

# Conceptual method: major steps

Northern Atlantic

January 2019

Version 2.1



Supporting Implementation of Maritime Spatial Planning in the  
Northern European Atlantic

AGENCE FRANÇAISE  
POUR LA BIODIVERSITÉ  
Établissement public du ministère de l'Environnement

CEDEX  
CENTRO DE ESTUDIOS Y  
EXPERIMENTACIÓN  
DE OBRAS PÚBLICAS

 Cerema



CPMR  
CRPM



universidade  
de aveiro

SH M  
L'océan en référence



European Commission  
Directorate-General for Maritime Affairs and Fisheries

**Grant Agreement: EASME/EMFF/2015/1.2.1.3/03/SI2.742089**

Component: 1.3.1 Develop and propose a conceptual methodology for transboundary MSP in the Northern Atlantic, with operational details on selected aspects

Sub-component: 1.3.1.1 Conceptual method: major steps

**Deliverable Lead Partner:** Cerema-UAVR  
**Start Date of Project:** 01/01/17  
**Duration:** 25 Months  
**Version:** 2

Dissemination Level		
<b>PU</b>	Public	
<b>PP</b>	Restricted to a group specified by the consortium (including the Commission services)	
<b>RE</b>	Restricted to other programme participants (including the Commission services)	
<b>CO</b>	Confidential, only for members of the consortium (Including the Commission services)	

Disclaimer:

This report was produced as part of SIMNORAT Project (Grant Agreement NO. EASME/EMFF/2015/1.2.1.3/03/SI2.742089). The contents and conclusions of this report, including the maps and figures were developed by the participating partners with the best available knowledge at the time. They do not necessarily reflect the national governments' positions and are not official documents, nor data. The European Commission or Executive Agency for Small and Medium sized Enterprises is not responsible for any use that may be made of the information it contains.

## Document Information

<b>Deliverable Title</b>	Conceptual method: major steps
<b>Coordinator</b>	Quintela A. and Sala P.
<b>Authors (in alphabetical order)</b>	Alloncle, N.; Alves, F. L.; Campillos-Llanos, M.; Cervera-Núñez, Cristina; Dilasser, J.; Ganne, M.; Giret, O.; Gómez-Ballesteros, M.; Marques, M.; Quintela, A.; Sala, P.; Silva, Ana; Sousa, L. P.
<b>Recommended Citation</b>	Quintela, A., Cervera-Núñez, C., Marques, M., Sousa, L.P., Silva, A., Alves, F.L., Sala, P., Dilasser, J., Ganne, M., Campillos-Llanos, M., Gómez-Ballesteros, M., Alloncle, N. and Giret, O. (2019) Conceptual method: major steps. EU Project Grant No.: EASME/EMFF/2015/1.2.1.3/03/SI2.742089. Supporting Implementation of Maritime Spatial Planning in the European Northern Atlantic (SIMNORAT). Cerema - UAVR. 36 pp. DOI: 10.5281/zenodo.2594662

## Version History

Date	Document Version	Reviewer	Revision
31/12/2017	1.0	UAVR	Initial draft of literature review
24/01/2018	1.0	Cerema	Content revision
31/01/2018	1.1	UAVR	Content revision
07/03/2018	1.1	IEO, CEDEX, FBA	Content revision
12/03/2018	1.2	UAVR	Final version of literature review
02/05/18		Cerema	Gap and SWOT analysis questionnaire
May to November 2018		AFB, IEO, Cerema, UAVR	Partners contributions to the questionnaire
22/11/18	1.3	IEO	Summary report of answers to the questionnaire
11/01/19	2	IEO	Compilation version
25/01/19	2.1	IEO/UAVR/Cerema	Minor layout revision

# Table of Contents

1. Review of MSP methodologies.....	1
2. Review of transboundary MSP approaches.....	2
2.1 Transboundary MSP approaches in the Northeast Atlantic.....	3
2.2. Transboundary MSP approaches in the Baltic Sea.....	6
2.3. Transboundary MSP approaches in the North Sea.....	7
2.4. Transboundary MSP approaches in the Eastern Mediterranean Sea.....	8
3. Review of transboundary MSP with focus on ecosystem-based approach.....	9
4. Proposal of a transboundary MSP with special focus on EBA.....	12
5. SWOT analysis on the proposed major steps and principles of EBA cross-border MSP.....	16
5.1. Pre-planning.....	17
5.1.1. Defining principles, goals and strategic objectives in a common/shared vision.....	17
5.1.2. Definition of operative tools.....	18
5.1.3. Planning legal framework.....	18
5.1.4. Creation of a transnational steering committee.....	19
5.1.5. Identification of planning area.....	20
5.1.6. Identification of the stakeholders' key sectors.....	20
5.2. Analysis phase.....	21
5.2.1. Data collection and mapping.....	21
5.2.2. Assessment and Analysis.....	22
5.3. Planning phase.....	22
5.3.1. Multiple specific objectives definition, management measures, indicators and outcomes.....	22
5.3.2. Scenario creation.....	22
5.3.3. Trade-off analysis/decision making.....	22
5.3.4. Sustainable financing options.....	23
5.3.5. Zoning.....	23
5.3.6. Strategic planning proposal.....	24
5.4. Implementation phase.....	24
5.4.1. Compliance.....	24
5.4.2. Enforcement.....	24
5.5. Monitoring phase.....	25
5.5.1. Monitor Performance indicators.....	25
5.5.2. Monitoring outcomes report.....	25
5.6. Evaluation phase.....	26
5.6.1. Evaluation of Pre-planning.....	26
5.6.2. Evaluation of Analysis.....	26

5.6.3. Evaluation of Planning.....	26
5.6.4. Evaluation of Implementation.....	26
5.6.5. Evaluation of Monitoring.....	27
5.7. Stakeholder engagement.....	27
5.7.1. Political and legal requirement.....	27
5.7.2. Representation of all sectors affected by the plan.....	28
5.7.3. Cultural setting of the planning area.....	28
5.7.4. Key sectors affected by the plan.....	29
5.8. Communication.....	29
5.8.1. Creation of a communication and dissemination plan.....	29
5.8.2. Definition of an effective communication strategy.....	29
References.....	31
Annex I. MSP methodologies.....	34

## List of Figures

Figure 1. Transboundary Marine Spatial Planning initiatives analysed by Sea Basin: TPEA in the Northeast Atlantic; ADRIPLAN in the Eastern Mediterranean Sea; MASPNOSE in the North Sea; BaltSeaPlan in the Baltic Sea.4

Figure 2. Proposed methodology for transboundary MSP with a focus on ecosystem approach.14

YFigure A 1. A step-by-step approach to Marine Spatial Planning (Source: Ehler and Douvère, 2009).34

Figure A 2. The TPEA methodology diagram (Source: TPEA Evaluation Report, 2013).34

Figure A 3. Flowchart of the activities developed under ADRIPLAN methodology (Source: Barbanti *et al.*, 2015).35

Figure A 4. Methodology for EBM in MSP (Source: Ansong *et al.*, 2017).36

## List of Tables

Table 1. Summary of the major MSP steps in the literature review.13

Table 2. Proposed steps for Ecosystem Based Management in Transboundary Marine Spatial Planning.13

## Acronyms

<b>CMF</b>	Commission for Each Seafront
<b>EBM</b>	Ecosystem Based Management
<b>EBSA</b>	Ecologically or Biologically Significant Marine Areas
<b>EEZ</b>	Exclusive Economic Zone

<b>EU</b>	European Union
<b>ICES</b>	International Council for the Exploration of the Sea
<b>ICZM</b>	Integrated Coastal Zone Management
<b>MPA</b>	Marine Protected Areas
<b>MSFD</b>	Marine Strategy Framework Directive
<b>MSP</b>	Maritime Spatial Planning
<b>NGO</b>	Non-Governmental Organization
<b>SWOT</b>	Strengths, Weaknesses, Opportunities and Threats
<b>TMSP</b>	Transboundary MSP
<b>UN</b>	United Nations

# 1. Review of MSP methodologies

The objectives of Maritime Spatial Planning (MSP) referred in the Article 5 of the MSP Directive (2014/89/EU) that establishes the framework for maritime spatial planning are:

- When establishing and implementing maritime spatial planning, Member States shall consider economic, social and environmental aspects to support sustainable development and growth in the maritime sector, applying an ecosystem-based approach, and to promote the coexistence of relevant activities and uses.
- Through their maritime spatial plans, Member States shall aim to contribute to the sustainable development of energy sectors at sea, of maritime transport, and of the fisheries and aquaculture sectors, and to the preservation, protection and improvement of the environment, including resilience to climate change impacts. In addition, Member States may pursue other objectives such as the promotion of sustainable tourism and the sustainable extraction of raw materials.
- The Directive is without prejudice to the competence of Member States to determine how the different objectives are reflected and weighted in their maritime spatial plan or plans.

In order to fulfil the above objectives (Article 5) the MSP Directive identifies the procedural steps to be established by Member States, taking into account relevant activities and uses in marine waters:

- Take into account land-sea interactions;
- Take into account environmental, economic and social aspects, as well as safety aspects;
- Aim to promote coherence between maritime spatial planning and the resulting plan or plans and other processes, such as integrated coastal management or equivalent formal or informal practices;
- Ensure the involvement of stakeholders in accordance with Article 9;
- Organise the use of the best available data in accordance with Article 10;
- Ensure trans-boundary cooperation between Member States in accordance with Article 11;
- Promote cooperation with third countries in accordance with Article 12.

In 2009, Ehler and Douvère identified 10 steps to a step-by-step approach toward ecosystem-based management for MSP (Figure A 1 of Annex I):

- Step 1 Identifying need and establishing authority;
- Step 2 Obtaining financial support;
- Step 3 Organizing the process through pre-planning;
- Step 4 Organizing stakeholder participation;

- Step 5 Defining and analysing existing conditions;
- Step 6 Defining and analysing future conditions;
- Step 8 Implementing and enforcing the spatial management plan;
- Step 9 Monitoring and evaluating performance;
- Step 10 Adapting the marine spatial management process.

Pinarbasi *et al.* (2017) defines seven different stages of the MSP process after reviewing the ones proposed by Coleman *et al.* (2011), Ehler and Douvere (2009), and Stelzenmüller *et al.* (2015):

- Stage 1 Define goals and objectives;
- Stage 2 Gather data and define current conditions;
- Stage 3 Identify issues, constraints, and future conditions;
- Stage 4 Develop alternative management actions;
- Stage 5 Evaluate alternative management actions;
- Stage 6 Monitor and evaluate management actions;
- Stage 7 Refine goals, objectives and management actions.

## 2. Review of transboundary MSP approaches

In the European Union (EU), a key requirement of the MSP Directive and one that should contribute to the overall coherence of ecosystem-based MSP is the obligation for the EU Member States to cooperate within a sea-basin. It is a very challenging requirement implying coordination within a sea-basin between Member States and cooperation with relevant third countries. In the context of implementing the 2030 Agenda for Sustainable Development, the next logical step for the EU is to encourage and strengthen Transboundary MSP (TMSP) globally. This is also convergent with the efforts of the international community and various United Nations (UN) agencies to promote the development of strategic action plans at transboundary scale to achieve long-term sustainable use of ocean resources (Carneiro *et al.*, 2017).

One of the major difficulties in transboundary cooperation has been, for example, the fact that neighbouring jurisdictions have different MSP timeframes, with some nations having considerably more developed MSP processes than in others (Flannery *et al.*, 2015). Flannery *et al.* (2015) highlights the enabling factors for transboundary planning: policy convergence; shared experiences, common issues and joint solutions; existing transboundary institutions.

This author identifies, as well, the key questions for transboundary MSP initiatives:

- The degree of policy convergence that has occurred amongst neighbouring jurisdictions;



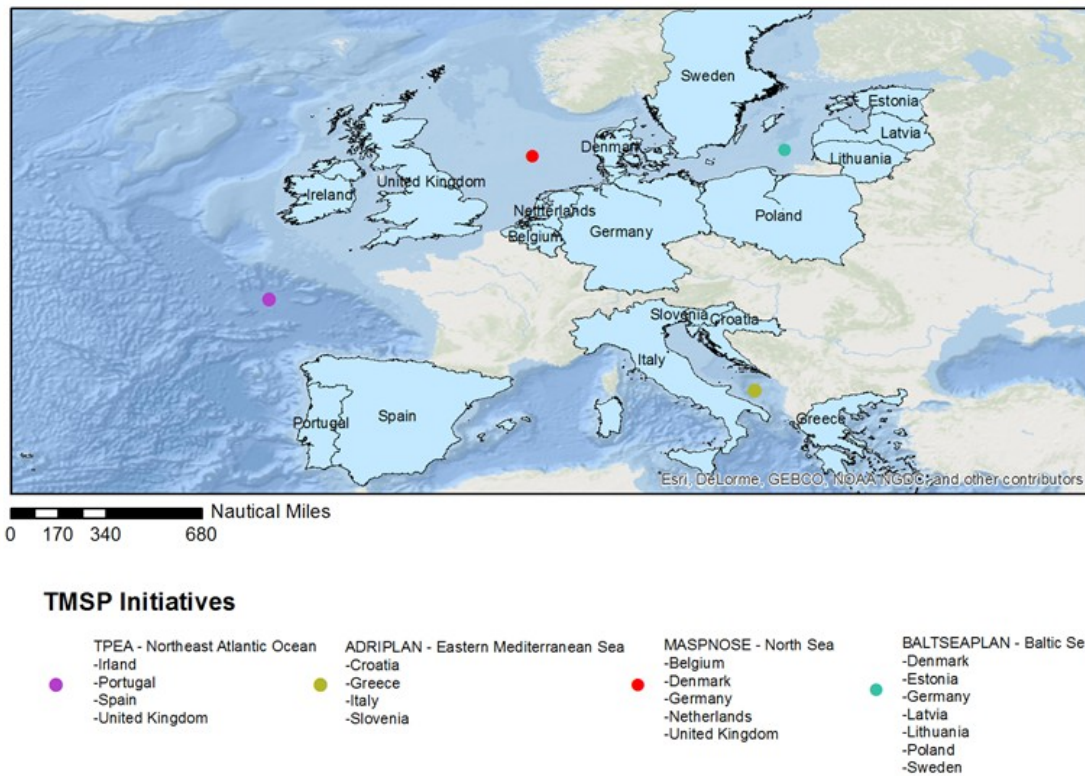
- Whether or not neighbouring jurisdictions have compatible conceptualisations of MSP and the issues they wish to address through MSP;
- The nature of transboundary relations and how current transboundary institutions, might facilitate the development of transboundary MSP.

Olsen (2017) identifies six good practices to strengthen cross-border collaboration:

- Designs that build trust and common purpose;
- Invest in understanding the existing governance system;
- Adopt an issue-driven approach;
- Adopt a long-term perspective;
- Manage expectations for stakeholder involvement;
- Effective long-term Monitoring and Evaluation.

## 2.1 Transboundary MSP approaches in the Northeast Atlantic

Despite the lack of a common, accepted specific methodology for TMSP, there are several examples of transboundary marine pilot planning initiatives (North Sea, the Baltic Sea, the Atlantic Ocean and Mediterranean Sea). The main methodologies for transboundary MSP, of each of these projects/ planning initiatives are analysed, in a sea basin scale. The choice on the examples presented in the next section was made according to their relevance in TMSP methodologies in the European context (Figure 1).



**Figure 1. Transboundary Marine Spatial Planning initiatives analysed by Sea Basin: TPEA in the Northeast Atlantic; ADRIPLAN in the Eastern Mediterranean Sea; MASPNOSE in the North Sea; BaltSeaPlan in the Baltic Sea.**

### TPEA project<sup>1</sup>

This project formulates the following key lessons to adopt a transboundary approach to MSP. First, it is crucial to define transboundary areas and issues. Second, transboundary data management requires the development of cross-jurisdictional institutional relations and the development of agreed processes, building on existing measures for data sharing. Third, differences in culture, awareness and institutional arrangements across the region and between neighbouring jurisdictions required stakeholder engagement activities to be tailored to each context. The project adopted common principles to guide engagement: inclusivity, equity, flexibility, transparency and integration. Fourth, it is crucial to understand the different governance systems (Jay *et al.*, 2016).

The methodology proposed by TPEA project (Jay, S. and Gee, 2014) is based in five main topics: Cross-cutting themes; Preparation; Analysis; Planning; Evaluation. The TPEA Good Practice Guide (2014) therefore concentrates on the experiences gained through carrying out key elements of a transboundary MSP process in the context of legal and policy frameworks, participatory approaches and technical considerations. Particular attention was given to the Preparation, Analysis, Planning and Evaluation stages and to the Stakeholder engagement and Data issues, which ran alongside the stages throughout the process (Figure A 2 of Annex I):

1 <https://www.msp-platform.eu/projects/transboundary-planning-european-atlantic>

- **Preparation:** This stage of the TPEA project focused on selection of the pilot areas and setting out principles (e.g. for data collection) and strategic objectives. A common system for storing, visualising and managing geographical data was created in order to support the subsequent phases of analysis and planning.
- **Analysis:** Based on available information, the pilot areas were characterised in terms of biophysical features, their continuity across borders and existing infrastructures. Existing uses and activities in the pilot areas were identified and characterised in terms of distribution, intensity and impacts. Current and potential pressures and synergies were also considered. The governance framework was also characterised, and existing transboundary agreements and initiatives were reviewed, together with legal and policy instruments and national/regional priorities for maritime and coastal issues. Relevant information on the pilot areas was then integrated to identify the most likely priority uses and activities.
- **Planning:** Following the identification of key issues, specific objectives were developed in accordance with the particular needs of the pilot areas. Different planning options were explored, partly by using scenarios. A set of recommendations was developed for each pilot area accompanied by appropriate guidelines for their implementation.
- **Evaluation:** A checklist was drawn up for evaluating the TPEA transboundary MSP process. Recommendations were then made for an evaluation of outcomes and impacts at a later planning stage (not covered by TPEA). The following three themes ran through all four stages of the process and were important considerations from the outset:
- **Stakeholder engagement:** A series of workshops was held in each pilot area as the primary means of stakeholder engagement, with the aim of involving stakeholder groups from both sides of borders in the activities developed by the team. This ensured that their opinions, knowledge and other inputs were included at different stages of the transboundary planning process.
- **Communication:** The progress and results of the project were reported more widely via a dedicated website, making key documents and news items publicly available, fact sheets, a web portal and an app were also used.
- **Data:** Spatial data relating to the pilot areas was gathered to the extent possible, providing information about marine conditions and maritime activities. An exhaustive work of standardization and harmonization was carried out. This Geographical Information System (GIS) allowed information to be displayed on maps of the two areas, and, for the southern pilot area, was made publicly accessible through a web viewer.

## 2.2. Transboundary MSP approaches in the Baltic Sea

### BaltSeaPlan<sup>2</sup>

The methodologic Baltic MSP Principles in Bothnia Plan of implementing TMSP identified by BaltSeaPlan (Schultz-Zehden A., 2008) are:

- **Data management and monitoring:** Good knowledge of the sea and the trends and pressures it faces is essential for MSP to be delivered successfully. Trends are monitored in the environment, the economy, in society and technology and this data is translated into spatially relevant information. Cooperation among data networks ensures that information is easily accessible when needed.
- **Spatial subsidiarity:** MSP is understood as a cooperative practice that involves several spatial and administrative levels. Facilitated by appropriate structures and processes at the national and international level, this enables spatial challenges to be dealt with at the lowest most appropriate spatial level.
- **A transnational approach to transnational issues:** A pan-Baltic approach guides transnational topics such as shipping, energy, fisheries and functions such as nature conservation. General objectives and targets are not set nationally, but for the BSR as a whole, allowing Baltic countries to contribute more or less to a particular policy target as long as the overall objective is guaranteed. Transnational MSP solutions are developed based on these.
- **National and sub-national maritime spatial plans as key implementation tools:** The vision 2030 is implemented by means of national and sub-national maritime spatial plans, which translate the commonly agreed objectives and targets for Baltic Sea space into a tangible spatial framework. All Baltic Sea states take account of these transnationally agreed principles when drafting and implementing national and sub-national maritime spatial plans. A prerequisite is that all Baltic Sea states have established the structures that allow them to successfully use MSP as a tool for sustainable management of human activities in the Baltic Sea.
- **International cooperation at the institutional level:** Creation of a transnational coordinating body to facilitate the practical transnational MSP process, a transnational coordinating body for MSP has been established that brings together representatives from the national planning authorities plus other relevant institutions and stakeholders. The transnational coordinating body is a technical body responsible for drafting the common vision and developing appropriate MSP methods and contents including requirements for tailored monitoring.

<sup>2</sup> <http://www.baltseaplan.eu/>

- **A formal decision-making body:** By 2030, ministers responsible for spatial planning in the Baltic (including Russia) have been brought together in a formal body responsible for endorsing pan-Baltic MSP. The task of this ministerial body is to formally endorse the common principles for Baltic Sea space, to agree on the common objectives and targets and – if necessary – adapt the common vision based on the results of socio-economic and ecological monitoring.

### 2.3. Transboundary MSP approaches in the North Sea

#### MASPNOSE<sup>3</sup>

MASPNOSE focussed on two case studies (Hommes et al., 2012):

- **Thornton Bank.** The case study comprises an area between Belgium and The Netherlands, partly on sand banks located on both sites of the border. Cross-border MSP could aid to address the issue of wind energy, shipping, fisheries management, aquaculture and nature conservation.
- **Dogger Bank.** The case study comprises an area between the United Kingdom, The Netherlands, Germany and Denmark. Cross-border MSP could aid to address the issue of fisheries management, nature conservation and sustainable energy production.

This was done through the exploration of the possibilities of cooperation among stakeholders and between countries establishing elements for a common agenda for the cross-border cooperation.

**MSP requires a transparent process with identified steps, deliverables and quality assurance.** The procedural steps needs to be clear to all participants and need to be linked to a legal framework and a decision-making process. In a cross-border context, these requirements are even more pronounced than in a national context and require special attention. Specific challenges that were identified:

- the organisation of cross-border stakeholder involvement due to a different stakeholder practice, legal constraints and policy constraints;
- quality assurance through scientific advisory boards and legal frameworks;
- the requirement of a coherent planning and permitting system in the respective member states.

**Effective stakeholder involvement.** MSP requires a differentiation between front-stage and back-stage transparency. Front-stage transparency to the general public on the objectives of the process, who are involved and what stage it is in. Back-stage transparency is limited to the directly involved stakeholder groups and is used to share information for building trust and joint learning among stakeholders.

3 <https://www.wur.nl/en/show/Maspnose-Maritime-spatial-planning-in-the-North-Sea.htm>

**Geo-spatial analyses have an important role in MSP.** The Dogger Bank case study has shown that geo-spatial analyses have an important role in MSP. This refers to analysing current conditions, future scenarios and the analysis of potential effects of measures (including cumulative effects). The use of interactive geo-spatial tools has proved very productive for stakeholder involvement in MSP (joint fact-finding). Procedures for when and how geo-spatial tools will be used should be clear to all participants.

**The principle on the connection between MSP and Integrated Coastal Zone Management (ICZM).** MASPNOSE project identified further challenges regarding the link between MSP and ICZM for cross-border MSP that are not addressed in the 10 key principles for MSP are: establishing mandate and accountability, financing of stakeholder involvement, and adaptive management.

**Monitoring and Evaluation of a MSP.** Needs to be defined at the beginning of the process as part of a Quality Assurance programme. The monitoring should ideally be carried out by experts who are not involved in the content of the MSP process. The MASPNOSE Initial Assessment has shown that Monitoring and Evaluation is currently not always an explicit part of MSP processes in the Member States involved in this preparatory action. Cross-border MSP processes poses specific challenges because of the potentially different phases in the policy cycle in different Member States.

## 2.4. Transboundary MSP approaches in the Eastern Mediterranean Sea

### ADRIPLAN<sup>4</sup>

The project develops proposals and recommendations for MSP on the Adriatic-Ionian Macroregion and on two Focus Areas represented by the Northern Adriatic Sea (Focus Area 1) and the Southern Adriatic – Northern Ionian Sea (Focus Area 2).

The area, as a whole and at the scale of the Focus Areas, has a high potential for the application of MSP, based on the three aspects derived from the ten key principles, used in the study carried out in 2011 for DG MARE (PRC, 2011).

Purpose of MSP in the area:

- Type and intensity of uses as well as the ecological value of the marine area; economic effects of a better management of conflicting uses;
- Feasibility of MSP in the area: scientific data/knowledge base, institutional capacity, legal and administrative supportive framework and stakeholder's involvement;
- Conditions for cross-border/international cooperation: in case the marine area falls beyond national jurisdiction, as is the case for great part of the Adriatic-Ionian Sea.

The methodological approach proposed follows the suggestion and requirements of the call for proposal and the recommendations of the international guidelines on MSP available, highlighting

4 <http://adriplan.eu>

some key activities, such as data collection and management, stakeholder involvement, cross-disciplinary and cross-area analysis and synthesis of results, also intended for widespread dissemination. A brief description of the methodology developed reported below, in particular including two crosscutting activities and the five flowchart phases (Figure A 3 of Annex I).

### 3. Review of transboundary MSP with focus on ecosystem-based approach

A solution to the challenge of the implementation of MSP on a transboundary level should be based on the bioregions that have been demarcated by the International Council for the Exploration of the Sea (ICES) in 2004. This would ensure that Ecosystem Based MSP is implemented at a bioregional level and the overlaps and conflicting issues between countries are identified and addressed before each country goes into developing MSP for their various jurisdictional areas. Examples can be drawn from the Baltic Sea MSP initiatives (Zauch, 2014). International agreements and policies are critical in ensuring planning beyond jurisdictional boundaries by developing common visions and goals. Countries with shared high-level goals and commitments can use them as a point of departure for developing cooperation in cross border MSP (Secretariat of the Convention on Biological Diversity and the Scientific and Technical Advisory Panel-GEF, 2012).

In addition to using a bioregional approach in setting an ecosystem boundary, the planning area should cover coastal and near-shore waters and the uses and impacts from this area analysed and addressed. This step is important as it was realised from the results of the survey that most MSP plan boundaries are set in a single geographical area and rarely look at an interconnected geographical scope (Ansong *et al.*, 2017).

A relevant methodology to address a TMSP in accordance to the Ecosystem Based Management (EBM) approach is the one proposed by Ansong *et al.* (2017).

Apart from using the bio regionalisation approach in setting the boundary of the planning area, it is important that scientific and ecological/environmental consideration (ecosystem boundary) is predominant over just jurisdictional. The planning boundary should ensure that connectivity; ecologically and biologically significant areas; representativity; replicated ecological features; and adequate and viable sites are covered in the area (Convention on Biological Diversity, 2009).

Ansong *et al.* (2017) identifies the six major stages of the EBM approach in MSP (Figure A 4 of Annex I), which are described below:

- Definition of the goals of Ecosystem Based MSP;
- Defining and analysing existing conditions;
- Planning phase;
- Implementation;

- Monitoring and evaluation;
- Cross-cutting stakeholder participation.

### Stage 1. Definition of the goals of Ecosystem Based MSP

To ensure healthy ecosystem and delivery of ecosystems services, reach a sustainable human uses and an integrate management and governance.

### Stage 2. Defining and analysing existing conditions

This stage of the EBM in MSP process is where takes place the definition of the planning area, data collection and mapping and its assessment and analysis.

#### *Definition of the planning area*

The boundaries for planning should not be limited to the coverage of the management area but go further to be set based on a bioregional approach or with an ecosystem boundary perspective. A boundary, that is set based on the ecosystem or with biological and ecological consideration sets a strong basis for the planning process to be ecosystem-based. Setting a planning area beyond that of the management area helps to identify and to a large extent capture external sources of influence that have an effect on the management area.

#### *Data Collection and mapping*

It is important that information on ecological, economic, environmental and oceanographic conditions are collected and mapped for further analysis. Information on important human uses such as both commercial and recreational fishing; marine transportation; renewable and non-renewable energy production; and sand and gravel mining, among others should be collected and mapped (Ehler and Douvère, 2009).

Apart from the bio-profiling process, the condition of the ecosystem can be analysed based on the following criteria used to identify Ecologically or Biologically Significant Marine Areas (EBSA) (Convention on Biological Diversity, 2009):

- Connectivity between biotic, abiotic and socio-economic patterns and conditions which are important for the life stages of species;
- Biological diversity;
- Biological productivity;
- Uniqueness or rarity of habitats and species;
- Endangered or species and habitats under threat/vulnerable;
- Natural areas (areas with low level of human degradation);
- Areas of community and cultural value;



- Areas of high-level importance to human use.

### *Assessment and Analysis*

In this step is important to map and analyse spatially the cumulative impacts emerging from uses and activities, undertake socioeconomic analysis and the use of EBM tools (e.g. Ecosystem-based Risk Assessment)

### Stage 3. Planning phase

The planning phase of an Ecosystem Based MSP should look at coming up with planning and management measures, making trade-offs where the ecosystem is a priority and analyse future conditions by scenario creation, innovative and sustainable financing options and zoning for the implementation of regulations. This stage must address the pressures and impacts on species and habitats, uncertainty and knowledge gaps.

### Stage 4. Implementation

The implementation stage involves three stages (Ehler and Douvère, 2009). These are implementation of management and planning measures, ensuring compliance and enforcement. It is important to ensure that all sectors are involved in the implementation of management measures and zoning regulation. It is essential to ensure that stakeholders, especially the community, are involved from the onset to make implementation smooth and effective. In trying not to reinvent the wheel and to reduce costs, it may be necessary to use existing institutions for the implementation process. To make EBM operational all single-sector management institutions should comply in implementing existing measures and also in generating future plans and programmes in accordance with the spatial management plan and measures.

Enforcement of measures can be ensured through inspections, negotiations and legal actions and regulations should be applied, based on transparent policies and procedures (Ehler and Douvère, 2009). Non-Governmental Organizations (NGO) should be involved at this stage to detect and report non-compliance.

### Stage 5. Monitoring and evaluation

At each stage of the process, there should be an evaluation to ensure set procedures are followed to inform the next stages. Again, to make EBM operational in MSP the process has to be continuous. The first planning cycle should end in a monitoring and evaluation step and results and lessons learnt should be adapted into the next planning cycles. Results from this research showed monitoring stage of Ecosystem Based MSP should include the following:

For the monitoring process to be easy and effective with meaningful results monitoring should be based on indicators referred to at the setting of goals and objectives stage above. This calls for objectives of the Ecosystem Based MSP to be specific, measurable, action oriented and time-bound.

The indicators for monitoring should also be readily measurable, cost effective, concrete, interpretable, grounded on scientific theory, sensitive, responsive and specific (Koehn *et al.*, 2013).

Evaluation should be a continuous process in which measures or indicators of performance are defined and systematically compared with programme goals and objectives (Ehler and Douvère, 2009). Reporting of the information from evaluation would serve as a basis to adapt the Ecosystem Based MSP process. Adaptive management in MSP can be achieved by (Ehler and Douvère, 2009):

- Modifying MSP goals and objectives (for example, if monitoring and evaluation results show costs of achieving them outweigh the benefits to society or the environment);
- Modifying desired MSP outcomes (for example, the level of protection over a large marine protected area could be changed if the desired outcome is not being achieved);
- Modifying MSP management measures (for example, alternative combinations of management measures, incentives and institutional arrangements could be suggested if initial strategies are considered ineffective, too expensive, or inequitable).

#### Stage 6. Stakeholder participation (cross-cutting step)

The participation and involvement of stakeholders is the backbone of a successful Ecosystem Based MSP process. The fact that ecosystem goods and services are, in many instances, external to the market economy or lack proper market valuation is thought to hamper effective planning and management of ecosystems (Kidd *et al.*, 2011). The only sure way to ensure ecosystem goods and services are properly maintained is through effective stakeholder engagement processes and participation. According to results of Ansong *et al.* (2017) study, stakeholder participation should be based on the following factors:

- Political and legal requirement;
- A representation of all the sectors affected by plan;
- Cultural setting of the planning area;
- Key sectors which are affected by plan; and
- Population demographics (size of the planning and management area).

## 4. Proposal of a transboundary MSP with special focus on EBA

Based on the literature review, 7 major steps (Figure Figure 2) and 29 sub-steps for a transboundary MSP were identified and are described below. Each step and sub-step was defined having in consideration the concept of TMSP and the EBA principle. The Table 1 summarizes the major methodologic steps from the literature review. Table 2 shows the relevance of the proposed steps with the MSP Directive and the steps proposed of the IOC/UNESCO approach proposed by Ehler and Douvère in 2009.

**Table 1. Summary of the major MSP steps in the literature review.**

		Methodological approaches					SIMNORAT proposal
		TPEA	BaltSeaPlan	MASPNOSE	ADRIPLAN	Ansong <i>et al.</i> , 2017	
MSP steps	Preparation/ Pre-planning	x	x	x	x	x	Pre-planning
	Diagnosis/ Interpretation	x	x	x	x	x	Analysis
	Planning	x	x	x	x	x	Planning
	Implementation	x	x	x	x	x	Implementation
	Monitoring	x	x	x	x	x	Monitoring
	Evaluation*	x	x	x	x	x	Evaluation
	Stakeholder engagement*	x	x	x	x	x	Stakeholder engagement
	Communication*	x	x		x		Communication

\* cross-cutting steps, i.e. steps to be undertaken thought the entire MSP process

**Table 2. Proposed steps for Ecosystem Based Management in Transboundary Marine Spatial Planning.**

		Relevance to the MSP Directive	IOC/UNESCO approach (Ehler and Douvere, 2009)
		SIMNORAT framework proposal	Pre-planning
Analysis	<ul style="list-style-type: none"> <li>• Article 4</li> <li>• Article 6 (objective b)</li> <li>• Article 8</li> <li>• Article10</li> <li>• Article 6 (objective c)</li> </ul>		<ul style="list-style-type: none"> <li>• Step 3</li> <li>• Step 5</li> <li>• Step 6</li> </ul>
Planning	<ul style="list-style-type: none"> <li>• Accordance with the ordinary legislative procedure 12</li> </ul>		<ul style="list-style-type: none"> <li>• Step 6</li> <li>• Step 7</li> </ul>
Implementation			<ul style="list-style-type: none"> <li>• Step 8</li> </ul>
Monitoring	<ul style="list-style-type: none"> <li>• Article 14</li> </ul>		<ul style="list-style-type: none"> <li>• Step 9</li> </ul>
Evaluation*	<ul style="list-style-type: none"> <li>• Article 4</li> </ul>		<ul style="list-style-type: none"> <li>• Step 9</li> </ul>
Stakeholder engagement*	<ul style="list-style-type: none"> <li>• Article 9</li> </ul>		<ul style="list-style-type: none"> <li>• Step 4</li> </ul>
Communication*	<ul style="list-style-type: none"> <li>• Article 4 (paragraph 6)</li> </ul>		

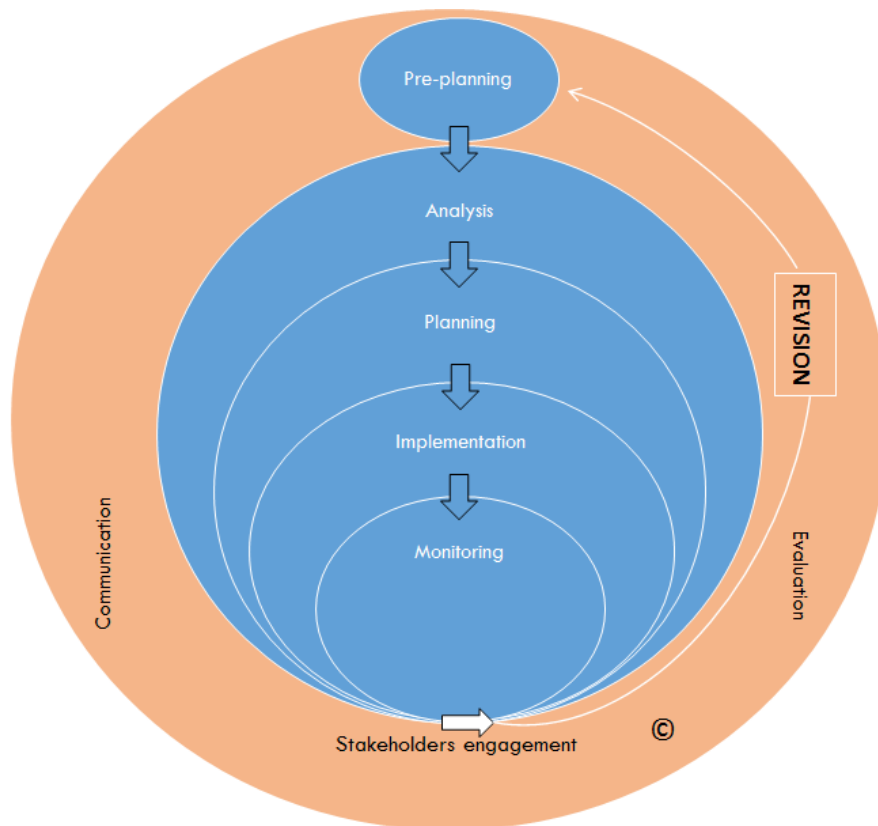


Figure 2. Proposed methodology for transboundary MSP with a focus on ecosystem approach.

### Pre-planning

- **Defining principles, goals and strategic objectives in a common/shared vision.** Healthy ecosystem and delivery of ecosystem services; sustainable human uses; integrated management and governance.
- **Definition of operative tools.** Definition of a common system for storing, visualizing and managing geographical data.
- **Planning legal framework.** Identify legal and administrative supportive framework. Characterization of the governance framework and review of existing transboundary agreements and initiatives.
- **Creation of a transnational steering committee.** Creation of an entity responsible for promote the cooperation between countries involved. A common transboundary plan must be based on the governance structure of both countries and formulated in such way that it is possible to either directly, or via corresponding plans in either country, lay down legally effective recommendations or regulations.
- **Identification of planning area.** Boundaries and scale definition, ensure connectivity between ecosystems, EBSA'S adequate and viable sites.

- **Identification of the stakeholders' key sectors.** Identification of the relevant stakeholders.

## Analysis

- **Data collection and mapping.** Co-existence of uses and activities, species and habitat distribution, uncertainty and changes in ecosystem, conflicts and synergies distribution
- **Assessment and Analysis.** compatibility among uses, economic and social analysis, and use of ecosystem perspective through EBM tools: cumulative impacts/pressures, Ecosystem-based risk assessment

## Planning

- **Multiple specific objectives definition, management measures, indicators and outcomes.** Identification of the key issues, specific objectives according to the planning area particular needs.
- **Scenario creation.** Exploring different planning options using scenarios
- **Trade-off analysis/decision making.** Ensuring an operational EBM in MSP, the ecosystem should be a priority when it comes to making trade-offs between uses, the environment and maintenance of ecosystem services.
- **Sustainable financing options.** In this stage is important to ensure that government has allocated budget for planned actions and measures, especially those related to ensuring that the ecosystem is maintained and the environment is preserved.
- **Zoning.** Zoning ensures that regulations are enforced in particular sections of the planning and management area. Minimizing conflicts between uses taking an holistic view of areas of ecological importance and environmental vulnerability
- **Strategic planning proposal.** Address pressure and impacts on species and habitats, uncertainty and knowledge gaps

## Implementation

- **Compliance.** Compliance (comply in implementing existing measures and in generating future plans and programmes, in accordance with the spatial management plan and measures)
- **Enforcement.** Through inspections, negotiations and legal actions and regulations applied on basis of transparent policies and procedures. NGOs should be involved in this stage to detect and report non-compliance.

## Monitoring

- **Monitor performance indicators.** Monitor native species and habitat diversity, population of key species and connectivity among ecological attributes.
- **Monitoring outcomes report.** This report should address the monitoring of the state of the system, monitoring the performance of the plan and monitoring the time and rate of the implementation.

## Evaluation

- **Evaluation of Pre-planning.** Legal and administrative framework, Institutional capacity and cooperation, Transboundary MSP area, formulation of strategic objectives.
- **Evaluation of Analysis.** Area characteristics, uses and activities and cross-border relevance of coastal and maritime issues, governance framework, area of common interest, data availability and quality.
- **Evaluation of Planning.** Specific objectives, planning alternatives (options and scenarios), Planning documents.
- **Evaluation of Implementation.** Roles, responsibilities and decision-making, resources, implementation.
- **Evaluation of Monitoring.** Evaluate the achievement of objectives and wider benefits.

## Stakeholder engagement

- **Political and legal requirement.** Comply with the legal requirements regarding stakeholders' participation.
- **Representation of all sectors affected by the plan.** Transnational stakeholders' engagement workshops and online forum to promote involvement on all stages and outcomes.
- **Cultural setting of the planning area.** Common cultural dynamics, historic transboundary initiatives.
- **Key sectors affected by the plan.** In accordance with the Step 1 (pre-planning) all key sectors affected by the plan should be involved.

## Communication

- **Creation of a communication and dissemination plan.**
- **Definition of an effective communication strategy.**

## 5. SWOT analysis on the proposed major steps and principles of EBA cross-border MSP

The definition of opportunity, threat, strength, weakness, was based on Karppi (2001) SWOT analysis as a basis for regional strategies.

To the completion of the SWOT matrix, it was asked to each partner to identify opportunities, threats, strengths, weaknesses regarding the implementation of each step or principle in the methodological approach for cross-border MSP, defined in the literature review.

It was asked the partners if each methodological steps or principles were already taken into account in a cross-border MSP process. If so, a description on how it has been implemented was requested. Finally, to a better comprehension of the objectives the following definitions were provided:

- Strengths - A resource or capacity the organisation can use effectively to achieve its objectives in order to implement the methodological steps in your on-going cross-border MSP process;
- Weaknesses - A limitation, fault or defect in the organisation that will keep it from achieving its objectives in order to implement the methodological steps in your on-going cross-border MSP process;
- Opportunities - Any favourable situation in your country in order to implement the methodological steps in your on-going cross-border MSP process;
- Threats - Any unfavourable situation in your organisation's environment that is potentially damaging to your strategy in order to implement the methodological steps in your on-going cross-border MSP process.

In order to benefit as much as possible from the knowledge gained in cross-border case studies and regarding the fact that countries are at different stage of their national MSP process, answers provided by partners are more related to pilot projects (i.e., TPEA, SIMNORAT) and their case studies than to the national processes of MSP implementation and their transboundary considerations. *Regarding the latter, the answers to the questionnaire were based on literature review and knowledge of SIMNORAT partners. As a result, they do not reflect the overall undergoing projects or processes led by the planning authorities.*

Acknowledging this and having in mind that, although actions in the framework of projects could derive in inputs and support for national processes, they cannot be weighted or compared in the same way; therefore a distinction has been made while developing this summary in order to highlight those answers directly related to the real MSP implementation processes (text boxes).

## 5.1. Pre-planning

### 5.1.1. Defining principles, goals and strategic objectives in a common/shared vision

**Question 1: Is that methodological steps or principles already taken into account in a cross-border MSP process? If so, please describe how it has been implemented.**

In the framework of the project, Spain and Portugal defined a shared vision with principles, objectives, goals and strategic objectives.

#### **SWOT analysis**

Portugal and Spain have identified as an advantage, their common planning experience in land use and their historical background in cross-border cooperation managing shared resources as a way to facilitate a possible cooperation in cross-border MSP.

France created a methodological guide to enforce MSP. Some meetings have been conducted between countries as a starter of further discussion between countries regarding MSP national processes.

On the other hand, ambiguity in terminology and differences in interests, also taking into account the different phases in which the countries are in the MSP implementation, could be a constraint to this possible collaboration.

### 5.1.2. Definition of operative tools

**Question 1: Is that methodological steps or principles already taken into account in a cross-border MSP process? If so, please describe how it has been implemented.**

Geoportals were created in the context of the pilot projects. In SIMNORAT, a common system for storing, visualizing and manage geographical data was created for the 3 countries for the OSPAR IV area. Similarly, in TPEA, a geoportal was created in which there was cartographic information about the pilot area between Portugal and Spain (Gulf of Cádiz).

#### **SWOT analysis**

A transboundary or cross-border geoportal, as the one built in SIMNORAT project, will benefit the planning process. Indeed, it will give a global vision of the cross-border area. Many of the available maritime spatial data are already in compliance with the INSPIRE Directive although some data is still not available, either because of format issues or because of lack of open access. Moreover data are often produced by different authorities and distributed in different geographical areas and topics which makes more difficult its compilation in a coherent way. In France, a unique national platform in order to visualise data is under construction. It can be considered as a first step to provide homogeneous data format in a transboundary geoportal. However, another constraint when creating a transboundary data portal could be the misbalance in quantity and official data between countries.



### 5.1.3. Planning legal framework

**Question 1: Is that methodological steps or principles already taken into account in a cross-border MSP process? If so, please describe how it has been implemented.**

In the context of the project, in both cases, legal, administrative and governance framework was characterized and the cross-border agreements and initiatives were identified.

#### **SWOT analysis**

In general, European requirements for Member States (e.g. MSFD, MSPFD) provide the common basis for cross-border working, although the differences in administrative and governance structure (e.g. regional governments) makes the collaboration more complex and the differences in regulations may cause limitation in a joint decision-making.

In the case of Portugal and Spain the sound relationship between these two countries has been identified as an opportunity to facilitate cross-border MSP, so is the SIMNORAT project for France, Portugal and Spain for transboundary MSP.

### 5.1.4. Creation of a transnational steering committee

**Question 1: Is that methodological steps or principles already taken into account in a cross-border MSP process? If so, please describe how it has been implemented.**

In the context of SIMNORAT, Spain and Portugal are working in a case study that plan to propose the creation of a transnational steering committee to manage a cross-border Marine Protected Areas (MPA) between the two countries. The shared cross-border management plan would be based on the governance structure of both countries in a way that can define effective recommendations and/or regulations.

#### **SWOT analysis**

In both case studies (Portugal and Spain, France and Spain) past experiences exist in the creation of this kind of forum (e.g. Commission to the Application and Development of the Convention of Cooperation to the Protection and Sustainable Use of Portuguese-Spanish Watersheds, the Pyrenean Commission).

However, in relation to a potential MSP cross-border forum, the planning authorities need to be core in the creation of it. Also, in the case of Spain and France, a strong coordination between foreign affairs and planning authorities is crucial to ensure the effective functioning of the committee.

The existing transnational platforms like OSPAR or the Atlantic Strategy could favour the creation of a bilateral forum that would be an opportunity setting the example to follow in cross-border areas with special interest for conservation and facilitating communication among all partners, updates and brainstorming possible solutions.

In the particular case of Spain and France some meetings have been conducted between countries as a starter of further discussion between countries regarding MSP national processes.

### 5.1.5. Identification of planning area

**Question 1: Is that methodological steps or principles already taken into account in a cross-border MSP process? If so, please describe how it has been implemented.**

Spain and Portugal defined the boundaries of their case study in order to ensure connectivity between ecosystems. The scale definition was based on the pressures affecting the proposed cross-border MPA. On the other hand, in the Spanish-French Case Study, two scales were considered to define its boundaries, one taking into account ecological items and another one bigger, in relation to stakeholder engagement.

#### **SWOT analysis**

An opportunity when defining scale and boundaries according to EBM is the availability of some data regarding geology, habitats and oceanographic variables at supranational scale (e.g. EMODNET). However, there are still gaps in some types of data and when considering the definition of the “ecological boundaries” the dynamic nature of some important ecological items (i.e. marine mammals) makes difficult to set them.

In the Case Study between Spain and Portugal, for instance, knowledge is fragmented regarding connectivity processes between the 3 seamounts proposed to protect. Also, the difference of knowledge between countries is quite notable, as the Spanish part is well documented but there is a lack of data for the Portuguese seamounts.

Regarding this Case Study, there is a strong will from the Portuguese authorities in the identification of the planning area that will ensure the connectivity of the ecosystems. Moreover, part of the proposed area to connect both spaces comprises an overlapping of Exclusive Economic Zone (EEZ) claims, which would make the joint collaborative research the most logical and suitable one.

### 5.1.6. Identification of the stakeholders’ key sectors

**Question 1: Is that methodological steps or principles already taken into account in a cross-border MSP process? If so, please describe how it has been implemented.**

Key stakeholders were identified in order to conduct interviews and national and cross-border workshops.

#### **SWOT analysis**

Portugal has already identified a list of potential stakeholders due to the current formal MSP process. Spain is in a very early stage of the MSP process, the method that is being used is to recover the list created by Marine District and used for the communication and dissemination of the Marine Strategy

and update it. In the case of France, the commission for each sea basin gather stakeholders at each step of the plan.

A weakness identified by the three countries is that some sectors are more organized and visible than others at administrative levels, which could go in detriment of their representation, causing imbalance between sectors.

Spain, Portugal and France see in cross-border stakeholder workshops conducted through projects, the opportunity to create bonds between stakeholders inside and between countries or to reinforce them (in the case of Spain and Portugal SIMNORAT and TPEA).

## 5.2. Analysis phase

### 5.2.1. Data collection and mapping

**Question 1: Is that methodological steps or principles already taken into account in a cross-border MSP process? If so, please describe how it has been implemented.**

Portugal & Spain: Data regarding the co-existence of activities and uses, species and habitat distribution, uncertainty and changes in the ecosystems, conflicts and synergies distribution are being addressed (e.g. nautical tourism, submarine cables, fisheries, navigation).

France & Spain: Analogously, in the Case Study between France and Spain, data about the pelagic compartment (marine mammals and seabirds) and from fisheries and maritime traffic were gathered and processed in order to conduct a Cumulative Effect Assessment.

#### **SWOT analysis**

Data collection in both Case Studies could provide better knowledge in transboundary areas although, as mentioned before, differences in data sets present another complication. Case studies might be an opportunity to highlight the need to collect more data (especially in the case of Portugal regarding the Portuguese seamounts).

Specifically in the case study between Spain and Portugal, due to the location of the planning area, there will be a need for reinforcing funding mechanisms for high seas research to address knowledge gaps.

In this sense, France identified as strength, the fact that a lot of producers of data are involved in MSP process. In this sense, at the Spanish side, it is planned to use the data from the second cycle of Marine Strategies and from projects as INTEMARES to support the MSP process. *[Note: They are all gathered in national contexts, not transboundary component in this context.]*

Data collection and mapping is very time-consuming (France) more if it has to be in a cross-border context. Moreover, misbalance in data between sectors and/or countries could lead to wrong conclusions (Spain).

## 5.2.2. Assessment and Analysis

**Question 1: Is that methodological steps or principles already taken into account in a cross-border MSP process? If so, please describe how it has been implemented.**

Portugal & Spain: An assessment of current and potential future uses, activities as well as their pressures and impacts, is being conducted. However EBM tools such as cumulative impacts/pressures and Ecosystem-based risk assessment will not be used.

On the other hand, in the French-Spanish case study, as mentioned before, a Cumulative Effect Assessment is being conducted in order to analyse the impacts produced by fisheries and maritime transport on marine mammals and seabirds.

### **SWOT analysis**

Portugal highlights a high level of expertise in the process of assessment of compatibility of uses. However assumes that, although the availability of EBM tools, there are uncertainties arising from lack of scientific knowledge regarding these tools. As mentioned before, there are environmental and strong economic and social data available too. However, data standardization between countries and work with these tools is understood as a time consuming step.

## 5.3. Planning phase

### 5.3.1. Multiple specific objectives definition, management measures, indicators and outcomes

**Question 1: Is that methodological steps or principles already taken into account in a cross-border MSP process? If so, please describe how it has been implemented.**

Portugal & Spain: Common multiple objectives where defined in the context of this Case Study (e.g. assess conflicts between conservation, fisheries and marine traffic, identification of main challenges in cross-border MPA planning, identification of knowledge gaps).

### **SWOT analysis**

Portugal & Spain: Definition of specific objectives was achieved in consultation with national authorities in MSP although that does not assure a match with the political agenda. Also, countries are in different stages in the MSP process which make difficult the cross-border approach.

### 5.3.2. Scenario creation

[There were no answers related to this sub-phase]

### 5.3.3. Trade-off analysis/decision making

**Question 1: Is that methodological steps or principles already taken into account in a cross-border MSP process? If so, please describe how it has been implemented.**

Portugal & Spain: Recommendations - to be implemented - will be based on the trade-off analysis in such a way that will ensure an ecosystem based management approach, a good environmental status and guarantee the maintenance.

### **SWOT analysis**

When considering cross-border cooperation in order to follow the EBM in Cross-Border MSP between Portugal and Spain, we take into account that formal MSP and SEA process in Portugal already considers maintenance of ecosystems services as a Critical Decision Factor. In Spain, legislation establishes that MSP plans should be compatible with ecological objectives established in each marine strategy.

In France, the decree no. 2017-724 of May 3 stated for the integration of the Marine Strategy Framework Directive (MSFD) implementation (through the setting up of the second Marine Strategy "*Plan d'Action pour le Milieu Marin*") into the MSP process that will deliver the "sea basin strategy document". Both directives are therefore implemented through a single document, which ensure a better EBM at each stage of the MSP process.

However, the lack of scientific knowledge represents a gap in the full understanding of ecosystem services within the cross-border region and the benefits that those services represent to society.

Portugal & Spain: The Case Study between Spain and Portugal can represent an opportunity to study the ecosystem services linked to offshore MPAs in particular those related to seamounts.

### **5.3.4. Sustainable financing options**

[There were no answers related to this sub-phase]

### **5.3.5. Zoning**

**Question 1: Is that methodological steps or principles already taken into account in a cross-border MSP process? If so, please describe how it has been implemented.**

Portugal & Spain: This Case Study will take into consideration zoning in order to address activities and uses that potentially impact the proposed cross-border MPA.

### **SWOT analysis**

Portugal & Spain: Regarding this case study, low level of use and activities in the area (offshore) could ease conflicts mitigation. However, previous events of pollution affecting both countries (e.g. Prestige) highlight the need to address the environmental vulnerability through a holistic perspective, having in mind that maritime transport is one of the existing activities difficult to reallocate. Also, some economical important sector as it is navigation or submarine cables and pipelines needs and expectations might threat the zoning process.

In general, potential future activities could be difficult to zone. However, already delimited MPAs (or areas of ecological importance) help to protect areas of singular ecological value from future development of activities.

### 5.3.6. Strategic planning proposal

**Question 1: Is that methodological steps or principles already taken into account in a cross-border MSP process? If so, please describe how it has been implemented.**

The Portuguese-Spanish case study will aim to develop the methodology to create and manage a cross-border MPA that will address pressures, uncertainties and knowledge gaps. The Spanish-French case study provides a common Pressures Assessment in the study area.

#### **SWOT analysis**

Portugal & Spain: The case study has already identified present and potential activities and pressures, which will make possible a precautionary approach of the strategic planning proposal. Addressing the uncertainties and knowledge gaps might be opportunities in future cooperation in joint scientific research missions (e.g. sharing oceanographic research efforts) but it will also need funding. The existence of projects (MESH-Atlantic) provides some data regarding the study area.

## 5.4. Implementation phase

### 5.4.1. Compliance

**Question 1: Is that methodological steps or principles already taken into account in a cross-border MSP process? If so, please describe how it has been implemented.**

Portugal & Spain: The case-study will define common measures of compliance identifying competent authorities and develop a proposal of a common management plan (governance, monitoring, and measures).

#### **SWOT analysis**

Portugal & Spain: The offshore oceanic location of the planning area will demand for high financial resources to implement the proposed measures comparing to those located nearest to the coast. It is proposed that common measures will be drawn in a cooperative way which will be an opportunity to achieve success however they compliance is highly dependent on the institutional cooperation of resources between both countries.

### 5.4.2. Enforcement

**Question 1: Is that methodological steps or principles already taken into account in a cross-border MSP process? If so, please describe how it has been implemented.**

Portugal & Spain: Authorities responsible for Inspections, negotiation and legal actions will be defined in the pre planning (governance framework). NGOs will have the opportunity, accordingly to the legal requirements of stakeholders' engagement, to highlight possible non compliances of the plan.

#### **SWOT analysis**

Portugal & Spain: As mentioned before, funding and operational means will be limiting factors due to the oceanic offshore nature of the planning area.

### 5.5. Monitoring phase

#### 5.5.1. Monitor Performance indicators

**Question 1: Is that methodological steps or principles already taken into account in a cross-border MSP process? If so, please describe how it has been implemented.**

Portugal & Spain: The cross-border common management plan would have a monitoring action plan that should be based on the monitoring plans of both jurisdictions and in line with the MSFD reports.

#### **SWOT analysis**

The monitoring action plan of the formal process of MSP in Portugal, regarding ecologic and biologic issues is based on the MSFD implementation process. In Spain, the MSP process will align with MSFD as in France, where a strategic document has been developed joining both MSFD and MSP Directive processes.

For the three countries, this intertwining could play an important role in the monitoring of a TMSD process, since the same methodology and indicators are implemented for all Member States. However, differences in the stage of MSFD implementation in the different jurisdictions may threaten the monitoring report momentum. Also it should be taken into account that some indicators are difficult to measure.

#### 5.5.2. Monitoring outcomes report

**Question 1: Is that methodological steps or principles already taken into account in a cross-border MSP process? If so, please describe how it has been implemented.**

Portugal & Spain: The monitoring report would address the environmental status of the cross-border MPA, the impact of the management plan in this status and will assess the time and rate of implementation

#### **SWOT analysis**

The use of MSFD monitoring program and indicators that are common for the three countries could be an advantage for coherence. However, differences in the stages of MSFD implementation might threaten the monitoring report momentum.

## 5.6. Evaluation phase

### 5.6.1. Evaluation of Pre-planning

**Question 1: Is that methodological steps or principles already taken into account in a cross-border MSP process? If so, please describe how it has been implemented.**

According to the regulations applicable to planning tools, the evaluation phase is mandatory and will be consider as cross-cutting.

#### **SWOT analysis**

Legal framework considers the evaluation step of the planning process, which gives the opportunity to adapt the Pre-planning considerations if needed.

### 5.6.2. Evaluation of Analysis

**Question 1: Is that methodological steps or principles already taken into account in a cross-border MSP process? If so, please describe how it has been implemented.**

According to the regulations applicable to planning tools the evaluation phase is mandatory and will be consider as cross-cutting.

#### **SWOT analysis**

Legal framework considers the evaluation step of the planning process, which make the opportunity to adapt the analysis if changes occur.

### 5.6.3. Evaluation of Planning

**Question 1: Is that methodological steps or principles already taken into account in a cross-border MSP process? If so, please describe how it has been implemented.**

Portugal & Spain: According to regulation applicable to planning tools the evaluation phase is mandatory and will be consider as cross-cutting

#### **SWOT analysis**

Legal framework considers the evaluation step of the planning process, which gives the opportunity to adapt specific objectives and planning alternatives.

### 5.6.4. Evaluation of Implementation

**Question 1: Is that methodological steps or principles already taken into account in a cross-border MSP process? If so, please describe how it has been implemented.**

According to the law applicable to planning tools the evaluation phase is mandatory and will be consider as cross-cutting.



## SWOT analysis

Legal framework considers the evaluation step of the planning process, which gives the opportunity to adapt the methodology of implementation.

### 5.6.5. Evaluation of Monitoring

**Question 1: Is that methodological steps or principles already taken into account in a cross-border MSP process? If so, please describe how it has been implemented.**

According to the law applicable to planning tools the evaluation phase is mandatory and will be considered as cross-cutting.

## SWOT analysis

Legal framework considers the evaluation step of the planning process, which gives the opportunity to adapt the monitoring methodology (e.g. indicators).

## 5.7. Stakeholder engagement

### 5.7.1. Political and legal requirement

**Question 1: Is that methodological steps or principles already taken into account in a cross-border MSP process? If so, please describe how it has been implemented.**

Portugal & Spain: The common management plan would ensure the compliance of the legal requirements from both jurisdictions regarding the stakeholder's participation.

There will be cross border stakeholder participation Spain-France, Portugal-Spain and at national levels.

## SWOT analysis

Portugal is currently in the stage of consultation for the MSP process however, Spain is in a very early stage and still has not involved stakeholders in the process. Moreover, there are difficulties in financing cross-border stakeholder engagement inside the formal processes; the opportunities arise with projects like SIMNORAT.

A shared legal requirement among countries could extend the cross-border MSP process since difference regarding legal requirements on both countries exists. Also the difference in stakeholder's knowledge (Portuguese and French stakeholders being acknowledged and willing to participate while Spanish ones are maybe not aware of the process), could be a disadvantage for a transnational understanding.

Regarding French national process, the stakeholder engagement is taken into account through a Commission for Each Seafront (CMF) and various consultation times. For instance, in the beginning of 2018, France launched a first public dialogue phase on the initial statement, issues and vision on

each seafront. This phase included workshops and a dedicated website (merlittoral2030.gouv.fr). As mentioned before, several cooperation structures already exist (i.e. Pyrenean Commission) and some meetings (as a starter) have been conducted between countries.

In the context of the case studies, cross-border workshops for stakeholders were conducted.

### 5.7.2. Representation of all sectors affected by the plan

**Question 1: Is that methodological steps or principles already taken into account in a cross-border MSP process? If so, please describe how it has been implemented.**

Portugal & Spain: A workshop involving stakeholders affected by the potential cross-border MPA will be organized. In this workshop, the question of developing a permanent forum of discussion and the best way to develop this forum could be addressed.

Spain & France: In the context of the case study, a cross-border workshop for stakeholders was conducted

#### **SWOT analysis**

Portugal & Spain: There is a solid knowledge of who needs to be involved and in what capacity, although some sectors may not be well organized unbalancing sectorial representation.

There is a lack of implementation tools to facilitate an effective transboundary public discussion and participation of civil society groups but SIMNORAT project (through the task of stakeholders' engagement improvement) might be a facilitator of a permanent cross-border forum of discussion between stakeholders of the three countries.

### 5.7.3. Cultural setting of the planning area

**Question 1: Is that methodological steps or principles already taken into account in a cross-border MSP process? If so, please describe how it has been implemented.**

Portugal & Spain: Several historic cross-border initiatives and settlements of common cultural dynamics would be addressed to improve the cross-border stakeholder's engagement.

#### **SWOT analysis**

The existence of ongoing cross-border agreements provide a good basis for cooperation in MSP between Spain and Portugal, however some of them focus on economic development increasing the environmental pressures, effects and risks to the planning area, also causing unbalance between sectors.

#### 5.7.4. Key sectors affected by the plan

**Question 1: Is that methodological steps or principles already taken into account in a cross-border MSP process? If so, please describe how it has been implemented.**

Portugal & Spain: A workshop and interviews involving the stakeholders affected by the case study has been organized.

##### **SWOT analysis**

Due to time and resources limitation, not all the key stakeholders could be reached for interviews and/or workshops. Although, thanks to the tasks of stakeholder engagement of SIMNORAT, identification of stakeholders has been carried out and the authorities databases have been updated. Moreover, sectors in the stakeholder engagement process are harmonized in a way that will give the opportunity to compare the views, concerns and conflicts in a cross-border approach.

Again, some sectors are better represented than others, like fishing which usually represent a high level of cross-border conflicts.

#### 5.8. Communication

##### 5.8.1. Creation of a communication and dissemination plan

**Question 1: Is that methodological steps or principles already taken into account in a cross-border MSP process? If so, please describe how it has been implemented.**

In the framework of the project, a communication and dissemination plan was created.

##### **SWOT analysis**

Portuguese, Spanish and French MSP authorities are part of the Steering Committee of SIMNORAT and use their channels to communicate results as well as to promote initiatives related to stakeholder engagement in the framework of the project. The project too provides the tools to disseminate properly the case studies and the issues arising from them, however the common language is English, which may threat the reach of all public.

##### 5.8.2. Definition of an effective communication strategy

**Question 1: Is that methodological steps or principles already taken into account in a cross-border MSP process? If so, please describe how it has been implemented.**

The strategy of communication is based in dissemination tools and materials such as the geoportal (<http://visu-simnorat-eu.shom.as8677.net/>), webpage (<http://simnorat.eu/>), newsletters, leaflets and reports from the stakeholder's engagement workshops

## **SWOT analysis**

Portugal & Spain: The involvement of Portuguese national authority in MSP (DGRM - Direção-Geral de Recursos Naturais, Segurança e Serviços Marítimos) in the proposal of the case study between Portugal and Spain can be important to disseminate the results and outputs. There are also European dissemination channels (MSP Platform, IOC-UNESCO).

An advantage between Spain and Portugal are the similar languages with the capacity to be understood in both countries, which can benefit an effective communication strategy. However, different stages in the formal MSP process might create an unbalance regarding the stakeholders and civil society knowledge on MSP.

## References

- Ansong, J., Gissi, E., Calado, H., (2017). An approach to ecosystem-based management in maritime spatial planning process. *Ocean and Coastal Management*, (141) 65-81.
- Barbanti A., Campostrini P., Musco F., Sarretta A., Gissi E. (eds.) (2015). Developing a Maritime Spatial Plan for the Adriatic –Ionian Region. CNR-ISMAR, Venice, Italy.
- Carneiro, G., H. Thomas, S. Olsen, D. Benzaken, S. Fletcher, S.M. Roldán, D. Stanwell-Smith, D. Bloxson, A. Fakhry, Q. Fang, I. Lutchman, M. Tierney, J. Mccann, E. Molenaar, A. White, L. Whitford (2017). Cross-border cooperation in Maritime Spatial Planning Directorate-General for Maritime Affairs and Fisheries Directorate A — Maritime Policy and Blue Economy Unit A.2.
- Carr, M. H., Neigel, J. E., Estes, J. A., Andelman, S., Warner, R. R., and Largier, J. L. (2003). Comparing marine and terrestrial ecosystems: implications for the design of coastal marine reserves. *Ecol. Appl.* 13, S90–S107. doi: 10.1890/1051-0761(2003)013[0090:CMATEI]2.0.CO;2.
- Coleman, H., M. Foley, E. Prahler, M. Armsby, G. Shillinger (2011) Decision guide, Selecting decision support tools for marine spatial planning, Cent. Ocean Solut.
- Collie, J.S., Adamowicz, W.L.V., Beck, M.W., Craig, B., Essington, T.E., Fluharty, D., Rice, J., Sanchirico, J.N., (2013). Marine spatial planning in practice. *Estuar. Coast. Shelf Sci.* 117, 1-11.
- Convention on Biological Diversity (2009). Azores Scientific Criteria and Guidance for Identifying Ecologically or Biologically Significant Marine Areas and Designing Representative Networks of Marine Protected Areas in Open Ocean Waters and Deep Sea Habitats. Montreal, Canada, 10pp.
- Douve, F. (2008). The importance of marine spatial planning in advancing ecosystem-based sea use management. *Marine Policy*, 32(5), 762–771.
- Douve, F., and Ehler, C. N. (2009). New perspectives on sea use management: Initial findings from European experience with marine spatial planning. *Journal of Environmental Management*, 90(1), 77–88.
- Ehler, Charles, and Fanny Douve (2009) Marine Spatial Planning: a step-by-step approach toward ecosystem-based management. Intergovernmental Oceanographic Commission and Man and the Biosphere Programme. IOC Manual and Guides No. 53, ICAM Dossier No. 6. Paris: UNESCO.
- Flannery, W., A.M. O’Hagan, C. O’Mahony, H. Ritchie, S. Twomey, (2015) Evaluating conditions for transboundary Marine Spatial Planning: Challenges and opportunities on the island of Ireland, *Mar. Policy*. 51: 86–95. doi:10.1016/j.marpol.2014.07.021.
- Hommel, S., Maes, F., Goldsborough, D., de Vos, B., Stuvier, M., Bolman, B., Sørensen, T.K., Stelzenmüller, V. (2012). MASPNOSE final Report. 40pp.
- Jay, S. and Gee, K. (eds.) (2014) TPEA Good Practice Guide: Lessons for Cross-border MSP from Transboundary Planning in the European Atlantic, University of Liverpool, Liverpool, UK. ISBN 978-0-99301460-4.

- Pınarbaşı, K., Galparsoro, I., Borja, V., Stelzenmüller, Á., Ehler, C.N., Gimpel, A., Decision support tools in marine spatial planning: Present applications, gaps and future perspectives, *Mar. Policy*. 83 (2017) 83–91. doi:10.1016/j.marpol.2017.05.031.
- Karppi, I., Kokkonen, M., Lähteenmäki-Smith, K. (2001) SWOT-analysis as a basis for regional strategies (Nordregio Working Paper). Stockholm: Nordregio. Retrieved from <http://urn.kb.se/resolve?urn=urn:nbn:se:norden:org:diva-248>
- Kidd, S., Plater, A., Frid, C., (2011).The Ecosystem Approach to Marine Planning and Management.*Earthscan*, London.
- Koehn, J., Reineman, D., Kittinger, J., (2013). Progress and promise in spatial human dimensions research for ecosystem-based ocean planning. *Mar. Policy* 42, 31-38.doi:10.1016/j.marpol.2013.01.015.
- Olsen, S.B. (2017), “Good practices in support of cross-border collaboration in MSP” presented at the 2nd International Conference on Marine/Maritime Spatial Planning, Session 6: Cross-border cooperation, UNESCO, Paris, 201
- Payne I, Tindall C, Hodgson S, Harris C. (2011) Comparative analysis of Maritime Spatial Planning (MSP) regimes, barriers and obstacles, good practices and national policy recommendations. *Seaenergy* 2020.
- PRC (Policy Research Cooperation, 2011). Information package: Study on the impacts of future MSP policy options in the EU.
- S. Jay, F.L. Alves, C. O’Mahony, M. Gomez, A. Rooney, M. Almodovar, K. Gee, J.L.S. de Vivero, J.M.S. Gonçalves, M. da Luz Fernandes, O. Tello, S. Twomey, I. Prado, C. Fonseca, L. Bentes, G. Henriques, A. Campos (2016) Transboundary dimensions of marine spatial planning: Fostering inter-jurisdictional relations and governance, *Mar. Policy*. 65: 85–96. doi:10.1016/j.marpol.2015.12.025.
- Schultz-Zehden A., Gee K.,Scibior K. (2008). Handbook on Integrated Maritime Spatial Planning (BalticSeaPlan).
- Secretariat of the Convention on Biological Diversity and the Scientific and Technical Advisory Panel dGEF, (2012). Marine Spatial Planning in the Context of the Convention on Biological Diversity: a Study Carried Out in Response to CBD COP 10 Decision X/29. Montreal, Technical Series No. 68, 44 pp.
- Stelzenmüller, V. H.O. Fock, A. Gimpel, H. Rambo, R. Diekmann, W.N. Probst, U. Callies, F. Bockelmann, H. Neumann, I. Kröncke (2015) Quantitative environmental risk assessments in the context of marine spatial management: current approaches and some perspectives, *ICES J. Mar. Sci.: J. du Cons.* 72: 1022–1042.
- Torres-Moye, G., Edwards, M. S., and Montaña-Moctezuma, C. G. (2013).Benthic community structure in kelp forests from the Southern California Bight.*Cienc. Mar.* 39, 239–252. doi: 10.7773/cm.v39i3.2250

- Van Tatenhove (2017): Transboundary marine spatial planning: a reflexive marine governance experiment? *Journal of Environmental Policy & Planning*, DOI: 10.1080/1523908X.2017.1292120.
- Van Tatenhove, J. P. M. (2016). The environmental state at sea. *Environmental Politics*, 25(1), 160–179.
- VanTatenhove, J. P. M. (2013). How to turn the tide: Developing legitimate marine governance arrangements at the level of the regional seas. *Ocean & Coastal Management*, 71, 296–304.
- Wilkinson, T., Agardy, T., Perry, S., Rojas, L., Hyrenbach, D., Morgan, K., et al. (2004). “Marine species of common conservation concern: protecting species at risk across international boundaries,” in *Proceedings of the Fifth International SAMPAA (Science and Management of Protected Areas) Conference*. British Columbia, Vic.
- Zauch, J. (2014). Sea basin maritime spatial planning: a case study of the Baltic Sea region and Poland. *Mar. Policy* 50, 34-45.

# Annex I. MSP methodologies

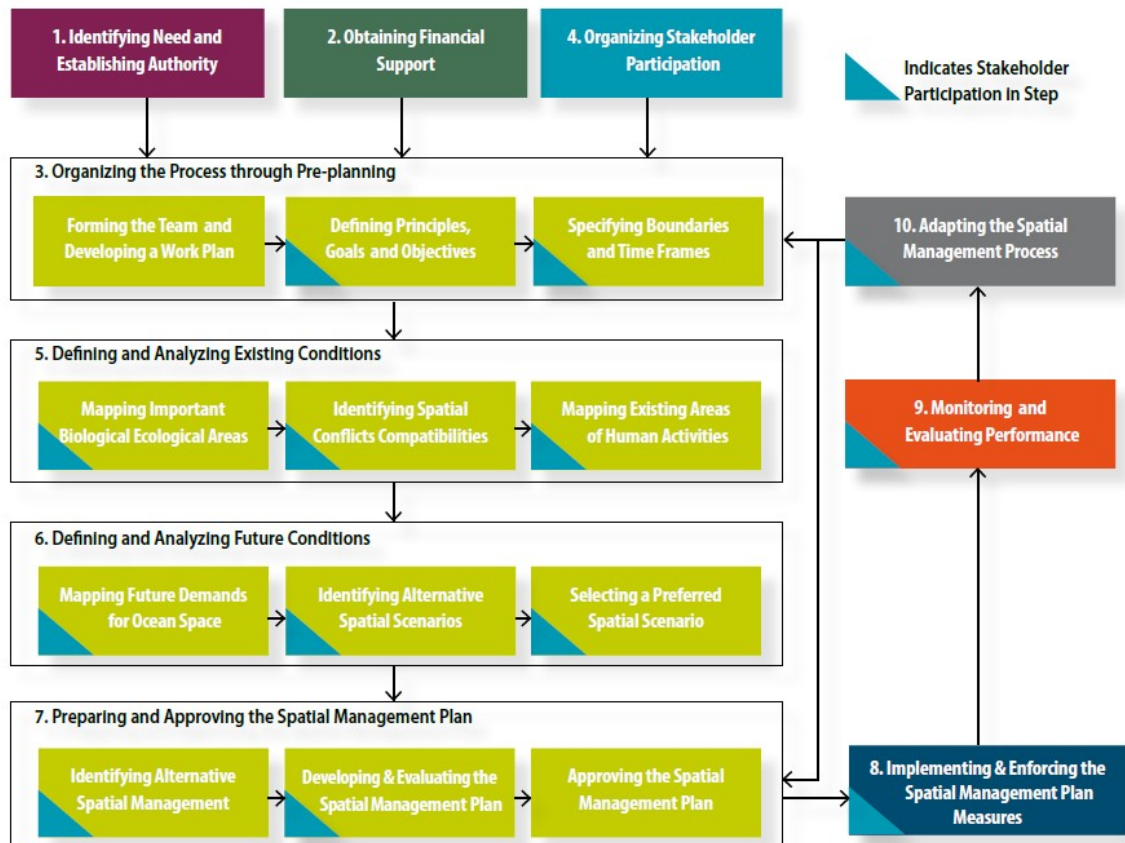


Figure A 1. A step-by-step approach to Marine Spatial Planning (Source: Ehler and Douvere, 2009).

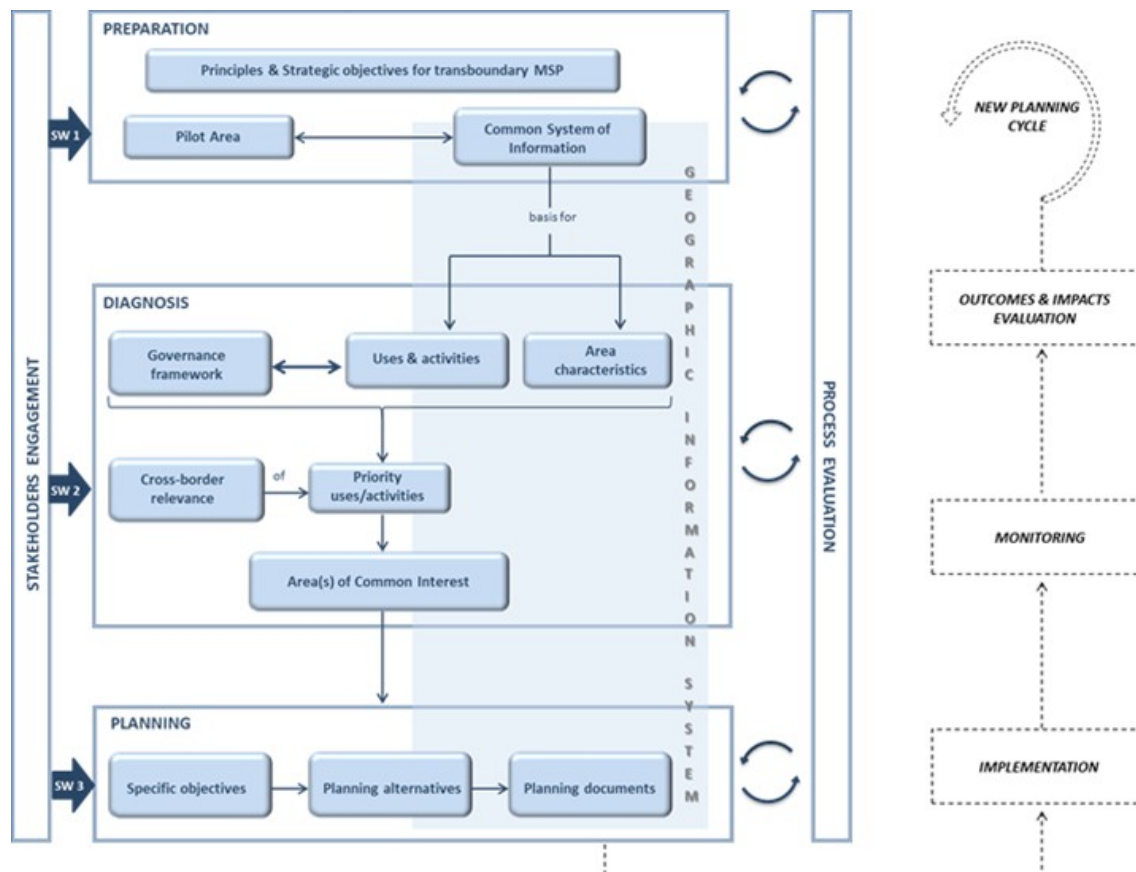


Figure A 2. The TPEA methodology diagram (Source: TPEA Evaluation Report, 2013).



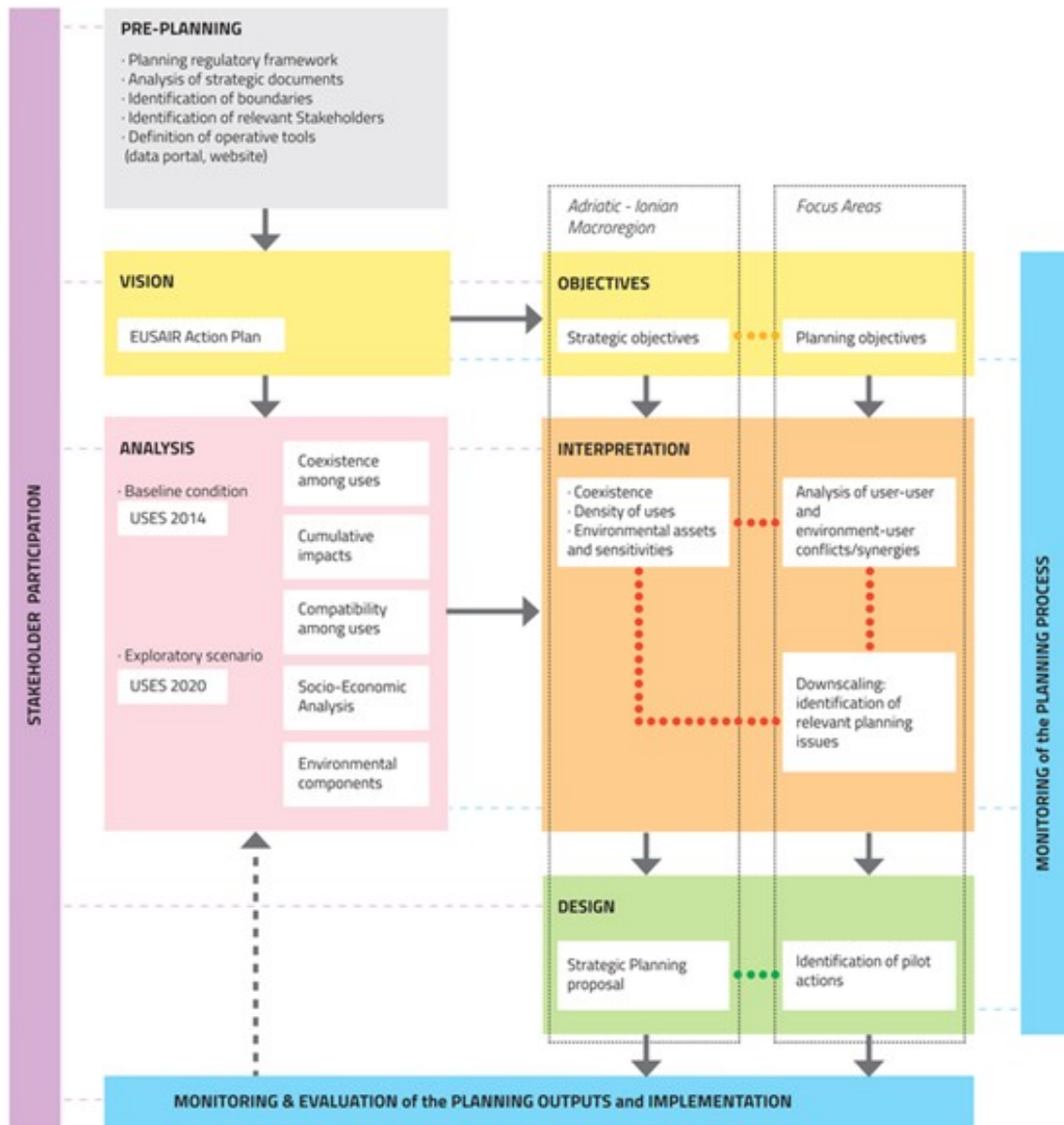


Figure A 3. Flowchart of the activities developed under ADRIPLAN methodology (Source: Barbanti *et al.*, 2015).

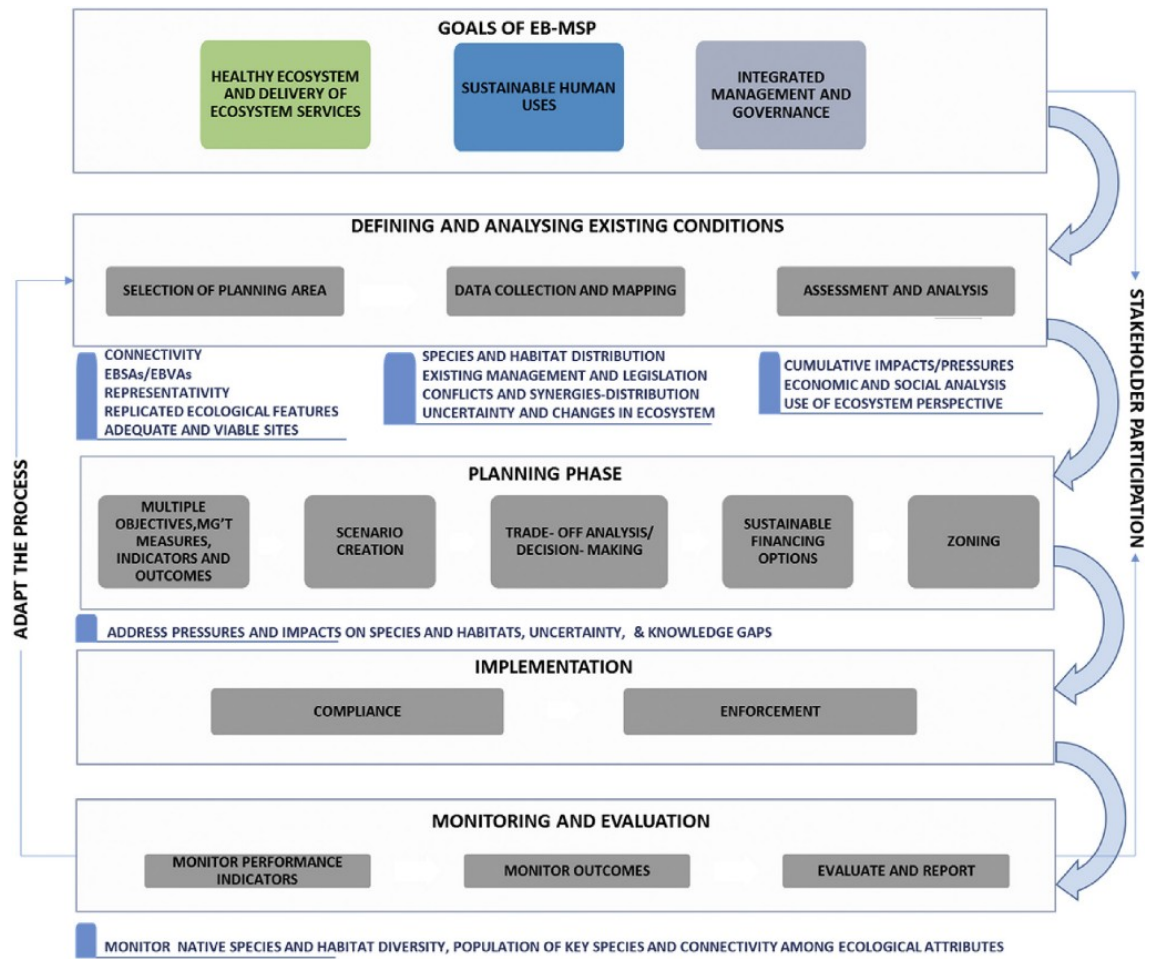


Figure A 4. Methodology for EBM in MSP (Source: Ansong *et al.*, 2017).