heritage and the impact that human activities have upon them; and
- to promote public awareness, understanding and appreciation of the value of the marine environment and seek active public participation in the development of new policies.

To some extent these goals have been criticised by the stakeholders for their ecological focus. In their opinion the idea of sustainability should also consider economic and social issues.

On the basis of these overarching core principles, appropriate policies, objectives and targets were assigned in the pilot marine regional plan for each sectoral activity. For example, in renewable energies the objective is to exploit the resources in the Irish Sea in a sustainable manner. Therefore the policy defines suitable areas, which are subject to:

- Evaluation of the findings from an Environmental Impact Assessment (EIA).
- Complying with the requirements of the Habitat Regulations.
- Satisfactory resolution of potential conflicts with commercial and recreational navigation, commercial and military radar, fishery or other site-specific interests.

Proposed indicators to measure the achievement of the objectives are the power output from renewable energy sector, number of jobs created or supported, and the amount of resources to support the policies. Targets could be set for the potential of the marine environment to produce renewable energy, individually for wind, waves, tides and streams.

Data Analysis Approach / Generating Spatial Options

In a stakeholder workshop in April 2005 an analysis of necessary data was carried out. In the opinion of the pilot project consortium this analysis was required for reaching an efficient plan-making, because a focussing on the important topics allows a better decision-making through complexity reduction. Among others, data on following topics were collected:

- Base and geophysical (cartography elements).

Marine Spatial Planning

- Conservation (nature protection areas).
- Fishery (spawning areas, map of inshore fishing grounds).
- Renewable energy (maps of potentially exploitable offshore wind, wave or tidal energies).
- Mineral extraction (details of licensed/leased extraction sites).
- Military activities (details of coastal and sea firing and bombing ranges).
- Marine inputs (location and details of wastewater and industrial discharges).

The data described above is metadata. This means that single data in the project has been edited in geospatial information (ArcGIS), in the context of the What, Who, Where, When and How. From all data pdf maps of the existing and future activities have been drawn to have a format that makes it possible for the provider to give a feedback about correctness of the information.

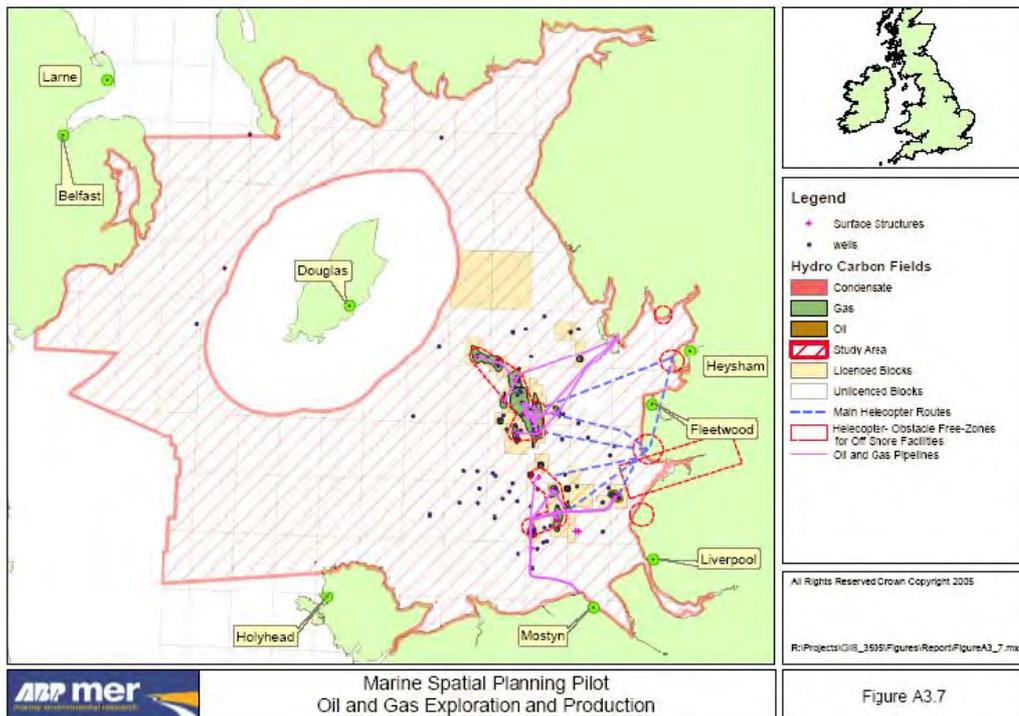


Figure 5: Map of Existing Activities for Oil and Gas Exploration and Production

With the pooling of the data on the existing and the prospective uses over a period of 20 years (2005-2025) conflicts could be identified. From this point spatial options can be generated and evaluated in a second step.

Even if modelling techniques in land-use plan making, e.g. weighting of objectives, can be applied, to-day consultation and consensus-building is more important. This results from the situation that often only few and critical choices are available. An example of the development of options and their evaluation is given in the paragraph 1.5.

Community and Institution Involvement

The planning process of the Irish pilot regional marine plan indicates the involvement of stakeholders and interested members of public. The participation was organised through workshops in the different planning phases in 2005. In April an opening presentation was arranged for the topics of the required information and to underline the necessity of a plan

production, followed by the discussion of the outline draft for the pilot plan in June and the draft plan in September. Amendments proposed by the participants were then taken into consideration for the final plan.

Participants were sent from the state (DEFRA; Countryside Council for Wales or North West Regional Assembly), lobbies (British Port Association, Friends of Earth or Scottish Fishermen Association) and science (Cardiff University, Marine Institute Ireland or private coastal experts).

Strategic Environmental Assessment

Similar to terrestrial planning in the EU, each regional marine plan needs a SEA. Unlike the MSP, the assessment is a tool for avoiding harmful long-term effects on the environment and not for producing a strategic approach. Anyhow, synergy effects in data research and community involvement can be achieved.

Implementation, Monitoring and Review

The implementation of the plan is the task of a wide variety of agencies from the public and private sectors. Hence it is assumed that a co-ordinating MMO and the involvement of relevant authorities are essential. Another instrument could be to use the MSP to steer public investment from Europe and the national government in direction of the formulated objectives.

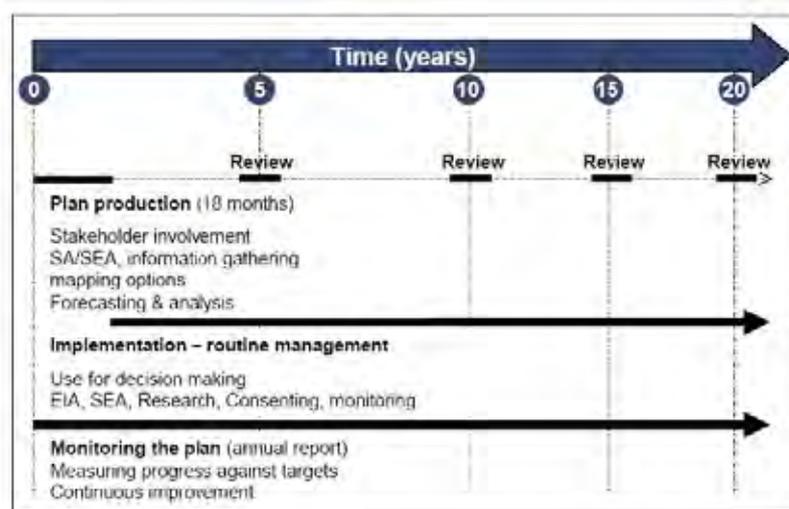


Figure 6: Timetable of MSP Review

By monitoring, as an ongoing process, conformity and effectiveness of the plan can be ensured. For this, four types of measuring indicators can be named: the progress of plan preparation, significant effects of implementing policy, contextual effects and output. Additionally, the plan should be comprehensively reviewed after some years.

1.5 Scenario of Planning Decisions on the Basis of the Marine Regional Plan

In the previous paragraphs the sectoral activities on renewable energy have been described in the context of conflicts, as well as the relevant objectives and policy assignment. Here, the scenario is added of how a planning decision for tidal stream plant on the basis of the marine regional plan could look.

Several constraints are immanent to the tidal stream sector: the tidal flow, the depth range of 20-30 m for piled or 30-70 m for anchored devices, the distance from shore less than 8 km for economic provision of interconnection to the National Grid, and a minimum farm size of 30 MW

which requires an area of 2 km². For the purpose of the scenario, a target of 30% (205.8 km²) of the area which offers suitable tidal resources has been adopted. This would correspond to an estimated power output of 10.5 TWh/year.

In the process of successive overlaying of sectoral uses, the number of resource cells suitable for tidal stream plant will increasingly be reduced. For the following sectors this process has been performed: shipping routes, high speed craft areas, wreck sites, submarine cables, geological and nature conservation, fishery, fish nursery, mariculture, marine recreation, military activities, mineral extraction, oil and gas production/interconnections, ports and navigation, renewable energy (non-tidal), as well as potential Natura 2000 offshore sites.



Figure 7: Resource Cells Identified as having Least Constraints for Development of Tidal Turbine Farms

If all these sectors were considered for the planning of tidal stream plant, no areas would be useable for that use. However, some activities, mainly shipping and marine tourism, are spread over a wide area, allowing thus a degree of flexibility in zoning of such uses away from specific areas. Another approach would be to introduce a concept of multiple use. For example, a combination of shipping routes and tidal stream plant in piled device may be possible. As a result, solutions can be found to some extent through negotiation between different sectors.

The map shows areas which are least constrained. In total, this would cover an area of 187.25 km² and thus comes close to the above default 205.8 km².

2. Canada – Eastern Scotian Shelf Integrated Management (ESSIM) Initiative

The ESSIM Initiative was announced in December 1998, following the recommendations of the “Sable Gully Conservation Strategy” that implemented an integrated management approach to the protection of the marine environment in a part of the Eastern Scotian Shelf. Therefore, the ESSIM Initiative has the aim to extend this approach to the wider Eastern Scotian Shelf ecosystem, extending from the coast out to the edge of the EEZ.

2.1 Area of the Case Study

A marine area of about 325,000 km² is covered by the ESSIM Initiative. Only the northern part of the site borders with the peninsula of Nova Scotia. This province has a population of about 934,000 inhabitants with an average density of 17 inhabitants per km².

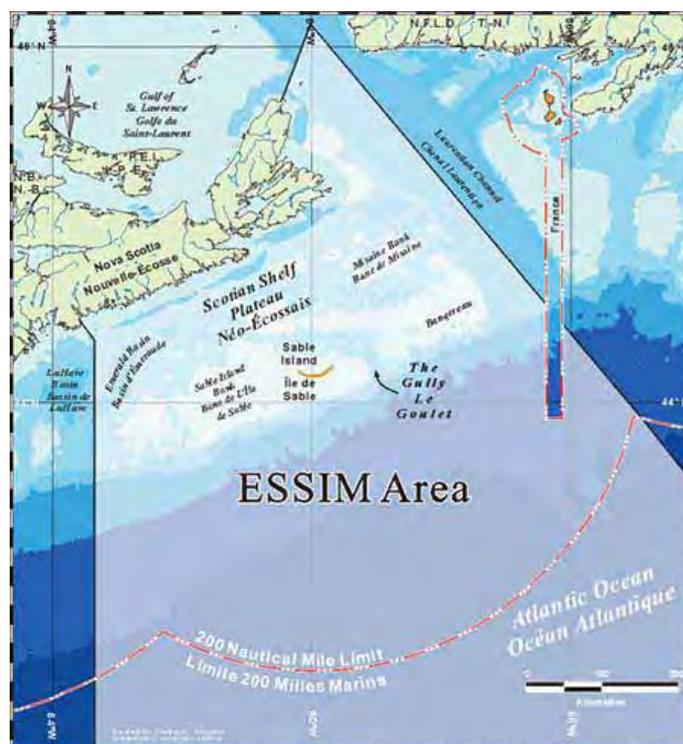


Figure 8: ESSIM Planning Area

The area is characterised by the natural prolongation of the land territory of Canada. Consequently, the continental shelf has a relatively low depth of up to 200 m and a structure of canyons, deep valleys and sloping hills. At the continental slope the ocean reaches a depth of 2,000 m and then plunges to 5,000 m. This geographical variety, the different seasons, and tidal processes offer a habitat for a wide range of species of seabirds, marine mammals (whales, seals), crustaceans (lobsters, shrimps) and fish (herrings, haddocks). This valuable natural capital offers possibilities for fishery and mariculture, as well as recreation. Further useable economic resources are:

- Oil and gas deposits.
- Offshore minerals resources.
- Possibilities for marine renewable energies.

As a result of these important living and non-living marine resources, as well as their multiple uses, the area is one of the first in which an integrated management approach will be adopted. Therefore the borders of the area represent a mix of administrative and ecological considerations.

2.2 Uses and Conflicts in the Eastern Scotian Shelf

Current main commercial uses in the marine part of the Eastern Scotian Shelf are those of the oil and gas industry, fishery, and marine transportation and shipping, plus other sectors, e.g. marine industry, maritime defence operations and tourism.

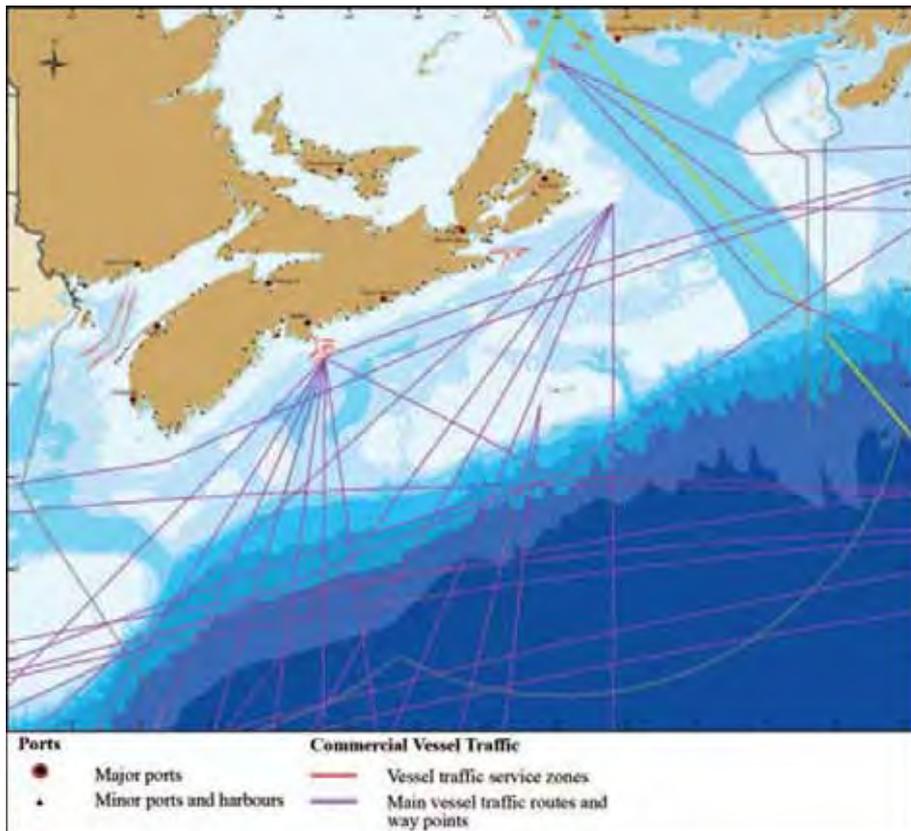


Figure 9: Shipping Routes and Harbours

From the point of view of the ESSIM-Initiative, conflicts in the area can be divided into inter- and intra-sectoral ones. The former occur between different sectors and the latter inside a branch.

Issues of conflict have been noted between fishing activities and submarine telecommunication cables, with regard to cable damages or loss of fishing gear. Also, seismic vessels for geological research are in conflict with the interests of the fishing industry. Further issues derive from spatial overlaps between areas licensed for oil and gas extraction, or spatial demands of other regional uses. Examples of intra-sectoral disputes in the fishery sector are found among different fleets, or inshore and offshore groups.

The marine environment has an immanent clash of interest with the human activities described above. Conflicts have been noted particularly in by-catch through trawling, the introduction of invasive marine species into a new environment by ships' ballast waters, acoustic disturbance through industrial or military activities, whale-ship collisions, as well as land-based and point sources of pollution.

2.3 Legal Basis for Marine Spatial Planning

The legal basis for the marine management approach in Canada is formulated in the Federal Ocean Act. It is one of the world's first legislative commitments to a comprehensive approach for the protection and development of oceans and coastal waters. The law defines the maritime zones over which Canada has the jurisdiction, the contents of the ocean management strategy, as well as the power, duties and function of the Minister of Fisheries and Oceans. For understanding MSP in Canada the first two are relevant. In addition to the description of the Ocean Act the Operational Framework on basis of this law will be introduced.

Canada's Maritime Zones

The jurisdiction for marine issues in Canada reaches from the low-water line along the coast to the edge of the EEZ, including the borders of the Territorial Water at 12, the Contiguous Zone at 24 nm and the Continental Shelf.

In respect of the UN Law of the Sea, Canada claims the sovereign rights through this act in this area, for the purpose of exploring and exploiting, conserving and managing the natural resources, whether living or non-living, also such as the production of energy from the water, currents and winds and has the jurisdiction with regard to:

- the establishment and use of artificial islands, installations and structures;
- marine scientific research; and
- the protection and preservation of the marine environment.

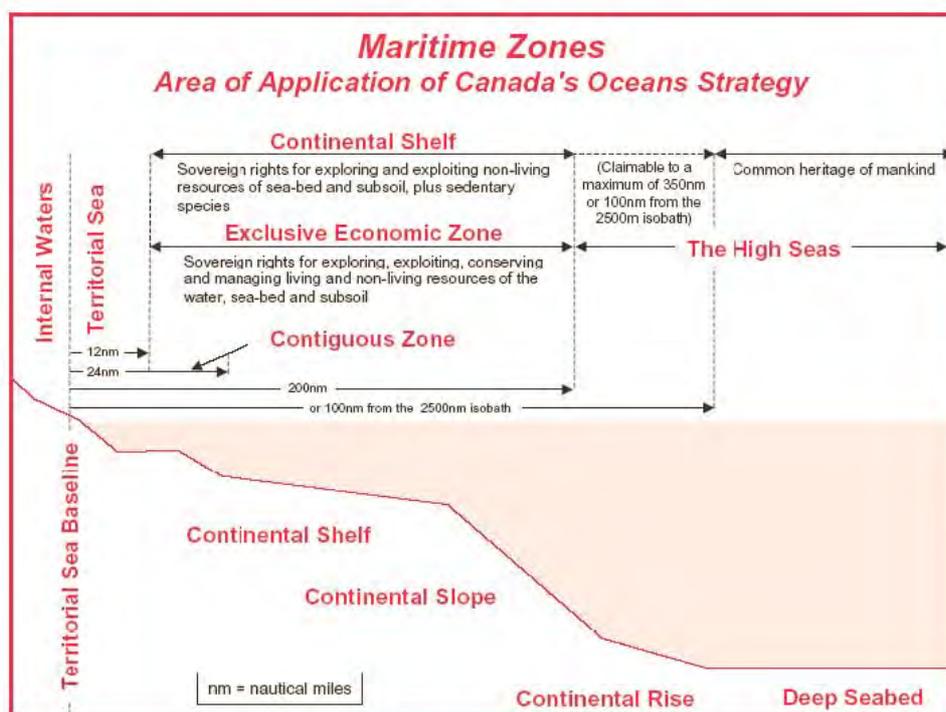


Figure 10: Classification of Canada's Maritime Zones

Oceans Management Strategy

The national marine strategy is based on the principles of sustainable development, integrated management of activities in the estuaries, coastal and marine waters, as well as a precautionary approach.

In this context, the Minister of Fishery and Oceans has, in collaboration with other ministers, boards and agencies of the Government of Canada, with provincial and territorial governments and with affected aboriginal organisations, coastal communities and other persons and bodies, the mandate to lead and facilitate the development and implementation of plans for the integrated management of all activities or measures in or affecting estuaries, coastal waters and marine waters.

To implement the integrated management plan, the Minister shall develop and implement policies and programs with respect to matters assigned by law to the Minister and in co-ordination with other ministers, boards and agencies of the government of Canada, as well as provincial and territorial governments and affected aboriginal organisations, coastal communities and other persons and bodies. Therefore advisory or management bodies should be established, as well as marine environmental quality guidelines, objectives and criteria.

In addition, Marine Protected Areas can be established for the conservation and protection of commercial and non-commercial fishery, endangered or threatened marine species, high marine biodiversity or biological productivity, or any other marine resource and habitat. Leading figure thereby is the Minister of Fishery and Oceans.

The operational framework

The operational framework defines the governance model, the role of the integrated management bodies, the management by areas and the planning process in general.

Governance is based on collaboration and co-management. Through these instruments a greater involvement of the people who are most affected by the decisions of marine policy should be achieved. A possible structure of such an integrated management body is shown in the figure below.

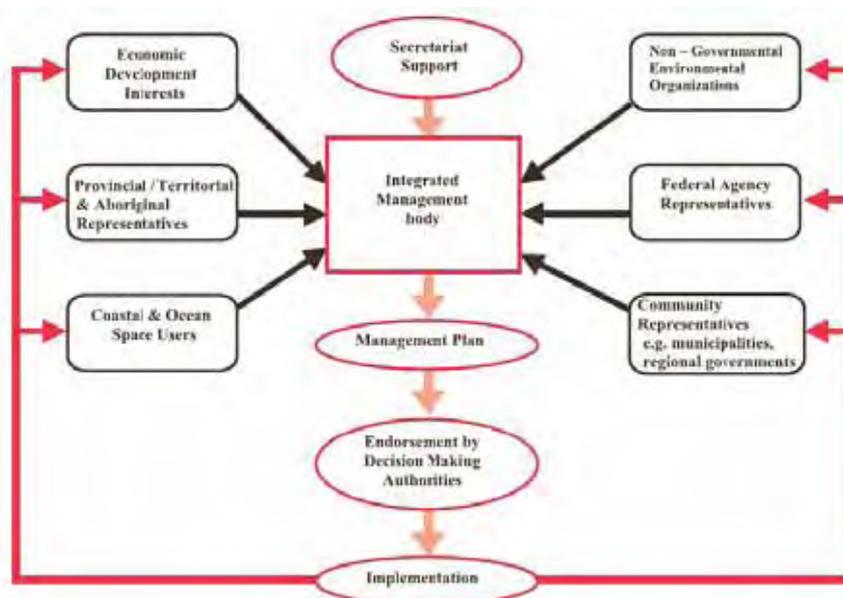


Figure 11: Possible Organisation of an Integrated Management Body

The spatial extension of the plans is divided into Large Ocean Management Areas (LOMAs) and smaller Coastal Management Areas (CMAs). The former formulates a framework of ecosystem-based objectives for a large geographical part of the marine environment extending from the coastline to the limits of the EEZ, whereas the latter is nested in this context and develops a policy for the coastal communities which take into consideration the landmass as well as the coastal waters.

The proposed planning process itself contains six steps. First of all a management area must be assessed and the affected interests considered. After the development of an integrated management plan this has to be endorsed by the responsible decision-making authorities of the management body. Eventually, the plan will be implemented, and in the final step the outcomes will be monitored and evaluated.

2.4 Planning Process

In the context of the legal basis for MSP, the ESSIM-Initiative has developed a strategy for a LOMA. A final plan was formally recognised in 2007. The plan-making process from 1998 to 2007 will be described below.

Goals and Objectives

In consideration of international policies Canada developed its own ocean strategy in 2002 and a follow-up ocean action plan in 2004. These two documents provide the basis for the three main goals of the ESSIM-Initiative, as shown below.

The overarching goal is collaborative governance and integrated management in which the aims of sustainable human use and healthy ecosystems are integrated. Consequently, the goals can only be seen as interconnected.



Figure 12: Overarching Goals and Objectives

In the following phase these three aims were specified and operationalised through strategic-level and operational objectives, management strategies and actions, as well as the outcome and performance indicators in the context of an objective-based approach.

In this interrelation, the goals are high-level statements of the desired outcome, serving as an umbrella for the development of all other objectives. Based on the describing attributes of the goals, e.g. economic wellbeing, strategic-level objectives can be developed. These objectives give a general management direction on how to reach the goals. Further specifications are carried out by the operational objectives. These objectives are flanked by management strategies and actions for the methodical way of implementation. Finally, the outcome and performance indicators allow the measurement of the level of improvement for the planning area and the management activities.



Figure 13: Scheme of the Objective-Based Approach

For the goal of sustainable human use this process will be illustrated below. It defines social and cultural wellbeing and economic wellbeing as attributes. Objectives in this context for the former are:

- communities are sustainable;
- sustainable ocean/community relationships are promoted and facilitated; and
- the ocean area is safe, healthy and secure.

Strategies to reach the objective of sustainable communities are for example: support ocean-related services and infrastructure, enhance ocean-related education, training and awareness, or involve Aboriginal people in planning and development decisions.

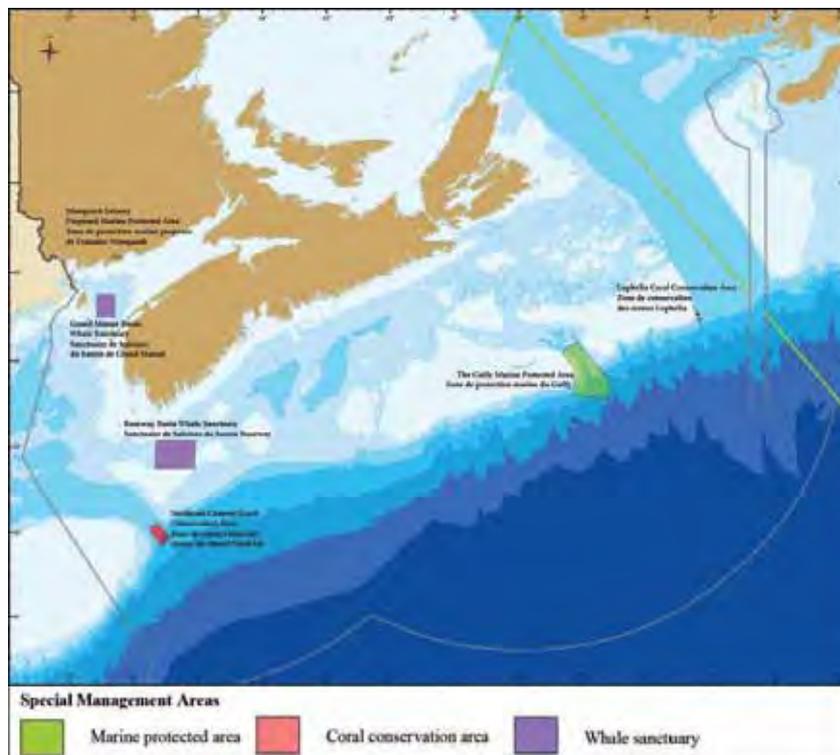


Figure 14: Marine Biodiversity Protection

Therefore, the outcome of the planning process is not a drawing, but contains statements of the goals, objectives and general strategies which can be accomplished through MSP, as in the case of the Marine Protected Areas.

Data and Analysis Approach

Comprehensive studies were made of the marine environment and life, as well as its current situation, with particular reference to the influence of the human uses. Further data was collected of the marine protected areas, the oil and gas fields, cable infrastructure, shipping routes, fishing areas, and the tourism and recreation sector.

Community and Institutional Involvement

As a result of the management approach mentioned in the Ocean Act and the operational framework the ESSIM-Initiative implemented in the plan-making process a collaborative planning model to develop and promote shared goals relating to environmental, economic and social sustainability. The operating principles for this approach are, among others, inclusion of all stakeholders, and consensus-based, transparent and knowledge-related decisions or recommendations and networking.

Government of Canada	4 members	Conservation Groups	3 members
Government of Nova Scotia	3 members	Community Groups	2 members
Government of Newfoundland & Labrador	1 member	Academic & Private Sector Research	2 members
Offshore Petroleum Boards	2 members	Transportation	1 member
Municipal Government	2 members	Telecommunications	1 member
Aboriginal Peoples	2 members	Tourism	1 member
Fisheries	5 members	Citizens at Large (proposed, optional)	1-2 members
Oil and Gas	2 members		
Total: 29-33 members			

Figure 15: Current Members of the ESSIM Stakeholder Advisory Council

In this context various institutional components have been developed:

- The ESSIM-Forum: It offers participation in the planning process to all stakeholders and interested individuals in its annual meetings. Also, the forum can not make decisions; it provides input and guidance.
- The Stakeholder Advisory Council: On the basis of a consensus-based decision-making approach the council has the responsibility for leadership and guidance for the ESSIM-Initiative in partnership with the planning office and other various stakeholder groups. As shown in the figure above, the membership is balanced by sector and other criteria, such as group size, capacity, commitment and history. Meetings are held at least once in a trimester. The council can form subgroups for special tasks.
- The Government Sector Structure: This organisation consists of the Federal-Provincial ESSIM Working Group and the Regional Committee on Ocean Management. The former has the purpose to build government support and cohesion for the ESSIM-Initiative as an intergovernmental forum of over 20 ocean-related federal and provincial departments. The latter co-ordinates decision-making at the intergovernmental and interdepartmental levels as a senior executive forum for federal and provincial departments and agencies.

- The ESSIM Planning Office: It offers shared leadership and co-ordination for development and implementation of the plan in co-operation with the Stakeholder Advisory Council and the Government Sector Structure. The office is positioned within the structure of the Department for Fishery and Ocean and therefore shares the same decision rights.

Further community and institutional involvement was organised through workshops specifically on eco-systems and benthic habitat issues, ongoing during the planning-process.

Implementation and Evaluation

After the Government has endorsed and approved the plan, the departments are committed to integrate the plan issues into their planning, including strategic and business plans, environmental assessments or the annual financial planning. Departments could also commit themselves through letters of support or intent and memoranda of understanding or agreement.

On the stakeholder level implementation is ensured through the participatory approach of the planning process and the core stakeholder advisory council as a standing working group, which provides regular input on plan development and the related planning activities. Additional support for further involvement of the community is given by the ESSIM Planning Office. Possible organisational documents for the implementation of the plan topics are, among others, performance reports, activity applications or guidelines. An external commitment could also make an opportunity.

Furthermore, two-year-cycle action plans will be developed by the ESSIM Planning Office as the leading institution. They allow provision of a high level of detail on the selected issues, including various roles and responsibilities, timelines, milestones and targets.

The plan outcomes and its performance should be evaluated as described above. It is the task of the ESSIM Planning Office to prepare regular status reports. Example of an outcome indicator is the percentage of children at high-school level who have understanding of ocean-related issues, as a measure for the success of the strategy of ocean-related education. An example of a performance indicator is the attendance list of meetings as a measure of stakeholder participation. A full review of the plan should be held every five years.

The current state of the planning process (September 2007) is that the integrated management plan is awaiting its final approval by the Minister of Fishery and Oceans, so that the implementation phase has now commenced informally with the emphasis on the establishment of a network of marine protected areas.

3. Belgium – Marine Spatial Planning in the Belgium Part of the North Sea

The current MSP in the Belgium Part of the North Sea (BPNS) is based on a permission system supplemented by an informal marine master plan. Based on the assumption that planning possibilities today are not sufficient for a future sustainable development of the marine environment the pilot project “GAUFRE Towards a Spatial Structure Plan for Sustainable Management of the Sea” was carried out from 2003 to 2005 within the framework of the “Second Scientific Support Plan for a Sustainable Development Policy (SPSD II)” carried out from the years 2000 to 2006.

Besides a general description of the area, the uses and conflicts, and the legal basis for MSP, as well as the two planning approaches of a permission system and the approaches of the pilot project will be considered in the following paragraphs.

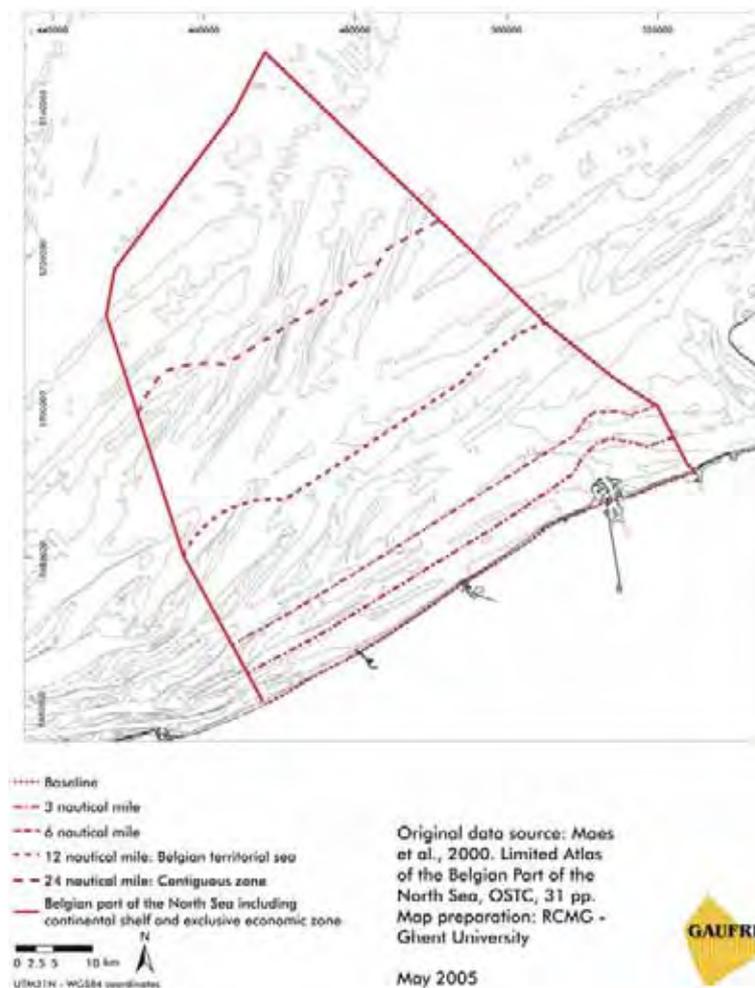


Figure 16: Legal Zoning and Geophysical Structure of the BPNS

3.1 Area of the Case Study

With a size of 3,600 km² involving the territorial waters and the EEZ, the BPNS is situated in the central part of the North Sea region. The adjacent province of West Flanders has a population of about 1.1 million, with a density of about 365 persons per km². Geophysically the area is characterised by a sandbank-swale system mostly parallel to the 66.5 km coastline, with an

average water depth of 20 m and a maximum of 35 m. Further characteristics of the landscape are the beaches and coastal wetlands. These living spaces are a home for seabirds (guillemots, visitors), marine mammals (seals, porpoises) or fish (cod, herring, mackerel).

Besides the nature and landscape with their importance for fishery and tourism, further resources of the area are the following:

- Cultural heritage (high number of ship wrecks).
- Suitable areas for wind energy.
- Widely available sand and gravel resources.

3.2 Uses and Conflicts in the Belgium Part of the North Sea

In the BPNS the main activities are related to shipping (channel and cross-channel routes), fishery, military exercise, coastal defence, sand and gravel extraction, dredging and disposal of dredged material (to maintain access to Belgian seaports), as well as recreation and tourism. Besides that, the area is dissected by various cables and gas pipelines with a total length of 1,077 km.

Thereby the tourist locations on the coastline are the most famous and most important of Belgium and are still continuously growing. In the future the economic sectors of wind energy and mariculture will be added to these sea-related activities. For wind energy two wind parks with 110 turbines and a spatial demand of 19.5-23.9 km² (without the surrounding safety areas) have been granted. Mariculture is still in an experimental phase.



Figure 17: Spatial Distribution of all Activities in the BPNS

As the number of activities in a relatively small area described above shows, the North Sea is one of the most exploited sea areas of the world. Thus, the spatial demands are not restricted to national actors, but also include the neighbouring countries and the international level. Accordingly, a multitude of conflicts exist in the BPNS or will appear in the future.

The activities mainly have a negative physical or ecological impact on the environment. This particularly refers to fishery, mineral extraction, dredging, cables and pipelines, wind farms and coastal defence which lead to a high transformation of the sediment structure with the consequence of considerable habitat and benthic changes, as well as having effects on the trophic relations. In general, substantial chemical effects emerge only from aquaculture in the form of micro pollutants and eutrophication. Besides the negative externalities the activities could also make a positive contribution to the environment. For example, the base of a wind energy plant can function as an artificial reef.

Conflicts among the activities have to be considered in the context of current and future spatial demands. Thereby the intensity of interest collision varies. Some activities exclude each other, e.g. dredge disposals and aquaculture, others are manageable in time, space or overlap, e.g. recreation and military exercise. In particular all localised uses, e.g. mariculture, cables or wind parks exclude most of the others, e.g. shipping, fishery or dredging.

3.3 Legal Basis for Marine Spatial Planning

The legal framework for managing the activities in the Belgian marine area is based on a license requirement and an Environmental Impact Assessment (EIA), as introduced through the Marine Protection Act of 1999. According to this law, license is required for:

- Civil engineering projects;
- Excavation of trenches and raising of the seabed;
- Use of exclusive or high-power acoustical devices;
- Abandonment or destruction of wreckage or sunken cargo;
- Industrial activities; and
- Activities of advertising or commercial enterprises.

Exempt from this requirement are, amongst others, commercial fishing, scientific marine research, navigation and non-profit activities carried out by individuals. Additionally, *any activity in ocean space which is subject to licensing or authorisation, either under this act and the executory decisions taken hereunder or under other legal or regulatory provisions in force...shall be subject to an environmental impact assessment.*

As can be seen from the above, there is still no legal basis for a strategic planning approach to the marine environment. Also, the GAUFRE pilot project does not tackle any institutional issues of MSP. It states the role of the government regarding spatial policy of the North Sea. Hence the drawing of the structure plan and issues of a trans-national approach should be a special task of the government.

3.4 Marine Spatial Planning Today

In 2003 the federal state of Belgium developed an informal master plan for the BPNS. The key issues of the plan are mineral extraction, wind parks, marine environment protection and prevention of oil pollution, as well as the management of sea-related land-based activities. Plan implementation is thereby incremental and divided into two phases. In the first phase zones are defined for mineral extraction and wind energy, and in the second phase for marine protected areas. In this process stakeholder involvement should play a key role.



Figure 18: Phases 1 and 2 of the Sustainable Master Plan for the BPNS

Mineral Extraction

To avoid unsustainable sand and gravel over-exploitation in the most economically efficient coastal areas, the master plan proposed a more diverse zoning system. Therefore, a sequential procedure system of extraction was established to reduce the impact on the environment and to allow for natural recovery. Furthermore, a maximum exploitation quota of 15 million m³ during five years was fixed. These stipulations were confirmed by law in 2004.

Wind Parks

For the reduction of investors' insecurities in the planning process of offshore wind parks, and to diminish negative environmental effects one zone for the construction of wind parks was outlined for which companies can submit requests for permissions.

Marine Protected Areas

On the basis of royal decrees, the first six marine protected areas were established according to the bird directive and habitat directive in the context of the Natura 2000. It is intended to supplement the decrees through user agreements signed between the Belgian Government and the sectors.

3.5 Marine Spatial Planning Tomorrow – the Approaches of the GAUFRE Project

Initiatives for a MSP of human activities in the BPNS exist, while an overarching vision and a planning approach integrating all activities are still missing. To reach a more strategic level of planning the GAUFRE pilot project has adapted the on-land planning method of the region of Flanders to the marine area. The comprehension of planning is thereby to develop a global and strategic vision of the desired spatial outcome, in which interests have to be balanced among each other. Therefore a definition of every single piece of land is not necessary. Accordingly, the emphasis of the project is placed on the planning process and not on the contents of a final plan.

The project has to be seen as a first attempt of a holistic MSP in Belgium indicating that the BPNS is part of a wider mass of marine waters that consist of a three-dimensional structure as

well as being occupied by an extensive arrangement of jurisdictional zones, infrastructure and uses.

Data and Analysis Approach

In a first step of the analysis homogenous zones in relation to geophysical and ecological data were constituted. Thereby the correlation of sedimentological diversification and the occurrence of macrobenthos play a decisive role, even if it was not possible to attribute variables to all locations within the BPNS.

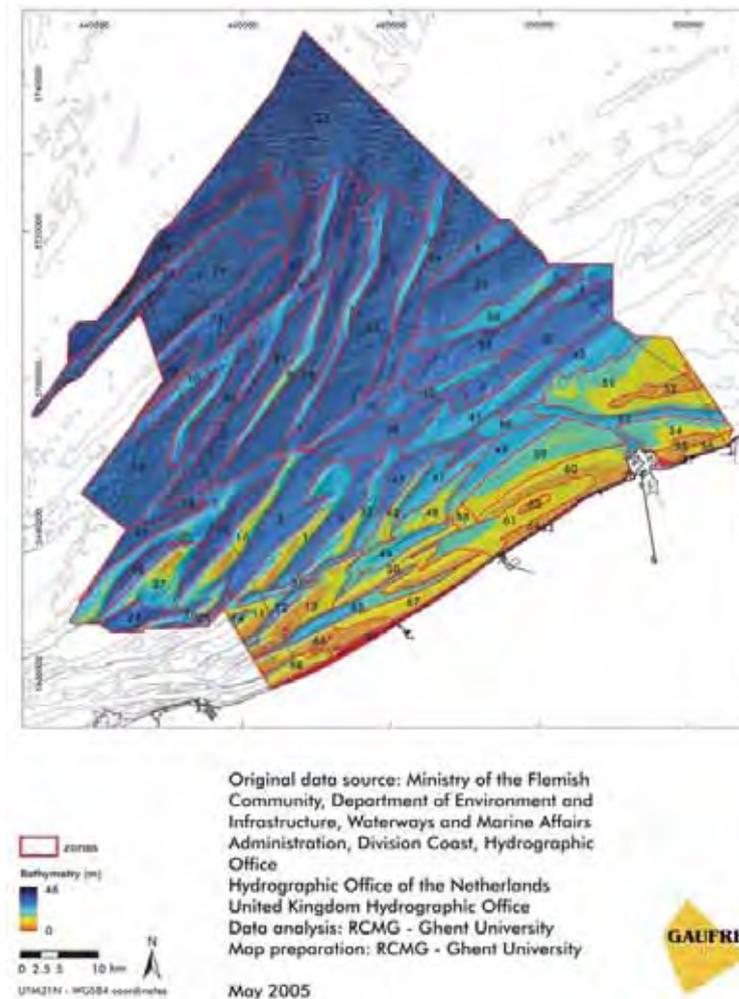


Figure 19: Zoning of the BPNS on Basis of Geophysical and Ecological Data

Later on, the infrastructure and the historic, current and future uses were considered in the context of their legislative framework, spatial distribution and intensity of use, and restructured to a GIS-system, which allows to layer marine environmental information and to create maps.

The so collected and edited data of infrastructure and activities has to be further analysed with respect to suitability, environmental impact and interaction among users:

- It can be determined through the suitability tool which zones of the BPNS are suitable for different activities before space is allocated to that use. There could be constraints of technical and jurisdictional nature, as well as from economic, social and ecological aspects.
- For each use the size of environmental impact, regarding physical, chemical and ecological issues, was identified, and the intensity of their occurrence scored and presented in impact maps.

- As a third point the interaction among users was analysed. Thereby not only physical but also future demands had to be considered. On the basis of a table the positive and negative externalities of a newly introduced use on the current uses are shown, as well as their possible management in time, space and overlap. Also, these results have been presented in maps of positive and negative effects.



Figure 20: Sand and Gravel Extraction: Spatial Distribution and Use Intensity

Linking Scientific Data and Structural Planning

To edit scientific data in a more practicable way for the structural planning process, simplified overviews in maps and synthetic illustration through overlapping of the former were created. The maps are therefore not necessarily geographically accurate. The contents of these are the sub-areas and the dynamics of the BPNS, the natural values and the infrastructure in the BPNS, and the structure of the coastal strips.

Values and Scenarios

As core values GAUFRE defines wellbeing, ecological and landscape, and economic development. Thereby

- well-being sees the North Sea as an area for recreation, in particular at the coast, with the sea as a large empty space;
- ecological and landscape understands the North Sea as a scarce landscape which has to be preserved; and
- economy considers the North Sea as a wealthy area, in which resources have to be exploited to reach a surplus value.

Additionally to these core values the project identifies principles for the planning process. These are, in detail, measures for the protection of the marine environment, sustainable management and sustainability in relation with the core values described above, and finally security for the protection of land against floods, as well as the environment against pollution.

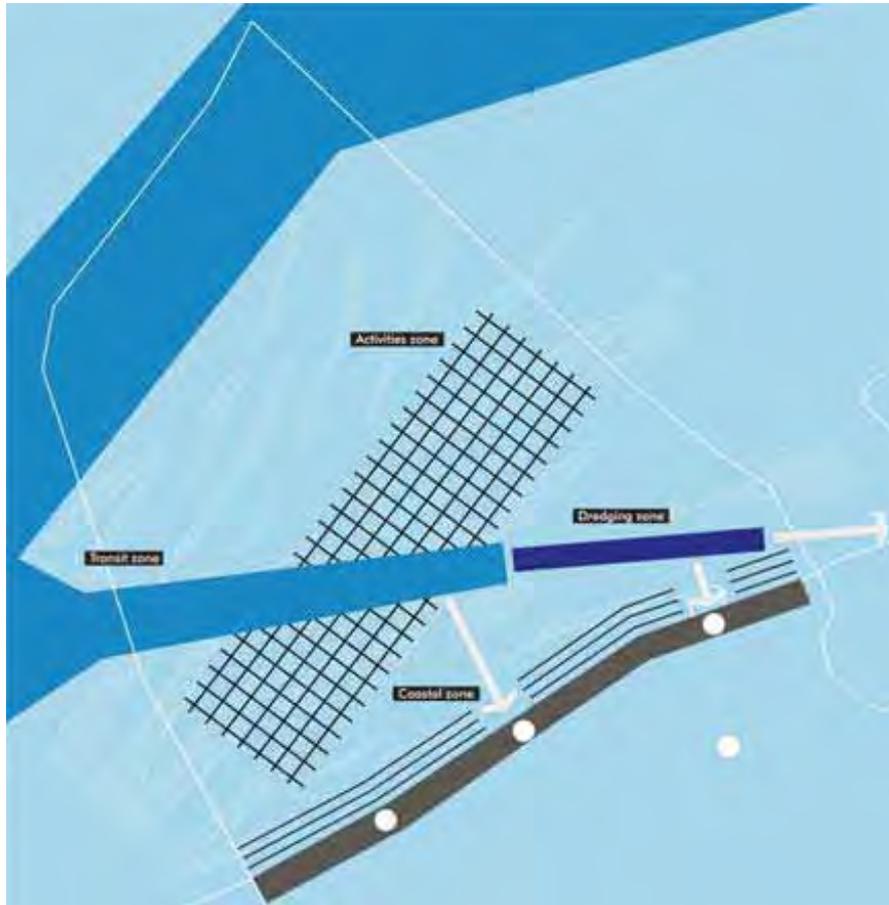


Figure 21: The Dynamics of the BPNS

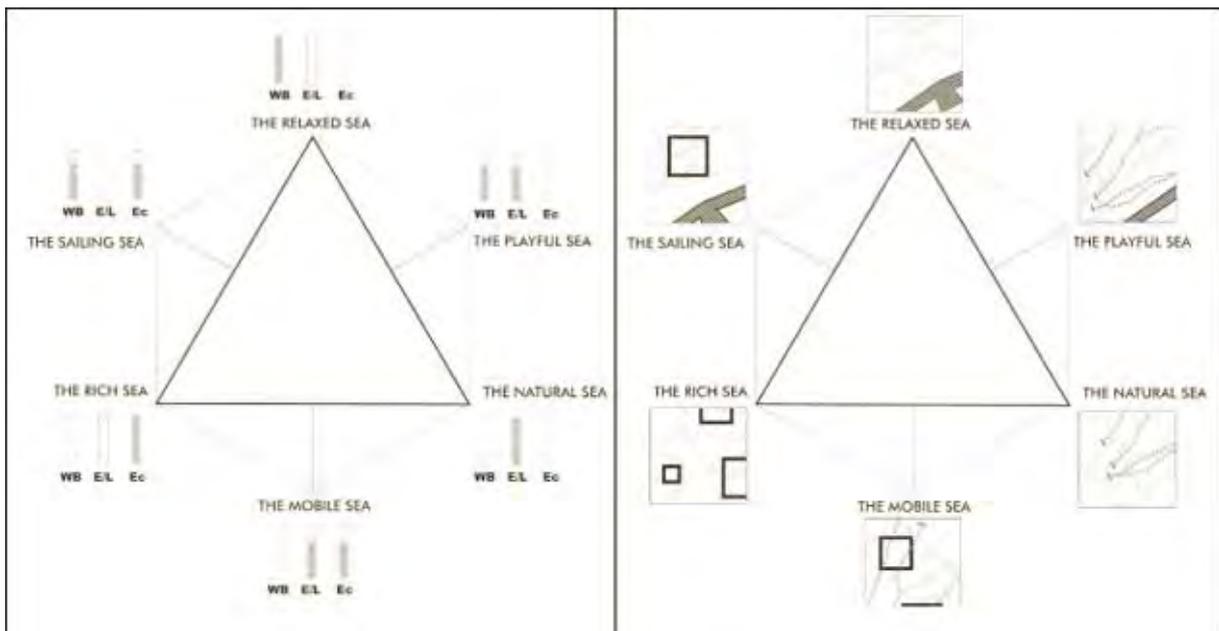


Figure 22: Scenarios for the Future of the BPNS

On the basis of these core values and principles, six scenarios emphasising one or two values were developed. Thereby fixed principles have to be considered, e.g. regulations on shipping, economic considerations for fishery or protection of the most valuable nature zones. These scenarios are:

- The Relaxed Sea pursues the idea of consumer welfare in the North Sea relating to recreation from a landward point of view. Therefore the spatial concept is concentrated on the coastal strip.
- The Playful Sea is also connected with the recreational and tourism issues as the previous scenario, but goes beyond it with the objective of developing the marine area for recreational purpose. As a result, spatial demands are made to the sea and not only to the coastal strip.
- The Natural Sea advocates the preservation of the sea dynamics, open landscapes and the coast as natural heritage. This could lead to the exclusion of large parts of the BPNS, to the moving of uses to deeper sea areas to protect the valuable natural shallow coastal waters and to the reduction of the intensity of activities.
- The Mobile Sea assumes the use and consumption of the natural resources in a controlled way. Consequently, this scenario integrates the values of ecology and economy. Spatial demands should thereby concentrate on locations where negative environmental impacts would be small. These are sandbanks with high regeneration ability, mobile energy platforms or rotation systems of use.
- The Rich Sea emphasises the economic development, promoting the maximisation of the exploitation of the natural resources. Therefore, every activity should be situated in its economically most efficient location. These are generally areas with a short distance to the coast so that uses could be concentrated in core zones. In this context the most important economic activities (sand and gravel extraction, fishery) should have priority. Further spatial issues are the combination of offshore wind parks with mariculture and fish nursery, and concession zones for fishing.
- The Sailing Sea adds the social to the economic issue. Effort is made towards socially valuable immobile structures, e.g. communication infrastructure, hard coastal defence or the development of port activities. To increase transport efficiency a differential transport network should be implemented and an (air)port island built for the relief of current ports and residents.

These six extreme scenarios offer the possibility for discussion among stakeholders and experts about the importance given to every core value and activity in the BPNS. This way a structural plan for the North Sea could be defined, somewhere in the centre of the hexagon of scenarios.

Decisions Rules and Stakeholder Workshop

The GAUFRE project accentuates the need for decision rules in MSP, because they enable to identify all the potentially permitted uses within the BPNS. Thereby, the decision rules are to be comprehended as operating principles to find the best option and location for each sector activity, in consideration of the interactions to other uses, e.g. inter-sectoral interests, conflicts and synergies. This also includes the relation to land activities. Basis for all decision rules is the general strategic vision of the marine environment.

The development of new decision rules should start from the existing rules and use public participation, expert knowledge and relevant literature to obtain sector-specific data and resolve conflicts. For problem solution the study proposed a three-step process:

- distinct definition of the goals and objectives per sector;

- scoping of necessary data, also regarding to the legislative, political, policy and scientific requirements;
- preparation of a management plan with different scenarios and a balancing of the objectives of the sectors against each other.

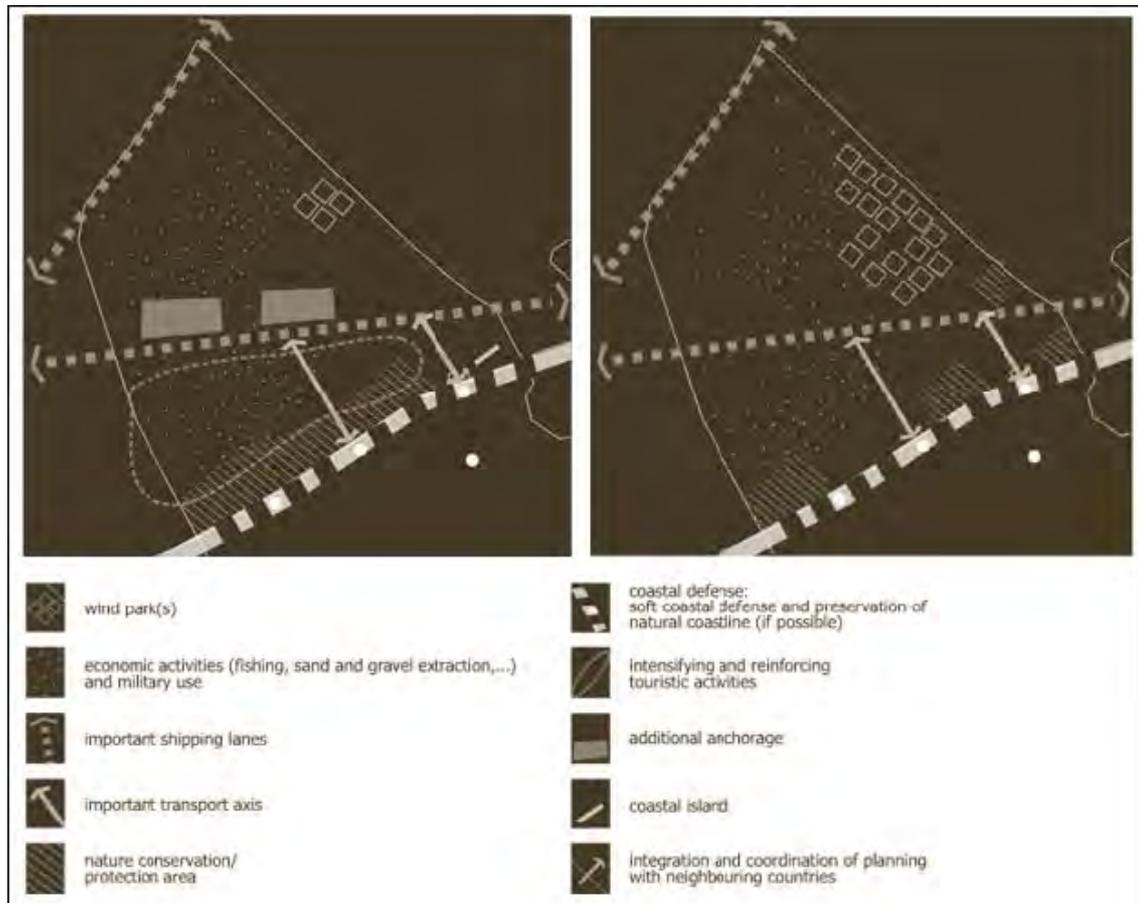


Figure 23: Scenarios of the Groups 2 and 5 of the Stakeholder Workshop

For the preparation of the stakeholder workshop the project defined open decision rules to the five most important spatial uses in the BPNS. These are marine protected areas, wind turbines, sand and gravel extraction, fishery, and tourism. For instance, for wind turbines the general question is posed if *the introduction of wind turbine parks is necessary to meet the demand of green energy*. In case of a positive answer questions were then put to the issues of location, size, shape and target value in a second step.

These questions were discussed in the workshop and 15 decision rules defined with a high consensus between the participants, even if there is still a need for discussion on the issues of coastal defence, mariculture and fishery. For example, for wind energy the decision rule was: *yes, and the concession areas must be designated on the basis of a minimal impact on landscape (visual) and ecology*; or for tourism: *the recreational function of the coast must be strengthened (active and passive), with enough space for nature*. Through the different weighting of these decision rules the six workshop groups produced different spatial scenarios, as the figure 21 shows.

4. Germany – Marine Spatial Planning in Mecklenburg Western-Pomerania

In Germany the competence of MSP is divided between federal and federal-state levels. The former involves the jurisdiction for planning in the EEZ (behind the 12 nm) and the latter for the Territorial Waters. This specific situation will be considered for the coast and the marine waters of the federal state of Mecklenburg Western-Pomerania (MV) in Northern Germany, that was the first to extend its spatial plan to the Territorial Waters.

4.1 Area of the Case Study

With its 381 km of outer coastline MV has Territorial Waters of about 6000 km². Since the Baltic Sea is an inland ocean the EEZ is only a small strip. About 900,000 people live in the sea-related administrative districts with a density of 100 inhabitants per km².

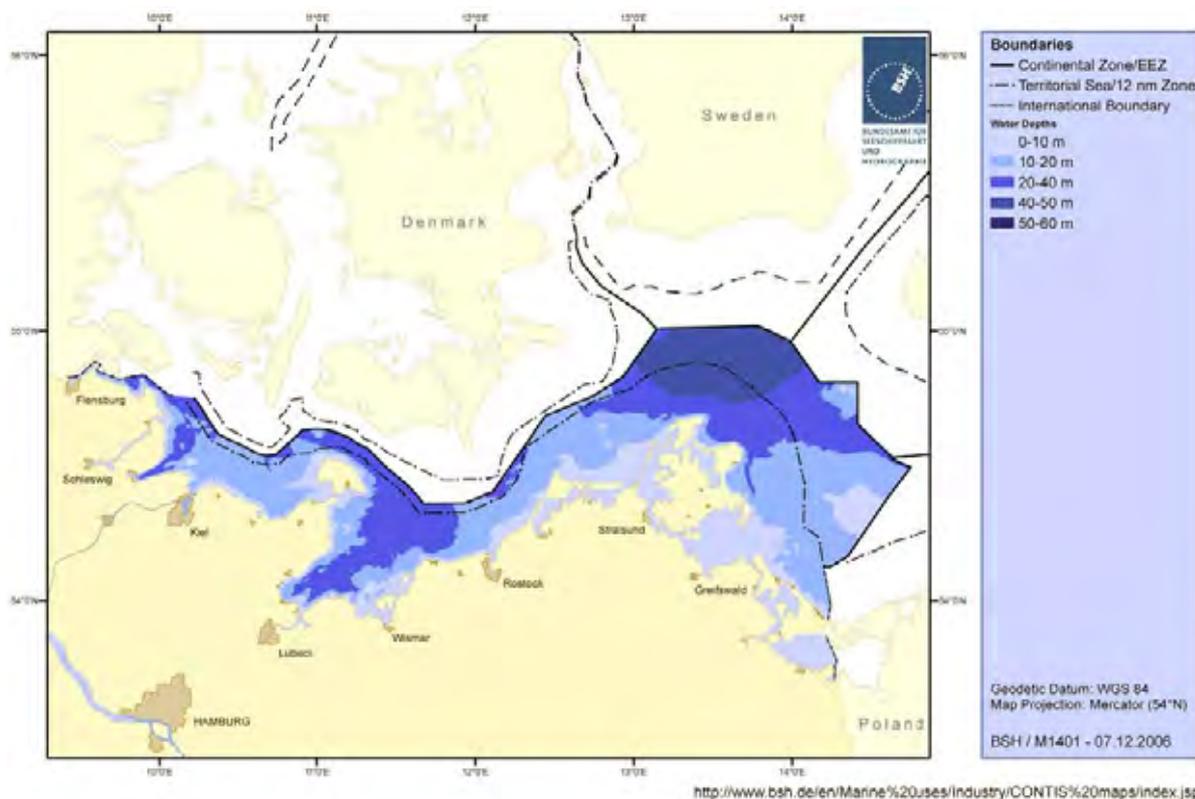


Figure 24: The German Part of the Baltic Sea

The shoreline is characterised by shallow coastal waters and lagoons, and provides habitat for birds (migratory), crustaceans, plants and fish nursery. The sea area also contains different species like seals or fish (herring, sprat or cod). In general the Baltic Sea, as one of the major brackish (low-salinity) water basins of the world, reaches only an average depth of 52 m. Besides fishery and mariculture, landscape and nature are the main regional assets being suitable for tourism and recreation. Non-living environmental resources of the region are:

- Cultural heritage, like wrecks and settlements on the seabed and at the coastline.
- Mineral resources.
- Areas suitable for wind energy exploitation.

4.2 Activities and Conflicts in the German Baltic Sea

The Baltic Sea is commercially used in MV for tourism and recreation as the most important regional economic factor. Further activities are related to shipping and transportation, military exercise operations, offshore wind parks, mineral extraction, and laying of cables and gas-pipelines.

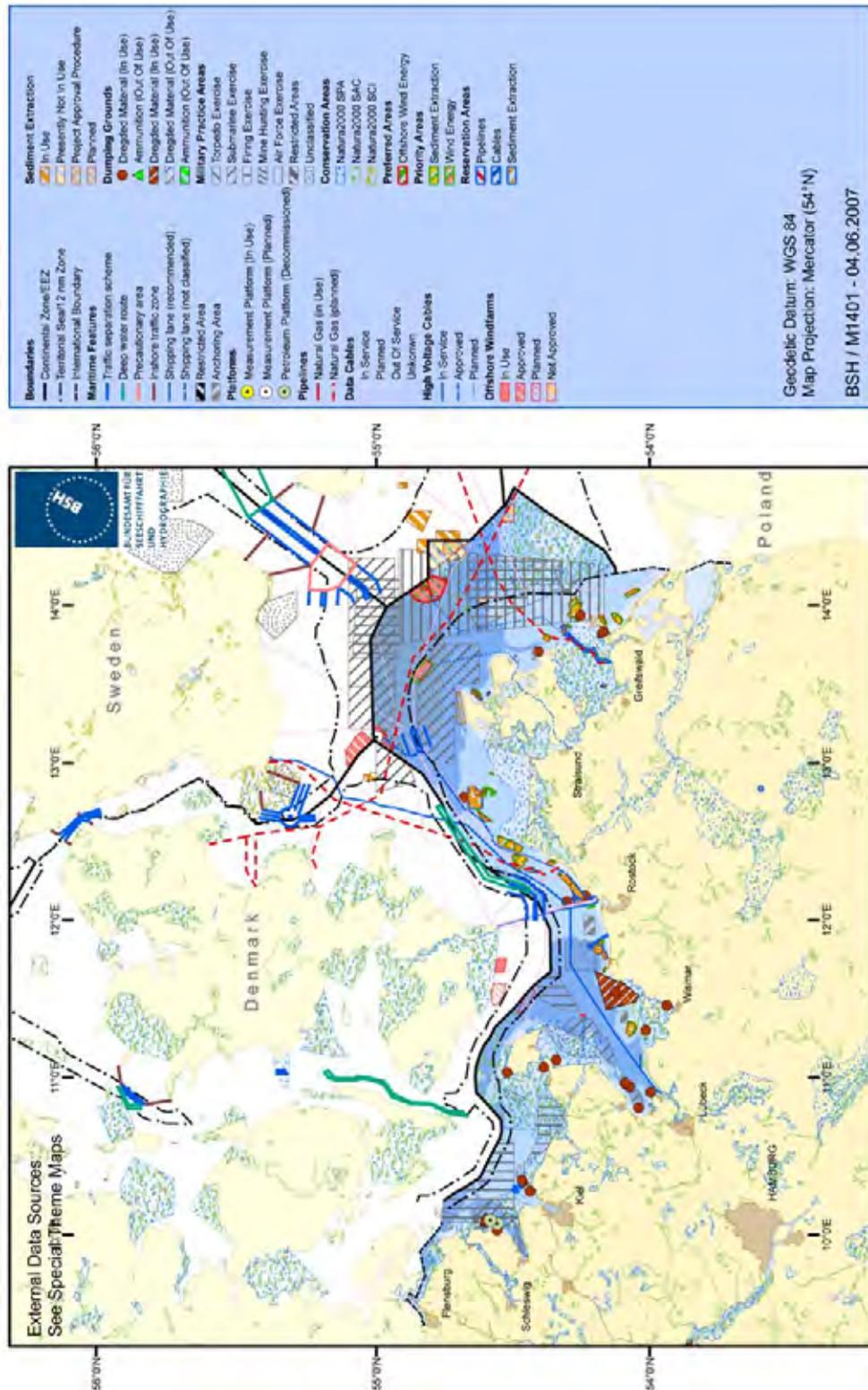


Figure 25: Existing and Perspective Uses and Nature Conservation in the Baltic Sea

Due to the specific geographical situation of the only a low water exchange with the North Sea can be measured. Therefore the Baltic Sea is highly sensitive to pollution from marine or coastal activities, as well as discharges from rivers.

Further conflicts arise from the introduction of new activities in the marine region. This is especially the case with the offshore wind parks, which generally exclude the traditional activities, e.g. shipping or fishery. Since they ruin the landscape and endanger maritime traffic, which involves the risk of oil-spill accident, offshore wind parks are in a natural conflict with the interests of the tourism and recreational sector.

4.3 Legal Basis for Marine Spatial Planning

As described above, the MSP is divided between the federal and the federal-state levels. So after considering the similarities the legal particularities for each planning area will be described.

General Spatial Planning Instruments and Requirements

The overarching basis for regional plans is the Federal Regional Planning Act (Raumordnungsgesetz/ROG). The law appoints as main instruments: planning objectives and planning principles. The former *prescribes standards in the form of texts or drawings in regional plans which are governed by or can be reconstructed on the basis of area-specific or functional features and which have been finally decided upon by state authorities responsible for regional or sub-regional planning in the individual Laender; they serve to develop, organise and protect the respective areas* (ROG 2006 s 3 No 2). The latter are *general statements concerning the development, organisation and protection of areas defined in or in accordance with section 2 as standards to be complied with in subsequent judgements and discretionary decisions* (ROG 2006 s 3 No 3). Or in other words: planning objectives are legally binding and planning principles have to be considered in the decision process.

In addition to these regional planning requirements stipulations could also refer to sites in form of:

- Priority areas: scheduled for certain regionally significant functions or uses, other conflicting uses are excluded.
- Reservation areas: special importance is attached to certain regionally significant functions or uses when balanced with competing regionally significant uses.
- Suitability areas: suitable for certain regionally significant measures and are prohibited in another location in the planning area (ROG 2006 s 7 (4)).

Among others, further required issues concern the preparation of a SEA, the involvement of public authorities and legal persons through the opportunity to make comments, or monitor the impacts of the plan implementation on the environment.

Exclusive Economic Zone

With regard to the above-mentioned general instruments, the MSP in the EEZ is in the sphere of competence of the Federal Ministry of Transport, Building and Urban Affairs, which, in co-operation with the concerned federal ministries, issue the stipulations of the plan as statutory ordinance. The Federal Maritime and Hydrographic Agency (BSH) carries out the procedure. Thereby the planning competence is harmonised with the United Nations Convention on the Law of the Sea only for some functions.

The Federal Regional Planning Act defines that objectives and principles should be issued with regard to the economic and scientific utilisation, the safety and waftability of shipping as well as the protection of the marine environment.

Before the amendment of the Federal Regional Planning Act in 2004, offshore marine infrastructure was managed through the Offshore Installation Ordinance. For example, in the case of wind-energy permit could only be refused if the project endangered the security of shipping or the marine environment. So the BSH had no scope of discretion.

Territorial Waters

For the Territorial Waters the marine spatial plan is the extension of the regional plan of the federal state of MV to its sea area, regarding the Federal State Regional Planning Act. Therefore, the requirements for the MSP are the same as for terrestrial planning. The leading figure in MV is thereby the supreme spatial planning authority in the form of the Ministry of Transport, Construction and Regional Development. Having followed the above-mentioned general requirements (participation, SEA), the state spatial programme will be issued as statutory ordinance by the federal-state government. For the integration of the sea related communities, the federal-state planning act mentioned the opportunity of the implementation of integrated coastal zone management as an informal instrument for the achievement of the objectives of the regional plan.

Moreover, on the federal-state level a further instrument is the regional impact assessment procedure (RIA). Through this, *regionally significant plans and measures* (large-scale infrastructure projects) *shall be harmonised with each other as well as co-ordinated with the requirements of regional policy*. According to these aims the RIA integrates all relevant issues, especially environmental aspects (EIA) and evaluation of locational or route alternatives. Finally, the result of the procedure has to be considered in the regional planning decision.

4.4 Planning in the EEZ

The current state of MSP in the German EEZ is that the preparatory work is being done including the draft plan, SEA and public participation. As a consequence, statements on the planning process could not have been made so far. Alternatively, the pilot project for the co-ordination of competing spatial demands of the Federal Office for Building and Regional Planning from 2003 to 2005 will be considered, which also gives an ambitious approach to the integration of MSP in ICZM.

Study Area, conflict situation and aim of the pilot project

The study area was the sea field Kriegers Flak situated in the EEZ 32 km (17 nm) north-west of the island Rügen. In the pilot phase for the area applications for permits for 80 wind energy plants were submitted, and issued in 2005.

Through the dynamic growth of the tourism branch with the emphasis on water sports, and the decline of the agricultural and production sectors at the same time, tourism has reached a share of about 40% of the employment and the economic power of the island of Rügen. Therefore the support and strengthening of the tourism branch has the highest priority in the regional development as a strategy against unemployment and population migration. For these reasons all plans and measures which are in a potential conflict with these interests are considered suspicious and need a sensitive justification and communication strategy for their acceptance.



Figure 26: Site of the Offshore Wind Park Kriegers Flak

This fundamental conflict between the interests of tourism on one hand and wind energy on the other has been intensified through an at least partially irrational confrontation between the federal and federal-state levels as wind park advocates and the island-district as opponents.

Out of lack of an institution for moderation and conflict solution, the aim of the pilot project was seen in the development of a participative co-ordination mechanism as an instrument for conflict reduction in the interest of all stakeholders.

Data Approach and Further Conflicts

Besides the overlaying conflict between the wind park development and the tourism interests of the island, further data was collected in order to identify other disputes. In particular information was surveyed on ecological issues, shipping, fishery, pipelines and cables, military activities and mineral extractions. Out of this material further conflict was noted with the interests of the fishery, cable tray and shipping sector:

- Kriegers Flak is a highly frequented cruise area. A sufficient safety distance to the shipping routes could be kept.
- Requirements of third persons in relation to cable trays were solved through individual arrangements.
- Consequently, conflicts remain only for the fishery sector and recreational cruising because of the definition of the area as a prohibited zone.

Environmental impacts of the project were considered in the context of several subjects of protection, e.g. population, soil, water, climate, landscape, fish and birds. In general, environmental impact will be concentrated during the construction period. Apart from this the influence of the wind park on the human recreation and the landscape through visual disturbance, shading and reflection should be regarded. The intensity of the impact is thereby related to the distance from its origin.

Community and Institutional Involvement

Participation issues have to be seen separately for the pilot project and the approval process of the wind park.

Within the pilot project interviews were made as a preparation for the workshops with stakeholders from the Rügen island (mayors, heads of departments, representatives of the

district and lobbies) and the Federal Office for Building and Regional Planning. Contacting the BSH as the authorising agency failed. In the further course the BSH arranged a postponement of the workshops because of substantive demurs concerning the hearings of the approval process in the same time period. Eventually, the contractor and the client decided to cancel the workshops.

The approval process was arranged in the frame of the Offshore Installation Ordinance with its formal requirements of community and institution involvement. Nevertheless, municipal stakeholders had the impression that their interests (fishery, tourism) had not been considered sufficiently. This primarily had three causes:

- The Offshore Installation Ordinance mentions only two causes (security of shipping and the protection of the environment) to refuse a permit. Therefore an integration of other aspects and a fair appreciation of all planning issues were not possible.
- The key questions of such an approval access are so complex that the general public can not understand these in detail and so feels embarrassed.
- Through the segmentation of the planning competence between the state (EEZ), the federal state (Territorial Waters) and the municipalities (coast) the balancing of interest is hardly feasible.

Even though the planning in the EEZ has been reformed to a more integrated approach there is still a need to co-ordinate the different planning competencies in an overarching informal institution. Such an approach would offer the chances:

- to define corridors for acceptable solution strategies;
- to integrate all relevant issues and to assess them in a fair manner;
- to raise all stakeholders to the same rank;
- to integrate the different governmental levels for a joint assessment process;
- to reach win-win situations through the integration of all issues; and
- to assure an early, transparent and informal information, as well as communication policy.

For institutional issues the pilot project recommends the introduction of a regional ICZM representative, situated in the existing regional planning system. Furthermore, for conflict prone co-ordination processes an impartial moderator or mediator should be appointed in advance.

4.5 Planning in Territorial Waters

The federal state MV is the first German coastal state that has integrated the marine issue in its regional development program. After the introduction of this, the outcomes of the RIA for the wind park Baltic I will be described.

The Federal State Regional Development Program

In the regional development program statements are made regarding the fields of wind energy plants (definition of suitable areas), cables (reserve areas), environmental protection (priority areas), tourism and recreation (reserve areas), as well as resource securing (priority areas).

Thereby ICZM and spatial planning in coastal waters is viewed as an instrument to co-ordinate the different spatial demands. In addition to the above mentioned specifications, the needs of the security of shipping, the conservation of the cultural heritage, the support to and development of fishery, the spatial arrangement of mariculture, the defence, and the dumping of dredged material should also be considered.



Figure 27: Extraction from the Regional Development Plan (Mecklenburg Western-Pomerania 2005)

Regional Impact Assessment Procedures

In the planning process of the offshore wind park Baltic I 16 km (8,6 nm) north of the peninsula Darß, a RIA was executed in order to form an opinion about the project impact on shipping security, environmental protection and the tourism sector. The project covers an area of about 7 km² with 21 wind energy plants.

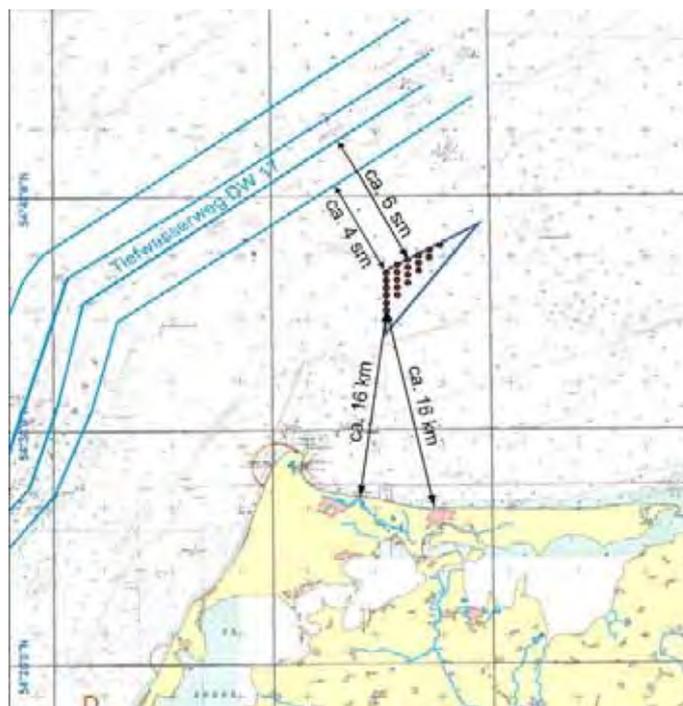


Figure 28: Applied Wind Park and Impact on Deep Waterways

The main results of the procedure were:

- Disturbances of the safety of shipping are hardly to be expected with a statistical possibility of ship/wind park collision of once in 146 years without, or 286 years with risk reducing features.
- Through this low risk contamination of the sea by an accident is unlikely and therewith negative consequences for the tourism sector are not to be presumed.

- Harmful impacts on bird migration (cranes) are hardly to be expected and can be further reduced by measures like the shutdown of the plants in the main bird migration period.
- • The wind park will change the landscape. But this intervention can be minimised through a low-reflection surface and a low-contrast colour scheme.

Beyond the negative impacts of the wind park, the positive externalities for the economy and employment should be taken into account.

5. Conclusions and Recommendations

Even though every marine region of the world has its own specific characteristics in relation to the geo-physical structure, the resources and the biodiversity, the four case studies in the UK, Canada, Belgium and Germany show that, at least in the western industrialised countries, the spatial demand on the marine environment is increasing. The necessity of a holistic MSP system is seen particularly in the context of the protection of the marine environment and the introduction of new uses, e.g. renewable energies or mariculture.

In the UK and Belgium the pilot projects were initiated to research opportunities for developing, implementing and managing a MSP system. Hence the focus is put on the analysis of the activities in the marine environment and the possibilities of generating spatial solutions.

The main idea of the Irish Sea project in the UK is to identify conflicts and develop possible options for the territorial waters and the EEZ, through pooling of the data on the existing, as well as prospective uses. Thereby it is proposed to have a variety of plans in order to get the opportunity to provide a link between terrestrial and marine planning. Furthermore, the project picked up the topic of institutional building and the contents design of a marine bill.

The Belgian pilot project concentrates on the data collection and analysis similarly to the British approach, but takes it even further. On the basis of core values the planning consortium formulated six extreme scenarios. In a stakeholder workshop these scenarios were discussed and own vision statement scenarios and decision rules were developed. The project was thereby associated with the territorial waters as well as the EEZ, and promotes the idea of a cross-national MSP.

The cases on a legal basis in Canada and Germany are different in their binding force. Thus, the Canadian approach tries to reach a better arrangement of uses through the integration of the marine planning goals and objectives in the existing official planning documents, as well as the voluntary commitment of stakeholders. Statements on zoning have so far only been made for the protection of the marine environment. Also, the overarching plan for the territorial waters and the EEZ can be complemented by a coastal management plan. Further emphasis in the project was on institutional building for stakeholders, governmental organisations and management, which are continuing their work in the implementation process.

Unlike this rather informal approach, in the German Baltic Sea the traditional instruments of spatial planning, like zoning and regional impact assessment, are applied, but to this formal concept an informal ICZM can be added. Although this approach is the most legally binding of the four case studies, problems could occur through the division of the planning competence in the EEZ (federal) and the territorial waters (federal state).

Since MSP is a relatively new issue, no recommendations on the basis of long-term experience can be made. However, from the experience of the contractor and the planning approaches described above, some issues should be pointed out:

- The case studies indicate that an overarching plan for the territorial waters and the EEZ is essential. Probably only this way a holistic planning approach can be developed for the marine environment, in which specific plans can be integrated.
- Particularly in marine areas with a high-density of uses, e.g. the Baltic or the North Sea, a cross-national planning approach is required to avoid harmful influences on the neighbouring countries' marine regions and to reach a holistic planning scheme.

- All relevant current and prospective uses and resources of sea and the related coast should be considered, so that potential conflicts and possibilities for multiple uses could be identified in an integrated GIS system. Collection of necessary data should be carried out in advance to reduce the costs of the planning process.
- For a sustainable development of the marine environment a vision statement is needed to give direction for the stakeholders in their daily work and implementation.
- Seeing the MSP as a process, institutions are needed in which stakeholders, experts and governmental actors can communicate on the same level to solve conflicts, to find strategies for the implementation of the planning concept, or to discuss new ideas.

The case studies and the recommendations are intended to provide an overview of the topics of MSP today. Even if every region has its own specific attributes, this work may be an encouragement for the daily work of the workshop participants.

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