MARINE SPATIAL PLANNING INSTRUMENTS FOR SUSTAINABLE MARINE GOVERNANCE

SEAPLANSPACE COUNTRY MANUAL - DENMARK









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CHAPTER 1. MARITIME SPATIAL PLANNING IN DENMARK

1. MARITIME SPATIAL PLANNING IN DENMARK (LISE SCHRØDER, KARIN TOPSØ LARSEN)

1.1. INTRODUCTION

Denmark is located in the south-west part of the Baltic Sea, where Danish straights and Oeresund provides access to Kattegat and the North Sea. Compared to a limited land area of 42.933 km², Denmark has a relatively large sea territory of 105,000 square km². According to the latest survey by the Danish Geodata Agency, the Danish coastline sums up to 8750 km (Geodatastyrelsen, 2021). 78 Danish islands are inhabited, and from any given location in Denmark, the distance to the sea, is less than 52 km. In total, Denmark consists of more than 400 islands, as well the peninsula of Jutland connected to northern Germany marking the western border of the Baltic Sea (the Danish Ministry of Environment, 2021).

Historically, Denmark has been a nation of seafarers closely connected to the sea and, nowadays, fisheries as well as shipping are still particularly important business sectors. Due to an exceptionally large sea territory in the North Sea, oil and gas energy exploitation has become a huge sector during the past half century. Also, wind energy has been an important industry in Denmark for decades and, recently, this sector has primarily expanded offshore. Denmark has a long tradition for spatial planning, including a strong focus on assessing how specific projects influence the environment. Still, maritime spatial planning as a holistic and integrative process has a noticeably brief history in Denmark, as the first Danish maritime spatial plan was launched during spring 2021.

In the following chapters, it is described how Maritime Spatial Planning (MSP) is being implemented in Denmark. The legal frameworks for MSP on an international as well as national level in Denmark will be presented, including an introduction of some of the central terms and concepts within the field.

1.2. THE LEGISLATIVE BACKGROUND OF THE DANISH MSP PROCESS

In Denmark, MSP covers the Danish Sea territory, including internal waters, the territorial sea and the exclusive economic zone (EEZ), see figure 1. Danish Maritime territory constitutes 105,000 square km² in total, which includes Marine internal waters: 3500 km², the Territorial Sea (12 nm zone): 40 000 km² and the Exclusive Economic Zone (EEZ): 61 500 km².

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Figure 1: The Danish sea territory including internal waters, the Territorial sea and the Exclusive Economic Zone (EEZ) (Data source: the Danish Ministry of Environment, 2021)

1.2.1. TERMINOLOGY

A definition of the central terms and concepts used in maritime spatial planning is included in the Danish Act on Maritime Spatial Planning (the Danish Ministry of Environment, 2016). Thus, the following are the definitions of these concepts as defined by law:

- The Marine area: The marine territory (Søterritoriet) and the Exclusive Economic Zones, see the law on the borders of the Marine Territory (Søterritoriet) and the law on Exclusive Economic Zones.
- The Marine region: The North Sea (including Kattegat) and the Baltic Sea.
- Maritime Spatial Planning: A process during which relevant authorities analyse and organise human activity in marine areas to achieve economic, environmental and social aims.
- The Maritime Spatial Plan: Rules with attached maps established by the Minister of Industry and Growth, determining the spatial and temporal distribution of activities and use of maritime space in Danish marine areas.

1.2.2. THE AIMS AND PRINCIPLES OF MARITIME SPATIAL PLANNING

Maritime spatial planning, or maritime physical planning, is a multifaceted term, which can be characterized as the authorities' organization and planning of human activity at sea, based on different economic, social, and environmental concerns (see terminology). Working across borders and sectors is important to ensure that human activity happens in an effective and sustainable way. The human use of oceans has changed during recent decades and much emphasis has been placed on the potential for "blue growth" and increasingly more widespread exploitation of the oceans' resources. Oceanbased activities do not take place within a bounded area, but across national territories. Thus, the maritime spatial planning of human activity affecting the marine environment and its ecosystems needs to be sustainable, holistic, and transnational. In 2014, the European Parliament and the Council of the European Union published EU Directive 2014/89/EU on maritime spatial planning, which functions as a shared legal framework for MSP in Europe. According to this directive, the main purpose of maritime spatial planning is "to promote sustainable development and identify the utilization of maritime space for different sea uses as well as to manage spatial uses and conflicts in marine areas" (The European Union, 2014: 138). Maritime spatial planning is, thus, an area of planning which affects numerous sectors and areas of knowledge, making cooperation between regional, national and global authorities vital.

An overall ecosystem-based approach, or EBA, is intended to be applied, and in extension to the Directive on Maritime Spatial Planning, other EU-directives are of significance for the marine environment, including: the European Water Framework Directive, the Marine Strategy Framework Directive, the Habitats Directive, the Common Fisheries Policy (CFP) and legal acts following these.

The Danish Act on Maritime Spatial Planning came into force in the summer of 2016, at which point Denmark, as one of the last countries of the EU, implemented the MSP Directive (Erhvervsministeriet 2016: 1). This provided the basis for the Danish maritime spatial planning process lead by the Danish Maritime Authority and the development of the first Danish MSP plan, which came into force in March 2021 (the Danish Maritime Authority, 2021-a).

1.2.3. INTERNATIONAL FRAMEWORKS

In this section, the legal context for marine management will be introduced, including international frameworks, such as the United Nations Convention on the Law of the Sea (UNCLOS) and marine areas outside of national law and relevant conventions.

The United Nations (UN) Convention on the Law of the Sea (UNCLOS) is an international convention containing guidelines and regulations concerning shipping, the environment and the nations' utilization and administration of the seas and its resources. UNCLOS was passed in 1982 and came into force in 1994. It concerns "almost everuthing that has to do with the oceans, including fishing, shipping, environmental preservation and the juridical borders of the open seas" (Globalis, 2015). Although much of UNCLOS is a written account/legalization of customary proceedings, there are also new aspects, such as the responsibilities of the states in the protection of the marine environment and the struggle against pollution. 168 countries have signed the United Nations Convention on the Law of the Sea, including all members of the EU. Denmark ratified it in 2004 (Udenrigsministeret, 2005).

There are areas of the sea where no state can implement its national laws. These areas include the High Seas and the seabed beneath the High Sea, called The Area. The High Seas are defined as the water column that lies beyond national jurisdiction. The High Seas are open to activities, such as fishing and shipping by all states, who, therefore, must cooperate to protect these areas (Udenrigsministeret, 1969). The Area is the seabed outside of national jurisdiction, meaning beneath the open ocean (UNEP WCMC, 2019). This area, along with its resources, has been declared a World Heritage Site by the UN (Dahl, 1978/1982).

Other relevant frameworks considered in the Danish MSP is the Convention on Biodiversity and underlying nature objectives, UN Sustainable Development Goals, in particular Goal 14 on life below water, as well as Danish obligations to ensure a good marine environment pursuant to the Helsinki Convention (HELCOM) and the OSPAR Convention.

1.2.4. THE DANISH LEGISLATIVE FRAMEWORK

Denmark's first act on maritime spatial planning came into force in the summer of 2016 in accordance with EU Directive 2014/89/EU on maritime spatial planning (Erhvervsministeriet 2016: 1). The Danish MSP act, with further revisions, lays down the framework for the implementation of planning Danish marine areas (Erhvervsministeriet, 2016/2020: 2). According to this act, maritime spatial planning needs to contribute to the sustainable development of offshore renewable energy production, sea transportation, transport infrastructure, fisheries and aquaculture, the use and extraction of raw materials, land reclamation, preservation, protection, and the improvement of the environment.

State and municipal authorities have an obligation to ensure that licenses, etc., for area use at sea, and adopted plans do not conflict with the maritime spatial plan, cf. §14 of the Maritime Spatial Plan Act. Whether or not a license can be granted or plans adopted for a specific activity in an area in accordance with the maritime spatial plan will still depend on main sector legislation.

1.2.5. THE ADMINISTRATION OF COASTAL ZONES

Regarding the coastal zone Denmark differs from our neighbouring countries, where land-sea interaction perspectives are included in the MSP. In Sweden the municipality plans overlaps with the MSP, and in Germany this is the case at regional (länder) level, while in Denmark the municipal planning jurisdiction ends at the coastline, where national planning jurisdiction starts. Though, some of the Danish Coastal Authority's administrative areas relating to the Coastal Protection Act, such as coastal protection, overlap, to a minor extent, the municipalities' planning referring to the Danish Spatial Planning Act can include guidelines for the use of coastal waters (see figure 2).

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Figure 2: The terrestrial planning of municipalities and the national spatial plan meet, as a general rule, at the coastline. Though, some of the Danish Coastal Authority's administrative areas, such as coastal protection, overlap. (Adapted from the Danish Maritime Authority 2021)

As defined by the Danish Planning Act, municipalities are responsible for the planning of the designated coastal zone, which covers a 3 km wide zone along the coast, including both rural land zones (open lands as well as agricultural lands) and land zones with summer housing. The coastal zone must be kept free of buildings and facilities, unless these are dependent on a near-coastal location or appointed as a specific 'area of development' (Planloven, 2020). The term 'Area of development' was introduced in Danish spatial planning legislation in 2017 due to government intensions of promoting growth and development with the potential to create new jobs, among other things, within coastal- and nature-based tourism. If permission is granted by the state, the possibility of designating local 'areas of development' makes it easier for municipalities to begin new development projects and promote city planning within the coastal zone (Erhvervsstyrelsen, 2019). In a second round of applications in 2019, 22 Danish municipalities applied - among them, Holbaek, Faxe, Vordingborg and Lolland from the South Baltic Region (Bolig- og Planstyrelsen, 2021).

Regarding municipal planning at the sea territory, referring to §11a (1) of the Danish Planning Act, §11a (1), no. 20, municipalities can make guidelines for the use of coastal waters, including guidelines for water quality, outdoor facilities, the construction of bathing beaches, restrictions on traffic, etc.

1.2.6. ORGANIZATION OF THE DANISH MSP PROCESS

As pointed out by the Danish Maritime Authority, which has coordinated the MSP process in Denmark, maritime spatial planning in Denmark has many stakeholders and other parties, who will be affected (the Danish Maritime Authority, 2021-a). As illustrated in figure 3, the preparation of the maritime spatial plan is coordinated by the MSP secretariat, which is part of the Danish Maritime Authority belonging to the Ministry of Industry, Business and Financial Affairs. Therefore, the work of preparing the maritime spatial plan has taken place in close collaboration between the following ministries and their specific agencies (see also figure 3):

- The Ministry of Industry, Business and Financial Affairs,
- The Ministry of Finance,
- the Ministry of Defence,
- the Ministry of Climate and Energy,
- the Ministry of Environment, the Ministry of Food, Agriculture and Fisheries,
- the Ministry of Transport,
- the Ministry of the Interior and Housing,
- the Danish Energy Agency,
- the Danish Business Authority,
- the Danish Fisheries Agency,
- the Danish Geodata Agency,
- the Coastal Authority,
- the Danish Environmental Protection Agency,
- the Danish Housing and Planning Authority,
- the Agency for Culture and Palaces and
- the Danish Civil Aviation and Railway Authority.

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Figure 3: The organisation of the Danish MSP decision process - all national agencies and authorities with interests in the sea territory were included in the working group, describing the interests, while a steering committee with all relevant ministry departments represented, made the negotiations, balancing interests in the MSP, on the basis of which legislation is made by the Danish Parliament.

1.3. THE CONTENT OF THE DANISH MSP

The first Danish maritime spatial plan was launched by the Danish Maritime Authority on March 31st 2021 and sent into a six-month public hearing.

According to the Danish Act on Maritime Spatial Planning, the planning of the Danish Sea territory should:

- Support economic growth, the development of marine areas, and the sustainable use of resources in the marine environment.
- Contribute to achieving the goals set by the Danish MSP Act
- Take land-sea interactions into consideration
- Strengthen cross-border collaboration according to the United Nations Convention on the Law of the Sea (UNCLOS)

Areas utilized for national defence or security activities are not affected by the Act.

More specifically, the Danish maritime spatial plan must include the following sectors (the Danish Maritime Authority, 2021):

- 1. The offshore energy sector
- 2. Maritime transport
- 3. Transport infrastructure
- 4. Fisheries and aquaculture
- 5. The extraction of raw materials at sea and
- 6. Preserving, protecting and improving the quality of the environment.

The maritime spatial plan may also promote sustainable tourism, recreational activities, outdoor life as well as land reclamation.

Like in other countries, a number of new activities are moving offshore, so, despite the fact that Denmark has a relatively huge sea territory, the demands on sea areas are increasing. The overall maritime spatial plan illustrates national political priorities regarding the future allocation of space for the majority of activities at the Danish Sea area. In principle, these priorities apply for the next 10 years. Still, the plan can be changed, if the government decides upon it due to new needs or directive obligations (the Danish Maritime Authority, 2021).

1.3.1. ZONES FOR USES AND ACTIVITIES

Until the Danish MSP planning process began, an integrated plan for the Danish Sea territory did not exist. The distribution of areas in the Danish maritime spatial plan is based on a zoning principle dividing the sea area into four distinct types of zones.

These zones can overlap, if co-location and multiple uses are possible (the Danish Maritime Authority, 2021):

- 1. Development zones including:
 - Renewable energy and energy islands,
 - The exploration and exploitation of oil and gas,
 - CO2 storage,
 - New infrastructure projects,
 - Aquaculture incl. shellfish production and marine farming,
 - The extraction of mineral resources
- 2. Special use zones including:
 - Shipping corridors
 - Protection measures for aviation
 - Cable corridors for renewable energy
 - Land reclamation
 - Pipelines
- 3. Nature conservation and environmental protection including:
 - Marine strategy areas
 - Natura 2000 areas
 - Protected areas
 - Nature and game reserves

- 4. General use zones
 - General use zones consist of all areas in the maritime spatial plan that are not designated for other purposes.

Besides the uses and activities included in the four designated zones, fishing, shipping, recreational use and tourism can take place in all zones unless other legislation prohibits it or until constructions are built or in case other regulation is formulated that limits the activity (the Danish Maritime Authority, 2021-b).

Referring to the Explanatory Notes of the Danish Maritime Spatial Plan, where further details are provided, the specific sectors covered are described briefly as follows (the Danish Maritime Authority, 2021-b).

1.3.2. RENEWABLE ENERGY

Denmark is a pioneering country in renewable energy as highlighted in the European Commission's strategy for renewable energy at sea. In order to meet government goals for the green transition and the further development of green technologies at sea, the maritime spatial plan allocates a significant part of the sea area for renewable energy. The maritime spatial plan sets the overall framework for the long-term development of renewable energy at sea, which includes establishing space for new offshore wind farms and energy islands as well as increasing demands in the transport sector, industry and society in general – see figure 4 (the Danish Maritime Authority, 2021-b).



Figure 4: the Danish MSP (www.havplan.dk) – renewable Energy (Data source: the Danish Ministry of Environment, 2021)

1.3.3. NATURE CONSERVATION AND ENVIRONMENTAL PROTECTION AREAS

Regarding conservation and environmental protection, the MSP includes areas designated as Natura 2000 sites, marine strategy areas, nature and wildlife reserves, and conservation areas – see figure 5. In parallel with the consultations on the maritime spatial plan and, referring to the obligations in the Marine Strategy Directive aiming at helping to preserve habitats for marine flora and fauna and restore biodiversity in Denmark's marine areas, the government has submitted 13 new maritime conservation areas for consultation. These include 12 areas with strict protection. In order to follow up on directive obligations, an executive order on the designation of new bird protection areas has also been sent for consultation, to secure the habitats and increase the proportion of Danish protected sea areas from approximately 19% to approximately 30% of the Danish sea area (the Danish Maritime Authority, 2021-b).



Figure 5: The Danish MSP (www.havplan.dk) – Environmental protection (Data source: the Danish Ministry of Environment, 2021)

1.3.4. OIL AND GAS ACTIVITIES AND CO2 STORAGE

As decided in the broad political agreement on the future of oil and gas extraction in the North Sea in December 2020, oil and gas extraction in Denmark will cease in 2050 at the latest. Still, oil and gas extraction in the North Sea is of significant value to society and contributes to jobs, investments, tax revenue and the supply of energy. The maritime spatial plan continues the designation of the existing oil and gas area in the North Sea west of 6°15" east longitude – see figure 6. To comply with the Paris Agreement and the goals for removing CO2 from the atmosphere, a broad majority of parties in the Danish parliament has decided to designate areas for capturing, transporting and storing CO2 in Denmark, if appropriate safety and environmental conditions can be fulfilled. Storing CO2 in the former oil and gas reservoirs can support Denmark's green transition and the path to a 70% reduction target, and the majority of existing oil and gas areas as well as one new area have been allocated for this purpose. Space has also been allocated for two future transit pipelines, Nord Stream 2 and the Baltic Pipe (the Danish Maritime Authority, 2021-b).



Figure 6: the Danish MSP (www.havplan.dk) – Oil and gas (Data source: the Danish Ministry of Environment, 2021)

1.3.5. FISHERIES AND AQUACULTURE

The Danish fishery sector plays an important role in providing jobs in coastal areas as well as for the provision of healthy food in general and, throughout history, fisheries have played a leading role in Danish society (the Danish Maritime Authority, 2021-b). The maritime spatial plan allows fishing to continue freely in accordance with the rules that apply today. However, due to other legislation, area-specific restrictions for fishing activities will be in place e.g., in protected areas. As pointed out in the MSP, the Danish government wants to promote careful fishing methods and will, therefore, provide more knowledge about the effects on the marine environment of the use of bottom trawling gear (beam trawl, demersal trawl and anchored seine net). To ensure the sustainable development of the Danish aquaculture sector, fish farming will to a great extent, have to take place in environmentally friendly salt and freshwater fish farms on land. The maritime spatial plan only allocates areas for existing sea farming and currently pending applications for the establishment of sea farms, which are already under official consideration. Areas for mussel production include mussel and oyster cultivation banks, transplantation banks, and the farming of mussels and oysters in the water column – see figure 7. Seaweed production is not yet common in Denmark and, in principle, can take place throughout the sea area (except in the shipping corridors) as there are no areas designated yet, but permission has to be sought and restrictions may follow from other legislation, or if the zone is already allocated for other purposes (the Danish Maritime Authority, 2021-b).



Figure 7: The Danish MSP at www.havplan.dk: Marine farming and aquaculture (Data source: the Danish Ministry of Environment, 2021)

1.3.6. MINERAL RESOURCE EXTRACTION

Mineral resource extraction at sea complements extraction on land and Denmark is largely self-sufficient as regards sand, gravel and stone. To ensure that Denmark also has access to the necessary resources to support future building and construction projects, zones for the extraction of sand, gravel and filler sand have been allocated in the MSP. The designation of possible mineral resource areas has been focused on places where currently existing mineral resource areas are, in areas where mineral resources have been mapped out, as well as where other sectors are impacted as little as possible – see figure 8. Furthermore, geographical considerations have been included to minimise transport as much as possible. (the Danish Maritime Authority, 2021-b).



Figure 8: the Danish MSP (www.havplan.dk) – Mineral resource extraction (Data source: the Danish Ministry of Environment, 2021)

1.3.7. TRANSPORT INFRASTRUCTURE

To ensure a well-functioning transport infrastructure across the sea, including connections between different parts of Denmark as well as neighbouring countries, Europe and the rest of the world, the government wants Danish transport infrastructure to continue to expand and be maintained in order to meet the needs of the future. The allocation of areas for transport infrastructure has been based on whether infrastructure projects have been initiated, e.g. adopted through a construction act, feasibility studies have been commenced, funds set aside for a feasibility study or any other political decision on the project has been made. Allocations in the MSP for future bridges and tunnels cannot be taken as an expression of whether the projects in question can be expected to be realised or not. Furthermore, allocations have been made to support the possible need for future compensation dredging at the Great Belt Bridge to ensure that the hydrographic conditions of the Baltic Sea remain unchanged throughout the lifetime of the bridge, and to respect current aircraft approach plans and distances for public airport to ensure air safety and regularity or capacity in air traffic – see figure 9 (the Danish Maritime Authority, 2021-b).



Figure 9: the Danish MSP (www.havplan.dk) - Transport infrastructure (Data source: the Danish Ministry of Environment, 2021)

1.3.8. LAND RECLAMATION PROJECTS

If there is a land reclamation project planned that is of major importance for society, the maritime spatial plan can exempt areas from other use. In the current MSP, the plan sets out an area for Hvidovre Municipality's land reclamation project for up to 9 new islets as an extension of the current area Avedøre Holme – see figure 10. As pointed out in the explanatory notes, the allocation of areas for land reclamation projects in the MSP does not limit the possibilities of carrying out land reclamation elsewhere at the Danish sea territory, provided that it does not conflict with other allocations. (the Danish Maritime Authority, 2021-b)



Figure 10: the Danish MSP (www.havplan.dk) – Land reclamation projects (Data source: the Danish Ministry of Environment, 2021)

1.3.9. MARITIME TRANSPORT

Denmark is among the world's leading maritime nations and 60,000 commercial ships pass through the Great Belt or Øresund connecting the Baltic Sea with the North See via Kattegat yearly. There is freedom of navigation in Denmark but to ensure the safest and most direct routes through Danish waters, the maritime spatial plan allocates the most important shipping corridors based on current use. In collaboration with neighbouring countries, the best and most efficient routes have been designated. To enhance cohesion across Denmark, the plan includes shipping corridors for national ferry routes as well as connections to neighbouring countries – see figure 11 (the Danish Maritime Authority, 2021-b).



Figure 11: the Danish MSP (www.havplan.dk) – Maritime transport (Data source: the Danish Ministry of Environment, 2021)

1.3.10. OTHER ACTIVITIES

The maritime spatial plan supports a governmental priority of ensuring that Danish sea areas can also be used for tourism and leisure activities. By means of a general use zone, including all sea areas in the maritime spatial plan not allocated for specific purposes, land expropriation for new, large facilities, which could have a negative effect on leisure activities, are prohibited – see figure 12. All areas, designated under this label in the maritime spatial plan, can be used as they are today until facilities are built or activities are started that restrict this use (The Danish Maritime Authority, 2021-b).



Figure 12: The Danish MSP at www.havplan.dk: The general use zone (Data source: the Danish Ministry of Environment, 2021).

1.4. PLANNING IN THE DANISH COASTAL ZONE

The MSP covers all parts of the Danish Sea territory ending at the official coastline, where it meets the borders of the Danish Planning Act and the jurisdiction of municipalities. During the Danish MSP hearing process ending September 30th, 2021, a dedicated meeting targeted at municipalities made it clear that a clarification was needed regarding planning legislation in the coastal zone, where there is a close connection between the Danish Coastal Authority's tasks under the Coastal Protection Act and municipal planning. Referring to an explanatory document, made by the Danish Maritime Authority in collaboration with the Danish Housing and Planning Authority, it is described how the proposal for the MSP meets municipal planning and current procedures of permissions regarding the sea territory. Once the MSP has been announced as a ministerial order by the Minister of Industry, Business and Financial Affairs, revisions might be added to this description following responses to the public hearing and changes in the plan. (The Danish Maritime Authority, 2021-b). The following

refers to the Explanatory Notes accompanying the Danish Maritime Spatial Plan supplemented by the explanatory text provided by the Danish Maritime Authority in August 2021.

1.4.1. THE INTERRELATIONSHIP BETWEEN THE MARITIME SPATIAL PLAN AND MUNICIPALITY PLANNING

In cases, where municipalities are authorized to plan at the sea territory, this planning must not conflict with the maritime spatial plan, cf. §14 of the Maritime Spatial Plan Act.

Existing municipal plans or local municipal development plans will not be affected by the MSP, while municipal plans or local municipal development plans that come into force after March 31st, 2021, have to be in accordance with the MSP. The MSP, as well as future changes to the proposal, is legally binding as soon as it is published. Public authorities are not allowed to grant permissions or make plans, which are not in accordance with either the actual MSP plan in force or published plan proposals or proposals for changes to an existing plan. Regarding municipal planning at the sea territory, referring to §11a (1) of the Danish Planning Act, §11a (1), no. 20, municipalities can make guidelines for the use of coastal waters, including guidelines for water quality, outdoor facilities, the construction of bathing beaches, restrictions on traffic, etc. Referring to the Maritime Spatial Plan Act, §5(3), plans can be developed to promote sustainable tourism, recreational activities and outdoor life, etc.

As emphasized by the Maritime Authority, municipal activities at sea can continue to take place as before, with few modifications, within the framework of the Planning Act. The allocation of areas for development zones means that licenses can still be issued or planning conducted for land use within the zones for other purposes, provided that the licenses are compatible with the purpose for which the development zone has been allocated. However, licenses, etc. will only be granted upon consultation with the minister responsible.

The guidelines of the municipal plans must not be in conflict with the maritime spatial plan, cf. §11 of the Planning Act, while local development plans that overlap with the sea must not conflict with the maritime spatial plan.

1.4.2. THE DANISH PLANNING ACT

The Danish Planning Act provides the legal framework for spatial planning on land in Denmark. Though, there are a few exceptions regarding planning that can take place at the sea territory.

Planning in coastal waters,

Referring to the Planning Act, municipal plans must include guidelines for the use of coastal water areas. This includes, for instance, recreational uses, such as bathing, sailing, and fishery. The municipal plan cannot define frameworks for the content of local plans or legally binding regulations for the use of coastal waters.

Planning on water areas within or in relation to harbour work in a city development area

Referring to the Danish Planning Act, the municipal council can define the use as well as establish facilities on water areas, as long as it is within or in relation to harbour work and in an urban transformation area.

This means that the municipal council can establish municipal plan frameworks for the content of local development plans as well as include legally binding regulations regarding:

 the use of water areas in a city development area, as long as it is within or in relation to harbour work. This could include beach facilities, bathing, other recreational water activities or lay outs for houseboats. the establishment of facilities in a city development area as long as it is within or in relation to harbour work. This could include dredging work and the establishment of moorings as well as the placement of vessels to be used for other purposes than sailing and dredging, etc., (e.g., house boats).

Planning of built up areas and facilities in the coastal zone.

Referring to the Danish Planning Act, municipal plans must include guidelines for the use of the coastal zone. The coastal zone must be kept free of buildings and facilities, unless these are dependent on a near-coastal location or appointed as a specific 'area of development' (Planloven, 2020).

As far as planning in the coastal zone is concerned, except for the establishment of commercial harbours and other infrastructure constructions, it will not be possible to plan for built up areas and facilities on land if it concerns areas at the sea territory or specific coastal protection.

This regulation does not apply to coastal protection measures in relation to existing built up areas and facilities.

The planning of coastal protection measures pursuant to climate change regulations,

Referring to the Planning Act, the municipal council must make guidelines in the municipality plan as well as include legally binding regulations in the local development plan to ensure mitigation measures in areas identified in the municipality plan as exposed to flooding, if developed for city purposes and technical facilities etc. A mitigation measure could be a flood protection construction placed on land as well as in the water (Planloven, 2020).

Explanatory notes for the municipality plan.

The municipal plan must be accompanied by explanatory notes explaining the conditions, including conditions regarding protected areas referring to other legislation, as well as land use reservations pursuant to sectorial legislation as well as planning and construction laws (Planloven, 2020).

Municipal planning is not allowed to conflict with the $\mathsf{MSP}^{\text{\tiny t}}$

Municipal plans as well as local development plans are not allowed to conflict with either the actual MSP plan in force or plan proposals or proposals for changes to an existing plan published for hearing (Planloven, 2020).

1.4.3. RELATIONS BETWEEN THE MARITIME SPATIAL PLAN AND PERMISSIONS AT THE SEA TERRITORY

The Coastal Authority grants permissions to constructions and activities at the sea territory in accordance with §16a of the Danish Coastal Protection Act. Furthermore, The Coastal Agency provides licenses to coastal protection initiated by the state, as well as to bypass and utilize sediments.

The Danish Coastal Authority also grants permission for state coastal protection, pursuant to §3(5) of the Act, and bypass, pursuant to §16b of the Coastal Protection Act . Grant permissions for non-state coastal protection, pursuant to §3(2) of the Act, are the responsibility of municipalities. The same applies to certain kinds of bathing jetties and landing stages.

It is the responsibility of the authority granting permissions that they are not in conflict with the MSP. Havplan. dk has to be checked and the minister in charge of the relevant resort has to be contacted. If the minister judges that there is a conflict, permission cannot be granted in accordance with the Danish Act on Maritime Spatial Planning. Existing permissions will not be affected.

1.4.4. THE COASTAL PROTECTION ACT

The Danish Coastal Protection Act is about permissions for coastal protection as well as permissions for facilities and activities at the sea territory.

The Maritime Spatial Plan will not change existing jurisdictions among public authorities and the MSP will not replace permissions relating to other existing legislation.

Permissions to facilities at the sea territory.

The sovereignty of the state regarding the Danish Sea territory is incorporated in §16a of the Coastal Protection Act, on the basis of which, *the Danish Coastal Authority* grants licenses for the placement of fixed or anchored facilities as well as activities not regulated by the legislation of another authority.

- Facilities refer to all fixed or anchored devices or objects in the territorial sea, which can be marinas, seaweed production facilities, reefs, moorings, cables, pipelines and harbour baths, etc.
- Activities refer, for instance, to dredging or long term anchoring. Furthermore, the Coastal Authority can grant permission to vessels for other purposes than sailing, like house boats, etc.

More details on different kinds of facilities and activities can be found in the official guidelines from the Coastal Authority (Kystdirektoratet, 2015).

Permissions pursuant to §16a of the Coastal Protection Act are not dependent on municipal planning. Though, the Coastal Authority will always consult municipalities when handling applications for permissions.

Permissions for the bypass and utilization of sediments,

At the sea territory as well as at beaches and other inshore coastal areas without vegetation, it is possible, in accordance with §16b of the Coastal Protection Act, to get permission to

- Bypass in terms of the utilization of littoral deposits due to a fixed construction, a fairway or a harbour basin, etc.
- Utilization usage, for other purposes than bypass, e.g., filling or sand feeding at coast stretches outside areas for bypass.

The Danish Environmental Agency will judge if the sediment, planned to be dredged, is free of pollutants or is an environmental contaminant.

Permissions to bathing jetties and landing stages,

Since 2007, municipalities have been authorized to grant permissions for simple bathing jetties and landing stages, where water flows without hindrance and outside commercial harbours and marinas.

Pursuant to §2 of the Act on Bathing Jetties and Landing Stages,

- the municipality can provide guidelines and terms for the application procedure and conditions for granting permissions as well as restrict possible constructions,
- if the bathing jetty or landing stage is constructed as a pier or similar construction hindering water flow, permission has to be granted by the Coastal Authority.

If the construction consists of bigger bridges with terraces, big pierheads or furnishing, permission has to be granted by the Coastal Authority in accordance with §16a of the Coastal Protection Act.

Permissions for Coastal protection,

Pursuant to the Coastal Protection Act, coastal protection is only allowed if permission is granted. The municipality has the authority to grant permissions for the coastal protection of single properties as well as municipality projects, including longer coastal stretches. If it is a state project, the Minister of the Environment has the jurisdiction to grant license.

Coastal protection projects can be established inshore or offshore or as a combination. Examples could be sand feeding, establishing slope protection, groynes, breakwaters or dikes.

In the case of comprehensive construction work, local development plans or amendments to the municipality plan can be made.

1.5. THE FULLY DIGITAL, LEGALLY BINDING DANISH MSP

MSP processes are dependent on access to data. In this part, Danish maritime spatial data infrastructure and the Danish digital MSP will be introduced.

1.5.1. MARINE SPATIAL DATA INFRASTRUCTURE

Spatial data infrastructure (SDI) allows data to be shared between people within organisations, states or countries. In the EU, a major step towards a pan-European spatial data infrastructure was Directive 2007/2/EC on establishing an Infrastructure for Spatial Information in the European Community (INSPIRE), which entered into force in 2007 (Hansen et al, 2017). Regarding the marine environment, the term Marine Spatial Data Infrastructure (MSDI) applies. In 2015, the Danish Geodata Agencu, in collaboration with ten other Danish agencies, initiated the implementation of a Danish MSDI to support exchanging and sharing spatial data concerning the marine environment (the Danish Geodata Agencu. 2015). This service, the Marine Map of Denmark, provides a joint administrative basis, through which authoritu activities regarding the use of the sea and its resources can be coordinated and optimised while balancing the interests of economic development and the marine environment. The MSDI has, thus, been a backbone in implementing the directive on maritime spatial planning in a Danish context, where the central goal during the Danish MSP process has been to be able to launch a fully digital legally binding plan (see figure 13).



Figure 13: The public part of the Danish MSDI "The marine map of Denmark" at <u>www.msdi.dk</u>: Here showing the zones of the MSP while in hearing (Data source: the Danish Ministry of Environment, 2021)

CHAPTER 1. MARITIME SPATIAL PLANNING IN DENMARK

1.5.2. THE DIGITAL MSP

The Danish Maritime Spatial Plan is the first legally binding digital plan in the country. As pointed out in a leaflet from the Danish Maritime Authority, map attachments and coordinates have, until now, been published as pictures or text in the Danish Law Gazette (the Danish Maritime Authority, 2019). In order to make data available digitally to administrative systems, the publication of spatial data should occur digitally in the future in order to be used, without hindrance, in their continued digital form in administration processes and comparable with other published spatial data. The development of the Danish digital MSP has been supported by the Pan Baltic Scope project, funded by the European Maritime and Fisheries Fund of the European Union. It establishes an infrastructure for the digital publication of the geography of legal rules, the Agency for Data Supply and Efficiency (SDFE) has described a number of issues regarding background maps, history, interoperability and storage, which can also be utilised by other countries. Due to the Order on the promulgation of the maritime spatial plan, published in December 2020, the Danish maritime spatial plan and amendments to the maritime spatial plan will not be promulgated in the Danish Law Gazette (Lovtidende), but on the digital portal, <u>www.havplan.dk</u> – see figure 14. Consultations on proposals for the maritime spatial plan and proposals for amendments to the maritime spatial plan will be published at <u>www.havplan.dk</u> as well as at the Danish consultation portal (www.hoeringsportalen.dk).



Figure 14: The interface to the English version of the digital and legally binding Danish MSP at <u>www.havplan.dk/en</u> (Data source: the Danish Ministry of Environment, 2021)

The maritime spatial plan allows local development plans and municipal plan frameworks to be displayed as service information for the maritime spatial plan, so that one can navigate the plans that a municipality may have adopted for a given coastal area. This allows municipalities and citizens to view coastal local development plans and municipal plan frameworks in one place (The Danish Maritime Authority, 2021-b).

1.6. CONCLUSIONS

The maritime spatial planning process is a very new task in the Danish planning context, especially when it comes to the coastal zone, where the MSP meets municipal plans at the coastline, the picture gets a little blurred. The involvement of coastal municipalities in the MSP process, has, so far, been very limited. Though, it is emphasized by the Maritime Authority (2021) that municipal activities at sea can continue to take place as before, with few modifications within the framework of the Planning Act. The allocation of areas for development zones and licenses can still be issued or planning conducted for land use within the zones for other purposes, provided that the licenses are compatible with the purpose for which the development zone has been allocated. The legally binding MSP makes it possible to make changes and amendments to the plan when needed.

CHAPTER 2. HUMAN AND ECONOMIC ACTIVITIES IN THE SOUTH BALTIC REGION, WITH A FOCUS ON DENMARK

2. HUMAN AND ECONOMIC ACTIVITIES IN THE SOUTH BALTIC REGION, WITH A FOCUS ON DENMARK (KARIN TOPSØ LARSEN, LISE SCHRØDER)

2.1. AN INTRODUCTION TO HUMAN AND ECONOMIC ACTIVITIES IN MSP

The primary purpose of MSP is to function as a tool for the multilevel and multidimensional governing of common resources that seas and oceans - in this case the Baltic Sea - can provide. As a source of an abundant variety of resources, many livelihoods depend directly (for food) and indirectly (for economic value) on the Baltic Sea.

The Baltic Sea is facing serious environmental challenges that threaten its multilevel ecosystems' abilities to function properly and, thereby, to renew themselves sustainably. A large share of environmental challenges facing the Baltic Sea's eco-systems are human made, i.e., generated by humans' over-use and unsustainable exploitation of different types of natural resources, as well as humans' emissions of different types of materials that pollute such ecosystems (Taminskas & Povilanskas, 2021). MSP is not primarily a tool to assess or mitigate such environmental challenges but, instead, builds on an understanding that all human use of marine resources should be sustainable, hence the ecosystem-based approach that is integrated in the MSP concept. It is in the interests of the people and economies that use and rely on the qualities, values, and resources that the Baltic Sea represents, that those resources continue to be provided.

This chapter gives a brief overview of the economic sectors that rely on the resources generated by the Baltic Sea as well as the people who rely on them. First, there will be a brief introduction to the demography of the South Baltic Region, followed by a brief introduction to coastal municipalities in Denmark, particularly those that border on the Baltic Sea. The second half of the chapter focuses on socio-economic sectors that are marine- and maritime-based. Again, the structure is to start with the Baltic Sea Region as a whole, followed by a description of the socioeconomics of the maritime economy in Denmark.

2.2. THE DEMOGRAPHY OF THE SOUTH BALTIC REGION

Nine countries border the Baltic Sea and a further five countries are partly within the catchment area, which has a total population of around 85 million (REF GKM). The catchment area of the Baltic Sea is defined as all the countries that have borders directly on the Baltic Sea Coast, but also the adjacent countries from which tributary rivers and waterways that run into the Baltic Sea are included. All countries bordering the Baltic Sea, except Russia, are EU Member States.

The Baltic Sea coastal regions, defined as regions that have a coastline and where more than 50% of the population live within 50 km of the coast, have a population of more than 9 million people. That number is increasing, at the expense of the northern- and easternmost regions and are indicative of general urbanization trends. In Poland, there is demographic growth, particularly in the city ports of Gdansk and Szczecin-Świnoujście, while the Nordic countries are experiencing a population decline in the rural north and population growth in the more urban south, as well as micro-urbanization, i.e., the movement within rural regions of people toward regional small cities (Burchaez & Kalinowski, 2021).

Table 1: The coastal region population for each South Baltic country:

Country	Number of coastal regions	Total population
Denmark	5	1042226
Germany	3	874 739
Lithuania	3	556 884
Poland	10	4 493 006
Sweden	3	1 945 116
Total	24	8 911 970

In summary, it may be stated that the livelihoods and practices of 85 mil. people affect the condition of the Baltic Sea, while the livelihoods and well-being of 9 mil. people, who live next to the Sea, depend more or less directly on it.

2.3. DANISH MUNICIPALITIES BORDERING THE BALTIC SEA

Danish coastal municipalities are some of the most central stakeholders in the new national MSP process. As mentioned above, there is a potential planning dilemma in the fact that municipal planning jurisdiction stops at the waterfront, whilst many municipalities have stakes and interests beyond the coastline. In June 2021, the KL Local Government Denmark, a joint umbrella organization for all 98 municipalities in Denmark, organized a webinar on Denmark's MSP public consultation process, targeting municipal administrators in planning and environmental departments. The purpose of the webinar was to focus on the municipal interface between land and sea planning from a municipal perspective. Besides concern regarding how to deal with the new legal aspects of planning in the coastal zone within the regulatory framing of the MSP (see chapter 1), the webinar made it obvious how municipalities, to a large extent, were very uncertain about the implications of the MSP as such.

In the Danish South Baltic Region, 16 municipalities border the sea: Bornholm, Greve, Solroed, Koege, Stevns, Faxe, Naestved, Vordingborg, Guldborgsund, Lolland, Slagelse, Kalundborg, Odsherred, Holbaek, Lejre and Roskilde. In the following section, we present some of the known MSP interests that several municipalities located in and around the South Baltic Sea have.

The MSP interests of many of the Zealand coastal municipalities pertain to: the development of harbours in relation to shipping, and in particular to the development of the offshore wind industry; the construction and expansion of the Femern Belt development connecting Denmark and Germany through the island of Lolland; the development of specific coastal business sectors such as aqua-culture and tourism; and, finally, concerns about the effects of pollution, including eutrophication and climate change for the future quality of life along coastal regions.

The section also includes the results of a quick survey of whether coastal municipalities in Denmark around the South Baltic have provided information on their websites about the ongoing national MSP hearing process and its relevance to their municipality (KL, 2021).

CHAPTER 2. HUMAN AND ECONOMIC ACTIVITIES IN THE SOUTH BALTIC REGION...



Figure 15: In the South Baltic Region, 16 municipalities border the sea (Data source: the Danish Ministry of Environment, 2021)

2.3.1. BORNHOLM

Bornholm Municipality, covering the Island of Bornholm, is located to the east of the rest of Denmark in its own individual part of the Danish Sea territory south of Sweden, northeast of Germany and north of Poland. Bornholm Municipality covers an area of 588.36 square kilometres and has a total population of 39,439 (2020). The island is unique in a Danish context due to its geology, where the main part of the island consists of granite, except along the southern coast. The island has a rich cultural heritage, including the remains of the medieval fortress Hammershus as well as the fortification at Ertholmene witnessing the strategic role of Bornholm.

The regional municipality of Bornholm has many interests that relate to MSP. As Denmark's easternmost island, surrounded by the Baltic Sea, it is in many ways dependent on the ocean both as a resource base and for a sustainable environment.

There is no available information on the municipal website about the political hearing of the Danish MSP on a municipal level. However, one of the Danish Maritime Authority's dialogue meetings about the national MSP was held in June 2021 on Bornholm.

The MSP aspects that Bornholm is particularly interested in, is related to its development as an "Energy island", a national hub for generating, realigning and distributing offshore wind energy, developing local enterprises, including the Port of Roenne; improving conditions for commercial fisheries in the Baltic; and providing sustainable coastal tourism.

This Country Specific Manual contains two cases from Bornholm: coastal tourism and the Port of Roenne



Figure 16: The first version of the Danish MSP as it looks around the coast of Bornholm (Data source: the Danish Ministry of Environment, 2021)

2.3.2. GREVE

Greve Municipality is a municipality about 21 km south-west of Copenhagen on the east coast of the island of Zealand in eastern Denmark. The municipality covers an area of 60 km² and has a total population of almost 50,000.

There is no online information available on Greve Municipality and its political treatment of Denmark's MSP. As a municipality along the Bay of Koege with attractive beaches all along its coastline, it has MSP stakes in tourism development, but also issues pertaining to access to ensuring high water quality along its coast, which has historically been a bay functioning as a run-off of polluted industrial wastewater and sewage, as well as issues concerning coastal protection against flooding.



Figure 17: The first version of the Danish MSP as it is around the coast of Greve Municipality (Data source: the Danish Ministry of Environment, 2021)

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2.3.3. FAXE

Faxe Municipality covers an area of 406 km² and has a population of almost 37.000.

It is also the case for the municipality of Faxe that is has not been possible to find any information on the political process at a municipal level concerning the national hearing of MSP law.



Figure 18: The first version of the Danish MSP as it is around the coast of Faxe Municipality (Data source: the Danish Ministry of Environment, 2021)

2.3.4. GULDBORGSUND

Guldborgsund Municipality is located on two islands, Lolland in the west and Falster in the east, bordering the Guldborgsund strait. The municipality covers an area of 903.15 km² (2013) and has a total population of 61,219. The municipality has the southernmost point in Denmark, Gedser Odde, and the main town is Nykøbing Falster.

Guldborgsund Municipality would like to increase the production of sustainable ocean-based protein. With a 332 km coastline, the municipality perceives itself to be in a beneficial position in terms of developing a sustainable aqua-cultural-based business sector (mussels, seaweed and eelgrass). The municipality has entered strategic international partnerships through the Submariner network and Blue platform projects as well as with national university project partners (Aarhus University, the Technological Institute and Danish Aquaculture) to develop sustainably. Guldborgsund sees itself as a testing site for sustainable aquaculture development in waters with lower salinity compared to aquacultural sites further away from the Baltic. Therefore, the municipality cooperates with Baltic Sea partners, who `only' have access to low salinity waters. Finally, Guldborgsund Municipality also sees possibilities in high interaction between on-land food production that enhances sea-based food production with lower nutrient emissions than traditional agricultural production (the Guldborgsund Municipality, 2021).



Figure 19: The first version of the Danish MSP as it looks like around the coast of the Guldborgsund Municipality (Data source: the Danish Ministry of Environment, 2021)

2.3.5. KALUNDBORG

The municipality has been the location of a political actionfor a clean environment, organized by the Danish Society for Nature Conservation at Havnsø in August 2021. The action was called: "Jump into the water for a clean Nekselø Bay". The action specifically targeted bringing attention to the Danish MSP and its administration for the next ten years of the marine environment. The Danish Society for Nature Conservation has criticized the Danish Government for only planning for 4,1% of Danish marine areas to be protected areas. Instead, they demand that Denmark should follow the EU biodiversity strategy, which stipulates that each country should dedicate at least 10% to Marine Protected Areas.

The municipality has stakes in the Port of Kalundborg, which is one of Denmark's largest container ports (the Port of Kalundborg, 2021).

Kalundborg Municipality has filed a response to the hearing process expressing concern regarding the potential locations of offshore windfarms.



Figure 20: The first version of the Danish MSP as it looks like around the coast of the Kalundborg Municipality

2.3.6. KOEGE

Koege Municipality, on the east coast of the island of Zealand, approx. 40 km southwest of Copenhagen, covers an area of 255 km² and has a total population of 60,675 (2019).

Køge Municipality is one of few municipalities that have carried out a political MSP process in the municipal council (Koege Municipality, 2021). Koege Municipality has filed a response to the hearing process, where the Municipal Council of Koege note positively that the current MSP contains an allocated area for the production of sustainable energy in the bay of Koege, in the form of offshore wind energy. However, concern is expressed regarding potential gravel extraction along the coast and the risk of further erosion along the coast and its consequences on the flora and fauna. Furthermore, the municipality suggests establishing artificial reefs and more areas for environmental protection (Havplan.dk).



Figure 21: The first version of the Danish MSP as it looks like around the coast of Køge Municipality (Data source: the Danish Ministry of Environment, 2021)

2.3.7. LEJRE

Lejre Municipality is located in the middle of Zealand, bordering the south part of Roskilde Fjord. It covers an area of 240,1 km² and has a total population of 28.173 (2021).

Lejre Municipality does not have information on their website pertaining to the municipal consultative process.



Figure 22: The first version of the Danish MSP as it looks like around the coast of Lejre Municipality (Data source: the Danish Ministry of Environment, 2021)

2.3.8. LOLLAND

Lolland Municipality is in the South-western part of Zealand. It covers an area of 892,9 km² and has a total population of 40.539 pr. In general, the municipalities on the islands of Zealand: Lolland, Falster and municipalities that cover many small islands in the area – ranging from Møn and Bogø to Masnedø etc. – perceive the ongoing construction and development project connecting Germany, through the Femern Belt to Denmark, as an important development opportunity, but also a land-sea connection that will change the region permanently (Altinget, 2016)(Lolland Municipality, 2019).



Figure 23: The first version of the Danish MSP as it looks like around the coast of Lolland Municipality (Data source: the Danish Ministry of Environment, 2021)

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2.3.9. ODSHERRED

Odsherred Municipality is in the North-western part of Zealand. It covers an area of 356,6 km² and has a total population of 32.923. It has not been possible to find information on whether or not Odsherred Municipality's interests in the Danish MSP have been treated politically. However, Odsherred is a peripheral municipality highly reliant on coastal tourism with many summer cottages and second homes within its interzonal coastal areas. The municipality is, therefore, heavily reliant on good water quality and clean beaches. See under Kalundborg Municipality for more on the environmental aspects of the Danish MSP in the Sejerø Bay area.



Figure 24: The first version of the Danish MSP proximate to the coast of Odsherred Municipality (Data source: the Danish Ministry of Environment, 2021)

2.3.10. SOLRØD

Solrød Municipality, on the east coast of the island of Zealand, covers an area of 40 km² and has a total population of 21,582 (2014). It is popular for its recreational beaches and summer house areas along the coast of Koege Bay.

It has not been possible to find any information about the political treatment of Denmark's MSP in the local government/ municipal context for the municipality of Solrød.

However, Solrød, along with other municipalities along Køge Bay, has great stakes in the development of coastal protection against floods and climate-change induced flooding. In 2020, the municipality of Solrød adopted the final of a series of local coastal protection plans. Køge Bay has been identified as one of 10 areas in Demark at most risk of flooding due to climate change and co-related increases in extreme weather events (Solroed Municipality, 2021).





Protective measures for aviation
Cable corridors for renewable energy
Existing mineral resource areas
Reservations for future mineral extractions

Renewable energy - future

Existing nature conservation and environmental protection

CHAPTER 2. HUMAN AND ECONOMIC ACTIVITIES IN THE SOUTH BALTIC REGION ...

2.3.11. STEVNS

Stevns Municipality is located on the southeast coast of the island of Zealand (Sjælland) in south Denmark. The municipality covers an area of 250 square kilometres and has a population of 22,782 (2019).

Stevns Municipality is located on the southeast coast of the island of Zealand (Sjælland), in south Denmark. The municipality covers an area of 250 square kilometres and has a population of 22,782 (2019), The municipality covers most of Stevns Peninsula. The area is known for its white chalk cliffs, which are quite rare in Denmark. In 2014 the cliff, Stevns Klint, was listed on the UNESCO List of World Heritage Sites in Northern Europe.



Fig. 26. The first version of the Danish MSP as it looks around the coast of Stevns Municipality (Data source: the Danish Ministry of Environment, 2021)

CHAPTER 2. HUMAN AND ECONOMIC ACTIVITIES IN THE SOUTH BALTIC REGION ...

The municipality of Stevns does not have any information on their website on any local political process concerning the Danish MSP. However, the municipality covers most of Stevns Peninsula. The area is known for its white chalk cliffs, which are quite rare in Denmark. In 2014, the cliff, Stevns Klint, was listed on the UNESCO List of World Heritage Sites in Northern Europe and most of the coastline is categorized in the MSP as part of an existing nature protection and environmental protection area. Furthermore, the municipality has stakes in the development of the offshore wind energy park called 'Aflandshage Vindmøllepark' (Stevns Municipality, 2021).



Figure 27: Roevig Harbour in the Municipality of Stevns (Photo: Lise Schroeder)

2.3.12. SLAGELSE

Slagelse Municipality is located on the west coast of the island of Zealand (Sjælland), in south Denmark. The municipality covers an area of 570,1 km² and has a population of 79.122 (2021).

The municipality of Slagelse has completed a local political process and decided on its municipal consultative response to the national government.

Slagelse Municipality is surrounded by several waters: the Great Belt, which runs between the central islands of Fynen and Zealand, the bay of Musholm, Agersø Sound, Skælskør Fjord, Skælskør Cove and the fairway 'Smålandsfarvandet'.

The municipality is pleased that a number of interests and stakes have been included in the plan: shipping corridors, Nature 2000 and other coastal environmental protective areas, limited development zones for raw material extraction and aqua culture, and larger zones for offshore wind energy development, whilst there are no restrictions on the number of increased usages, such as tourism. The Municipal Council does remark, however, that the MSP has not included an Environmental Assessment, including the effects of fisheries, raw material extraction, or the effects of continued nutrient emissions, just as the MSP does not contain planned action to conserve, protect and improve the environment in accordance with UNs SDGs or other marine environmental acts or water management plans.

Slagelse Municipality has filed a response to the hearing process expressing concern regarding the lack of detailed descriptions of fisheries and gravel extraction (Havplan.dk).



Figure 28: The first version of the Danish MSP as it looks like around the coast of Slagelse Municipality (Data source: the Danish Ministry of Environment, 2021)

CHAPTER 2. HUMAN AND ECONOMIC ACTIVITIES IN THE SOUTH BALTIC REGION ...

2.3.13. VORDINGBORG

Around 135 km west of Bornholm, across the Baltic Sea, is Vordingborg Municipality. Vordingborg Municipality is on the southeast coast of the island of Zealand (Sjælland) and covers an area of 621 km². It has a total population of 46,600 (2006). The Masnedsund Bridge connects the town of Vordingborg to the island of Masnedø. The Storstrøm Bridge connects Masnedø to the neighbouring municipality of Guldborgsund. The Farø Bridges connect the two municipalities from the town of Bakkebølle Strand over Farø Island to Falster. Bogø Island is also part of the municipality.

There is no information available about whether this municipality has carried a political consultative process through, but it has stakes in terms of its extensive harbour expansion, carried out since 2015 and completed in 2019. One of the capacities that this expansion has enabled is to function as a construction and service port for the new Storstrøm Bridge, which is being commissioned by the Danish Road Directorate and will connect Zealand with Falster via Masnedø. The bridge will be approximately 4 km in length and will be Denmark's third longest bridge, only exceeded by the Øresund Bridge and the Storebælt Bridge.

Vordingborg Port is involved in an EU project on sustainable port operation and maintenance, called DUAL Ports. The focus is on the re-use of materials in the port expansion project as well as the development of specific port lighting based on renewable energy sources (Vordingborg Municipality, 2021).

Vordingborg Municipality has filed a response to the hearing process expressing concern regarding potential gravel extraction along the coast, especially along the cliff of Moen (Havplan.dk).



Figure 29: The first version of the Danish MSP as it looks like around the coast of Vordingborg Municipality (Data source: the Danish Ministry of Environment, 2021)

2.3.14. HOLBAEK

Holbaek Municipality (Danish: Holbæk kommune) is a municipality in the region of Sjælland, 60 km from Copenhagen, bordering the west coast of Roskilde fjord. The municipality covers an area of 578,33 km² and has a total population of 71.913 (2021). The biggest city is Holbaek, which dates to 1236.



Figure 30: The first version of the Danish MSP as it looks like around the coast of Holbæk Municipality (Data source: the Danish Ministry of Environment, 2021)

2.3.15. ROSKILDE

Roskilde Municipality (Danish: Roskilde kommune) is a municipality in the Sjælland region, 30 km west of Copenhagen on the island of Zealand (Sjælland), in east Denmark. The biggest city is Roskilde. The municipality covers an area of 212 km² and it has a total population of 80,687 (2008). To the north-west is Roskilde Fjord, where a large area for nature conservation and environmental protection has been designated.



Figure 31: The first version of the Danish MSP as it looks like around the coast of Roskilde Municipality (Data source: the Danish Ministry of Environment, 2021)

2.3.16. THE RESPONSE TO THE MSP HEARING PROCESS FROM THE DANISH ORGANISATION OF MUNICIPALITIES

KL (the Danish organisation of municipalities) has filed a response to the hearing process in which it is emphasised that there should be more focus on protecting the visual qualities of coastal landscapes (havplan.dk).

2.4. THE BLUE ECONOMY IN THE SOUTH BALTIC REGION

The blue economy comprises economic activities connected to oceans, seas and/ or coastal areas, i.e., industries and manufacturing sectors as well as coastal and maritime workers involved in the marine environment. such as shipping, fisheries and energy production, including activities on land, such as ports, shipyards, land-based aquaculture, algae production and coastal tourism. This definition is the one used by the EU (the European Commission, 2020). Others, like the Centre for the Blue Economy, argue that it has three related but distinct uses and meanings: (1) the overall contribution of the oceans to economies; (2) the need to address environmental and ecological sustainability of the oceans, and (3) the ocean economy as a growth opportunity for both developed and developing countries (Rousseau, 2020). In this section, we define and use it in the sense of the ocean economy as a growth opportunity for the Baltic Sea area, whilst being aware of the need to address the environmental and ecological sustainabilitu of the ocean and its resources as a prerequisite for sustainable development.

The Blue Economy has become a rapidly developing and innovative segment of many regional and national economies. Alongside traditional economic sectors, such as fisheries and shipping, several innovative new sectors are emerging: ocean-based renewable energy, desalination, bioeconomy and biotechnology, and in sectors providing new development prospects, new supply chains and new jobs (The European Commission, 2020).

Traditional maritime sectors and innovative marine activities are at the heart of the economies of South Baltic coastal regions. People have used the Baltic Sea for a very long time, especially as a transportation route and source of food. Today, the surface and seabed of the Baltic are locations of extremely varied and intensive human activities. These include maritime transportation and fisheries as well as aquaculture, oil and gas exploitation, offshore wind production, cables and pipelines as well as leisure and recreative activities, including coastal and cruise ship tourism as well as boating and angling.

On top of these more traditional sectors, there are several emerging new blue economy and innovative sectors, including blue energy, i.e., offshore wind energy, ocean energy (wave and tidal), blue bio economy and biotechnology, marine minerals, desalination and maritime defence. These sectors offer significant potential for growth and jobs, especially in the field of renewable energy. Offshore wind, for instance, has seen exponential growth, which has led to a similar increase in jobs in EU coastal communities (Burchacz & Kalinowski, 2021).

Throughout the world, there is evidence of mounting interest in marine resources and the expansion of maritime industries to create jobs and economic growth. Energy and food security are key priorities. Therefore, 'Blue Growth' has been identified at the European Union policy level as a promising economic development field.

In 2014, the European Commission adopted the Sustainable Blue Growth Agenda for the Baltic Sea Region, which focused on developing the potential of the maritime economy in and around the Baltic Sea. This was followed, in 2016, by a stakeholder-based dialogue on which areas the implementation stage of the Blue Growth Agenda should focus on (Schultz-Zehden et al, 2017) In the following part, some of the dominant economic activities within the Blue Economy in the Baltic Sea are elaborated on.

2.5. KEY MARITIME SECTORS IN THE SOUTH BALTIC AND THEIR SOCIO-ECONOMIC OPPORTUNITIES AND CHALLENGES

Fishing activities

The fishing industry represents the most traditional economic sector in the Baltic Sea Region, where it has long and rich traditions. As early as the Middle Ages, it was one of the most important economic and social activities and it experienced an unprecedented boom during Hanseatic times. The fishers of today can only dream of such times. The fisheries sector and the people whose livelihoods and lifestyles depend on it are facing both an environmental, economic and social crisis.

The principal species targeted in commercial fishery are cod, herring and sprat, which, collectively, constitute about 95% of the total catch. However, for many of the Baltic Sea's most important commercial fish stocks, the situation is critical. The species worst off is the Eastern Baltic cod stock, which is on the verge of collapse.

The commercial fisheries sector is one of several factors that is challenging the Baltic Sea's environment. It does so primarily through the selective extraction of species, including incidental non-target catching.

Economically, drastic reductions in catch quotas are endangering the existence of many businesses and their future is at risk. The catch quotas in the Baltic Sea for 2021, agreed upon by the Fisheries Ministers of EU Member States, exceeded the fishing industry's worst expectations, with further cuts for cod and herring, the most economically important species of fish for Baltic Sea fisheries.

The fishing industry is arguing that the fact that several fish stocks in the Baltic Sea are now at critical levels cannot solely be blamed on the fishing sector. Fishermen try to fish the catch quotas (TACs) they are allocated from year to year. The Baltic Sea was heavily affected by overfishing, environmental toxins and nutrient emissions during the second half of the 20th century but, in recent decades, emissions of environmental toxins and nutrients have changed radically. There are still serious environmental problems in the Baltic Sea, not least due to eutrophication, which causes major problems for cod, among others. However, the decline in recent years for several important commercial fish stocks also raises questions about shortcomings in the overall fisheries management system and the setting of catch quotas (TACs).

Many fishing businesses in the Baltic Sea area are now on the brink of collapse. The economic sector is hanging by a thread together with all its related industries, from net-makers to boatbuilders to fish smoking, fish processing and catering businesses. On some coasts, traditional fishing crafts are increasingly degenerating into a 'folklore tourist event,' which only serves to provide tourists with an atmospheric backdrop for eating tasty fish dishes, which, in many cases, are imported from elsewhere. Angling tourism is also at risk as the maximum catch quantities for recreational fishing remain limited to five cod per day.

Collectively, small-scale fishing is on the verge of collapse, which is of enormous economic and social importance for residents in many coastal areas of the Baltic Sea. Since the start of the 1980s, the number of cutters in most Baltic Sea states has decreased significantly. Many full-time fishermen are switching to part-time work or giving up the occupation completely . The market-based fisheries management system has been widely criticized for (1) on the one hand, not sufficiently lowering catch quantities, whilst (2) ruining the livelihoods of fishermen and fishing communities. Due to the fishing management system of quotas, future generations of fishers face increasingly high economic barriers to enter the system (Høst and Christiansen, 2018).

Aquaculture activities

Aquaculture is the controlled production of aquatic organisms, whether at sea, in estuaries or inland. As an activity, aquaculture, today, provides half of all fish for human consumption worldwide and has experienced vigorous global growth during recent decades. Many Baltic Sea coastal countries, such as Denmark, Germany and Poland have a long history with the inland aquaculture of rainbow trout and also of other species, such as the common carp. There are 332 aquaculture sites in the Baltic Sea. In terms of volume, nearly 90% of aquaculture production for human consumption in Baltic Sea waters deals with the cultivation of rainbow trout.

It is very difficult to assess the socioeconomic challenges to aquaculture in the Baltic due to a lack of statistics and knowledge. Based on Eurostat, the Coalition Clean Baltic (CCB) has assessed that, during the period 2009-2016, ca. 138.000 tons were produced annually in the Baltic Region. By means of comparison, total EU production constitutes 1,2 Mil. tons and Norway's production 1,3 mil. tons annually. The number of employed within the sector is relatively, ca. 3000-3200 persons in the entire Baltic region.

Commercial sea-based aquaculture of seaweed in the region is currently restricted to Denmark and Germany. As along other cold temperate coasts of Europe, the main target species is the kelp Saccharina latissima, which is generally capable of relatively fast growth. However, the species reaches its distribution limit in the Baltic Sea salinity gradient at Bornholm (Møller Nielsen et al. 2016).

While commercial seaweed farming is still restricted, several pilot projects have been launched to develop seaweed farming in the area. Low salinity in the inner parts of the Baltic Sea is still seen as a major limitation to seaweed farming (Blidberg & Gröndahl 2012).

Offshore windfarms

Wind power and other offshore renewables, such as wave power, are parts of the solution in the ongoing global move away from coal, oil, gas and nuclear power towards more sustainable forms of energy production. The first offshore windfarm in the world, the Danish Vindeby, was constructed in 1991 in the western end of the Baltic Sea. However, it is especially during the last ten uears that the interest in offshore wind energy in the Baltic Sea has taken off. Denmark and Sweden were the first countries to develop offshore windfarms in the region during the 1990s but, since 2011, Germanu has quickly established itself as a major offshore wind country in the region. 95% of existing capacity is in the south-west of the BSR. in the territorial waters of Denmark, Sweden and Germany. Currently, there are many planned projects active in Poland as well as in Finland, Denmark, Sweden and Germany. Despite quick developments offshore, the bulk of wind power developments today take place on dry land. As an example, in the EU, in 2016, 10 923 MW were installed onshore compared to 1 567 MW offshore. However, this ratio is changing as the cost-efficiency of offshore developments is improving (Tonderski and Jedrzejewska, 2013).

In 2013, the challenges and opportunities of the offshore wind energy sector in the South Baltic Region were assessed. These included financial aspects – difficulties in finding financial support for the development of an emerging economic sector requiring substantial infrastructure investments; technical challenges and opportunities, stressing the need to not only continue the development of technologies that cater specifically to offshore construction and servicing, which require very different technical solutions than land-based wind energy production. And related to this, the need to build and ensure access to electric grids and networks to transport, store and distribute the power generated by offshore power stations, and, again, the need for substantial financial investments in such infrastructure. The study also pointed to the aspects of safety and the need for international spatial planning to ensure integrated planning between the location of large offshore wind farms and other marine and maritime activities, including shipping lines. Finally, the study pointed to more direct socio-economic aspects of supplying a skilled work force to work on the construction, production, servicing and storing of offshore wind-generated power, which may, indeed, be a significant challenge in countries around the South Baltic Sea (Tonderski and Jędrzejewska, 2013).

Offshore oil and gas

Offshore oil and gas exploration are not large-scale activities in the southern BSR. These activities are likely to increase, though, as there are plans to exploit several new fields in the Polish Exclusive Economic Zone.

Port industry and shipping

The Baltic Sea is one of the most heavily trafficked seas in the world, accounting for up to 15% of the world's cargo transportation. According to the HELCOM Automatic Identification System (AIS) for monitoring maritime traffic, established mid-2005, there are about 2,000 ships in the Baltic marine area at any given time and, each month, around 3,500–5,000 ships ply the waters of the Baltic Sea (HELCOM, 2009).

Shipping is one of the main users of the Baltic Sea and is a central determinant for development and trade in the region and, therefore, also one of the most economically important sectors in the Baltic Sea. There are approximately 400 ports in the BSR, 90 of which are of international importance, all of them functioning as traffic nodes between land and sea and for commercial as well as passenger traffic. As such, Baltic ports have become crucial nodes in the international flow of goods and as significant wealth generators.

Baltic liner shipping consists of three main sectors: ferry (mainly passenger transport with cargo in the form of trucks and cars); cargo (mainly roll-on roll-off (ro-ro) unitized cargo) and container shipping.

Amongst the 3500-5500 ships that navigate through the Baltic Sea per month, more than 50% are general cargo ships. Approximately 20% of ships are tankers carrying over 200 mil. tons of oil, whilst ca. 11% are passenger ships operating about 50 mil. Passengers (Matczak et al., 2018).

In 2014, Baltic Sea countries, including Russia, controlled ca. 7000 ships with a gross tonnage of about 1000, which represented 13% of the world fleet and 35% of EU-controlled fleet. There has been a tendency toward a fewer number of vessels combined with a growth in cargo tonnage, thus indicating that the size of ships is expanding (especially for cargo transport).

The main development factors for shipping in the Baltic concern global economic development trends, the law framework for shipping in the future, a change in global trade flows, i.e., a re-routing of international trade, and a change in environmental factors. Shipping is likely to increase on a European as well as global scale due to global population growth, economic growth and the effects of increasing globalization. It is also expected that a model shift from road-based transport to seabased transport will take place in Europe. The Baltic Sea favours waterborne traffic over shorter distances because of a high density of harbours, meaning that Short Sea Shipping shortens travel distances compared to road-based transport. Both road- and shipping-based transport is expected to become more expensive. It is also expected that there will be a greater number and shore of larger vessels to enable more efficient and cost-saving freight transport. Larger ships with deep draught represent a major challenge for routes entering the Baltic Sea for crossing shallow areas as well as port development (Matczak et al., 2018).

The decade 2005–2014 brought double digit growth (+14.3%) to the entire sector of Baltic ports. Ports may affect the activation of the economy of regions constituting a basis for diversified economic activities. Thus, seaports, as economic and spatial structures as well as nodal points of the transport infrastructure, also perform basic economic functions for the region, namely:

- Transport, related to cargo handling and transhipment, as well as the storage of goods,
- Industrial, involving the performance of industrial activities in port areas (repairs and the construction of small vessels as well as repairs of fishing gear and its manufacture),
- Commercial, referring to the role and function that a seaport performs in the process of distributing goods, e.g., sorting, repackaging, sale and purchase contracts as well as financial and legal services,
- Baltic fishery services, including the transhipment, storage and processing of fish as well as cutters and fishing boats using the port,
- Tourism and recreation, involving the operation of international passenger traffic and passenger ships, coastal shipping passenger vessels, yachting as well as various forms of water sports and recreation (fishing, diving, etc.) (Matczak et al., 2018).

Coastal and marine tourism and recreation

In 2016, the BALTIC SEA REGION tourism industry:

 generated 88 million international arrivals (+10.4 percent from 2014) and registered 227 million overnight stays (+8.9 percent from 2014)

- of which 54 million overnight stays by international visitors were recorded – equal to 24 percent of all overnight stays (+9.4 percent from 2014)
- directly provided jobs for more than 640,000 persons (+6.5 percent from 2014)

If the Baltic Sea Region is considered a macro-destination, most of its international tourists come from within the BSR region, i.e., Germans, Poles, Danes, Swedes and Lithuanians (Jacobsen, 2018).

There is great variance in the tourism industries between South Baltic countries.

The tourism industry along the German Baltic Sea Coast, encompassing the regions of Hamburg, Mecklenburg-Vorpommern and Schleswig-Holstein, are increasing in the number of arrivals, of which 23,9 % of overnights are international tourists, but only 9,6 % of arrivals are international tourists. On the other hand, 5,4% of total employment in the German Baltic Sea Coast is within tourism, which is one of the highest shares amongst South Baltic countries. 2% of the GDP in Baltic Sea Coast regions is from tourism. Most international visitors come from Denmark, Sweden, Switzerland, the Netherlands and the UK.

The tourism industry in Lithuania is also growing, by 14,6% measured as the number of arrival tourists. As one of the most international destinations amongst South Baltic countries, ca. 46,8 % of overnights are international tourists. The tourism industry makes up 1,8% of total employment in Lithuania, whilst tourism contributes 1,8% of GDP in Lithuania. The many international tourists come from Belarus and the Russian Federation, which are both declining in number, while Latvia, Germany and Poland are on the rise.

The tourism industry in Sweden is also growing, with an increase from 2014 to 2017 by 12,5% in the number of arrival tourists. Of these, 24,5 % of overnights are international tourists and tourism is responsible for 3,5% of total employment in Sweden, while its contribution to GDP is 2,4%. The largest international tourist visitor markets are Norway, Germany, Denmark, the UK and the Netherlands.

Tourism is also on the increase in the Polish Baltic Sea Coast regions in the north and north-east. It has a growth rate from 2014 to 2017 in the number of arrival tourists by 17,1%. Of these, 17,9 % of overnights are international tourists. The tourism sector is responsible for 2,1% of total employment in Polish Baltic Sea regions, contributing to 1,9% of GDP in Poland Baltic Sea regions. In terms of who the international tourists are, Germany stands out by far – it is the largest international tourist market, followed by the Russian Federation, Sweden, the UK and Denmark, the last three being on the rise (Jacobsen, 2018).

Danish coastal and maritime tourism is presented in chapter 3 below.

Collectively, coastal and maritime tourism is an economic sector in each of South Baltic country and it is indicative that tourist numbers are on the rise, as the tourism product is diversifying. These are trends that will demand more space – on land, on the coast and in the (primarily) shallow, but increasingly also further out to sea) and will also intensify the use of that space in the near future.

2.6. THE BLUE ECONOMY IN DENMARK – CHALLENGES AND OPPORTUNITIES

Denmark is among the world's leading maritime nations and its maritime economy, called Blue Denmark, is one of the country's industrial strengths. The sector consists of shipowners, -yards, equipment manufacturers, service and repair businesses, ship designers, shipping and logistics companies, shipbrokers, ports, offshore organizations within both oil and gas as well as offshore wind, maritime scrapping and recycling industries and maritime educational institutions, - trade organizations, etc.

In 2017, the gross value added in the Danish maritime industry was approximately DKK 96 billion and Danish maritime organizations export constituted ca. 25% of all Danish exports. The Danish maritime sector is competitive globally based on high technological and specialized products as well as innovative solutions.

Denmark has the world's fifth largest merchant fleet measured in the number of ships operated by Danish shipping companies – after Greece, Singapore, China and Japan.

In the Danish MSP, the Danish Government stresses its perception of understanding marine-based resources as a simultaneous source of economic and social wealth, but also its central role in supporting a green transition by developing and expanding green technologies on the oceans as a central instrument. More specifically, the establishment of large offshore wind farms and the creation of energy islands is planned. The Danish MSP states that it does not want large unsustainable aquaculture in the sea and, in the future, most aquaculture is to take place on land (Søfartsstyrelsen, 2021).

In 2019, production in Blue Denmark amounted to DKK 394 billion and the gross value added (GVA) amounted to DKK 104 billion. This corresponded to 9.7% of total production and 5.1 of GVA, respectively, of the overall economy. If the indirect contribution is included, total contributions amounted to 11.4 and 7.3%, respectively (Cowi, 2020). In other words, this is a significant economic contribution.

CHAPTER 2. HUMAN AND ECONOMIC ACTIVITIES IN THE SOUTH BALTIC REGION ...

Exports from firms in Blue Denmark amounted to almost DKK 287 billion in 2019. This is a little more than the previous year and corresponded to 26.5% of total exports. If indirect exports are included, the proportion corresponds to 29.1% (COWI, 2020).

In terms of employment and jobs in the Blue Economy in Denmark, the Ministry of Higher Education and Science is concerned about the lack of skilled labour that can support the further development of the Danish maritime sector.

Approximately 97 000 persons are directly or indirectly employed in Blue Denmark, which corresponds to 3,4% of all employment in Denmark (Marcod) and includes the indirect contribution from the demand for goods and services in other Danish sectors. In 2019, Blue Denmark accounted for the direct employment of 60,880 persons. This corresponded to 2.1% (direct) and 3.4% (direct and indirect) of all employment in Denmark.

However, the total employment contribution of Blue Denmark has decreased during the period from 2009 to 2019, the direct employment decrease constituting 12,087 persons (Cowi, 2020)

CHAPTER 3. ECONOMIC SECTORS WITH MSP INTERESTS – DANISH EXAMPLES

3. ECONOMIC SECTORS WITH MSP INTERESTS – DANISH EXAMPLES (KARIN TOPSØ LARSEN, LISE SCHRØDER)

3.1. INTRODUCTION

This chapter focuses on a number of specific economic sectors that have interests in marine and maritime spatial planning (MSP) in Denmark. Each sector and its MSP interests is exemplified through a case description, the purpose of which is to point out some current developments in and along the Danish Baltic Sea coasts showcasing MSP aspects and highlighting different MSP dilemmas. The purpose is also to function as a reference section for further reading or investigation. The case examples included are:

- Commercial harbour expansion in relation to the development of the offshore energy sector. The case is Port of Roenne in Bornholm
- MSP perspectives in local development plans based on coastal and maritime tourism. The case is the island of Bornholm

3.2. ROENNE HARBOUR AND BORNHOLM – MOVING INTO THE OFFSHORE WIND INDUSTRY

The Port of Roenne A/S operates Bornholm's supply port and is Denmark's easternmost commercial/industrial port. An essential aspect of the harbour's business model is its central location in the Baltic Sea, which gives it rich opportunities to provide a varied range of maritime services encompassing both ferry traffic, cruise ships, bulk transportation and offshore wind energy (Port of Roenne, 2021).

The Port of Roenne has undergone a long strategic process, transforming it from a 100% municipally owned port into a highly ambitious commercially-run joint stock company. The regional municipality of Bornholm is the majority stockholder and there is close collaboration between the harbour and the municipality. The choice to change the harbour into a joint-stock company was carried out to act on a truly commercial basis and drive the expansion of the blue economy on Bornholm.

The harbour's stocks are now owned jointly by the local Bornholm sections of The Confederation of Danish Industry (Employer association) and FH – the Danish Trade Union Confederation (employee association). A masterplan for the development of Roenne, as a commercial harbour was made in 2016, stipulating that the harbour infrastructure needed to expand substantially,

CHAPTER 3. ECONOMIC SECTORS WITH MSP INTERESTS - DANISH EXAMPLES

and the plan is to manage the harbour commercially in order to make enough money to finance this expansion (Rønne Havn A/S Masterplan, 2016). Besides the 5-board members that represent the stockholders, the board consists of a further five independent members with special competences.

The expansion of Roenne Harbour was completed in October 2019 and its new infrastructure has made the harbour especially attractive for the offshore wind-energy market (Sylvest, 2020).

The Port of Roenne A/S has four central business areas, each of which has different MSP interests and stakes.

3.2.1. FERRY TRAFFIC

Rønne Harbour is Bornholm's most important traffic hub from which ferries depart and arrive on a daily basis from Ystad in Sweden, Koege in Zealand and Sassnitz in Germany.

Ferry traffic is relevant for MSP on several counts concerning sail routes, i.e., planning spatial use in relation to other users, including transportation to offshore wind energy areas, safety as well as the environmental effects of ferry vessel emissions and wave activity on marine animals, fauna and coastal areas.

3.2.2. CRUISE SHIPS

The cruise tourism industry perceives Bornholm to be an important tourist attraction and Roenne Harbour is ideally positioned in relation to the already well-established cruise ship routes in the Baltic Sea.

The COVID19 Pandemic has been extremely detrimental to the cruise industry and the Port of Roenne experienced a large number of cancellations on that account in 2020 and 2021. But until the crisis, the Port of Roenne experienced an increase in the number of cruise ship passengers by almost 50% from 2018 to 2019. Whilst 26 cruise ships used Roenne Harbour as a port of call in 2018 (encompassing 12.500 guests), that number increased to 42 cruise ships in 2019, bringing 19.000 guests.

The Port of Roenne A/S completed a harbour construction project in 2019, which means that the port can offer improved infrastructural and other conditions, upon calling into the port, for the largest of cruise ships on the market. Since the summer of 2019, the Port's new 300-meter multi-purpose wharf can receive ships up to 350 meters long. This means that the harbour has increased its volume, not just in terms of being able to receive more ships but also much larger ships.

By expanding the development of the port, the traffic patterns have not only changed the way in which cruise ships can be received, but have also affected the ports of call that cruise ships choose, effectually altering the patterns of cruise ships in the entire South Baltic area. It has also changed the number of and flows of cruise tourists that travel around on the island (Port of Roenne, 2021).

3.2.3. BULK

More than 1 m tons of dry and liquid bulk goods pass through the Port of Roenne each year. Liquid bulk primarily consists of petrol and diesel for road transport in Bornholm as well as bunkers for ships sailing to and from the island. Ships up to 120 m in length can bunker at the oil pier, where the depth is 7 meters. Larger ships can bunker using trucks or using a 65 m3 bunker barge located at the port.

Dry bulk consists of both imported and exported dry bulk, like grain, feed, fertiliser, sand, gravel and wood chip. The port has wharfs with depths of 7, 9 and 11 m, where dry bulk ships can be (un)loaded, using either one of the port's two mobile cranes or by ship cranes (port of Roenne, 2021).

3.2.4. OFFSHORE WIND

The Baltic Sea has immense potential for windfarms and the Port of Roenne A/S is chosen as a pre-assembly port for several projects at sea. Siemens Gamesa and MHI Vestas have already selected the Port of Roenne A/S because of its unique infrastructure.

Bornholm has the infrastructure to be a trans-European centre of green energy for the Baltic Sea-region. In a recent Climate statement report (May 2021), the Danish Government proposed that Bornholm should be appointed the status of an `energy island´ by establishing and connecting to a 2 GW offshore windfarm with connections to Zealand and Poland by 2030.

The proposal/decision to establish a 2 GW offshore wind farm to be located in proximity to Bornholm is also an indication that the Baltic Sea-region has been given political priority, after many years of focus on the North Sea, thus shifting national climate and energy ambitions to include the Eastern part of Denmark and regions in the Baltic Sea as well.

Bornholm as a centre for green energy development in the Baltic Sea

The idea of making Bornholm 'an Island for green energy' came to life when the Danish energy company, Ørsted, in November 2019, suggested to place a gigantic offshore wind farm next to the island, on the already screened sea-area at 'Rønne Banke'. At the same time, it was suggested to locate a transformer station on the island as a logical cable-link between Sweden, Denmark, Germany and Poland, in order to develop mutual energy and climate cooperation between European countries in the south Baltic Sea area (Port of Roenne, 2021).

3.2.5. COMMUNITY-BASED FERRY SERVICES & POWER TO X

The Danish government has also proposed promoting the new Power-to-X technologies. Specifically, the technologies that transform green power into green hydrogen that can be further refined to fossil free fuels to provide more sustainable sea-based transportation.

The port of Roenne has proposed that the community-based ferry services on Bornholm could be a good place to start as a place for research and testing facilities for the further development and qualification of PtX-technologies (www.roennehavn.dk).

Danish Shipping, Danish Energy and Wind Denmark, which are all sector and stakeholder organisations within the maritime and energy sectors, have commissioned an analysis of the socioeconomic effects of the offshore windmill industry for different localities – including the Port of Roenne and Bornholm (Sylvest, 2020).

The report concluded that, although Bornholm has the lowest number and share of employees in the offshore wind industry compared to other publicly owned (municipal) ports in Denmark, investment in offshore windmills would still generate thousands of workplaces throughout the service-life of the offshore windmills, which is approximately 25 years. How large a share of these jobs would benefit Bornholm depends on the competency profile of the local work force (Wind Denmark, 2019; Sylvest, 2020). Currently, Bornholm's skills' profile reflects a high skills level within general shipping and maritime services and repairs, but limited skills within specific job profiles in the offshore wind farm industry.

In connection to this, the same stakeholders have calculated that designating Bornholm as a `Green Energy Island' and constructing offshore windmill parks as planned as well as establishing an energy-transformer hub on Bornholm with connections to Poland, Germany and Sweden would demand 27.617 fulltime workers during the 25-year span that the offshore windmill park would be expected to function. How large a share of these jobs would go to Bornholm, would, again, depend on which firms win contracts and their terms of procurement. It is expected that the installation of Krieger's Flak will require 129 works during installation (Sylvest, 2020).

3.2.6. MSP AND BORNHOLM'S STRATEGIC PLANS WITHIN THE OFFSHORE WIND ENERGY SECTOR

As can be seen, the Danish state and the local municipality in Bornholm are highly ambitious about the potential future role of Bornholm as a green energy hub in the South Baltic. For each new development, new spatial needs will evolve, including installing and servicing traffic between Bornholm and offshore installations, which cross the busy shipping lines located south of Bornholm. This calls for further international coordination, testing the important purpose of a joint EU directive in practice, where several nations must coordinate not only their current use of maritime space, but jointly plan and strategize the common development of green energy production in the South Baltic, with multiple national economic interests at stake.

As is often the case, these new economic activities will have both new spatial demands, but also intensifu the spatial use of already busy seaways. Transforming the Port of Roenne into a green energy hub may, paradoxically, create new environmental issues, which need to be addressed as an integrated aspect of an international planning process. What are the assessed environmental impacts of a substantial expansion of offshore wind energy production and the creation of a green energy transformer on an island that functions as a geographical hub of supplying four countries with electricity and Power-to-X-technologies? And, how can we compensate the environment to ensure that such economic expansion leven though it concerns a phasing out of fossil fuels) takes place within an eco-system-based approach, which must continue to be at the very heart of all MSP processes? These questions require addressing, otherwise the transition from fossil-based energy to sustainable energy sources will be self-defeating.

Facts about Krieger's Flak

Krieger's Flak is located in the Baltic Sea approximately 30 miles west of Bornholm, which is equivalent to approximately 3 hours of sailing.

It consists of 72 SWT-8.4-167 wind turbines.

These are 230 meters high and have a total output of 604.8 $\ensuremath{\mathsf{MW}}$

The construction of the wind farm started in 2020 and when it is completed, will supply power to ca. 600,000 Danish households.

Source: Port of Roenne

Facts about Arcadis Ost 1

Arcadis Ost 1 is scheduled for installation in early June 2022 to the end of February 2023

The project will consist of 27 \times V174-9.5 MW offshore wind turbines

The 27 offshore wind turbines will have a total output capacity of 257 $\ensuremath{\mathsf{MW}}$

The project site is located 74 kilometres from the Port of Roenne, Bornholm.

Arcadis Ost 1 will be able to supply 300.000 German households with clean energy

Source: Port of Roenne

3.3. COASTAL AND MARITIME TOURISM IN DENMARK – AND THE CASE OF BORNHOLM

This subchapter will introduce coastal and maritime tourism in Denmark and discuss the potential role of the Danish national MSP as well the EU MSP directive on the development of tourism in Denmark. This case description contains three overall parts. Firstly, there is an introduction to coastal and maritime tourism in Denmark as a specific (economic) activity. Secondly, the chapter presents a number of general planning aspects that pertain particularly to tourism, focusing on specific spatial needs for different coastal and maritime tourism forms. Finally, the chapter describes a specific Danish tourism case: the role of the Danish MSP in relation to tourism development on the island of Bornholm.

3.3.1. WHY IS MSP IMPORTANT FOR COASTAL AND MARITIME TOURISM IN DENMARK?

Coastal and maritime tourism represents over one third of the maritime economy in the EU and has been identified as a sector with special potential for supporting sustainable growth under the EU Blue Growth Strategy (The European Commission, 2014).

Coastal and maritime tourism depends heavily on the quality of the environment, including both water quality and coastal zone land attraction, just as it relies on the good co-existence of simultaneous and various uses of marine and maritime space.

MSP is, therefore, or can potentially be, an important leverage for the growth and sustainability of the tourism sector. The approach in this chapter is to help us understand how, by applying MSP processes, we can enhance the development of a more sustainable tourism sector in coastal and maritime spaces. In other words, we can paraphrase the American 1960's President Kennedy: Ask not what tourism can do for Maritime Spatial Planning, but what Marine Spatial Planning can do for coastal and maritime tourism.

3.3.2. DEFINITIONS

Coastal and maritime tourism consists of a large number of differentiated activities illustrated below. It is indicative of examples that activities themselves are not just carried out by tourists, but also by residents and other day-visitors as recreational activity.

The UNWTO (United Nations World Tourism Organization) defines tourism as:

"...a social, cultural and economic phenomenon which entails the movement of people to countries or places outside their usual environment for personal or business/professional purposes" (UNWTO, https://www. unwto.org/glossary-tourism-terms) Tourism can, as an economic activity, be further divided into two types:

- Commercial tourism, measured as the number of paid overnight stays.
- Non-commercial tourism, covering people who travel to their own summer houses, or travel to stay with family and friends in other locations than their primary home.

Recreational activities can, on the other hand, be defined as non-work-related activities undertaken by residents for leisure.

There is, thus, no clear distinction between actual tourism and recreational activities in terms of spatial use, but there will be a clear economic difference in terms of tourism spending as opposed to recreational and non-commercial tourism spending.

Be aware that not all tourists engage in recreational activities and that variations in tourism forms – i.e., urban tourism, meeting tourism etc. often take place in other areas within the coastal zone. This is why this chapter specifically takes its point of departure in coastal and maritime tourism, but not all national statistics are able to make such differentiations.

Examples of tourism activities in coastal and marine spaces

- Walks along the coast,
- Beach and bathing activities,
- Motorized water activities (speed boats etc.),
- Sailing, kayaking, canoeing, other trips on the water,
- Recreational fishing,
- Underwater activities: snorkelling, diving, scuba-diving
- Boating life in harbours,
- Surfing and other surf- and wind-related sports,
- Cultural activities along the coast, including coastal and underwater cultural heritage,
- Nature-based activities along the coast, including birdwatching,
- Outdoor sports, hiking, trekking,
- Overnight stays on the coast,
- Cruise tourism

This exceptionally lengthy list shows how varied and differentiated coastal and maritime tourism and recreative activities are – each form uses coastal and marine spaces in diverse ways, at different times and, therefore, have different spatial needs and impacts (Kaae, 2018).

3.3.3. THE CHARACTERISTICS OF COASTAL AND MARITIME TOURISM IN DENMARK

In Denmark, 78 out of a total of 98 administrative municipalities are defined as coastal municipalities, meaning that the municipality partially consists of a coastal zone stretching 3 km from the seaside¹.

The Centre for Regional and Tourism Research has, in collaboration with the Institute of Geoscience and Nature Management (IGN) at Copenhagen University, created the Danish Coastal Tourism Model (DCTM), which specifically measures the socio-economic effects of tourism in the 3 kilometre zone along the coasts of Denmark. The model has shown that the regional and socioeconomic effects of coastal and maritime tourism are strong along the Baltic Sea - both along the coastal municipalities south of Zealand and in Bornholm. In these localities, tourism is one of the main economic contributors for the production of coastal oriented tourism goods and services and the local labour market. Coastal and maritime activities include services, such as tackle shops, hotels, restaurants, boat and equipment rentals. and charter boats, etc. All tourists, who have conducted an activitu connected with the coast or sea, are defined as coastal and maritime tourists. By this definition, summer-cottage tourists (only those cottages situated in the coastal zone), cruise tourists and leisure yacht tourists are defined as coastal and maritime tourists, as their primary purpose is to stay at the beach-side or make activities at the sea. In Denmark, 95% of summer cottages are located within a 3 km distance to the sea.

Coastal and maritime tourism in Denmark accounts for 37% of the total tourism revenue. In 2018, coastal and maritime tourism provided 22,766 fulltime jobs and 9,972 million DKK in the gross value added directly to the Danish economy. This means that coastal and maritime tourism in Denmark accounts for approximately one third of the whole tourism revenue in Denmark, a share that is on the rise (Nielsen, Zhang & Javakhishvili-Larsen, 2019).

3.3.4. GENERAL TRENDS IN SPATIAL REQUIREMENTS WITHIN TOURISM

Mass tourism, defined as high volumes of visitors with relatively low spending potential, is not expected to expand spatially, i.e., no new allocations of land, coast and sea use for the purpose of mass tourism accommodation. However, the use of space already allocated to mass tourism is expected to be intensified. This will have an impact on the sea environment and water quality in particular and environmental pressure on mass tourism areas (the coastal zone) are among the factors requiring special attention in MSP processes.

Tourism-related infrastructure and services, defined as the facilities and services necessary to develop tourist destinations (accommodation, catering, transport, information, museums and tourist attractions) are generally expected to increase in connection to the increased volume of tourists as well as their expectations of increased guality and value of services.

Niche tourism, defined as specific added-value services or a demand for specific locations with special qualities, is on the increase. This includes an increase in the demand for accommodation located in specific landscapes. Many of these tourist demands are dependent on access to specific locations, for example bird migration tourism. The impact of this type of tourism is expected to be on locations with high environmental sensitivity, thus requiring a specific infrastructure and specific solutions in order to mitigate negative environmental effects, for example by allocating space for natural and protected areas (on the land, coast and sea).

Tourism products are defined by UNWTO (2021) as "a combination of tangible and intangible elements, such as natural, cultural and man-made resources, attractions, facilities, services and activities around a specific centre of interest, represent the core of the destination marketing mix and create an overall visitor experience, including emotional aspects for potential customers. A tourism product is priced and sold through distribution channels and has a life cycle. It is expected to increase in diversification. The progressive diversification of the tourism product in specific locations can lead to spatial conflicts among tourist segments at a local level.

3.3.5. ANTICIPATED TOURISM INDUSTRY DEVELOPMENTS, WHICH ARE OF MSP RELEVANCE

The expected continued growth of coastal tourism, including the increase in spatial demands, as mentioned above, is characterised by the intensification of spatial use in mass tourism areas, the increase in more specific or even niche tourism forms, the increase in tourism-related infrastructure and services and the diversification of tourism products, all have implications for onshore, coastal and off-shore spatial planning. The environmental impacts of the tourism sector need to be addressed in MSP processes.

1. The environmental impacts of other sectors on tourism:

Notwithstanding the impacts on the environment of tourism itself, tourism, as an attractive human activity, depends on favourable environmental conditions, particularly for coastal tourism, on high water quality. Landsea interactions are especially relevant here.

¹ The four municipalities with the four largest cities in Denmark: Copenhagen, Aarhus, Aalborg and Odense are an exception, where the coastal area is defined as a one-kilometre zone from the shoreline due to a diversified specialisation of economic activities and a mixed-use of lands in larger urban areas.

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2. Adaptation to climate change:

Apart from the direct environmental impacts of tourism and other economic sectors, coastal tourism is also highly vulnerable to the effects of climate change. Coastal areas are especially dependent on the effects of a number of climate change-related impacts, for example flooding, erosion and increased draught and, thus, have direct and indirect effects on coastal and maritime tourism. Coastal defence may be necessary and such solutions may impact on spatial needs and the attraction of coastal areas, and thus require planning.

3. The transformative potential of tourism:

However, tourism, as a human activity, also has specific potential as a learning platform, whereby the time spent as tourism in a specific environment may be perceived as a potential opportunity to teach tourism about, for example, sustainability, climate change and environmental effects on natural environments on different behaviours. Tourism today is less about rest and relaxation and more about engagement and may, therefore, be a potential opportunity to support change through specific tourism products with such planned effects.

In terms of MSP processes, there are three primary planning aspects that are especially pertinent in relation to MSP and tourism. These are:

- The need for stakeholder participation
- The protection of the marine environment
- Better integration for land-sea interactions.

Stakeholder participation in tourism,

As within all areas of planning, consulting relevant stakeholders – preferably early in the planning process, is an important part of ensuring that all interest groups are heard – and to bring transparency in spatial uses and the interests that lie behind it, to the foreground. The purpose is to identify important areas of potential conflicts or multi-use potentials, to characterize each activity and allow for the identification of possible mitigation measures. The three examples, shown above, prove that this is not without challenges. Stakeholders within tourism are extremely varied and may be difficult to bring together on equal terms – stemming from large shipping companies to small recreational associations.

Skriver Hansen (2019) has argued, based on studies from the recreational MSP area, that many recreational activities along the coast and in marine environments are unmapped – often also because such use does not involve built structures and are mobile in their spatial use patterns. Many are temporally limited. However, mapping some of these activities is an important prerequisite for MSP processes.

The tourism sector is highly diverse and most activities are very fragmented. This has proven to be a challenge when developing MSP.

Protecting the marine environment,

Maritime activities have often been developed on a sectorial basis with little consideration for other uses or the cumulative impact of all activities on the marine environment. This has led to the deterioration of sea water quality and the loss of marine biodiversity. A holistic approach is needed.

Coastal and maritime tourism is an economic activity, but also a human activity of high value – and it is heavily dependent on the preservation of the marine environment and should benefit from a more integrated approach (between sectors and between the land and sea).

Using an ecosystem-based approach, MSP can also facilitate the development of coherent networks of MPAs to maximize their benefits.

3.3.6. THE CASE OF MSP AND TOURISM IN BORNHOLM

In this section, MSP is presented in relation to the tourism sector and its development potentials on the Danish Island of Bornholm. The purpose is to understand the potentials of Marine/Maritime Spatial Planning in relation to a specific context, both in terms of enhancing a more sustainable environment as well as in terms of supporting more sustainable tourism development.

Bornholm is in the Baltic Sea, close to the south coast of Sweden and east of the rest of Denmark. In Denmark, the island is often called the `sunny island' (due to its relatively large number of hours of sunlight compared to the rest of Denmark and its reputation as a summer holiday destination) as well as the `rocky island', referring to its unique geological features compared to the rest of Denmark. Its size is 588,36 km² and has a population of 39.570 inhabitants (dated 1.1.2021) and is visited by more than 600,000 tourists a year.

The tourism sector in Bornholm consists of many smalland medium-sized firms offering services concerning accommodation, restaurants and attractions, etc. Destination Bornholm is their joint development and marketing platform, representing approximately 560 tourism enterprises. The local regional municipality of Bornholm supports Destination Bornholm and is also a significant actor within the field. Destination Bornholm has organized the sector's joint tourism strategy for the development of tourism on Bornholm for the period 2020-2023 (Destination Bornholm, 2019).

In the strategy, Bornholm is deemed the "Saint Tropez of the North", referring simultaneously to Bornholm's status as one of Denmark's prime coastal destinations, but also to its wide range of social and cultural offers, many of which attract a more exclusive group of tourists, who demand high-end food, accommodation and other shopping and experience amenities.

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According to the strategy, Bornholm's strengths in terms of tourist attractions are its unique nature compared to the rest of Denmark, its strong and distinct cultural position in terms of it being the home of many ceramic artists and painters and it being bestowed with the title of World Craft Region in 2017 by the World Craft Council (WCC), which is the largest international organization for Arts and Crafts and is recognized by UNESCO. Bornholm also has a strong brand within the outdoor market, being well known for its many recreational and coastal tourism offers. Finally, it has a strong regional culinary position, and has been one of the first areas in Denmark to develop a regional variety of new Nordic food (Destination Bornholm, 2019).

In terms of the number of tourists and the economic value of the tourism sector for Bornholm, both were rising rapidly in Bornholm until the Covid-19 pandemic.

Table 2: Guests and turnover 2010-2018, Bornholm

Indicator	2010	2017	2018
Number of guests	528.000	624.000	
Tourism turnover	253 million Euros	347 million Euros	354 million Euros
Foreign guests			130 million Euros
Danish guests			224 million Euros
Number of generated jobs	2.000	3.000	

Source: The Centre for Regional and Tourism Research (Den Regionale Model for Turisme, SAM-K/LINE®_RTSA)

As can be seen in Table 2, both the number of guests as well as the economic turnover generated by the tourism sector in Bornholm has risen greatly in the period 2010-2018. The table also shows that domestic tourists make up approximately 2/3 of all visitors. International tourists primarily come from Germany, Sweden, Norway, the UK and USA.

The table also shows that the number of jobs generated by the tourism sector has risen from 2.000 in 2010 to approximately 3.000 persons in 2017. The total size of the Bornholm labour market is approximately 20.000 persons. However, many employees live far away from Bornholm outside the tourist season, for example, young people who have grown up in Bornholm but have moved away to study may return to the island during the summer holidays and work within the tourism sector.

Table 3: Overnight accommodation 2018

Accommodation type	Number of overnight stays, International tourists	Number of overnight stays, Domestic tourists	
TOTAL	795.499	2.240.865	
Hotel	83.893	175.947	
Rented summer house	508.152	423.830	
Camping	99.748	167.410	
Rented house	17.346	8.555	
Yachts & boats	24.160	9.872	
Cruise	21.277	-	
Private summer house	-	466.203	
Holiday centre	-	98.507	
Family/ friends	-	672.874	

Source: The Centre for Regional and Tourism Research (Den Regionale Model for Turisme, SAM-K/LINE®_RTSA)

Table 3 shows the types of accommodation that international and domestic tourists in Bornholm use. Apart from showing that international and domestic visitors use different accommodation types, the table also shows that most of the accommodation forms are coastal, apart from rented houses and staying with family/friends, which can be located all over the island, almost all the accommodation forms above take place near the coast. Almost all summer houses in Bornholm are located within 3 kms from the sea.

3.3.7. STRATEGIC TOURISM GOALS

Bornholm's tourism strategy 2020-2023 states that Bornholm's strong brand, based on the strengths mentioned above, could easily increase the number of tourists attracted to the island during the summer months. However, this is neither possible, nor desired.

Capacity, both in terms of access to ferries (from Sweden, Denmark, Germany and Poland) and accommodation, are at their full capacity during the summer months.

The Bornholm tourism strategy still intends to support further economic growth and plans to do this by expanding the number of overnight stays by 5% annually. This can only be achieved by expanding the visiting period to the spring, autumn and winter.

This calls for further planning of the use of the coastal zone throughout the year. The following three types of tourism that are planned to expand in Bornholm are all relevant in terms of MSP and will be elaborated on below. They are: outdoor tourism, climate and environmental tourism and cruise tourism.

3.3.8. OUTDOOR TOURISM

Outdoor tourism is defined as recreational life in a commercial context. In other words, recreational activities that businesses can make money off.

Bornholm's natural resources create unique opportunities for outdoor recreation. Many of these relate to the coastal zone and marine environments.

Outdoor is no longer a niche but a mainstream activity for everyday tourist, who seek exercise and social contact in a natural setting" Nature is today's sports centre/ gym".

In terms of MSP, a tourism strategy banking on outdoor tourism and, on doing so, not only during the summer but throughout the year, requires an increased use of coastal zone spaces and an intensification of usage of natural resources and space. At the same time, it is also a tourism form that is especially reliant on a safe and attractive environment in the coastal zone and on high water quality.

3.3.9. CLIMATE AND ENVIRONMENTAL TOURISM

This aspect of the Bornholm tourism strategy is based on an understanding that destinations, which do not address the concerns of tourists for environmental challenges, climate change and CO2 emissions, will lose customers.

In Bornholm, a brand called Bright Green Island was developed approximately 10 years ago and it attempts to build a narrative around Bornholm as an environmentally sustainable island, encompassing the circular economy and circular energy forms, including sustainable waste-treatment. In this narrative, the construction of offshore windmill parks is supportive of such a vision and will further position Bornholm as a green island. Although limited in scope, tourism products based on food and energy tours have been developed.

In terms of MSP, climate and environmental tourism goes hand in hand with an ambitious maritime spatial plan in which the sustainable use of marine-based natural resources is planned for.

3.3.10. CRUISE TOURISM

The development of cruise tourism is an economic activity that has been worked on strategically by Bornholm tourism stakeholders for several years, now formally organized in the local collaboration cluster called Cruise Network Bornholm. In 2012, nine out of ten cruise ships that sailed around Bornholm did so without calling at any local ports.

In collaboration with the expansion of Roenne Harbour, a new cruise ship pier was established, which allows for much larger cruise ships to dock directly in Roenne harbour.

Guests spend 65 Euros per guest whilst in Bornholm, which corresponds to what they spend in Copenhagen and Stockholm, making this tourism form attractive for local tourism stakeholders. Tourism stakeholders in Bornholm are aware of the cruise industry's tarnished reputation in terms of environmental issues and is, therefore, working as a destination to forward more sustainable cruise tourism forms and push for the development of international standards.



Figure 32: Cruise ship anchoring outside Christiansoe, north of Bornholm (Photo: Lise Schrøder)

3.3.11. POSITIONING TOURISM IN THE DANISH MSP

As described in the chapter, the Danish MSP has given a special position to four economic activities. These are fishing, sailing, recreation and tourism. Activities within these areas have not been 'planned' in the sense that specific spaces have been allocated to them or that specific locations have been set aside for future development. Instead, tourism, recreation, fishing, and sailing can take place in all zones unless specific legislation prevents this or until fixed and regulated structures are built in these areas.

In the following figures, a view is taken on the sea territory around Bornholm and the spatial allocation for specific purposes as presented in the Danish MSP: Baltic Pipes & Nord Stream 2 (figure 33), Natural resource extraction (figure 34), Offshore wind farm areas (figure 35), Environmental protection (figure 36), Air traffic security (figure 37) and Shipping corridors (figure 38). The grey island in the middle is Bornholm, while the grey line framing the figure is the Danish Exclusive Economic Zone (EEZ) demarcation.



Figure 33: Baltic Pipes & Nord Stream 2 – the pipelines leading oil and gas across the Baltic Sea, which run through the Danish EEZ close to Bornholm, is demarcated (Data source: the Danish Ministru of Environment, 2021)



Figure 34: Natural resource extraction – areas that have been allocated to natural resource extraction, with darker shades indicating historic extraction sites and lighter areas indicating planned extraction sites. (Data source: the Danish Ministry of Environment, 2021)



Renewable energy - future Renewable energy and energy islands

Figure 35: Offshore wind farm areas – areas that have been allocated to place large offshore wind farms, an activity that is expected to develop Bornholm as an `energy island'. This will be elaborated elsewhere. (Data source: the Danish Ministry of Environment, 2021)



- Existing nature conservation and environmental protec
- Proposal for new bird protection areas
- Proposal for new protected marine strategy areas
- Proposal for strictly protected marine strategy areas

Figure 36: Environmental protection – the areas the Danish MSP have reserved for environmental protection. It consists of four parts. One (solid green) indicates an already existing nature and environmental protection area. The other three are proposed environmental protection areas. The dotted area is a proposed bird protection area, the green-lined areas are proposed protected Ocean Strategy areas, while the red zones are prosed Marine Protected Areas with a high protection level. (Data source: the Danish Ministry of Environment, 2021)



Figure 37: Air traffic security – the area that has been allocated to the ascent and descent of flights coming into and leaving Roenne airport, to ensure that no tall constructions – such as windmills, may be placed within this zone for security reasons. (Data source: the Danish Ministry of Environment, 2021)



Figure 38: Shipping corridors – including the allocated (and already existing) shipping corridors within the Danish EEZ around Bornholm. As shipping traffic in the Baltic is substantial, this is an important zone, and as offshore windfarms will be constructed in the area (Data source: the Danish Ministry of Environment, 2021)

3.3.12. SUMMING UP THE DANISH MSP AND TOURISM IN BORNHOLM

When looking at the Danish MSP and the case of tourism in Bornholm, there are a number of positive elements as well as some critical points to address.

Some of the aspects of the MSP support the sustainable development of tourism in Bornholm, including the current Bornholm Tourism strategy in the current Danish MSP. This includes:

- 1. Overall environmental concerns addressed: focus on renewable energy
- 2. Bornholm as a (renewable) energy island
- 3. Marine Protected Areas north of Bornholm
- 4. A proposed (offshore) bird protection area
- Lots of room for tourism coastal and sea-based activities (no space limits)

However, there are several issues that have not been addressed in this first round of the Danish MSP process. It is not so much a question of allocating space to economic activities that are detrimental to sustainable tourism development in Bornholm, as it is a matter of a missed opportunity to address some specific aspects of MSP. These points are:

 There has been extremely limited stakeholder participation with no occasion or opportunity to discuss tourism amongst stakeholders in relation to MSP (it is the discussion, not the MSP result, which is important)

- A lack of mapping of tourism and recreational activities – so there is still no overview of knowledge on how space is used
- 3. The effects of the densification and diversification of tourism products is not addressed
- Land-sea interactions have not been addressed, which means that the municipal coastline is respected, but not addressed.

From this perspective, planning has been reduced to an act of reserving space/place for several definable activities in the future, including the development of Bornholm as an energy island. Yet, the opportunity to focus on the PROCESS of planning has been missed.

This does not mean that the lost opportunity is permanent. The Danish MSP is still undergoing a public consultation procedure, and new rounds will be carried through in the future.

It is also noteworthy to point to the pan-Baltic and pan-European scope of the MSP directive. When all EU countries have adopted their national MSP, it will be possible to exchange experiences and learn from each other about how different types of activities or aspects (for example `coastal and maritime tourism') are addressed in different countries. It does not have to be the lowest common denominator that sets the bar for the ambitions of national MSPs. As is well-known from the tradition of terrestrial planning, planning is an ongoing learning process, and well-functioning MSPs will, of course, have the potential of inspiring others during the MSP planning cycles to come.



Fig. 39. Roenne Harbour – a lot of construction work is ongoing to meet new demands (Foto: Lise Schrøder)

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CHAPTER 3

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