

#### Southwest Baltic Case

#### **Topic Paper on Fisheries**

This Topic paper is the working paper based on the joint Baltic SCOPE exercise and cannot be treated as the official opinion of the European Commission and Member States involved.



#### Preface

This Topic paper has been developed during the first two phases of the South West Case in the Baltic Scope project. In total four topic papers have been developed in the Case, one for each of the topic dealing with Energy, Shipping, Environment and Fishing. The Case study has also produced a technical paper about Shipping and safety distances to structures like offshore windfarms. The papers have been developed generically over a period from March 2015 to march 2016.

The main purpose of the topic papers was to initiate the discussions about which topics might be interesting, and why so, in a transboundary maritime spatial planning context in the region. Another aim was to create a joint knowledge's base for the planners to discuss common transboundary issues to be handled in the process of developing coherent maritime spatial planning in the region. Therefore; the papers shall be assessed in its context of the Case studies and the purpose of the Baltic Scope project and not as a full technical report stating the exact and current situation in South West Baltic.

The responsibility of developing the topic papers was a shared between the project partners with one country responsible for one topic each, Germany was topic lead for Energy, Denmark for Shipping, Poland for environment and Sweden for Fishing. In the process of developing the papers the Topic leader have had contacts with relevant authorities in the other countries to secure a comprehensive understanding and view. Earlier versions have been discussed and adjusted accordingly in the process to what is now the final version.

The topic papers have also been used to as knowledge base in stakeholder discussions and the final versions have been influenced by stakeholders input.

As the project moved on in to discussing planning solutions it was jointly decided that the topic papers has served its purpose and that it would not gain more to the project to do more work on the papers. Therefore it was decided to not spend time on layout, cross reading and updating of facts to make it in to a full Topic report. Therefore, once more, the papers should be understood as working documents and **not** technical reports as such.

Case study Coordinator for the South West Case in Baltic Scope.

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### **Conclusion and recommendation**

Fisheries is not suggested to be the main focus for the project as it is mainly regulated and handled within the Common Fisheries Policy (CFP). However it is an important industry and it will be necessary to take fisheries into account when spatial solutions are discussed and elaborated. Fisheries interests are clearly transboundary with national fisheries interests and activities which are not contained within national borders, thanks to the common fisheries policy and bilateral agreements between neighbouring countries. As a consequence, a dialogue is required to determine how national fisheries interests of one country in foreign territories can be represented in the national marine planning processes of other countries in the region.

In addition the role of the group is to compile information on fisheries/habitats for the identified cross-border areas/hot spots and to analyse the impact on fisheries of any change of the use of the sea.

Some objectives and processes highlight fisheries in relation to MSP:

- Fishing takes place in almost every fishable location in the Baltic Sea, also in cross border areas in the South West Baltic and many focus areas within the case.
- Increased or new uses of the sea may potentially negatively affect the fisheries.
- There is an on-going discussion on regulation of fisheries in specific Natura 2000-sites.
- Increased protection of fish habitats, fishing grounds and access to ports (via MSP) may strengthen the fisheries.
- Representation of important fish habitats are dealt with jointly together with the thematic group on nature protection to ensure a joint picture for essential habitats for commercially interesting species.

### Summary

The topic paper on fisheries in the South West Baltic case (Denmark, Germany, Poland and Sweden) has a focus in strengthen the knowledge of fisheries in the partner countries in the Baltic SCOPE project from a spatial perspective suitable for MSP. The main part of this paper is to digest relevant spatial information of fisheries management regarding catch data, vessel monitoring and quota system, as well as to present and analyse compiled maps of national fisheries with transboundary issues in focus.

By influence from the agreement at thematic meeting in the Central Baltic case (CBC) the topic coordinator suggested four questions regarding fisheries and the MSP process to planners involved in the SWB case.

- 1. How do you want to represent fisheries in your marine plan?
- 2. Who is involved in representing fisheries in your marine plan?
- 3. How would you like to present your fishing interests in other countries EEZ?
- 4. How would you like other countries to present their fishing interests in your marine plan?

These questions where handed out to SWB partners as a suggestion for progress on the topic of fisheries. By compiling and share information on how national fisheries management is constructed and the participation of them in national MSP process, the incorporation of other countries fishing interests in a national MSP plan is facilitated.

The answers to the questions above reveal the different phases and focus of the national MSP processes of the partner countries. Overall the topic paper form a basis to dig deeper into fisheries in a transboundary MSP perspective.

The work within this project has shown the importance of sharing information of methods and views of fisheries by gathering countries around the Baltic Sea. As a concluding part of this paper and the thematic meetings, three findings are presented, for planners and policymakers to consider in future collaboration on fisheries in MSP:

### **1.Introduction**

#### 1.1 The South West Baltic case and topic fisheries

The two case areas within the Baltic SCOPE project, the Central Baltic (CB) and the South West Baltic (SWB), share many issues related to fisheries. This topic paper aims to give a broad and general overview as a basis inclusion of the topic in the SWB case area. During the project the topic paper has evolved. In initial stage the document served as an introduction to discussions in the stakeholder conference in Hyllie, Sweden 27-28 January 2016 where fisheries was discussed. Contributions from Denmark, Germany, Poland and Sweden on national situations regarding fisheries have been submitted (Annexes 1, 2, 3 and 4 in this paper). As a second stage of the process, the topic paper summarizes the discussions and conclusions by answering four questions regarding fisheries in current MSP process in each of the four partner countries as well as recommendations from the sector regarding both the case area and the specific focus areas within the case area.

This topic paper focuses primarily on commercial fisheries but touches on recreational fisheries in some cases as it is closely linked (e.g. in cases where the same species are targeted by recreational and commercial fisheries) and in some cases is considered together with commercial fisheries interests in the MSP process.

## **1.2 Relevance and findings from regional discussion on fisheries and MSP in the South West Baltic case**

South West Baltic constitutes very important fishing grounds for the Baltic Sea fisheries sector. The area also includes essential fish habitats for cod and herring, the species constituting the lion share of the commercial fisheries in the area. Bearing this in mind it will be necessary to take fisheries into consideration when discussing and finding spatial solutions for the needs from other sectors such as shipping and off-shore wind energy, as well as nature protection issues within the Baltic SCOPE project. Also there is an on-going discussion on regulating fisheries in specific Natura 2000 sites which may affect the fisheries in the future. Fisheries is mainly regulated and handled within the Common Fisheries Policy, even though the CFP provides some provisions to nationally regulate fisheries in the territorial waters.

Participant	Organization	Country
Antje Gimpel	Thünen Institute of Sea Fisheries	Germany
Kim Raegaard	Danish AgriFish Agency	Denmark
Marcin Rakowski	National maritime Fisheries Research Institute	Poland
Michael Gottlieb	Danish AgriFish Agency	Denmark
Ulrika Gunnartz	Swedish Agency for Marine and Water Management	Sweden
Fredrik Nordwall	Swedish Agency for Marine and Water Management	Sweden
Anita Tullrot	County Administrative Board Västra Götaland	Sweden
Pär Persson	County Administrative Board Skåne	Sweden
Katarzyna Kaminska	Ministry of Maritime Economy and Inland Waterways	Poland
Lena Szymanek	National Marine Fisheries Research Institute	Poland

#### Table 1: Participants in fisheries workshop, Hyllie 26-27 january 2015

During the first phases of the project the planers group decided to focus the work on four thematic topics and some geographical areas. This decision was based on experiences from previous marine spatial projects and discussions on what are the most pressured transboudary areas to handle in cross boundary spatial planning. Figure 1 is showing the geographical areas selected. The selected topics were Energy, Shipping, Nature/environment and Fisheries.

Recommendations from the thematic group to the MSP process then focused on the need for common agreements to develop aggregated maps of fisheries in the Baltic Sea and within this process, strive for a policy to display national interest in transboundary fishing grounds. With this type of information MSP process has the ability to map both common and nationally based interest in specific cross border areas.

The needs for a good incorporation of fishery interest in the MSP process is partly relied on decisions and processes that goes beyond the mandate and timetable of the Baltic Scope project. There this topic paper aims to present compiled national maps of fisheries and through a transboundary perspective describe the implications and opportunities to get a total picture of both fishing activities and fish habitats.



Figure 1: BalticSCOPE focus areas in South West Baltic case area

With input from the thematic discussions, the topic coordinator derived the fishery paper in order to deliver a material at transboundary planning activities in the SWB case in spring 2016. These planner meetings focus on some of the eight identified focus areas and contains:

- Adler-Odra bank Rönne grund (Trilateral meeting: Denmark, Germany and Poland)
- South Middle bank (Bilateral meeting: Poland and Sweden)
- Kriegers flak (Trilateral meeting: Denmark, Germany and Sweden)

### 2. Sector background

#### **2.1 Introduction**

Commercial fisheries is one of the most important forms of exploiting marine resources with special socioeconomic and cultural importance. Wild fish resources constitute in general an important ecosystem service for human well-being as providing food and cultural services such as recreation, cultural heritage and legacy of the sea. At the same time fisheries may affect

marine ecosystems. Overfishing may cause changes in the trophic chain and the use of active gears may influence vulnerable marine ecosystems on the seabed.

Fishing takes place in more or less all waters. Small-scale fisheries is normally conducted in limited areas and sometimes on a stationary basis (mostly fixed net fisheries), while other forms of fisheries are more flexible in nature and are conducted over large areas (mostly trawl fisheries).

Fishing locations vary between seasons, but also depend on how fishing opportunities develop which can vary with e.g. changes in gear type, target species or movements of target species due to environmental variability. Fisheries require infrastructure such as landing places and harbours. Fishing constitutes a traditional activity at sea and is likely to be affected by other new or expanded uses of the sea demanding space. Competition from other sea users may imply less flexibility for the fisheries, sometimes also reduced fishing possibilities.

Fishing is dependent on healthy habitats and migration corridors for the fish during its life span. Other uses may adversely affect these habitats or corridors to the detriment of the fish stocks and hence, the fisheries. Maritime spatial planning may however offer additional opportunities to protect these habitats.

Spatial claims and conflicts relates to steaming to and from fishing locations, fishing locations (static or for non-static gear), fish habitats (including nursery areas, spawning areas and other important fish habitats) and blue corridors to secure migratory, lifecycle and trophic level connectivity.

Requirements of the sector	<ul> <li>Fishable and healthy stocks</li> <li>Access to fishing grounds and ports for landing, bunkering and repairs</li> </ul>
Main catch species in Southwest Baltic	<ul> <li>Cod</li> <li>Herring</li> <li>Sprat</li> <li>Plaice</li> <li>Turbot</li> <li>Sea Trout</li> <li>Salmon</li> <li>Eel</li> </ul>
Current use	<ul><li>Active gear (mainly trawl)</li><li>Static gear (Mainly nets)</li></ul>
Regulations	EU:s Common Fisheries Policy

	<ul> <li>Bilateral agreement between SE and DK in Öresund and DK-DE in the Baltic Sea</li> <li>Multi species management plan for cod and herring</li> <li>Cod closure areas (seasonal): Bornholm (cross border), Eastern Gotland (cross border) and Gdansk basins</li> <li>ICES areas 22, 23, 24: closure in February &amp; March</li> </ul>
Potential conflicts	<ul> <li>Marine conservation (Activity)</li> <li>Traffic/Safety: Static gear (Activity) and Traffic patterns</li> <li>Energy installation phase including cables (Activity and Habitat)</li> <li>Between types of commercial fisheries (Habitat and Activity)</li> <li>Mining and Dumping (Activity and Habitat)</li> <li>Recreational fisheries (Activity)</li> <li>Marine aquaculture (Activity)</li> <li>Cultural heritage (Activity)</li> </ul>
Potential synergies	<ul> <li>Marine conservation for sustainable fish stocks (Habitat)</li> <li>Offshore Wind Farms (OWF) – installations as areas of potential fish habitats</li> <li>OWF as potential exclusive marine areas for fishing with static gear</li> <li>Shipping and fisheries strengthen development of multi-use port infrastructure</li> </ul>

Figure 2: Characteristics of the fisheries sector, identified within the Baltic SCOPE project





# 2.2 Ecosystem approach – A link between fishery management and Marine Spatial Planning

In general, wild fish resources constitute an important ecosystem service for human well-being as providing food and cultural services such as recreation, cultural heritage and legacy of the sea. At the same time fisheries may affect marine ecosystems. Overfishing may cause changes in the trophic chain and the use of active gears may influence vulnerable marine ecosystems on the seabed.

EU, the common fisheries policy (CFP) was recently reformed to focus on sustainable fisheries through ecosystem based management. The EU directive 2014/89 also constitutes how ecosystem based approach is a main objective for the MSP process. The dual focus on ecosystem based management is important factor to include the sector in the MSP process in a good manner. From a Baltic Scope perspective Latvia is applying an ecosystem services approach in the national MSP and Sweden are investigating how ecosystem services could be presented in the national planning process.

Out of the twelve principles forming the ecosystem based approach, there are both spatial and temporal aspects regarding both the ecosystems and management. Spatial aspects of the ecosystem and management can be referred to principle 5 *"Conservation of ecosystem structure and functioning, in order to maintain ecosystem services, should be a priority target of the ecosystem approach"* and principle 6 *"Ecosystem must be managed within the limits of their functioning"*. Here the keywords *functions* and *structure* in the principles highlights spatial aspects of the ecosystem approach which also motivates discussions within the Baltic Scope project due to the fact that functional and structural aspects of fishing activities are transboundary.

Temporal aspects in the principles of the ecosystem based approach focus on the need to view changes over time as inevitable as well as potentially slow in process of showing their full effects (Principle 8 and 9).

An example of the temporal aspects is shown in an yet unpublished SwAM report on marine effects of climate change. Figure 3 show potential changes in salinity in the three MSPareas in Sweden divided into scenarios of "Business as usual" and fulfillness of agreements within the Balt Sea Action Plan. The time period shows how lower salinity



level occurs in a slow process over decades. From a Baltic Scope perspective, a lower salinity level is likely affect the presence of different fish species and thereby spatial patterns of fishing activities in the Baltic area.

Expectations of the reformed CFP is to see improvement in fish stock and thereby a positive development in the fishery sector. However, there are difficulties to predict the characteristics of future fisheries regarding type (passive/active gears) and targeted species. This difficulties is the result of lack of projections of future needs in the sector as well as lack of knowledge how current fishing methods affects the ecosystem. The unknown damage from current fishing methods is an

example of the challenge of temporal aspects of a ecosystem based approach. Changes in fisheries could also be related to effects of climate change. SwAM currently working on scenarios where the waters of the Baltic is predicted to see huge changes in qualities that will effects the characteristics of the fishing sector.

#### 2.3 Spatial aspects of fishery management

Section 2.2 highlights several spatial dynamics of fish habitats and fishing activities. Beside seasonal and habitat dynamics, commercial fisheries also tend to be a transboundary issue. Fish nurse, spawn and migrate between nations around the Baltic Sea, which result in transboundary fishing activities as well as management at EU level through the CFP and the quota system.

Transboundary catch areas are identified for specific species in the quota system. The share of an estimated total available catch (TAC) within one catch area is distributed among the member states by the principle of historic fishing activities in the area. This historical principle for the share of TAC creates a variation among the Baltic Sea countries regarding cross border activities within the transboundary catch area. In addition to the share of TAC, member states can transfer quotas between each other during the annual period of the quota, which then has a potential to change the transboundary aspects of national fishing activities for a specific species over the year.

Regardless of share of TAC in a catch area there are some restrictions regarding fishing activities in neighboring waters. Foreign vessels are prohibited to fish at a distance less than 12 nautical miles from the baseline of a neighboring country (but there can be agreements between countries allowing fishing in territorial waters).

The International Council for the Exploration of the Sea (ICES) gives scientific fisheries advice. A spatial framework in fisheries management is shown in Figure 3, the ICES squares map. They serve as reference areas within a larger catch area and are the basis for the ICES scientific recommendation for the annual decision of TAC in the catch area. There are many sources of spatial information regarding fisheries and the ICES squares map gives one example of transboundary aspects of the sector. However, the larger catch areas of different species, the basis of quota, often overlap.



Figure 5: ICES squares in the Balltic SCOPE area. (<u>https://www.havochvatten.se/hav/fiske--</u><u>fritid/yrkesfiske/statistik-och-kartor/fangstomraden---faos-och-ices-indelning-i-</u><u>delomraden/fangstomrade-ostersjon.html</u>)

The timeframe in annually negotiated fishing quotas can be a challenge for the MSP. In the MSP processes areas of fisheries interest may be identified and last for a longer period than the actual spatial patterns that are the result of the quota procedure and the dynamics of fish habitat and fisheries. By taking historical spatial changes for fisheries into consideration, planning relevant areas may be identified, areas of interest that not necessarily correspond with the present activities in various catch areas in the Baltic Sea.

The reformed CFP is taking these spatial patterns of quotas distribution into consideration by the implementation of regional groups for fisheries management. BALTFISH is the regional forum in the Baltic Sea where member states meet each other to discuss regulations and management of fisheries.

Based on CFP legislation and the natural dynamics of the fisheries and fish habitats, Maritime Spatial Planning is facing some challenges to incorporate spatial needs and claims of a dynamic fishing sector in a comprehensive plan for solving different interests at sea. Fishing constitutes a traditional activity at sea and is likely to be affected by other new or expanded uses of the sea demanding space that imply less flexibility for the fisheries. In some cases this may also result in reduced fishing possibilities as other uses of marine space or protection of areas, for e.g. fish habitats, is recommended through a MSP process.

#### 2.4 Spatial aspects of the Fishery sector

#### 2.4.1 Available data in the fisheries sector

Spatial data on fishing activity is available as part of the monitoring and reporting framework of the CFP, this includes site specific catch data as well as VMS/AIS tracking data for larger vessels. In figure 6 different aspects of available data of fisheries are listed.

Data type	Parameter	Parameter	Parameter
Logbook Vessel >10 meter	Catch (quantities)	Gear type and position (set/haul) or ICES rectangles of 30 x 30 nautical miles	Time
Logbook Vessel >12 meter	+ VMS monitoring		
Logbook Vessel >15 meter	+ AIS (mandatory to have onboard but optional to use for monitoring of the vessel		
First hand value	Prices		
Fishing avtivity	Days at sea		

#### Figure 6: Available data in Fisheries

Map layers of fisheries activities can be modelled on the basis of this data. In preparation for the first meeting of the SWB thematic group on fisheries Denmark, Germany, Poland and Sweden submitted examples of maps displaying fishing activity in various ways as a basis for defining national interests for fisheries.

Further data on essential fish habitats and how to delineate these is required for some species (e.g. cod Important areas for fish and thereby for fisheries change over time. Time series for

## location of fishing activities cover mainly the last 15-20 years, but due to the dynamic nature of fish, there is no guarantee that this will reflect future sites of importance to fisheries.





#### 2.4.2 Regional maps as potential for improvements of planning evidence

There are sample data on the geographical distribution of the fisheries, with the exemption of small scale fisheries (in particular vessels less than 12 meters). For small scale vessels exact fishing locations is not always reported in a detailed way which is in accordance with EU-legislation. Small scale vessels constitute a large share of all vessels, but a small share of the total catches.

Data collection in the fisheries is constructed to serve national agencies and their responsibility for surveillance of the national fleet and keep catch activities within the national share of a fishing quota. As a result of this national focus there are limitations regarding spatial distribution of national fishing activities at regional or sub-regional levels available.

However, the ICES Working Group on Spatial Fisheries Data (WGSFD) has developed regional maps of fisheries activity in the Baltic area in response to data calls from i.a. HELCOM.

Based on VMS and logbook data, WGSFD presents total fishing effort 2009 – 2013 in the Baltic Sea. Figure 1 shows a general view of catch intensity in the Baltic by aggregation of three gear groups. Spatially the fishing acitities is concentrated to the south of the Baltic and also gives a hint of fluctuations when 2010 and 2013 seems to be years with greatest fishing intensity.



Figure 8: HELCOM total VMS effort (hours) for mobile contact bottom gear, midwater trawl and longlines seasonal variations of 2013



Figure 9: HELCOM total VMS effort (hours) for mobile contact bottom gear, midwater trawl and longlines seasonal variations of 2013. Source: compiled from http://www.ices.dk/community/groups/Pages/WGSFD.aspx)

WGSFD identifies several caveats by using VMS as data source i.e. difficulties of setting a speed filter to distinguish between fishing and steaming activities among the vessels as well as the limited coverage of vessels >12 meters. However, from a transboundary perspective the VMS is estimated to cover the part of a total fishing.

ICES also presents a seasonal overview of the fishing efforts in 2013 (Figur X). In the CBC case area fishing efforts seems to a peak in the first 4 months of the year. In the data call HELCOMs request played a additional role to the OSPAR request where fishing activities where transferred into economic aspects. The WGSFD group calculated the landing value in euro.

The ICES WGSFD working group has data from all member states regarding total catch and landing weights for the Baltic Sea structured in zones of 3x3 nautic miles. In accordance to ICES agreements this material is not published to a broad public before member state give their permission. For transboundary issues in a MSP process this means that ICES spatial information does not cover national participation in shared fishing grounds which then makes it hard to identify common vessel routes between fishing ground and important harbours and landing places around the Baltic sea.

Regarding the Baltic Scope project the data available at ICES has a potential possibility to form improved planning evidence where spatial information of the national distribution of the catches in the fishery sector from comon fishing grounds can be shown. An agreement of sharing this type of information still has to be discussed in the Baltic Scope project. At the moment ICES data presented in the topic paper presents a broad picture of catch intensity and can be compared with areas for nursery and spawning in the Baltic.

# 3. Method and Representation of fisheries in Baltic Scope

In order to progress this topic paper, despite the fact that key findings tend to be beyond the mandate and timetable of the BalticSCOPE project, the topic coordinator took influence from the CB case where the thematic group on fisheries agreed on answering four questions regarding fisheries and the MSP process.

- 1. How do you want to represent fisheries in your marine plan?
- 2. Who is involved in representing fisheries in your marine plan?
- 3. How would you like to present your fishing interests in other countries EEZ?
- 4. How would you like other countries to present their fishing interests in your marine plan?

These questions where handed out to SWB partners as a suggestion for progress on the topic of fisheries. By compiling and share information on how national fisheries management is constructed and the participation of them in national MSP process the incorporation of other countries fishing interests in a national MSP plan is facilitated. A general conclusion from CB-case is to strive for a detailed description of the method of incorporation and aggregations of the data to produce the compiled maps which should be structured as a flow chart in the topic paper.

# 4. Characteristics of Fisheries in Partner countries

#### 4.1 Fisheries in Denmark

Figure 1 below displays where Danish vessels fish, as well as seven selected nature preserve areas (Natura 2000). At this time, there is no system for pointing out areas of national interest for fisheries in Denmark – neither for commercial nor recreational fisheries.

Currently Denmark are discussing different options on how fisheries should be integrated in the national maritime planning processes in the future. Since fisheries are predominately regulated through the EU common fisheries policy, at this point Denmark do not think that fisheries should planned for in our national plans as such. On the other hand, fisheries is an important stakeholder in the use of our marine areas, and should be integrated in the basis for marine spatial planning in an appropriate way.

Currently Denmark use available fisheries data for assessing impacts of initiatives in Danish marine waters. This is the case for assessing effects of introducing marine MPA's under Natura 2000, the MFSD and other initiatives that put restraints on fisheries.

Denmark primarily use VMS, logbook and landing data from Danish fisheries in order to asses both fishing intensity and economic impact of proposed initiatives. In addition to this, Denmark also have hearings of fisheries organizations in order to get further information on small vessels that do not have VMS equipment on board.

As stated above Denmark primarily use VMS data to investigate where fisheries take place. This enables to make charts on fisheries intensity, which can be used to get a good overall picture of fisheries in certain areas.

Information on the Danish fisheries can be found in Annex 1.



Figure 10. Areas where Danish vessels fish, as well as seven selected nature preserve areas (Natura 2000).

#### 4.2 Fisheries in Germany

At present in German waters only the draft of the updated MSP for the territorial sea of Mecklenburg-Vorpommern includes spatial designations with regard to fisheries. Mecklenburg-Vorpommern has designated marine reservation areas for fisheries. The spatial designations refer to areas that are of major importance for fishing as well as for fish species due to their natural functions. In these reservation areas fishery concerns on the one hand and the preservation of fish species and their habitats on the other hand should have a special weight when implementing projects or competing uses. The spatial designations aim at protection of natural sources of fisheries, in particular spawning and nursery areas against impact of other uses. Therefore also the natural fish fauna and certain habitat types benefit from the spatial designation. When reservation areas for fisheries overlap with protected areas like Natura2000 sites fishing also has to follow protection regulations.

Germany has not defined any areas of national interest for fisheries in the EEZ so far. When updating the plans in the following years there will be considerations regarding fisheries. The MSP for the German EEZ only defines reservation areas for scientific research. In these areas

fisheries research has special weight in the balancing process. So the areas should be held accessible for research vessels, resp. gear / monitoring stations etc. and protected from conflicting activities.



Figure 11. Spatial designations with regard to fisheries in German waters (sources: BSH, Ministry of Energy, Infrastructure and State Development MV).

Apart from the above mentioned MSP designations, the following map has been created within the BaltSeaPlan project for the Pilot area Pomeranian Bight/ Arkona Basin. The map refers to the fisheries topic by including a huge cod spawning area in the Arkona Basin and fishery closure areas on the Oderbank as well as herring spawning areas in the Greifswald lagoon.



Figure 22. Pilot Project Area MSP Pomeranian Bight/ Arkona Basin – Fish and Fisheries.

Significant data used for representing the interest of fisheries in MSP is the fishing effort on key target species as well as information on important spawning and nursery areas.

In German waters conflicts primarily arise between fisheries and nature conservation. The increasing number of OWF is a potential future conflict. Also the development in nature conservation, with future implementations of new Natura-2000 areas can affects fisheries by new regulations. - . In general, transboundary coordination is necessary for all spatial measures causing a displacement of fishing effort. For example, if Natura2000 areas or other protected areas are closed for fisheries, this will lead to transboundary impacts. As the area closure is regulated by common fisheries policy it, per se, requires transboundary coordination.

Further information on German fisheries can be found in Annex 2.

#### 4.3 Fisheries in Poland

#### 4.3.1 Introduction

There are formally established fishery areas in Poland- due to the Fisheries Act and appropriate Regulations of fishing is allowed in all Polish Maritime Areas (PMA), except those closed/of limited use (temporary or permanently) for fishery activities (due to military purposes, safety reasons, EU regulations, fish resources management, etc.) (fig.6). However they are scarcely regulated and they do not reflect the needs of natural fish resources - they do not provide complex protection for spawning grounds, nursery areas and migration routes. In some cases such as Natura 2000 areas there are informal propositions for a much more advanced establishment of fishery areas where ichtyofauna ecosystem needs are taken into account.

Formally, there are no legally designated (recommended in any strategic or policy document) areas of national interest for fisheries in Poland (like fishing grounds or fishery routes) - this is the reason of huge expectations towards the future MSP.



Figure 13. Fishery restrictions as for the end of 2014, source: Study 2015

#### 4.3.2 Fishing grounds

During the early MSP phase (inventory, resulted in Study 2015) applications have been submitted to the process by the Ministry responsible for fishery as well as the Regional Sea Fishery Inspectorates. The main proposal was that the access to fishery areas has to be secured as well as rational fishing implemented at the ICES 24, 25 and 26 squares (meaning whole PMA). It was underlined that internal waters (mainly Vistula and Szczecin Lagoons) as well as territorial sea (with stronger focus on the distance up to 6NM) are crucial for traditional coastal fishery, operating on smaller, often open deck boats. For the offshore fishery, six bigger areas were shown as having the strongest importance – south of Bornholm, Kołobrzeg-Darłowo, Władysławowo, Slupsk Furrow, Gdansk Deep and Gulf of Gdansk. For the inventory purposes the analysis of fishing effort for different tools have been performed, confirming existence of mentioned grounds (fig.7, 8). From a transboundary perspective, the area south of Bornholm is also identified as Adlergrund in the BalticSCOPE and one objective in bilateral planner meeting.



Figure 14: Polish fishing effort – Bottom trawl tools 2012, source Study 2015

The importance of Adlergrund from a polish perspective is confirmed by figure 8 which shows how the area is the main catch area for passive gears for Poland outside their national border. The spatial distribution of cod and herring in figure 9 confirm the view of Adlergrund and Middlebank as the vital fishing grounds where polish acess to waters in neighbouring countries should be considered.



Figure 15: Polish fishing effort – passive tools, 2012, source Study 2015)



Figure 16: Polish catches of HER and COD 2012 by vessels >12

#### 4.3.3 Spawning areas for commercial species

There are no legally designated spawning areas of commercial fishes, except the two EU cod closure areas. There are some restrictions to fishery, entered by law for protection of fish wellbeing – like closed areas in the estuaries

A conclusion from the inventory process presented in (Study 2015) with regards to spawning areas stress that spatial delimitation of the spawning areas of pelagic roe commercial species (like sprat, cod) is highly difficult due to spatial and time variability of spawning.

Despite the difficulties in delimitation it is known that effective spawning of cod takes place in the Bornholm Deep and Slupsk Furrow with an upper limit of 60 m isobaths of the depth, depending on water temperature and salinity. Still a significant time and spatial variability is observed both in the distribution of roe and larvae.

#### 4.3.4 Areas of national interest for fisheries – Process and criteria for pointing out

Poland has strategies to improve designations of areas of national interest for fisheries. As mentioned in 4.3.3 Poland don't have designated important areas for spawning which then also is an objective for the process of new areas of importance. As critiera for designation of fish habitat Poland listed important areas for spawning, nursery of fish as well as ichthyofauna – (criteria used for inventory purposes – Study 2015). Criteria for nursing and spawning areas concerns favourable habitats and hydrological conditions while areas of ichthyfauna will be based on qualitative criteria regarding the role of the area (feeding, spawning or migration).

Regarding the fishing activities, there are criteria both for areas of importance for coastal fisheries, offshore fisheries and recreational fisheries. While recreational fisheries is mainly defined upon statistical criterias, the coastal contains a qualitative method where areas of importance are defined also from a dialogue with fishermen where they suggest areas based on their experience. The areas of importance for offshore fishing grounds will combine the qualitative parameter of a dialogue with economic and statistical values of fishery squares. An overall objective for the process of defining areas is to locate them more precisely than in a statistical scale fishing square. A better precision of important fishing areas will improve the conditions for the assessment of potential conflicts with other types of marine space use

Theoretically, the data collected should allow the assessment of the distribution of fishing effort by types of tools used and species caught. Still, fishery squares are too large in terms of data

### resolution, to be useful in MSP. For inventory purposes (Study 2015) these analyses were complemented with VMS data.

In addition to fishing activities, Poland will point out important infrastructure for fisheries. This is harbours and routes to the fishing grounds. Critieria for harbors contains main function, number of vessels, operators, percentage of population dependent on fisheries. Routes to the fishing grounds will mainly be based on interpolation methods and information about the ports of departure and return taken from logbooks. Visualization of the space used by fishing vessels in order to reach the fishing ground is important from the point of view of the economics of fisheries. They are usually the shortest route and therefore most profitable (fig.16)



Figure 16. Routes to the fishing grounds - 2012, source Study 2015

Further information on Polish fisheries can be found in Annex 3.

#### 4.5 Fisheries in Sweden

#### 4.5.1 Fishing activities

Sweden has the EU's longest coherent coastline and is surrounded by several sea areas in which Swedish commercial fishing takes place. Swedish fisheries are conducted more or less

intensively in the Baltic, Kattegat and Skagerrak, but at times also further away in the North Sea and the Norwegian Sea. Fishing pressure varies spatially and over time. Small-scale fishing takes place in limited areas and is sometimes stationary, while other fishing activities are more flexible and conducted across large areas. Where fishing is conducted varies between seasons, but also depending on how fishing opportunities evolve.

In Sweden there is a specific boundary inside which trawling is not permitted, with the exception of "trawling areas". In the Gulf of Bothnia, the Baltic Sea and the Skagerrak, this boundary extends four nautical miles from the baseline.



Figure 17. Swedish fishing regulations (see Annex 4).

In the Kattegat, the boundary is set at three nautical miles. In the Öresund, trawling is generally not permitted. The trawling boundary very closely follows the boundary for access into Swedish

territorial waters that applies according to agreements made with Danish, Norwegian and Finnish fishermen. There are also a number of fish protection areas along the entire Swedish coast and further out into the Baltic Sea and Kattegat where fishing is not permitted year round or for parts of the year.

Current national interest claims for commercial fishing refer to areas in the sea, domestic lakes, rivers and harbours and were indicated in 2006. The Swedish Agency for Marine and Water Management is responsible for the national interests.

These areas in the sea encompass internal waters, territorial waters and the exclusive economic zone. The areas indicated are responsible for approximately 85 per cent of the total value of the Swedish sea catch.





In the sea, areas of national interest are defined primarily based on the catch value per unit area, while the individual national interest areas are based on specific fish species. The catch values

are related to a regional division of the following marine areas: the Bay of Bothnia, the Bothnian Sea, the Baltic Sea proper, Kattegat and Skagerrak. 55 home ports or ports of call, as well as the three most important wild salmon rivers, are also pointed out as being of national interest for commercial fishing. As regards spawning and growth areas, it was determined that there was only enough data to indicate 12 such areas in the southern Baltic Sea and the Skagerrak/Kattegat.

In terms of catch per area, the Baltic Sea (including the Gulf of Bothnia Sound) dominates with 65 per cent of Swedish catches, followed by the North Sea, 20 per cent; and Skagerrak/Kattegat, 16 per cent. In both the Swedish territorial sea and the exclusive economic zone fishing from other EU countries' vessels occurs. Figure X show spatial patterns of Swedish landing values for cod and pelagic species together suggested areas of national interest for fisheries with crossborder implications. These areas are results of thematic meetings of fisheries in MSP process and related to identified areas like Kriegers Flak in the South west case of BalticSCOPE.



Figure 19: Suggested area (43) for national interest of fishery and concentration of Swedish pelagic (herring, sprat, mackerel and sand lance) and demershal (mainly Cod) catches by trawl and seine . Quantity (kg) by landed weight, 2008 – 2012 © openstre

Even if the fish is landed in many places, a small number ports for about 90 percent of landings in Sweden in quantity, with the main ones in the Baltic being Gävleborg (Norrsundet), Kalmar ( Västervik), Gotland (Ronehamn), Blekinge (Nogersund, Karlskrona), Skåne (Simrishamn, Trelleborg, Skillinge). Traditionally Sweden landed even significant quantities in Denmark, especially pelagic fish such as herring and sprat. In 2012 Swedish landings in Denmark represented about 40 percent of total Swedish landings. The largest pelagic catches are from an area south of Gotland between Poland and Sweden as well as area along the west coast.

Further information about Swedish fishing activities can be found in Annex 4.

#### 4.5.2 Fish habitats

There are no readily available comprehensive maps on essential fish habitats/spawning areas etc, but partial and squattered information for certain stocks/areas such as:

Cod spawning areas are identified in deep areas e.g. Eastern Gotland basin (low), Bornholm basin/Arcona basin, Slupsk Furrow and Gdansk basin (low) and also in the Öresund region on the Swedish side.

Regarding the spawning areas for herring, there are fluctuations between seasons where coastal



Figure 203 Map of spawning and nursery areas, SwAM (2015)

areas are important in spring while spawning in autumn is identified in off shore areas. In the southern Baltic there are spawning areas for turbot which is a Swedish interest areas for fisheries

Further work is required to develop reliable maps of essential fish habitats which discriminate spatial and temporal variability which is essential to support marine planning.

# 5. Fishery in MSP process: Four strategic questions

# 5.1 Question 1: How do you want to represent fisheries in your marine plan?

#### 5.1.1 Denmark

Denmark has not started discuss these issues yet since the MSP process recently has started. Overall there are current mapping methods to describe which probably will be the main input to the MSP process.

When working with fisheries data in relation for example Natura 2000 and the MFSD the method combines data of fishing hours, kilowatt fishing hours (shows distribution of vessel size engaged in fishing) and average fishing speed in order to give a broad picture of the fisheries in Danish waters.

When looking into specific areas of fisheries Danish management use a combination of VMS, logbook and landing data in order to give indications on the value of fisheries in specific areas.

In the future process for a good representation of fisheries, Danish authorities will initiate the involvement of local fisheries in order to get a more detailed picture of the fisheries that takes place. By using this method, interest areas for small vessels which don't have VMS equipment.

#### 5.1.2 Germany

Through participation in the Baltic SCOPE project, Germany has identified the need of better knowledge regarding fisheries as a part of the process to update existing Maritime Spatial Plans in the Baltic Sea. Some information about fishing activities would be brought in to the process through an external report prepared by the Thünen-Institut which will serve as material to identify suitable methods to display and discuss fisheries spatially in the upcoming plans. For that reason it is difficult for Germany to answer the question clearly at this point. For a good representation of fisheries in future MSP process, fisheries organisations should be asked and involved, in order to get a more detailed picture of the fisheries that takes place. This might be especially important for those small vessels that either don't have to use VMS equipment or even not to fill out logbooks (all vessels smaller than 8 meters).

#### 5.1.3 Poland

Fisheries in Polish MSP is seen from one side equally as other sectors, from the other as traditional and of coastal societies' identity importance. So not only the economic numbers creates the picture but also its influence on local tradition and culture.

The MSP process in Poland started in 2013 with gathering the data and elaborating the national inventory. The fishery analyses were prepared by the National Sea Fishery Institute having the sound knowledge on fishery economy and society importance. There were three SH meetings during that phase, with an active involvement of fishery sector, both of national and fishermen level. During this part the official applications to the process were submitted by the Ministry responsible for fishery, by the regional sea fishery inspectorates and by the fishing organizations. The main proposal was that the access to the fishery areas has to be secured as well as rational fishing at the ICES 24, 25 and 26 squares (meaning whole PMA). It was underlined that the internal waters (mainly Vistula and Szczecin Lagoons) as well as territorial sea (with stronger focus on the distance up to 6nm) are crucial for traditional, coastal fishery, operating on smaller, often open deck boats.

Finally the planning phase will start in July 2016. The inventory should be updated as the first step. Certain analyses will be updated and deepened in order to point out the areas of national importance for fisheries. These are: 30 fishing grounds

- Coastal fishery traditional fishery areas, chosen by each fisherman, based on their own knowledge and experience. It is important to locate them more precisely than in a statistical scale fishing square. This will allow the assessment of the scale of potential conflicts with other types of marine space use. To map the areas important for coastal fishery a thorough inventory will be performed. This will be accomplished by direct registrations of fishing effort distribution and questionnaires interviews with fishermen from different fishery regions.
- Offshore fishing grounds determined by both traditional communication and economic and statistical values, performed on ICES squares complemented with VMS data. Since 1 January 2012 all vessels in Poland with a total length ≥ 12m must be equipped with a VMS transmitter.
- Fishery harbours their importance (main function, number of vessels, operators, % of population dependent on fishery...)

- Routes to the fishery grounds mainly based on interpolation methods and information about the ports of departure and return taken from logbooks. Visualization of the space used by fishing vessels in order to reach the fishing ground is important from the point of view of the economics of fisheries. They are usually the shortest route and therefore most profitable.
- Spawning and nursery areas based on existence of favourable habitats and hydrological conditions
- Recreational fishery the number of fishing vessels, trips and the number of the participating anglers, vessels length/type (influencing the possible distance from the shore), trips length.
- Important areas for ichthyofauna (criteria used for inventory purposes Study 2015) qualitative criteria – the role of the area (feeding, spawning or migration).

#### 5.4.1 Sweden

#### 5.4.1.1 Current Process of mapping fisheries for upcoming Marine Spatial Plan

The current status in representation of fisheries in MSP is a process at SwAM to define a data call to the Swedish University of Agricultural Science (SLU). A updated map regarding fisheries will help the national MSP process by distinguish the interest of the sector and motivate the approach towards different areas defined as "*potential areas for more detailed analysis*"

Regarding the Baltic Scope project, SwAM initially asked for presented results by the end of March which SLU viewed as a too ambitious deadline to deliver a good visual product for MSP. Therefore, in this topic paper, Sweden will present the criteria of the upcoming maps that are yet to be produced for the national MSP process.

Key motives behind the new data call and upcoming mapping is to improve the ability to make spatial projections of future fisheries by strengthen knowledge regarding historic fishery activities and the spatial dynamics that has occurred in the past. In accordance to an ecosystem based approach, SWaM wants to distinguish areas of interest for different fisheries e.g. small scale, large scale and also defined after a certain type of fishing gear. The new information will play a vital role in defining new and update current areas of national interest which is an ongoing discussing at the fishery unit in SwAM

In detail, maps regarding Swedish interest of fishing activities will contain:

- a. Catch activities in different areas over a long period of time (Total amount as well as separated into different segment of the fisheries)
- b. Economic value of catch per segment (Presented in numbers and percentages). Ambition to present this in seasonal variations and different time periods)
- c. Dynamics in evaluation of specific fishing grounds over time
- d. Important steaming routes for access to ports and landing places

Regarding fish habitats the data call will show important areas based on the sustainability of species of economic interest for the fishing sector. With this approach habitat areas will improve the representation of different stages of the life span of species compared to present definitions of spawning and nursery areas of national interest.

#### 5.4.1.2 Description of (present) map in Topic Paper – Flow Chart

The maps submitted in this topic paper mainly from Marine Spatial Planning - Current Status Report 2014 (SwAM 2015). In the report, fishery is presented separately as one out of several sectors and topics that are discussed in relation to initial MSP process on national level. The map of fishing activities has evolved during this project and unites data of fishing activities from Current Status Report with outcomes from recent thematic report in the MSP process where suggestions for new areas of interest outside were identified. From a Baltic Scope perspective, five suggested areas are of specific interest due to their transboundary implications.

Regarding the fishing activities the maps shows the spatial concentration of catches in kilograms based on landed weight and separates pelagic and demersal fishing activities into two maps.

Data is collected from logbook (Electronically or manually, reported by the fishermen) where setpositions are reported with an accuracy of 925 x 1850 meter. Based upon set positions the grid is 5x5 km in a raster format. The chosen grid is the result of a compromise between the expected accuracy, representative variation of reported position and the ability to create clear spatial patterns of activity. In relation to normal trawling speed the vessel can potentially move up to a distance of 18 km which could motivate a grid of 20X20. However, the choice of to narrow grid system is strengthen by the quality in logbook positions as well as the possibility to identify specific hot spots within areas of intensive fishing by distinguish distribution of set positions into different grids.

The method of set-positions as a base is preferable for active gears while the passive gear in the maps are characterized by lack of reported positions. The standards of logbook reports also leads

to an overestimated value for a certain grid when the logbook reports a middle positon of the passive gear and not the full length of it. This is amplified by the fact fishing standards with passive gear almost constantly fish in the same area.

#### 5.2. Who is involved in representing fisheries in your marine plan?

#### 5.2.1 Denmark

The AgriFish Agency play an important role in representing fisheries in our marine plans. The Agency will also make use of local knowledge of fisheries their regional units in the organization can contribute with. The National Institute for Aquatic Resources (DTU Aqua) also plays an important role in relation to analyze and represent available data.

#### 5.2.2 Germany

The participation and involvement will be a question for an upcoming process of discussion and updates of existing Maritime Spatial Plans. The discussions will be based on the external report about German fisheries activities in the Baltic that is described in section 5.1.2. For that reason it is difficult for Germany to fully answering this question at this point.

#### 5.2.3. Poland

The fishery sector was involved from the very beginning the national MSP process in Poland. The wide range of SH were informed about the process and encouraged to submit their proposals and comments. The fishery inventory was performed by the National Sea Fishery Institute. The methodology was consulted and agreed during the meetings. During the inventory phase (2014) there were three SH meetings. No comments were received after the inventory was approved.

The planning phase of MSP in Poland will start in July 2016. There are 4 SH consultation meetings foreseen during the 3 years time (also dedicated to SEA procedure) and additional meetings with sectors if needed/urged. The inventory analyses will be repeated and deepened, again the NSFI will perform fishery sector research, with stronger focus on coastal fishing grounds delimitation.

During the whole process the fisheries will be represented by the Ministry level (currently the Ministry of Maritime Economy and Inland Shipping), the regional fishery administration

(fishery inspectorates), fishermen associations, organisations, companies and individual fishermen; scientific institutes.

#### 5.2.4 Sweden

The planning phase of Marine Spatial Planning in Sweden has started in the autumn 2015. The start of the process is a series of thematic meetings in order to get more detailed information for planning, in addition to the current status report 2014. The thematic meetings is divided into seven different themes where fisheries is one of them. Five meetings for each topic has been held by SWaM and the findings from the meetings will be compiled into a thematic report.

The aim of the thematic work on fishery was to clarify the spatial implications of fishing activities and fish habitats in the marine spatial planning to provide a better understanding of the interest of fisheries and identify the need for new data for the creation of solid planning evidences for the MSP process.

The thematic work was initially carried out to government agencies responsible for managing key interests of fisheries in the marine area and representatives from the county administrative boards. As a government agency, SwAM plays a dual role here as different units of the agency is responsible for the MSP process, as well as representing the national interest of fisheries. Representatives from SwAMs fishery units participated in the thematic meetings together with

The representation at the thematic meetings in fishery was restricted to fishery management representatives. The thematic process was finalized with a bilateral meeting in Stockholm 6th April 2016 where representatives from fishing industry were added and discussed the findings in all seven themes.

The participation of non-governmental organizations (NGOs) has been restricted to comment on the work of *Current Status Report 2014* and the first draft of *Proposal for the direction and scope of Marine Spatial Planning in Sweden* (2015). In addition to their participation in the bilateral meeting in April, SWaMs intention to take more active measures to involve a broader fishing sector when the first drafts of the three Marine Spatial Plans are presented

SwAm applied a similar method at all thematic meetings. The thematic groups studied the whole Swedish coastline based on GIS layers with information of *national interest* areas for different sectors. Certain areas of overlapping interest where discussed from a thematic perspective and classified as either *conflict*, *co-existing* or *competing* interests

## 5.3. Question 3: How would you like to present your fishing interests in other countries EEZ?

#### 5.3.1 Denmark

Since we have not yet fully decided on how we want to represent fisheries in our own waters the same naturally applies in other countries EEZ. Nevertheless there will probably be a use of the same method as used in relation to Natura 2000 and the MFSD.

#### 5.3.2 Germany

Experts at the Thünen Institute of Baltic Sea fisheries, responsible for delivery of requested German report on fisheries in MSP (described in section 5.1.2) estimate that probably not more than 1-3 vessels smaller than 12 meters are fishing in the marine area of a neighboring country such as Sweden. German fishing activity outside of the German territorial sea and the EEZ takes place most probably at similar locations as the fishing activity of fishermen from other countries. Therefore, the ongoing process of an external report will not put too much effort in gathering detailed information on German fisheries in foreign sea areas as the areas will be most probably equal to the ones used by the native fishery.

At the same time the data basis for fisheries in Germany is very poor due to the amount of fishing vessels <12 meters in the total fishing fleet operating in the Baltic. Vessels of this size are obliged to fill out logbooks, but have no legal obligation to install monitoring systems such as VMS. However, in the logbooks the position of fishing activities are requested only on a very broad spatial scale, as just the index of the relevant ICES rectangles (30x30 nautical miles) needs to be noted down. Thus, it is nearly impossible to monitor the fishing effort of those small vessels on a sufficiently fine spatial resolution.

#### 5.3.3 Poland

During the early planning phase – the inventory will be updated also with the focus on Polish fisheries activities outside of Polish EEZ. The results will be presented during the international consultations meetings scheduled for the 2016-2019.

#### 5.3.5 Sweden

The compiled map from Sweden (Figure 4) show fishing activities in other countries EEZ. This will be updated by the current process described in section 5.1.2. In this current process there is a

similar ambition to map Swedish fishery interest beyond the Swedish EEZ. To fulfill the criteria A-D presented in section 5.1.2, the economic aspects of catch value highlights the need to map fishing activities outside Swedish EEZ where especially Swedish fishing activities in Norwegian waters is crucial for the Swedish fishery sector.

# 5.4 Question 4: How would you like other countries to present their fishing interests in your marine plan?

#### 5.4.1 Denmark

Denmark think they would probably prefer the same method as used in relation to Natura 2000 and the MFSD when other countries contribute with input on fisheries in the Danish Maritime Spatial Plan.

#### 5.4.2 Germany

Need of contribution from DE

#### 5.4.3 Poland

"This can be discussed in Szczecin" Still has to be cleared out due to the lack of time in Szczecin to discuss this issue

#### 5.4.4 Sweden

Based on the current process of updating maps of Swedish fishery sector, SwAM view the criteria presented in 5.1.2 as the ideal structure also for neighbouring countries to contribute their fishery interest in the Swedish MSP. The criteria (Listed from A-D in 5.1.2) includes spatial aspects of fishing methods, economics and logistic needs in the sector and aims to put a flexible strategic perspective for the future based on historic patterns of Swedish fisheries. With a coherent approach from all countries around the Baltic in representing their fishery interest will help the MSP process in all countries to identify important common fishing grounds and ports for different segments and improve the ability to secure and develop fishery in the Baltic Sea for a future fleet regardless of national distribution.

### 8 Findings/Recommendations

In this final section the topic paper will shortly analyse and conclude the findings from compiled material of maps, information and answers to the four questions. First 8.1 compile the main differences of information in the compiled maps discussed from the perspective of how to improve the national material in a direction towards a better coherence. Section 8.2 contains the contribution from the fisheries sector regarding planning recommendations from the SWB case. The recommendations below are suggestions to include in upcoming work of finalizing a Final report. Suggested recommendations in section 8.2 are structured as general and area-specific recommendations. In relation to the Final report, recommendations below is not granted to be found or formulated in the same way in the Final report.

## 8.1 Towards a common solution? – Main differences between compiled national maps of fisheries

#### 8.1.1 Introduction

Maps presented in this section are compiled by each country and has been the main part of material for discussions since to beginning of the project. During the project there has been discussions around the differences between compiled map and if there's a need to start a process to produce joint maps within the project.

Based on challenges identified in the fishery group at stakeholder meeting in Malmö, the South West case lowered the ambitions of producing a joint map of fisheries for a focus on organising bi- and trilateral planner meetings in spring/summer 2016.

Therefore, as a concluding part of this section, the topic paper describe main differences between compiled national maps to help understand limitations and differences in the data of fisheries. This could hopefully also inspire improvements of the mapping in each country in their ongoing MSP processes.

#### 8.1.2 Differences in data of fishery activities

Sweden and Poland present spatial data with of landnings where catches related to spatial squares are aggregated with VMS tracking which than spatially diversifies the squares of landing. The Danish map shows fishing activities only from VMS tracking which means that fishery activities is hard to distinguish från steaming activities in the fishing fleet. German map shows no data on activities from the fishing fleet in the Baltic.

#### 8.1.3 Difference in areas of interest.

All partner countries present areas of interest either for fishery or fish habitat. Sweden presents existing areas of national interest of fisheries and combine these national areas with a map that contains areas of interest outside national EEZ which were identified in thematic discussions of the national MSP process. Some of these areas highlights transboundary relations in fishery.

Germany restrict the spatial designations outside territorial water to "areas reserved for (fisheries) research" while more distinct "marine reserved areas for fisheries" is located closer to the coast. However there seems to be no clear distinction among these areas regarding the ambitions to protect fish habitats or promote activities of the fisheries sector.

Denmark argues that the lack of identification of interest areas for fisheries is related to their overall perspective on how integrate fisheries in MSP: The maps show seven selected Natura2000 areas where the area southwest of Bornholm has a transboundary character. It is not stated how these selected Natura2000 areas are related to protection of certain species.

Poland describes areas of national interest without showing them on their map. The description states a dissatisfaction with the criteria behind the areas. This is amplified in section X where "criteria for pointing out areas of national interest for fisheries" are presented with focus on potential of methodical improvements to identify these type of spatial areas.

#### 8.1.4 Differences in mapping of ports and landing places

Poland present the main routes between fishing ground and ports. There is no additional description of variation in landing values or catch species. The VMS tracking shows Kołobrzeg and Władysławowo are two important harbours. Sweden has no map of important fishing ports but connect the spatial distribution of landing values to the landing places which highlight nine different ports in the Baltic Sea as important on the basis of holding 90% of a total landing value.

#### 8.2 Suggested recommendations: Fisheries in MSP

#### 8.2.1 General recommendations

- National MSP should show areas of national interest for fisheries in other countries EEZ. ("With mutual efforts to achieve this; Important areas in a Pan Baltic Perspective can be identified")
- Rerouting of shipping lines should avoid common important fishing grounds. (OWF designations can be a tool to promote this!)

#### 8.2.2 Area specific recommendation: Adler Bank/Odra bank

• Secure polish access for fisheries south of Adlers bank in Danish water by consider route over Odra bank for landing in ports of Kolobrzeg and Swinoujsce