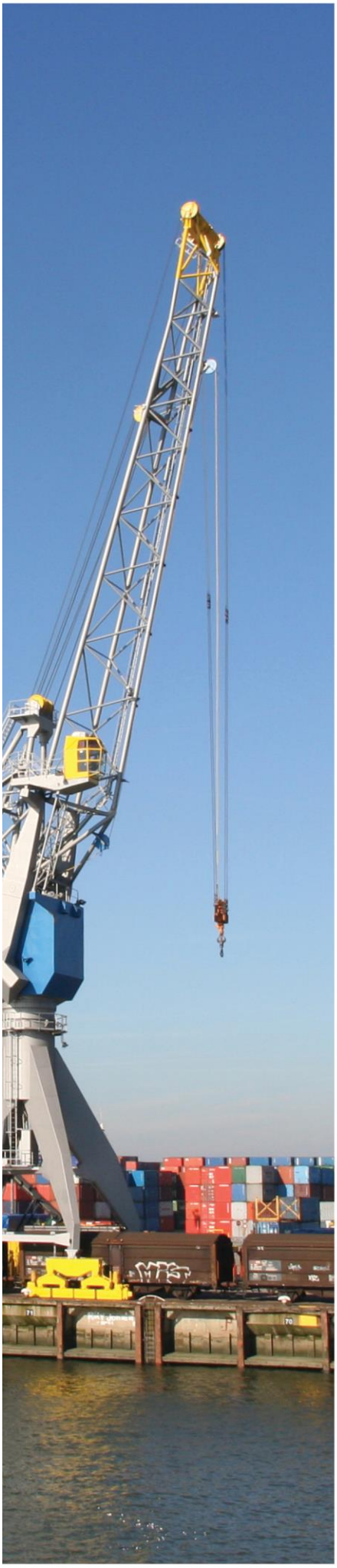

European Commission

Maritime Spatial Planning for Blue Growth

How to plan for a Sustainable Blue Economy?

Conference report
Final version

11-12 October 2017
Brussels, Belgium
#MSP4BG

Maritime Spatial Planning for Blue Growth

How to plan for a Sustainable Blue Economy?

11 - 12 October 2017, Brussels, Belgium

Conference report

This document was developed by the European MSP Platform for the European Commission Directorate-General for Maritime Affairs and Fisheries (DG MARE) and the Executive Agency for Small and Medium-sized Enterprises (EASME) as the result of the conference on "Maritime Spatial Planning for Blue Growth" held on 11-12 October 2017 in Brussels, Belgium. The information contained in this document does not represent the official view of the European Commission.

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DAY 1: Wednesday 11th October

Session 1: Setting the scene

Felix Leinemann, Directorate-General for Maritime Affairs and Fisheries

Mr. Leinemann, Head of Unit for Blue Economy Sectors, Aquaculture and Maritime Spatial Planning at the Directorate General for Maritime Affairs and Fisheries (DG MARE), welcomed participants, experts and speakers to Brussels and encouraged everyone to exchange experiences and discuss matters in relation to MSP and the sustainable Blue Economy. He pointed out that even though the Blue Growth Strategy was launched five years ago, this is the first conference bringing together different maritime sectors to discuss MSP.

"It is the first conference bringing together different maritime sectors to discuss MSP"

Karmenu Vella, Commissioner for Environment and Maritime Affairs and Fisheries

The Commissioner thanked participants, experts and speakers for being present at the conference and showed his contentment about the private sector attending the event. The European Commission (EC) has hosted many events on MSP, yet this is the first conference involving so many sector representatives. Mr. Vella emphasized that this conference is a great opportunity for maritime spatial planners to listen to and discuss the sectors' needs and objectives.

"Around 10 years ago, MSP was a not well-known concept - today it has become a common practice."

Mr. Vella stressed the importance of the seas and their enormous intrinsic value: unlike our cities, they provide us with a free horizon; we enjoy clean coastal and marine environments and the wildlife they support; and we benefit from their role in keeping our climate stable. However, the unsustainable use of our seas, climate change and pollution threaten the fragile balance of marine ecosystems.

Around 10 years ago, MSP was a not well-known concept - today it has become a common practice. MSP has become compulsory in the European Union: by 2021 all coastal Member States need to have maritime spatial plans in place. Since 2014, the European Commission has invested 18 million EUR in supporting projects in the field of MSP and the European Commission is looking to share this wealth of experience with countries outside of the EU. It will support UNESCO's International Oceanographic Commission with 1.4 million EUR to develop international guidelines for countries looking to work with their neighbours when drawing up their maritime spatial plans.

Jaak Aab, Minister of Public Administration in Estonia (video message)

The presentation started with a short video highlighting the importance of the seas' economic, social and cultural values. Mr. Aab stressed that there is a need for sustainable development of Europe's seas and oceans, in order to keep the seas healthy for future generations.

"Member States need to look beyond their borders, in order to capitalise on the full potential of MSP cooperation between sectors."

Estonia regained its independence 26 years ago and since then the sea has been used mainly for fishing and shipping. MSP has been introduced to balance the interests of various sectors. Estonia has two MSP strategies: one for territorial waters near Pärnu, which is known for good wind conditions, and another for the island of Hiiumaa, which is rich in fish.

Mr. Aab concluded his presentation by emphasizing that Member States need to look beyond their borders, in order to capitalise on the full potential of MSP. When developing MSP, it should be ensured that the maritime activities take place in a sustainable manner and that they do not endanger fragile marine environments.

Gesine Meissner, President of the European Parliament Intergroup on Seas, Rivers, Islands & Coastal Areas

Ms. Meissner highlighted the importance of MSP for the Blue Growth Agenda as it encourages cross-border cooperation and works to avoid conflicts. Moreover, MSP connects Member States and the EU with the world.

"MSP is a tool that can help achieve a transparent process facilitating cooperation between sectors."

Oceans have a high value as they fulfil many important functions, such as the provision of nutrition. Thus, it is important to care for them, especially with respect to predictions of population growth. Oceans are also important in the context of climate change and they are becoming increasingly more important for maritime sectors such as renewable energy or coastal and cruise tourism. An example are the German 'Wadden islands' where conservation and nature protection are combined with economic activities.

Ms. Meissner stressed that maritime sustainable development is vital for preserving the oceans for future generations. MSP is a tool that can help achieve a transparent process facilitating cooperation between sectors. In this context, Ms. Meissner urged the Member States to adopt the Directive on Maritime Spatial Planning as soon as possible. As more and more activities are shifting to the sea, the cooperation between countries becomes increasingly important and MSP is a crucial tool in this process.

MSP is of great importance for Blue Growth and Ms. Meissner pointed out that there is a need for more maritime spatial planners, training facilities and education in schools. In addition, funding and commitment of national and

regional governments is of key importance. Finally, there is a need for thorough analysis of possible synergies between sectors' activities.

Philippe De Backer, State Secretary for the Fight against Social Fraud, Privacy and North Sea, Belgian Federal Government.

"MSP can help to manage all these activities on the North Sea in a manner that guarantees optimal use of space, the preservation of the environment as well as safety at sea."

Mr. De Backer stated that Belgium has always been at the forefront of MSP, with a rather small North Sea coastline of only 65 kilometres. However, the Belgian part of the North Sea is very significant: it is home to one of the most used sea routes in the world. That same scarcity of space lies at the origin of a growing interest in the Blue Economy. There are 50,000 people working in the Belgian Blue Economy including sectors such as shipping, tourism, fishery, dredging, ship repair and wind energy. Belgium is very interested in further expanding its Blue Economy and is currently testing the possibility of mussel cultivation. There is also interest in creating artificial islands for economic development, and offshore wind power is constantly expanding. MSP can help to manage all these activities on the North Sea in a manner that guarantees optimal use of space, the preservation of the environment as well as safety at sea. In 2003, Belgium prepared its first plan for the Belgian part of the North Sea. The GAUFRE project was the first attempt to approach MSP in a multidisciplinary way and it inspired the development of the European Directive on MSP, which created a framework for national maritime spatial plans across Europe. In 2014, the first Belgian Maritime Spatial Plan was prepared, which stressed the importance of multifunctional use of the coastline. Increased safety of shipping routes, environmental protection, renewable energy and innovation, coastal protection, and more aquaculture are important elements for Belgium. The revision of the Belgian MSP started in January 2017 and the new plan will enter into force in April 2020. Thereby, as long term planning is important, Belgium has started a North Sea Vision 2050 project, which looks into the sea of the future and is a participatory process, involving many stakeholders (e.g. planners, private sector, researchers), which is crucial for enabling good MSP.

Sli.do, which is an audience interaction tool for meetings, events and conferences, was used during the conference. It allowed for interactive Q&A, live polls and real-time presentation sharing.

Sli.do results:
61% of participants stated that MSP plays a very important role in fostering sustainable Blue Growth;
Participants are least familiar with: marine aggregates, cables & pipelines and oil & gas.

Session 2: How to plan today to accommodate tomorrow's Blue Economy?

Technical study EU MSP Platform: What is the role of visions in supporting MSP and Blue Growth?

Angela Schultz-Zehden, European MSP Platform

Ms. Schultz-Zehden, Contract Lead Manager of the EU Commission-funded European MSP Platform and Managing Director of s.Pro - sustainable projects GmbH, introduced the EU MSP Platform. Ms. Schultz-Zehden emphasized that the EU MSP Platform does not only comprise technical studies and handbooks, but that it also includes Focal Points that can be contacted directly, as well as information about upcoming workshops and meetings. This year, the EU MSP Platform is looking into the role of MSP in driving sustainable Blue Growth. MSP provides certainty for investments and ensures transparency in planning processes. It is also a transnational cooperation mechanism, helping to prevent and solve conflicts as it supports the identification and embracement of synergies between maritime sectors. MSP puts current issues and future demands on one map (product) and brings people around the same table (process).

''MSP puts current issues and future demands on one map (product) and brings people around the same table (process).''

The technical study "MSP for Blue Growth: MSP as a tool to support a sustainable Blue Economy" consists of three key tasks: 1) visions for maritime space (national as well as sea-basin wide); 2) future spatial demands in key maritime sectors; 3) indicators on how MSP processes and plans cater for Blue Growth. The maritime sector roundtable discussion papers were developed through an analysis of the main future trends for nine maritime sectors and their spatial implications. The study reveals both the strong side of MSP (possibility to support Blue Growth), but also limitations of MSP in this regard (MSP should not be considered as the only way of supporting Blue Growth).

Visions or 'forward-looking processes' (FLP) are deployed for different purposes. In some cases, the process itself is more important than the final document, because it presents a mechanism for stakeholder engagement and facilitates dialogue on a joint future. In other instances, the final document is crucial, if for example it provides statutory norms and principles. Another purpose of a FLP can be that it serves as a 'warm-up' for an actual MSP process, encouraging stakeholders to start thinking outside of their sectoral 'bubbles' and to consider longer time scales. The study analyses FLPs on several levels and sea basins.

Ms. Schultz-Zehden suggested six lessons learned to benefit future FLPs:

1) Management techniques in addition to common sense;
2) More structured and planned involvement of industry;
3) Quantify what you can;
4) Make use of SMART goals;
5) Involve politicians and those on whom active use and implementation depends on;

6) Specify what and where priorities and challenges are.

As the aim of the study is to provide practical guidance, a handbook on visions and MSP will be published in December 2017.

Case Study 1: Celtic Seas Partnership - Lyndsey Dodds, World Wide Fund for Nature UK

'We need to work across boundaries and sectors to avoid conflict, take advantage of opportunities and consider serious implications for marine health if conflicts are not addressed."

Lyndsey Dodds, Head of Marine Policy at the WWF UK, presented the Celtic Seas Partnership which started in 2013. The main aim of the project was to engage the stakeholders in the implementation of the Marine Strategy Framework Directive and achievement of good environmental status in Europe. The project has been unique in terms of scale: it brought together over 1 500 stakeholders from 22 sectors across all the Celtic Seas countries. The Partnership took a neutral facilitating role, which helped engage industry, government and conservation bodies in a 'safe space'. The Partnership has co-developed many products and tools that can be applied to achieve sustainable marine management/aid maritime spatial planning, like for example: guidelines on conflict resolution, transboundary governance, co-location of renewables and other industries, an MSFD data portal, guides on ecosystem services, marine planning for terrestrial planners, fisheries mediation, strategic management frameworks and stakeholder engagement advice. As part of the project, over 20 national and multi-national workshops involving over 500 participants from multiple sectors and countries were organised to discuss the 'ideal' future of the Celtic Seas. This resulted in a large number of maps and 5 reports, which were turned into a more accessible website. As a result, three different future scenarios were developed: 1) Business as usual; 2) Nature at work; 3) Local Stewardship.

Figure 1 Area covered by the Celtic Seas Partnership

Ms. Dodds summarised her presentation by listing the key findings of the project:
1) The seas are getting busier;
2) There are always winners and losers;

3) We need to work across boundaries and sectors to avoid conflict, take advantage of opportunities and consider serious implications for marine health if conflicts are not addressed;
4) The work has helped to identify hotspots for future activity, which industry and other marine stakeholders can coalesce around, to start the conversations needed to develop a joint vision and decide who gets to develop where. She pointed out that it is important to have a clear vision, but that there can be different scenarios and strategies depending on the stakeholders involved.

Case Study 2: Belgium Vision Process 2050 - Frank Maes, Maritime Institute Ghent University

'Early involvement of stakeholders and open information sharing is the key."

Frank Maes, one of the pioneers in developing long-term visions for MSP and initiator of the GAUFRE project started his presentation by emphasizing that MSP is a learning process.

The Belgian Master Plan for the North Sea (2003-2005) focused on maintaining and improving biological diversity, creating opportunities for offshore renewable energy, reducing and controlling environmental effects of aggregate extraction and promoting investment security and transparency, as well as securing safety of shipping. It did not have a legal basis and encountered a number of challenges, including data gaps and difficulties in engaging with the fishing community. The lesson learned is that there is never enough data, but one has to start planning and make decisions. In these initial phases, it is crucial to identify what data are lacking and make a decision in what data to invest.

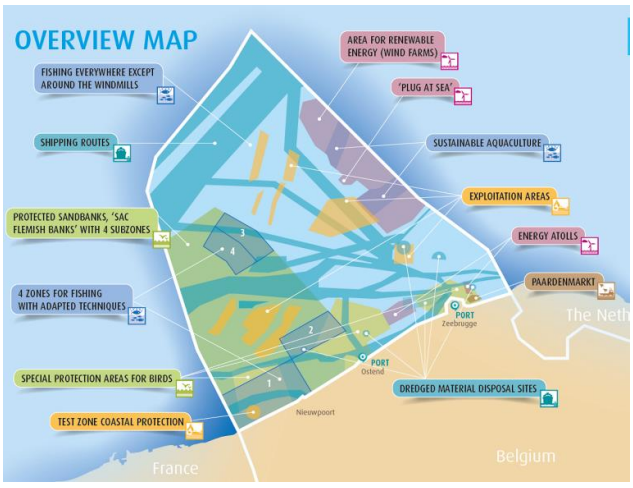

Figure 2 Belgian Spatial Plan 2014-2020

In 2012, the Belgian Law on the organisation of MSP made the plan binding. Moreover, management measures were adopted by way of Royal Decree. As a next step, the Belgian Spatial Plan was developed (2014-2020), which was based on:

1) a planning process (+/- 2 years);
2) stakeholder participation;
3) public participation;
4) governance participation;
5) SEA plan and a procedure to adapt the plan (revision);
6) consultation with neighbouring countries (UK, France and the Netherlands).

In 2017, Belgium started revising the Belgian Spatial Plan while at the same time initiating a process towards a vision 2050. The North Sea Council and 6 transversal experts were involved in the process. Moreover, 3 working groups were set up in order to get the stakeholders involved: 1) nature; 2) Blue Growth; 3) multiple use of space. Mr. Maes pointed out that it is important to look at sectors' needs. He also stressed that having a regulatory framework in place is crucial.

Based on his experience and the MSP process described above, Mr. Maes listed 5 key learning insights and pointed out the importance of:
1) Transparency regarding the objectives, process and all stakeholders;
2) Trust;
3) Early involvement of stakeholders and open information sharing;
4) Do not expect clear answers to probabilities that may occur towards 2050;
5) Stimulate stakeholders, politicians, and the public at large to make them at least start thinking about the future and MSP.

Case Study 3: BLUEMED - Gauci Borda, BLUEMED Strategic Board

"Regional cooperation is vital for sustainable development."

Gauci Borda introduced the initiative to the plenary and explained how the BLUEMED Initiative fosters integration of knowledge and efforts of EU Member States of the Mediterranean Basin to jointly create new 'blue' jobs and sustainable industrial growth in the maritime sectors in the Mediterranean. Member Countries include Cyprus, Croatia, France, Greece, Italy, Malta, Slovenia, Spain, Portugal and Belgium. During the Malta Presidency, BLUEMED opened up to the non-EU countries of the area. The process is facilitated by the European Commission (DG RTD, DG MARE).

Main BLUEMED actions include: facilitation of the BLUEMED Strategic Research and Innovation Agenda adoption by the EU Member States of the area; promotion of cooperation / joint actions with the "EU Strategy for the Adriatic Ionian Region" (EUSAIR) and the "Western Mediterranean initiative" (WEST MED); BLUEMED widening to all countries bordering the Mediterranean; promotion of cooperation with other MED R&I initiatives, major EU projects, technology platforms, industries and SMEs, networks and organisations; creation of a bottom-up approach through Platforms/CSA.

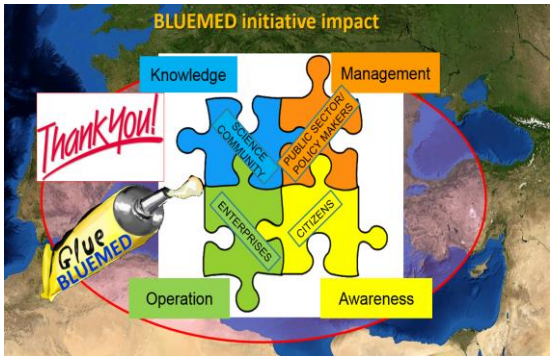

Figure 3 BLUEMED initiative impact

Mr. Borda pointed out that regional cooperation is vital for sustainable development. BLUEMED makes it happen through connecting various stakeholders and making them work together.

Case Study 4: Baltic LINes - Ulrich Scheffler, Federal Maritime and Hydrographic Agency in Germany

"We need to leave the sectoral 'bubble', in order to come up with a coherent vision for the plans of the sea basin."

Ulrich Scheffler is project coordinator for the Interreg NorthSEE project on harmonisation of maritime spatial planning in the North Sea, focusing on Shipping, Energy and Environment at the Federal Maritime and Hydrographic Agency in Germany. Baltic LINes is focusing on linear infrastructure. It looks into the key drivers for Blue Growth including shipping and renewable energy. Mr. Scheffler stressed the importance of MSP, signalling that new activities like renewable energy are coming and taking space, which can cause competition between sectors. The project identifies spatial needs based on analysis of annual ship traffic and technical wind energy resource potential. He stressed that due to the high shipping density, it is especially important to plan for shipping routes correctly, in order to avoid conflicts. As part of the project, data on ship positions were mapped. Transnational 'MSP Challenge' workshops are part of the project, in order to involve more stakeholders.

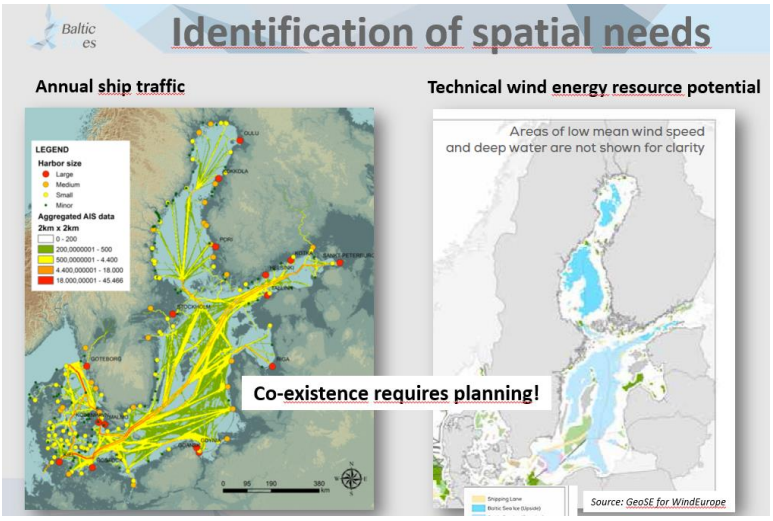

Figure 4 Identification of spatial needs

The first findings of the project were presented:
1) The Baltic offers good opportunities for transnational MSP: excellent existing network and planning is still in progress in most countries;
2) Shipping and energy have spatial dimensions that reach across borders and need to be coordinated by MSP;
3) Future sectoral spatial needs are difficult to estimate due to accelerated technological developments (e.g. autonomous vessels, floating turbines);
4) New MSP Challenge Baltic Sea edition offers to test scenarios and get in dialogue with stakeholders;

5) A decentralised data infrastructure will contain relevant data for transnational MSP.

Mr. Scheffler concluded his presentation by stating that one needs to leave the sectoral 'bubble', in order to come up with a coherent vision for the plans of the sea basin. He added that this industry is developing fast and that the future is unsure, thus MSP is very important. Finally, planning must be transnational and coordinated.

Case study 5: Sea change project New Zealand - Raewyn Peart, Environmental Defence Society

"Collaboration (with other sectors/stakeholders) is powerful."

Raewyn Peart has been a leader in promoting the introduction of marine spatial planning in New Zealand and was a member of the collaborative Stakeholder Working Group, which successfully prepared the first marine spatial plan in the country. Ms. Peart presented the recently completed Maritime Spatial Plan for the Hauraki Gulf – the most intensely used maritime space in New Zealand. The biggest driving force for MSP was a significant and on-going environmental deterioration of the area, which could also reflect on other sectors that depend on the ecosystem, for example fisheries. The plan was developed by a Project Steering Group, which involved many stakeholders.

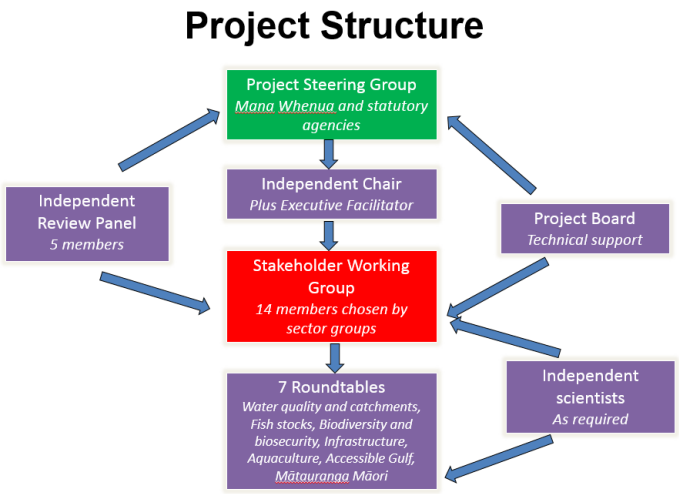

Figure 5 Sea Change project structure

The plan identified 13 new aquaculture sites including oysters, mussels, and farmed fish. The project also looked at maritime transport and identified 15 marine protected areas across the Hauraki Gulf Marine Park. All of these were selected because of their habitat and ecological values, and were based on the information provided by scientific advisors. Fishing methods had been redrawn to allow the fish to recover. The project also looked at catchment impacts (eutrophication) and put in place catchment plans. Ms. Peart closed her speech with a presentation of key learning insights:

1) Integration allows for a more constructive dialogue;

2) Collaboration (with other sectors/stakeholders) is powerful;
3) Indigenous world-view strengthens the planning process.

Discussion

Moderator Peter Woodward invited the presenters of session 2 to the stage and opened the floor to questions and contributions from the audience

1. Involving the wider public

The initial German maritime spatial plan was limited in terms of public engagement, while the reviewed plan provided more opportunities for commenting by making it public. In New Zealand, public participation was secured through meetings and open doors. In case of the BalticLINes project, there was a possibility of commenting for the public, but people could get more active if they would become part of a stakeholder group. It was added that work with children and students should not be forgotten.

2. Reconciling Blue Growth with Good Environmental Status

For the Celtic Seas Partnership, the MSFD was a starting point. However, none of the scenarios showed improvement on the MSFD descriptors. Having a vision and a MSP in place is a basis for sustainable development in line with Blue Economy. It was added that Blue Growth needs to adapt to the status of the environment – which forms the basis for any development. In this way, Blue Growth can be reconciled with good environmental status. Finally, there is a need to also look at the merits of maritime activities and to focus on win-wins.

3. Involving stakeholders that do not want to be involved

In order to get stakeholders involved, one needs to actively go out and meet them (e.g. fishermen). Still, stakeholders cannot be forced to participate if they do not want to be part of the process. The key is to have a transparent and long process that encourages stakeholders to get involved. There are many tools and methods to get people involved. The pressure from outside is becoming bigger and thus stakeholders should become interested in being part of the process, in order not to lose resources.

Experiences and success factors

Angela Schultz-Zehden introduced the topic to be discussed, namely the success factors that help to ensure stakeholder engagement for effective MSP. Afterwards, table groups reflected on the case studies and identified the following key success factors:

Angela Schultz-Zehden, European MSP Platform:
"Keep on going! Building trust takes a lot of time"

1. Raise awareness on outside benefits. To inform stakeholders make them understand the process and their role, then set the rules;
2. Show stakeholders that their inputs are highly valuable and taken seriously. Demonstrate the value of MSP to motivate the stakeholders to engage.

Establish a bridging mechanism between government and industry, regular communication and milestones to absent stakeholders;
3. Ensure a structured, efficient, transparent stakeholder process that ensures commitment through e.g. a MoU among all stakeholders including the community at large;
4. Full-cycle involvement;
5. Manage expectations to create clarity and foster trust;
6. Put yourself in the shoes of stakeholders;
7. Co-construction: Develop your engagement approach to suit the stakeholder, don't expect the stakeholder to adapt to your approach;
- Understand your stakeholders and communicate interactively;
- Find a common language;
8. Need to emphasise the focus and positive outcomes of engagement;
9. Encourage champions to represent key interests;
10. Respect all stakeholders (inclusivity);
11. Communication should be tailor-made – recognising that stakeholders are different – respond with bespoke solutions.

Commenting by the sector panel

Christine Valentin, Chief Operating Officer, World Ocean Council

"MSP is a tool to achieve sustainable development goals – it forces sectors to think about tomorrow and to work across silos"

Ms. Valentin pointed out that the WOC has been working since 2008 in different areas and sectors. Finding collaboration and business development possibilities is important for stakeholders. It is good to try and involve the stakeholders before a project or process starts, because it takes time. Moreover, it is crucial to have a vision, as it makes things exciting and thus more interesting for stakeholders. A holistic approach should always be applied.

David J. Patraiko, Director of Projects, The Nautical Institute (UK)

"Every MSP decision should be discussed with stakeholders, so social and process competences of planners are important"

Mr. Patraiko pointed out a dilemma: the majority of the discussions happen on EU and national level, but many decisions are taken at a local level. In this context, Mr. Patraiko referred to a MSP guide to shipping issues. Shipping includes many sectors, so it should not be seen as a single sector. The guide includes information on how to involve sectors in MSP.

Ulrik Stridbaek, Head of Regulatory Affairs, DONG Energy

"Any stakeholder, also NGOs, need to be heard. There will always be conflict of interest. Informed regulatory solutions are important. Many of these challenges are going to be cross-boundary"

Mr. Stridbaek first clarified that the focus of DONG Energy changed from gas and oil to offshore energy over the course of the years. Offshore wind power is developing very quickly and has the potential to make a shift from fossil fuels towards a more sustainable future. Renewable energy is also about managing the environment and acting against climate change. Mr. Stridbaek highlighted two key messages: 1) Commitment is

needed for successful stakeholder involvement; 2) Transboundary cooperation is of key importance.

Nikos Anagnopoulous, President and CEO, APC Advanced Planning-Consulting SA

"Aquaculture needs good quality environment. A flexible and effective MSP is needed"

Mr. Anagnopoulous stated that it is challenging for aquaculture to coexist with new sectors like for example tourism. MSP must be aligned with integrated coastal zone management. Mr. Anagnopoulous mentioned Greece as an example of a country that has restrictions for coexistence of sectors, making it difficult to realise multi-use. Mr. Anagnopoulous stressed that it is important that all actors involved have a good understanding of what MSP is, and that a healthy marine environment is vital for aquaculture.

The moderator presented some of the key messages collected during the interactive session 2, in order to encourage discussion in the panel.

The Nautical Institute puts a lot of effort in involving the stakeholders, because their involvement is very important for the shipping sector. It is not about 'ticking the box', but rather about making the message clear and making people truly interested and involved. In addition, it was pointed out that commitment is crucial. Moreover, it is important to get stakeholders involved before or at the planning stage (at planning stage it is still possible to move a wind turbine, but it is much more difficult when it is already built). Stakeholder engagement is a long process. In some cases it could be a good idea to first go out to reach one of the sectors and then go to other sectors – a 'step-by-step' approach is needed.

It was pointed out that having reliable data is vital, in order to provide a scientific basis for discussions between sectors and stakeholders and prevent conflicts between them. It is important to be open to a compromise.

DAY 2: Thursday 12th October

Session 3: Assessing future spatial demands of the Blue Economy

Technical study EU MSP Platform: Assessing future demands of Blue Economy

Javier Fernandez Lopez, Ecorys & Jan Maarten de Vet, Ecorys, European MSP Platform

Javier Fernandez Lopez is Technical Director at Ecorys in Spain and Jan Maarten de Vet is Director at Ecorys in Brussels. Both are members of the EU MSP Platform and lead the research on future spatial demands of key maritime sectors. Nine roundtable discussion papers were presented, each reflecting on a maritime sector. The key findings are presented overleaf:

Shipping and ports: Maritime transport accounts for almost 75% of externally traded goods in Europe, while 400 million passengers pass through European ports on a yearly basis. It is key to anticipate which ports will be frequented by what kind of ships – and to plan port infrastructure accordingly. Spatial implications of autonomous vessels are still unknown. Extreme weather events require weather rerouting, additional to established planning. The opening up of the Arctic Route during the summer may alter sea traffic patterns.

Offshore oil and gas: An increase in offshore oil / gas production through the expansion of existing rigs is an important trend – but not necessarily implying a growth of the space required. In parallel, new exploration and drilling sites (new rigs, offshore) would imply a growth of the space required. This has implications for MSP and could potentially create conflicts with other maritime activities. In addition, the decommissioning of installations in the future needs to be considered.

Fishing: Historically, fishing is a spatial claim with a long tradition in the European seas. The fishing sector is sometimes displaced by other sea uses (especially in near-shore areas). As it is a mobile activity, most fishing vessels have a geographical location system available, which informs about the whereabouts of their activity. However, not all types of vessels are required to make use of such systems, and illegal fishing vessels remain undetected.

Offshore wind: The capacity of offshore wind has significantly increased in Europe since 2000. By 2020, the total installed capacity of offshore wind installations is expected to be 23 GW, and up to 64GW by 2030. The capacity of offshore wind turbines is also increasing (8-10MW) and installations are moving further away from the shore into deeper waters, making grid connectivity more challenging. Offshore wind energy offers opportunities for multi-use (e.g. aquaculture, recreation), promoting potential economic incentives and a reduction of environmental impacts.

Coastal and maritime tourism: The on-going growth of coastal tourism in Europe has implications for new infrastructure and ports – and changes land-sea interactions as well. Environmental impacts can be seen as a two-way process: coastal and maritime tourism (e.g. waste, water use, congestion) impacts other sectors and other sectors (e.g. ships leaking oil) impact on tourism. Coastal defence is of prime importance to counter coastal erosion and to enable tourism, but flooding plans also need to be taken into account.

Marine aquaculture: Marine aquaculture is a growing sector and the open oceans are seen as one of the most likely areas for large-scale expansion. MSP is being recognised as one avenue for advancing sustainable aquaculture development worldwide. Physical environmental factors such as water temperature, ocean currents, sunlight, and the availability of food and nutrients, are known to have a direct effect on the growth of aquaculture species.

Pipelines and cables: Sub-sea cables are becoming increasingly important in light of growing global communication needs (97% go per fibre optic submarine cables) as well as an increasing need for grid connectivity (offshore wind). Pipelines are of increasing importance in light of EU energy imports (energy security). One of the challenges for the cable sector is the risk of damage by fishing activities or anchoring of ships. There is still high uncertainty over the biological impacts that cables might pose on the environment (vibrations, waves, etc.).

Ocean energy (Tidal and Wave): Tidal and wave energy structures are place-driven and depend on the resource potential of a given place. Each renewable energy source requires specific installations and different spatial layouts with significant consenting and licensing processes as a consequence. Tidal and wave energy are emerging sectors which rely heavily on other sectors for creating synergies.

Marine aggregates and marine mining: Countries are turning their attention to the ocean in order to ensure that future demands for raw materials can be met. The increasing need for protection of the European shorelines will require raw materials to be deposited at the coastlines as protective walls.

The presentation was summarised with a statement that all maritime sectors are very different and that there is a need to understand these sectors in order to ensure successful MSP. MSP aims for the allocation of space in a rational manner, which minimises conflicts of interests and maximises synergies across maritime sectors. Moreover, MSP enables information gaps to be identified and future research to be prioritised.

Key insights from the 'Mini ConverStations' per sector

Based on two rounds of table conversations, the following key messages per sector were presented:

Offshore wind:

- "The North Sea is the new Saudi Arabia for offshore wind" – the sector is really bulldozing through and other sectors may feel left out;
- Paris meets the sea – commitments made under the Paris agreement for renewable energy generation are a political driver for the sector;
- Impacts on other sectors should be addressed, for example through supporting development of other technologies in other sectors (example of offshore wind sector from the Netherlands lobbying for EU funding for developing new fishing techniques to avoid disturbing seafloor habitats and less fuel use). Innovation support provides a long term solution;
- Co-design for multi-use – offshore wind parks are not being designed for multi-use right now. There are possibilities of multi-use with aquaculture, but the industry is not pushing for this. Multi-use of space focused on economic activities rather than environmental protection (e.g. no fishing zones around wind parks);
- It is important to ensure the right policy framework, allowing the industry to deploy 4-7 GW capacity per year in order to have cost reduction;
- It is necessary to have more studies on risks and benefits of co-location (multi-use), including on land-sea interaction;
- It is crucial to ensure strategic use of MSP in terms of:
  - Assessing cumulative impacts;
  - Engaging policy-makers and local communities;
  - Engaging multi-sector stakeholders.

Ocean energy:

- MSP can play a role in encouraging the ocean energy sector through improving certainty for investors by:
  - Raising the profile of the sector nationally (difficult to engage the sector within MSP programmes, easier at EU level);
  - Reducing risk in consenting (by undertaking preliminary assessment of environmental and social constraints);
  - Planning the grid strategically, with transmission connections and integration with onshore grid planning, coordinating between technologies e.g. with wind and across borders to e.g. North Sea Super Grid;
- Providing a framework for understanding and managing co-existence;
- Sectors require device development and testing;

- Existing sectors take space. Wave and tidal technologies need to be judged on their potential. Co-location needs to be considered;
- The sectors require investment in demonstration, testing and route-to-market solutions.

Tourism:

- MSP is a tool for sustainable development of tourism, as it not only identifies spatial tensions, but also discusses development potentials due to the fact that it:
  - Identifies spatial opportunities (for diversification);
  - Ensures sustainable infrastructure (for the time diversification strategy);
  - Includes various stakeholders/sectors across different governance levels (for development of new activities and synergies with other existing maritime activities).

  MSP is an effective tool to base the diversification strategy (through time, space, activities) for the sustainable development of the coastal and maritime tourism sector in a country/region/sea-basin. MSP: 1) grounds the assessment of tourism potentials on the "mapping" of a region's "natural assets"; 2) assesses the availability and support needed for infrastructures (e.g. remote areas) and/or ecosystem protection services (e.g. shipping/aquatic-parks) boosting the sector in a sustainable way; 3) discusses the risks of tensions with other sectors and identifies potential areas for win-win synergies (e.g. fishermen and sustainable pesca-tourism);
- A sustainable tourism sector in a sustainable environment;
- Go local! Engage with the local communities to develop sustainable and innovative products;
- Take into full consideration land-sea interactions in terms of the consequences for the different sectors involved, as well as the consequences for the environment;
- Need for a change in the approach: the environment is not just a natural resource, but also an economic one.

Marine aggregates and marine mining:

- The spatial aspect is of the greatest importance for the marine aggregates and marine mining sector, as the spatial availability of the resource cannot be altered. The sector is often included in maritime spatial plans and allocated zones that are far bigger than the locations where eventually the actual dredging will take place, but this also means that large areas can be excluded from the interest areas of the marine aggregates industry. This is called 'mineral safeguarding', to ensure that the locations of interest for the sector will not be 'sterilized' by other sectors, i.e. other sectors influencing the seabed in such a way that the resources can no longer be extracted;
- Contrary to popular belief, the marine aggregates sector can be included in multi-use planning, and it can be combined with marine protected areas as well as offshore renewable energy, military activities or the fisheries sector, as long as there is proper assessment and management. Multifunctional layering and combinations that take into account the temporal aspect are possible and welcomed by the sector, but a

substantial evidence base must be created. At the same time it is important to stay realistic as climate change is a trend and demand is changing as well;
- An effort must be made to ensure that the planning cycles of MSP are more aligned with the time scale of the sector, i.e. the marine aggregates sector looks forwards 30 years and MSP cycles are around 6 years, so EU directives should include longer term planning perspectives to accommodate for the sector.

Shipping:

- Expecting and handling increased traffic volumes of short sea shipping, offshore installations, and recreation/ferries/cruise is important. All these areas are expected to produce new/increased spatial requirements for ports and maritime traffic;
- Safety zones around installations should be defined. The safety requirements should consider a 4D approach and be flexible in implementation;
- Port infrastructure needs to be considered:
    - Larger vessels;
    - Use of technology for asset management;
    - Cyber resilience;
    - Reception facilities;
    - New small ports (regeneration);
    - Changing fuel types;
    - Land-Sea interactions;
- There are a number of parameters that need to be considered when thinking of the future needs for spatial resources for ports and shipping. These will influence the width and depth requirements for shipping lanes.

Offshore oil and gas:

- The offshore oil and gas sector does not need much space and has limited spatial implications. The sector is characterised by a stable trend with matured markets in place;
- The sector has three different stages: 1) Exploration; 2) Exploitation; 3) Decommissioning. Spatial implications vary by stage of the sector. Exploration is the stage with the most potential challenges in terms of planning, as the new sites are unknown;
- The stage of decommissioning holds possibilities of exploring various types of multi-use, such as the production of mussels in former platforms or storage of CO_2 emissions in former gas production sites;
- Conservation/MPAs pose challenges for decision-making for planners. In this context, active and effective stakeholder involvement is considered fundamental to address concerns of the public.

Pipelines and cables:

- Laying cables is regulated by countries up to 12nm offshore and there is a license that must be paid for, but laying cables beyond 12nm is free. In the high seas, cables are regulated by the International Seabed Authority. When laying a cable across different countries, the industry wants to adhere to similar regulations and licensing requirements. However, the regulations currently differ from one country to another, and harmonisation is needed;
- When mapping cables that are cover more than one country, a lack of data and a lack of the compatibility of data and maps poses a problem. Countries need to harmonise data across countries and share these in a regulated way. The problem is that everyone uses different data standards and this needs to be harmonised;
- The environmental impacts of cables are known to be relatively small. Cables can be re-routed around MPAs, underwater cultural heritage, offshore wind farms, etc. Cables can also be combined with MPAs;
- If a buffer zone for ships around cables and offshore wind turbines is smaller, in order to reduce the footprint, then this has cost implications due to increased risk. It is not good practice to put all cables in one corridor, as damage caused by ships would cause major and multiple problems. For this reason, cables are quite dispersed around the sea floor rather than clustered.

Fisheries:

- 'Get on a fishing boat' - MSP professionals (and other stakeholders) need direct engagement with the fishing sector to encourage a two way dialogue, flow of knowledge/data/information and develop mutual empathy;
- MSP needs to recognise the diversity of the fishing sector and reflect this in its stakeholder engagement and planning strategies;
- MSP can encourage imaginative thinking about the scope for multi-use with fishing as part of the mix with other sectors;
- It is important to consider small-scale activities;
- A Vessel Monitoring System (VMS) should be used for localisation of activity;
- Co-management in bringing together stakeholders, engaging them in the process, and empowering them to be active in the planning and implementation of MSP is crucial.

Marine aquaculture:

- MSP can significantly contribute to aquaculture development by:
  - making marine data readily available to practitioners;
  - identifying areas with higher potential for aquaculture development, to support expansion of aquaculture areas, better siting and/or identification of areas for introduction of new species;
  - contributing to critical issues at local level (in the framework of national aquaculture strategies), such as carrying capacity identification, social licensing and co-location with other uses;

- including aquaculture zoning areas in maritime spatial plans and vice versa, contributing to well-based identification of aquaculture zoning areas;
- highlighting the benefits of MSP for aquaculture development.

- Moreover, it is important to find appropriate locations for aquaculture and have solid planning in place. If planning is solid, licenses will be eased too.

Session 4: How can synergies between maritime sectors be promoted through MSP?

Testimonies and demonstrations

Floating Power Plant - Chris McConville

Chris McConville, General Manager of the Floating Power Plant, presented the applied technology, which combines wind and wave energy production. He pointed out that competition is already growing between, and within, sectors. Furthermore, the energy sector and other sectors are put into 'boxes', so there is no space for hybrid projects. Using synergies leads to shared costs and increased total power output. The project could be extended to include more sectors like for example oil and gas. However, it proved difficult to find out who should be responsible for paying and maintaining the plant. It is important to identify areas where synergies exist like for example resources overlap or infrastructure sharing. MSP can help to discover areas where sectors can cooperate.

"Wider action is needed to encourage collaboration in allocated spaces. Depending on the context, policy makers need to encourage or even force collaboration."

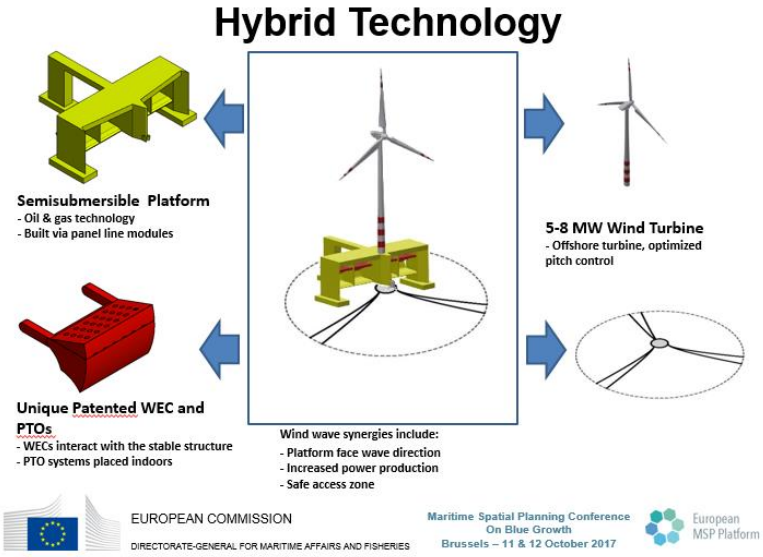

Figure 6 Hybrid technology of the Floating Power Plant

Wider action is needed to encourage collaboration in allocated spaces. Depending on the context, policy makers need to encourage or force collaboration. Collaboration can be encouraged through financial incentives

and reduced development risk, and forced through lease and consent conditions.

Coastal waters management in Malta – Michelle Borg, Maltese Planning and Environment Authority

Michelle Borg is the unit manager at the Maltese Planning and Environment Authority. Ms. Borg presented the history of Malta's coastal waters management and took aquaculture as an example. In the beginning, the aquaculture sector was producing small fish, but in the 2000s, tuna penning was introduced, which required more space. This caused spatial conflicts between aquaculture and shipping, as well as with the tourism industry. Most of the activities are located on the north-eastern shore of the island, because there is more shallow water. Due to water pollution in coastal areas, the pressure on the aquaculture sector increased. As a result, relocation of aquaculture sites was initiated. Permits were revoked until new and more suitable locations were selected. Malta took several actions to regulate the use of coastal waters.

"Integrated approach leads to synergy and can foster growth."

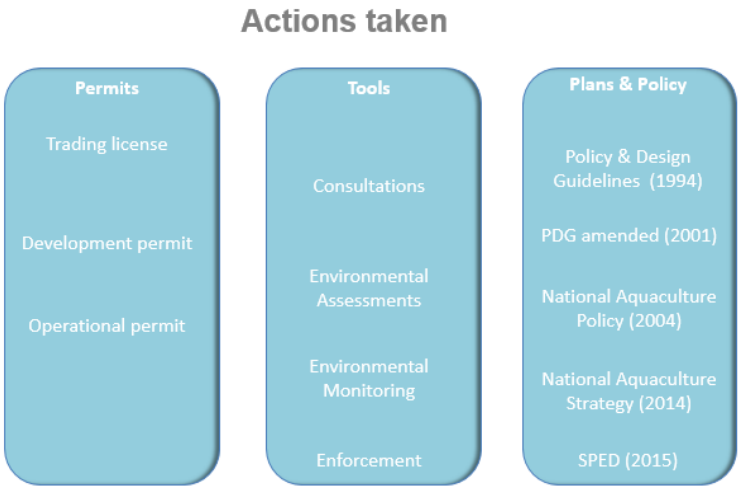

Figure 7 Actions taken in Malta in order to regulate use of coastal waters

Tools used included: consultations, environmental assessments, environmental monitoring and enforcement. The case of aquaculture in Malta has shown that an integrated approach leads to synergy and can foster growth. Understanding each other (sectors) leads to capacity building over time.

Synergies between sectors in Italy – Andrea Barbanti, ISMAR-CNR

Andrea Barbanti, Project Manager at the Italian Marine Science Institute, presented synergies between sectors in the Emilia-Romagna region. The tourism sector coexists here with many other uses like fisheries, aquaculture and gas platforms. Trends in this area include an increase of arrivals and overnight stays, a decrease of average length of stay, diversification of the

"Safeguarding environmental objectives (water quality, ecosystems) and landscape is not only important from the sustainability point of view, but it is also vital for the existence of the tourism sector."

touristic offer (not only beach and sun, but a mature sector); distribution of the touristic offer on wider areas (enlarge destinations); 'de-seasonalisation'; recovery of the nautical sector; and wide area branding (Northern Adriatic, EUSAIR brand). Synergies with onshore activities and coastal defence also exist. For example, an area suffering from climate change can contain sand deposits that could be used for coastal defence work and beach enrichment. Synergies between fisheries and aquaculture can be improved through more space for touristic-oriented areas (e.g. diving, recreational fisheries). Tourism in the Emilia-Romagna region coexists with the oil and gas sector since the 1960's. Decommissioned platforms can be used for potential multi-use (aquaculture, renewables, recreation), artificial reefs and related touristic uses. Synergies between tourism and environmental protection also exist. Specific protection measures can activate synergies with tourism, such as recreational fisheries, diving, nautical or ecotourism.

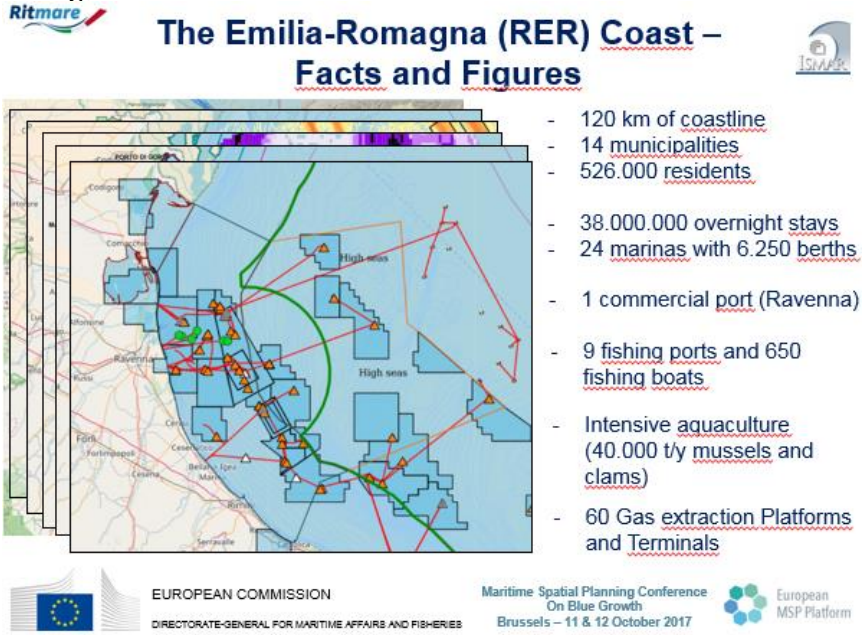

Figure 8 The Emilia-Romagna (RER) coast – facts and figures

Finally, five key enabling factors were presented:

1. Consistent vision, management objectives, measures;
2. Coupled/coordinated land and sea planning (LSI);
3. Safeguarding environmental objectives (water quality, ecosystems) and landscape;
4. Full engagement of all stakeholders (several sectors involved; many small-to-medium size stakeholders);
5. Dialogue and proactive attitude of central and local administrations, promoting dialogue among the sectors and sustaining actions (governance).

Experiences and success factors

Table groups reflected on the testimonies and demonstrations and identified the following key success factors to help to promote an integrated approach, and contribute to synergies when allocating space:

1. Force it or endorse it!

2. Promote dialogue between sectors. Use existing examples to get inspired;
3. It is a marriage of two sectors and/or government;
4. Look for 'win-wins' (big and small);
5. A need to find common denominators, involve social science and develop a methodology for finding synergies;
6. MSP can promote knowledge exchange between sectors;
7. Governmental incentives are vital. Collect evidence of effective synergies;
8. Change state of mind, do not 'kill' strange ideas. Develop together and follow-up with governance;
9. It is good to talk;
10. Governance is key: type of framework: flexible planning helps!
11. Precautionary and participatory approach in decision-making and implementation;
12. Think in 4 dimensions and out of the box (innovation);
13. Commitment and engagement are important.

Panel discussion

Peter Woodward introduced the panelists.

Phil Gilmour, Head of Marine/Offshore Renewable Energy in Marine Scotland, Scottish Government

" Workshops at different levels (local, regional, national and transnational) encourage exchange between the sectors."

Phil Gilmour is the Head of Marine/Offshore Renewable Energy in Marine Scotland, Scottish Government, where he is responsible for the planning and consenting policy for offshore wind, wave and tidal energy development around Scotland. Mr. Gilmour explained that Scotland engaged in a year of strategic assessments, looking for synergies between maritime sectors. He pointed out that stakeholder consultation is very important. Synergies between sectors encourage exchanges between them. Workshops at different levels (local, regional, national and transnational) encourage exchange between the sectors. Mr. Gilmour stated that the government should allow entrepreneurs to steer the process.

Jacek Zaucha, Maritime Institute of Gdańsk

"It is crucial to keep space in seas for future generations"

Jacek Zaucha is professor of Economics at the University of Gdańsk and has extensive experience in maritime spatial planning. Mr. Zaucha was involved in the preparation of the MSP for Poland and explained that the process was difficult: there were plenty of conflicts and only few synergies. As it is not easy to find synergies, cooperation between sectors and regulators is needed, in order to make synergies happen. In addition, synergies should be included as a concept into MSP strategies. Mr. Zaucha emphasized that 'synergy' should be better defined and should be seen as a tool that allows to plan the sea in a way that will leave as much space as possible for future generations. Thereby, it is also important to take into account the synergies between sea and land. Mr. Zaucha added that transnational projects provide relevant inputs into transboundary MSP. Moreover, leadership is very important. It matters who is in charge and how the sea is managed. Furthermore, the importance of social

science was stressed: it is crucial to convince people that their views are taken into account.

Leo de Vrees, Senior Advisor, North Sea Energy Initiative, Dutch Ministry of Infrastructure & the Environment

"If you want to go fast go alone, if you want to go far go together"

Leo de Vrees is a senior advisor to the Dutch Ministry of Infrastructure and the Environment, co-chairing a Support Group of North Sea countries on MSP and environmental impacts related to offshore wind energy development. Mr. de Vrees pointed out that the MSP policy in the Netherlands focuses on multi-use and sees synergies as win-wins. An example of a synergy between an offshore wind energy farm and gas storage was mentioned. Mr. de Vrees stated that the tender system in the Netherlands mainly selects projects based on the lowest prices, which does not support projects applying synergies/multi-use. Governments can put forward rules for integrated development of areas, facilitate discussions and put rules in place if needed. Moreover, synergies between governments are also very relevant (for example for cooperation in planning shipping lines and harmonisation of restrictions). The North Sea Declaration was mentioned as an example of cooperation between countries. It is vital to spread the responsibility for MSP among different ministries and sectors involved. Mr. de Vrees added that legislation and educational programmes are already in place in the Netherlands, thus there is capacity for MSP in the country. Learning by doing is also important.

Sli.do results:

Which is the top enabling factor for delivering synergies between sectors?
According to the conference participants, collaborative workshops, followed by demonstration projects and clear planning guidelines are the best ways of enabling synergies between sectors.

Which sector will change the most in the next ten years?
According to the conference participants, the tidal and wave energy sector, as well as offshore wind will change the most in the next ten years.

Session 5: Wrap-Up Session: Implications for MSP in Europe and beyond

Science-based approaches and decision support tools: their role in MSP implementation and Blue Growth

Vladimir Ryabinin, Executive Secretary, Intergovernmental Oceanographic Commission (IOC) of UNESCO

"There is a need to enhance the MSP predictive dimension. Therefore, open and free information systems are needed to provide data for ecosystem approaches to MSP."

Vladimir Ryabinin became Executive Secretary of the Intergovernmental Oceanographic Commission (IOC-UNESCO) and Assistant Director General in March 2015. To better manage nature and the resources of the ocean and coastal areas, IOC promotes international cooperation and coordinates programmes in marine research, services, observation systems, hazard mitigation and capacity development. The IOC was introduced as the only intergovernmental body of the UN, which comprises 148 Member States. The IOC is producing data to inform policy makers, including for example observations of major parts of world's oceans. They also prepared a tsunami warning system.

Oceans are represented in the Sustainable Development Goals, creating a framework to justify the work of the IOC. Mr. Ryabinin presented results of a conference that took place earlier in 2017, where it was shown that more than ten per cent of the world's maritime space is covered by MSP. He pointed out that the biggest challenge is the conservation of marine environment. Thereby, it is vital to find a framework for synergies. Mr. Ryabinin presented the Joint IOC-EC Roadmap for MSP and mentioned that Europe can lead on MSP, but a more advanced MSP across the world is needed, with special emphasis on the ecosystem approach.

There is a need for global and regional systems to assess the changes based on modelling and predictions (Earth System Perspective) of climate change. Mr. Ryabinin pointed out that modelling for MSP is already taking place. Still, open and free information systems are needed to provide data for ecosystem approaches to MSP. Science capacity differs around the world: Europe has a very important science capacity, which is not the case for Russia or Africa. Therefore, the science capacity needs to be developed in these areas, for example through educational programmes. The International Decade of Ocean Science for Sustainable Development initiative could help share knowledge and enhance interdisciplinary marine research capacities through the transfer of marine technology, leading to economic benefits for all UN Member States, particularly for Small Island Developing States (SIDS) and Least Developed Countries. Mr. Ryabinin presented five take-home messages:

1. Move actively along the Joint Roadmap;
2. The role of EC, EuroGOOS, EMODNET is key; it is not regional, but global (best practices, global functions);
3. Need to enhance the MSP predictive dimension;
4. Need to reach out to global change community with a view to take into account future changes on the regional scale;
5. Oceanography in 2030, after the Decade is completed - a sustainable information service of highest societal value, with a much better known and mapped ocean.

Conclusions by the panel

Peter Woodward introduced the panelists.

Jan Steinkohl, Policy Officer, European Commission, DG ENER

"All sectors should work together to make synergies happen"

Mr. Steinkohl is Policy Officer in the unit on Renewables and CCS policy in the European Commission. He stated that DG ENER was first seeing sea from the capacity perspective: the sea could for example increase the EU's energy independence. The High Level Group on North Seas enables better coordination of renewable energy in the North Sea. In addition to coordination between countries and sectors, it is important to balance the different aspects (e.g. conservation of natural capital) and work in cross-border manner. Mr. Steinkohl added that all sectors should work together to make synergies happen.

Konstantinos Rigas, European Commission, DG MOVE

"Dare to think for the day after and look to the benefits of the day after"

Mr. Rigas from DG MOVE explained that ports are centres of industrial activities, fisheries, alternative energies etc. He pointed out that the necessary legislation is already in place: port authorities need to consult stakeholders regarding several issues, including MSP. Thereby, it is important to have a consultation strategy in place. The strategy might change depending on the size of the project. Mr. Rigas mentioned the Ports Forum, which was established to offer a forum for discussion.

Matjaž Malgaj, Head of Unit, European Commission, DG ENV

"Keep it productive and think healthy"

Mr. Malgaj is Head of Unit for Marine Environment and Water Industry at DG ENV. He pointed out that we have one ocean and therefore we need to organise the Blue Economy in a way that it does not destroy it. Thereby, the ecosystem based approach is the only way to understand pressures and how they relate to the environment. It is possible to manage the ecosystems in a sustainable way. There are a number of Member States which have advanced MSP and they can serve as good examples on how to move forward. Moreover, there is a need for synergies not only between maritime sectors, but also across various Directorate-Generals of the European Commission.

Katarzyna Krzywda, Director of Department of Maritime Economy, Polish Ministry of Maritime Economy and Inland Navigation

"You do not have to use the whole sea – leave some space for future generations"

Ms. Krzywda worked on the transposition of the MSP directive into Polish law. She pointed out that MSP should be a simple tool to use. MSP cannot predict the future. Thus, politicians first need to adopt a vision of the maritime spatial areas development and, on this basis, MSP should be drafted. Cross-border cooperation is one of the biggest challenges for MSP. According to Ms. Krzywda, decisions have to be taken by politicians and not by maritime spatial planners. Therefore, politicians also need to have knowledge on MSP. Without the knowledge of the topic, it will not be possible to move forward. Thereby, the

industry should look for synergies and provide information on what activities could be combined. MSP is a continuous process, therefore maritime spatial planners need to be brave and not be afraid of making mistakes. In addition, not all available areas should be planned for maritime activities - some space should be left for future generations.

Paulo Machado, Head of Unit, Monitoring Unit, Directorate General for Maritime Policy, Portugal

"More ocean literacy is needed"

Mr. Machado is involved in the monitoring of the National Ocean Strategy. He presented his three key messages. First, engagement of stakeholders is crucial and it is especially important to involve them in early stages of the process. The Portuguese MSP aims at being transparent and clear. Second, it is important to promote synergies and co-existence of initiatives. Finally, there is a need for innovation and research, but at the same time training and educational programmes are necessary.

Closing words

Bernhard Friess, Director for Maritime policy and Blue Economy, European Commission, DG MARE

"We need to think about the environment, because whatever we do leaves a footprint behind."

Mr. Friess thanked the organisers, moderator, the DG MARE team and all participants for being present at the conference. Out of 16 key messages of the conference (see Annex I), Mr. Friess selected two key points, on which he further elaborated. First, we need to think about the environment, because whatever we do leaves a footprint behind. MSP helps to protect the environment and can support creation of economic opportunities. As an example he mentioned that the EU has managed to reach fishing at a sustainable level in the North Sea and Baltic. Second, there are many benefits of stakeholder driven discussions. Opportunities can be maximised if the stakeholders work together.

Annex I Key Messages

Maritime Spatial Planning (MSP) for Blue Growth

How to plan for a Sustainable Blue Economy?

Key messages from the 'MSP for Blue Growth' Conference in Brussels on 11/12 October 2017

At the conference actors in MSP processes and in Blue Growth sectors expressed support to meet the commitments made under the Paris agreement and to achieve SDG14 for the Oceans (please refer to the 'Our Oceans conference' held early October 2017).

A. Maritime Spatial Planning processes

- **Framework for certainty, enabler of investment:** MSP is key to provide certainty for sectors ('de-risking') – thus creating a stable and predictable regulatory environment and so helping to promote investment.
- **MSP practitioners should go out to the sectors and learn to speak their language**, in order to make synergies possible. It requires a pro-active approach and showing true interest in what is going on within the sectors.
- **Anticipation is key!** Get started but look beyond 2021 as the first generation of MSP expires – keep ongoing afterwards.
- **Long-term visions** have to be complemented by long-term commitments. This includes time to build trust and confidence.
- **Highlight the benefits of MSP for the sectors.** Work with the sectors so that they learn the benefits of engagement. Emphasise opportunities as an entry point into engagement and cooperation. Start and take the easy wins. MSP can promote knowledge exchange between sectors too. There is a need for solid evidence about what sectors need and their impacts.
- **Location, location, location!** A lot of sectors require long-term and stable locations – based on specific resource potential (ocean energy, marine aggregates, aquaculture, oil and gas) – a challenge to combine this with adaptive management and flexible planning practices.
- **Mapping of areas of high potential is key.** – Take into account the markets (what sort of fish) and future demands (what type of sand we need for tomorrow's concrete).
- **MSP also can promote synergies between public authorities / policy makers.** It requires cross-cutting and inter-ministerial / departmental cooperation, including that of regulatory bodies.

B. Stakeholder and sector engagement

- **Engaging with stakeholders from different levels and sectors is of critical importance for MSP.** For example, join a fishing boat or come visit an offshore platform.
- **MSP needs to interact with individual sectors** (and at multiple scales). This can go through sector platforms and fora (e.g. shipping and aquaculture).
- **There is an enormous variety and diversity of sectors.** Not only a differentiation between sectors but also within sectors.

- **Have a robust need for a structured, strategic and step-by-step approach** to stakeholder engagement. Reach out at the right time; start with the individual sectors, then broaden to multiple sectors and then to the broader audience.
- **Reach out to the media as a force to engage with.** They are a lever to the public and to politicians too. Engage with journalists, who are trained to communicate complex issues into understandable language.
- **Watch out: traditional sectors also change!** They do because of new technologies. This creates new opportunities, for example in shipping, digitalisation in fishing, VMS, or tourism).
- **MSP is an important tool to support the 'new kids on the block'** - to encourage and provide the future space for emerging sectors such as ocean energy and aquaculture.
- **MSP can promote collaboration between sectors.** Synergies are difficult to obtain – it is difficult to get them top-down. Interaction with sectors is more nuanced than a table with 'red' (tensions) and 'green' (synergies). Watch out for over-generalisation and find opportunities from case to case. But simply by bringing together sectors, synergies can develop spontaneously. Emerging sectors are often more open to synergies than mature ones.

Annex II List of participants

Surname	First Name	Organisation
Aabel	Jens Petter	PGNiG Offshore Norway
Abspoel	Lodewijk	ministry for Infrastructure and Environment
Aerts	Luk	PNO Innovation
Ala-Rämi	Aino Katariina	University of Turku
Alexandrov	Mihaela Laura	NIMRD G.Antipa Constanta
Alistair	Lane	European Aquaculture Society
Anagnopoulos	Nikolaos	APC sa
Barbanti	Andrea	CNR-ISMAR
Beaz Hidalgo	Victoria	EASME
Berkowska	Elzbieta	Chancellery of the Sejm
Berne	Sybil	MacCabe Durney Barnes
Bertholet	Eric	Aries GreenTech Solutions
Bocci	Martina	EU MSP Platform
Bocci	Matteo	Ecorys
Bonsu	Prince Owusu	University IUAV of Venice
Borg	Greta	EASME
Borg	Michelle	Planning Authority
Bozkurt	Tülay	Ministry for EU Affairs - Turkey
Burgess	Samantha	WWF
Campbell	Danna	Fisheries and Oceans Canada
Campostrini	Pierpaolo	CORILA
Chng	Wei Ping, Michelle	Ministry of National Development
Colella	Chiara	Regione Puglia
Cota Franco	Sofia	Newcastle University
Dael	Suzanne	Danish Maritime Authority
de Backer	Philippe	Belgium Federal Government
de Boer	Femke	SWFPA
de Boer	Klaas	European Parliament
de Grunt	Lisa Simone	EU MSP Platform - S.Pro
De Vet	Jan Maarten	EU MSP Platform - Ecorys
de Vrees	Leonardus	Rijskwaterstaat
Deligianni	Maria	European Community Shipowners' Associations (ECSA)
Detant	Anja	EASME
Dodds	Lyndsey	WWF UK
Dom	Ann	Seas At Risk
Donati	Cecilia	Mercator Ocean
Dragan	Mihaela	WindEurope
Eparkhina	Dina	EuroGOOS
Estol	Judith	Catalan government
Fairgrieve	Rhona	Scottish Coastal Forum
Fernandez-Lopez	Javier	EU MSP Platform - Ecorys

Fincke	Dirk	UEPG – European Aggregates Association
Friess	Bernhard	European Commission
Frödin	Melissa	CPMR North Sea Commission
Gauci Borda	Ian	Policy and Internationalisation Executive
Georgieva	Maria	Ministry of Regional Development
Giannelos	Ioannis	Ecorys
Gilliland	Paul	Marine Management Organisation
Gilmour	Phil	Marine Scotland
Gonzales	Ana	Region of Murcia Office in Brussels
Greenhill	Lucy	SAMS
Grehan	Anthony	National University of Ireland, Galway
Gruet	Remi	Ocean Energy Europe
Haines	Rupert	ICF
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Annex III Conference Issues Paper

Conference Issues Paper

Maritime Spatial Planning for Blue Growth:

How to plan for a sustainable Blue Economy

11 – 12 October 2017, Brussels, Belgium

Final Version

This document was developed by the European MSP Platform for the European Commission Directorate-General for Maritime Affairs and Fisheries (DG MARE). It is developed to facilitate discussion at the Conference on "Maritime Spatial Planning for Blue Growth" held on 11-12 October 2017 in Brussels, Belgium. The information contained in this document does not represent the official view of the European Commission.

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1. Introduction

Blue Growth has become a major policy objective for the EC, Member States and a broad range of maritime actors alike. It has contributed to jobs and growth, supported innovation and research, and promoted a collaborative and inclusive approach[1]. However, there are still many challenges facing the development of our maritime economies:

- *Synergies versus tensions* – How can we foster synergies between maritime economic activities rather than tensions?
- *Ensuring space for future demands* – How can we anticipate future demands and ensure that the right space is available for them?
- *Ecosystem-based approaches* – Meeting environmental ambitions and objectives while promoting maritime economic development is often complex.
- *Stakeholder engagement* – How to ensure that maritime economic development is inclusive and transparent enough?
- *Local, regional and cross-border governance* – Maritime economic activities often rely strongly on local planning, good local governance and increased cross-border cooperation. At the same time, effective marine strategies and management usually require coordination at regional sea level.

Maritime Spatial Planning (MSP) can help to address the above challenges by creating a framework for evidence-based and inclusive maritime spatial plans. MSP reconciles economic needs with other dimensions and demands, including the protection of the environment, the supply of ecosystem services, the interactions between activities and processes occurring at sea and onshore, and cross-border cooperation. Moreover, MSP processes raise awareness for the innovation potential of the sea and its role in general for the economy as well as the environment. Planning decisions of today are not only designed to minimize conflicts between current demands, but also ensure that space is available to meet future demands.

The conference, "Maritime Spatial Planning for Blue Growth: How to plan for a sustainable Blue Economy," to be held 11-12 October 2017 in Brussels, Belgium, will provide a forum for discussion and exchange, offering concrete examples and guidelines on how to apply MSP as a tool to support sustainable maritime economic development ('Blue Growth'). In particular, the conference aims to:

- Assess future spatial needs of a wide range of maritime sectors;
- Discuss how the MSP process can facilitate a better understanding of the needs across maritime sectors stakeholders and ecosystems;
- Share best practices on how MSP can really support the Blue Economy;
- Discuss approaches and experiences towards synergies, co-location, etc.;
- Discuss approaches and experiences of conflict resolution and addressing spatial tensions;

This issues paper provides relevant background material for the conference by presenting the key draft findings of the Technical Study on Maritime Spatial Planning for Blue Growth up to the end of August 2017, which is under development by the European MSP Platform on behalf of the European Commission.

The overall objective of the study is to provide MSP authorities and experts with practical tools and methods, which help them to design MSP processes in such way that they deliver sustainable growth for their maritime economies. To this end, the study delivers guidance around the following three dimensions important within such processes:

[1] Joint Roadmap to accelerate Maritime/Marine Spatial Planning processes worldwide – 2nd International Conference on Marine/Maritime Spatial Planning, 15-17 March 2017, Paris UNESCO. Conference conclusions.

1) How to develop visions, which provide the framework for subsequent MSP processes?
2) Roundtable Discussion Fiches on the possible spatial requirements for current and future maritime activities.
3) Suggestions for possible type of indicators, which may assist MSP authorities to check, whether their MSP processes meet their given objectives

Even though these three strands of work are presented in separate formats, they are closely interlinked to each other. Vision processes (Task 1) provide the basis to derive to jointly agreed 'SMART' objectives towards which a MSP process should lead to and which are the basis for any kind of related indicator system (Task 3). Understanding the current and especially future spatial demands of the various maritime activities and the various planning horizons related to them, is a key pre-requisite for planners to ensure that planning decisions of today can cater for the blue economy and environment to tomorrow (Task 2). By analysing future developments and identifying the anticipated evolution of key maritime sectors in the course of a given timeframe, a shared vision could be developed as part of an MSP process. MSP is one approach to linking a desired future to present conditions, by analysing the spatial implications of future sector trends and defining specific and achievable objectives. As MSP is an adaptive process, tracking progress and periodic evaluation is necessary to ensure appropriate adaptation to changes resulting from either internal and/or external forces.

This issues paper highlights the main findings from the Technical Study tasks on developing visions (Task 1) and analysing current and future potential spatial demands of key maritime sectors (Task 2). Initial findings regarding a third task on developing indicators are not explicitly presented, but rather are incorporated as relevant to the other two tasks. The final results of the study and the conference will be made available at the MSP Platform (http://www.msp-platform.eu/).

2. How to Plan Today to Accommodate Tomorrow's Blue Economy?

Maritime Spatial Planning is not only concerned with minimising conflicts between ongoing activities in a given maritime space, but is actually designed to avoid such conflicts to happen and develop synergies, in the first instance by anticipating future developments. Vision processes are of key importance in that regard as they lead to an agreed upon perspective towards which kind of future maritime spatial plans shall lead to.

Visions can be developed through a variety of Forward-Looking Processes (FLPs), which refers to any kind of forward-looking document or process, be it visions, scenarios, forecasts, strategies, action plans or roadmaps. Thus FLPs can take many forms and serve a range of purposes, depending on who is initiating the FLP, who is involved in the process, for which purpose the FLP is drawn up and how it is expected to be used. This determines the nature of the process and subsequently influences the development of different typology of results.

Several FLPs that are currently ongoing in European Member States are part of statutory national MSP processes. In addition, there are also several on-going transnational MSP projects that are working on FLPs with emphasis on transnational sectors, such as shipping or energy. The material presented below is based on an analysis of FLPs that have been developed as part of MSP processes, as well as those that have been developed in other contexts and may be of specific relevance for MSP.

2.1 Defining Forward Looking Processes (FLPs)

FLPs usually start with some type of investigation of future trends, using methods designed to analyse possible and/or desirable future conditions, depending on which forward-looking approach is applied. This analysis is then used for the development of a FLP intended for use on its own or as part of another FLP (i.e. scenario as part of a strategy). Different formats of FLPs are defined in Figure 1.

Scenarios[2] [3]	Consistent and coherent descriptions of alternative hypothetical futures intended to explore how current and alternative development paths might affect the future, and consider assumptions about the drivers of change and the impact they have.
Forecast[4]	An estimate of a variable of interest at some specified future date based on past and present data and most commonly by analysis of trends.
Vision	Preferred evolution of given developments in the course of a given timeframe, which has been agreed on in general lines, either only among those developing the vision, or together with stakeholders. In some cases, a vision is seen as the preferred agreed scenario, which implies that scenarios must have been developed and discussed prior to the actual adoption of the vision.
Strategy	Shows the various actions, usually in broad terms, necessary to reach defined goals and / or a vision. Preferably, it can also contain the specific objectives, responsible bodies, and sometimes even timelines and indicators for tracking progress.
Roadmap	A roadmap define the steps needed to implement a process, it is usually underlined by milestones and concrete timelines.
Action plan	Usually defined as complementary to a strategy and a roadmap, an action plan proposes clear actions and responsible actors for the implementation of the roadmap or strategy.

Figure 1. A definition of six different FLP formats

The structure of, and interrelation between, these formats varies depending on the purpose of the overall process. For example, one document can be called a strategy, but can also include a vision and scenarios. As part of the same process, an action plan could also be developed as an extension to the strategy, to better support its implementation.

2.2 Differences between FLP and MSP

MSP is a spatially-oriented, medium term process (revised and adapted normally every 5 years), whereas FLPs are not necessarily spatial and usually have a long term character (beyond 10 years). MSP objectives could also be developed taking into consideration shorter time frames, as well as a system of indicators for tracking progress towards the specific goals and an overall vision for the maritime space. Figure 2 summarizes the key differences between FLPs and MSP.

Characteristic	MSP	FLP
Extent of detail	Fairly detailed	Relatively undetailed
Regulatory setting	Statutory	Usually not statutory
Time-span	Up to 5-10 years	Usually beyond 10 years
Techniques	Data based, analytical and quantitative and spatial techniques	Mainly methods involving imagination and tacit knowledge
Spatial nature	Spatial	Not necessarily spatial

[2] ABPmer & ICF International, (2016). Future Trends in the Celtic Seas, Scenarios Report, ABPmer Report No. R.2584d. A report produced by ABPmer & ICF International for Celtic Seas Partnership, August 2016.

[3] Alcamo, J. (2001). Scenarios as tools for international environmental assessments. Expert corner's report, Prospects and Scenarios No. 5. EEA, Copenhagen.

[4] Armstrong J Scott, ed. (2001). Principles of Forecasting: A Handbook for Researchers and Practitioners. Norwell, Massachusetts: Kluwer Academic Publishers. ISBN 0-7923-7930-6.

Holistic nature	Normally Cross-sectoral/holistic	Not necessarily cross sectoral

Figure 2. Summary of differences between MSP and FLP

An FLP could include scenarios that concentrate on spatial implications of possible changes and illustrate the concrete consequences of future sea use trends. This spatial representation does not need to be accurately detailed, since it is developed to visualise the desired direction of how the marine space would be used in the future under different conditions. These types of scenario or the forecasts are usually of more use in an actual MSP process.

2.3 When is it useful to develop an FLP in addition to MSP?

Drawing up an FLP that contains a common and shared vision for a given sea area (be it at national or sea-basin wide scale) can have several advantages.

1. It can help communicate the benefits of an MSP process, stimulate public debate and stakeholder dialogues, increase awareness of future trends and ensure commitment towards objectives for reaching a desired future.
2. An FLP can also clarify the need for a forward-looking MSP and provide cross-sectoral perspectives on issues often regarded individually.
3. Additionally, an FLP is also useful for identifying priorities for the use of maritime space and the action necessary to for achieve them, and can help achieve cross-sectoral and multi-level (and potentially transnational) cooperation among different actors on marine and maritime issues.

Therefore, an FLP process is highly interlinked with 'planning for Blue Growth'.

In order to serve their full function, the elaboration of an FLP usually involves a broad range of stakeholders, which requires substantial time for drafting, discussion and finalisation. Development of an FLP for MSP is especially useful if:

- the ownership of the sea space is divided among ministries;
- MSP is a totally new process and there is an aim to invest in stakeholder capacity building;
- a long term anchor for MSP is needed;
- there is a need to represent uses not present so far in MSP;
- it will help achieve better land-sea integration;
- the MSP process uses a systems approach to planning and considers a large marine ecosystem that crosses jurisdictional boundaries between countries;
- a sea space is influenced by maritime processes in other countries and there is a need to find consensus among countries; and/or
- development requirements of a certain sector require cross border coherence in planning certain aspects (e.g. shipping lanes, underwater cables).

2.4. Providing tools and methods on how to develop FLPs ?

The analysis and assessment of vision processes related to MSP processes so far has not only revealed interesting insights into the range of purposes which such kind of processes can serve as well as providing insights into appropriate methods for how to

develop them. It has also shown the challenges faced by those, who have undertaken such a kind of process.

To this end, the handbook for FLP development prepared as part of the forthcoming Technical Study, is designed to provide MSP authorities with a practical set of tools and methods, which shall support in them to overcome these challenges. It will help answer the following questions:

- Which FLP format may be best applied for a given purpose?
- How can FLPs be drawn up in different contexts?
- What information, tools, and resources might be needed for different types of FLPs?
- How can an FLP be effectively linked to maritime policies and spatial management options?

The intention of the handbook is to illustrate a palette of possibilities for working with FLPs, showcasing options and ideas, rather than being prescriptive. Examples of elements of FLPs that are related to MSP will be presented at the conference and as well in the forthcoming Technical Study

Issues for discussion at the conference:

1. *What can we learn from past and ongoing Vision processes implemented? What was the original purpose, for which they have been designed? And have the processes led to these original objectives? What kind of challenges did planners face when developing these visions?*
2. *What tools and instruments have been used to develop these visions? What has worked and what has not worked?*
3. *How to use tools such as scenarios and forecasts in the MSP context?*
4. *How to position these within the global objectives and international agreements, including those related to environment and climate change? How can outputs of these processes be made more useful to industry?*

3. Assessing Future Spatial Demands of the Maritime Economy

A knowledge gap exists regarding how MSP authorities can best consider the Blue Growth potentials and foreseen evolution in various sectors across sea basins, as well as the given assumptions to reach these potentials in MSP processes and resulting plans. To fill this gap, an analysis is in progress on the main future trends and their spatial implications in several relevant Blue economy sectors, which would be advisable for consideration in Member States' on-going national MSP processes. This analysis takes the form of Roundtable Discussion Fiches, which have been made available prior to the conference and which will be included in the forthcoming Technical Study.

Taken together, the Fiches point towards an extraordinary diversity of spatial implications depending on sector characteristics (e.g. linear or place-based), temporal characteristics, water depth, mobility and land-sea interaction. Evidently, expanding and emerging activities have potentially stronger MSP implications than mature (stable) activities, for which space is already carved out. Furthermore, the ability to forecast developments differs significantly between sectors, and so does the level of sophistication and robustness of such prognoses.

The main features and spatial (MSP) implications of each sector fiche are highlighted below.

3.1 Shipping & Ports

Traffic density is an indication of which areas are valuable for shipping. The more heavily an area is trafficked, the wider a shipping lane should be to allow for safe overtaking.

For determining the **width of a shipping route**, it should be assessed what are the biggest vessels that use a particular area. The bigger the ships, the bigger their turning circle. It needs to be ensured that sufficient space is reserved for collision avoidance manoeuvres. Furthermore, water depth in shallow areas limits the accessibility for vessels with a bigger draught. Canals and locks may also restrict the access of bigger ships to certain waterways.

In addition to the traffic density of the commercial ship traffic, other types of navigation, e.g. fishing vessels, vessels servicing fixed installations, and leisure boats should be considered.

It is important to anticipate which ports will be frequently accessed by what kind of ships in the future in order to determine which routes ships will use in the future. Existing and planned **port infrastructure** is a decisive factor. For example, only a small number of ports accommodate very large carriers and cargo is then shipped to other destinations. Additionally, the offer of alternative bunkering technology in a port will influence the direction of traffic flows, once an increased number of vessels will use such technology. Some small ports may even decline in importance in such a competitive environment.

The spatial implications of **autonomous vessels** are difficult to foresee. In the trial phase, testbeds will be established that may be closed for other ships. In the foreseeable future, autonomous and manned vessels will coexist. Some experts say that in the beginning, autonomous vessels may require a separate lane. Others argue that autonomous shipping will require less safety distances, because technology will be more reliable than vessels operated by humans.

In recent years, **extreme weather events** have increased (heavier rain and storms), which also affects shipping. Weather routeing is important (and could even take precedence over regular ship routeing) to ensure that ships are provided with the optimum routes to avoid bad weather[5]. In order to allow weather routeing, space needs to be available to allow ships to temporarily deviate from established shipping lanes. In addition, climate change may trigger an opening of the Arctic route during summer, which may alter sea traffic patterns in some areas.

3.2 Offshore oil & gas

There are three potential options for an increase in oil and gas production for EU Member States, some of which could have implications for MSP, whilst others may not require an increase of the space required by the activity.

An increase in offshore oil/gas production through the **expansion of existing rigs** is an important trend – it would not necessarily imply a spatial growth of the space required by the activity. This option is followed by those EU Member States whose oil and gas production might have reached its upper limits or where the development of new offshore development areas is too expensive to pursue. However, an increase in offshore oil/gas production through the development of **new exploration and drilling sites** (new rigs, offshore) would imply a spatial growth of the space required by the activity. Thus, this option would have MSP implications and would potentially create conflicts with other marine activities. Furthermore, **decommissioning** of installations in the future is to

[5] IMO Resolution A.528(13)

be accounted for. Furthermore, with regards to the socio-ecological systems involved in fisheries management, it is worth highlighting that **extensive and broad expertise in social, economic, environmental and legislative realms is needed** to better integrate fisheries into MSP.

At the same time, having a highly diversified sector in terms of target species as well as variety of gear types and vessels could be interpreted as an advantage for overcoming the potential development barriers that might affect the fisheries sector, which might end up **being impacted differently depending on the species being targeted or the used gear type** (i.e. some gear types are allowed around offshore wind farms and aquaculture farms, while others are forbidden). However, such fragmentation could also make fisheries a weaker party relative to other MSP stakeholders in terms of not having a single voice that would push for their interests and necessities. This might end up displacing fisheries from an area in benefit of other marine sectors that might have more organized structures.

3.3 Fishing

Historically, fishing is a spatial claim with the longest tradition (along with shipping) for all sea areas. As such, it is one of the sectors of concern when designing a MSP plan. Despite many efforts having been placed to include the sector´s needs into MSP plans, when it comes to fisheries, relevant knowledge challenges still remain which makes modern MSP plans not seem to achieve their theoretical integration potential[6]. Some of these challenges lay at the **inventory phase of the activity** (where do fishers fish? Which areas are more valuable? Less? Where are nursery areas located? Etc.), whilst others lay at the **plan development** and **negotiation phase** (5 year plans against several long-term species and life stages temporal dimensions, effects of climatic changed or cumulative human impacts on fisheries, etc.). As Janßen et al (2017)[7] state: "this raises a wider range of integration challenges, starting with techniques to analyze where fishermen actually fish, assessing the drivers for fishermen's behavior, seasonal dynamics and long-term spatial changes of commercial fish species under various anthropogenic pressures along their successive life stages, the effects of spatial competition on fisheries and projections on those spaces that might become important fishing areas in the future, and finally, examining how fisheries could benefit from MSP".

3.4 Offshore wind

The continued expansion of offshore wind has major implications for MSP. In addition to the need for more space, the general trend is that new technologies allow projects to be carried out in **deeper waters and further away from the shore**. It is estimated that a wind turbine producing 6MW needs approximately 1 km^2 of space in relation to another turbine[8]. At the same time, the continuous energy dependency of the EU will push for the development of alternative energy sources, such as offshore wind energy, and the creation of an offshore grid (hub-based), which will entail technical, economic, legal and spatial implications.

Further developments of the offshore wind farm industry will have to take into consideration other maritime uses and their stakeholders. **Potential multi-use** examples will need to be investigated in order to minimise the potential cumulative impacts from a social and environmental perspective. As such, some stakeholders are proposing the co-use of offshore wind energy platforms together with aquaculture (especially longlines for algae, etc.) or with conservation and recreational purposes (the use of the platforms as artificial reefs or as FADS- Fish Aggregating Devices). Multi-purpose offshore wind

[6] Holger Janßen, et al. Integration of fisheries into marine spatial planning: Quo vadis?, Estuarine, Coastal and Shelf Science, 2017

[7] Ibid.

[8] DG MARE, Energy sectors and the implementation of the Maritime Spatial Planning Directive. Information for stakeholders and planners, European Commission, 2015, p. 10 https://ec.europa.eu/maritimeaffairs/sites/maritimeaffairs/files/docs/publications/energy-sectors-msp_en.pdf

platforms are still in the research phase with no active businesses cases. However, market studies have shown that, if the will of the co-using sectors is there (along with financial support), these solutions might be happening quite soon in some European sea basins.

Many potential implications for offshore energy on other maritime activities exist. Due to the development of offshore wind both in terms of technology and deployment, the sector brings spatial competition vis-a-vis other (mature) maritime activities. Spatial overlap of offshore wind energy with other maritime activities has already been observed in some sea basins, i.e. the North Sea. In the future, **decommissioning** of offshore wind turbines will need to be taken into account as well.

3.5 Coastal and maritime tourism

The expected **continued growth in coastal tourism**, both in terms of nights spent in coastal regions but also in number of tourists, has implications for onshore spatial planning, such as the construction of new infrastructure and ports. This development of the sector, combined with its **diversification**, can have possible implications in the context of MSP as connecting different sectors requires mobility between the MSP sectors, and thus requires **infrastructure on land to enable mobility**, for example, between cruise ships, beaches and underwater cultural heritage. However, co-existence of the coastal tourism sector with other MSP sectors leads to land-sea interactions and consequently water quality issues. Hence, even though space may not be shared by coastal tourism and other MSP sectors, the **environmental impacts of the other sectors may impact coastal tourism**. An example of this are ships that leak oil. This mechanism goes both ways: an example being trash left behind by beach guests entering the water, affecting the water quality. Another 'classic' example is tourism and aquaculture – which has a mix of implications for both sectors.

Linked to the increase of the sector is the **adaptation to climate change**. When coastal cities flood, when coastal deltas change substantially or when the water becomes saltier, tourism is impeded. Coastal defence is of prime importance to counter coastal erosion and to enable tourism. The implications for MSP are that flooding plans need to be considered. The density of (offshore) oil and gas platforms is increasing, especially in some of the most touristic areas in the Mediterranean. However, the two uses coexist and do not necessarily interfere.

Competing activities in the same waters may deter or prevent investments. These activities may also increase waste generation and energy and water consumption, exacerbate the exploitation of biological and other resources and ultimately lead to more pollution and a serious deterioration of marine and coastal ecosystems.

3.6 Marine aquaculture

MSP and its effective spatial management is being recognised as one avenue for advancing sustainable aquaculture development worldwide (Stelzenmüller et al., 2017[9]). It offers a chance for greater recognition of the sector's interests as well as representing an opportunity to minimise conflicts, with present and future marine activities, as it gives the aquaculture sector the opportunity to engage with other stakeholders in a multi-actor arena (regulators, planners, other local stakeholders including communities), thus allowing a better prospect of developing aquaculture production according to the principles of the Ecosystem Approach to Aquaculture (EAA).

At the same time, MSP could be a means to **improve public perception** about potential environmental impacts, especially those associated with marine fish farming, and on access to and use of coastal resources. In this sense, MSP could help the aquaculture

[9] Stelzenmüller et al., (2017), Maritime ecosystem-based management in practice: Lessons learned from the application of a generic spatial planning framework in Europe in Marine Policy 75, p. 174-186

sector by creating clusters of farms, each within a management area (Aquaculture Management Areas – AMAs), which will look at the specificities (social, economic and environmental) of their spatial area and will manage to reduce risks created by the optimisation of farm production.

Despite this, siting criteria for the cultivation of different species still need to be further developed and additional research on optimal sites is recommended. In fact, **inappropriate spatial site selection** is one of the major constraints to the sustainable development and expansion of the industry. In addition, the unprecedented race between different sectors for access to the sea has increased the interest of the sector to gradually expand to more offshore grounds as well as to explore new potential co-location opportunities among various maritime activities (Multi-Use) - e.g. renewable energy, tourism - will help the further development of the sector by creating avenues for a more holistic and equitable approach of the aquaculture sector and MSP.

At the same time, being also strongly related to the land, land-sea interaction is a crucial aspect for the aquaculture development where MSP would definitively provide spatial management solutions to impacts coming from land or coastal areas.

The idea of **sustainable aquaculture areas as hotspots for nutrient reduction** (seaweeds aquaculture) and for fish stock refuge (supporting recruitment in adjacent areas) deserves to be further explored, thus contributing to conservation measures as well as providing marine ecosystem services. This idea could link MSP with economic measures such as compensation schemes (i.e. incentives, PES, etc.).

3.7 Pipelines & cables

The installation of new submarine cables and pipelines might entail MSP implications with various other uses of marine waters, especially at submarine cable hub areas, such as the following:

With regard to marine archaeology, no implications are foreseen as the parties to the UNESCO Convention on Underwater Cultural Heritage (2001) agreed to **exempt cables from that treaty** because of the specific provisions of the United Nations Convention on the Law of the Sea (UNCLOS) and the agreement of the parties that cable laying and maintenance posed no threat to underwater cultural heritage.

The migration of fishing into deeper water has obliged the submarine cable industry to develop techniques for **protection of its systems** in deeper water. There is the potential for whale entanglements with submarine telecommunication cables. Extensive new extraterritorial marine protected areas covering regions could affect trans-Atlantic and trans-Pacific cables (see the Biodiversity Beyond National Jurisdiction (BBNJ) initiative).

Disturbance of the seabed and seabed organisms, re-suspension of contaminants buried in the seabed, visual disturbance, noise and vessel emissions and waste also have environmental implications. During the operating phase, the appearance of electromagnetic fields, thermal radiation and the introduction of artificial hard substrate should be highlighted.

Temporary beach closures could be a consequence of the installation and burial of submarine cable segments on beaches and thus affect coastal tourism.

When new cable routes are being planned, the planners contact the owners of existing cables, identify the planned route, depth and angle proposed and seek comment from the existing cable operators. This technique has worked well to date and to the satisfaction of all parties involved. However, the International Cable Protection Committee (ICPC) has issued some recommendations in order to minimize these potential implications.

3.8 Ocean energy (tidal and wave)

Tidal and wave technologies are place-driven, depending on the resource potential in a given location. Spatial implications are expected to be limited to modest in the short- to medium-term; however, **the situation could drastically change in the longer term**, once breakthroughs would be realised, leading to an upscaling and cost reduction in a way similar to offshore wind – with major spatial implications as a consequence.

Each renewable energy source requires specific installations, which will have different spatial characteristics. This requires **significant preparation of consenting and licensing**. Difficulties arise where insufficient expertise / evidence is available about strategic environmental impacts.

However, in general terms, the geographical proximity of ocean energy installations and the onshore infrastructure would increase the **potential spatial conflicts** with other coastal uses. Especially for tidal energy, taking place mostly in shallow waters where other maritime activities may also occur (coastal fisheries, shipping, conservation, etc.), this could potentially create conflicts. Comprehensive Life Cycle Assessments (LCAs) of ocean energy arrays, which would also include factors such as fluctuation of power output, storage, or grid integration, are still missing. For a number of individual Wind Energy Converter (WEC) types, no LCAs are available so far. The inclusion of the need to provide WEC type LCAs could help minimize MSP conflicts.

Tidal and wave are emerging sectors which rely heavily on other sectors for creating synergies. Offshore wind (including floating wind), and pipelines and cables are the most obvious sectors, also considering the shared use of infrastructure (e.g. vessels). The sector poses relatively limited spatial implications vis-a-vis other maritime activities, with fisheries and conservation being the most obvious ones.

3.9 Marine aggregates and marine mining

Marine aggregates extraction and the marine mining sector´s further development may entail some MSP implications. **Land reclamation** for new development sites as well as **new dredging sites** for obtaining sand and gravel for coastal adaptation to environmental changes (related to beach nourishment, erosion restoration, climate change effects, sea level rise, land-use changes, etc.) may cause conflicts with other marine and coastal uses such as tourism, recreation, coastal fisheries and aquaculture and conservation. The potential impacts of marine aggregates extraction and marine mining onto **biological and archaeological resources** are still unclear, but need to be understood if Europe pursues further developments of these sectors.

In a world where most beach and coastal areas are suffering from an increase in erosion due to morphological changes of their environments together with unprecedented sea level rises and climate change impacts, the need for **beach nourishment** has increased, conflicting with touristic and recreational uses of the beaches. This is why nature-based solutions to beach nourishment are being researched such as **sandscaping** - a potential solution as it is an innovative coastal management concept, which is designed to use natural processes (wind, waves and tide) to distribute marine aggregates to nourish and create new beaches

Working in partnership with industry, regulators and stakeholders are expected to improve the sustainability of the deep-sea mining sector, in particular by reducing the area of seabed licensed dredges year by year.

Issues for discussion at the conference:

1. *What will be the future spatial demands from sectors as varied as shipping, offshore oil, renewable energy, pipelines, fisheries, aquaculture, tourism and marine aggregates ?*
2. *What are the most dynamic and spatially demanding sectors?*
3. *What are the dynamics between 'movable' and 'fixed' spatial demands?*
4. *Which spatial demands require long-term investment?*
5. *What other key insights can be obtained on the basis of the Roundtable Discussion Fiches?*

4. How can synergies between maritime sectors be promoted through MSP?

Maritime spatial planning is sometimes associated with just managing spatial conflicts and tensions. However, a growing interdependency between Blue Economy sectors requires a stronger focus on synergies. New and emerging sectors often depend on mature or growing sectors – when building critical mass. They can make use of shared infrastructure (e.g. multi-purpose platforms or ports), share providers or make use of the same resources. Such synergies do not materialise in an abstract form – they depend much on the precise technical, economic, institutional, environmental – indeed precise geographic circumstances. Some sectors (e.g. cables and pipelines) are rather enablers for others (e.g. offshore wind). Blue Growth promotes an integrated approach, away from more sector-oriented approaches. Maritime spatial planners need to be aware of the potential of such synergies. They can play an essential role in promoting such an integrated approach, and facilitate exchanges between sector stakeholders that would otherwise not take place.

Issues for discussion at the conference:

1. *What experiences have been gained in exploring synergies between maritime sectors?*
2. *How can MSP help to promote an integrated approach, and contribute to synergies when allocating space?*
3. *What are the enabling factors for delivering such synergies through MSP?*
4. *What can we learn from past and existing projects in this domain?*
5. *What MSP tools and instruments are being used for resolving spatial conflicts? Can stakeholder involvement play a role?*

Annex IV Conference Programme

European Commission

European MSP Platform

1. Background and Aim

Blue Growth has become a major policy objective for the European Commission, Member States and a broad range of maritime actors. It has contributed to jobs and economic growth, supported innovation and research, and promoted a collaborative and inclusive approach to the maritime economy. However, there are still many challenges facing the development of maritime economies:

- Anticipating future trends and demands – How to plan and accommodate for the Blue Economy?
- Synergies versus tensions – How to foster synergies between maritime economic activities rather than tensions?
- Stakeholder engagement – how to ensure that maritime economic development is transparent and inclusive?

Maritime Spatial Planning (MSP) can help to accommodate tomorrow's Blue Economy by creating a framework for evidence-based and inclusive maritime spatial plans from national authorities. MSP reconciles economic needs with other dimensions and demands, including the protection of the environment, the supply of ecosystem services, the interactions between activities and processes occurring at sea and onshore, and cross-border cooperation.

This conference aims to provide a forum for discussion and exchange, offering concrete examples and guidelines on how to apply MSP as a tool to accommodate sustainable maritime economic development. It will build on a Technical Study which aims to:

- Assess future spatial needs of a wide range of maritime sectors;
- Discuss how the MSP process can facilitate a better understanding of the needs across maritime sectors stakeholders and ecosystems;
- Share best practices on how MSP can really support the Blue Economy;
- Discuss approaches and experiences.

2. Target audience

The conference is targeting:

- Policy makers and practitioners engaged in Maritime Spatial Planning;
- Sectoral ministries and authorities responsible for sectoral planning and licenses;
- Maritime industry sectors including maritime business community and intermediaries;
- Local and regional authorities, engaged in the planning and management of the marine environment and the sea-land interface;
- NGOs addressing marine environmental or social concerns such as marine conservation;
- Academics and researchers engaged in MSP and or the Blue Economy;
- Funding organisations;
- All other interested parties.

3. Speakers and contributors

The conference will benefit from a range of speakers and contributors, including European Commission officials, sector policy representatives, MSP practitioners, NGOs and academics. The conference will be highly interactive, which means that participants themselves will act as contributors.

4. Conference format

Each of the suggested sessions will have a tailor-made format, including a mix of impact presentations, panels, case study examples, and small group discussions ('Mini conversations').

5. Programme

Moderator of the conference - *Peter Woodward*

Wednesday 11 October

12.30-14.00 Registration and buffet lunch

14.00-15.10 Session 1: Setting the scene

Welcome words

Opening speech
Karmenu Vella, Commissioner for Environment, Maritime Affairs and Fisheries;

Opening words - Video message
Jaak Aab, Minister of Public Administration, Estonia;

Political perspective
Gesine Meissner, Member of the European Parliament;

Keynote speech
Philippe de Backer, State Secretary for the Fight against Social Fraud, Privacy and North Sea, Belgium.

15.10-18.00 Session 2: How to plan today to accommodate tomorrow's Blue Economy?

What tools and practices are being used for developing maritime strategies and visions for the shared space? What is necessary to get industry more involved in such processes? What are the factors of success? What is the role of visions (including scenarios and forecasts) in the MSP process? Why have some visions helped the MSP process?

15.10-15.30 Technical study EU MSP Platform: What is the role of visions in supporting MSP and Blue Growth?

Angela Schultz-Zehden & *Ivana Lukic*, European MSP Platform.

15.30-16.10 Case studies will be presented, focusing on elements of forward-looking approaches.

Case study 1

Celtic Seas Partnership, *Lyndsey Dodds,* Head of Marine Policy, World Wide Fund for Nature;

Case study 2

Belgium Vision Process 2050, *Frank Maes*, Director, Ghent University Maritime Institute;

Case study 3

BLUEMED initiative, *Gauci Borda*, Core member, BLUEMED strategic board;

Case study 4

Baltic LINes, *Ulrich Scheffler,* Maritime Spatial Planning, Federal Maritime and Hydrographic Agency in Germany;

Case study 5

'Sea change project New Zealand', *Raewyn Peart*, Policy Director, Environmental Defence Society.

16.10-16.35 Coffee/tea break

16.35-16.50 Questions and answers

16.50-17.20 Experiences and success factors

Table groups reflect on the case studies and address key questions.

17.20-18.00 Commenting by the sector panel

The results from the above experiences will be commented by a panel consisting of representatives from maritime sectors, and business interest groups. How to find common ground between all actors involved?

Sector Panel

Paul Holthus, Founding President and CEO, World Ocean Council;

David J. Patraiko, Director of Projects,The Nautical Institute;

Ulrik Stridbaek, Head of Regulatory Affairs, DONG Energy;

Nikolaos Anagnopoulous, President and CEO, APC Advanced Planning-Consulting SA.

18.00-20.00 Cocktail and standing dinner

Thursday 12 October

9.20-12.40 Session 3 : Assessing Future Spatial Demands of the Blue Economy

What are the actual current and future spatial demands from sectors as varied as shipping, offshore wind energy, tidal and wave energy, offshore oil and gas, pipelines and cables, fisheries, aquaculture, tourism and marine aggregates? What are the most dynamic and spatially demanding sectors? Where are the key spatial 'conflicts' between sectors? And what are the key differences between sea-basins?

8.30-9.15 **Registration and coffee**

9.15 **Welcome to Day 2**

9.20-9.40 **Technical Study: Assessing future demands of Blue Economy**

Javier Fernandez Lopez & *Jan Maarten de Vet*, European MSP Platform.

9.40-11.40 **'Mini conversations' per sector**

Participants will take actively part in 'mini conversations' in groups of 8-10 persons, and exchange on the basis of sector factsheets provided. As the conversations will be held 2 times, participants will have the opportunity to take part in 2 mini conversations on the future spatial demands of shipping, offshore wind energy, tidal and wave energy, offshore oil and gas, pipelines and cables, fisheries, aquaculture, tourism and marine aggregates. Each conversation will focus on one sector and include both sector and MSP experts. The conversation will be moderated by an expert on the topic. The aim of the mini conversations is to gain key insights on the future spatial demands of this sector.

09.50-10.30 **Round 1**

Moderators

Offshore wind: *Mihaela Dragan*, Wind Europe and *Tom Remy*, Wind Europe;

Ocean energy: *Rémi Gruet*, Ocean Energy Europe and *Phil Gilmour*, Scottish Government;

Tourism: *Andrea Barbanti*, ISMAR-CNR and *Matteo Bocci,* Senior Associate Consultant on Coastal Tourism, Ecorys;

Marine aggregates: *Mark Russell*, Planning, Mineral Resources & British Marine Aggregates Producers' Association (BMAPA);

Shipping: *David J. Patraiko*, The Nautical Institute;

Offshore oil & gas: *Bernard Vanheule,* International Association of Oil and Gas Producers;

Pipelines & cables: *Peter Jamieson*, European Subsea Cables Association (ESCA) ;

Fisheries: *Brian O'Riordan,* LIFE - The Low Impact Fishers of Europe and *Jacek Zaucha*, MSP Platform Expert, Maritime Institute in Gdansk;

Aquaculture: *Courtney Hough*, European Federation of National Aquaculture Associations and *Alistair Lane,* European Aquaculture society.

10.30-11.00 **Coffee/tea break**

11.00-11.40 **Round 2**

11.40-12.30 **Key insights from the 'Mini conversations'**

Rapporteurs feedback and commenting

12.30 - 13.30 **Buffet lunch**

13.30 –15.30 Session 4: How can synergies between maritime sectors be promoted through MSP?

What experiences can be shared on creating synergies between maritime sectors? How can MSP help to promote an integrated approach, and contribute to synergies when allocating space? What are the enabling factors for delivering such synergies through MSP?

13.30-14.00 **Testimonies and demonstrations**

3 presentations on synergies and the role of MSP.

Speakers

Chris McConville, Project Manager, Floating Power Plant's UK subsidiary;

Michelle Borg, Unit Manager, Malta Planning Authority;

Andrea Barbanti, Research Manager, ISMAR-CNR.

14.00-14.35 **Experiences and success factors**

Exchange in small groups on the experiences gained by participants about synergies that have been created through MSP processes. Conversations will include representatives from various sectors as well as MSP practitioners. What success factors and conditions are required to generate such synergies?

14.35-14.50 **Coffee/tea break**

14.50-15.30 Panel discussion

The exchanges will be reported back and commented by a panel consisting of MSP planners, relevant authorities and experts. What are the success factors?

Expert Panel

Phil Gilmour, Head of Marine/Offshore Renewable Energy in Marine Scotland, Scottish Government;

Jacek Zaucha, MSP Platform Expert, Maritime Institute in Gdansk;

Leo de Vrees, Senior Advisor, North Sea Energy Initiative, Dutch Ministry of Infrastructure & the Environment.

15.30–16.45 Session 5: Wrap-up session: Implications for MSP in Europe and beyond

15.30-15.45 Science-based approaches and decision support tools: their role in MSP implementation and Blue Growth

Vladimir Ryabinin, Executive Secretary, Intergovernmental Oceanographic Commission (IOC) of UNESCO.

15.45-16.30 Conclusions by the panel

What are the lessons learned? What new insights have been obtained? What is needed to make MSP an effective tool for Blue Growth? What are the implications beyond Europe? And what are next steps?

Panel

Paula Abreu Marques, Head of Unit, European Commission, DG ENER;

Daniela Rosca, Head of Unit, European Commission, DG MOVE;

Matjaž Malgaj, Head of Unit, European Commission, DG ENV;

Katarzyna Krzywda, Director of Department of Maritime Economy, Polish Ministry of Maritime Economy and Inland Navigation;

Paulo Machado, Head of Unit, Monitoring Unit, Directorate General for Maritime Policy, Portugal.

16.30-16.45 Closing words

Bernhard Friess, Director for Maritime Policy and Blue Economy, European Commission, DG MARE.

16.45 End of conference

Final Version

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