



**Stakeholder workshop on key drivers and future developments
of shipping, fishing and nature conservation**

Deliverable D.T.4.2.3



ABSTRACT

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Abstract:

The Plan4Blue project is conducting three case studies to study cross-border aspects of economic activities and nature conservation and to identify possible roles for national MSP processes in addressing them. The case studies focus on shipping, pelagic fishing and Natura 2000 areas in the project area that covers Estonian and Finnish waters in Gulf of Finland and Archipelago sea areas. As part of the case study the project invited experts in these three topics to a workshop that was organized in September 4-5, 2018 in Turku, Finland.

The workshop we focussed on three elements:

- Key drivers that influence development of shipping, pelagic fishing and nature conservation
- Conditions for sustainable development in shipping and pelagic fishing
- Information sources and the next steps in the case studies

There was altogether 39 participants that represented expertise on the three topics that the cases deal with. There was 20 persons who work in administration on regional or national level, five representatives of industries and 14 came from research organisations. Regarding the nationalities, there was 14 persons from Estonia and 25 from Finland.

Acknowledgements

We are thankful for the commitment and input by the workshop participants as well as to Mr. Janne Antikainen for inspiring and skilful facilitation of the event. Plan4Blue project is co-funded by the INTERREG Central Baltic programme.

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INTRODUCTION

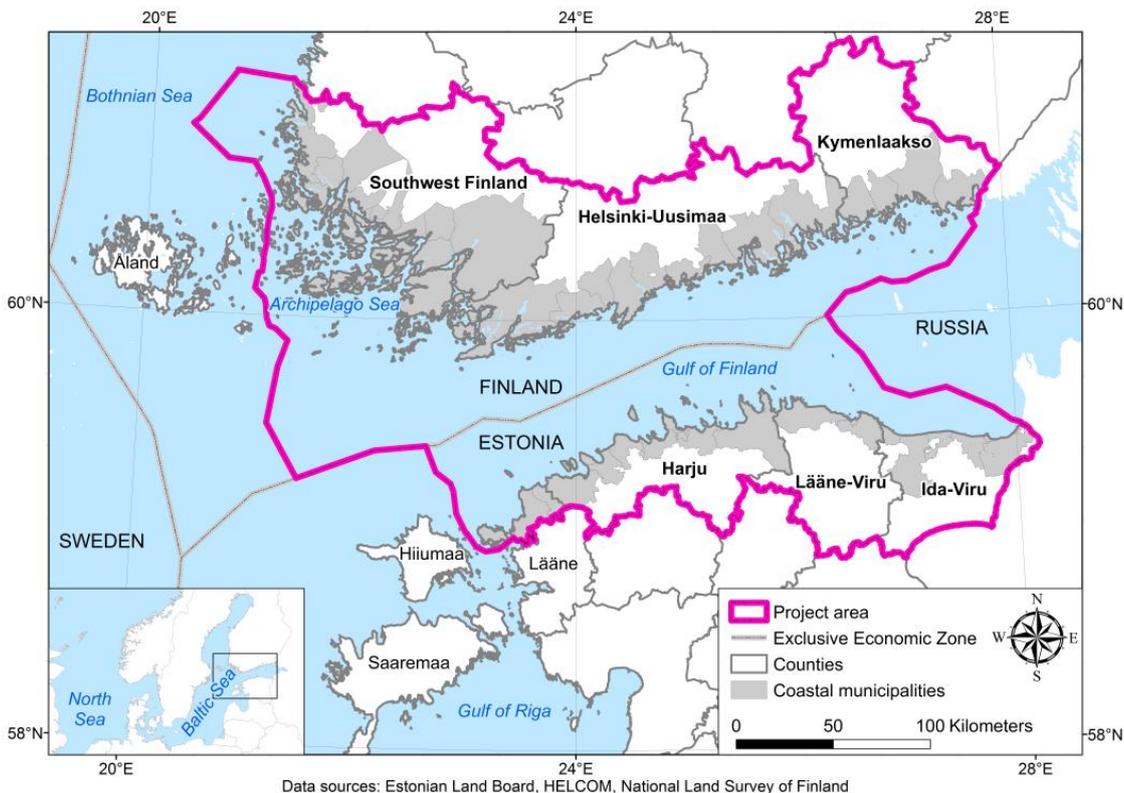
Background

The Plan4Blue project is conducting three case studies to study cross-border aspects of economic activities and nature conservation and to identify possible roles for national MSP processes in addressing them. The case studies focus on shipping, pelagic fishing and Natura 2000 areas in the project area that covers Estonian and Finnish waters in Gulf of Finland and Archipelago sea areas (see map1 below). We will also compare and combine the results of three cases to produce the fourth, cross-sectoral synthesis to cover the whole project area. The results of each case and the synthesis will be discussed with spatial authorities and stakeholders with whom we will translate the results to fit the national MSP processes in Estonia and Finland.

The workshop that is reported in this deliverable is contributing to the case studies. In this workshop we focussed on three elements:

- Key drivers that influence development of shipping, pelagic fishing and nature conservation
- Conditions for sustainable development in shipping and pelagic fishing
- Information sources and the next steps in the case studies

The second workshop will be organised in March 2019 to discuss the draft results of case studies. While the first workshop focussed more on cases, the second workshop will emphasise also the cross-sectoral aspects.



Map 1. Plan4Blue project area.

The workshop

The workshop was organised in September 4-5 2018 in Turku, Finland.

There was altogether 39 participants that represented expertise on the three topics that the cases deal with. There was 20 persons who work in administration on regional or national level, five representatives of industries and 14 came from research organisations. Regarding the nationalities, there was 14 persons from Estonia and 25 from Finland.

Agenda

<p>Plan4Blue Turku workshop 4-5 September Venue: Radisson Blu Marina Palace Hotel Linnankatu 32, 20100 Turku</p> <p>Tuesday, September 4th Moderator: Janne Antikainen, MDI</p> <p>11:00 – 12:15 Registration & lunch at Radisson Blu Marina Palace</p> <p>12:15 – 12:30 Opening of the workshop Riku Varjopuro, Plan4Blue Project Coordinator, Finnish Environment Institute SYKE</p> <p>12:30 – 13:00 National MSP processes</p> <ul style="list-style-type: none">• Estonia, Trim Lepland (Ministry of the Finance)• Finland, Pekka Salminen (Regional Council of Southwest Finland) <p>13:00 – 13:15 Introduction to Plan4Blue scenario work, Riitta Pönttynen (University of Turku)</p> <p>13:15 – 13:30 Introduction to cases, Riku Varjopuro (SYKE)</p> <ul style="list-style-type: none">• Pelagic fishery• Marine Natura 2000 areas in MSP• Shipping between Estonia and Finland <p>13:30 – 14:00 Interactive identification of cross-sectoral aspects</p> <p>14:00 – 14:20 Coffee break</p> <p>14:20 – 16:30 Working groups on key driving forces of the cases</p> <ul style="list-style-type: none">• Pelagic fishery• Marine Natura 2000 areas in MSP• Shipping between Estonia and Finland <p>16:30 – 17:00 Feedback from the working groups and revisiting the cross-sectoral interactions</p> <p>17:00 – 17:05 Closing the day</p> <p>19:00 – 21:00 Dinner at Panimoravintola Koolu</p>	<p>Wednesday, September 5th Moderator: Janne Antikainen, MDI</p> <p>9:00 – 9:30 Coffee and registration</p> <p>9:30 – 9:40 Welcoming and opening of the 2nd day</p> <p>9:40 – 11:30 Future developments and actions for the 2020's</p> <ul style="list-style-type: none">• Pelagic fishery• Marine Natura 2000 areas in MSP• Shipping between Estonia and Finland <p>11:30-11:45 Stretching the legs</p> <p>11:45-12:30 Feedback on finalization of the case studies</p> <ul style="list-style-type: none">• Pelagic fishery• Marine Natura 2000 areas in MSP• Shipping between Estonia and Finland <p>12:30 – 12:45 Closing of the workshop, next steps</p>
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PLENARY SESSIONS

The plenary sessions of the first workshop day consisted of introductory presentations on the case studies and previous work done in Plan4Blue on future scenarios. There were also presentations of national MSP processes to update the participants on the current situations in both countries.

The workshop utilised an on-line voting platform Screen.io to collect input from the participants. The participants were asked about competition at the sea area and who they think will win or lose.

The first “warm-up” questions dealt with spatial completion. Most of the responses indicate an increase of competition of the use of sea areas.

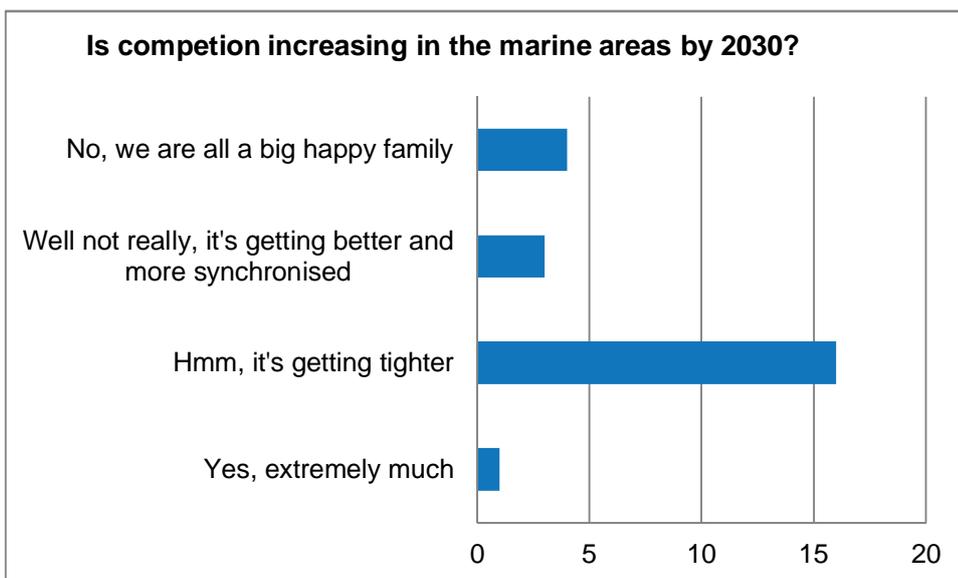


Figure 1. The participant’s views on spatial completion in the sea areas by 2030

The participants understanding of the possible winners and losers in the future suggest that rather hard values will drive the near future developments and changes are expected.

Table 1. The participant’s views of the top-5 winners and losers by 2030

Winners	Losers
Those who have money and influence	Small-scale businesses
Shipping	Nature, biodiversity
Big companies	Fishers
Those who can change	Traditional electricity production
The military	Depends on time and place

They were also asked about interactions between sectors, both conflicts and synergies. The following table gives examples of the positive and negative interactions. Altogether the participants identified more positive than negative interactions and potential.

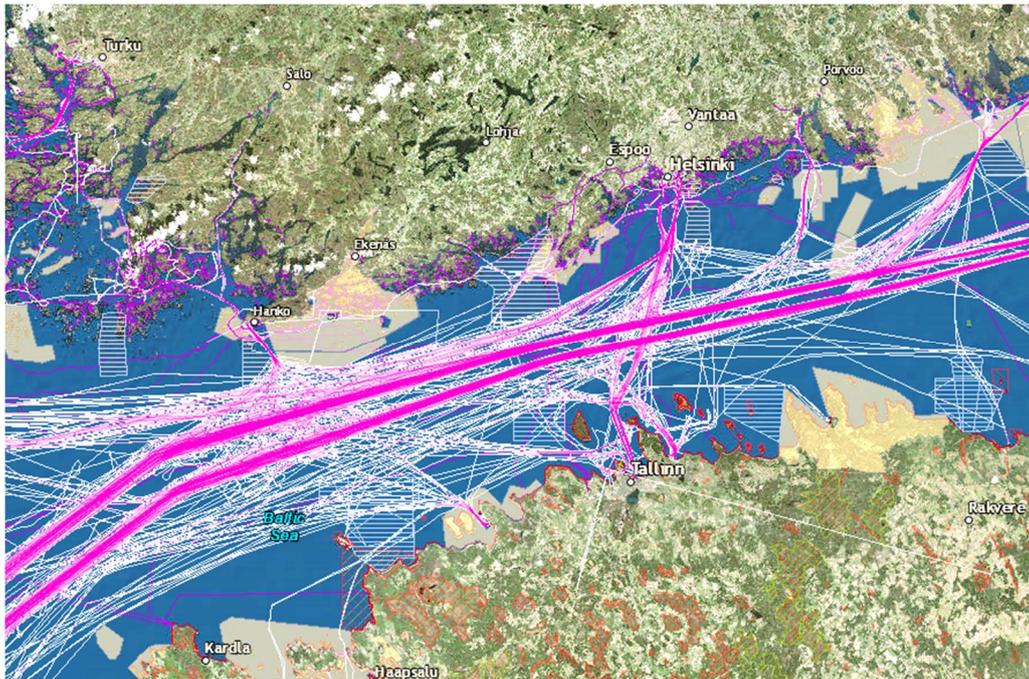
Table 2. Positive and negative interactions between sectors

Positive interactions	Negative interactions
Information sharing between sectors	Environmental status of the Baltic Sea vs. Blue Economy
Collaboration between sectors allows better using of existing infrastructure and investments	Wind farms and migration of birds and bats
Using MSP process also for communication of nature values	Natura 2000 and aquaculture
Economic growth and new business models	Aquaculture vs. windfarms vs. navigation
Protected areas and tourism (synergies)	Aquaculture x fishing (diseases)

CASE MARITIME TRANSPORT

Introduction to the case shipping

Maritime transport covers shipment of goods (cargo) and people by sea, while the port operations are a necessary tool to enable maritime trade between trading partners. The Gulf of Finland sea area is characterized by sensitive environment, heavy maritime traffic and multiple ways of using the marine space (Map 2). The objective is to integrate the issues that are most vital to maritime transportation - safety, continued operation, business success and efficiency of sustainable eco-socio-technical maritime transportation system into the MSP options.



Map 2. Multiple uses of marine space in the Gulf of Finland. Lines represent transport routes (purple colour indicates intense traffic), areas shown in the sea are protected areas or areas reserved for military purposes.

The aim of MSP in the Gulf of Finland region is to allocate the necessary marine space for effective and efficient development of maritime transport and other Blue Economy sectors concerned. Actual use of allocated sea space for maritime transport development is governed and managed according to international and national legal requirements enforced at international and national level.

The wide goal of the workshop was to understand the concerns of professionals and stakeholders in maritime transport sector. The workshop was divided between two sessions each with a certain headline:

- 1) An understanding of the foreseeable future of shipping in Gulf of Finland
- 2) Drivers in the MSP context, recognizing challenges and opportunities

It is important to mention that drivers here are meant as something that create and fuel activity (Collins English Dictionary), the activity being maritime transport including port operations.

Group work on shipping

During the group work sessions it was planned to (1) investigate the drivers which experts see in the maritime transport in the near future (~2030) and (2) analyse their likelihood and importance. Firstly, brainstorm technique was used, where all participants were invited to share their ideas without criticism from others. Secondly, the ideas were put on an axis showing their importance and likelihood (see Figure x). We provided the group with basic background information orally and on a handout. During the workshop we had an excellent opportunity to exchange views and have fruitful discussions with a wide variety of stakeholders: public sector, representatives from Port of Tallinn and Port of Helsinki, universities and ship owner's association.

Results of the group work on shipping

During the brainstorm session the following main topics affecting maritime transport were agreed: policy making and regulations, global trade changes, co-operation, technical developments, economical developments. During the second session these results were further analysed and their importance and likelihood assessed. These results were divided into three groups: affecting MS, not affecting MSP and grey zone (not sure about the impact to MSP).

Maritime sector is heavily guided by the **regulations** proposed by International Maritime Organization (IMO), where majority of developments connected to maritime safety and environmental impact of shipping originate from. Because of the long duration of IMO processes these changes are well predictable and therefore manageable for shipping companies who see it as a "stable change". On the other hand, this means that new practices such as autonomous shipping take years or even decades to be approved for common use.

Economic development has an impact on the transport demand as a whole, and in our analyses, it stands as pair with regulations in importance, although the likelihood (and perhaps nature) of changes is harder to predict. Tourism and cruise shipping were seen as a grey zone under economic development; tourism is demand-driven and tourism flows are hard to guide or plan. Ways that this could be done can include marketing efforts to highlight regionally special features and developing new business models and forms. Challenges of developing maritime tourism include shortness of the season, state of the sea and difficult access to destinations outside the city regions.

Within the limits of economic development **global trade** evolves around markets, policies and policy making, geopolitics and port network. Ports are in a constant competition over clients and shipping routes can change quite rapidly when new opportunities arise. For certain types of cargo, such as containers, competition is more restricted as few ports have the infrastructure needed to handle containers.

As global trade especially from Asia has grown, vessel sizes have grown accordingly. Cargo vessels profit from the economy of scale, especially in container traffic. Limiting factors to vessel size are the width and draft of fairways, channels and locks, and height of bridges on fairways leading to closed seas and harbours. For ships sailing to the Baltic sea ports, the Danish straights limit the draft of ships to little over 15 meters and the height of the ships to 65 meters. Largest container ships in operation today already surpass these and are in fact even too big to sail through the Panama Canal. These ships serve the Asia-Europe routes which typically terminate to the ports of Belgium and the Netherlands.

Most cargo transport to Gulf of Finland is delivered with smaller feeder vessels, which comply both with the environmental regulations of the Baltic Sea area and ice class demands of northern parts of the Baltic Sea. Ice class demands for the ships limit the amount of ships capable of sailing to northern Baltic Sea ports in wintertime, as vessels lacking an ice class cannot rely on receiving ice breaker assistance.

Although the size of the feeder vessels is only a fifth of the over 20,000 TEU capacity of the largest ships, they too have grown in size during past decades. This is seen as the only factor driving fairway development in the area, as some ports seek to deepen their fairways in order to accommodate larger vessels. A major part of the cargo is delivered by RoRo vessels and, in fact, forms the basis of operation for the Helsinki-Tallinn passenger ferry route. As individual **ports specialise**, port operators tend to expand their services by operating several ports. RoRo traffic connected to passenger services tends to stay in inner city harbours due to the needs of passenger traffic. It was seen that most ports can expand their services by growing out to the sea. Therefore,

logistic challenges related to growth in vessel size or number of moorings mainly concern hinterland connections.

Co-operation between ports was seen quite important and likely to take place; it was seen that ports would benefit from more standardised infrastructure and statistics on the port operations. The collected data quality is different and not coordinated, which makes it difficult to make analyses. Maritime spatial planning could be one driving force for such co-operation.

Technological changes in shipping are driven by the previously mentioned drivers. This may explain why the importance of this driver was seen modest in comparison. Often new technologies are introduced as modifications to existing technologies or as a parallel solution to traditional ones. For example, modern ships take advantage of autopilots on open sea, which may lower the minimum number of crew on board but does not replace the crew altogether. It is also foreseeable that new fuel types will be first introduced as auxiliary fuels, or that existing fleet will be converted to use new, less polluting fuel types. It was discussed that autonomous shipping will probably not have spatial effect but it is certainly a development in the coming years. Denmark, Estonia, Finland and some other countries have taken the initiative to include autonomous shipping in IMO agenda.

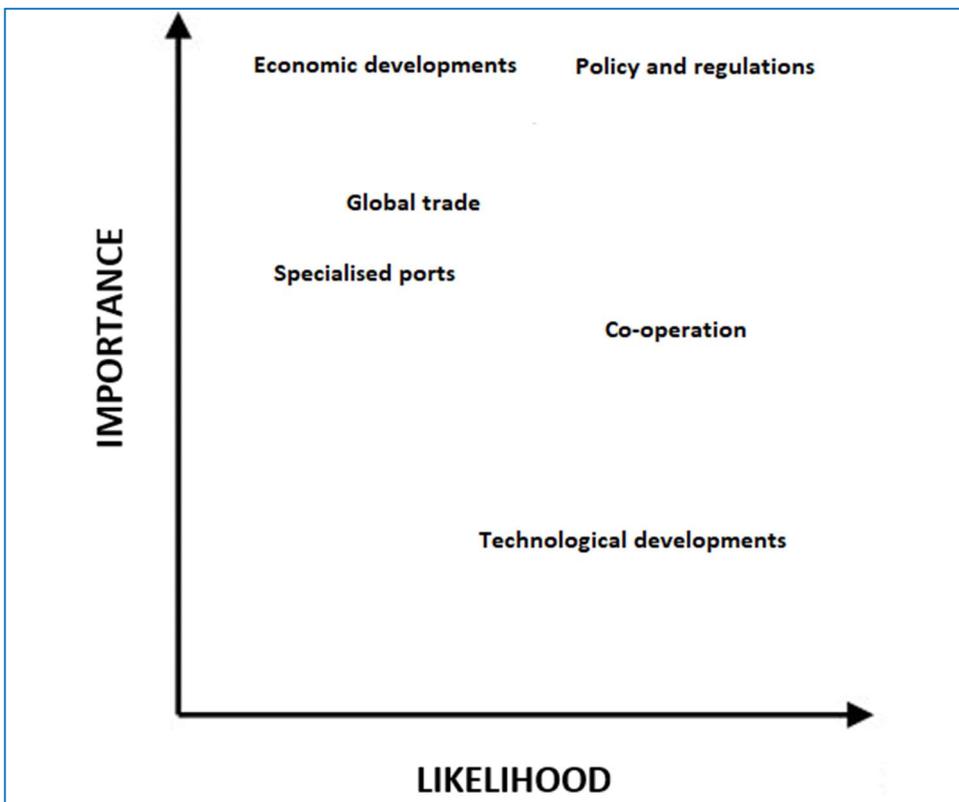


Figure 2. A result of the analysis of key drivers

CASE MARINE NATURA 2000

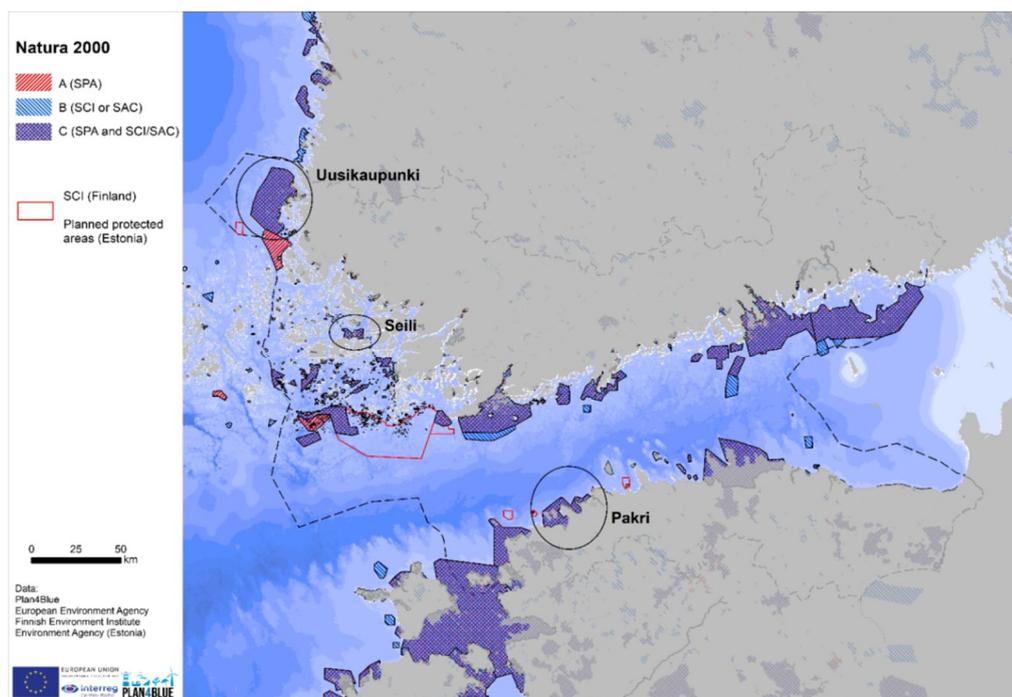
Introduction to the case Natura 2000

Natura 2000 (N2K) network is a large network of protected areas. N2K sites are based on two EU directives: Habitats Directive (92/43/EC) and on Birds Directive (2009/147/EC). The main aims of Natura 2000 sites and the network is to protect species and habitats that are important in EUs scale and to prevent the biodiversity loss.

The main aim of the marine N2K case is to spark up ideas and open discussion how marine N2K areas could be handled in Maritime Spatial Planning processes in Finland and in Estonia. National Maritime Spatial Planning processes are moving forward in both countries, and the question how to handle N2K in the MSP process is relevant in both countries. For more when planning cross-border projects and when there is cross-border cooperation it is important to know how each country handles their marine N2K sites in MSP process, and in general to make the cooperation smoother.

Marine Natura 2000 sites set legal limitations for the sea use and marine activities, but it is important to note that in general N2K sites are not “no go” areas – more likely they are areas where activities may be practiced, but it need to done in a sustainable way. One aim is to see roughly what activities could be practiced in and close by N2K sites and to get information how certain activities impact on protected species and habitats. Information on vulnerability of species and habitats and on impacts of different activities on them is collected in Plan4Blue work package 2 (vulnerability profile, info cards).

There are several marine Natura 2000 sites in the project area, bigger and smaller. There are several bigger N2K areas for example Uusikaupunki Archipelago N2K site in Finland and Pakri N2K site in Estonia. There are three types of Natura 2000 areas: A - areas based on Birds Directive, B - areas based on Habitats Directive and C - areas formed based on both, Birds and Habitats Directive. (Map 3)



Map 3. Marine Natura 2000 sites in the project area. Circled sites are selected for closer comparison: Uudenkaupungin saaristo (Archipelago of Uusikaupunki), Seilin saaristo (Archipelago of Seili) and Pakri. SPA area (Special Protection Area) indicates Birds directive protected sites and SAC area (Special Areas for Conservation) indicates Habitats directive (the Nature directives), SCI is Site of Community Importance.

There are four main questions in the marine Natura 2000 case. The questions are what kind preconditions marine N2K sites set for MSP, how is the N2K process like (defining and managing the sites), how marine N2K sites can be handled in MSP process, and if N2K assessment need to be done then how should it be done?

Group work on marine Natura 2000

Our main task in the first session (Session 1) was to recognize with the group members what are the drivers that impact on the marine protected areas and N2Ks and to their development in the future. The main aim was to recognize many drivers and talk about those: how the drivers will appear, how important they are and how likely they will occur? First the group was asked to think drivers on their own. After that each participant said one driver and explained why she/he named certain driver. We made several rounds as many drivers came up. During the rounds we discussed about those drivers together with all the group members. After brainstorm session we put the drivers to axis showing their importance and likelihood to happen (Figure 3).

In the second session (Session 2) we asked the participants to think first by themselves how N2K areas could be handled in MSP process. After short time of thinking we started to discuss about the issue with the whole group. The group facilitator secured that each participant had space to impress her/his ideas and comments. Ideas were gathered on a flipchart with post-its. After brainstorming the issues together, the best ideas were highlighted.

The workshop provided fruitful platform to talk about N2K and nature protection with the relevant stakeholders. The workshop provided space for the stakeholders to take time to think about N2K and MSP as processes and how those processes can be linked. The main aim of the N2K case in the workshop was to get new ideas and have relaxed discussions of the topic.

Results of the group work on marine Natura 2000

Session 1 Identification of important drivers impacting marine N2K sites and nature protection

In the first session the group discussed about the drivers. The main aim was to spark up and brainstorm ideas of relevant drivers. Several drivers were considered to be the most important impacting marine N2K sites and nature protection and their development:

- Pressure for economic growth (resources, economic development)
 - Economic de-growth can cause worse status of the environment as there is not enough money to take care of nature
 - Selecting the best location for the economic growth
- Political pressure (possible changes in EU policy and legislation)
- Climate change (habitats and species moving to new areas)
- Need for legislative clarity (as a mean for conflict resolution)
- People's attitudes (political decisions, legislation)
- Loss of biodiversity
- Increasing amount of data, knowledge and understanding
- Technical development (overcoming issues through technical advances)
- Environmental regulations and policies (from WP1 scenario work)
- Processes outside N2K areas (birds wintering elsewhere, fish spawning areas)

Other drivers mentioned, to name few, were drivers like pressure for green energy, political pressure for stricter environmental/nature protection regulations, interest to use more sea as the possibility for transport (tunnel Hel-Tal, Talsinki, development of transport, oil spills, especially in case of autonomous shipping), attractive leisure and recreational areas, better knowledge of the environment, unknown alien invasive species, better and safer shipping lines (increasing the safety level of shipping), and global processes.



Figure 3. The most relevant drivers were selected after the brainstorm. Drivers were put into a chart according to their likelihood to happen and occur (x-axis) and with the importance that each driver has (y-axis). Note! All the drivers in the chart are relevant and their location in the chart is only directional.

Session 2 Finding ways how marine N2K sites and nature protection could be handled in MSP process

The second session focused on the question how marine N2K sites and nature protection could be handled in MSP process. One key element of Natura 2000 areas that came up was the notion that each Natura 2000 site is unique. Each N2K site protects species and habitats that are listed in the N2K site standard data form. As each site is different, N2K sites can not be handled as a one layer. One way of how to handle N2K sites could be to create hotspot layer of habitat types and species – that could be use as a background material in the planning.

Several ideas and thoughts came up relating to N2K sites in Estonia. In Estonia the N2K sites are there where they are and they have to be taken into account, there are regulations, legislation. The question mark is regarding the planned but not yet designated MPAs/N2K sites, if activities can be allowed or not. In Estonia SEA is done for strategic plans and is SEA also N2K is described there. One key issue relating to N2K sites is that N2K conservation objectives need to be considered (Natura 2000 assessment) when planning concrete activities. One issue is also that in Estonia not all protected areas / N2K sites need to have management plans (MP), but bigger ones should have. In Estonia there in court decision concerning Hiiu MSP. That can affect the way how N2K sites will be taken into account in the Estonian MSP.

Several issues and ideas came also up relating to Finnish N2K sites and nature protection. One thing is that currently there is a process going on where management plans will be done for certain marine N2K sites. In the management plans marine environment and underwater environment will be taken into account. Management plans are done for the sites if there are addressed threats in or close to the N2K site in question. The N2K process is continuous. One central issue is that planners and nature specialist could meet more often to share ideas and knowledge about the marine environment.

Communication was one central topic that came up during the discussions. It is relevant in both countries that there could be more communication to the general public and stakeholders about the nature protection and N2K sites. Different processes, like MSP, can provide good possibilities to communicate about our nature protection to the general public in a good and positive way. In Plan4Blue there is work package 2 that deals with marine nature values. That work can be used in communication also.

Next steps/how to proceed with the case study

In the last session the group discussed how this case could proceed forward: what material could be used, and what would be interesting for them to know more about. Several ideas about the possible material came up. In Estonia it could be useful to see the MSP court case, management plans, species action plans, EELIS database, biodiversity maps made by Environmental Agency. In Finland management and use plans and other general plans could be useful and also official statements relating to marine N2K sites.

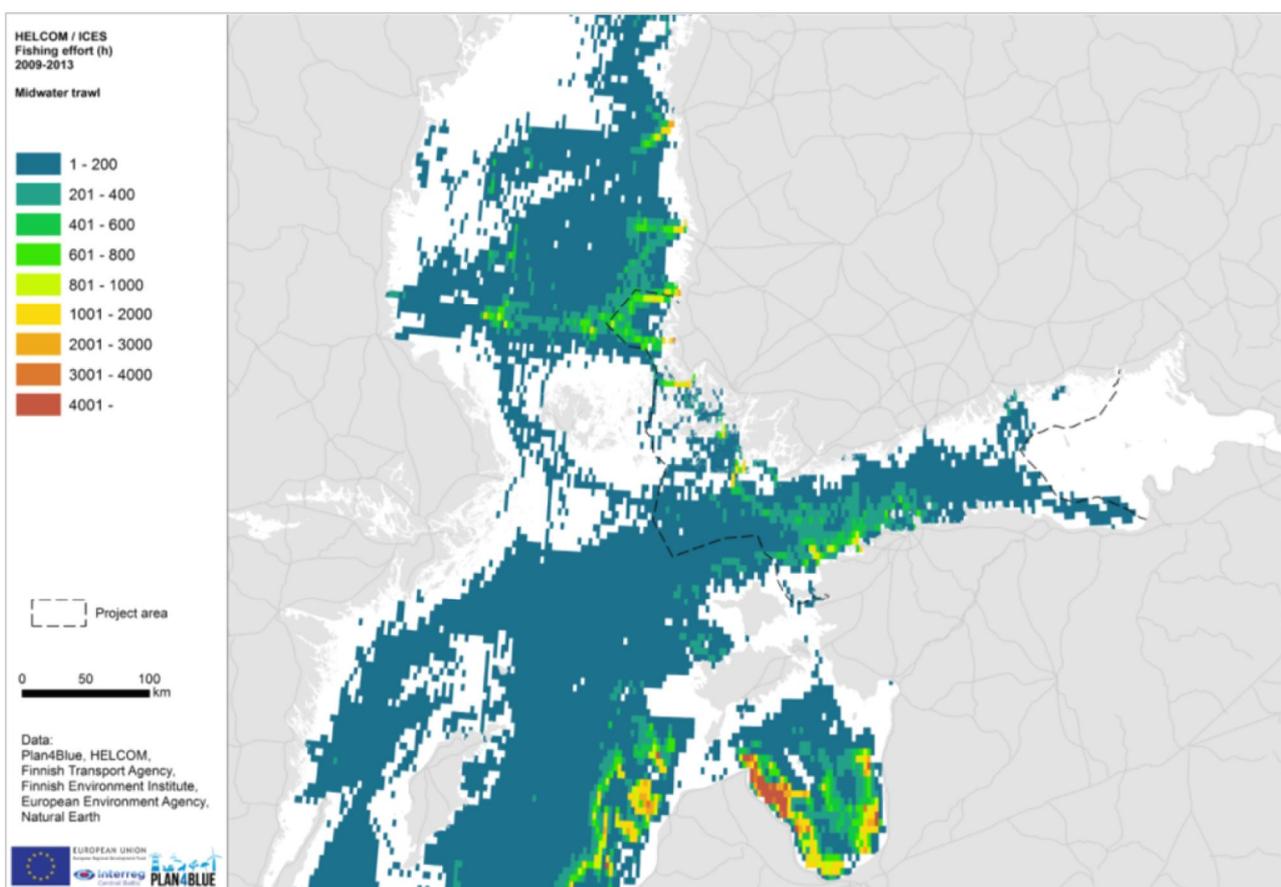
Two other ideas were to interview N2K and nature protection specialist from both countries. General material was mentioned to be relevant, like EU Commission's guidelines and other documents.

There were also ideas relating to relevant cooperation between Estonia and Finland. Cooperation between national administrations and planners would be needed to share data and information related to N2K sites. It was also mentioned that information about bird and bat migration could be shared between countries.

CASE PELAGIC FISHING

Introduction to the case pelagic fishing

The case focuses on pelagic fishing of herring and sprat. Pelagic fishing takes in large areas and vessels can operate in waters of both countries. The case covers the whole project area, but due to the large coverage of the fishing operation we need to address also Bothnian Sea and northern Baltic Proper (see Map 4 below). Focus is on open sea areas, but routes between fishing harbours, landing sites and fishing grounds are important. The case needs also to pay attention to spawning and nursery areas as they are parts of the essential fish habitats. In fact, many of the potentially important interactions between pelagic fishing and other human activities at sea may take place in coastal waters where herring spawns and that are the nursery areas of the fish



Map 4. Spatial extent of mid-water trawling fishing effort in the northern Baltic Sea.

The guiding question for the case is to identify the conditions for pelagic fisheries to continue in the project area and the factors that influence that?

1) What are the key factors that influence the future of pelagic fisheries in the project area? Factors should be identified from various perspectives:

- a) Future of the fish stocks is obviously decisive
- b) Also fish markets develop (consumer behaviour?), new products to be processed from fish may be developed and fishing technology can change.

c) Also availability of work force and an interest to invest to fishing are among the possible relevant factors.

d) And we need to check what useful results are available from WP1 scenario work.

2) What are the necessary actions/decisions/planning solutions to support its sustainable existence? (i.e. to ensure the conditions for fishing to continue)

Here good fisheries management is, of course, the key to ensure availability of the fish resource. However, our main focus could be in other aspects than in conventional fisheries management (stock assessments, quota setting, monitoring) or in fisheries economics (fish markets, new fish products). We should not ignore those factors, but we could put our focus especially on analysing spatial aspects of fisheries. This would mean putting focus on fishing grounds, on spawning grounds, on routes that fishing vessels use/need and other uses of seas area that are supporting or harmful to fishing.

Group work on pelagic fishing (1/2)

Group works of the fishery case was organised in three sessions similar to the other groups works (shipping and Natura 2000). In the fishery case the first session focused on identifying and analysing key drivers of the sector. The second session focused on scrutinising opportunities and challenges for reaching a sustainable state for pelagic fishing by 2030. Sustainability consists of environmental, economic and social elements. The last session discussed the next steps and the approach to finalise the case study.

As a background material for the group work we prepared the map as shown above (figure 4) and a handout that to present some key points about the fishery in the area, the concept of essential fish habitat and information about other sea uses in the area.

Results of the group work on pelagic fishing

Session 1 Key drivers of pelagic fishing

The first session focused on the drivers that influence development of pelagic fishing. First we started by identifying the drivers. This was done by asking each participant to suggest a driver on their turn. We did several rounds like this. The drivers were then grouped together and each group was given a name that describes the group of drivers. In the consecutive steps of the group work we handled each group of drivers as one driver. From these we identified the most important ones that were then analysed according to their importance and their likelihood to influence the pelagic fishing significantly by 2030. The latter analysis was done with a help of a figure where y-axis represented the importance of a driver and x-axis the likelihood.

The following table shows the groups of drivers in the order of their importance.

Table 3. The key drivers of the development of pelagic fishing

Key drivers	Comment
Global market development	Refers to large scale dynamics of demand for fish products and to trade politics
State of the ecosystem	Overall state of the Baltic Sea ecosystem that influence fish stocks. The state of the sea has importance also to usability of the fish for human consumption (pollutants)

State of the fish stocks	The fish stocks is the basis for fishery. It is directly linked to political decisions on fishing quotas.
Costs of fishing	The costs are influenced by many factors, e.g. fuel prices, tax systems and also by the subsidies
Consumer behaviour	Smaller scale market dynamics, impacts also the price of fish (consumer behaviour can be influenced by national actions, e.g. campaigns, MSC certificate)
Innovations in fish products	New products for the consumers, but also to industrial use
Concentration of capital	Concentration of quotas, where to find investors?
Fishing technology development	Influences cost of fishing and is linked to new developments in the market

An analysis of the key in terms of their importance and likelihood to become influential by 2030 produced the following result (figure 4)

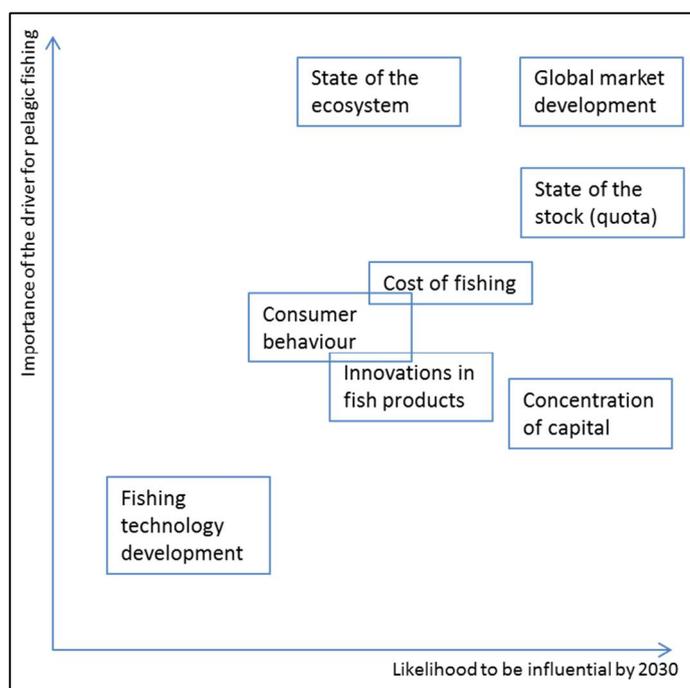


Figure 4. A result of the analysis of key drivers

The analysis of the drivers indicated that the three most important drivers are global market development, the state of the ecosystem and the state of the fish stocks.

Global market development influences pelagic fishing in the region since the fishery operates in truly international markets. Previously a large share of the fish that was sold for human consumption went to the Russian market that is close now due to trade restrictions. This makes the fishery dependent on trade politics and geo-political developments. The largest share of herring and sprat catches in Finland are sold to fur industry. Global demand of fur is thus an indirect, but important driver also of the pelagic fishery.

State of the ecosystem was also identified as one of the most important drivers. It influences the state of the fish stock – also one of the most important drivers – but has also consequences on the possibility of selling Baltic Sea fish to the markets. Level of dioxins in the fish is an important factor that was mentioned. Changes in the state of the ecosystem were conceived as rather slow development. Therefore, it was seen as not to become very influential by 2030. Currently, any dramatic changes are not foreseen and, for instance, the climate change that is an important factor influencing the state of the ecosystem will not produce significant changes by 2030.

The state of the fish stocks that is directly influencing the fishing quotas is an important factor. It was also seen in the group work as a factor that continues to be very relevant by 2030 (more than the state of the ecosystem). The state of the fish stocks influences how much fish can be caught, which makes it very important, but still the market development was seen as a more important driver to the development of pelagic fishing.

Session 2 Opportunities and Challenges for sustainable fishery

The second session was started with a statement that described the preferred end-point:

“The pelagic fishing should be in a sustainable state or on the road towards it in this area by 2030”

It was also emphasised that sustainability consists of environmental, social and economic dimensions. All of them are important. Then the participants were asked to think:

- What are the key challenges in achieving that?
- What are the most promising opportunities?

The participants wrote these on separate post-it papers and they were then categorised into ecological, social and political, economic and cross-sectoral themes. During the discussions we also tried to identify action points, especially such that could be promoted within. The following table shows the result of this exercise

Table 4. Opportunities and challenges in maintaining or reaching a sustainable state for pelagic fishing

Ecological	Economic	Social and Political	Cross-sectoral
<p>Opportunities:</p> <ul style="list-style-type: none"> - Healthy environment and healthy food products (certified) - Rehabilitation of migrating fish populations (dam removal) - New species - Higher quota <p>Challenges</p> <ul style="list-style-type: none"> - Environmental change - Climate change affecting fish stocks <p>Actions</p> <ul style="list-style-type: none"> - Reserve the most important fishing grounds - Protect spawning and nursery areas in MSP 	<p>Opportunities</p> <ul style="list-style-type: none"> - Positive effects on market demand, such as <ul style="list-style-type: none"> o MSC certification o Local food trend - Russian market opens again - New fish-based products - Biotechnology - New technology (more energy saving, cleaner and more efficient) <p>Challenges</p> <ul style="list-style-type: none"> - Trading rules (stable or unpredictable) - Geopolitical sudden changes - Collapse of fur animal farming - Lower demand for small pelagic fish as a result of consumer behaviour change in Eastern Europe <p>Actions</p> <ul style="list-style-type: none"> - More MSC certifications - Promotion of fish products (continue the existing) - Technology development programmes 	<p>Opportunities</p> <ul style="list-style-type: none"> - Good and predictable governance of the Baltic Sea fisheries - Collaboration with scientists - Working conditions and good salary for fishers - Stock assessments and science-based advice <p>Challenges</p> <ul style="list-style-type: none"> - Changing, new management system - Control system's efficacy - Young will not take fishing as an occupation <p>Actions</p> <ul style="list-style-type: none"> - Results oriented ecosystem-based management 	<p>Opportunities</p> <ul style="list-style-type: none"> • Co-operation with other activities (e.g. wind parks and wave energy) <p>Challenges</p> <ul style="list-style-type: none"> • Other activities spoil spawning areas

Discussion on opportunities and challenges pointed out a few most critical aspects for maintaining and reaching sustainable state in pelagic fishery. Discussion on the necessary actions identified some important actions for the near future. For a more detailed scrutiny the group chose protection of spawning areas as that was seen clearly as an important action that maritime spatial planning can address.

The discussion on how MSP could help in protection of the spawning areas raised the following points:

- Sprat spawns on open water areas, which means that the sprat does not have any specific spawning areas.
- The existing modelling on the potential spawning areas of herring indicates that almost all shallow water areas are potential spawning areas. It is important to (still) increase our knowledge on herring spawning areas. Where exactly are the herring spawning areas?
- In addition to spawning areas, it is important to know nursery areas and in general different areas for all life stages of fish
- The concept of essential fish habitats should be utilised in MSP. Even then the most important areas should be identified to help planners to know, which areas are especially critical for the fish stocks. All coastal areas or even all spawning areas cannot be protected.
- Research methods to identify the essential fish habitats for MSP include sampling and modelling as well as interviews of fishermen.
- The information of the essential fish habitats are usable for MSP processes in Estonia and Finland.
 - In Estonia the MSP process is relatively detailed where the information on the essential fish habitats can be used in planning as was shown in the Pärnu Bay MSP pilot.
 - In Finland MSP will be more general. In such a planning very detailed spatial information on essential fish habitats or spawning areas is not on the suitable scale. However, the important areas for the fish stocks can be included in the background documents that will be produced to support MSP in Finland. The background documents can include information on more detailed levels and they can also indicate which issues could be taken into account in lower level spatial planning in sea areas such as regional planning

Next steps/how to proceed with the case study

The last session with the group discussed how to proceed with the case study. This question was approached by focusing on the three main drivers and how to describe them in the case report.

Table 5. Key drivers and their handling in the case study

Key drivers	Which aspects to raise in the report and possible information sources
Global market development	<ul style="list-style-type: none"> • Describe the market of herring and sprat <ul style="list-style-type: none"> ○ Check existing market reviews ○ Describe to which market segments herring and sprat catches are sold to? In which proportions? ○ National statistics • Describe conditions for sustainable harvesting

	<ul style="list-style-type: none"> ○ Certificates • Describe growing trends <ul style="list-style-type: none"> ○ Studies of OECD, FAO and EU Blue Growth • Keep in mind the economy of scale in facing the future
State of the fish stocks	<ul style="list-style-type: none"> • Describe the ICES and EU quota system, EU Common Fisheries Policy (CFP) <ul style="list-style-type: none"> ○ It was commented that the system is a stable factor and not likely to change dramatically • Follow discussion on the next CFP and EMFF periods <ul style="list-style-type: none"> ○ The current period is 2014-2020 , the first concept papers on the next period are available on the DG MARE page
State of the ecosystem	<ul style="list-style-type: none"> • Structure the ecosystem part according to the MSFD descriptors (those that are relevant for the fish stocks, including spawning and nursery areas) <ul style="list-style-type: none"> ○ e.g. eutrophication and alien species • Are there risks of any sudden changes? Systemic changes, e.g. how will ice-free winters influence fish stocks <ul style="list-style-type: none"> ○ SmartSea project has studied impacts of climate change on fish ○ Also SwAM has made a study on climate change and MSP • Follow offshore wind energy development in the Baltic Sea

The group agreed that we can ask their comments and inputs as the case studies proceed. There was also an interest to participate the next workshop.

The group had also a more general discussion on the case report. It was suggested that description of drivers and also description of opportunities and challenges to ensure sustainability of pelagic fishing could follow the PESTEL approach that separates drivers to Political, Economic, Social, Technological, Economic and Legal.



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