LME LEARN

GEF LME:LEARN

LARGE MARINE ECOSYSTEMS

MARINE SPATIAL PLANNING (MSP) TOOLKIT

gef

IW LEARN

LME LEARN

UNDP Empowered lives. Resilient nations.

UNESCO United Nations Educational, Scientific and Cultural Organization

Intergovernmental Oceanographic Commission

ICES CIEM

NOAA

IUCN

CONSERVATION INTERNATIONAL

ACKNOWLEDGEMENTS

Special thanks goes to Sustainable Projects (s.Pro) who developed the toolkit. Contributing members include Angela Schultz-Zehden, Clare Waldmann, Ivana Lukic, Joseph Onwona Ansong, Lisa Simone de Grunt and Susanne Altvater.

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www.iwlearn.net/marine

Contents

List of Acronyms

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AIS	Automatic Identification System
AMSIS	Australian Marine Spatial Information System
AMP	Adaptive Marine Policy
ANZLIC	Australia New Zealand Land Information Council
APF	Adaptive Policy Cycle/Framework
BOEM	Bureau of Ocean Energy
BSR	Baltic Sea Region
CB	Central Baltic
CBD	Convention of Biological Diversity
CCALMR	Commission for the Conservation of the Antarctic Marine Living Resources
CDI	Center for Development Innovation
CEA	Cumulative Effects Assessment
CGDI	Canadian Geospatial Data Infrastructure
CTI-CFF	Coral Triangle Initiative for Coral Reefs, Fisheries and Food Security
DG MARE	Directorate-General for Maritime Affairs and Fisheries
DSS	Decision Support Software
EASME	Executive Agency for Small and Medium-sized Enterprises
EBA	Ecosystem based Approach
EBSA	Ecologically or Biologically Significant Marine Areas
EEZ	Exclusive Economic Zone
EMODnet	European Marine Observation and Data Network
EU	European Union
EUBSR	European Union Baltic Sea Region
EwE	Ecopath with Ecosim
FAO	Food and Agriculture Organization
GBR	Great Barrier Reef
GIS	Geographic Information System
HELCOM	Helsinki Commission
ICES	International Council for the Exploration of the Sea
ICAM	Integrated Coastal Area Management
IMOS	Integrated Marine Observing System
IMO	International Maritime Organization
IOC	Intergovernmental Oceanographic Commission
ISO	International Standards Organization
LME	Large Marine Ecosystem
MASPNOSE	Maritime Spatial Planning in the North Sea
MEDTRENDS	Mediterranean Trends
MFZ	Marine Functional Zoning
MSDI	Marine Spatial Data Infrastructure
MPAs	Marine Protected Areas
MSP	Maritime Spatial Planning
NGOs	Non-Governmental Organizations
PERSEUS	Policy-Oriented Marine Environmental Research in the Southern European Seas
PEMSEA	Partnerships in Environmental Management for the Seas of East Asia
RODEO	Real-time Opportunity for Development Environmental Observations
SAMP	Special Area Management Plan
SAP	Strategic Action Programme
SeyCATT	Seychelles Conservation and Climate Adaptation Trust
SEA	Strategic Environmental Assessment
SMART	Specific, Measurable, Achievable, Relevant and Time-Bound
SWB	South West Baltic
TACs	Total Allowable Catches
TDA	Transboundary Diagnostic Analysis
TOR	Terms of Reference
TPEA	Transboundary Planning in the European Atlantic
TQM	Total Quality Management
TUMRAs	Traditional Use of Marine Resources Agreements
UK	United Kingdom
UNESCO	United Nations Educational, Cultural and Scientific Organization
UNCLOS	United Nations Convention on the Law of the Sea
VASAB	Visions and Strategies for the Baltic
VALMER	Valuing Ecosystem Services in the Western Channel
VMS	Vessel Monitoring System
WWF	World Wildlife Fund

1. Introduction

This report presents the content of a web-based toolkit on marine spatial planning (MSP) for Large Marine Ecosystem (LME) practitioners as part of the LME:LEARN project. The MSP toolkit provides MSP practitioners with practical guidance, examples of tools and methods that are necessary for designing and carrying out the MSP process in an LME (Large Marine Ecosystems) context.

In an LME context MSP is still a fairly new concept and most of the ongoing projects and initiatives are the first to start a transboundary MSP. The toolkit draws on existing LME MSP experiences as well as other transnational MSP practices applicable in an LME context to provide guidance to those who intend to or are already involved in an LME MSP initiative.

As part of the larger set of LME toolkits, it shares the aim of promoting an integrated, collaborative approach to coastal and ocean management.

The toolkit is organised according to the general components of an MSP process, and highlights specific aspects which have to be taken into account during a transboundary MSP process. The toolkit provides examples of relevant tools and approaches, which can aid those involved in such a process to implement specific steps in the best possible way.

1.1 Toolkit rationale

Numerous handbooks and toolkits exist, which describe the various steps or elements to be included in a given MSP process; with the step-by-step approach developed by IOC/UNESCO (Ehler and Douvere 2009) being among the most commonly known (see example 1.1.1). The steps of this process are used to define the chapters and subchapter of the toolkit, in accordance with the Terms of Reference. Moreover, there are multiple repositories of tools and approaches that provide experiences relevant to transboundary MSP (see examples 1.3.2, 1.3.3).

However, there is no single reference point, which provides quick access to practical information on how to initiate and implement a transboundary MSP process in LMEs. While there are similarities to an MSP process implemented and initiated by one authority within one area of jurisdiction, there are several substantial differences, which need

to be taken into account when designing and implementing a transboundary MSP process. This toolkit is therefore designed to highlight the specifics of a transboundary MSP process, especially in LMEs where little MSP experience exists.

1.1.1 EXAMPLE: A step-wise approach to MSP

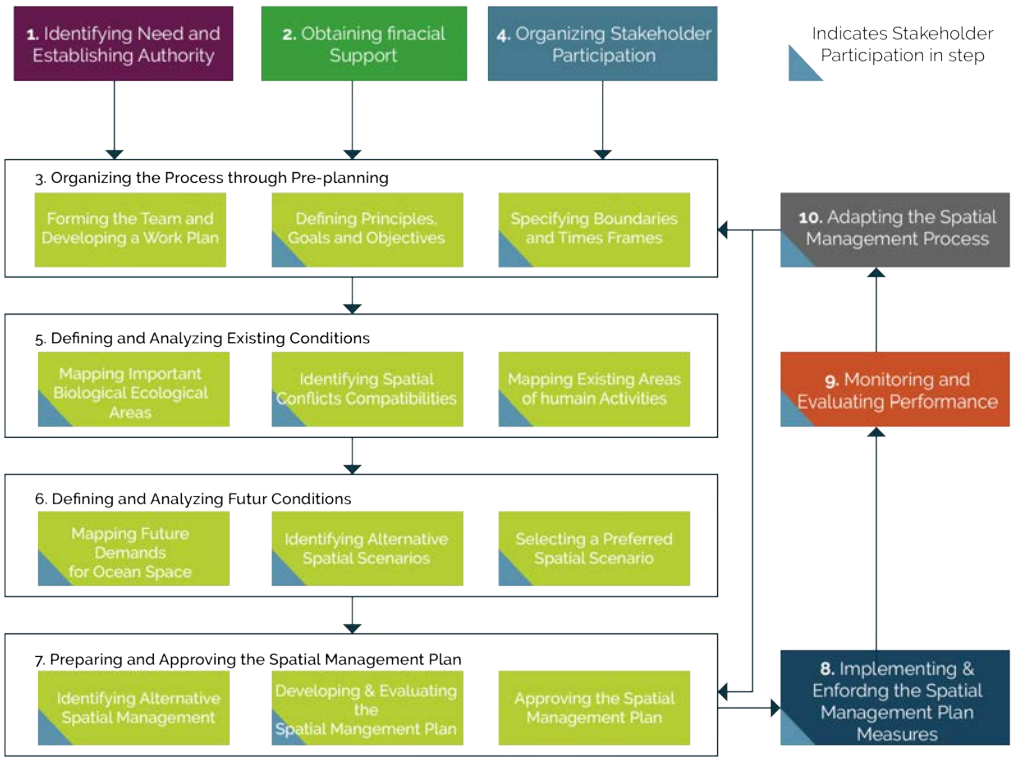


Figure 1. IOC/UNESCO step-by-step approach to marine spatial planning (Ehler and Douvere 2009)

IOC/UNESCO published a ten-step guide (Figure 1) to implementing an ecosystem-based MSP in 2009. The first part of the guide presents a definition of MSP, its benefits and outputs as well as a description of the relationship between MSP and other marine management approaches. Throughout the text, international examples are presented of MSP at different stages. The steps highlight the actual operationalization of MSP and present a logical order that could be followed to achieve the objectives of a given MSP process. By following the steps, the reader can gain an understanding of the skills and expertise that are needed for developing an MSP plan. The guide describes each of the steps by making reference to specific actions and tasks under that step, and it also presents how the steps may be interrelated in an MSP process. It has been used extensively to promote and guide discussions in the initial stages and designs of MSP processes, as well as in other capacity building efforts – thus, it serves as a relevant foundation for this toolkit.

This toolkit developed for GEF LME:LEARN is partly based on the steps as presented in the IOC UNESCO guide. Even though not presented as steps, the toolkit identifies aspects which require special consideration specific to transboundary MSP for each of the elements of an MSP process. Moreover, it also takes into account the evolution and expansion of knowledge on MSP over the past decade, since the IOC/UNESCO guide has been developed.

Marine Spatial Planning: a step-by-step approach toward ecosystem-based management

1.2 Target audience

The toolkit provides guidance for those who plan to initiate an MSP process in the LME context, including support for designing, organising and implementing transboundary MSP. It also serves as a signposting platform for supporting individuals who are already involved in transboundary MSP by providing possible tools and methods for one or more specific steps within the MSP process.

LMEs are very diverse with respect to their geographical, ecological, and governance aspects. This diversity, along with differences in the capacity of practitioners as well as marine management approaches globally, is reflected in the toolkit's "no one size fits all" approach (please see section 2.3). Whereas the general elements of a transboundary MSP process should be more or less generic, the toolkit is not prescriptive. It mainly provides ideas and inspirations for MSP practitioners globally on what has worked elsewhere and whether/how this may also serve as an example for other transboundary MSP processes.

The toolkit is mainly designed to provide guidance for those initiating the very first transboundary MSP process within a given LME. With this in mind, it is important to invest resources in project design to set a good foundation for an initial MSP process, given that MSP is not intended as a 'one off' process. Rather, MSP is designed to be adaptable and periodically revisited. The guidance and examples contained in the toolkit may indeed be useful for future 'turns' of the MSP cycle, but it is worth noting that the current toolkit places emphasis on designing an initial process (please see Chapter 3).

1.3 Information basis

The toolkit is based on a review of existing studies and repositories of practices from all over the world (see 1.3.1, 1.3.2, and 1.3.3). These 'Key Resources' can provide additional information on transboundary MSP and marine management topics which may be of interest to LME practitioners.

Guidance and examples contained in the MSP toolkit are also based on the long-standing experience of consulted experts and the authors themselves in implementing MSP projects. Figure 2 shows that the range of experiences on how to organise an MSP process and prepare a marine spatial plan is rapidly growing throughout the world (Ehler 2017).

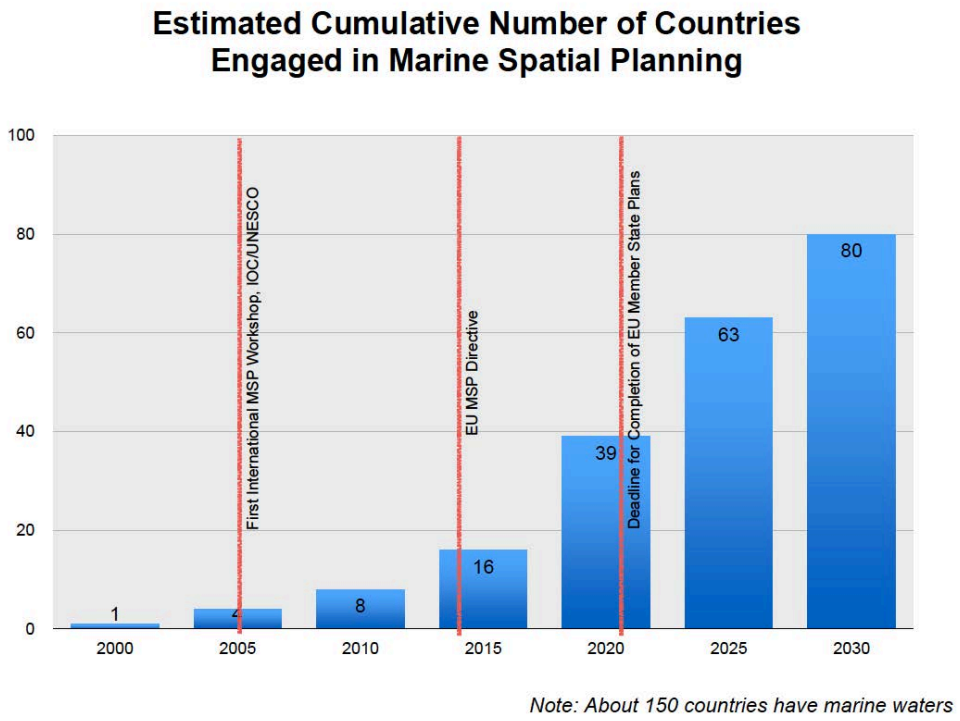


Figure 2. Estimated cumulative number of countries engaged in marine spatial planning (Ehler 2017)

However, examples of transboundary MSP processes are still rather limited, especially from outside of Europe, as seen in Figure 3. Moreover, experience in transboundary MSP processes is often less concerned with joint planning, but rather accounts more for experience on how to foster cross-border cooperation and collaboration in MSP across jurisdictions. Furthermore, it has to be underlined that experience in transboundary MSP based on statutory, legal processes established within two countries is even more limited in light of the fact that a very small number of national processes are actively taking place, especially outside of Europe.

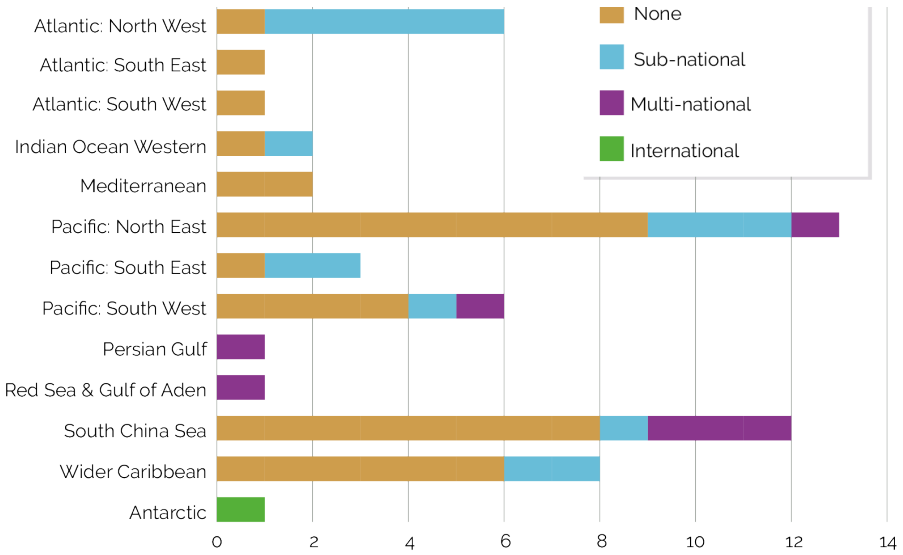


Figure 3. Distribution of non-European cross border MSP processes (European Commission 2017b)

Based on this current global state of play, the toolkit takes into account that most transboundary MSP processes within the LME context will mainly start from a situation where a formal MSP authority has yet to be established at the national level. Thus, an initial MSP project for an LME may actually serve as the inspiration for national authorities as well as transnational networks to formally begin an MSP process, as well as incorporate the results and data compiled by the LME MSP project in formal national MSP processes.

1.3.1 KEY RESOURCE: Study "Cross-border cooperation in Maritime Spatial Planning"

The European Commission's Directorate General for Maritime Affairs and Fisheries (DG MARE) published a study in 2017 on international best practices of cross-border cooperation, with a focus on non-EU examples. The study highlighted lessons learned and good practices from four case studies from across the world. The report also presents recommendations for the international development of MSP. The results of the study can be applied in diverse contexts, with a particular focus on cross-border cooperation. Lessons learned include the notion that a 'coordinating body or mechanism that is accepted across different jurisdictions facilitates commitment from the relevant parties during planning and implementation'. In addition, 'creating a sense of collective purpose and trust among authorities involved in the MSP planning process assists collaboration.'

Study on Cross-border Cooperation on Maritime Spatial Planning

1.3.2 KEY RESOURCE: European MSP Platform

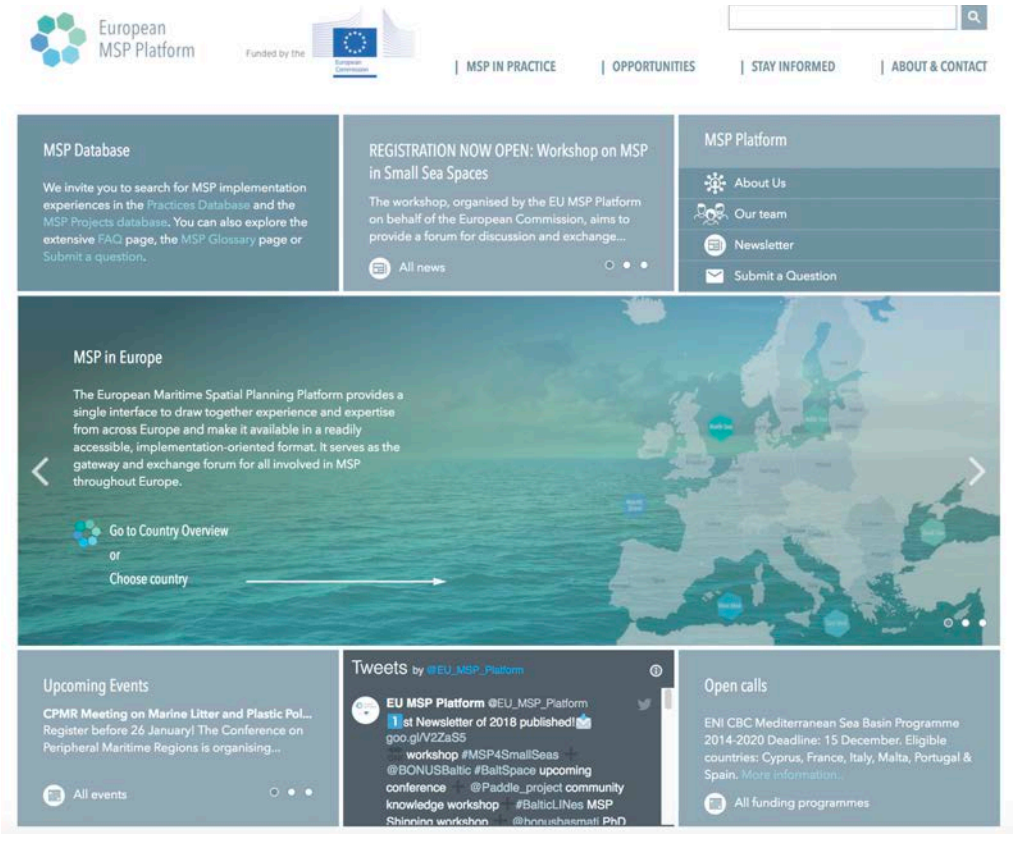


Figure 4: Homepage of the European MSP Platform

The European Maritime Spatial Planning Platform, funded by the European Commission, provides a large repository of practices and relevant information to assist EU Member States in their current processes to develop national maritime spatial plans by 2021. The Platform website (Figure 4) contains databases for Practices and MSP Projects, which includes specific information on European cases of cross-border MSP, such as guidance on conducting cross- border consultation and sea-basin cooperation mechanisms.

European MSP Platform

1.3.3 KEY RESOURCE: Panorama Marine and Coastal Solutions

The Panorama Solutions platform includes a theme for Coastal and Marine Solutions, curated by the Blue Solutions Initiative. These solutions can illustrate a range of approaches to marine and coastal spatial planning and management, as well as marine protected areas, ecosystem services, climate change and sustainable finance to fisheries, tourism, marine litter or educational and capacity development measures. The solutions can be implemented at different levels (from local to multi-national; from hands-on to policy). The sharing and exchange of these solutions provides others with examples and lessons learned regarding successful approaches that have worked in given contexts. They can inspire others to adapt and replicate these achievements without "reinventing the wheel", thereby accelerating action for sustaining healthy marine and coastal ecosystems.

Panorama Marine and Coastal Solutions Portal

2. Introduction to Transboundary Marine Spatial Planning

2.1 MSP - Marine Spatial Planning

Marine Spatial Planning[1] is the 'public process of analysing and allocating the spatial and temporal distribution of human activities to achieve ecological, economic and social objectives that are usually specified through a political process'. (Ehler and Douvere 2009)

Over the last few years, an increasing number of nations have begun to implement MSP at various scales, from local initiatives to transnational efforts. The motivation to do so has often come from the need to find suitable space for new maritime industries; improved coordination among sectors to reduce conflicts and create synergies, or the need to stop or even reverse negative environmental trends. (European Commission 2017b).

This chapter introduces important issues for MSP in the transboundary context, which is the situation in which most LMEs are situated. These considerations are presented here as an introduction, and are further expanded and clarified in later chapters. Cross-references are included to guide the author to relevant sections where more information may be found.

1 This concept is referred to as Maritime Spatial Planning, in particular in the European Union where the Framework Directive on Maritime Spatial Planning provides a framework for MSP activities for coastal EU Member States. The "labels" are less important than the goals, objectives, and geographic scope of the initiatives in various places.

2.2 Importance of issues of scale for LMEs

2.2.1 An ecosystem-based tool – but a national competence

Delineating boundaries is a fundamental part of the MSP process, as described in detail in Chapter 5 (5.2). This delineation is so far most often defined by political and jurisdictional borders, as MSP is normally conducted by national or sub-national authorities. Typically, these borders do not correspond to the limits of maritime activitiest or ecosystems.

At the same time, an MSP process is expected to apply an "ecosystem-based approach (EBA)." This approach refers to "a strategy for the integrated management of land, water and living resources including humans and their institutions in a way that promotes conservation and sustainable use in an equitable way"[2].

MSP is intended to inform the spatial distribution of maritime uses and activities in a sustainable manner that recognises and operationalises the following EBA elements (UNEP 2011):

1. aligning with ecosystem boundaries;
2. managing for multiple objectives/benefits;
3. considering cumulative impacts;
4. using best-available science and information;
5. applying the precautionary approach to deal with uncertainty; and
6. managing adaptively.

The application of EBA in MSP is an important issue for LME practitioners, as the majority of the 66 Large Marine Ecosystems (LMEs) around the world span across national jurisdictional boundaries. As a result, most LME boundaries do not always correspond to the given jurisdictional boundaries of the countries involved with potential authority over a formal MSP process. Therefore, there is the need to indicate which mechanisms and/or tools can concretely support implementing EBA in transboundary MSP, while at the same time respecting the political reality of two or more entities who are in charge of the MSP process, with each having individual jurisdiction and interests within this given ecosystem.

Convention on Biological Diversity, Ecosystem Approach

2 Similar terms are often used to refer to the same concept: ecosystem-based approach (EBA), ecosystem-based management (EBM), ecosystem approach (EA). EBA is normally used in Europe, as referenced in the Marine Strategy Framework Directive and MSP Directive, while in the US, EBM is normally used. EA is used in the Convention on Biological Diversity. For the purposes of this toolkit, the term 'ecosystem-based approach' (EBA) is used throughout.

The ecosystem-based approach is discussed in more detail in section 5.6, including examples of tools to ensure EBA is adequately incorporated in MSP for an LME. It is also discussed in the **›› Strategic Approach Toolkit Chapter 2: The ecosystem-based 5-module approach and recommendations for strengthening the approach** and **›› Chapter 5 section on Ecosystem-based Management.**

2.2.2 Transboundary vs. cross-border and multi-national vs. sub-national

MSP across an entire LME can have different levels of complexity as it spans across one or more shared borders (European Commission DG for Regional Policy 2011). The following definitions and diagrams provide clarification of various possible levels:

- Cross-border (Figure 5) refers to engagement between two or more entities that share a common political border (e.g. neighbouring countries). At times, there can also be disputes on the exact locations of these borders.

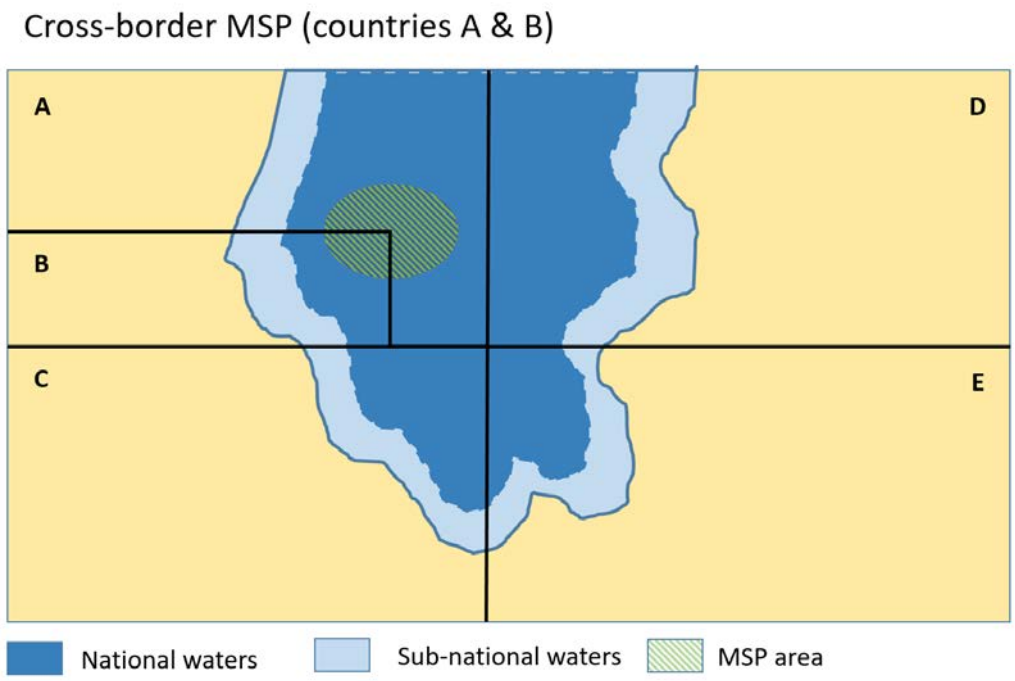


Figure 5: Cross-border MSP (two countries)

- Transboundary MSP (Figure 6) refers to engagement of multiple entities (e.g. countries, states, provinces) across one ecosystem, who also do not necessarily share a common border. Transboundary expands beyond transnational in that it encompasses sub-national (see below) as well as the high seas. Similar to transnational MSP, each entity has individual jurisdiction over different ocean spaces, different economic considerations, drivers for MSP, etc. For the purposes of this handbook, we refer to transboundary MSP as the most all-encompassing term, which captures various LME contexts.

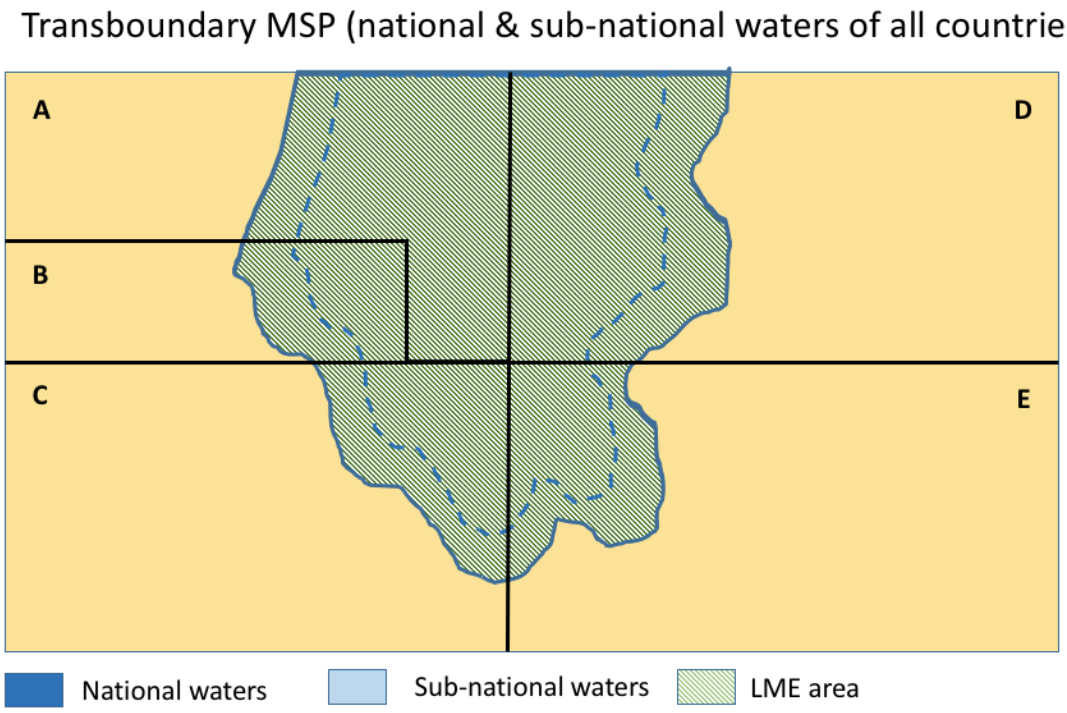


Figure 6: Transboundary MSP (multiple national and sub-national entities)

In all cases, one has to further distinguish between:

- Sub-national where several different entities (e.g. regions, provinces) within one country each hold jurisdiction over marine waters which are relevant for an MSP plan in national waters. In the diagrams above, sub-national waters are indicated in light blue closest to the shoreline.
- Multi-national where several countries each hold national jurisdiction over a joint ecosystem.

The level of complexity increases when not only different administrations (e.g. environment ministry, energy ministry, etc.) but also different countries are involved. As the legal basis and mandate for MSP is normally held exclusively at the national (or sub-national) level, MSP is by definition a political process, meaning that it requires decisions to be made in various governmental bodies to support, initiate, develop and ultimately implement MSP (Ehler and Douvere 2009). Figure 7 illustrates this added complexity in a transboundary setting, where elements of an MSP process need to be considered in relation to each other as well as across international borders.

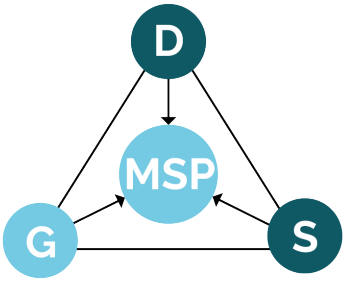


Fig.8.2.4. MSP incorporating data, governance and stakeholder perspectives.

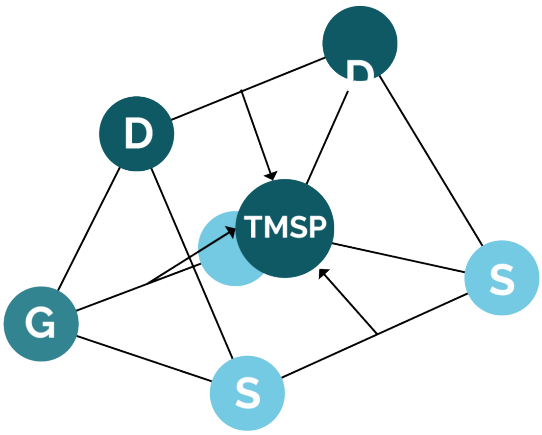


Fig.8.2.5. Inter-relation of elements of MSP in transboundary MSP.

Figure 7: Example of relationship between MSP elements in a single country (top) and transboundary (bottom) context (Jay 2015)

Multi-national MSP implies agreement between two or more different political bodies from more than one country. Moreover, countries in a given multi-national context are normally at different stages of MSP implementation, if they have even begun a national MSP process. Additionally, planning cultures, economic conditions, stakeholders, legal mandates and interests may vary substantially within a particular MSP situation (please see further discussion in Ch. 5).

Given that most LMEs fall within the multinational context (e.g. multiple countries with jurisdiction over one ecosystem), our subsequent transboundary considerations, tools and examples are presented primarily with this context in mind. However, as MSP deals with integration challenges also in less complex situations - the toolkit can also provide useful ideas for any given MSP process.

Further discussion of issues of management area scale can be found in the **❯❯ Strategic Approach Toolkit in Chapter 3 section 3.4: The Spatial Variability of Transboundary Concerns and SAP Reforms** and in the **❯❯ Governance Toolkit Chapter 4: Scale of Governance in LMEs** .

2.2.3 Transboundary planning concepts: vertical and horizontal integration, spatial subsidiarity and the nested approach

MSP at the national level is defined as a process across sectors (*horizontal integration*) as well as across administrative and planning levels (*vertical integration*). These factors are relevant in a multi-national MSP context, with an added dimension: cooperation is required among the same sectors and administrative levels across countries (thus integration of different levels of government). Figure 8 illustrates the difference between multi-level, cross-sectoral and transnational, as a way to show the appropriate level at which stakeholders should be managed in these different dimensions (taken from the Baltic Sea context).

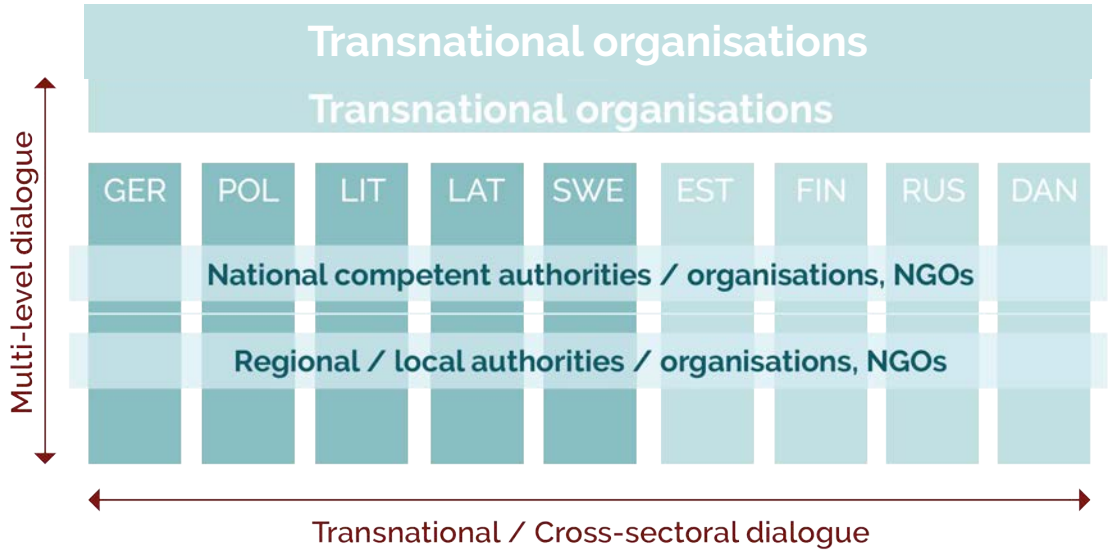


Figure 8: Multilevel paths in the Baltic Sea Region. Created by Baltic Environmental Forum (BEF) Latvia for the PartiSEApate project. (Matczak et al 2014)

Given this multi-dimensional nature, transboundary MSP should adhere to the principle of spatial subsidiarity, which proposes that spatial challenges should be dealt with at the lowest most appropriate spatial level. However, this must be facilitated by appropriate structures and processes at national and international levels. These structures help to ensure that MSP is conducted as a cooperative practice involving several spatial and administrative levels, and the objectives for different levels are aligned. Figure 9 illustrates an example of a possible set-up of different roles and responsibilities in a multi-national, transboundary MSP context.

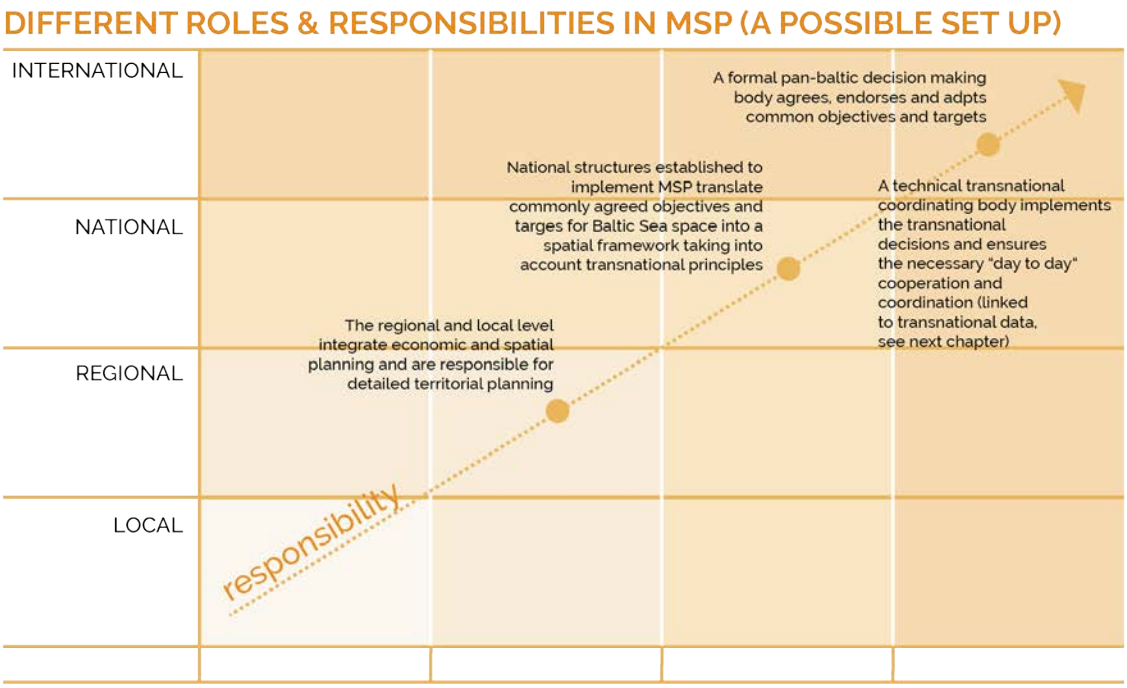


Figure 9: The spatial subsidiarity ladder in MSP, developed for the Baltic Sea Region (Schultz-Zehden. and Gee 2013)

To implement the spatial subsidiarity principle, many countries take a *nested approach* to MSP, where plans are organised in a hierarchical order, meaning that there are appropriate linkages across administrative levels (vertical integration). A nested approach to MSP is often appropriate for countries where there is divided jurisdiction between the national and local level, resulting in different plans created for different sea areas. These can be very detailed at the local level, and if done right, a nested approach to MSP could ensure planning coherence where all plans fit into each other.

Such an approach also respects the fact that currently there are limited instances where formal legal obligations exist to develop MSP plans at the national or transnational scale.[3] Countries are therefore potentially faced with a situation, where they may not have a direct counterpart for MSP yet within their LME partner countries.

2.2.4 Results of transboundary MSP

With the above considerations for transboundary MSP in mind, it is therefore very likely that the result of a multi-national MSP may not be one single marine spatial plan covering an entire transboundary area (e.g. an LME). Rather, the end result is often **a coherent set of national marine spatial plans within the LME**, which are based on jointly developed outputs, namely:

1. a joint assessment of current conditions covering the whole LME (Ch. 5);
2. a forward-looking vision/strategy for the LME at hand (Ch. 6); and
3. mutually agreed upon guidelines and principles (Ch. 7).

3 Known instances include: coastal Member States of the European Union in accordance with the EU Directive on Maritime Spatial Planning (2014/89/EU), the United States of America in accordance with the National Ocean Policy (Executive Order 13366), and China in accordance with the Law on the Management of Sea Use (Sea Use Management Law, 2001).

Additionally, a multi-national MSP process could result in distinct **'hot spot area'** plans, for specific locations spanning two or more national boundaries with high levels of activity or sensitive cross-border issues. (see further discussion on this topic in section 5.2)

2.3 No "one-size-fits-all" approach

There is, of course, no "one-size-fits-all" approach to marine management, and therefore not at any level of MSP. Something that has worked in one country or region may not be applicable to another region. Environmental conditions, maritime activities and related MSP issues differ substantially in marine areas around the globe. These can be specific to a given country not only due to socio-economic conditions and related interests in maritime activities; but also, due to the geo-political situation of the given country or region. Most obviously, the size and type of marine space available to each country is also variable.

Globally, countries are at very different stages of MSP development, with differing MSP resource availability and varying governance systems both for national processes as well as transnational cooperation. Moreover, planning cultures differ substantially, which impacts how a marine spatial plan is adopted in national legislation. In some cases, countries may focus on establishment of specific zones and exact allocation of maritime activities; whereas other countries may focus more on establishing principles and strategic planning criteria. The Table 1 provided in Example 2.3.1 provides a sample list of different types of plans developed as a result of an MSP process.

The examples provided in the following chapters of the toolkit include, where appropriate, a description of the context in which the tool or method is applied, rather than providing a "one-size-fits-all" approach. The descriptions include information on the tool itself, how it was used, what is needed to use it (i.e. enabling conditions), and the limitations or challenges of using the tool or approach.

2.3.1 EXAMPLE: Different types of MSP plans

Differences in planning cultures, legal mandates, governance systems, and other factors influence the end result of a given MSP process. The Table 1 summarises different types of existing MSP plans, showing the diversity resulting from MSP approaches and that a "one-size-fits-all" approach cannot be applied to MSP. This list is not intended to be exhaustive, and further examples of types of plans are likely to exist.

Table 1: Types of marine spatial plans

TYPE OF PLAN	EXAMPLES	DESCRIPTION
National plan with spatial allocations	Maritime Spatial Plan for the Belgian Part of the North Sea,	This plan lays out principles, goals, objectives, and long-term vision, and spatial policy choices for the management of the Belgian territorial sea and EEZ. Maritime Spatial Plan for the Belgian part of the North Sea
	Belize Integrated Coastal Zone Management Plan	This plan covers both coastal and territorial seas of Belize and sets out action plans which are supported by zoning/spatial schemes for the management of coastal and marine human activities/uses
	Seychelles Marine Spatial Plan	The plan is being developed in phases and takes a multi sector approach to zoning the entire EEZ for marine protected areas, and multiple uses in addition to an implementation plan.
National integrated plan [4]	Harnessing Our Ocean Wealth – an Integrated Marine Plan	This sets out a roadmap for the Government's vision, high-level goals and integrated actions across policy, governance and business to enable Ireland's marine potential to be realised. Implementation of this Plan will see Ireland evolve an integrated system of policy and programme planning for marine affairs. Harnessing our ocean wealth: an Integrated Marine Plan for Ireland
	National Framework for Marine Spatial Planning in South Africa	The framework adopted in 2017, delivers high level directions for developing MSP in the context of existing legislation, policies and planning regimes in South Africa. It also sets out the processes for developing and implementing marine area plans to ensure consistency across the entire EEZ. National Framework for Marine Spatial Planning in South Africa

4 These plans are normally overarching government policies for MSP/marine management and normally informs/guides the actual marine plan development at either the national/multi-level.

TYPE OF PLAN	EXAMPLES	DESCRIPTION
Multi-level plans	Sweden	Three distinct plans for separate areas, covering the territorial sea from 1 nm outward of the base line and the EEZ, are under preparation by the same national authority; while coastal regions also have the right to prepare their plans up to 12 nm. Sweden: MSP Platform Country page
	China	The Law of the Management of Sea Use (Li 2001) in China established a hierarchical marine functional zoning (MFZ) scheme at different scales including national, provincial and municipal/county level. The national marine zoning is used to address quantifiable national objectives/zones and the experience informed the development of 11 MFZ plans for coastal provinces, autonomous regions and municipalities by the respective local governments. The provincial MFZ divides the national MFZ into sub zones whiles the municipal/county level MFZ divides the provincial MFZ into more specific and smaller zones where necessary. Marine Functional Zoning in Xiamen, China
	United Kingdom	In the UK, the preparation of marine plans is the responsibility of the respective governments within the UK. For example, Scotland has prepared Scotland's National Marine Plan, which provides a single framework for managing Scotland's seas. This plan will be supplemented by eleven Regional Marine Plans, prepared by the Marine Planning Partnerships. United Kingdom: MSP Platform Country page
	Germany	There is no hierarchy between the different plans prepared for the two EEZs (Baltic Sea and North Sea) and the three plans prepared by each of the coastal states; e.g. the plan prepared by Mecklenburg-Vorpommern for its 12 nm zone is not under a hierarchical order of the plan prepared by the Federal Government for the Baltic Sea EEZ. Germany: MSP Platform Country Page

2.4 More than just a map

While MSP has a substantial focus on the spatial dimension of various human activities and ecosystems, a map which indicates the location of current uses and conditions is not the only intended end product of an MSP process. Rather, it is the starting point (referred to as the 'stock-take', see 5.7), regardless of the geographic scope of an MSP process (e.g. national, sub-national or multi-national).

An MSP plan can contain a map with 1) clear designated areas for current uses and 2) indicate possible/planned areas for future uses. In addition to such a map, or multiple maps, an MSP plan is likely to include planning policies to guide future developments. A plan is designed to resolve both current conflicts as well as prevent future conflicts and foster synergies between uses. Accordingly, a future-oriented vision and corresponding goals and objectives should be included in a plan. These then point towards suitable locations for uses, taken from an integrated perspective. Please see example 2.4.1 for a description of the contents of a sample MSP Plan.

Additionally, the positive impact of an MSP process may not only stem from the resulting plan itself. An MSP process may have numerous positive side effects, as it often provides an initial forum where different stakeholders express their given interests ('stakes') related to a specific maritime space. If well designed, an MSP process may lead to increased understanding of other stakeholders' needs, and thus not only potentially limit conflicts, but create synergies and cross-sector cooperation fields, which may be outside the scope of the actual spatial planning dimension as such (e.g. economic cooperation).

Along these lines, it should be clarified that MSP cannot be the single tool to bring about all solutions to management challenges in a given marine space. In many cases, conflicts may be less about finding the appropriate location for an activity, but more about the actual way a maritime activity is carried out (e.g. certain types of fishing gear which may damage habitats) or even about whether a maritime activity is carried out at all. Even though MSP plans may sometimes address such principles in relation to spatial dimensions of uses, determining an alternative method for how to conduct an activity may often be well beyond the actual mandate of the MSP authority. Rather, alternative methods often need to be agreed, endorsed and implemented by separate regulatory authorities based on national legislation and structures.

In cases where any decisions may lead to increased costs or even the reduction of a given use in a maritime space, MSP therefore involves political decision making (as referenced in the IOC/UNESCO definition of MSP). Understandably, agreement on such trade-offs is even more difficult to achieve between countries.

As a result, initial MSP processes should not necessarily start with the most debated issues, but with those where 'easy wins' can be achieved within a relatively short time frame. It is important to keep in mind that MSP also incorporates the concept of adaptive management, and thus should not be thought of as a one-time process. Rather, it is an iterative cycle, which should be revisited and reconsidered according to an agreed time frame – allowing for consideration of more complex, controversial and emerging issues in a later 'turn' of the cycle and 'next generation' MSP plans.

2.4.1 EXAMPLE: Sample contents of an MSP plan (England)

An MSP plan is likely to contain more than just a map of current uses – rather, it can also include policies to guide future oriented development. For example, England's Marine Management Organisation (MMO) has jointly developed marine plans for two regions to date: The East Inshore and East Offshore marine plans. The plans contain 28 maps and figures, as well as 11 objectives and 38 supporting policies (Figure 10). While the maps help marine users understand the best locations for their activities, future developments are guided by the priorities and policies laid out in the plan for the specific plan area.

Figure 10: Number of maps for UK East Inshore and East Offshore Marine Plans. Source: Presentation by Paul Gilliland at 13th Meeting of the EU Member States Expert Group on MSP, 11-12 October 2017

Marine Management Organisation: Marine Planning in England

3. Designing the Transboundary MSP Process

Investing resources in good MSP process design at the forefront is important for establishing a well-functioning process for the years to follow. This section identifies guidance and tools for planning and designing a transboundary MSP process.

3.1 Identifying the need for transboundary MSP

The potential benefits of an ecosystem-based, transboundary MSP process have been well documented in numerous studies on MSP (European Commission 2010; Lukic *et al.* 2018; White *et al.* 2012; Cameron *et al.* 2011). Benefits include:

- Direct attention to connections within an ecosystem as a whole;
- Identifying and embracing synergies between the same maritime sector operations across countries – with many maritime activities taking place multi-nationally to begin with;
- Minimizing current conflicts between neighbouring countries and preventing them to happen in the future to come;
- More efficient government planning by achieving greater coherence as well as collaboration at an early stage – resulting in streamlined & accelerated cross-country planning procedures (e.g. strategic environmental assessment processes);
- Reduced transaction costs for maritime activities (e.g. data compilation, legal, administrative and opportunity costs);
- Improved opportunities to collaborate on cross-border infrastructure development (e.g. offshore electrical grid networks);
- Ensuring transparency and thus leading to increased acceptance of change;

- Accelerating the development of innovative, sustainable, emerging uses by taking a joint approach (e.g. bundling knowledge, resources, permissions);
- Ensuring a joint approach and coordination regarding multi-national sector organisations (e.g. IMO, MPA networks);
- Finding and addressing issues of common concern, which cannot be handled by one country on its own (e.g. climate change adaptation; oil spill risks; energy transmission lines; maritime transport; fisheries);
- Safeguarding ocean space & resource availability for future generations by ensuring efficient use of maritime space and potential co-location of maritime uses;
- Accelerating development and improving positive benefits of (national) MSP plans by combining knowledge resources (e.g. joint data use), joint SEAs, common legends, etc.

Although these benefits may offer a sufficient set of justifications for why to embark on a transboundary MSP process in the first place, current experience indicates that it is important to define a concrete set of motivations and drivers for a given LME MSP process. These should be clear enough without any detailed stocktake and/or mapping exercise, which is part of the MSP process itself. The checklist provided in (3.1.2) can guide development of a list of drivers and motivations. The LME Data Sheet and the Indicator Framework from the **LME Scorecard** can also serve as a guide for conducting an initial assessment of the motivations and drivers for MSP.

Table 2 provides an overview of drivers, issues and overarching objectives of some of the transboundary MSP cases around the world:

Table 2: Sample of drivers for selected cases (adapted from European Commission 2017b)

CASE	COUNTRIES	DRIVER(S)
RI Ocean SAMP	US (RI, MA)	State offshore wind energy targets
CCAMLR	Argentina, Australia, Belgium, Brazil, Chile, China, EU, France, Germany, Italy, India, Japan, South Korea, Namibia, New Zealand, Norway, Poland, Russia, South Africa, Spain, Sweden Ukraine, United Kingdom, USA, Uruguay	Marine protection from (over)fishing

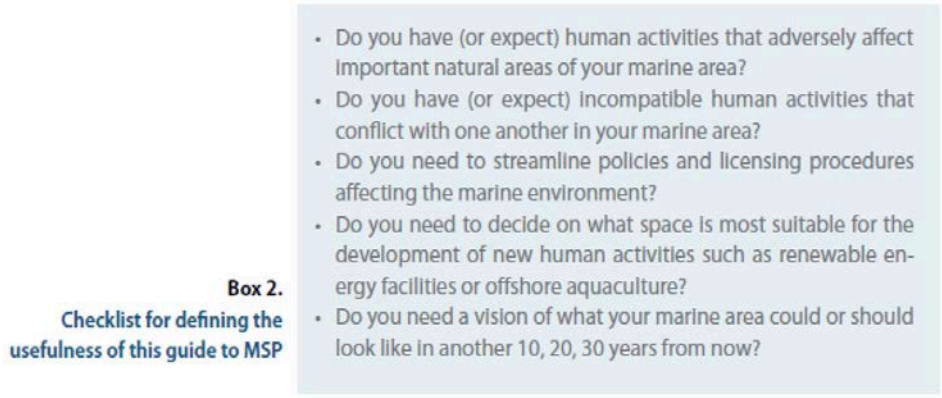
CTI-CFF	Indonesia, Malaysia, Papua New Guinea, Philippines, Solomon Islands, Timor Leste	Reversing degradation of coral reefs, ensuring food security through improved fisheries management, addressing climate change
Xiamen MFZ	China (states within China)	Sea-use conflicts, marine environmental degradation, lack of institutional coordination
Western Baltic Sea	Latvia, Estonia, Lithuania	Small sea space with many different maritime uses and emergence of offshore wind industry
Wider Baltic Sea	Germany, Sweden, Finland, Latvia, Lithuania, Estonia, Poland, Denmark, Russia	Grey areas with disputed country borders in busy areas, emergence of autonomous shipping
North Sea	UK, Germany, Netherlands, Belgium, Norway, Denmark, Sweden	Establishment of super grid, joint approach to offshore wind energy production
Adriatic Sea	Italy, Slovenia, Croatia, Macedonia, Albania	Small busy sea space shared by many countries
Black Sea	Bulgaria, Romania	Joint approach Bulgaria & Romania necessary to shift old shipping lane to comply to new needs
Great Barrier Reef	Australia (states within Australia)	Reversing degradation of coral reefs
All EU Member States	23 coastal EU Member States	Legal obligation based on national legislation and coherence of national MSP plans under MSP Directive

Easy-to-understand communication on possible benefits and motivations for embarking on a transboundary MSP process is an essential first step. It is a key condition for securing the necessary funding for a transboundary MSP project and motivating the relevant institutions to become involved – either as direct project partners or involved stakeholders.

A simple problem and related objective tree from a logical framework analysis may already provide the necessary information regarding drivers and motivations (see discussion in 3.3) but good visuals are also essential elements for conveying such messages. Sometimes a simple map or graph showing the transboundary interrelations between uses may already convey the basic message why a MSP process is required (see example 3.1.3). Further examples of communication tools are provided in 4.5.

3.1.1 EXAMPLE: Checklist for identifying drivers and motivations (IOC/UNESCO)

As referenced in this toolkit as well as in the IOC/UNESCO step-by-step approach to MSP (Ehler and Douvere 2009) it is worthwhile to clearly define motivations and drivers. The checklist provided in the step-by-step approach guide (Figure 11) was intended for readers of that guide to determine if the step-by-step approach would be useful for their work. Despite this original intent, it also provides a useful list of questions for those involved in an MSP process to review when developing their list of drivers and motivations. The questions can help planners in a transboundary MSP context initially identify the issues to be dealt with in MSP. This list can be refined and added to during later steps in the MSP process, including analysing conditions (Chapter 5) and defining goals and objectives (Chapter 6).



Box 2.
Checklist for defining the usefulness of this guide to MSP

- Do you have (or expect) human activities that adversely affect important natural areas of your marine area?
- Do you have (or expect) incompatible human activities that conflict with one another in your marine area?
- Do you need to streamline policies and licensing procedures affecting the marine environment?
- Do you need to decide on what space is most suitable for the development of new human activities such as renewable energy facilities or offshore aquaculture?
- Do you need a vision of what your marine area could or should look like in another 10, 20, 30 years from now?

Figure 11: IOC/UNESCO Checklist for defining different needs for MSP (Ehler and Douvere 2009)

3.1.2 EXAMPLE: Visualising cross-border activities and impacts (Transboundary Planning in the European Atlantic – TPEA)

Transboundary maritime activities can lead to situations where multiple countries share and exploit the same resource, where multiple countries engage in the same maritime activity, or where one country's maritime area is impacted by another country's maritime activity. Understanding these cross-border interactions, their dynamics and geographic extent is a key initial step in transboundary MSP. Visualisations of these interactions can be produced to illustrate the drivers and motivations for MSP. The project 'Transboundary Planning in the European Atlantic' (TPEA) produced a Good Practice Guide presenting suggestions for cross-border planning exercises, including visualisations of cross border activities, resources and impacts (please see Figures 12 - 14). Developing similar visualisations can help communicate the need for MSP by illustrating different cross-border interactions.

TPEA Good Practice Guide: Lessons for Cross-border MSP from Transboundary Planning in the European Atlantic

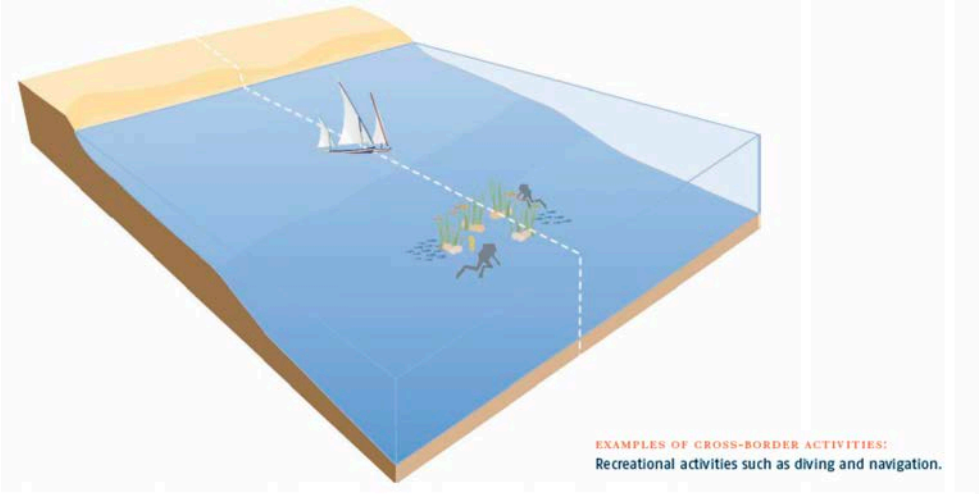


Figure 12: Examples of cross-border activities: countries engaging in similar maritime activities (Jay and Gee 2014)

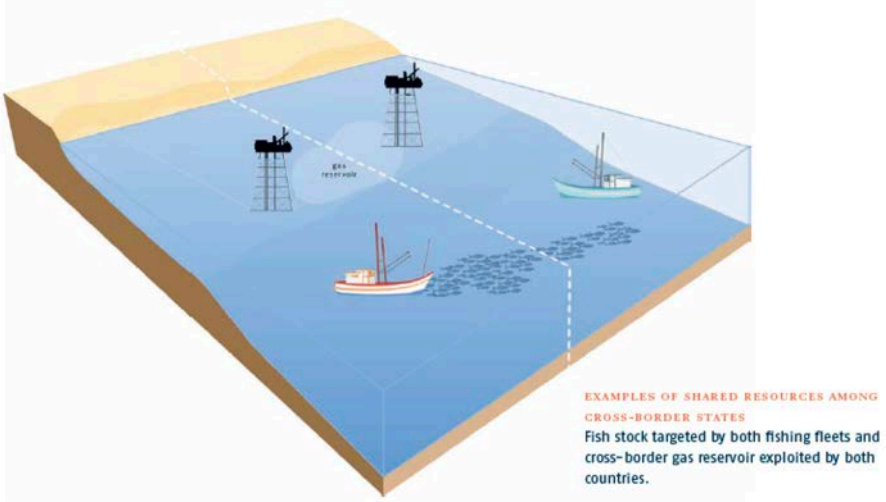


Figure 13. Potential marine cross-border impacts: countries using the same marine resources (Jay and Gee 2014)

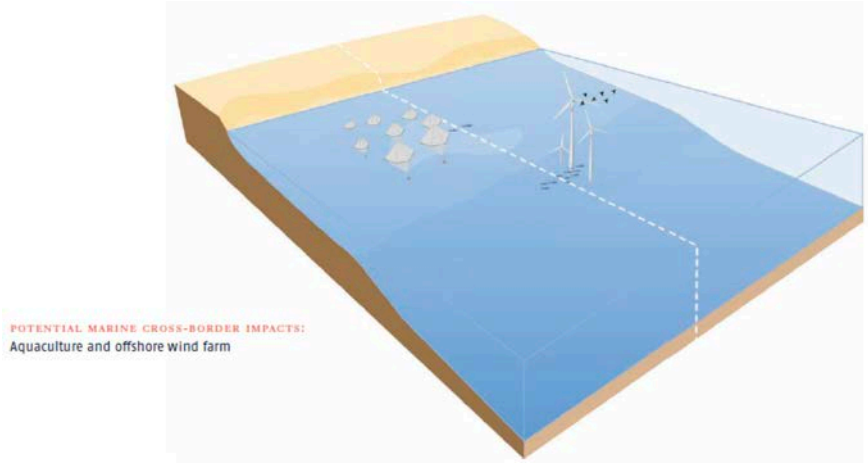


Figure 14. Potential marine cross-border impacts: countries engaging in similar maritime activities (Jay and Gee 2014)v

3.2 Establishing the Partnership / Team for a Transboundary MSP Process

3.2.1 Composition of a transboundary MSP partnership

In transboundary contexts, it is important to consider equitable representation of countries, organisations and stakeholders from across statutory (e.g. governments) and non-statutory (e.g. NGOs) MSP communities in their jurisdictions to ensure full ownership and collaboration. Building an MSP partnership for an LME should take into account the LME Governance Framework described in the **›› Governance Toolkit Chapter 2.1.1**.

Ideally, each country involved should already have an existing MSP authority which acts as the lead for MSP, according to national legislation. However, project designers for transboundary MSP have to be aware that in many cases there will not be such authority in place yet. In such cases, ideally a good 'guess' has to be made on which ministry / agency may later on in the process receive the leading role for developing and implementing national MSP by considering the remits, experience in strategic planning and the number of sectors that fall under the functions of the ministry/agency. For more on national coordination, please see the **›› Strategic Approach Toolkit Chapter 4.2: Good practices in NAPs and national interministerial committees**.

In many countries, the actual planning is subsequently sub-contracted to an expert organisation. In order to build the actual capacities in a given country, it is important to involve those institutions and sectoral agencies, who may later on be involved as expert advisors and are also equally respected by governments as well as stakeholders. Depending on the specific context, such organisations may encompass scientific organisations, e.g. universities or research institutes; consulting companies or NGOs specialised in process, project, stakeholder as well as change management processes; or experts in GIS systems and applications.

When an entity separate from the government assumes the planning role, a clear distinction should be made between them being a 'stakeholder' themselves in the process or acting as the maritime spatial planner. It is not helpful if the process is managed by an organisation, which in itself already has a bias towards a certain set of interests. In such cases, this partner bias should be balanced out by including other partners representing the other 'stakes'.

While often more complex than a national process, a transboundary MSP process may also have the advantage of benefiting from cross-fertilization of knowledge sharing from the outset of the project and resulting efficiency gains. Participants may pool their skills, each leading on a certain task, allowing them to learn from each other's expertise, especially across borders. This is particularly valid in cases where capacity is uneven among institutions within different jurisdictions. Reciprocal capacity building can be used to strengthen MSP cooperation (see example 3.2.1.1).

In summary, the partnership should as much as possible encompass partners from all countries involved, as well as represent the range of skills required in an MSP process (e.g. process management, data & information management, legal competence, stakeholder engagement, etc.) and ensure that it is not perceived as being biased towards any sector / 'stake' to be involved in the process.

3.2.1.1 EXAMPLE: Reciprocal capacity building through paired partnerships(Coral Triangle Initiative for Coral Reefs, Fisheries and Food Security (CTI-CFF)

Where capacity is uneven among the institutions within different jurisdictions, a possible solution could be to pair one of the lesser capacity stakeholders with a stakeholder that perhaps has more capacity. In order to strengthen cooperation on MSP, this approach has been applied by the Coral Triangle for Coral Reefs, Fisheries and Food Security (CTI-CFF) to enable the sharing and strengthening of specific collaborative practices. CTI-CFF a partnership made up of high-level government authorities of six countries. Regional exchanges among CTI-CFF partners allow for mutual learning and awareness raising on certain issues, such as sustainable tourism and MPAs.

Coral Triangle Initiative on Coral Reefs, Fisheries and Food Security (CTI- CFF)

3.2.2 Coordinating bodies

The project should be coordinated or at least initiated by a given body or mechanism as legitimate across different jurisdictions – as this secures commitment from relevant parties during planning and implementation (see example 3.2.2.1). Even though it is not necessarily expected to be in place at the outset of a transboundary MSP project, it is highly beneficial if the transboundary coordinating body brings together the relevant established MSP authorities from the LME in question. In all instances, it is a key success factor to anchor the project into the overarching political framework and strategic processes of the given region and to work via existing transnational structures (see example 3.2.2.2). For more on co-ordinated transboundary governance, please see the **›› Governance Toolkit Chapter 4.1 Scale of governance in LMEs.**

It is not necessary that the transboundary body is taking care of the project management itself. Such a job can either be 'outsourced' to a neutral, professional service provider and/or can also be voluntarily taken on board by one of the involved countries. In cases where a service provider has been engaged, a professional, neutral management of the process is ensured with due regard to all transboundary / sectorial interests. With MSP being essentially a project and change management process, such an approach may have substantial advantages. Alternatively, the advantage of one country volunteering in the leading role may lead to a higher political commitment not only from the leading country, but also the other countries concerned. In this case as well, it is still an advantage if project management tasks are outsourced to a professional body.

Current examples of transboundary MSP processes show that projects and processes benefit from the creation of sub-groups, where experts for a given issue gather across the countries concerned to align activities (see example 3.2.2.3). These may either be formed directly from project partners and/or take the form of 'associated' advisory councils or committees (to be created or already existing) – which are outside the immediate MSP project, but meet 2-4 times per year to share information and provide advice the given MSP project. The topics for which such sub-groups may be established are highly context specific; but have previously dealt with the specific organisation and design of data portals or related cumulative impact assessment tools.

In conclusion, a transboundary MSP project is likely to benefit from an environment of trust, where planners and sectors can talk in a more informal manner to each other across countries (see also 5.7.3). The key for successfully transferring project results into formal implementation is (1) clearly anchoring the process to the political framework

of the given LME and (2) take-up of at least some project results by the countries involved. Thus, project partners should filter results back to their 'home countries' as well as continuing discussions of results at the transnational level.

3.2.2.1 EXAMPLE: Establishing an overarching coordinating body (Rhode Island Ocean SAMP)

The establishment of a coordinating mechanism or body may facilitate the implementation of MSP processes. Examples of coordinating bodies include the Rhode Island Coastal Resources Management Council, which was appointed as the coordinating authority for the Ocean Special Area Management Plan (SAMP). In this instance, both the state of Rhode Island and the state of Massachusetts agreed that the Council would coordinate the Area of Mutual Interest. Special legal, scientific, stakeholder, state, and federal committees were also set up to ensure ample engagement by all parties in the process. The intent of setting up legal and scientific committees was to ensure that major aspects of the Ocean SAMP initiative were reviewed, and advice provided by these experts. Unfortunately, because of the accelerated Ocean SAMP process timeline—among other factors—these two committees were not as effective as expected. Major legal and scientific decisions were necessary on a daily basis, and there was no time dedicated to set up coordinated meetings. The Ocean SAMP management team therefore changed its initial operational process, and involved legal and scientific experts from the committees individually, rather than as a group. Technical assistance was provided by experts from a local university (University of Rhode Island) who served on the management team, and attended bi-weekly meetings to assist the project leaders in overcoming political, technical, and administrative challenges that that could have stalled the process.

Rhode Island Ocean Special Area Management Plan

3.2.2.2 EXAMPLE: 'Flagship Status' projects under macroregional policy frameworks (EU Strategy for the Baltic Sea Region)

Establishing MSP projects with a so-called ‚flagship status' is a practice in the European Baltic Sea, in the context of the European Union Strategy for the Baltic Sea Region, which is an agreement between the Member States of the EU and the European Commission to strengthen cooperation between the countries bordering the Baltic Sea in order to meet the common challenges and to benefit from common opportunities facing the region. The Strategy is divided into three objectives, which represent the three key challenges of the Strategy: saving the sea, connecting the region and increasing prosperity. Each objective relates to a wide range of policies and has an impact on the other objectives. Work conducted to support strategy implementation is organised according to "horizontal actions," with Spatial Planning covering MSP.

'Flagship status' has to be granted by the two transnational bodies within the Baltic Sea, which together providing overarching political guidance to MSP in the Baltic Sea; namely HELCOM (Baltic Marine Environment Protection Commission Helsinki Commission) and VASAB (Visions and Strategies around the Baltic Sea). By acquiring such a status, the importance of projects is on a higher level, and such projects may serve as examples for desired future actions at both the country and regional level. Flagship projects in the Baltic Sea are often the result of policy ambitions in specific fields and can be concerned with issues of strategic regional importance. Projects with flagship status under EUSBSR aim to have a high impact on the region and contribute to the implementation of the objectives of the strategy – thus, they are rooted in a political framework which guarantees their lasting legacy.

Strategy for the Baltic Sea Region

3.2.2.3 EXAMPLE: Specific technical or sectorial working groups / advisory bodies (HELCOM-VASAB & CCAMLR)

Technical sub-groups of a coordinating body for transboundary MSP can provide expertise on certain steps and elements of an MSP process. For example, a sub-group on the topic of data was created by HELCOM in the form of the Baltic Sea Region MSP Data Expert Sub-group. This group works under the HELCOM-VASAB MSP working group and focuses on supporting data, information and evidence exchange for MSP processes with regard to cross-border/transboundary planning issues. The group meets up to four times a year and its members include MSP and data experts, appointed by the national competent authorities for MSP.

Others examples of technical sub-groups have focused more on the creation of specific sector groups (e.g. shipping, energy, fishery) or environmental concerns (e.g. habitat advisory boards). In other cases, scientific advisory bodies have been established, including the CCAMLR Scientific Committee to which all CCAMLR members are also a member. The Committee facilitates the exchange of data from fisheries monitoring, vessel observation as well as ecosystem monitoring between its members. The CCAMLR is obligated to take the recommendations of the Committee into account in decision-making.

Baltic Sea Region MSP Data Expert sub-group

CCALMR Scientific Committee

3.3 Defining the Objectives of the MSP Project

As described earlier, it should not be expected that one MSP project can solve all issues within the given LME. Therefore, expectation management regarding what issues MSP can tackle, and which sub processes and tasks it should encompass, is important from the outset. Issues that 'stir the pot' may attract attention, build constituencies and bolster political commitment. When MSP offers plausible solutions to significant problems or opportunities, then political will in support of MSP is more likely to be forthcoming.

At the same time, it should be clear that the objectives of a transboundary MSP project should be attainable and realistic – not only within the given project time-frame, but also possible to achieve by using available MSP tools and the existing legal frameworks. Particularly in the crucial early stage of an MSP process, there is the danger of overloading a transboundary MSP process.

In order to promote the cause for MSP within a given LME, it is important to identify "easy wins", which can be achieved within a rather short time frame, and then subsequently inspire the region to take the process a step further in the "next generation" MSP process. This allows for more difficult issues to be tackled in a follow-up process, and follows the inherent nature of MSP as an iterative process.

Initial issues to be dealt with may already be identified in a TDA / SAP for an LME. The results of TDA / SAP could also help identify smaller, more clearly delineated cross-border "hot spot areas" (please see 5.2.4) for which specific MSP solutions should be developed in the current or future rounds of the MSP cycle, related to a specific set of

sectors (e.g. shipping lanes; energy lines, MPA networks). See the **❯❯ LME Strategic Approach Toolkit Chapter 3: The Transboundary Diagnostic Assessment** and the **❯❯ LME Project Cycle Toolkit Chapter 3: Preparation of Transboundary Diagnostic Analysis Projects** for more on this topic.

It should be noted that MSP exercises often relate to the competences and mandates of multiple government agencies, political jurisdictions and sectors, who may have a history of competition and conflict regarding their individual interests in a marine area. These challenges therefore need to be overcome through a process of compromise, leading to shared perceptions of the issues which can be addressed through the given MSP project.

The objectives for the given MSP process should be set within the context of a "vision" process for the maritime space in question, which provides the forward-looking setting which an MSP sets out to achieve. Such a vision process is normally an element of a MSP project itself, as it requires substantial skills and knowledge of stakeholders and sector developments. The development and agreement of a joint vision is a substantial effort as well as achievement of an MSP project. It would therefore be a result and deliverable of a possible 1st generation MSP project. Vision development is described in more detail in Chapter 6.2.

A clear set of goals and objectives should, however, also be set for the MSP project itself. These should be developed on the basis of the "Logical Framework Approach" (Log frame), which helps to set out systematically and logically the level of objectives and thus the hierarchy between goals, objectives and outputs (European Commission 2004).

- A goal is relevant to solving an overall problem that impacts a society or broad context. It can be described as "we know why we are acting." A project is unlikely to completely achieve a goal, due to the fact that there are other factors which also need to be addressed – in other words, a goal is beyond the scope of the project (European Commission 2004). However, a goal provides a useful framework or point of reference for a project. An example of a goal is to increase aquaculture production.
- An objective is the strategic purpose of a project; best described as "we know where we want to get to." The immediate objective or project purpose is to be met with the realisation of the deliverables produced by the project, including benefits which the project intends to produce for stakeholders. It should address the central problem which a goal seeks to solve and be defined in terms of the benefits derived from achieving the objective. An example of an objective related to the example goal is to ensure space for marine aquaculture.
- The outputs are the concrete set of tangible and specific deliverables the project should produce, best described by "we know what we want to produce."

As shown in the example of the TPEA project (see example 3.3.1), it may be sufficient for an initial MSP project to aim for an initial stocktake, identification of "hot spot / pilot areas" and/or topics, followed by detailed assessments and preparation of solutions for those. Most importantly, an initial MSP project should also provide the framework for demonstrating how solutions will be implemented and result in a continuous transboundary MSP governance framework.

In all cases, objectives should follow the SMART standard, meaning they are (Cormier *et al.* 2015):

- Specific – objectives should not be too broad, but rather concrete. For example, 'protecting the marine environment' would be a very broad objective;
- Measurable – objectives should be defined in a way that allows their quantification;
- Achievable – the objectives should be attainable within the relevant time and contexts;
- Relevant – maritime spatial planning should have influence on the defined objectives and they should be relevant to the identified needs; and
- Time-bound – the achievement of objectives should be set in a specific timeframe.

3.3.1 EXAMPLE: Setting strategic project objectives (TPEA)

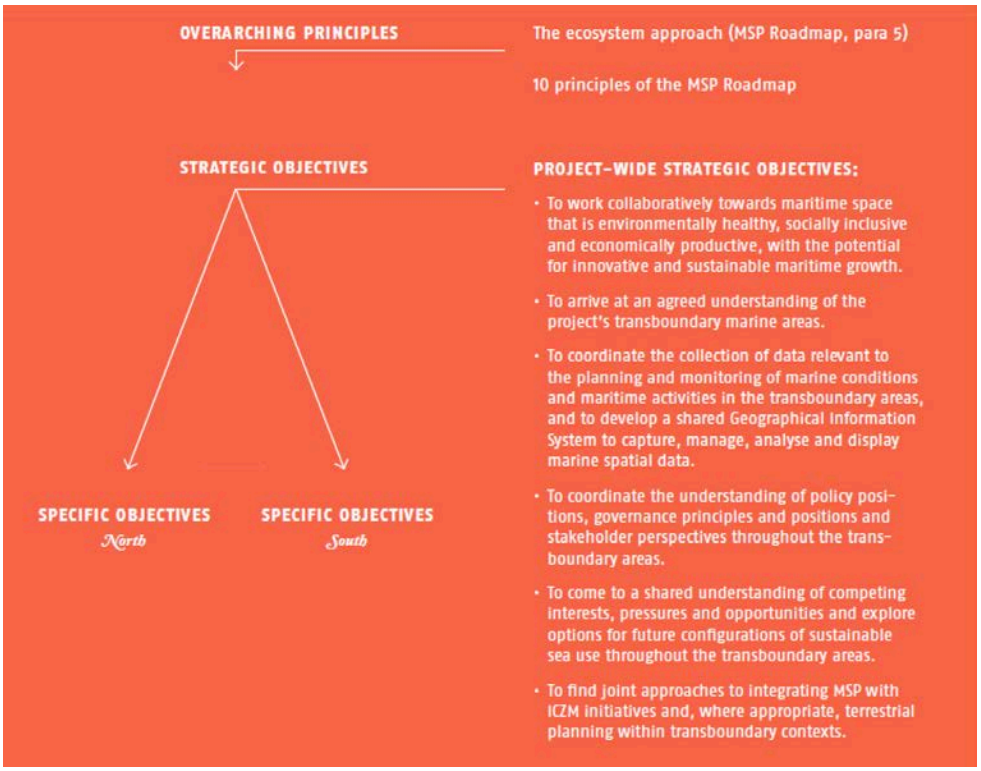


Figure 15. Common principles and strategic objectives of the TPEA project (Jay and Gee 2014)

The project Transboundary Planning for the East-Atlantic (TPEA) developed six strategic objectives that applied for all aspects and phases of the project (Figure 15). The project partners accepted the ten principles from the European Commission's Roadmap for Maritime Spatial Planning (European Commission 2008) as the basis for the project objectives. They included a common vision on what the future state of the plan area should be like, an agreed upon understanding of the transboundary areas as well as agreement on the meaning of the ecosystem approach. The project wide strategic objectives were further broken down into specific objectives for the two pilot areas of the project.

TPEA Good Practice Guide: Lessons for Cross-border MSP from Transboundary Planning in the European Atlantic

3.4 Developing the Work Plan - establishing effective communication and working structures

A clear and structured process that is understood by all relevant parties facilitates engagement and accelerates the planning process. Establishing a regular pattern of collaborative interaction and progress according to a clear action plan is important to make efficient use of resources and effectively communicate information between participants. In order to establish trust and working routines, it is advisable to start with more immediate, manageable tasks related to project objectives, delivering initial good results on those before engaging in more complex matters.

The overarching cycle of a transboundary MSP process follows the same general steps as a national MSP process:

- Preparation,
- Identification / Analysis,
- Solutions / Planning,
- Conclusions / Recommendations,
- Evaluation, and
- => then moving into adaptation /update of MSP Process again…

Data management, communication and stakeholder engagement are ongoing elements in each step. The work plan for a transboundary process has to take into account the specific additional challenges inherent when working in a transboundary setting. These aspects are explained in more detail in the following sub-chapters..

3.4.1 Work planning and management tools

As for any project, it is important to have in place a clear work plan for the MSP project, including a plan for resource expenditures, as well as a system for monitoring progress and overall process improvement. This can include the application of management tools such as Ghant Chart, Log frame (see section 3.3), Kanban, Total Quality Management (TQM) and numerous management software.

Clear understanding of roles and responsibilities can be aided by producing process/activity mapping, as well as a flowchart of responsibilities and sharing it with all involved in the project. Having project timelines and milestones clearly defined allows everyone involved to accordingly organize their schedules and manage expectations. Apart from internal processes, events and outputs, the process timeline can also include the relevant externalities that can affect the process. Such a timeline can also include the lead responsible entities/individuals for each of the expected outputs (please see Figure 16).

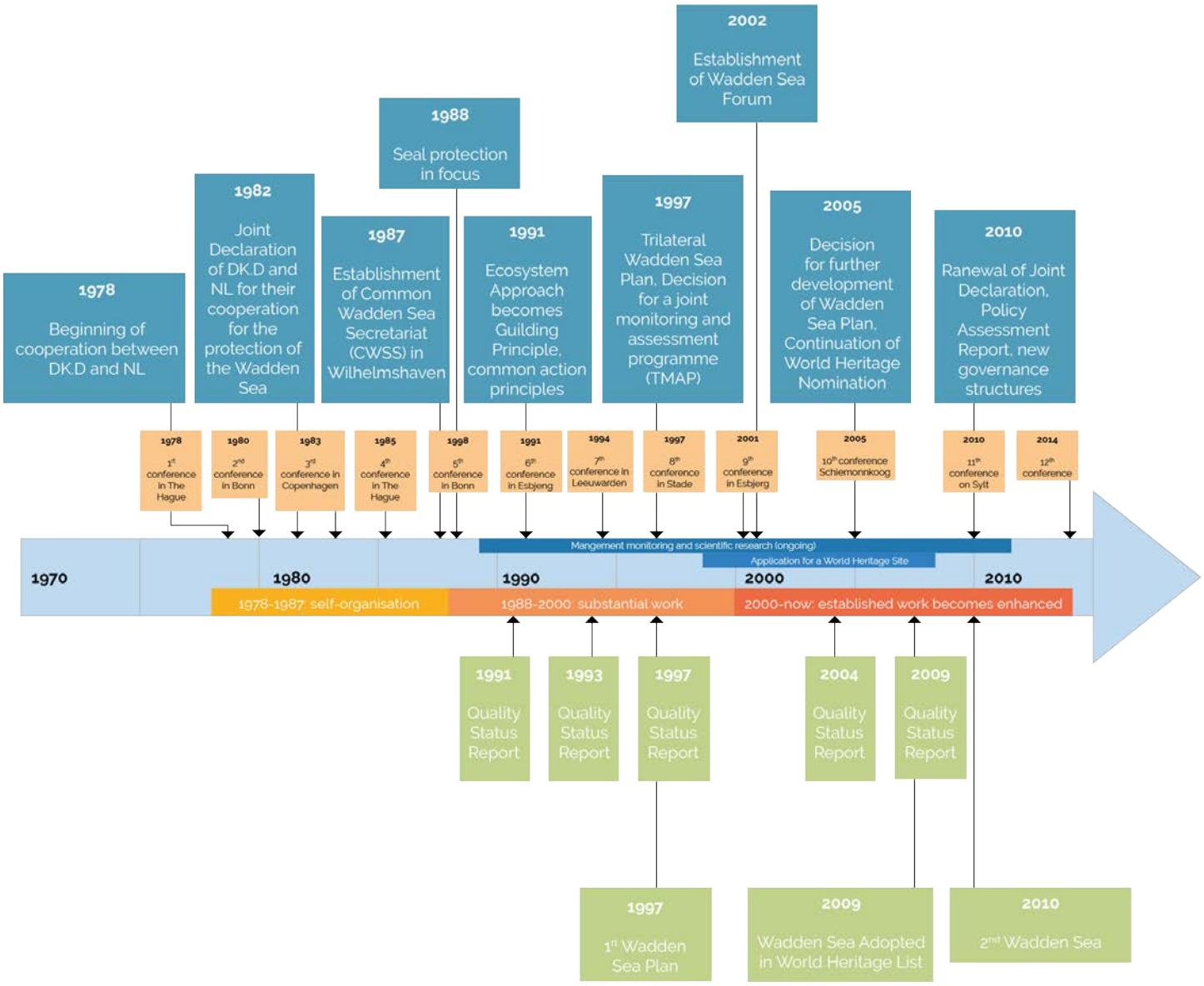


Figure 16. Key Events, Processes and Results of the Trilateral Wadden Sea Cooperation (Kannen et al. 2016)

Given that each organisation adheres to different rules when it comes to recording and tracking progress, it is recommended that project establishes unified reporting system. Having procedures in place (appropriate realistic and practical) for main work processes within the project ensures that everyone understand what their tasks entail, and can also ease integration of possible new members of the team. Even when carefully following work procedures things go wrong sometimes, especially if such a project is undertaken for the first time. It is therefore good to have a system in place to track where the project may have gone "off course," so that the "next generation" MSP process can account for these lessons learned. Such a document ensures traceability and exposes the root causes of recurring problems, and allows opportunity for doing things differently in future such initiatives. Having a dedicated person or a team that ensures that that process goes in line with budgetary limits and in respect to applicable laws is also advisable.

Learn about Quality: What is Total Quality Management?

Kanban explained for beginners.

3.4.2 Effective and diverse meeting formats

Depending on the location of an LME, it may take more resources to conduct transboundary meetings with representatives from multiple countries than a meeting planned for a national MSP. Thus, it is important to find suitable formats and routines for meetings. Normally, countries alternate the host country for meetings as a way of cost sharing and engaging with other national stakeholders who might not be able to travel for other transboundary meetings. Further discussion on effective facilitation techniques can be found in the **Stakeholder Participation Toolkit Chapter 4.2.2.1 Skilled Facilitation.**

Establishing sub-group meetings, which deal with specific issues (such as GIS, specific sectors or hot topic areas) and thus also include a smaller number of specialists, has proven to be an effective method in many transboundary processes (see example 3.2.2.3).

Even though physical meetings are important and cannot be substituted, more and more transboundary projects make increasingly good use of teleconferences or web-based meetings to report on progress, especially for smaller working groups (as described above). It should, however, be understood that such remote meeting formats are best suited in cases where partners know each other already quite well, have already established a common understanding of the given task and, most importantly, speak the same language.

3.4.3 Define meeting objectives, discussion topics & supporting documents

The work plan should clearly earmark the different types of meetings (timing / location) as motivations for work to be carried out in between these meetings. Additionally, the work plan should highlight the objectives of each meeting and the respective preparatory documents, which have to be available in advance in order to reach these objectives. It should be agreed beforehand between partners on whether the meeting is designed to seek agreement on certain items, or inform each other on ongoing progress, and/or whether it is designed as a working meeting, where some partners jointly work on certain issues during the meeting itself.

A working meeting may be a very effective method as there can be time delays if open questions / activities are taken back home. On the other hand, working meetings require more time as well as participation of knowledgeable individuals or experts on a given issue. This may sometimes not be possible.

Moreover, a key success factor is identifying the same formats for partners to report to each other to allow for clear cross-sector communication. Most projects have opted for one or two project members to take the leading role to develop a blue print for a given report with subsequent rounds of comments; which is then filled with information from each country / sector accordingly.

3.4.3.1 Example: Developing Meeting Schedules (Baltic SCOPE)

Step-wise Case Work

Analysis and knowledge gathering for plannign evidence:

- Topic papers
- Topic maps
- Cross-sector maps (bi-lateral)
- A combined map (overall)

Interaction:

- Planners' meetings
- Thematic meetings
- World Café, for across-sector interaction mapping
- The Stakeholder Conference
- A workshop Session at the 2nd MSP forum in Riga
- Synthesis accross sectors
- Cross sector conflict and synergy tables
- Overall and recommendations papers
- Final report writing

Cross-cutting Work

Project activities

- Planners and project meetings to discuss and interact across cases and groups
- Outreach events like Riga Kick-off and the 2nd MSP Forum in Riga

Pan-Sallie work within the project

- Ecosystem-Based Approach task force
- Joint green map for the Central Baltic area based on Swedish experience (chapter 5)
- Shipping density maps based on AIS-data developing out of the mapping exercise (chapter5, by Helcoml
- Assessment reports summarising knowledge during the preparatory and identification phases. including conflict and synergy tables for both case studies and a project recommandations report based on itneractive discussions and the project's internal survey (Nordregio)

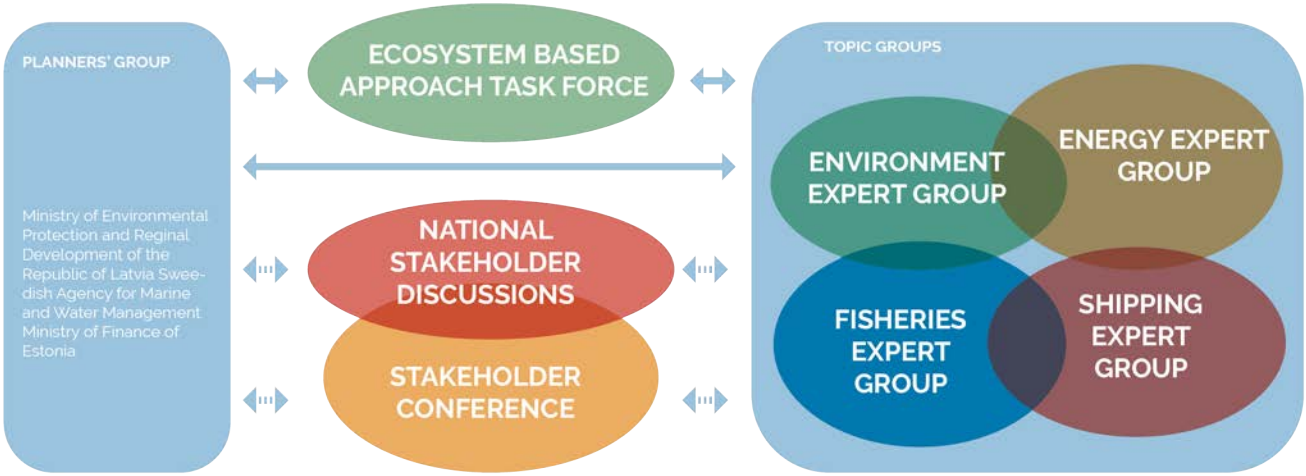


Figure 17. Examples of Baltic SCOPE work plans (Urtāne I. et al. 2017)

In the Baltic SCOPE project, different 'types' of meetings were planned (Figure 17) during the beginning phases of the project to target specific objectives and outputs. These plans included partner meetings (which involved all partners), planner's meetings of the MSP planners from the respective countries involved, as well as bilateral and thematic meetings on particular case studies. The planners' meetings served as working meetings on each case study. The bi- and trilateral meetings served as venues for sharing data, discussing the overlapping interests in greater detail and identifying concrete solutions. Thematic Working Groups and Meetings included experts from marine sectors to share knowledge and analyse transboundary themes such as the ecosystem-based approach and cross- sector aspects. Other sea basin wide/transboundary platforms such as the Baltic MSP Forum were also used to engage and disseminate information to wider international organisations, policy makers and practitioners.

Baltic SCOPE project website

2nd Baltic Sea MSP Forum

3.4.4 Take into account language & communication issues

One of the most obvious issues in transboundary MSP can be language differences among the countries involved, contributing to added complexity of transboundary MSP. Language is essential for communication both within the project & planning team as well as when working with stakeholders (see Chapter 4 on Stakeholder Engagement). Thus, it is valuable to remove any language barriers within multicultural, cross-border, decision-making frameworks so that negotiations can take place without giving bias to one or more parties involved. Good tools have to be put into place in order to overcome language barriers and different terminologies from national planning systems. It is important to ensure that all can take an active part with respect to spoken and technical languages. The most knowledgeable planning expert may at the same time not necessarily be the best to communicate in the project language chosen.

Finding the 'right' language

In transboundary contexts without a shared language, interpretation may be necessary, or an 'international' language not belonging to any of the jurisdictions may be preferred (see example 3.4.4.1). Rather than opting for one single language – it may also be possible to adapt the working language for the activity at hand, with due regard to equity. In case of translation or interpretation, it is worthwhile investing in knowledgeable interpreters who accompany the whole process, in order to avoid misunderstandings and misinterpretations in terminology, which can create tensions in meetings.

Create joint understanding /definitions of terms 'uses'

Even in cases where all participants share a common language, sufficient time should be allowed not only at the beginning of the project, but also at the beginning of each meeting, to clarify and develop a 'common' understanding of terminology. It has been evidenced in almost all transboundary projects analysed that different interpretations of terms used were a major source for misunderstandings and barriers to reaching agreements. In view of different planning cultures and jurisdictions a term might carry a particular connotation in one setting, but be understood differently elsewhere.

Some samples of typical misunderstandings in terms used:

- The term '*priority areas*' may for instance have a completely different meaning and legal implication in different countries and thus trigger different levels of concern.
- There are also often misunderstandings related to '*planned activities*'; e.g. activities which are not in place yet in the given maritime space in question. This can imply several meanings:
    - that the 'zone' has already been established, but no concrete application has actually been received and may also never be received;
    - or it may indicate an area for which a licence has already been granted and installation is soon to be expected;
    - or it may even only mean that this is seen as a potentially suitable area for an activity under discussion – but with no formal zone having been established.

Participants should identify potential differences of use of terms; clarify meanings where necessary and potentially develop new, project-specific sets of common terms as to avoid continuous misunderstandings. A glossary of terms and symbols may be established – which then should be repeated and explained at each single meeting (please see example 3.4.4.2.)

In all cases it is worthwhile to think about effective ways of communication with each other. This may often be fostered by joint inter-active exercises. These are important both for establishing good communication within the transboundary MSP project partnership as well as in communication with stakeholders. Please see 4.4 for a description of tools to be used for MSP communication, both within the transboundary MSP partnership as well as with stakeholders and political decision makers.

3.4.4.1 EXAMPLE: ensuring a common language (CCALMR)

Defining a common working language or providing translation services is important to ensure an equitable working environment for a transboundary MSP partnership. Meetings of CCALMR and their Scientific Committee are held with translation and interpretation services, whereas working group meetings are held in English. Holding Scientific Committee meetings with translation and interpretation services enables the focus of discussions to remain on questions of scientific rigour, therefore bypassing any tensions that might negatively affect negotiations. While working group reports are translated from English into the languages of the CCALMR members, the lack of translation and interpretation services can lead to barriers in understanding and discussions at the actual meetings themselves.

Commission for the Conservation of Antarctic Marine Living Resources (CCALMR)

3.4.4.2 EXAMPLE: Common symbols and legends (VASAB-HELCOM)

In order to achieve minimum level of harmonization of MSP in the Baltic Sea Region, VASAB-HELCOM principles on the MSP includes adopting a joint legend and symbols which have also been undertaken at the sea basin level through the Baltic sea regional data model. This has been seen as critical in reducing existing language and cultural barriers and encourage participation of stakeholders in transboundary context. National MSP processes and projects in the Baltic such as the BaltSeaPlan have gone on to adopt these legends and symbols during the data collection/stock taking stage to foster cross border cooperation on MSP. Having these common legends are also necessary in the transboundary discussions for conflict resolution. Other projects such as ADRIPLAN and TPEA have also discussed common pictographs and symbols during the start of the project based on approaches used in previous data related projects.

Baltic Sea Broad Scale MSP Principles

3.4.5 Build trust across borders and respect differences

MSP initiatives, especially those that span across jurisdictions, require a high degree of collaboration and commitment. Ultimately, this requires mutual respect and willingness to share power among the institutions involved. Thus, transboundary MSP depends on building openness and trust between participants, especially across borders, taking into account the different cultural contexts and learning from different approaches and priorities across jurisdictions.

Participants involved in the transboundary MSP process need to be confident that processes are transparent and their input will not only be respected, but also contribute to tangible benefits both for MSP on the whole as well as the individual user needs. While this holds true for the direct partnership, it is even more important for any kind of stakeholder involvement (see Chapter 4). Defining common principles at the beginning of the MSP process sets a clear foundation for how the process will operate, both within the partnership and among stakeholders (see example 3.4.5.1). Further discussion on these issues can be found in the **❯❯ Governance Toolkit Chapters 2.1.2 Evaluating Principles of Good Governance and 2.2 Values and Ethics**.

As is commonly stated, trust is earned and cannot be bought. It is something which needs and should be given time to evolve - it only builds up gradually as participants work together. Such 'growing together' may take extra time in transboundary contexts where participants may speak different languages, operate with different cultural norms, and are accustomed to different ways and modes of working as well as styles of communication.

Therefore, the overall work plan should account for plenty of time for evolution of mature forms of cooperation (see section 3.4.1 on work planning). Project design should take into account the overall level and culture of cooperation existing in the given LME. In many instances the very first MSP project may only be designed as a process of meeting each other and establishing effective forms of information exchange; rather than resulting into concrete joint planning (see example 3.4.5.2).

Depending on whether partners are working together for the first time or not - it is worthwhile to invest in the social components of inter-action. This may not only derive from including site visits in project work, but also fostering social interaction through a conscious effort of building inter-active; more playful, elements into meetings. Such elements may not only facilitate cross-border dialogue, but also assist in lowering communication barriers between different hierarchies (junior and senior staff) within the partnership team; different disciplines as well as better integration of 'newcomers'.

Moreover, partnerships should clearly define what should remain strictly internal, such as contents of meeting discussions or joint discussion papers, and what may later be made available to outside parties (see example 3.4.5.3). It should always be clarified whether team members, which have a formal role within their given institutions (e.g. national ministries), are acting and discussing in an 'expert' capacity or within the limits of their 'official' role. Experience shows that it many instances it is very beneficial if issues and difficulties can first be discussed internally without any further documentation to outside parties. It should then subsequently also be jointly decided which of the results can be made public via a mutually agreed statement.

Apart from these social and more process-oriented tools, collaboration is facilitated by creating a sense of collective purpose among authorities and partners involved in the MSP planning process, most notably by developing a common vision for MSP (see Chapter 6).

3.4.5.1 EXAMPLE: Principles of the Rhode Island Ocean SAMP development

Several key principles were created to guide the collaborative development of the Ocean SAMP. The principles related to the availability of information at the same time to everyone involved, and to ensure that decisions were not made behind closed doors or without input from the entire group. These principles also helped to ensure that stakeholders understood and actively supported the aims of the Ocean SAMP process. Apart from these overall process principles, Ocean SAMP stakeholder process was also led by the principles of fairness, transparency and decision making based on the best available information. Fair ground rules were agreed and followed at each of the stakeholder meeting. This has contributed to a broader commitment to the process and collaborative environment.

→ Rhode Island Ocean Special Area Management Plan

3.4.5.2 EXAMPLE: Steps to scale up transboundary cooperation

As part of the PartiSEAPate project in the Baltic Sea Region, an investigation was conducted to evaluate the potential for establishing a "pan-Baltic MSP dialogue," which would provide a forum for exchange among key regional stakeholders, including planners and sector representatives (Schultz-Zehden and Gee 2014). Based upon responses to a questionnaire used as part of the investigation, it was recommended that the dialogue should aim to build more mature forms of cooperation. The following steps, originally developed as part of the INTERACT project, offer an approach to scale up the level of maturity of transboundary cooperation for MSP as well as in general:

1	Meeting: Getting to know each other, learning about motivations, interest, needs, skills, expectations, cultural and structural aspects;
2	Information: Delivering (targeted) exchange of information, building basic cooperation structures and trust, shaping common ideas;
3	Coordination/Representation: Creating a joint partnership structure, first allocation of functions and roles;
4	Strategy/Planning: Defining joint objectives and developing concrete actions;
5	Decision: Binding commitments of partners, partnership agreement
6	Implementation: Joint implementation of actions, efficient joint management, fulfilment of requirements by each partner

→ INTERACT project

3.4.5.3 EXAMPLE: Rules of engagement for project meetings (SIMCelt & Seychelles MSP)

Terms of reference (TOR) are normally used to set out the rules of engagement for meetings and interactions during MSP projects. The SIMCelt project and Seychelles MSP process used TOR to define the role, functions and processes of engagement and meetings between Steering Committee members which normally acts as the main decision-making group. The specific and bespoke role and functions of government, technical agencies, civil society groups and industry representatives should be considered and well defined. To ensure that meetings and interactions are effective, efficient, participatory and trust is built between partners, certain ground rules and code of conducts are necessary for ensuring open and honest communication and build transboundary working.

Due to differences in governance arrangement across countries it is important that these rules of engagement/ code of conduct are adapted to the existing political context and governance arrangements of each country. This is normally effective when the TOR are defined and agreed on early in the process and through consultations with the relevant LME partners and stakeholders to ensure buy in and commitment.

The **Chatham House rule** has also been introduced into TORs in some MSP cases to define and clarify which information and material can be shared beyond the project group meetings while engaging with national and transboundary stakeholders (e.g. Welsh National Marine Planning process). The Chatham house rule can be used to engage specific expertise and stakeholders who are not part of the project group but can be invited to these meetings where necessary.

SIMCelt project

3.5 Obtaining financial support

Implementation of MSP is the responsibility of (national) public authorities. Therefore, it is very likely to depend on public funds, both in the medium and long term. As a result, sustained commitment from government(s) to finance MSP is a critical for any transboundary MSP process to enter into full implementation. In the absence of such commitment, there is a clear risk that the whole MSP process and/or parts of it will not be implemented.

At the same time, global experience shows that the initial MSP process is very often supported by project funding, and that a strategic approach towards structuring a series of consecutive as well as parallel projects can very well lead to a sustainable funding stream, which can provide resources for preparing MSPs for official adoption by the relevant authorities (see Figure 18). Efficient recording of project achievements and communication of benefits can contribute to a stronger, sustained commitment of funders and decision makers.

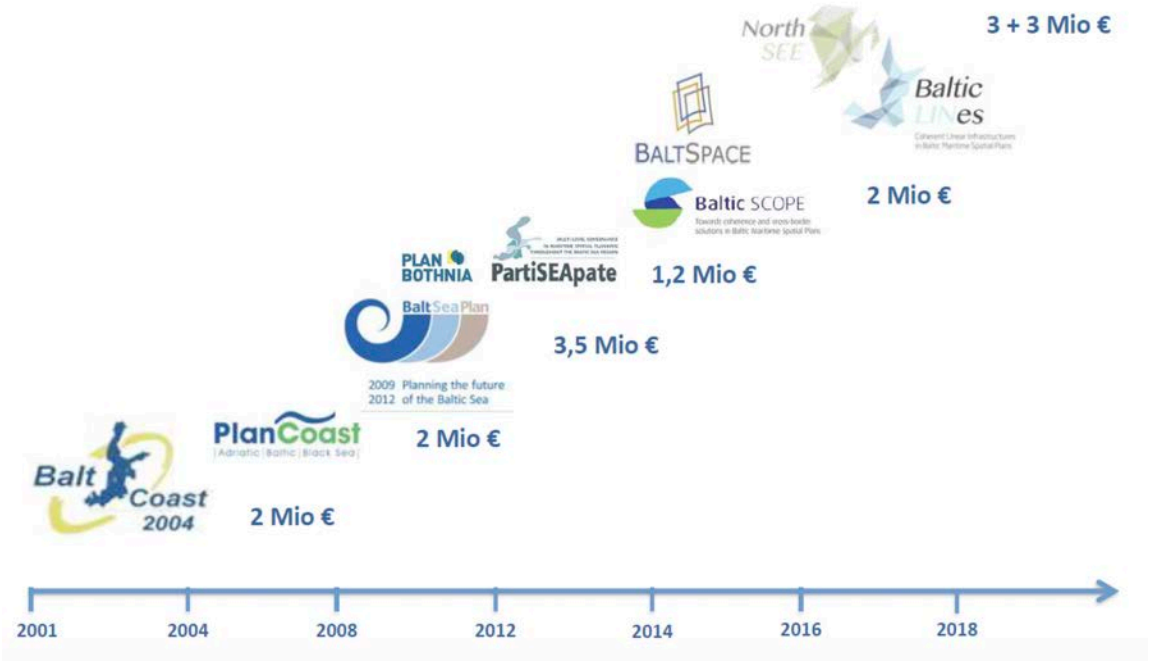


Figure 18. Example of project funding stream from the Baltic Sea Region

Most often, the full implementation (e.g. putting the management, licensing and monitoring procedures in place afterwards) may indeed consequently have to come from sources independent from project funding, such as public-private partnerships (see example 3.5.1). At that later stage, it is anticipated that political commitment has already been secured, which in turn should guarantee the respective public funding. For further information about sustainable financing, please see the ❯❯ Governance Toolkit Chapter 2.4: Sustainable Financing; ❯❯ the Project Cycle Toolkit Chapter 2.6: Financing, additional costs & co-financing; and ❯❯ section 2.3 of the LME Scorecard Indicator Framework.

Indicator Framework.

Strategic coordination of parallel or sequential projects potentially funded by different sources is a task best done by the transnational coordinating body, which should act as the overarching coordinator for the transboundary MSP process (see 3.2.2 for further discussion). Countries should take joint decisions in such a forum regarding which activity(ies) should apply under which funding programme in order to secure the necessary resources.

It should be noted that MSP processes can be very much adapted to the actual resources available and that the amount of funding required highly depends on the availability of data and information, which may have already been generated under previous projects and initiatives. MSP itself is more of a political and stakeholder involvement process than a solely scientific process – therefore, initial rounds of MSP are much less dependent on (expensive) joint data portals than is often assumed.

One successful method for convincing governments to offer sustained funding for MSP processes is to identify the link to potential long-term income generation as a result of the MSP implementation, as well as fulfilment of national commitments under international environmental agreements. As such, MSP is understood as an investment (see example 3.5.2), which either ensures additional, future income sources for the government (e.g. by accelerating 'blue growth' activities) and/or leads to cost reductions in other action fields (e.g. by avoiding costs related to legal disputes or costly climate adaptation costs).

Transboundary cooperation in MSP may also lead to substantial cost efficiencies by merging efforts for assembling data and information (e.g. database creation). Subsequently this also implies that data used in such initiatives would need to be harmonized before being analysed and visually represented on a map (see 5.7 for data issues). Given that some of the large marine industry business organisations (e.g. energy, shipping, fishing) operate in multiple countries, there is an interest on their part to have access to a single database that adheres to a single data standard (see example 5.7.3.2). Therefore, involving the marine business community in efforts to compile data provides an opportunity to secure financial resources from the private sector.

Information on other financing and economic policy instruments including area-based user rights, permits and quotas among others relevant to MSP and LME can be found in ❯❯ Chapter 6 of the Environmental Economic Toolkit.

3.5.1 EXAMPLE: Debt-for-nature swap (Seychelles)

This innovative climate adaptation debt restructuring includes a strong marine conservation component used by the Government of Seychelles and its Paris Club creditors. The debt restructuring used a combination of investment capital and grants to protect and reduce the vulnerability of the marine and coastal ecosystems of the Seychelles. It is set to promote implementation of a Marine Spatial Plan for Seychelles and also ensure large area will be managed for conservation as MPA within five years.

This is an innovative financial tool to restructure debt and allow governments to free capital streams and direct them toward climate change adaptation and marine conservation activities. This debt restructuring converted a portion of Seychelles' debt to other countries into more manageable debt held by a local entity; accomplished by refinancing the debt with a mix of investment and grants. The Nature Conservancy raised a certain amount in impact capital loans and grants to buy-back Seychelles debt. The cash flow from the restructured debt is payable to and managed by an independent, nationally based, public-private trust fund called the Seychelles Conservation and Climate Adaptation Trust (SeyCCAT). Debt service payments fund three distinct streams: one for work on the ground that will help reduce risk through improved management of coasts, coral reefs, and mangroves, another to repay investors and a third to capitalize SeyCCAT's endowment, which can then support conservation work into the future.

While this is a new approach for protecting marine areas, it is not unique in nature conservation (UNDP 2017); similar debt-for-nature swaps that have preserved large areas of tropical forests in Latin America. This combination of public and private funds—each leveraging the other—creates a new model and provides proof of concept for public/private co-investment debt restructuring in other areas of the world.

Seychelles Debt Restructuring for Marine Conservation and Climate Adaptation

3.5.2 EXAMPLE: MSP as an investment (PEMSEA)

Partnerships in Environmental Management for the Seas of East Asia (PEMSEA) is an intergovernmental organisation that aims to foster healthy maritime communities and economies throughout the region. One of the ways in which they deliver this aim is by promoting *impact investments*: market-based mechanisms that complement philanthropy and governmental finance injections. Impact investing offers creative financing for MSP-related projects at several levels, by combining the joint efforts of entrepreneurs, with a focus on innovation and capital for the public good. An initial overview of the "*investment landscape*" is made for potentially relevant partners and governments to better understand the expectations of investors, as well as enabling conditions for investments. In particular, projects involved in increasing conservation efforts and strengthening sustainable practices in fisheries and aquaculture are good candidates to receive impact investments. Public-private partnerships may also combine the expertise of private companies with the facilities and capacity of the public sector. In such partnerships, private actors take on financial and operational risks in delivering a public service, in exchange for a guaranteed derived revenue stream.

One form of PEMSEA impact investment support was used for launching MSP in Xiamen, China. Although it has subsequently been supported by government funding, contributions also came from fees paid by operators that had been authorised to make use of the maritime space, if they paid a fee. They also developed a business case that demonstrated the benefits of MSP, in order to justify the need for contributions from investors.

This type of partnership may provide financial support for MSP, yet it also faces some challenges. These include a lack of sustainable cost-recovery systems for the private actors, procurement processes that lack transparency, as well as a lack of accommodating legal frameworks. Transboundary business models may be developed that outline the financing needs and address these challenges.

Marine Functional Zoning in Xiamen

4. Stakeholder Engagement in Transboundary MSP

4.1 Key principles

As is the case for any national MSP process; good stakeholder engagement may be the key to providing the full set of benefits of a transboundary MSP process. These benefits may extend beyond the actual spatial planning decision. Furthermore, especially in light of potentially limited statutory mechanisms to enforce results of a transboundary MSP process, a stakeholder process is also key for actual implementation of the plan.

Identification and engagement of relevant stakeholders as early as possible is necessary for ensuring that the plan has broad relevance and buy in. Stakeholders are also valuable sources of information for plan development and decision-making process. Bringing stakeholders into the process early on and raising awareness of the intent and scope of transboundary MSP is important, especially when it is assumed that not all stakeholders are familiar with the concept.

Overall it should be clearly defined to what extent stakeholders will ultimately have a 'say' in the process - whether they will be merely 'informed' (on the lower end of the scale of stakeholder engagement) or whether they will even have power within the decision-making process[5]. In view of transboundary processes it is highly likely that such engagement can only reach up to the 'involvement' level.

Whereas the benefits of stakeholder engagement are the same as in any national MSP process, the type of stakeholders to be engaged, as well as the engagement method, may differ substantially depending on the scale of the MSP process. Checklists and tips for how and when to engage stakeholders across multiple levels can help with designing and ultimately carrying out the process (see example 4.1.1).

Several synergies exist between this chapter and the **» Stakeholder Participation Toolkit**. Links with specific sections have been identified below.

5 Additional GEFLME:LEARN toolkits provide more in-depth discussions of the process of stakeholder engagement – please see the LME Governance Toolkit and Stakeholder Participation toolkit, in particular section 2.1.3 Stakeholder engagement in the context of Good LME Governance.

4.1.1 EXAMPLE: Handbook on multi-level consultations in MSP (PartiSEApate)

The Handbook was developed within the context of "PartiSEApate – Multi-level Governance in Maritime Spatial Planning throughout the Baltic Sea Region". It provides an insightful checklist of tasks that MSP organizers should perform at different stages I process together with stakeholders at multiple levels. It emphasises the importance of MSP focal points in each country to facilitate cross-border consultations and describes the respective roles and tasks of the multiple players within a transboundary MSP process. It is meant to help maritime spatial planners decide 'why and how' to involve stakeholders from a given level at an appropriate time in the planning cycle. The handbook has a universal character: although it was developed based on the experience of the Baltic Sea Region countries, it can be applied in other EU sea basins and other parts of the world.

Handbook on multi-level consultations in MSP (PartiSEApate project)

4.2 Stakeholder Identification

The information gathered during the analytical stage (Chapter 5) can be used as the basis of a thorough stakeholder identification and analysis. This should concentrate on the transboundary dimension of maritime activities, who may or may not be positively or negatively affected by any change resulting from the MSP process, as well as the respective power of each stakeholder institution.

Identifying stakeholders with an interest or stake in a transnational MSP process normally depends on main reasons for their engagement, stakeholder participation traditions in a country as well as on other national policy/ project objectives. Further information on ways to define and categorize stakeholders based on their reasons for engagement can be found in the **» Stakeholder Participation Toolkit Chapter 3**. Several indicators in **» section 2.1 of the LME-LMSA Scorecard Indicator Framework** may also be helpful for stakeholder identification and development of an engagement strategy.

An initial step is to develop a comprehensive list of stakeholders from governments, sectors, and interest groups. To identify 'key' stakeholders, an analysis of stakeholder relevance to the process should be done based on agreed criteria (see example 4.2.1). Additional tools for mapping stakeholders can be found in the **» Stakeholder Engagement Toolkit Chapter 4.2.1 Mapping, Assessing and Engaging Stakeholders**.

4.2.1 EXAMPLE: Stakeholder selection (ADRIPLAN)

The ADRIPLAN project used stakeholder identification and mapping approach to identify different categories of stakeholders, from various national and international governance tiers with relevance in the Adriatic and Ionian Seas. A preliminary stakeholder list was compiled from all countries, departments and institutions and transformed into a common database, which can be updated whenever necessary. The selection of stakeholders reflected the

maritime sectors, users and interest groups active in the planning area, from statutory, regulatory and non-statutory perspectives, in order to achieve broad acceptance, ownership and support for MSP. The list was structured to group different categories of stakeholders according to their sectors, interests, and themes. The selection reflected all of these actors and their respective organization(s) or representative. As a next step, key stakeholders were identified, as well as the most appropriate method to engage with them (interviews, information requests, workshop participant, etc.). The selection of key stakeholders considered those that are entitled to take part in the planning process and discussions using weighted criteria. The following criteria were used, which may be useful in other transboundary MSP projects: decision-making power of the stakeholder; representation across sector and government levels; knowledge of the issues being discussed, as well as their experience and willingness to cooperate.

ADRIPLAN Conclusions and Recommendations

4.3 Stakeholder Engagement Strategy

The stakeholder engagement strategy in general concerns the decisions about whom to involve in the transboundary MSP process, in what ways, when, and for what reasons. While considering the wide pool of stakeholders in the selection process is important, engaging a large number of stakeholders is not necessarily a key to success. In fact, a careful stakeholder selection process, right timing and a well-designed engagement strategy is more important for MSP process outcomes.

The combination of appropriate methods to include in a stakeholder engagement strategy closely depends on the type and number of stakeholders identified as relevant to the process (see example 4.3.1). The ladder of engagement presented in the **›› Governance Toolkit Chapter 2.3: Stakeholder Engagement** and the **›› Stakeholder Participation Toolkit Chapter 2.1.3 provides a general framework for designing a strategy**. The stakeholder engagement strategy in a transboundary MSP process should consider some special considerations, described in the following sections:

First, stakeholder engagement in a transboundary context may very likely refer to institutional stakeholders rather than individual sector representatives (maritime users), who are likely to be targeted at the given local or national scale. The majority of stakeholder engagement – even on issues of relevance for the transboundary MSP scale - may be more effectively handled by each national partner involved, in light of varying stakeholder engagement cultures and power relations.

Further offshore maritime activities generally hold less stakeholder interest than nearshore activities. Transnational MSP processes – unless focusing on nearshore cross-border hot spot areas – are likely to deal with broader scale issues, which may be situated quite offshore. Thus, more attention has to be paid towards ways of attracting the right stakeholders to engage in the process.

Rather than embarking immediately on cross-sector / cross-level engagement, sometimes it is more effective to first learn about the perspective of a single sector by engaging interested and relevant stakeholders from one sector only across the LME / marine area in question.

Stakeholder engagement is more likely to be truly effective when opportunities are identified to go to a stakeholder directly, rather than expecting them to come to an MSP related meeting. It is relevant to identify already existing relevant transnational cooperation mechanisms or even governance structures and engage and work with those rather than trying to establish new ones.

It is important to engage stakeholders in a positive way and show the opportunities available to them via an MSP process. With MSP still being a relatively new concept, there can be signifiIant insecurity among stakeholders on what to expect from an MSP process. Sectors such as fisheries or shipping, where 'freedom of the seas' is a traditionally inherent value, may for instance be resistant to MSP – even though these sectors' activities span across borders and are expected to also benefit substantially from planning for emerging activities as part of MSP.

Stakeholder engagement should also be of direct value for the stakeholders themselves by providing incentives as reciprocation for their own investments. Transnational stakeholder meetings require more careful planning as they are more resource intensive. Not only may travel costs be higher, but more time is also dedicated by stakeholders to attend a meeting, potentially in another country. Therefore, when possible, engagement process should also consider what can be offered to stakeholders as direct engagement incentives (e.g. information sharing, networking opportunities, business pitches).

All issues related to language and communication barriers, which apply to the actual planning team (see 3.4.4), are even more prominent in interaction with stakeholders . This is especially due to the fact that stakeholders devote limited time to the process and information they receive needs to be understandable and to the point.

Finally, it is best to avoid stakeholder fatigue. Although it is beneficial to engage with stakeholders, they may be less interested in being continuously engaged, given their other obligations and concerns. Thus, engagement should be as effective as possible, implying:

- only a very few physical meetings;
- use of shorter / virtual methods: telephone interviews, online tools, webinars;
- interventions and engagement only with a specific group/body of interested experts;
- very good background materials, which are easy to read and visually appealing;
- offering good 'side events' outside the immediate scope of MSP (e.g. B2B forums interesting key note speakers, site visits, opportunities to present themselves, etc.).

4.3.1 EXAMPLE: Stakeholder analysis and mapping (Baltic LINes)

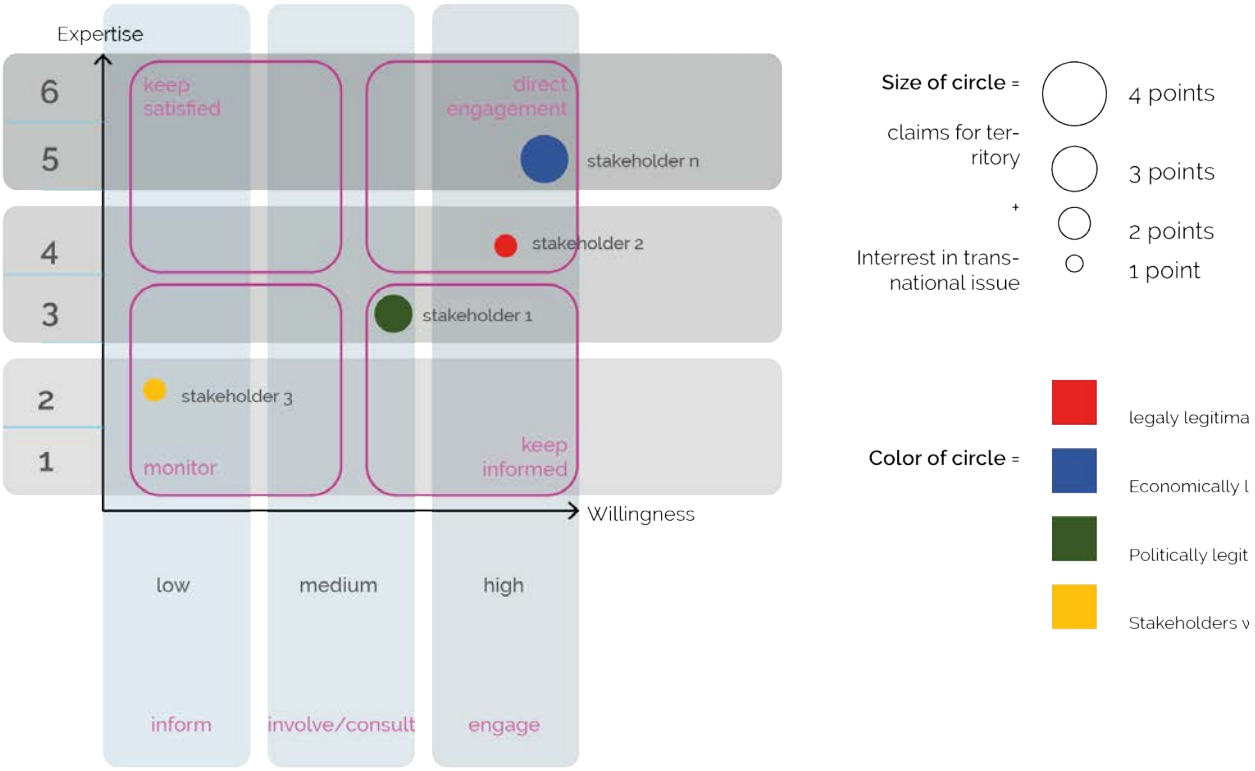


Figure 19. Stakeholder mapping matrix (BalticLINes 2017)

In the Baltic LINes project, stakeholders were analysed using the matrix based on several characteristics: power, relevance from a transnational perspective, willingness to participate, claim for territory and interest in transnational issues (Figure 19). The rating per characteristic was translated into scores, i.e. 3 for high, 2 for medium, 1 for low. The indicator "expertise" is the sum of power as well as relevance, while the indicator "value" is the sum of claim for space (1 for yes, 0 for no) and interest in transnational issues. The stakeholders are plotted in circles in the matrix according to their expertise and their willingness to participate. The latter ranking is directly taken from the stakeholder analysis. The value of each stakeholder is expressed by different sizes of circles. The basis of their legitimacy (legal, economic, political, scientific) is expressed through a colour code. The location of the plotted stakeholders in the matrixes quadrants indicates how they should be involved; for example, direct engagement was reserved for those with high expertise and willingness to cooperate, while those who cannot much contribute to the process (low expertise) but are willing to cooperate, were to be kept informed.

Stakeholder Involvement in Long-term Maritime Spatial Planning: Latvian Case

4.4 Stakeholder Engagement Methods and Tools

The methods and tools used as part of a stakeholder engagement strategy depend on geographical scale as well as the allocated time and budget. Commonly used methods in MSP are focus groups, workshops and online tools. The choice of a stakeholder engagement lead and workshop moderator who are neutral, unbiased, trusted and knowledgeable about the area, are essential for successful stakeholder engagement. Additionally, establishing a transparent process based of ground rules is a key for building stakeholders' trust, openness and buy in.

This toolkit does not describe in detail multi-stakeholder engagement processes, nor does it comprehensively include all potential methods and tools. The examples included here are particularly relevant to MSP. More stakeholder engagement methods and tools are provided in the **❯❯ GEF LME:LEARN Stakeholder Participation toolkit, specifically in Chapter 4.2.2 Engaging Stakeholders in Planning and Strategy Development**.

4.4.1 KEY RESOURCE: 'The MSP Guide: How to design and facilitate multi-stakeholder partnerships'

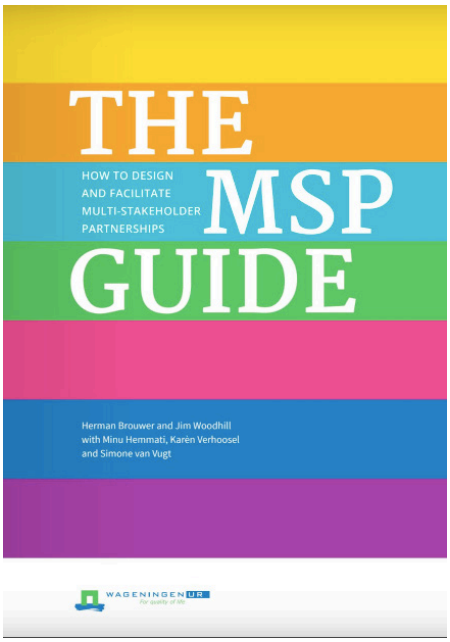


Figure 20: The MSP Guide (Brouwer and Woodhill 2016)

The MSP Guide: How to Design and Facilitate Multi-Stakeholder Partnerships has been launched by the Centre of Development Innovation of Wageningen University & Research with a second edition released in May 2016. The guide links the underlying rationale for multi-stakeholder partnerships, with a clear four phase process model, a set of seven core principles, key ideas for facilitation and 60 participatory tools for analysis, planning and decision making. It draws on the direct experience of staff from CDI in supporting MSP processes in many countries around the world.

The guide has been written for those directly involved in-MSPs - as a stakeholder, leader, facilitator or funder - to provide both the conceptual foundations and practical tools that underpin successful partnerships.

MSP Guide: How to design and facilitate multi-stakeholder partnerships

4.4.2 EXAMPLE: World Café workshop interaction tool

Engaging stakeholders in a world café set-up can increase their active participation. This method is suitable where there is a need to engage people in dynamic conversation and foster conditions for the emergence of collective intelligence. Initially, several tables are set up in one room, where participants may have discussions in small groups

around a particular question or issue. Then, after a specific amount of time, participants are asked to switch tables and to engage in a new discussion, which begins with a summary by the table "host" or moderator of the discussions that had previously taken place at that table. In this way, specific effort is invested in cross-fertilising ideas between participants and new perspectives are encouraged and explored. In general, it is advisable to have fewer than 10 participants per table, several predefined discussion questions, a neutral moderator at each table to stimulate, but not influence the discussion, and a note taker to record the possible input. At the end of the meeting, the results are often summarised in a plenary discussion, often resulting in defined follow-up action items.

The Baltic SCOPE project (xxvi) used this stakeholder engagement method during their second thematic meeting with stakeholders when developing the Central Baltic case. Invited sector experts were paired up, and asked to switch tables together after a certain time. This ensured that each group was able to meet with all participants, thereby increasing the opportunity for discussion and the generation of new ideas. During each meeting, the groups were asked to propose the key aspects of their sector relevant to MSP, on the basis of which the next group identified the main synergies and potential conflicts with other sectors.

→ MSP Guide: How to design and facilitate multi-stakeholder partnerships

→ Vision and Strategies for the Baltic (VASAB)

4.4.3 EXAMPLE: Visual game (MSP Challenge 2050)

Figure 21: MSP Challenge 2050 Board Game

The MSP Challenge 2050 is a visual game on MSP to encourage stakeholders to engage in a deeper understanding of other parties' objectives. The MSP Challenge 2050 comes in two formats: as a board game and as a computer supported simulation-game. It gives insight into the diverse challenges of sustainably planning human activities in the marine and coastal ecosystem. This is an innovative format to quickly introduce the essence of MSP to outsiders, in particular politicians, decisions makers and stakeholders from various sectors using the sea space. It aims to cultivate a spirit of collaboration and shows what can and cannot be achieved through MSP. For stakeholders who are only being introduced to the MSP concept, the board game is more suitable, while the computer game is

best used with stakeholders who have previous MSP experience. A board game covers several square meters and uses physical tokens representing human activities, including maritime sectors as well as ecological functions, that ‚players' (the planners) are moving across the board, in an exercise that recreates the space that maritime sectors take up in a given marine area. Several special editions have been launched, including focuses on short sea shipping, sustainable blue development, sustainable coasts and oceans, as well as a special edition for Marine Scotland. The board game presents a fictional marine space to avoid any political tensions, and planners are assigned to one of the three fictional countries represented on the board, with the instruction to achieve 'Good environmental status' and simultaneously, 'Blue Growth', according to different specific objectives and targets. The game is best played with around 20 players and should not take longer than a few hours.

MSP Challenge 2050

4.4.4 EXAMPLE: Sketching and visualising exercises (MASPNOSE)

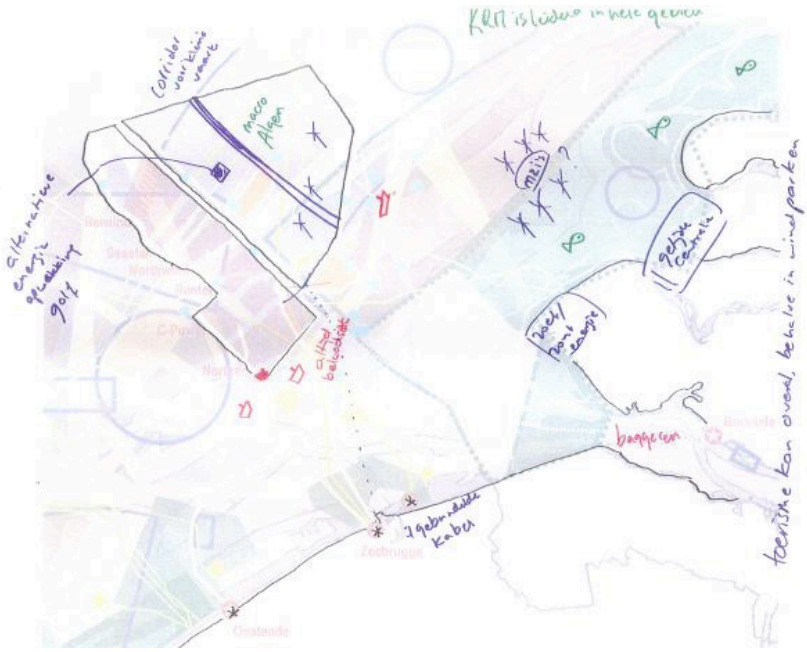


Figure 22. Map drawn by Dutch MSP authority representatives. Key: Arrow = Indication of a potential conflict in the most southern part of the Belgian offshore wind concession zone with shipping. (MASPNOSE Project)

Communication tools that can be particularly useful in MSP processes include joint mapping exercises. This can be done on a very simple level, using markers and flipcharts, but can also be done with the use of computers or digital tools. For partner meetings in MSP projects, simpler hands-on mapping exercises on a big sheet of paper are often sufficient to visualise the planning process and planning options /objectives. For example, the MASPNOSE project extensively made use of mapping exercises (Figure 22). The project contributed to the consultation between Dutch and Belgian governmental stakeholders to resolve potential interferences between windmills in the concession zone and shipping lanes. For a stakeholder workshop, an overall map combining activities and uses on the Belgian and Dutch side of the Thornton bank area was produced by Ghent University to serve as a layer to draw on. During the workshop, Belgian and Dutch participants were asked to draw their priorities on this map. The group was split into Dutch and Belgian government stakeholders, each providing their own input. Afterwards the results were discussed in a plenary session. The drawings reflect very closely on-going policy developments in both countries

but do not have an official status and are presented for information only. In a separate case study from the same project, interactive map tables were used as an effective way to present the underlying information and to collect input from workshop participants.

MASPNOSE Project website

4.4.5 EXAMPLE: Online discussion platforms, social media and webinars

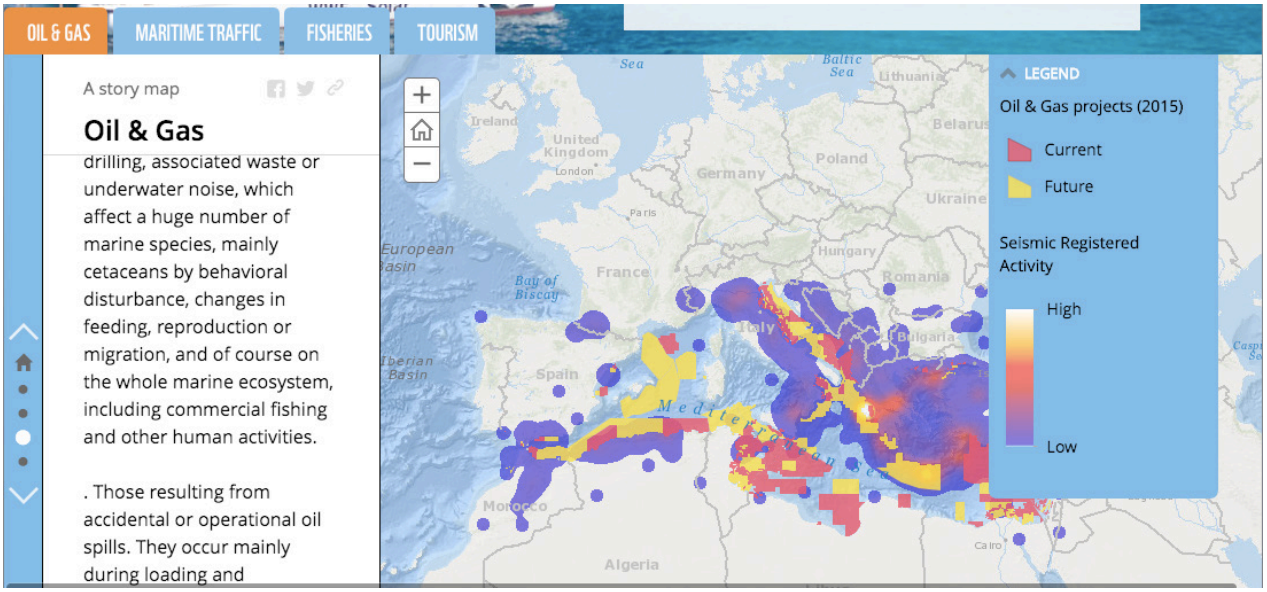


Figure 23. Example of MEDTRENDS project interactive online platform

Complementing workshops and meetings, **online discussion platforms** (including webinars, digital portals and websites) can be used as means of disseminating information to and communicating with stakeholders. Such tools are especially useful in a wide geographic area where engaging stakeholders in person is challenging. The websites for the ADRIPLAN, Baltic SCOPE and SIMCelt projects all include specific sections dedicated to stakeholders. On these pages, information about the organised workshops were shared, including photos and presentations given, save-the-date information, registration forms, agendas, reports and social media updates. Stakeholders were also able to make direct contact with the project partners through the websites.

Twitter or other social networks should not be underestimated as a means to communicate and gather opinions and information. Data portals and platforms are also useful tools that allow for transboundary stakeholders to easily access, share, comment and process available data, as well as comparing data sets for alignment across borders. On the data platforms, stakeholders can access clear visualizations of spatial situations that are discussed and used in the workshops and meetings (please see 5.7 & 5.8 for more discussions on data). The MEDTRENDS project, which mapped the main scenarios of marine economic development in Med-EU countries for the next 20 years, also uses an interactive online platform (please see Figure 23) to show an in-depth analysis of the current situation and future trends in four main marine economic sectors, their drivers and environmental impacts.

Webinars have also been extensively used by the US Regional Planning Bodies for engaging and informing the broader public about the MSP progress (Clean Energy Group, 2017). Throughout the webinar, participants are also able to submit comments and ask questions via the webinar Q&A feature. As many questions as possible are then

answered in the 2-hour time period usually allocated for a webinar. The webinar usually has one moderator and around five panellists. Slides from the webinar are also made available to the public and everything is saved under the same channel in Vimeo.

4.5 Communication Tools for transboundary MSP

Easy-to-understand communication of drivers for and possible benefits of embarking on a transboundary MSP is an essential first step of every MSP process, including designing an MSP project in the first place. Effective communication is actually already crucial for securing the necessary funding for a transboundary MSP project and motivating the relevant institutions to become involved – either as direct project partners or stakeholders (please see 3.1 Identifying the need for transboundary MSP). For more information on communicating with policy makers, see ❯❯ Chapter 5.3 of the Governance Toolkit.

In general, stakeholders devote limited time to the process and information they receive need to be understandable and to the point. Moreover, innovative presentation tools are often needed to attract and keep attention. Producing simple visuals, using images, videos or even game elements to present the complex ideas or introduce the discussion topics can be very useful. Also, a humoristic element may draw attention to the actual underlying reasons, drivers and potential benefits of a MSP process.

In addition to the examples described here, the MSP Challenge 2050 (4.4.3) and visualisations of cross-border impacts and activities from TPEA (3.1.2) are also helpful for communicating about MSP in general.

4.5.1 EXAMPLE: Short films used for explaining the MSP and communicating the need for its application

Figure 24. MSP in a Nutshell video

A number of MSP initiatives have produced a short film as a tool to familiarize those to be engaged in the process, as well as the general public, about MSP. This tool is particularly useful in areas where MSP is a new concept and there is a need to define general MSP elements and principles at the outset. The video can also be used to ensure that there is a common understanding on what the MSP is about and who is to be involved.

One such film, named "MSP in a Nutshell" (2017), was produced by the global Blue Solutions Initiative and the MARISMA project in the Benguela Current region. This dynamic and easy to understand animated video was developed for a wide audience: from local communities to planners and policy-makers. To ensure broad outreach, this video is also available in French, Spanish, Portuguese and Burmese, and can be shared and viewed publicly without needing to request permission.

Depending on specific purpose and the target audience, a film can include more complex topics and have additional features. For example, the film developed as part of the BONUS BALTSPACE project "MSP Explained: MSP Challenges in Maritime Spatial Planning in the Baltic Sea Region" (2018), has an interactive feature allowing one to explore specific aspects more in depth. Nevertheless, depending on the desired complexity of the final product, its development can require several months and extensive involvement of a communication and design professional.

4.5.2 EXAMPLE: Become a Maritime Spatialist within 10 minutes (BaltSeaPlan)

Figure 25. Brochure Cover from „Become a Maritime Spatialist within 10 minutes" (WWF Germany 2010)

An easy-to-read, non-scientific brochure was developed by WWF Germany using a "comic" format to depict objectives and possible benefits on an MSP process, as part of the BaltSeaPlan project (Figure 25).. While MSP can be a complex topic, the images and storyline used in the brochure help present the concept in an engaging format so that it is easy to understand for non-specialists. The brochure's content describes how planning solutions have been found through a process of involving authorities, stakeholders and interest groups to establish a formal set of regulations for all uses. It includes maps to illustrate the process of developing MSP for various uses (Figure 26).

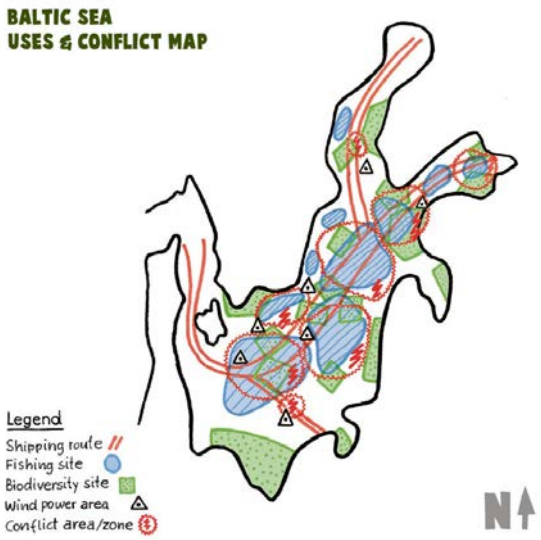


Figure 26. Sample map from „Become a Maritime Spatialist with 10 minutes" brochure (WWF Germany 2010)

The brochure was originally made available in five languages (Latvian, Estonian, Lithuanian, German and English) and has since been adapted for other contexts outside the Baltic Sea Region. It can be used to explain MSP to stakeholders who have previously not been involved in an MSP process.

Become a Maritime Spatialist in 10 Minutes

5. Analysing the Conditions

5.1 Introduction

MSP is a complex process involving a wide range of stakeholders across multiple levels of governance, over ecologically highly connected, but varying marine basins. A major challenge to effective transboundary MSP collaboration is the diversity of maritime activities and jurisdictional boundaries, as well as the interconnectedness of marine users and ecosystems. Diverse and cross-cutting governance processes and competing national interests create the potential for conflict and misunderstandings. Overlapping international and area specific regulatory systems further exacerbate this already complicated situation.

Spatial planning is deeply embedded in a country's history, social, cultural and political traditions, as well as the state of economic and urban development. Indeed, different legal and administrative structures create obstacles to cooperation, such as varying planning systems and regulations. For example, in some countries in a given sea basin, the MSP authority may be from the national transport ministry, while in others it may be from the environment ministry. This can at times lead to a mismatch in priorities in neighbouring MSP plans. Other factors include socio-cultural factors as well as ecological and physical characteristics found throughout an LME.

These contextual and institutional differences need to be taken into account as part of analysing current conditions in an LME when initiating an effective MSP process. A well-developed understanding of participating countries' individual ecological context and planning systems is essential for successful and durable cross-border collaboration.

At the same time, MSP projects should avoid the risk of getting stuck in too much data and information gathering without leaving sufficient space for addressing actual issues and problems. Thus, careful attention has to be paid towards keeping the focus on information which is really relevant and necessary for the transboundary MSP questions and issues to be tackled.

The following section describes the various elements and related possible tools to be used when analysing current conditions. This phase is important for effective transboundary MSP collaboration because it builds collective understanding of the diversity of maritime activities, planning and governance systems, and ecosystems, as well as how these elements are related to one another. Building a common knowledge base on the current conditions lays the foundation for understanding potential future conditions (chapter 6) as well as planning solutions (chapter 7).

5.2 Defining Marine Spatial Planning boundaries

This toolkit is mainly targeted towards supporting MSP at various transboundary scales relevant to an LME. These could be the entire LME itself, or sub-LME areas shared by two or more national jurisdictions, such as ecologically or biologically significant marine areas (EBSAs).

As described in Chapter 2 of this toolkit, there are special considerations to take into account regarding ecosystem boundaries and legal boundaries when defining a planning area for MSP, especially given the interconnected nature of maritime activities and ecosystems, including species connectivity (please see 2.2). In relation to analysing conditions, it is worthwhile to start the process of defining a planning area by doing an overarching strategic stocktake of current and future conditions for the overall LME area, to then potentially identify more detailed "hot spot areas," as described further below.

Jurisdictional issues are likely to be of central importance when defining the planning area for the purpose of transboundary MSP. The United Nations Convention on the Law of the Sea (UNCLOS) defines a range of maritime areas in which coastal states can exercise jurisdiction, and thus should be considered in an LME transboundary MSP process (Figure 27). Further information on jurisdictional boundaries under international legal conventions can be found in the **❯❯ Governance Toolkit Chapter 3.1 International legal framework and institutions.**

Figure 27: Maritime areas defined under UNCLOS (The Economist 2012)

When defining a planning area, attention might also be given, for example, to:

- The geographical extent of internal, archipelagic and territorial waters
- The extent of exclusive economic zones, if established pursuant to UNCLOS
- The outer limits of jurisdictional powers, likely to depend upon the enclosed or open nature of the sea basin
- Sub-national borders and responsibilities in the coastal zone and offshore

- National / sub-national departmental responsibilities and areas of competence
- National / sub-national MSP initiatives and planning areas
- The extent of integrated coastal management and river basin management initiatives
- Other international marine regions and administrative areas

Planning areas can begin to be defined by assembling the relevant jurisdictional data described above with the help of marine data infrastructures to include data in a geographic information system (GIS) (see 5.7). These can be combined with the results of spatial ecological models (see 5.8.1.4) which help support delineation of ecological boundaries, to identify planning areas (see example 5.2.2). However, it is not always necessary to start with compiling data in a GIS to define planning areas – it is also possible to begin by simply drawing on a map (please see 5.7.1).

The flexible/soft approach to defining the boundary of transboundary areas involves setting or defining broad areas which are not necessarily based on jurisdictional boundaries but rather to consider other factors important in better analysing and understanding the transboundary area especially for cross border purposes. Such an approach enhances the application of the ecosystem-based approach where connectivity and ecosystems boundaries are considered (please see example 5.2.1).

In many cases, so-called 'grey areas' may appear, which depict areas where the exact demarcation of legal boundaries between two or more countries are unclear or disputed. Where boundaries have not been agreed, it may be possible, for the purpose of the exercise, to agree on theoretical boundaries, or it may be preferable to leave any such boundary undefined (see example 5.2.3).

More detailed MSP planning exercises may lead to a more 'nested' approach (i.e. below the national or sea-basin planning level – see example 5.2.4) where certain transboundary (cross-border) 'hotspot' areas are identified (see example 5.2.5). This could include cases where two or more activities and interests intersect across two countries and/or overarching 'hot topics', which cannot be solved by one country on its own, but instead require an overarching transnational approach. Even though they are context specific, such transnational issues could refer to offshore energy infrastructure, shipping routes, and conservation areas which occur close to borders, or they could also refer to combinations of multiple uses which require some coordination between the countries or sub-national jurisdictions in question.

5.2.1 EXAMPLE: Defining the flexible boundary for the transboundary area (TPEA project)

The two pilot case studies in the TPEA project used a flexible/soft approach where factors considered included data availability, stakeholder engagement activities and jurisdictional issues. For example, the transboundary area between Portugal and Spain was initially defined broadly, by drawing a semi-circle of 60 nm radius from the point where the land border meets the sea, mapping cross-border activities and transboundary impacts allowed the identification of areas of common interest between the two countries.

The definition of the transboundary area between Ireland and Northern Ireland (Irish Sea) took account of a number of jurisdictional issues such as:

- fewer and less clearly established administrative boundaries;
- a more graded and shifted environment than on land with fewer features for planning; and
- the mobility and multi-scalar consequences of maritime activities.

The area was defined as extension of the international land border on the east coast into the Irish Sea (see Figure 28).

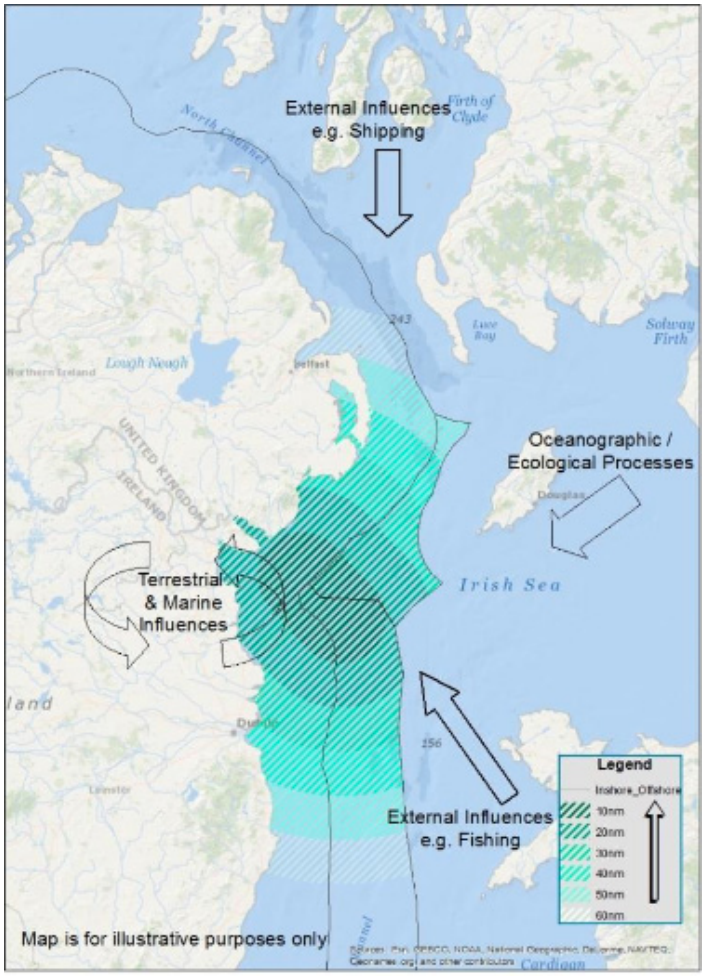


Figure 28. Transboundary area between Ireland and Northern Ireland

It is important to note that this approach is only applied for analysis and understanding purposes in a pilot project, and does not have any reference to the jurisdictional competences of the countries and measure developed from such analysis may not apply to the transboundary area.

When defining the precise limits of the pilot area, a number of aspects have been considered, combining hard borders when necessary for jurisdictional and governance reasons and softer gradients embodying transboundary effects and other geographical considerations:

- Between Ireland and UK there is no boundary linking the land boundary to the territorial limit. Therefore, in a pragmatic way, an imaginary centre line running directly from the axis point where the territorial limit meets the contiguous zone to the end of the land border was used.

- The outer limits of the pilot area had regard to the jurisdictional reach of the authorities involved in the project. This was determined by the boundaries of Republic of Ireland and Northern Ireland waters with other jurisdictions (especially Wales and the Isle of Man).

- "Transboundary" cannot be represented by hard borders because these effects are graded, decreasing in intensity with distance from the border, and also vary in their scale according to different environmental conditions and maritime activities. Therefore, degrees of transboundary effects were represented in the pilot area map with graded / buffer zones centred on the border, and arrows indicating wider influences. At the same time, it is understood that pilot planning documents need to refer to a clearly defined area in order to avoid legal uncertainty. The focus was therefore on identifying shared resources, cross-border activities and cross-border impacts.

- The pilot area focused primarily on marine space, but overlap with land and therefore land-sea interaction was reckoned to be necessary in order to capture coastal influences. To avoid interfering unduly with ICZM initiatives, the project aimed to ensure that land/sea interactions were properly considered.

TPEA Pilot Areas Report

5.2.2 EXAMPLE: Enlarging MSP boundaries to achieve comprehensive ecosystem-based management (CCALMR & CTI-CFF)

Two case studies (Commission for the Conservation of the Antarctic Marine Living Resources (CCALMR) and the Coral Triangle Initiative (CTI-CFF)) suggest that the mismatch between jurisdictional and ecosystem boundaries can be reduced when the planning area is enlarged. Both processes carefully aligned their boundaries with the respective marine ecosystems. An important note is that the MSP processes included a mandate to implement measures for cross-sectoral ecosystem-based management throughout the planning area. On a regional transboundary scale, like in the case of the CTI-CFF , there can be some friction cases due to overlap with mandates of other management institutions. Therefore, it is essential to align the MSP process with the mandates of other institutions that manage marine resources within the planning area.

Commission for the Conservation of Antarctic Marine Living Resources (CCALMR) from Study on Cross-border cooperation on Maritime Spatial Planning

Coral Triangle Initiative on Coral Reefs, Fisheries and Food Security (CTI- CFF) from Study on Cross-border cooperation on Maritime Spatial Planning

5.2.3 EXAMPLE: Finding ways of bypassing obstacles related to Grey Zones (Baltic SCOPE)

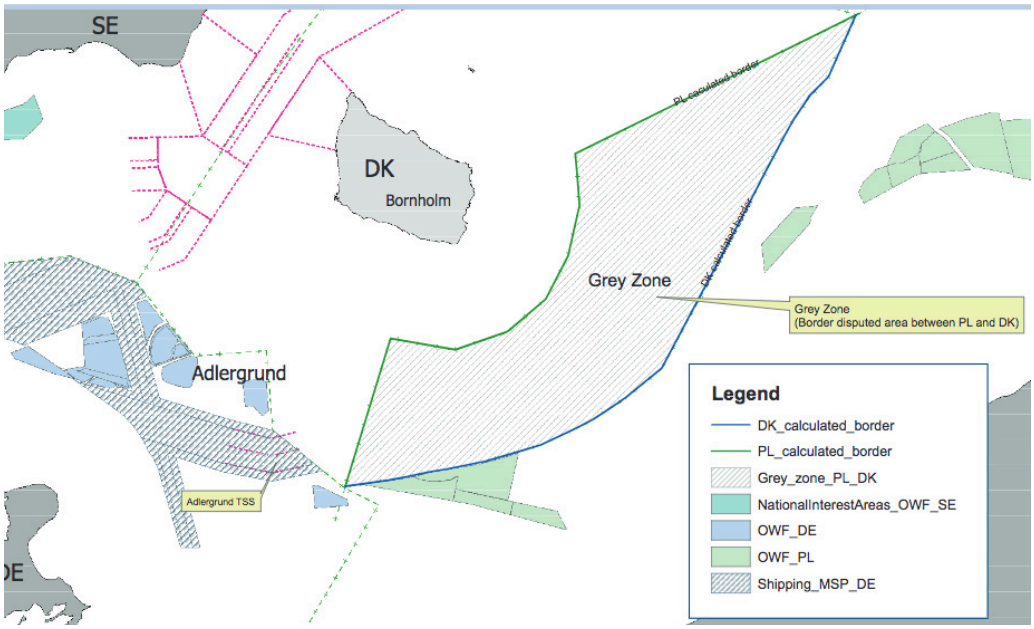


Figure 29: "Grey Zone" disputed area between Poland and Denmark. The map indicates the varying border calculations by each country (Baltic SCOPE 2017)

The Baltic SCOPE project allowed planners to think beyond what was originally thought possible when dealing with an area of overlapping interest. The "Grey Zone" is a disputed area in the EEZ of Denmark and Poland, which is an issue that goes beyond the planning mandates of the two countries, but has clear implications for their work (Figure 29). While a resolution for this disputed area cannot be solved between planning authorities, the planners of the two countries were successful in engaging their Ministries of Foreign Affairs into a bilateral dialogue. This interaction eventually led to the identification of a temporary solution, which made it possible for planners to proceed with their MSP processes, while the border conflict is solved at a higher political level. Although sceptical at the beginning, planners were highly satisfied with the pragmatic result of this dialogue. This is an approach to collaboration, which is also applicable to other grey zones, such as the harbour approach of the Świnoujście-Szczecin area between Germany and Poland, and other similar cases within and outside the Baltic Sea.

5.2.4 EXAMPLE: Planning traditions in the 'nested approach' (PartiSEApate)

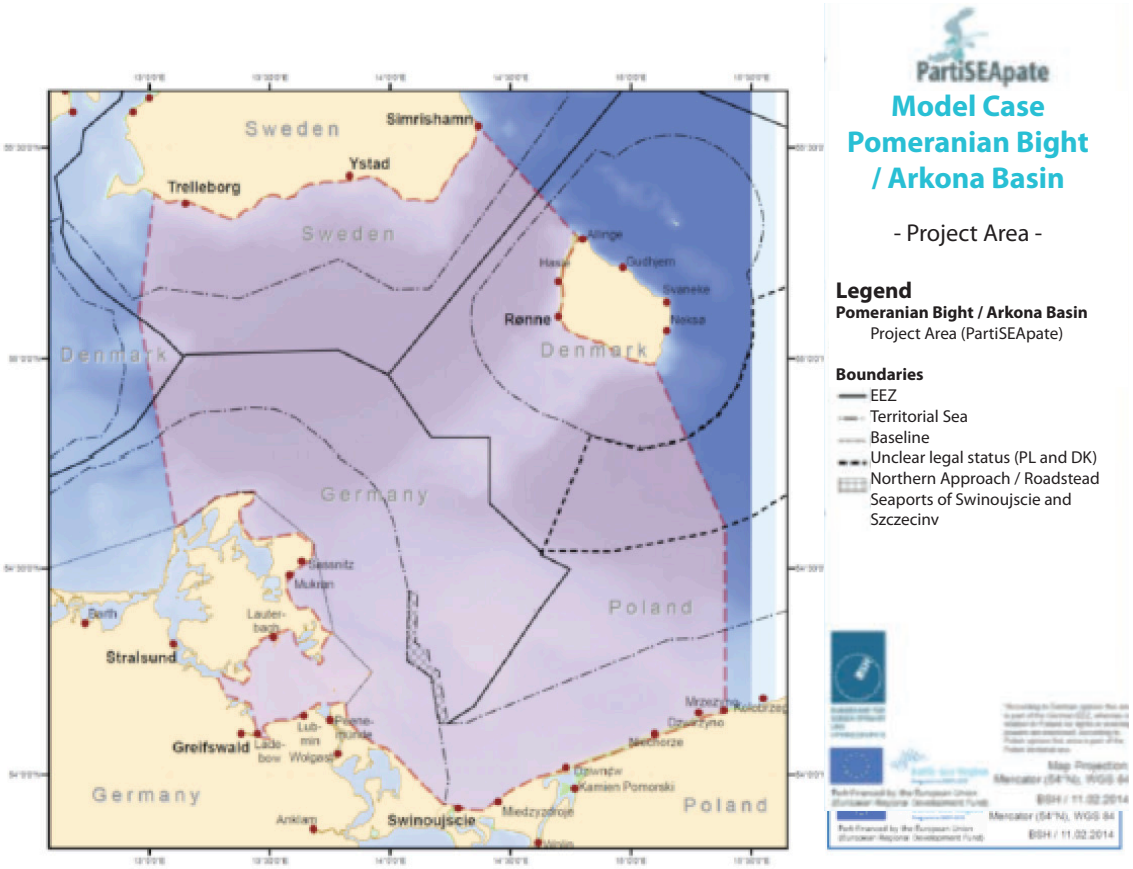


Figure 30: PartiSEApate model case for the Pomeranian Bight / Arkona Basin (Käppeler, et al. 2012)

The PartiSEApate project aimed to develop an appropriate governance model for transnational consultation and coordination on MSP within the Baltic Sea Region. It produced Recommendations, as well as a "Report on transnational cooperation and dialogue in the Pomeranian Bight / Arkona Basin" (a border area between Germany, Sweden and Poland). An analysis was carried out of actual and recommended consultation processes in two on-going transboundary infrastructure projects in the area, serving as examples of transnational cooperation and dialogue. The project concluded that countries have different traditions when it comes to data sharing and that MSP has a different role in different countries as well. In addition, the national cultures determine in different ways what is acceptable communication; in some countries, formal structures are required as there can be reluctance to rely on informal discussions. The partners from the three countries surrounding the Pomeranian Bight co-developed recommendations for a pan-Baltic MSP institutional framework and governance model including how to improve transnational consultation and cooperation, in their MSP Governance Framework Report (xxxviii), which also provided input for the HELCOM-VASAB Guidelines on transboundary consultation and cooperation and public participation.

5.2.5 EXAMPLE: Identification of joint hot spot areas (Baltic SCOPE)

Figure 31:. Challenges and enablers for the Central Baltic Case Study from Baltic SCOPE (Urtāne et al. 2017)

The Baltic SCOPE project concentrated on two transboundary case study areas: the southwest Baltic Sea (SWB) and the central Baltic Sea (CB). Although project planners shared the same overall goals and followed the same working stages, each case study area developed different approaches and tools for dealing with their transboundary MSP issues. In Central Baltic case, in the absence of clear transboundary conflicts between countries and a relatively strong sector divison of management, the CB case adopted a more thematic, stepwise, topical and process-based approach. Central features for interactive learning within the case have been topic papers, thematic meetings and a trans-boundary mapping exercise. The interaction started at the sector level and became increasingly cross-sector, including stakeholders at all steps. Despite an overall positive evaluation of the case approach, survey respondents pointed at a number of challenges (see Figure 31). There was some disagreement on the solutions and geographical focus. Whilst some respondents criticised the lack of a "common core" in terms of solutions and the loss of a possible geographical focus, which mainly could have benefited Latvia and Estonia, another respondent argued that the case did not identify specific geographic hot spots that need spatial solutions nor certain topics that need cross-border conflict resolution. On the contrary, the South West Baltic case took a geographic approach, that involved zooming in on six focus-areas and identifiying conflict issues and concrete solutions where sectoral developments potentially affect neighbouring countries. For instance, the Kriegers Flak focus-area, was seen as important and potentially conflicting for the construction of offshore windfarms and interest for gravel extraction. The Oresund strait, where Denmark and Sweden border only in territorial waters is one of the busiest shipping routes of the Baltic; while the same areas has also designated MPAs, raw material extraction and fisheries as well as the increasing interest for integration between the two main cities (Copenhagen & Malmö) in the area (Urtāne *et al.* 2017).

5.3 Understanding the different levels and boundaries of the governance systems in place

Most transboundary MSP processes will be confronted with a context of nested and overlapping governance and regulatory systems at international, regional and local levels as well as gaps in regulation and responsibilities. Existing policy and legal frameworks that may be relevant to transboundary MSP are presented in the **›› Governance Toolkit Chapter 3.1: International legal framework and institutions**. Methods for assessing governance are described in the **›› Governance Toolkit Chapter 5.2** and in the **›› Strategic Approach Toolkit Chapter 2.5: Governance module**. **›› Section 1 Governance of the LME Scorecard Indicator Framework** provides indicators which could be used in a governance assessment.

The most important governing actors for different maritime sectors (e.g. shipping, fishing, offshore energy, etc.) in question will not necessarily be placed at the same level of governance and geographic scale in each country involved. While environmental regulation is often complex and encompasses all levels of governance, energy and fisheries regulation may be regulated at higher (multi-national) levels, whereas shipping is even primarily guided by global regulations and actors, such as International Maritime Organisation (IMO). The Convention of Biological Diversity (CBD) provides an overarching framework for protecting marine ecosystems, including visions and goals for establishing MPAs, which then need to be implemented at lower levels. Thus, MPAs imply nested regulations defined at different levels of governance. For MSP to be effective, planners should be aware of all these institutional levels and their various competences across geographical scales.

Moreover, there is often also a geographical overlap between sectoral governance systems. Global conventions, sea-basin specific agreements and national regulations for different sectors impose norms and regulations over the same geographical space. These can either co-exist or conflict, depending of the level of impact that they have on each other (please see 5.5). For example, designating MPAs does not necessitate the need to impede shipping traffic. However, depending on technical and other circumstances, maritime traffic can have a detrimental impact on the marine environment, which may need to be addressed either through regulation or separation schemes. Here MSP comes in as a means for coordination – yet it requires a well-developed understanding of the overlaps of uses and relevant governing actors (e.g. that changes in shipping routes need to be resolved through the global IMO, whereas designating MPAs is often a national or sub-national responsibility).

5.3.1 EXAMPLE: Analysis of policies and legislations with reference to MSP (SIMCelt project)

Existing legislations and policies in various countries set the context for transboundary MSP development and implementation. It is important to understand the various international, national and local policies and legislations that can foster transboundary MSP. This approach was used in the SIMCelt project to inform issues and recommendations for enhancing cross border planning in the Solway Firth, which is a unique and single estuary divided by the national border between Scotland and England, and shares boundaries with Ireland and the Isle of Man, thus being subject to the requirements of two separate marine planning systems. The approach assessed legislative frameworks and marine and coastal planning policies including Local Development Plans and made recommendation and options for implementation.

In applying such an approach, it is important that the similarities and differences between the various national policies which relate to MSP and transboundary aspects of land sea interactions are identified and ways of bridging the differences are discussed. The approach for the SIMCelt project developed various requirements for transboundary MSP (see Figure 32) to understand how these have been addressed and the differences in the policy and planning system of the various UK administrations. Key issues and areas of focus to enhance planning across borders and align marine planning systems were also developed.

Requirement	England	Northern Ireland	Wales	Scotland
Maritime Spatial Planning	▫	▫	▫	▫
Regional planning	▫	?	?	▫
Assessment	Marine Information System	Northern Ireland Marine Mapviewer in development	Marine Planning Evidence Portal	Scotland's Marine Atlas, Shetland and Clyde Assessments
Statement of Public Participation	▫	▫	▫	▫
Status	East Plans 2014, South Plans expected 2017, NW, NE, SE, SW expected by 2021	Draft public consultation expected 2017	Draft consultation	SNMP 2015, Shetland RMP 2015, Clyde given Direction
Evaluation	East Plans review 2017, six-yearly progress report on English marine planning system to Defra by 2021	TBC	TBC	SNMP review by March 2018
Coastal Access	▫	▫	▫	▫
Commitments to marine and terrestrial planning considerations/ interactions	2011 Localism Act, National Policy Planning Framework 2012, 2013 England Coastal Concordat, Planning Advisory Services Soundness Checklist for Local Plans	Regional Development Strategy 2035, Strategic Planning Policy Statement 2014	Technical Advice Note 14 1998, Wales Spatial Plan 2008, Planning Policy for Wales 2016, Planning Advisory Services Soundness Checklist for Local Plans	Scottish Planning Policy 2010, National Planning Framework 3 2014, Circular 1- the Relationship Between Statutory Land Use Planning System and Marine Planning and Licensing 2015.
Climate Change	▫	▫	▫	▫
Conservation of seals	▫	▫	▫	▫

Figure 32: Example of policy analysis for Solway Firth (SIMCelt project)

SIMCelt project website

5.4 Understanding planning systems, structures and responsibilities

Next to the overarching governance system, it is most important for transboundary MSP processes that there is a good understanding of the planning systems within the countries involved. In the same way that specific issues and interests define the MSP objectives, the mandate of the planning agencies involved will highly influence the scope of the given plan; namely, the extent to which it can spatially manage the environment and human activities.

The potentially large number of organisations involved may be a challenge to understanding the procedures required for coastal and maritime activities. It is highly likely that the political and administrative structures that relate to the governance of the transboundary area will vary between the jurisdictions concerned. Sectorial responsibilities for coastal and marine affairs, such as licensing, may be divided between different governmental departments, but not in the same manner from one jurisdiction to the next. In order to connect the most appropriate arms of government across jurisdictions, it is important to understand these structures, divisions of responsibilities within each jurisdiction and the similarities and differences involved (see example 5.4.1). For example, sub- national responsibilities will be important in nations with federal structures, but not in more unified states. The municipal level may be significant in some contexts, possibly with transboundary structures at a local scale, but not necessarily elsewhere. Moreover, the resulting plans may not only cover different sectors, but may be highly different in character and legal implication (see example 5.4.2 as well as example 2.3.1).

It is also useful to understand frameworks of consultation in each territory and possibilities for stakeholder involvement (see Chapter 4). A strong stakeholder analysis and involvement strategy is key in order to find the right 'paths' for ensuring effective cross-border communication and consultation mechanisms between different bodies engaged in transboundary MSP. In some cases, it may be sufficient that a national planning authority will consult within their own national level stakeholders on cross-border issues – but in most cases, it has proven to be highly useful to closely interact with the given set of transnational sectorial institutions (if existing). One option is to organise targeted meetings per sector, where all interests for a given sector from the whole transboundary area are invited to participate.

Moreover, different approaches and timelines between individual countries' MSP processes can also be a critical element in case of LMEs. It may be the case that some countries are already engaged in an MSP process, while others are not. This could be possibly 'levelled out' by a transboundary MSP 'project'; which may at least ensure that important information from the country without a statutory MSP is not missed (see examples 5.4.3 and 5.4.4). Nevertheless, experience so far has shown that statutory MSP processes may lead to very different results than pilots and demonstrations carried out without political endorsement, and that important information may only come forward once a country also formally engages in a statutory MSP process.

5.4.1 EXAMPLE: Institutional analysis (Transboundary Planning in the European Atlantic)

INSTITUTIONAL ANALYSIS IN TPEA: Main institutions involved (Portugal) in each activity sector and their specific role (examples)

L Licensing
O opinion
E Enforcement
B O Binding opinion

	Directorate General of Marine Policy	Directorate General for Natural Resources, Safety and Maritime Services	Regional Directorates for Agriculture and Fisheries	Institute for Nature Conservation and Forestry	Portuguese Institute for Ocean and Atmosphere	Inspectorate General of the Ministry of Environment, Spatial planning and Energy and the Ministry of Agriculture and the Sea	Directorate General of Energy and Geology	Portuguese Environment Agency	Commissions for Regional Coordination and Development	Authority for Food and Economic Security	::
FISHERIES	O	L O E	L	L O				L E		E	
AQUACULTURE	O	L O E	L	L O	O			L E	E	E	
MARINE BIOTECHNOLOGY		L O E		O E		O E		L E	E		
MARINE MINERAL RESOURCES				L O			L E	L E			
ENERGY RESOURCES				L O		O E	L E	L E			
PORTS, TRANSPORTS AND LOGISTICS	O	L O E		L O		O E		L E		E	
INFRASTRUCTURES	O			L O		O E		L E			
TOURISM, SPORTS AND LEISURE	O	L O E		L O E		O E		L E	E	E	
SCIENTIFIC RESEARCH		L O E		O E	L	O E		L E	E		
NATURE CONSERVATION	O	L O E		O E		O E		L E	E		
UNDERWATER CULTURAL HERITAGE	O			O E				L E			

Figure 33: Institutional analysis in TPEA (Jay and Gee 2014)

The project Transboundary Planning in the European Atlantic (TPEA) produced a tool to understand administrative structures and responsibilities for transboundary areas along with recommendations for cross-border planning exercises. As shown for Portugal in Figure 33, relevant institutions from each country involved were analysed for their involvement with sectors and their specific role. Definitions of roles included licensing, providing an opinion (sometimes a legally binding opinion), and enforcement. The analysis revealed significant differences between countries at times. For example, in Spain there is a regional model with varying degrees of autonomy between regions and thus responsibilities are divided accordingly between the State and the regions. In contrast, Portugal primarily uses a centralised model (with a few regional exceptions), where decision making power is concentrated at the central level, and operational services are decentralised to regions or local authorities (Jay and Gee 2014).

5.4.2 EXAMPLE: Difference between legal implications and approach of high-level policies vs zoning systems (Scottish and German MSP)

The Scottish MSP process prioritised the development of a National Marine Plan led by Marine Scotland, a Scottish government agency. The National Marine Plan covers both inshore and offshore waters. Marine Planning Partnerships were delegated with marine planning functions and tasked with the implementation of the National Marine Plan at the regional level, to identify local priorities and foster local ownership. However, consenting and licensing remits at the regional level still remain with Marine Scotland. The National Marine Plan sets high-level policies for the use of marine assets and does not specify zones/areas for particular uses, unless for specific cases. This approach fosters co-existence of maritime uses, as exclusion zones are only appointed on a case-by-case basis.

Germany, on the contrary, uses a zoning system for the implementation of its maritime spatial plans. The Maritime Spatial Plans for the German EEZs of the Baltic and North Sea contain three types of zones, including "priority areas", where one use is granted priority over all other spatially significant uses; "reservation areas", where one use is given special consideration in a comparative evaluation with other spatially significant planning tasks, measures and projects; and "marine protected areas", where measures are applicable for the reduction of impacts on the marine environment.

5.4.3 EXAMPLE: MSP process drawings and descriptions - comparative approach (NorthSEE)

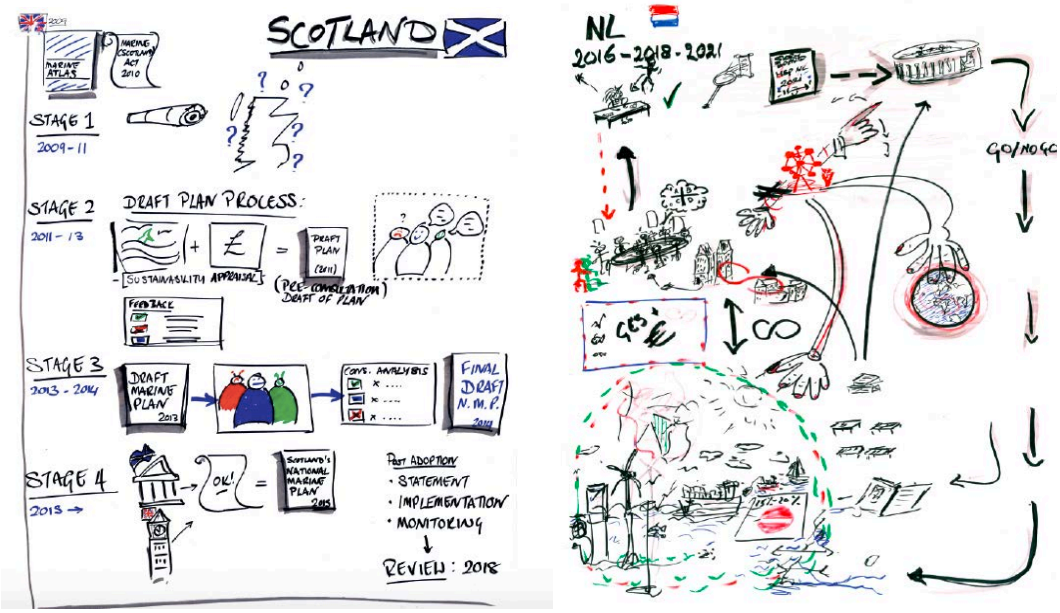


Figure 34: Comparative drawings of the MSP processes in Scotland and the Netherlands. (NorthSEE project)

The NorthSEE project promotes better exchange among MSP authorities and related experts and institutions in the North Sea region. In a project partner meeting of responsible MSP authorities, six countries (BE, NL, DE, DK, SE, NO) and one region (Scotland) each followed the same approach to describe their MSP processes.

The idea was to produce drawings describing each of their MSP processes so that stakeholders could understand on-going and planned activities, also coupled with background information. Every country described the reasons for MSP, how it started and the timeline of the MSP process (see example 5.4.4). A drawing developed by each national MSP authority visualized the processes as shown in Figure 34. Participants had to think how to describe the process in an easy, structured way. Similar processes as well as different approaches became apparent when drawing the figures.

The tool was developed during a NorthSEE partner meeting in 2016 and used in some cases for stakeholder involvement processes. Before the exercise started, participants had to pre-work on national MSP aspects and prepare an overview of relevant knowledge and approaches. An advantage was the trustful cooperation of the MSP authorities developed during previous, joint projects or during EU expert meetings on MSP. When using the tool, a workshop setting with sufficient material is needed. Limitations of using the tool can be the lack of trust between countries to show their way of procedure or too little time having passed since beginning the MSP process to draw what happened so far.

A North Sea Perspective on Shipping, Energy and Environmental Aspects in Maritime Spatial Planning (NorthSEE)

5.4.4 EXAMPLE: Timeline exercise for analysing current status of MSP across a trans-boundary area from NorthSEE project

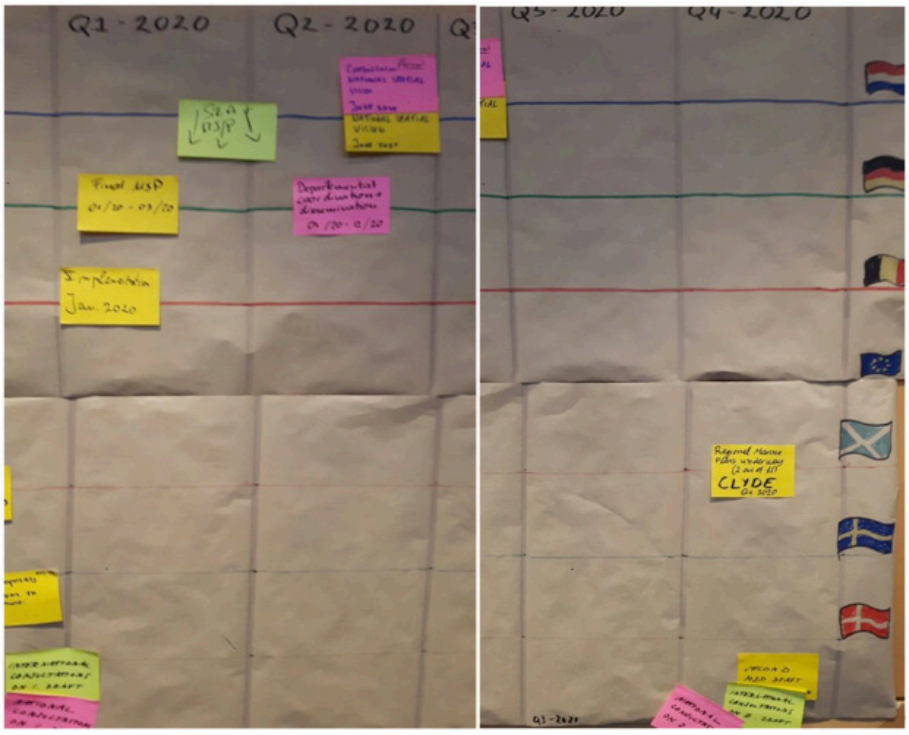


Figure 35: Wallpaper work on timeline of North Sea MSP processes (NorthSEE project)

The tool was developed within the NorthSEE project and jointly elaborated by countries bordering the North Sea (BE, NL, DE, DK, SE, NO and Scotland). During the exercise at a partner meeting, MSP authorities worked on the linear timeline of their processes, starting in the 2nd quarter of 2017 (start of the project) and ending in the year 2021 when all coastal EU Member States are required to prepare cross-sectorial maritime spatial plans according to the

MSP Directive. Participants used a common colour coding during the exercise for better comparison: on-going processes (red), cornerstones like the finalization of an SEA (green) and deadlines like the first draft or the final plan (yellow). All timelines were developed on wallpaper simultaneously to enable easy comparison between the countries and to show the current status of MSP across the trans-boundary area of the North Sea (see Figure 35).

The tool was elaborated in early 2018 during a project meeting and seems to have potential to be transferred to other MSP processes worldwide. Participants have been asked beforehand to elaborate on at least 20 specific activities and cornerstones of their national MSP processes to include them during the exercise. This was an important enabling condition for the successful creation of the timeline. Furthermore, of relevance is a trustful atmosphere among the involved MSP authorities due to projects and expert meetings over years. Necessary for the use of the tool is a workshop setting with a number of boards according to the range of the timeline. In case a process just started and there are no visions or strategies in place, which outline the future process, this exercise may be too early to apply.

A North Sea Perspective on Shipping, Energy and Environmental Aspects in Maritime Spatial Planning (NorthSEE)

5.5 Understanding National Priorities and Interests

Apart from different national jurisdictions, transboundary MSP is characterized by the fact that countries have different national priorities and interests – which can, at times, compete or conflict with one another.

MSP is often described to be *the* tool to resolve those conflicts. It should, however, be noted that a key enabler for a successful MSP process is to find an area or topic, where all countries involved together share the same broader interest and objective which they want to achieve. Only when national interests can be aligned with such higher goals, a discussion rather than a debate is possible, which is a pre-condition to finding a solution. (see section 3.3 for more on this topic).

Partners involved should embark on an analysis of the strategic objectives, priorities and targets in relation to any current maritime activity of relevance in the given area as well as any kind of future developments; e.g. in relation to aquaculture, port development, tourism, energy development, fisheries, environmental protection, etc. (see examples 5.5.1 and 5.5.2). This will enable all involved to gain a better understanding of the given national strategies, priorities and targets, as well as common understanding of joint interests, neutral issues (thus not relevant for transboundary interaction) or indeed competing interests. Please see Chapter 6 regarding analysing future conditions and developing a common vision.

It should be possible to compare priorities; identify synergies between jurisdictions and any differences that limit a joint approach (see example 5.5.3). First, a list of interests from the participating countries should be developed to provide a broad inventory. This can then point towards the need for more detailed discussions on key issues.

A next key step in analysis is to move from a table or list format to actual mapping format; e.g. to highlight and analyse the concrete possible spatial dimension of the conflict on a rough map (please see 5.7). It should be noted that such an exercise at an initial stage does not require a highly sophisticated GIS system, but could be done by simply drawing on printed maps.

5.5.1 EXAMPLE: National Priority analysis (BaltSeaPlan)

The BaltSeaPlan project undertook a national priority analysis to identify priorities and interest relevant to MSP of countries within the Baltic seas. Such analysis is important to understand which priorities or specific targets might have direct or indirect transboundary spatial impacts. The analysis for the project involved initially screening relevant international and national documents and policies that contained spatial/non-spatial targets (binding, suggested or agreed), discussed spatial trends and pressures, conflicts and synergies and informed the various governments' needs.

The selected policies and documents were analysed to identify common priority themes and priorities within international policies and legislations with reference to the Baltic Sea. Trends and spatial needs in key sectors, its implication, policy response and relevance for MSP across all the countries were also considered as part of the analysis and to understand their implications for the transboundary area. The approach further developed specific recommendations for achieving common targets including expanding and establishing spatial use of renewable energy, interconnected transport network, coherent and well managed MPAs. These tasks are also necessary in outlining structures necessary for coming to joint decision on joint decision on the use shared marine space.

It is important that the application of this analysis in an LME context considers issues and priorities at different spatial levels and engage stakeholders at various levels to give a true picture of the existing situation and possible recommendations for achieving the resulting targets (Schultz-Zehden and Gee 2013).

5.5.2 EXAMPLE: Adapting transboundary marine management approaches and issues into transboundary MSP (CTI-CFF)

In most cases, other transboundary marine management approaches are implemented before the transboundary MSP process begins. These transboundary marine management approaches normally focus on both national and transboundary issues and interest. It is essential that such approaches and issues are considered and ways for incorporating them into MSP are analysed. Such an approach was applied in the CTI-CFF initiative, where previous marine management initiatives and policies such as regional ecosystem approach for fisheries management, action plan for climate change adaptation, MPA systems and networks for the Coral Triangle were analysed and links/overlaps between them and MSP were established. This led to recommendations on how the transboundary MSP process can inculcate spatial and temporal fisheries, MPA and climate change measures. It also informed how the CTI-CFF MSP planning process was designed to ensure that information and mapping exercises inform decision making within and around fisheries management areas and MPAs whiles fostering coherence between spatial actions of these transboundary marine management approaches.

This approach is relevant before the start of the LME MSP process to understand existing conditions and inform the plan design and how existing knowledge and experience can be incorporated. It is important to note that this does not necessarily mean that the resulting recommendations are all adopted.

Coral Triangle Initiative on Coral Reefs, Fisheries and Food Security (CTI- CFF)

5.5.3 EXAMPLE: developing a 'matrix of interests' (Baltic SCOPE)

FOCUS AREA	Middle Bank		Adlergrund			Kriegers Flak		
INTEREST / COUNTRIES participating	PL	SE	SE	DK	DE	SE	DK	DE
Offshore Wind Energy (planned/existing)								
Power Cables (planned / existing)								
Data Cables (planned / existing)								
Pipelines (planned/existing)								
Other physical Infrastructure (Tunnel etc.)								
Ship Traffic / IMO Routes								
Sand and Gravel Extraction (planned/existing)								
Fishery								
Conservation Areas			?			?		
Other Nature Conservation and Managing Interests	??	??						
Defence						?		
Planning Restri ctions/ Regulations existing								
Territorial Sea (TS) / Exclusive Economic Zone (EEZ)	EEZ	EEZ	EEZ	EEZ	EEZ / TS	EEZ / TS	EEZ / TS	EEZ / TS
Notes / remarks	there might beNGO interests with regard to nature conservation (harbour porpoise); IBA		need for more information from DK			nature conservation interests in German EEZ with regard to bird migration (cranes) and reef structures		
Responsi ility for (ceoeraphical) information about areas	SE+PL		DE			DE+SE		

Figure 36: Baltic SCOPE Matrix of Interests for the Southwest Baltic case (Baltic SCOPE 2017)

A matrix presenting an overview of different sectoral interests across countries can help planners understand what the commonalities and disparities are among countries with respect to their national sectoral interests, as well as define key areas of transboundary MSP concerns (see Figure 36). The Baltic SCOPE project has developed a matrix of interests for all countries in pre-defined transboundary focus-areas within the Southwest Baltic Sea. The aim was to identify areas with real transboundary issues from an MSP perspective. As part of the exercise, project partners from each country were required to collectively fill in a matrix with the present, and potential (planned) national sectoral interests. The matrix was organised in a way that focus-areas where shown along the horizontal axis, while the vertical axis indicated the different national sectoral interests, with high and low priority being differentiated by using different colour shades. An overview of existing international regulations was also added to the matrix. By visualising the priorities of different countries for each focus-area, the exercise helped to identify opposing interests and to identify potential conflicts. At a general level, the exercise also helped to document how the project partners reached certain decisions, which can be an important element when communicating results to stakeholders.

5.6 Understanding the ecosystem-based approach (EBA)

Developing an ecosystem-based approach to MSP is essential for ensuring sustainable sea-use and protecting the environment. EBA allows for considering a transboundary area as one system, with all its interlinked components, processes and relationships, be it of environmental or anthropogenic nature. EBA is at the very core of the LME, as its application can address connectivity of species (see example 5.6.1), migratory routes (see example 5.6.2), and food webs, as well as anthropogenic effects to these processes. EBA is also discussed in the **›› Strategic Approach Toolkit Chapter 2: The ecosystem-based 5-module approach and recommendations for strengthening the approach** and **›› Chapter 5 section on Ecosystem-based Management**, and in the **›› Governance Toolkit Chapter 3.2.1: the Ecosystem Approach to Fisheries Management**.

Whereas almost all existing MSP processes throughout the world aim towards application of EBA, almost all existing cases of transboundary MSP experience have revealed significant differences on how countries interpret and implement EBA (see section 2.2.1 for more discussion on EBA and MSP). The section that follows here presented concrete tools for incorporation EBA in MSP.

As a very first step, it may be useful to establish a specific task force to deepen common understanding of the concept and to elaborate on how to promote its application in MSP. Such a task force may develop a concrete 'checklist toolbox' to be used by all partners and countries involved during the various planning stages (see example 5.6.3).

It should be noted that the actual application of EBA within MSP is, however, often also limited by the actual mandate of the bodies involved either in view of being able to influence (1) all the necessary maritime activities affecting the ecosystem in the plan area or (2) the mismatch between jurisdictional borders they are in charge of and the actual boundaries of the given ecosystem (see 2.2 and 5.2 for further discussion, and example 5.2.1). These two aspects are at the very heart of the motivation for transboundary MSP at LME level..

5.6.1 EXAMPLE: Evaluating large-scale habitat connectivity for sandeels (North Sea)

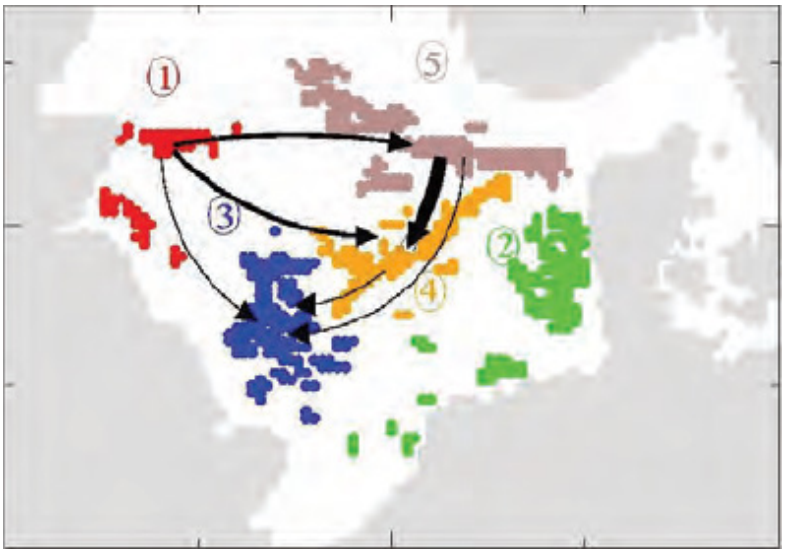


Figure 37. Proposed regional habitat aggregations for the North Sea lesser sandeel (Blaesbjerg et al. 2009)

A study conducted as part of the PROTECT project investigated recruitment and population dynamics of the North Sea lesser sandeel to evaluate habitat connectivity in the North Sea. Findings showed that habitats are connected over very long distances, and that the population size in one area can be influenced by changes in fishing pressure and environmental parameters from other areas. This shows the importance of spatial biological models, and should include ocean currents. The study also analysed the appropriateness of current management units, which at times artificially divide habitats that are naturally connected. The study proposed regional habitat aggregations to better inform management decisions (see Figure 37), and highlighted the importance of considering habitat connectivity at a large scale in transboundary MSP as well as fisheries management.

5.6.2 EXAMPLE: Tool on assessing migratory fish stocks (FAO)

The FAO manual describes a range of methods to assess migratory (trans-boundary) fish stocks. Migration of different fish species and stocks are well known especially in the EU sea basins to avoid bias in sampling and misinterpretation of results. The manual is based on this knowledge and provides information on the following methods to interpret the length-frequency data obtained from migratory fish-stocks and to transfer the knowledge to tropical regions:

- Method A: The annual-return matched samples method
- Method B: The general matched samples method
- Method C: Assessment based on tagging data
- Method D: Estimation of the growth parameters of migratory stock: The Atlantic Mackerel

Method A is based on the assumption that a fish stock follows a predictable migration route. If this migration route is known (e.g. from tagging experiments) in time and space we are in a position to follow the cohorts and to "match" samples so that they originate from the same cohort. Consider a simple hypothetical model (Figure 38):

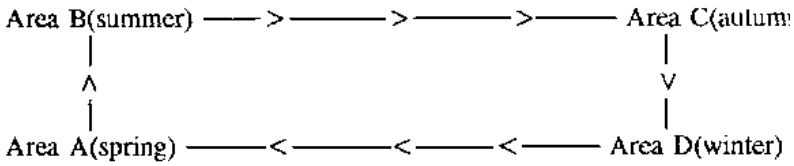


Figure 38: Hypothetical model A for migratory fish stocks (Sparre and Siebren 1998)

The approach of Method B (Figure 39) assumes that we have knowledge or a hypothesis of the migration route in time and space, and therefore are able to "match" samples so that they originate (or can be hypothesized to originate) from the same cohorts:

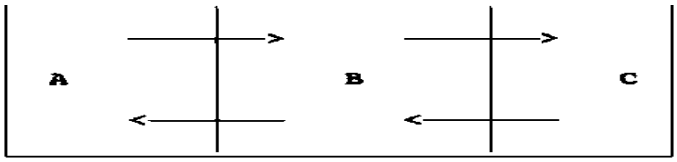


Figure 39: Hypothetical model B for migratory fish stocks (Sparre and Siebren 1998)

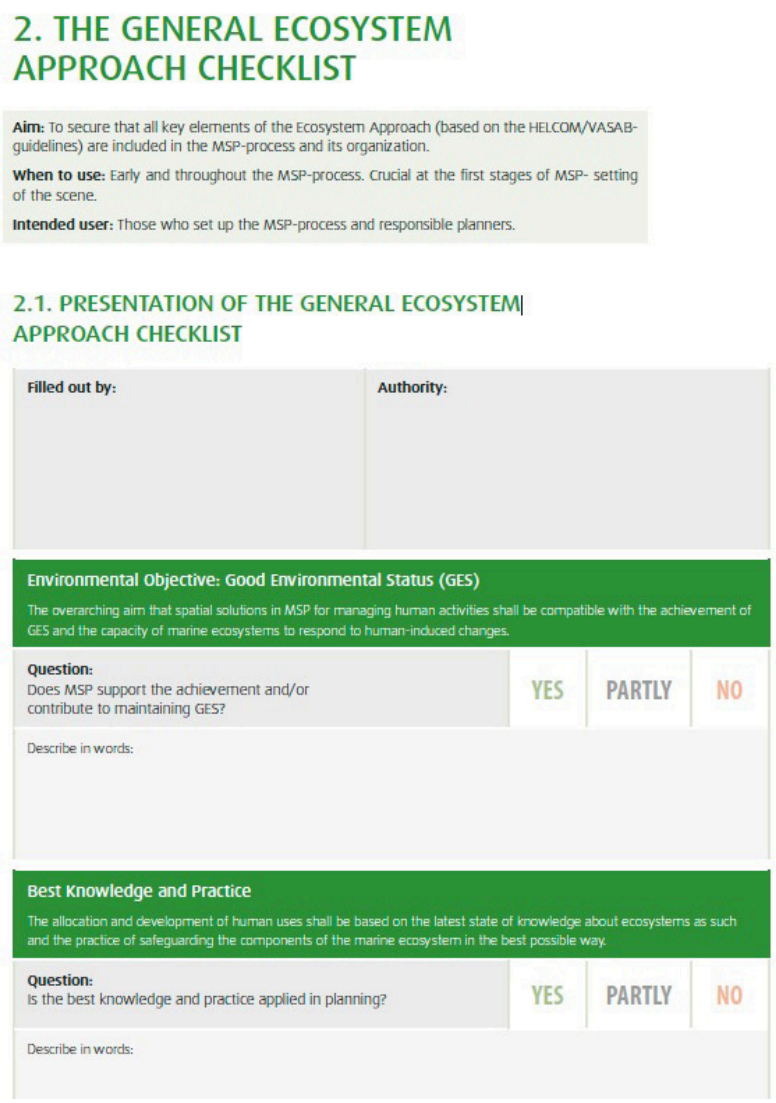
The success of tagging experiments (Method C) depends on the ability and willingness of the fishermen and others dealing with the catch to report on where and when the marked fish was caught. If the data are used also for estimation of growth parameters the size of the recaptured fish should be reported as well. The fishery must cover a relatively large part of the distribution in space and time of the stock to secure a reasonable number of recaptures for the estimation procedure.

Method D deals with seasonally migrating species sometimes migrating earlier in the season the older and bigger the fish are. The problem is analysed in well-documented studies of a stock of the North Atlantic mackerel (Scomber scombrus).

All presented methods have been applied in research cases, not in pilot plans of MSP or real MSPs.

Introduction to tropical fish stock assessment. Part 1 – Manual

5.6.3 EXAMPLE: A checklist to apply the ecosystem approach in MSP (Baltic SCOPE)



2. THE GENERAL ECOSYSTEM APPROACH CHECKLIST

Aim: To secure that all key elements of the Ecosystem Approach (based on the HELCOM/VASAB-guidelines) are included in the MSP-process and its organization.

When to use: Early and throughout the MSP-process. Crucial at the first stages of MSP- setting of the scene.

Intended user: Those who set up the MSP-process and responsible planners.

2.1. PRESENTATION OF THE GENERAL ECOSYSTEM APPROACH CHECKLIST

Filled out by:	Authority:

Environmental Objective: Good Environmental Status (GES)

The overarching aim that spatial solutions in MSP for managing human activities shall be compatible with the achievement of GES and the capacity of marine ecosystems to respond to human-induced changes.

Question: Does MSP support the achievement and/or contribute to maintaining GES?	YES	PARTLY	NO

Describe in words:

Best Knowledge and Practice

The allocation and development of human uses shall be based on the latest state of knowledge about ecosystems as such and the practice of safeguarding the components of the marine ecosystem in the best possible way.

Question: Is the best knowledge and practice applied in planning?	YES	PARTLY	NO

Describe in words:

Figure 40: Baltic SCOPE Ecosystem Approach Checklist (Crona et al. 2017)

Planners may use a checklist to harmonise their understanding of what the ecosystem approach involves, and how it can be used in MSP. Ambiguity among stakeholders on what the ecosystem approach should entail could result in unsuccessful MSP processes that only apply certain elements of the approach. The Baltic SCOPE project developed three such checklists for planners which include transboundary dimensions. They support stakeholders with the inclusion of the key elements of the ecosystem approach in the maritime planning process. They are also meant to analyse the extent of common views.

5.6.4 EXAMPLE: Transboundary ecosystem-based approach (Wadden Sea Management Plan)

The Wadden Sea, stretching over 500 km along the North Sea coast of the Netherlands, Germany and Denmark, is the largest trans-boundary transitional water body in Europe. It is an area of multiple jurisdictions and subject to the same requirements of EU policy and legislation. The principle of defining a shared vision is laid down in the Trilateral Wadden Sea Plan and constitutes the common trans-boundary policy and management plan for the Wadden Sea Area. The plan expresses a shared vision of the aspired ecological state of the Wadden Sea as a unique tidal transitional water body and its ecosystems. A very clear-cut vision is the biggest positive experience of the Management Plan for Wadden Sea that can be exchanged internationally.

The vision of a transboundary ecosystem-based approach is outlined as follows:

- A healthy environment which maintains the diversity of habitats and species, its ecological integrity and resilience as a global responsibility;
- Sustainable use;
- Maintenance and enhancement of values of ecological, economic, historical-cultural, social and coastal protection character, providing aspirations and enjoyment for the inhabitants and users;
- Integrated management of human activities which takes into account the socio-economic and ecological relationship between the Wadden Sea Area and the adjacent areas;
- An informed, involved and committed community.

→ Comprehensive management plan for the Wadden Sea

5.7 From Common Mapping to Joint Data Portals

Producing common maps for a transboundary area is essential to understand the given LME as one system without division into national interests. Maps can be used at multiple stages of the MSP process and are especially useful for:

a Communicating among the planning team in order to increase understanding of the actual state of play of current and future conditions in the whole LME;

b Communicating to, and information sharing with, stakeholders. This further contributes to better understanding of spatial implications of sectoral activities, as well as transboundary issues;

c Mapping the maritime resources of transnational interest (e.g. fish stocks, offshore wind);

d Identification relevant transboundary focus-areas; and

e Revealing patterns and trends at a greater scale.

5.7.1 Starting off with initial mapping / sketching exercises based on expert knowledge

Even for a national level MSP, gathering data is often a challenge, as it includes collection and integration of existing data from various sources, including different sectoral authorities, research institutes or even different levels of government. At a transboundary scale, these challenges increase even more. Thus, before embarking on a resource intensive joint data gathering exercises for transboundary MSP, a simple pragmatic approach can be taken making good use of the existing knowledge available within the planning team and stakeholders.

Availability of data should not represent a prerequisite for planning and stall the process. It is sufficient to start off with less precise methods resulting in rough sketches and maps with less detail, as long as focus areas of common concern can be identified; which can then be potentially further analysed at a later stage.

Numerous MSP projects and processes throughout the world have made good use of participatory mapping methods (see examples 4.4.4, 5.7.1.1, and 6.3.2).

5.7.1.1 EXAMPLE: Participatory mapping to support transboundary MSP (Grenada Bank)

A participatory GIS system was developed for the Grenada Bank (which includes both Grenada and St. Vincent and the Grenadines), known as MarSIS: Marine Resource Space-use Information System. The system integrates in social, economic and environmental information drawn from both scientific and local knowledge to provide a basis for coastal and marine planning and management. Stakeholders were engaged in meetings, data collection efforts such as field surveys, and a dedicated internet forum to provide local information, which helped foster a sense of ownership in the MSP process. MarSIS applied a participatory GIS approach to provide a framework for data

management and information integration, as well as subsequent ecosystem-level GIS analyses. MarSIS was used as part of designing a marine multi-use zoning design for the Grenada Bank, and helped support management and conservation capacity in the region. The process also highlighted mismatches between jurisdictional and socio-ecological scales, which requires further consideration in future MSP exercises. (Blue Solutions 2015)

5.7.2 Prioritising / selecting relevant data used for joint maps

Creation of maps and analysis that involves spatial aspects of marine activities and environmental processes is a prerequisite for any MSP exercise. At same time, any project which considers to embark on the creation of a joint database has to be aware that gathering relevant data for a transboundary area may be a potentially very time-; labour- and therefore also, financially consuming process, especially when carried out for the first time.

There is a large amount of data that could be potentially compiled for a transboundary area. However, it is key to select the most relevant data. Data topics should be prioritized based on the MSP issues identified, focusing on data that is possible to obtain rather easily. It should be kept in mind that a transboundary MSP exercise may not require the same amount of data as a national MSP process, given the fact that not all maritime activities are really of transboundary nature, nor all decisions need to be taken at transboundary scale. Much of the information which is relevant for MSP may already be collected as part of the ecosystem-based 5-module approach (please see the **›› Strategic Approach toolkit Chapter 3**). Indicators included in Section 3: Programmatic Implementation and **›› Section 4: Environmental and human well-being status from the LME Scorecard** may also help focus data collection efforts.

Data collection across countries should ideally be based on accepted criteria that specifies data categories that are of mutual interest, as well as preferable data formats. It is also important to define what is the temporal scope to be considered, so that data should cover not only the present status, but also past and future trends where possible. Data related to certain marine activities might be easier to integrate and present on a map as there may already be a common method of data collection (e.g. AIS system used in shipping). In these cases, issues of harmonizing data from various sources may be avoided. For other activities and processes (e.g. fisheries, ecosystem features) it may be much more difficult to come to a common system, as data collected is not coherent in terms of format, time frames, etc. and requires harmonisation.

Collecting, analysing and presenting large amounts of data may be challenging not only in view of resource constraints, but also may at certain stage be counter-productive. For clear presentation on the map it is important to select only the most relevant combination of data that can provide valuable insights for decision making. These are often spatial implications of current and future human activities (including MPAs). For environmental characteristics, planners are mainly working with information (sometimes in the form of 'indicators') rather than data as such. Moreover, to guide planning decisions, planners are eventually interested in qualitative information that can answer questions such as 'which areas are most important for fisheries in the transboundary area?'. Information on the socio-economic importance of activities are also relevant to planners and can answer questions such as 'how much does it cost for ships to take a different route?' and 'what is culturally important (e.g. traditional regatta) in the given area?'. This kind of data is usually collected from stakeholders involved in to the process (please see chapter 4 Stakeholder engagement in Transboundary MSP). Further discussion on data assimilation can be found in the **›› Strategic Approach Toolkit Chapter 3 section on TDA**.

5.7.2.1 EXAMPLE: Identifying research needs and relevant data (Rhode Island Ocean SAMP)

To identify research needs, the Ocean SAMP (Special Area Management Plan) team reviewed what are the required information for offshore wind siting and installation, the Environmental Impact Statements from planned commercial activities in the area, the topics discussed in other relevant initiatives, and spoke to many of the stakeholders. Early on, a multi-day event was held with researchers who had, over the years, researched different aspects of the Ocean SAMP study area, to gain a better understanding of available information. The research topics were prioritized and project planned based on the issues identified and the gaps in existing information. The process of prioritizing the research as well as describing its scope was shared during stakeholder meetings and through the web site. Whenever possible, researchers employed local fishermen to engage in the Ocean SAMP research. Fishermen felt that more research should be done on fishing and fisheries, and pointed the team in the right direction based upon their local knowledge. Representatives of tribal communities were also involved in to the process, providing important information about cultural heritage. (McCann and Schumann 2013).

5.7.2.2 KEY RESOURCE: Common data categories used for MSP throughout Europe

A study published by the European Commission, "Evaluation of data and knowledge gaps to implement MSP", researched the most commonly used data categories and sets by European MSP Planners. The study has emphasized that defining common data categories to be collected and presented on a map is a useful exercise for planners engaging in transnational MSP, as it allows for the creation of a common understanding between the countries involved and thus will enhance cross-border cooperation. As a first step, planners may analyse what data and knowledge are needed for decision-making on MSP, taking into account the different scales and points in the MSP cycle. Sources may include past and current MSP projects, publicly available documents from the industry and sectoral authorities (including environmental impact assessments and strategic environmental assessments), public databases (cadastres and registers), scientific literature as well as other relevant initiatives. Based on this analysis, planning authorities have to define what data and information is stored where and in what format, and determine whether this is sufficient to meet minimum MSP requirements. Guiding questions could include whether the required data exists at all, if its spatial coverage is comprehensive, whether it is freely accessible and compatible, as well as whether any raw data exists that could be transferred to required data formats. The study itself is also a key resource to any MSP data building effort throughout the world as it shows the most important data categories, which have been commonly used by all EU MSP processes so far. (European Commission 2017e).

5.7.2.3 EXAMPLE: Transnational Marine Spatial Data Infrastructure (BalticLINes)

The BalticLINes project is developing a Marine Spatial Data Infrastructure (MSDI) prototype for Maritime Spatial Planning for the Baltic Sea Region. This infrastructure will be accessible as an interactive web-map user interface for accessing, analysing and displaying cross-border data. The data infrastructure will be partly decentralised, meaning that some of the datasets will be accessed in real-time at the original source as opposed to data being fed into a central database. The added value of a decentralised system over a centralised system is that data will be up-to-date since it is administered and delivered by the data owners.

A decentralized system needs all datasets to be published through web services in standardised formats. Since not all MSP datasets are yet available using standard protocols, the prototype will use a "hybrid" approach to access datasets from original sources and from centralized systems.

The Baltic LINes data infrastructure will support maritime spatial planners in the Baltic Sea Region to understand and take into account the sea use and nature protection situation in neighbouring countries. Also, the tool may be used in MSP consultations instead of printed maps.

The version of the data infrastructure that is under development focuses on data for planning energy infrastructure and shipping routes in MSP. However, the scope of the data infrastructure will be expanded in the future. Furthermore, the data layers showing MSP designations may be integrated in the future.

BalticLINes project website

5.7.3 Data sharing issues

Apart from the practical issues of harmonising data standards across various boundaries (see 5.7.4); there may also be issues of general unwillingness to share relevant data in transnational settings. While this is already an issue at national level – this is even more prone to happen at transboundary level in view of safeguarding national interests. An example for this is reluctance of national authorities to share the information on military training areas, but it can also relate to any other (economic) national interest. The BalticScope project has found a pragmatic approach to work around this, which enables planners to still work with the full set of information available and thus take decisions on the basis of the full picture (see example 5.7.3.1).

5.7.3.1 EXAMPLE: Practical solutions for cross-border data-sharing (Baltic SCOPE)

Open exchange of reliable data is essential for transnational MSP processes, but national regulations often make it very difficult for planners to share their data with other parties. Data sharing is also made highly complex as countries often have different national input data, not to mention the fact that the information and data is often very dispersed within a country. Planners involved in the Baltic SCOPE project have overcome the barrier of reluctance in data sharing by very pragmatic means. Instead of encouraging all planners involved to make use of one given data porta and thus actually *sharing* the data, the planners were asked to bring their own laptops to the meeting. This facilitated an exchange whereby each planner was able to show the other parties what they were working on, without revealing their proposed planning solutions. This allowed for the joint development of planning solutions between all planners involved, without any of the planners being forced to actually share their information with others. (Urtāne *et al.* 2017).

5.7.3.2 EXAMPLE: Public private collaboration for data collection (US RHODEO study)

The construction of the first turbine in the US offshore environment offers an opportunity to address many of the environmental questions that are of concern to the public. Many national agencies have mandates to protect the environment and will need to know more precisely what wind development will involve. Through a collaborative effort with agencies on different levels of government, the construction and operation of offshore wind turbines is studied to gain insight into the actual disturbances to the environment. Without these real-time observations, analyses are based on best guesses and scenarios that are conservative. An analyst relies on the best available information and assumptions about the activities based on previous experience.

For offshore wind development, there is no previous experience, so the analyses and subsequent mitigation measures are based on an educated guess. With RODEO study in place these planning and management measures will benefit from real-time, independent observations during actual construction activities (BOEM 2015).

5.7.4 Harmonising Data

Given that countries are referring to different data standards, all data used for analysing and visualisation first needs to be harmonised. Moreover, symbols, legends, as well as terms used in mapping also differ across countries, and those to be used in a transboundary map need to be agreed upon.

At the transboundary level, datasets required may differ in many ways across adjacent jurisdictions, e.g. in view of collection methods, reference systems, quality, spatial scales, time-frames and attributes. This may be due to things such as different purposes for which data was collected; or different methods of measuring or handling data. In order to harmonise this data, it is helpful to consider a data model which sets out principles and standards for data collection. This will facilitate harmonisation of data into a single shared database. To streamline coordination of future data collection, the involved partners should carefully document the ways in which datasets collection methods vary (e.g. one is collected every two years and another every three years).

5.7.4.1 EXAMPLE: Decentralised data portals (EmodNET, Atlas of Ocean Wealth, US Marine Cadastre)

EMODNet Human Activities Portal provides information on the geographical position, spatial extent and attributes of a wide range of marine and maritime human activities throughout Europe. Where possible, portal also provides historical time series to indicate the temporal variation of activities. Data for the portal is continuously collected from a multitude of public and private data sources at EU, international, national, and local level. The methodology adopted is that, as far as possible, each activity should be covered by a single source that can provide data for all EU sea basins. This makes it possible to obtain complete and already harmonised datasets, thus reducing the risk of data gaps. When it is not possible to have a single source covering an entire activity, national and local sources are surveyed. EMODNet Human Activities Portal is particularly relevant for MSP as it provides access to an expanding collection of harmonised datasets covering human activities across all European Sea Basins. These range from established activities such as fisheries and shipping to more recent activity such as construction of offshore energy facilities. EMODnet also ensures that the data generated from various initiatives and projects, are safeguarded and made available for re-use beyond their life time. Data from the portal can be useful in scoping phases of the national MSP processes and trans-boundary and cross border planning initiatives.

Atlas of Ocean Wealth is an online tool that provides scientific information in a clear and useful way to aid decision-makers at the local, national and even international levels to better understand the true value of the ocean environments. It provides stakeholders the maps and data needed to make better, evidence-based ocean-use decisions. Mapping Ocean Wealth aggregates existing science and uses tools and maps to make science more accessible to audiences at all levels, globally. Higher-resolution models illustrate the value of oceans at broad scales to inform decision-making at the national and international levels. Meanwhile, fine-resolution maps and models improve local planning and management.

On the other hand, the National Portal at MarineCadastre.gov was developed as a collaborative effort among a number of non-governmental organizations. The website is an integrated marine information system that provides data, tools, and technical support for ocean and Great Lakes planning. It is recognized by regional ocean governance groups as the central place for authoritative federal data, with data, metadata, and map services from the project being integrated into the Northeast Ocean Data Portal, Mid-Atlantic Ocean Data Portal, and West Coast Ocean Data Portal. The Regional portals consume National-level data and are used to identify multi-use areas when siting projects, identifying compatibility, and providing data to support ocean action plans; they may also contain data specific to a region (e.g., state-created recreational data).

5.7.4.2 EXAMPLE: National marine data infrastructures in Canada and Australia

Significant efforts have been made on the national level to overcome the tradition of holding data in silos for in-organization/institution-use only. In Canada, through the adoption of the national spatial data infrastructure, also called Canadian Geospatial Data Infrastructure (CGDI), or "GeoConnections", Canada got to an interoperable marine spatial data infrastructure based on widely adopted international standards which offers marine data. The CGDI is divided into twelve nodes, with one of the nodes being Marine Geospatial Data Infrastructure that assists the economic and social needs of Canada's marine regions and the management of Canada's water resources. COINAtlantic is another initiative inside the CGDI which has implemented a coastal and ocean information network for the western North Atlantic. The network provides open access to spatial data to support integrated coastal and ocean management by adopting all standards of and complying with the architecture of the national data infrastructure.

In Australia, two approaches are tying the Australian Spatial Data Infrastructure: (1) Australian Marine Spatial Information System (AMSIS) that focuses primarily on "framework" data (boundaries, cadastre, infrastructure etc.). This is a web based interactive mapping and decision support tool that offers access to over 80 layers of information in the Australian marine jurisdiction including maritime boundaries, bathymetry, physical and environmental information, legal interests, fisheries and shipping; and (2) Integrated Marine Observing System (IMOS) Ocean Portal that offers a variety of data mostly from scientific research (e.g., biological and climatic data). This is a distributed set of equipment and data-information services, which, among many other applications, aims at meeting the needs of the research community in Australia. The strategic focus is on the 4-dimensional ocean variability and the impact of major boundary currents on the continental shelf, ecosystems, and biodiversity. The IMOS uses a modified version of GeoNetwork holding ISO 19115/19139 standard records, which provides data discovery, access and download.

What is relevant for the transboundary context and coherence of data across countries is the fact that the ANZLIC (Australia New Zealand Land Information Council) is coordinating the implementation of metadata guidelines and built a metadata profile based on the widely adopted metadata standard ISO 19115 which both the AMSIS and the (IMOS) Ocean Portal use (Seip and Bill 2016).

5.8 Assessment Tools

MSP is widely understood as an evidence-based process. Nevertheless, data and information collected throughout the process require synthesis and further analysis and/or interpretation before it can be used to support the development of maritime spatial plans and the decision-making process.

Numerous projects have developed various assessment tools and used to support the interpretation of information and build evidence for MSP. However, there is very little evidence that these are used by MSP authorities in national statutory MSP processes (European Commission 2017e).

The analysis of conflicts and synergies is likely to require evidence on spatial and environmental compatibility of different activities and impact assessments. In many cases, such conflict analysis may not refer to current conflicts, but relate to finding space for 'new' uses coming in (e.g. offshore wind, aquaculture, new MPAs). User-user conflicts and user-environment conflicts will need to be assessed. Different evidence is needed for developing scenarios for future sea use management, such as trends and forecasts in the planning area, which are not yet defined as a specific claim by a given sector, or a concrete demand from the policy level, as well as other relevant policies than can have more long-term goals. Further discussion on identifying issues to be addressed can be found in the **›› Strategic Approach Toolkit Chapter 3 on TDA**, the **›› LME Project Cycle Toolkit Chapter 3: Preparation of Transboundary Diagnostic Analysis (TDA) Projects**, or using the methodology included in the **›› LME Scorecard**.

5.8.1 Data analysis and visualisation tools

A number of data analysis and visualisation tools have been developed over the years to aid decision making in land use as well as marine spatial planning. The geographic information systems (GIS) described in 5.7 are generally used for MSP to store, visualize, and analyse spatial data and model the potential consequences of alternative plans. However, a number of other, also web-based, analytical tools have developed over the years (see examples 5.8.1.1). Moreover, specific modelling techniques have also been improving (e.g. using machine learning algorithms, time series, models for ecosystem services assessment, etc.) (see examples 5.8.1.2, 5.8.1.3, 5.8.1.4).

5.8.1.1 EXAMPLE: SeaSketch

SeaSketch is a flexible online mapping platform that has been used for MSP in the United States, Canada, New Zealand, Barbuda, Montserrat, Curaçao, the Galapagos Islands and Indonesia. SeaSketch, which facilitates iterative, collaborative design of spatial management areas, includes built in analytical tools "collaborative geodesign". Configured to reflect the planning goals and objectives specific to a given MSP initiative, SeaSketch offers users the ability to view spatial information about the distribution of human activities, natural resources and infrastructure in and around the ocean. Then, using this information as a guide, users can sketch prospective ocean zones and analyse whether they meet science and policy guidelines for ecosystem protection, economic impacts to ocean users and their relative trade-offs.

Frequently, stakeholders have information about how ocean space is used and valued - information that is essential for planning but that is often unrepresented as spatial (map) data. SeaSketch is used to conduct crowdsourced and facilitated surveys in which stakeholders may contribute this information and express these values. Because stakeholder participation is central to any successful MSP effort, SeaSketch has features that allow planners to track, visualize and quantify user activity. Using this information, planners may target underrepresented users or stakeholder groups and geographies to ensure proper representation in the process.

For example, in the Caribbean, SeaSketch surveys were used to collect information on the distribution of valued fishing and diving areas, which, ultimately, were represented in heat maps of ocean uses. These data have proven essential in evaluating the potential impact of marine protected areas on local ocean users that may be displaced

by these zones. SeaSketch was also used in the MOZALINK project that aimed to develop data, knowledge and solutions to support transparent, sustainable and science-based Marine Spatial Planning (MSP) in the Western Indian Ocean.

Map-based forums in SeaSketch can be communication tools once plans have been finalized. Decision makers may use this tool to expose plans, map data and analytical reports, and perhaps the dialog used to justify marine spatial plans.

5.8.1.2 EXAMPLE: Marxan - software for designing reserves as part of systematic conservation planning (Ritmare and BaltSeaPlan)

Marxan is one of the most widely used decision support software (DSS) for conservation planning. it uses an optimization method for site selection, searching for the most cost-effective suggestions for suitable marine conservation areas that meet a number of ecological, social and economic targets. Results can be influenced by changing parameters such as clustering, or altering the importance of different targets. The advantage of Marxan is that scenarios can be developed, which can then be taken as a basis for finding solutions.

Within the Ritmare project and with the support of other projects (Adriplan, Supreme, Erasmus Mundus Master Course on MSP), Marxan and its advanced version Marxan with Zones were applied to the Adriatic-Ionian Region for biodiversity conservation and to the subarea of the Italian Emilia Romagna Region with a specific focus on achieving the goals of sustainable development of aquaculture activities and biodiversity conservation. The use of Marxan and Marxan with Zones requires skilled expertise and resources. Moreover, it relies on wide data input; if not supported by dedicated projects (as ADRIPLAN in this case) data collection and structuring can be time and resource consuming activities. Marxan scenarios depend on set assumptions (as in the case of any DSS); results of the software application should be considered as starting points for stakeholder discussion and decision making, rather than scientifically-based decisions.

Within the BaltSeaPlan project, Marxan was used in a case study area to identify potentially suitable areas for offshore wind farming (Baltic LINes 2016). The case study took a transnational approach to the pilot area, seeking to identify those sites that have the lowest construction costs, make optimum use of the available wind and take account of the various spatial restrictions. A key advantage of using Marxan was that it showed data gaps and the difficulties of parameterization (thus, frequent feedback was necessary). Whilst the investment costs for offshore wind farming can be readily calculated, assigning cost values to nature conservation is an arbitrary exercise (how much is a Natura 2000 site worth). Also, not every conflict can be put into figures, so that the scenario maps may look deceptively complete but not really reflect the complete real situation. Much of using Marxan depends on the work of the planning group and their understanding of how to use a decision support tool. Therefore, close contact between the modeler and the planning group is advantageous. It should also be kept in mind that the results are directly influenced by the chosen simplified settings and should not be over-interpreted.

5.8.1.3 EXAMPLE: InVEST - a decision-support tool for valuing nature

InVEST provides free, open-source software models used to map and value the goods and services from nature that sustain and fulfil human life. It enables decision makers to assess quantified trade-offs associated with alternative management choices and to identify areas where investment in natural capital can enhance human development and conservation. The toolset currently includes eighteen distinct ecosystem service models designed for terrestrial, freshwater, marine, and coastal ecosystems. InVEST models are spatially-explicit, using maps as information sources

and producing maps as outputs. InVEST returns results in either biophysical terms (e.g., tons of carbon sequestered) or economic terms (e.g., net present value of that sequestered carbon). The spatial resolution of analyses is also flexible, allowing users to address questions at local, regional, or global scales.

Further discussion on the methods for assessing the value of ecosystem services can be found in the **Environmental Economics Toolkit Chapter 4.**

INVEST: Integrated Valuation of Ecosystem Services and Tradeoffs

5.8.1.4 EXAMPLE: Ecopath ecological modelling software

Ecopath with Ecosim (EwE) is an ecological modelling software suite for personal computers that has built and extended on for almost twenty years. The development is centred at the University of British Columbia's Fishery Centre, while applications are widespread throughout the world. EwE is the first ecosystem level simulation model to be widely and freely accessible. EwE has three main components: Ecopath – a static, mass-balanced snapshot of the system; Ecosim – a time dynamic simulation module for policy exploration; and Ecospace – a spatial and temporal dynamic module primarily designed for exploring impact and placement of protected areas. The Ecopath software package is particularly useful in situations where for example there is a need to address ecological questions; evaluate ecosystem effects of fishing; explore management policy options; or analyse impact and placement of marine protected areas.

Ecopath with Ecosim website

5.8.1.5 EXAMPLE: Adaptive Marine Policy (AMP) Toolbox

Figure 41. Adaptive Marine Policy Toolbox

The Adaptive Marine Policy (AMP) Toolbox was developed as part of the PERSEUS project to assist marine policymakers to achieve or maintain heathy status of coastal and marine ecosystems in the Mediterranean and Black Sea basins. The purpose of the AMP is to make scientific information and resources readily available in a

user-friendly format to assist policymakers, scientists and policy practitioners to formulate policies that will benefit the marine environment. The tool box is in three parts including a 5-stage adaptive policy cycle/framework (APF), thematic data bases and models and relevant examples/case studies. The APF is based on a step-by-step cyclical approach to policy making, where the sequence of phases is structured in five interactive steps (shown in figure 41). The set of tools and methods collated as part of the toolbox delivers both scientific and non-scientific knowledge for analysing and describing the state of marine ecosystems and assessing the impact of human activities, economic and social interests in relation to each stage of the APF.

It is important that potential users of this tool adapt it to fit their specific resources, geographical context and needs as the tool is specifically designed for Southern European Seas. The application of the AMP toolbox also requires periodical update of the 'Database of tools and methods' with new research evidences, tools and methods, to provide users with the most recent array of instruments. Dissemination of the tool to the wider end users of the tool to inform its contents and use is also essential. Although, the toolbox is easy to use, the simplicity and accessibility of the toolbox for a wide stakeholders' and decision makers, limits its use for complex issues which require more advanced technical and scientific skills (e.g. ecological assessments, cumulative and spatial impacts analysis). Data provided by process-based models and monitoring systems as well as environmental and climate projections, are also not included in the toolbox.

PERSEUS Adaptive Marine Policy Toolbox

5.8.2 Cumulative Impact Assessment

Assessing cumulative impacts of combined environmental effects of multiple activities may increasingly facilitate the actual application of EBA (see section 5.6). Cumulative impact tools can be used to assess the extent of environmental impacts of scenarios developed as part of an MSP process, or planned activities resulting from MSP, on a range of environmental resources. Designing and applying cumulative impact assessments ensures that an ecosystem-based approach is used in MSP through the evaluation of environmental effects. They can also be used in developing an accompanying Strategic Environmental Assessment (SEA) for an MSP (if required), which would ideally identify a means of anticipating and avoiding cumulative negative impacts on the environments. Cumulative impact assessments can most effectively contribute to transnational MSP by evaluating effects of activities in hotspots, or areas where a high level of activity is anticipated to occur (please see section 5.2 for more on hotspots). Cumulative impact assessment is also included as part of the ecosystem-based 5-module approach (see the **Strategic Approach toolkit Chapter 3**). Other impact assessment processes including SEA and environmental impact assessment can be found in **Chapter 3 of the Environmental Economics Toolkit**.

5.8.2.1 EXAMPLE: Cumulative Impact in an MSP Plan (Massachusetts Ocean Marine Plan)

The Massachusetts Ocean Management Plan translated policy direction and specific requirements of the state's Oceans Act into a comprehensive management approach which are implemented through state programs and regulations. A cumulative impact tool was used to map spatial distribution of ecosystem services and human activities relative to marine habitats through series of processes. The cumulative impact model used in this case combines ecosystem vulnerability, ecosystem distribution, and distribution and intensity of human stressors, which were vetted at global and regional scales.

Cumulative impacts were modelled at each location in a 250m grid by adding up the combined impacts of the suite of human stressors that occur there, weighted by the average vulnerability of the ecosystem(s) found in that grid/location to each stressor. The weights used are the ecosystem vulnerability scores which was derived through a survey of regional ecological experts and application of other global methods. Maps developed of the ecosystems were based on the best available data, but for some ecosystem types and some places, they could not be developed due to, data gaps. Important impacts such as changes in freshwater runoff and sedimentation, some sources of nutrient addition, or direct human disturbance from coastal visitation at this time, because data gaps and inadequate models.

The use of this approach therefore requires sufficient data on ecosystem and human activities in combination with expert knowledge. Although, the process does not prescribe particular management decisions, it can be used in addition to other tools that analyse ecological, economic, and social values to inform decision-making. (Kappel *et al.* 2012)

5.8.2.2 EXAMPLE: Applications of cumulative impact assessment tools

SYMPHONY is the tool designed to support the Swedish MSP process to implement the ecosystem-based approach and develop an accompanying Strategic Environmental Assessment. The tool can be used to map results of different scenarios using the SeaSketch interface (see 5.8.1.1), in order to display user-friendly outputs.

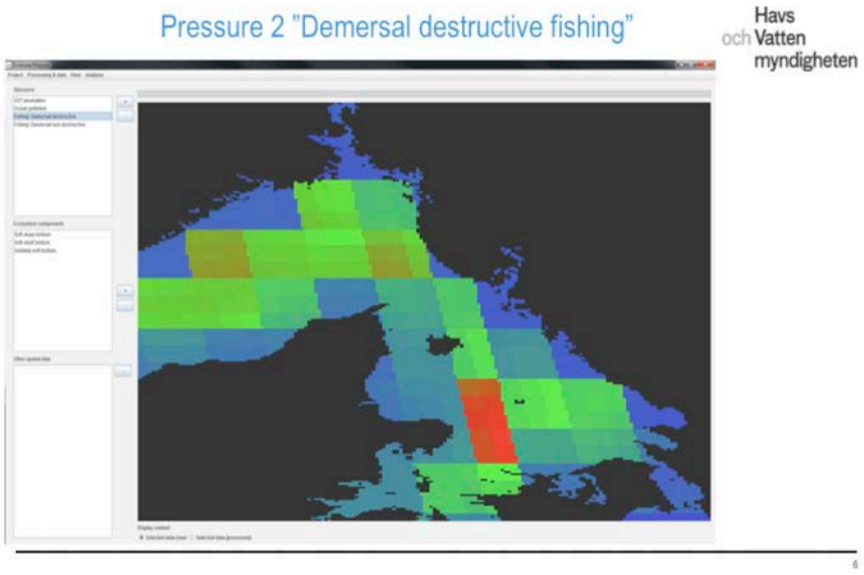


Figure 42: Example of results from SYMPHONY tool

Tools4MSP is another example, available on-line. It includes a Cumulative Effects Assessment component which can be customised for a pre-configured case study (spatial domain, time reference, resolution) using user- provided data. The online tool generates geospatial results and statistical outputs to inform MSP decision-making.

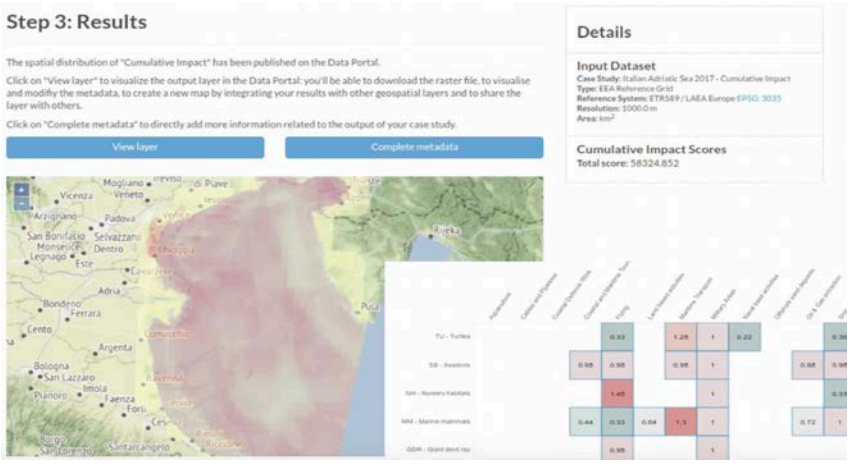
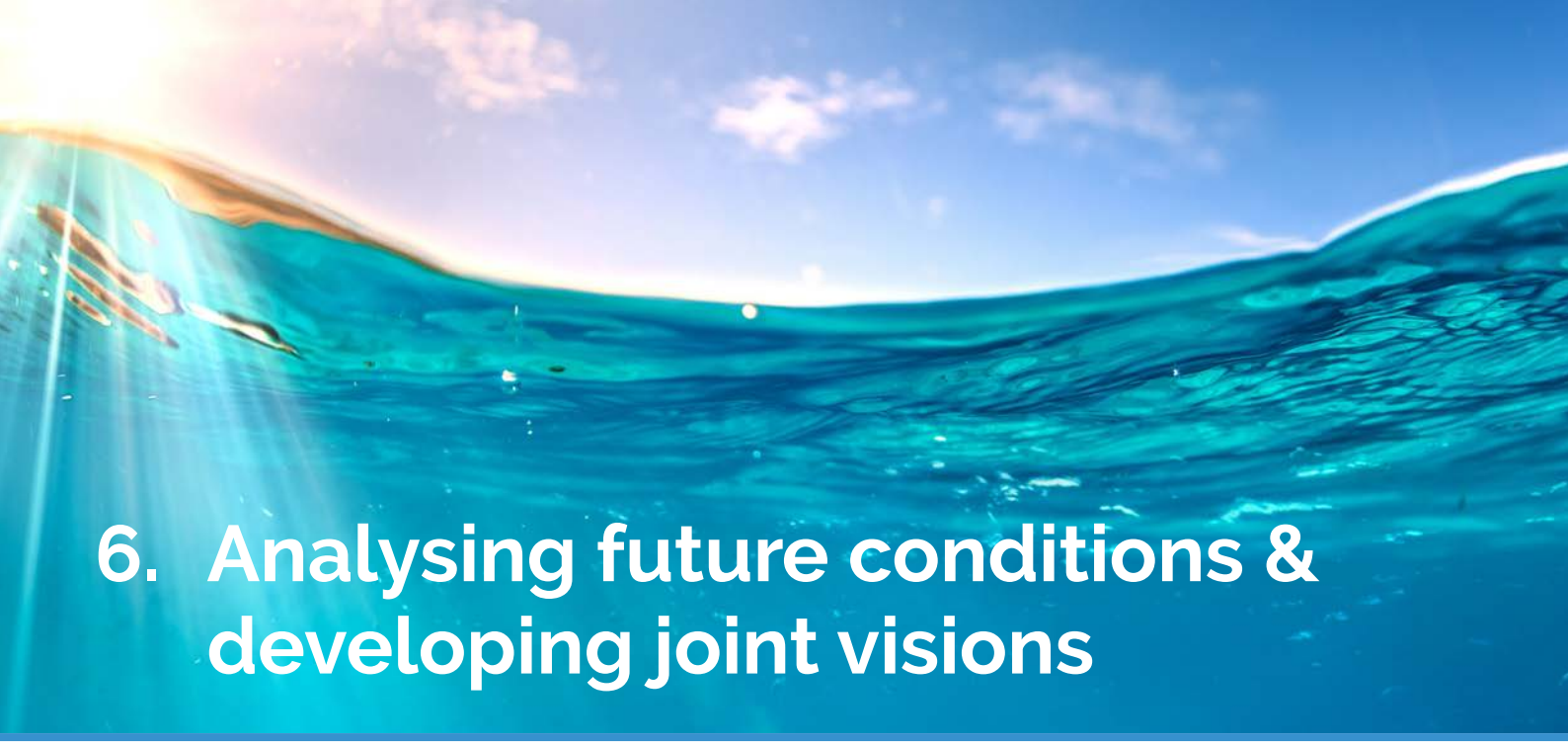


Figure 43. Example of results from Tools4MSP cumulative impact tool

The SIMCelt project considered a methodology and process for cumulative effects assessment in a MSP transboundary context by assessing seabed disturbance caused by multiple activities in two pilot areas including the Irish Sea and the coast of Brittany. The process analysed spatial data about human activities, pressures and the sensitivity of the receiving environment. The combination of these processes resulted in defining the cumulative/ concomitant effects. The results of the CEA assessment have also been illustrated on a web-based story map and video, which also indicates the challenges of CEA in transboundary MSP. The approach used indicates the need for best available spatial and temporal data and considering the risk of impact and effects.



6. Analysing future conditions & developing joint visions

Analysing and mapping current developments as part of a MSP process, provides a comprehensive picture about spatial impacts of given maritime sectors. However, it is also relevant to take into consideration possible future trends in maritime sectors, including changes in their growth and technological advancements (i.e. autonomous operations, VMS systems) which might have spatial implications beyond the usual 6 years planning horizon and/or provide new ways of information sourcing for planners. Vision and scenario processes are often used at the initial stages of the MSP process. Their aim is to anticipate changes in maritime sectors, discuss different options for the maritime space in question, and agree on a preferable course of development. These processes are beneficial for creating understanding on long-term planning objectives and on this basis aligning different sectoral priorities and defining planning objectives. Achievement of such guiding objectives may be tracked through appropriate indicators (see chapter 8), particularly indicators with a spatial dimension.

6.1 Analysing future sector developments and requirements

The analysis of national priorities and trends and the resulting matrix of interests may already include both current as well as future activities (see example 5.5.3 for Matrix of Interests). In some instances, conflicts already exist – especially those related to maritime activity(ies) and nature protection. In many other cases, MSP may be particularly helpful for preventing conflicts from occurring in the first place. Often these conflicts relate to the emergence of a new maritime use, which is requesting space at sea and may thus present a conflict for other existing sectors and/or environmental protection needs. In that sense, MSP is often not well suited to resolve current conflicts, but is rather a better tool to enable decision makers to positively shape the future development of the LME.

When assessing the spatial requirements of sustainable Blue Growth, planners should not only look at the existing maritime sectors active in the planning area and their current spatial requirements. It is equally important to look at new or emerging sectors, as well as new developments, such as technological advances, affecting the already existing maritime sectors. In particular, attention should be paid to the effects developments will have on the future spatial requirements of maritime sectors, possible changes in cross-sector relations, as well as underlying

environmental conditions and impacts. Moreover ,the transboundary issues in each sector need to be considered, as well as how technical, political or social changes may affect the way spatial planners should interact with the given sectors.

There are several existing examples of maritime sector changes which can already be considered:

- The increased use of on-board data systems (VMS / AIS data) may substantially improve the availability of data on ship movements and/or fishing activities.
- The emergence of floating wind parks may substantially increase the options for where offshore wind parks can be placed, as well as reducing impacts on the environment.
- Changing government policies on how certain sectors are financed or how the licensing process is organised may have equally substantial effects and lead to sudden growth of a sector (e.g. aquaculture).

To assemble this information for an MSP process, it is helpful to develop sector analysis fiches that refer to information from the initial analysis of current conditions as well as anticipated future conditions. Sector fiches can be based on national and transnational strategies in the given LME, as well as information generated from a variety of other documents, such as industry reports, national registries as well as institutional studies. The information gathered should then be validated and supplemented by additional interviews with sector representatives. The availability of a team of professionals with solid desk research skills, a good understanding of maritime sectors as well as MSP is usually a prerequisite for developing sector fiches.

The resulting sector analysis fiches provide spatial planners with a much stronger knowledge base for both transboundary as well as cross-sector discussions. They also provide the basis for facilitating joint vision processes.

See example 6.1.1 for more information on the sector fiche development process.

6.1.1 EXAMPLE: MSP Sector Analysis Fiches (European Commission study MSP for Blue Growth)

Sector analysis fiches were developed as part of a European Commission Study, titled "MSP for Blue Growth" and were published by DG MARE in April 2018 (European Commission 2017f). The nine fiches covered offshore wind energy, tidal and wave energy, coastal and maritime tourism, marine aggregates and marine mining, shipping and ports, oil and gas, cables and pipelines as well as fishing and marine aquaculture. The fiches provide an overview of future uses of the sea and the evolution of different maritime sectors, and focus not only on the present spatial needs, but also on the anticipated future developments of the sectors. In addition, the fiches look at existing interactions between the sectors and offer a set of concrete recommendations to inform MSP processes, including planning criteria.

GROSS VALUE ADDED	STATE OF THE SECTOR	PRESENCE ACROSS SEA BASINS
€36.1 billion EU's Gross Domestic Product (GDP) 262, 712 jobs created 262, 712 jobs created	Growing	North Sea Baltic Sea Atlantic, especially Celtic Seas

LAND-SEA INTERACTION	TEMPORAL ASPECT	LIFETIME OF INSTALLATIONS
Connections to land-based systems GRID Through ports for construction and maintenance	Different wind characteristics during seasons	Development time : 7-10 years Economic/technical lifespan : 25-30 years (with Possible extension)

INTERACTION WITH OTHER ISSUES
Synergies possibly with aquaculture, nature conservation, fishing and tourism Conflicts with shipping, marine aggregates and fishing, and to a lesser extent with tourism and nature conservation.

Figure 44. Sample of basic facts from sector fiche

6.1.2 EXAMPLE: Spatial demands and Scenarios (SIMCelt project)

The SIMCelt project used scenarios to understand current and future spatial demands for important maritime sectors whiles considering particular cross border issues in the Celtic Seas. The first step in such stage focused on developing sectors briefing notes for key sectors which were selected based on those which have transboundary aspects such as shipping and ports, pipelines and cables and sectors with increasing spatial demands such as aquaculture, offshore wind, wave and tidal energy. These sectors briefing notes were collated through desktop research and contact with maritime sectors and stakeholders to understand current, future trends and drivers for change.

It is important that for an LME area, cross border issues and potential future scenarios are discussed between relevant actors and stakeholders. Four scenarios were developed by the SIMCelt project which considered spatial diffusion/efficiency against the degree of cooperation/autonomy between sectors and countries bordering the Celtic Seas. A workshop which involved representatives of these maritime sectors and relevant stakeholders was held to test the four scenarios and also to understand the future targets, potential changes in policy and technology and challenges in managing demand of space by these sectors. During the workshop, participants were asked to imagine likely future trends and developments in the sectors they were familiar with and place a marker on a grid of the four scenarios to indicate where they thought their sector would be by 2050 as shown in the figure below. It is also necessary that the workshop is used as a platform to discuss potential solutions to resolution were put forward.

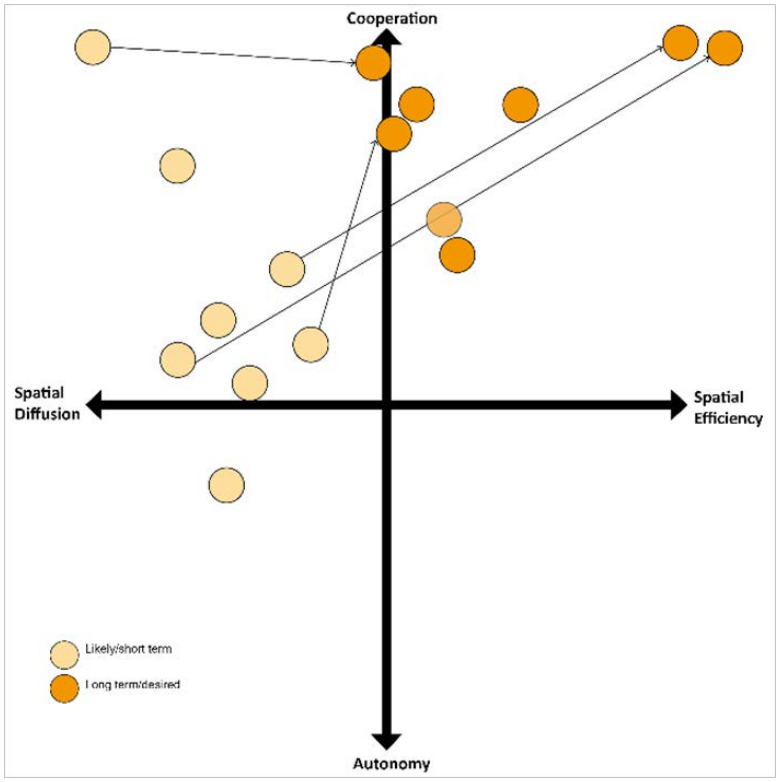


Figure 45. Sample results of future trends analysis exercise from SIMCelt

SIMCelt project, Spatial Demands and Scenarios

6.1.3 EXAMPLE: researching sector developments across countries (BalticLINes)

The BalticLINes project aims to improve the transnational coherence of shipping routes and energy corridors in the Baltic maritime spatial plans, to prevent cross-border mismatches and to ensure transnational connectivity. As one of the initial steps, the project has screened and analysed available information, data and maps related to past, present and future developments in shipping that are of relevance for MSP in the Baltic Sea (BalticLINes 2016). Some of the main questions answered by this analysis include:

- what are the economic, environmental and technological developments that may influence shipping in the coming years;
- what are the spatial implications of such developments;
- what are the existing plans or guidelines for the coordination of shipping traffic in the Baltic Sea?

The project will provide a synthesis of relevant information to enable in-depth discussions on common planning criteria for shipping, to develop likely future scenarios and to consult stakeholders in a comprehensive manner.

6.2 Developing a common transboundary vision

A transboundary MSP process should be guided by a shared transboundary vision exploring possible futures and choosing a preferred scenario for maritime uses. Such a process fosters a better understanding of which kind of future maritime spatial planners should plan for, and what kind of actions are required now to achieve such a future (see example 6.2.1 for a description of a vision developed for a transboundary MSP project).

The development of a vision or strategy can define relevant concepts as part of the MSP preparatory phase (e.g. maritime space and the use of maritime space), prepare stakeholder input to MSP, help prioritise the uses in maritime spatial plans and set out general planning principles. A joint transnational vision facilitates more coherent MSP across national borders based on commonly agreed elements for planning. These long-term processes also serve as a cross-border cooperation instrument. Further discussion on strategic thinking can be found in the **›› Strategic Approach Toolkit Chapter 3 on SAPs** and in the **›› LME Project Cycle Toolkit Chapter 4: Preparation of Strategic Action Programme (SAP) Projects**.

A well-crafted transboundary vision, which is also based on some realism, can act as a very strong bond among a transboundary MSP project group. It may enable partners, who may be stuck within the limits of their respective current remits, to gain a more positive understanding of the MSP process and their possible role in taking steps towards achieving it. A vision development process may lead to shared perceptions of the issues to be addressed, the concrete goals of an MSP and the strategies by which such goals will be achieved.

Along these lines, a vision process helps to clarify the focus of MSP and may also provide the basis to derive agreed upon SMART objectives for an MSP process. The task of MSP is to link this desired future to present conditions, e.g. by analysing the spatial implications of future sector trends and defining specific and achievable development objectives. A vision developed to supplement a MSP usually provides a long-term perspective by considering evolution of key maritime sectors beyond the typical MSP timeframe. This long-term perspective is vital for some physical infrastructures at both land and sea (e.g. offshore wind parks, port development, tourism centres). In many instances, not only do the planning periods of these sectors go well beyond the typical six-year horizon of the MSP, but also the resulting structures remain fixed for decades. Moreover, many sectors require cross-border coherence in planning (e.g. shipping lanes, energy corridors, underwater cables), and development of a joint transnational vision and planning principles has been beneficial in this regard. Such processes have also reviewed whether the national policies/strategies are compatible with each other and where synergies could be enhanced (i.e. energy corridors).

A vision for transboundary MSP can have the following benefits:

- raise awareness of emerging issues (e.g. effects of climate change, demography) and communicate the need for transnational MSP;
- stimulate stakeholder's engagement and capacity building, particularly where MSP is a new process; and
- facilitate the discussion and agreement about joint priorities, objectives and hot spot areas that MSP will focus on;
- account for future uses not present to date and for implications of technological changes in current uses;
- enable coordination between different authorities addressing sectors and issues by showcasing common future interests;

- provide a long-term focus for MSP that may extends beyond political cycles;
- showcase positive developments and scenarios in an LME planned 'without' jurisdictional borders
- achieve better integration of planning across the land-sea interface.

The sector fiches described in 6.1.1 can serve as basis for visions to be developed along with stakeholders from outside the project partnership. The visions should initially only concentrate on the generally preferred, while realistic, future. Only in a second step should visions be elaborated to provide detailed contributions to the given national MSP plans and their resulting provisions, in order to achieve the preferred future. In a final step, actors may then agree on the required priority actions to be taken when implementing an MSP in the future.

It should be noted that such kind of future development scenarios may not only relate to sector developments, but also expected developments and changes in environmental conditions. These include predicted climate change effects, as well as socio-economic conditions (e.g. demographic change, political conditions, economic developments), which may relate to multiple maritime sectors (see more on scenarios in 6.3).

In general, the choice of how to develop and design a vision and related vision development process within the given LME highly depends on the resources available for a given transboundary MSP process; cooperation maturity; as well as the ultimate purpose of the exercise. It also depends on whether transboundary vision development is first solely done among the direct transboundary MSP project team, or if a selected number of interested stakeholders from outside the immediate partnership are already involved. The advantage of bringing in outside stakeholders may be to immediately draw on their specific expertise for a given sector or issue, and to showcase the objectives and potential MSP can have. At the same time, their involvement increases the level of complexity of the process and may thus not be suited for a region, where it is first of all important to create a good understanding among the direct actors of the project partnership.

In all instances, there is evidence that a 'vision process' as much as an MSP process requires special facilitation and moderation skills (see example 6.2.2). This is especially relevant in the transboundary context due to the increased level of complexity and possible underlying barriers to create a common understanding of a mutually desired future. The stakeholder process and vision facilitation should thus be best taken by a neutral outside facilitator (individual who is not already within the process and is not perceived as an extension of any of the involved agencies). Such skills are often to be found within NGOs, universities, as well as consultancies specialised in change management processes.

The vision development handbook described in 6.2.4 includes more detailed information on the aspects of vision development described in this section. The handbook provides a complete 'toolbox' in its own right, with both tools as well as multiple examples and good practices on how to develop a MSP relevant vision.

6.2.1 EXAMPLE: Transboundary MSP Vision for the Baltic Sea (BaltSeaPlan Vision 2030)

The BaltSeaPlan Vision 2030 (Schultz-Zehden *et al.* 2011) was developed jointly in a collaborative process in the years 2011-2012 by the project partners from the BaltSeaPlan project. These came from seven different Baltic countries and encompassed a whole variety of ministries and authorities as well as researchers and NGOs, making it a reflection of a broad range of different backgrounds and perspectives. The lead authors of the document were social science researchers and spatial planners, who had been specifically contracted to facilitate the process among the project partners.

It is a regional sea-basin wide scale vision for MSP processes, providing an integrated perspective of sea uses and the Baltic Sea ecosystem. The vision aimed to provide more coherence and certainty to all users of Baltic Sea space. Grounded in existing trends and policy objectives, it tried to anticipate future developments and changes and to place them in a spatial context. The vision is transnational, but linked to national MSP as part of a holistic approach to MSP across scales.

As part of the vision, objectives and spatial implications were highlighted for the very first time for 4 transnational topics: 1) healthy marine environment; 2) coherent pan-Baltic energy policy; 3) safe, clean and efficient maritime transport; 4) sustainable fisheries and aquaculture. It serves as an excellent example on how to translate desired future developments into concrete provisions which should be taken up by maritime spatial plans.

General steps of the process included:

1. development of initial joint vision statement
2. analysis of existing strategies
3. development of new project ideas for unsolved issues regarding governance and management
4. involvement of all BSR partners and smaller working group through series of meetings
5. drafting and revision of vision text and graphics.

A pre-study was developed on future spatial needs of key transboundary sectors. The pre-study also explored links to sectoral strategies and policies, existing MSP principles (HELCOM/VASAB) and national MSPs. The scenarios were developed as part of the process and discussed at workshops. There were various feedback loops on the final text of the vision.

The BaltSeaPlan vision was the first of its kind and is still quoted. Take up of the vision was ensured through partners involved in MSP processes. The vision substantially influenced some MSP processes and outcomes in the Baltic; esp. as it developed joint sea-basin wide principles for spatial allocation decisions such as spatial efficiency, spatial connectivity, spatial subsidiarity; which have been used ever since by MS Planners.

Most importantly the vision also set the basis for the current transboundary MSP governance system in the Baltic and was one of the key documents which led to the adoption of the EU MSP Directive as it showed the importance of taking a transboundary approach to MSP. Moreover, currently ongoing projects and initiatives, which seek to create joint strategic agreement among Baltic Sea countries on how to develop the underlying transboundary

linear infrastructures (shipping lanes, energy grids, blue corridors) are still resulting from this Vision process. In conclusion, the vision development process created substantial benefits for those involved by creating a strong sense of common identity between the MSP community throughout the Baltic Sea Region.

6.2.2 EXAMPLE: Coral Triangle Vision 2020 and related strategies

In the Coral Triangle, WWF is working on realisation of the long-term vision for the region that encompasses variety of aspects including area-based protection and management, reduction of negative impacts from marine activities, and improved livelihoods. The vision has been defined as: "The oceans and coasts of the Coral Triangle, the world's center of marine biodiversity, are vibrant and healthy within a changing climate, building resiliency of communities, food security and contributing to improved quality of life for generations to come".

Starting from this broad vision, three specific goals to be achieved by 2030 have been defined relating to 1) percentage of the area to be managed; 2) reduction of the footprint of marine activities; and 3) sustainable food security, improved income and livelihoods.

The realisation of the Coral Triangle vision and goals involves three key strategies:

1. policy and advocacy - collaborating on different levels with relevant institutions, organizations, and initiatives. Six Coral Triangle nations are involved in to the process and appropriate marine policy issues are raised through the Coral Triangle Initiative on coral reefs, food security, and fisheries;
2. Innovation and business transformation – seeking for new business models, innovative ways of working with fisheries, fostering collaborations and dialogues among sectors.
3. Marketing and Communications - working across the region and linking up with like-minded institutions to find innovative, effective ways to let the call for sustainability be heard all over the world.

WWF Strategies for Sustainability in the Coral Triangle

6.2.3 EXAMPLE: Visual facilitation/ graphic recording (SIMCelt and Baltic Blue Growth Agenda)

In many cases, visions are not depicted at all as a specific spatial map, but may take the form of "wild picture", which is developed as part of the vision development process by a graphic recorder. The graphic recording is helpful as it engages people and also clearly shows the visionary character of the process, as opposed to the potentially resulting maritime spatial plan. Samples of good graphic recording are available as a resource form the SIMCelt project (xxxix) as well as the Implementation Strategy for the Baltic Blue Growth Agenda (Bayer *et al.* 2017).

Figure 46. Graphic Recording from SIMCelt project final conference

6.2.4 KEY RESOURCE: Handbook for how to develop an MSP Vision (MSP for Blue Growth Study)

Numerous past and ongoing transnational MSP projects have worked on developing future visions providing important input for the development of the respective national MSPs (see example 6.2.1). The *Handbook for developing Visions in MSP* (Lukic *et al.* 2018),, developed by the EU MSP Platform as part of the "MSP for Blue Growth" study, defines scenarios, forecasts, visions, strategies, action plans and roadmaps in an MSP context and how they can be used in MSP processes. The handbook presents methodological approaches used in existing and on-going processes and highlights the lessons learned. The purpose of the handbook is to help readers develop their own vision, guided by a decision framework and building blocks to compose a vision development process. The handbook is based on vision process experiences across Europe, which provide tools and practices that can be used to answer question such as:

- how to identify and analyse stakeholders?
- When and how to develop scenarios?
- How to ensure that vision process and its outputs stay continuously relevant?

Figure 47. EU MSP Platform Handbook for developing Visions in MSP

Handbook for developing Visions in MSP

6.3 Development of multiple scenarios

A visioning process usually starts with an investigation of future trends, using methods such as forecasts and scenarios to analyse possible and/or desirable future conditions. Although there are many different kinds of scenario development techniques, the scenario process always unfolds in a broadly similar manner:

1. The first phase of the scenario process deals with the identification of the scenario field by establishing the precise questions to be addressed and the scope of the study.
2. The second phase identifies the key factors that will have a strong influence on how the future will unfold.

3	The third phase usually examines what range of outcomes these key factors could produce.
4	The fourth phase involves condensing the list of central factors or bundling together key factor values in order to generate a relatively small number of meaningfully distinguishable scenarios.
5	The fifth and final phase of the scenario process can be labelled "scenario transfer" and involves applying the finished scenarios for purposes such as strategy assessment.

The scenario making process also considers identification of drivers of change and key variables (please see example 6.3.1). These drivers and variables can be environmental changes, uses and human activities, governance and management contexts. An overview of the existing maritime sector developments and their evolution across countries, in the form of a (jointly created) sector fiche, can be the first step for planners when assessing spatial requirements of maritime sectors (see 6.1).

Spatially mapped scenarios and resulting visions are usually more useful in an MSP process than non-spatial examples, but precise mapping of a large geographical area is challenging and may not be necessary for a vision process, which is more of an exploratory exercise than developing a statutory plan. **›› The Environmental Economics Toolkit Chapter 7** provides other non-spatial assessment tools including cost benefit and multi-criteria analysis approach for scenario analysis and comparing alternative management actions. Further discussion on presenting options for management action is included in the **›› Strategic Approach Toolkit Chapter 3 on TDA** and in the **›› LME Project Cycle Toolkit Chapter 3: Preparation of Transboundary Diagnostic Analysis (TDA) Projects.**

Most transboundary visions have used structural maps, which require less data and precision than GIS- derived maps, but still allow for identification and visualisation of main hot spots on a map. Such mapping exercises can be conducted in an interactive way, together with stakeholders or within the planning team. Interactive methods such as SketchMatch (see example 6.3.1) and visual facilitation (see example 6.2.2) have been used for participatory mapping exercises to facilitate discussions on spatial priorities.

6.3.1 EXAMPLE: Scenario Toolbox (VALMER)

Technical scenario guidelines have been produced during the VALMER project to help case study sites construct scenarios. These guidelines set out how to build scenarios in five complementary phases and provide twelve tools. The use of scenarios was seen as an effective way of moving from a theoretical framework to influencing the delivery of policy. Stakeholder engagement, via scenario building exercises, can utilise ecosystem service assessments and valuations to explore stakeholder views and preferences on various management options and trade-offs. Scenarios motivate participants to react to a plausible set of events in the future, or to build the future events themselves and then test these against a range of criteria. The criteria could be, for example, how real they are; how effective they are in delivering an outcome or whether all factors have been taken into account (Herry *et al.* 2014).

6.3.2 EXAMPLE: Participatory mapping exercises (SketchMatch)

A Sketch Match is an interactive planning method, involving a series of design sessions lasting up to three days. The Sketch Match session consists of forming work groups which analyse qualities, problems and potentials of a specific sea area, with an aim to identify a range of different objectives. The result of a Sketch Match is a spatial design, in the form of a map, visual story, model, 3-D GIS, visualizations, or whatever form suits the project best. The SketchMatch was developed by Dutch Government Service for Land and Water management (Dienst Landelijk Gebied, DLG). It was used to lay the basis for 'spatial development sketches' for integrated MSP in the Black Sea. The project aimed to develop a number of spatial draft plans for integrated flood management in the Galaţi–Tulcea region in Romania. The SketchMatch method was applied in Eforie and Sfantu Gheorghe study cases to identify and visualize potential development paths and facilitate the decision-making process for managers, policymakers and local stakeholders (Nichersu *et al.* 2018).

7. Solutions, Planning and Implementation

There are very few cases where a transboundary MSP process has already gone through a complete planning cycle and has therefore led to a concrete set of planning solutions – let alone binding implementation.

In general, it should be noted that planners themselves often do not have the mandate to solve all issues and that further political involvement is required if sensitive conflicts are to be resolved and plans and recommendation put into practice.

Planners have the capacity, however, to identify key issues, which can then be redirected to the right bodies responsible for handling them. It is mainly on this basis, that some samples can be shown of what kind of planning solutions may be found for transboundary MSP areas, and how they can be eventually enforced, despite being governed under different jurisdictions.

7.1 What type of planning solutions?

A distinction has to be made, whether planning solutions for transboundary MSP relate to

a) joint management measures in a concrete, specific set of cross-border, joint planning areas (hot spot areas – see 5.2.4); or

b) a common approach on how the regulatory provisions, e.g. zones, of the maritime spatial plan(s) are defined throughout the whole , transboundary area

c) an agreement on how countries integrate issues of transnational concern into their national MSP plans (potentially to be adopted later on), and thus potentially adapt planning decisions according to transnational needs; or

d) more general agreements on the overarching MSP governance system within the given LME; referring to mechanisms of how countries decide to collaborate and consult each other in MSP processes in the future. This could take the form of adhering to a joint set of planning principles, cooperation as well as consultation mechanisms including joint strategies on how to ensure finance for future joint initiatives (e.g. set up and maintenance of joint MSP data infrastructures or enabling tools to carry out cross-border Strategic Environmental Assessment (SEA) processes).

All those different forms of transboundary MSP are applicable for MSP in transboundary LMEs. It highly depends on the given context whether solutions will initially be found for a specific focus-area, or whether to begin with the establishment of a suitable transboundary MSP governance system.

In many cases, MSP may also be established as a new tool within an already existing governance system. This has the advantage that MSP may immediately be able to concentrate more on the actual solutions for a given issue (please see examples 7.1.1, 7.1.2 & 7.1.3). Further discussion on strategic planning is included in the **›› Strategic Approach Toolkit Chapter 3 on SAPs** and in the **›› LME Project Cycle Toolkit Chapter 4: Preparation of Strategic Action Programme (SAP) Projects**.

Given different planning cultures across countries, an existing governance system may put more focus on achieving coherence between planning provisions for MSP, but may be less prone to enable similar types of planning provisions. As shown earlier, plans throughout Europe for instance differ substantially in view of how planning provisions are integrated into the given national framework (see 2.3.1). Whereas this does not necessarily mean that the plans are not coherent with each other, transboundary cases with similar zoning systems seem to be mainly applicable in areas within one country (e.g. Germany, Australia – please see examples 7.1.4 & 7.1.5). In other cases, MSP as such first needs to be established.

7.1.1 EXAMPLE: Adapting existing management measures (CCALMR)

CCAMLR is a successful example of common management of one large marine area which is governed by different states. Its existence was driven by the need to find a multi-lateral response to a history of over-fishing in the Southern Ocean and increased threat of unregulated fishing on krill. CCAMLR has established a joint management of (de facto) high seas by all CCAMLR Convention Members (primary). It has also managed to establish a regime where respective coastal members are bound to transpose jointly agreed conservation measures in their own maritime zones, which belong to the CCAMLR Area.

→ Commission for the Conservation of Antarctic Marine Living Resources (CCALMR)

7.1.2 EXAMPLE: Piecemeal approach through adoption of rules and agreements (CTI-CFF)

The focus of the CTI-CFF was to designate "priority seascapes" and MPAs, apply the ecosystem approach to the management of fisheries and climate change adaptation measures between 6 countries in the western Pacific Ocean. The initiative did not initially start with an agreed plan and mechanism for implementation.

Socio-economic differences across the Coral Triangle countries was a challenge for an agreement to be made at the inception of the initiative (e.g. Papua New Guinea was slow to ratify the Secretariat Agreement on financial grounds). However, the CTI-CFF prioritised the agreement on goals and a plan of action in 2009, before committing to implementation through the adoption of the Rules of Procedure and Secretariat Agreement two years later. The initiative is a good example of how broad LME goals and plan of actions developed can be given cooperative and legislative backing for implementation overtime.

Coral Triangle Initiative on Coral Reefs, Fisheries and Food Security (CTI- CFF)

7.1.3 EXAMPLE: Joint management measures (Rhode Island)

The 'Rhode Island Ocean Special Area Management Plan' was developed over a course of a two-year period and has been formally adopted by the relevant authorities in 2011. Apart from the push from the offshore wind energy industry as an MSP driver, the case was also strongly enabled by the fact that it is NOT a multi-national case and thus had a strong and clear framework as a foundation. The plan enabled designation of areas of particular concern as well as restricted use areas (esp. for offshore wind energy deployment) in an integrated way across the two states concerned (Rhode Island and Massachusetts), including even designating a joint area of mutual interest. It is therefore a concrete case where a joint plan has been adopted across two different jurisdictions for a hot spot area. The adoption of the plan has in turn also achieved its goal: it has led to the successful development of the first offshore wind farm in the US, without leading to substantial conflict with other users (e.g. preventing conflicts from happening).

Rhode Island Ocean Special Area Management Plan

7.1.4 EXAMPLE: Complementary zoning (Great Barrier Reef)

While MSP in the Great Barrier Reef has been applied in only one country (Australia), the sheer size of its application and the fact that it is used across differing jurisdictional arrangements, actually means that it also can serve as an example of a transboundary approach to MSP. Already by 1979, the Australian and Queensland Governments agreed to complementary management of the waters and islands within the GBR Region. Known as the Emerald Agreement, this was fundamental in order to clarify the jurisdictional complexities of what was deemed State Waters (extending from high water mark to 3 nm offshore) versus 'Commonwealth waters'. As a result, the State of Queensland 'mirrored' the federal zoning in nearly all the adjoining State waters. The result is that today there is a complementary zoning for virtually all the State and Federal waters across the entire GBR from high water mark out to a maximum distance of 250 km offshore. This provides for more effective marine conservation and public understanding of the entire area as the regulatory provisions are the same irrespective of which jurisdiction applies (Day 2015).

7.1.5 EXAMPLE: Traditional Owner Agreements (Great Barrier Reef)

As one element of the complementary management approaches to the various MSP layers and zoning regimes within the Great Barrier Reef; formal Traditional Use of Marine Resources Agreements (TUMRAs) describe how indigenous Traditional Owner groups work with the Australian and Queensland governments to manage traditional use activities in their sea country. TUMRAs support cultural practices while protecting species and ecosystems critical to the health of people, culture and country. The TUMRAs operate across the jurisdictional boundaries and have been developed with differing levels of governments, and with various industries, stakeholders or community groups (Day 2015)

7.2 How to move from analysis to joint solutions

The analytical stage is mainly designed to develop a more concrete understanding on the specific "hot spot areas" as well as potentially "hot spot issues", for which it is necessary to find transnational planning solutions (see 5.2.4 for more on hot spots). Based on matrices of interests, it is possible to identify where countries' interests in a given location may:

- Co-exist (no further action necessarily required other than status quo); or
- Be in conflict with each other (requiring further action – if possible); or
- Enable each other (potential action to strengthen joint interests).

It is important to highlight the positive element of building on joint interests rather than only focusing on potential conflicts.

It is easier to come to a more pragmatic understanding of possible solutions when the area in question is concretely defined and there is a high level of understanding of underlying interests among the planners and countries involved (see 5.2, 5.3, 5.4, 5.5). At the same time, it should be noted that a solution may not be possible in all instances at the level of planning authorities, and that issues may need to be moved to a higher political level for resolution. Even in such situations, it has proved to be already helpful when planners across borders have gained a better understanding of the given issue and may at least already have developed either one or several options on how the issue may be solved by the political level. Further discussion on appropriate institutional arrangements for implementation can be found in the **›› Stakeholder Participation Toolkit Chapter 4.2.3.3 Co-management approaches** and **›› 4.2.3.4 Seeking and implementing agreements and policies**.

7.2.1 EXAMPLE: Identifying issues and suggested solutions for issues arising in transboundary hot spot areas in the Southwest Baltic Sea (Baltic SCOPE)

As described earlier (see 5.2.5), planners identified six specific focus areas within the southwest Baltic Sea, that are important form a transboundary perspective and that require cooperation between the involved states. For all areas, national planners and stakeholders identified and highlighted the main areas of potential synergies and conflicts in the region as well as other issues that require cooperation. This was achieved through the development of topic papers, a matrix of national interests (see example 5.5.3) and broader discussions within the project's planners' meetings, national stakeholder meetings and in a transboundary stakeholder conference. Following issue identification, national planners identified solutions and formulated recommendations to address conflicts and promote potential synergies in the transboundary focus areas and across sectors. This was achieved through open discussions within trilateral and bilateral meetings as well as unilateral tasks assigned to specific project partners.

Given the different nature of these areas and the resulting varying conflicts arising between the different countries involved; the types of planning solutions suggested also differ substantially. The full set of conflicts, potential synergies and related solutions (as well as more detailed description of methods used) are to be found in the case study report from the Baltic SCOPE project (Baltic SCOPE 2017).

The following only provides for a snapshot of what kind of solutions can actually be found in order to ensure coherence between plans within the larger southwest Baltic Sea ecosystem:

- The possibility to connect linear infrastructure in the transboundary area should be highlighted and developed in national plans;
- All countries should secure access of the given hot spot area to their fishermen by considering routes to their main fishing and landing ports;
- Involved countries should, in cooperation, consider to reroute the ferry or other shipping lanes before allocating space and/or building offshore wind farms in the identified hot spot area;
- Countries need to consider how offshore wind farm interests affect important fishing areas used by all countries;
- Offshore wind farm requirements in the given hot spot areas should be harmonised between countries before permits are granted; and/or
- Develop a shared visualisation tool designed to increase knowledge and understanding of current & future conditions in some hot spot areas

Moreover, the project suggested to develop additional tools, which would enable transboundary planning across the whole Baltic Sea Area:

- Development of a joint fisheries map which should provide evidence and activities of fisheries in their national waters as well as across the whole Baltic Sea
- Planning and sector authorities should collaborate to map the areas of high ecological value across the Baltic Sea using both a harmonized methodology and data sets in order to create MSP relevant green infrastructures/blue corridor GIS-layers to be used in MSP

7.3 Implementation and Enforcement

As discussed previously (7.1), implementation and enforcement in a transnational context highly depends on the existing governance regime. In areas where all countries already have MSP processes in place, implementation may mainly relate to (voluntary) agreements by countries to adhere to some strategic planning criteria or principles within their national MSPs.

However, the absence of existing MSP regimes at the beginning of the transboundary MSP process may also entail a unique opportunity, in that subsequent national MSPs in each country may be aligned with one another from the very outset. As shown by the given example of the MSP governance structure within the Baltic Sea Region, continuous dialogue between the respective MSP authorities is crucial, as well as a transparent governance structure that supports alignment of strategic LME wide objectives (top down) with more regional, lower scale planning processes (bottom-up) (please see example 7.3.1). For more on effective governance, please see the **›› Governance Toolkit Chapter 5.1 Effective Governance.**

On top of national structures as well as transboundary agreements to ensure coherence through consultation and cooperation during preparation of national and sub-national plans, a transnational MSP coordinating body needs to be set up which is tasked with organising and ensuring implementation of these agreements. This coordinating body should be responsible for drawing up transnational objectives and targets for the LME, requirements for tailored monitoring as well as continuous development and improvement of related transnational tools (such as joint data and research programmes). Further discussion on coordination mechanisms for implementation is included in the **›› Stakeholder Participation Toolkit Chapter 4.2.3 Involving Stakeholders in Implementation**.

7.3.1 EXAMPLE: Establishing a long-term MSP governance structure (HELCOM-VASAB MSP working group)

In the Baltic Sea Region, countries have established the HELCOM-VASAB MSP working group as an on-going cooperative structure, where countries continuously exchange and deepen working relationships to ensure that their respective MSP processes are aligned with each other. Over the course of the last several years, the character of the group has evolved. At the time it was created, not all countries had MSP legislation or authorities in place.

Therefore, the group was designed to ensure that such processes are put into place. Currently, it is the coordinating body where the given MSP authorities – by now in place in all countries – meet and continuously work on improving alignment between MSP processes.

Starting from agreement on 'joint principles on MSP' followed by the adoption of the joint MSP Roadmap - which stipulates that all BSR countries should have MSPs in place by 2021 - the HELCOM-VASAB MSP WG has by now also adopted a series of 'non-binding' guidelines on a continuous update of country information; the ecosystem-based approach in MSP and transnational consultation and cooperation, as well as public participation on MSP. Moreover, the members of the HELCOM-VASAB MSP WG continuously engage in various forms of MSP cross-border projects, which create the basis for even stronger joint collaboration on MSP – such as the creation and ongoing maintenance of a transnational MSP data infrastructure as well as the development of guidelines on how to align and consult on pan-Baltic linear infrastructures.

Collaboration on MSP within the Baltic Sea Region has benefited from a strong tradition of collaboration and existing transnational cooperation structures (incl. HELCOM and VASAB) coupled with the general joint understanding that action is required to improve environmental conditions. This has been reinforced during the past few years, not only by many countries becoming EU Member States, but also by the creation of a macro-regional strategy, which is accompanied by transnational funding programme availability. This funding has enabled the implementation of a continuous series of MSP projects building on each other's results.

These projects have created a strong community of MSP experts, who trust each other and have led to an underlying joint understanding of general MSP principles – even though they may have not been adopted formally by countries.

HELCOM-VASAB MSP Working Group

7.3.2 EXAMPLE: Adapting management measures (Norway – Russia Barents Sea)

The Barents Sea is considered as a single LME that is divided by the border between Norway and Russia. The resolution of the disputed border between Norway and Russia in the Barents Sea and various cooperation structures have contributed to developing and adapting joint management measures in the Barents Sea by both countries.

For example, the Joint Norwegian-Russian Fisheries Commission was formed as a cooperation mechanism to ensure healthy state of fish stocks in the Barents Sea. Joint management measures such as total allowable catches (TACs) and technical measures for fish stocks such as haddock, capelin and Greenland halibut, and beaked redfish are jointly agreed and reviewed based on management strategies agreed by both parties and on recommendations on catch levels from ICES, which includes both Norwegian and Russian scientists. Policies and joint management decision for fisheries are also informed by years of joint and advanced marine research cooperation between the two parties.

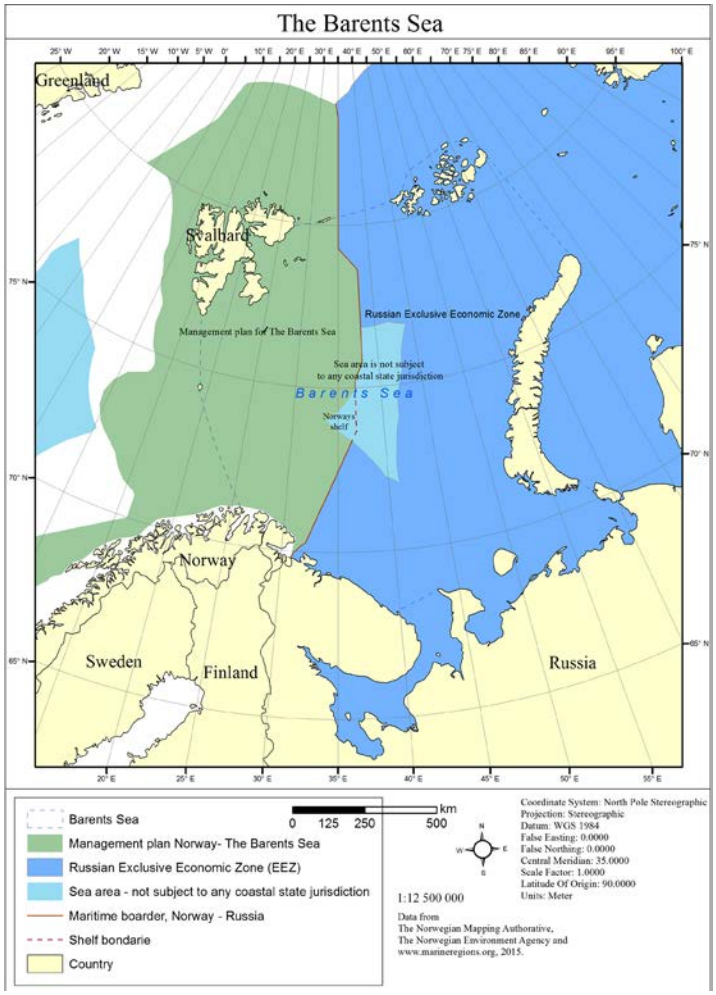


Figure 48: Map of Norway-Russia Barents Sea area

Similarly, there also exist bilateral agreements and joint contingency plans between the two countries on combating oil spills in the Barents Sea. However, the Barents Sea still poses new safety challenges and Russian cold climate experience can be merged with Norwegian offshore competences. The Barents 2020 project (Norway-Russia) through industrial cooperation have assessed international standards for safe exploration, production and transportation of oil and gas in the Barents Sea, based on existing standards in the North Sea. The output of the project included recommendations and guidance to improve ISO 19906 as an Arctic design standard; best practice for ice management; recommendations on evacuation, escape and rescue and recommendations on working environment.

The long-term goal is for all these structures, management measures, cross border research and projects such as the Barents 2020 to inform transboundary MSP cooperation between the two parties where Norwegian and Russian MSP plans for the area are closely aligned. Norway's experience of developing integrated management plans and the results of the bilateral cooperation on the marine environment will be key parts of the MSP process that Russia is now planning. The joint management measure and actions for fisheries and international standards for safe exploration will be adapted and inform the aligned marine plans.

→ Update of the integrated management plan for the Barents Sea – Lofoten area including an update of the delimitation of the marginal ice zone

8. Monitoring & Evaluation of Transboundary MSP

Monitoring and evaluation lies at the heart of good practice to any MSP process to measure whether or not goals and objectives are being met. This step is also important for improving and adapting MSP during the "next generation" MSP so that changes, both internal and external to the MSP project, can be incorporated, as well as lessons learned from the previous "generation."

Even though it is often placed at the end of a planning cycle, the actual design of the appropriate framework for evaluation should be developed at the very beginning of a planning cycle (see example 8.1.1). Monitoring can only be done well if objectives are clearly set as part of the logical framework analysis process during the MSP project design stage (see 3.3), and potentially subsequently when more specific objectives are set for actual planning, following the analysis and clarification of specific issues.

The "logical framework matrix" (European Commission 2004) implies that objectives are set against a given number of set assumptions, and that a limited number of objectively verifiable indicators are determined early on. These indicators are not only relevant to the determined objectives, but they can also be measured in an easy and cost-efficient format. A pre-condition for a good evaluation is that these target indicators are set against a baseline of current conditions, as measured at the beginning of the process. Further discussion of baseline conditions is included in the **›› Stakeholder Participation Toolkit Chapter 4.2.3.2 Gathering and sharing baseline information**. The clearer the objectives and desired outcomes of the given transboundary MSP process, the easier it is to develop appropriate evaluation criteria (see example 8.1.2).

It is therefore recommended to carry out a logical framework analysis process covering objective setting (including overall objectives, project purpose, deliverables, and assumptions) as well as related indicators as part of the overall project design. If done as a participatory process among the whole project team involved, this may also be an important point for clarifying the actual purpose and design of the project and thus act as a group bonding exercise for the transnational partner group (see 3.4.5 for more on this topic). The resulting logical framework can/should subsequently also be shared among the main stakeholder groups, as a way to clarify and manage stakeholder expectations for the given process. Further discussion on including stakeholders in monitoring and evaluation can be found in the **›› Stakeholder Participation Toolkit Chapter 4.2.4** PHASE 4: Working with Stakeholders on Monitoring and Evaluations.

This analysis should be repeated over the course of the MSP process - in particular, at the transition period moving from the analytical stage to the planning stage.

At current stage of MSP development, almost all monitoring and evaluation frameworks for transboundary MSP processes have focused on indicators related to the plan-making process, rather than the actual results and outputs of a planning process, i.e. change caused by it; let alone evaluation of plan implementation or plan impact.

Typical indicators and criteria have evolved for:

- Size of the area and number of sectors analysed and planned (not necessarily meaning implemented plans);
- Number of issues identified and analysed;
- Capacity built among the multi-disciplinary team;
- Number of stakeholders engaged in the process and willing to stay engaged;
- Number and quality of contributions from stakeholders; and
- Number of users for MSP databases.

Some of these indicators may overlap with those included in the ecosystem-based 5-module approach (see the **❯❯ Strategic Approach toolkit Chapter 3**). A set of indicators which can be adapted in relation to specific MSP objectives is included in the **❯❯ LME Scorecard**.

In some instances, subsequent increase of political will or even agreement on guidelines were selected as indicators to measure achievement of overarching objectives. The key resource described in 8.1.3 provides more detailed information on developing indicators and criteria, as well as further examples.

As the practice of MSP matures and more initiatives transition to implementation of policies, rules and procedures called for in a plan, it becomes important to identify and track the actual changes in human and institutional behaviour that the MSP provisions have been designed for. Whereas many external factors may play into higher-level MSP goals (e.g. blue growth, increased ocean energy, more aquaculture, increased fish stocks, healthier ecosystems); projects should dare to clearly delineate what their contribution will actually be (e.g. increase in sustainable fishery techniques applied in the given area; reduction of licensing time and costs for new maritime activities; decrease of legal disputes; increase of sustainable maritime activities). In order to increase the number of stakeholders and politicians engaged in such a process; it is time that MSP Planners are also displaying more confidence in the actual propositions of what MSP processes can be designed for.

8.3.1 EXAMPLE: Evaluation framework for trans-boundary MSP (Baltic SCOPE)

The framework suggests a generic methodology to evaluate trans-boundary aspects of MSP. It is a bottom-up evaluation method as alternative to ready-made evaluation frameworks and recommends a theory-based approach to anticipate and later test why an intervention produces intended and unintended effects, for whom and in which contexts, as well as what mechanisms are triggered by the intervention and in which contexts.

The framework developed criteria (13) and indicators (65) for the following five topics: a) preparation of the plan, b) outputs of trans-boundary agreements, c) outcomes, d) follow-up and evaluation and e) cross-cutting themes. The following table provides examples of plausible theories of change for trans-boundary collaboration in MSP:

Output of transboundary collaboration	Immediate outcome	Intermediate outcome	Impacts
Agreement on a transboundary planning solution	Acknowledgement of the transboundary need for national MSP	A change in the national MSP	Improved coherence of planning of maritime activities
Establishment of a transboundary collaborative body	Naming of national (and sector/interest) representatives	Actual transboundary collaboration	Improved transboundary collaboration

Figure 49: Table of cause and effects of transboundary MSP (BalticSCOPE 2017)

The approach can help in planning trans-boundary collaboration and answer questions like

- What can be the expected results?
- What are possible time-spans?
- What are the most likely difficulties in achieving the results?

A set of evaluation criteria and respective indicators are necessary for a systematic and transparent evaluation which is presented as lists of criteria and indicators in the annex of the report (lxii). The list has been developed based on literature on the evaluation of MSP and especially based on interviews and observations conducted during the Baltic SCOPE project. Input for making the framework has also been collected from project partners in two working groups that were organised during the project.

The set of criteria and indicators is structured into five categories:

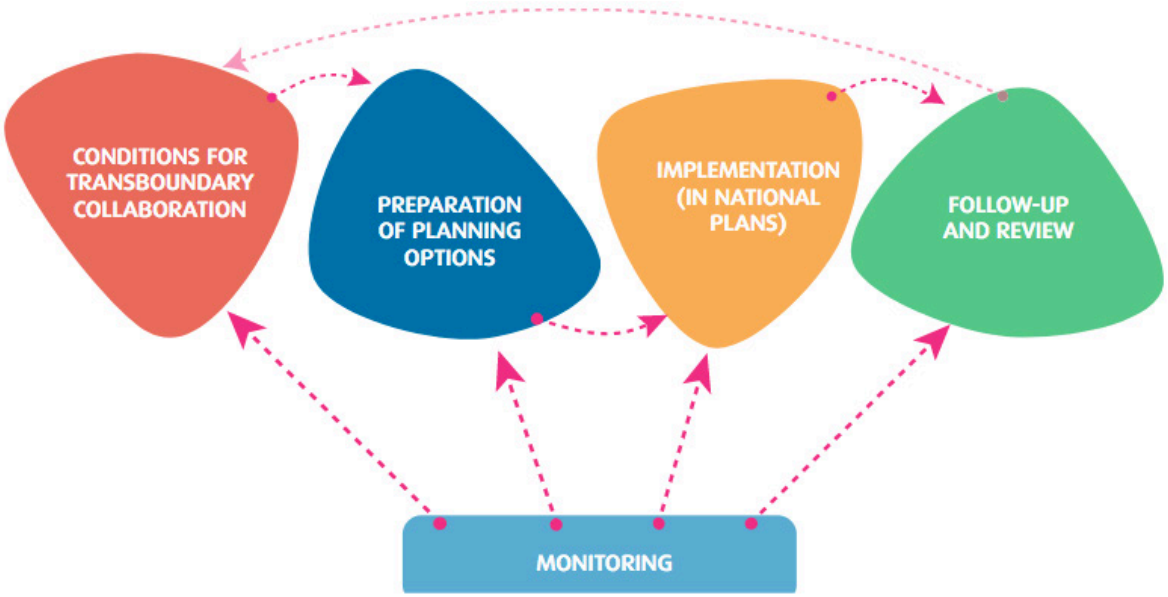


Figure 50: Topics and foci of the evaluation framework (BalticSCOPE 2017b)

However, the methodology was not used in statutory MSP processes yet. During the process, it became apparent how important stakeholder engagement can be when dealing with different languages and motivating stakeholders to participate.

8.3.2 EXAMPLE: Quality checklist for transboundary MSP processes (TPEA)

A framework for evaluating the conduct and outcome of transboundary MSP in two pilot areas was developed as part of the TPEA process. It sets out to answer the following questions:

- What is to be evaluated?
- When should evaluation be carried out?
- Who should evaluate?
- How are results to be presented?
- Who should be responsible for spatial data collection?
- What resources are needed?

Evaluation criteria and indicators were outlined which cover a range of institutional and spatial issues and follow the logic of the TPEA process diagram:

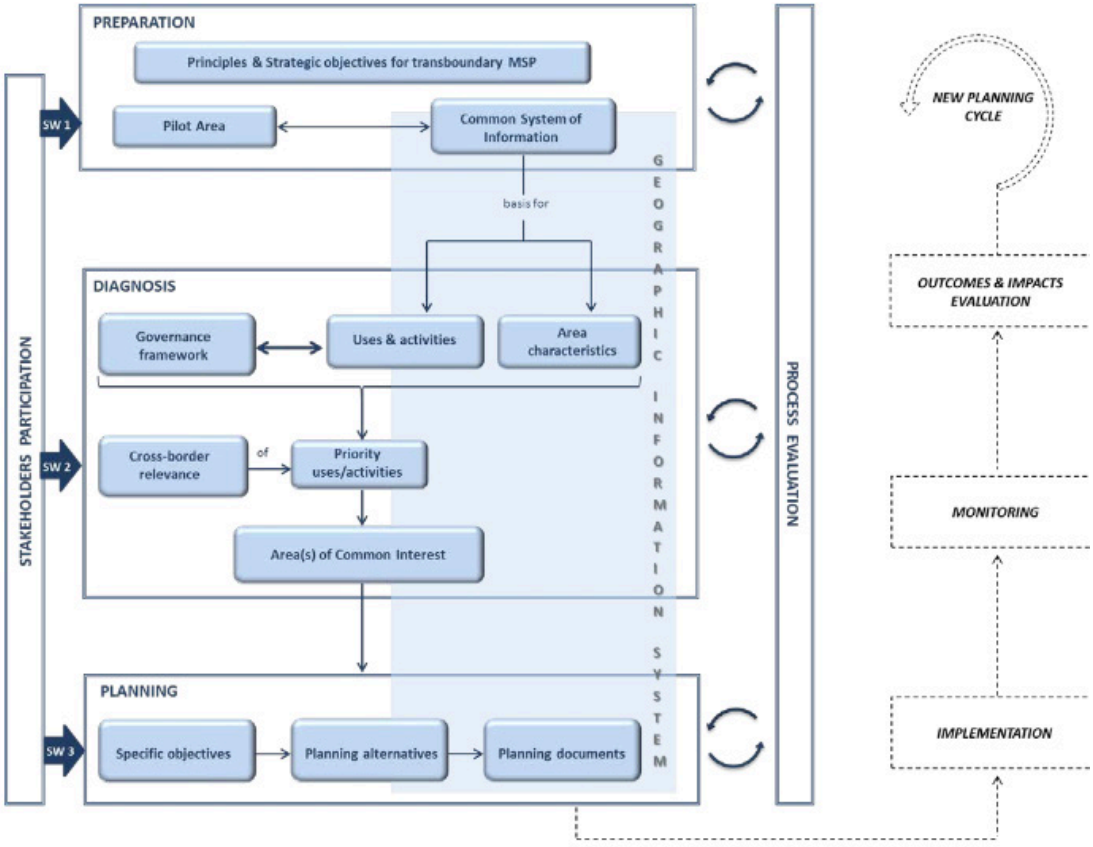


Figure 51: TPEA process diagram (TPEA 2015)

Given the main project objective to develop recommendations for a transboundary approach to MSP in two pilot areas, the TPEA evaluation framework mostly focuses on "evaluation of the plan-making process." The indicative TPEA quality checklist for transboundary MSP processes covers preparatory steps, definition and analysis of the trans-boundary area, planning and communication, as shown here:

A. Process evaluation			
Preparation			
Criterion	**Indicator**	**Country**	**yes/partly/no**
1. Legal and administrative framework	a. Formal jurisdictional MSP systems are in place.	Country 1	
		Country 2	
		(Country 3...)	
	b. Legal instruments and administrative processes are in place to facilitate transboundary cooperation in MSP activities.	Country 1	
		Country 2	
2. Institutional capacity and cooperation	a. Authorities have responsibility for transboundary cooperation in MSP.	Country 1	
		Country 2	
	b. The roles and responsibilities of organisations in transboundary MSP have been clearly defined and communicated.	Country 1	
		Country 2	
	c. There are institutional resources (eg. staffing, skills, funding, data availability) for organisations to engage in transboundary cooperation in MSP.	Country 1	
		Country 2	
	d. There is effective formalised communication between organisations across borders.	national level	
		regional level	
		local level	
	e. There is equitable sharing of transboundary MSP responsibilities and tasks across borders.		
3. Trans-boundary MSP area	a. An agreed transboundary area has been defined for MSP purposes.		
	b. Stakeholders have been involved in the selection of the transboundary area.		
4. Formulation of strategic	a. Agreed strategic objectives for the transboundary MSP process have been established.		

Figure 52: An extract of the indicative TPEA quality checklist for trans-boundary MSP processes (TPEA 2015)

The quality checklist has been applied and tested in the two pilot areas (Irish Sea and Gulf of Cadiz TPEA 2015). Ideally the checklist is used at regular intervals beyond the lifetime of TPEA. Each country involved in a transboundary exercise should fill in the checklist, either in a collaborative process or individually with subsequent discussion of results. The indicative evaluation checklists should be understood as flexible instruments, which can be expanded and adapted according to need. Data for the pilot areas themselves as well as transboundary data is needed to work with the checklists. Evaluation is a continuous or periodic process, which should be carried out as part of regular meetings using the adaptive process checklist of TPEA, which is less resource intensive than a formal review process. However, it is challenging to evaluate resource intensity, taking into account cost effectiveness and deciding whether to use the entire checklist or relevant sections only.

8.3.3 KEY RESOURCE: Indicator Development Handbook (MSP for Blue Growth Study)

The MSP indicator development handbook is a guidance document developed to assist policy makers and stakeholders' in their decision-making processes of blue growth development. The handbook provides an overview of the indicator development process, detailed descriptions of the role of indicators in the MSP cycle and a process description for the development of indicators.

The handbook has been designed to help experts develop MSP indicators that are context and objective specific, using a systematic 3 step approach. The first step is to define SMART (Specific, Measurable, Attainable, Realistic and Time-bound) objectives (please see 3.3 for more definitions) that are scale and context specific for an identified blue growth project. Developing indicators involves source identification, defining baselines and targets as well as external factors that may influence output. This enables the development of the indicators to later conduct monitoring and evaluation to assess whether expected results are delivered.

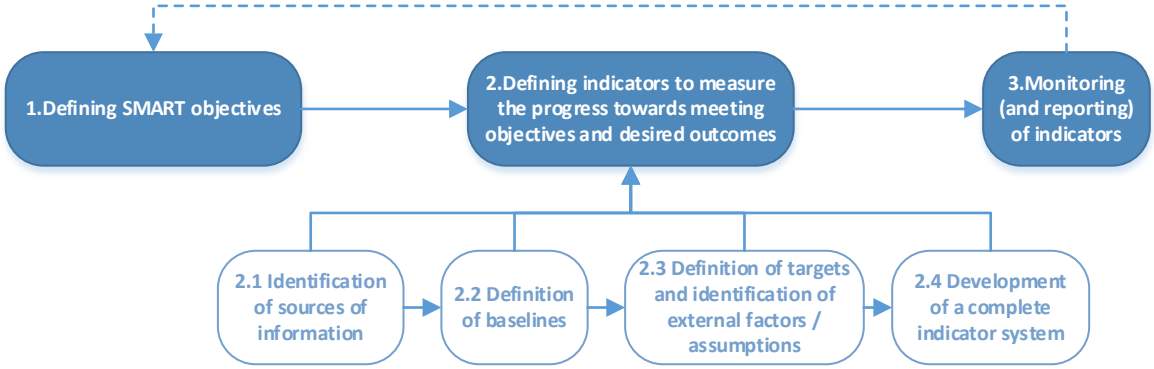


Figure 53: Indicator development process (European Commission 2018)

Once SMART objectives are defined, the following elements are needed to develop corresponding indicators: an indicator title, measurement unit, MSP dimension, indicator type, baseline value, information source, calculation method, reporting and communication arrangements, among others.

This approach can help develop efficient and concise blue growth and MSP projects. The indicators are objectively project based, but also allow for flexibility of use in different projects by adapting the same approach in different cases. Nonetheless, the approach faces limitations in its composition and use, since it is a small part of a complex MSP decision making system. Therefore, the limited one-to-one matches between the MSP and the achievement of an objective makes it difficult to select indicators that really determine the success of MSP. The scope of using the indicators is also limited as they can only be interpreted for country and context specific cases.

https://www.msp-platform.eu/practices/handbook-msp-indicators-development

Indicator development handbook from: Study: MSP for Blue Growth

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GEF LME:LEARN

GEF LME:LEARN is a program to improve global ecosystem-based governance of Large Marine Ecosystems and their coasts by generating knowledge, building capacity, harnessing public and private partners and supporting south-to-south learning and north-to-south learning. A key element of this improved governance is main-streaming cooperation between LME, MPA, and ICM projects in overlapping areas, both for GEF projects and for non-GEF projects. This Full-scale project plans to achieve a multiplier effect using demonstrations of learning tools and toolboxes, to aid practitioners and other key stakeholders, in conducting and learning from GEF projects.

Project Components

1. Global and regional network of partners to enhance ecosystem-based management and to provide support for the GEF LME/ICM/MPA projects to address their needs and incorporate climate variability and change considerations.
2. Synthesis and incorporation of knowledge into policymaking; capture of best LME governance practices; and development of new methods and tools to enhance the management effectiveness of LMEs and to incorporate ICM, MPAs and climate variability and change, including the five LME Approach modules.
3. Capacity and partnership building through twinning and learning exchanges, workshops, and training among LMEs and similar initiatives.
4. Communication, dissemination and outreach of GEF LME/ICM/MPA project achievements and lessons learned.

PARTNERS

GLOBAL ENVIRONMENT FACILITY

Through its strategic investments, the GEF works with partners to tackle the planet's biggest environmental issues. The GEF is the funding agency for LME:LEARN and the portfolio of projects we provide services to.

UNITED NATIONS DEVELOPMENT PROGRAM

UNDP works to eradicate poverty and reduce inequalities through the sustainable development of nations. UNDP works in cooperation with other UN agencies, the GEF, international financial institutions, regional organizations, NGOs, the private sector and others to improve water and ocean management and sustain livelihoods at local, national, regional and global scales through effective water and ocean governance. UNDP is the implementing agency for the GEF LME:LEARN project. .

INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION OF THE UNITED NATIONS EDUCATIONAL SCIENTIFIC AND CULTURAL ORGANIZATION

IOC-UNESCO promotes international cooperation and coordinates programmes in marine research, services, observation systems, hazard mitigation, and capacity development in order to understand and effectively manage the resources of the ocean and coastal areas. IOC-UNESCO is the project executor and contributes capacity building, technical knowledge, data and information exchange, project management, and project sustainability.

INTERNATIONAL UNION FOR CONSERVATION OF NATURE

IUCN provides public, private and non-governmental organizations with the knowledge and tools that enable human progress, economic development and nature conservation to take place together. IUCN is responsible for development of the Environmental Economics toolkit and the LME Hub on the GEF LME:LEARN website.

INTERNATIONAL COUNCIL FOR THE EXPLORATION OF THE SEA

ICES is a global organization that develops science and advice to support the sustainable us of the oceans. ICES is responsible for the Governance Working group, delivery of the Governance Toolkit, organization of training courses and dissemination of best practices.

CONSERVATION INTERNATIONAL

CI is a nonprofit environmental organization with a goal to protect nature as a source of food, fresh water, livelihoods and a stable climate. CI is responsible for the development of the toolkits on Stakeholder Participation and LME Assessment, as well as developing a guide on planning and implementing comprehensive marine management capacity development.

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (U.S)

NOAA is an agency of the U.S. Department of Commerce that enriches life through science. NOAA has a diverse range of diverse skills and expertise that it shares as part of their continued science and technical support of LME projects and other related capacity building activities for ecosystem-based approaches in the management of coastal and marine resources.

This global project is funded by the Global Environmental Facility (GEF), implemented by the United Nations Development Programme (UNDP), and executed by the Intergovernmental Oceanographic Commission (IOC) of UNESCO. The GEF LME:LEARN's Project Coordination Unit (PCU) is headquartered at UNESCO-IOC's offices in Paris.

www.iwlearn.net/marine

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