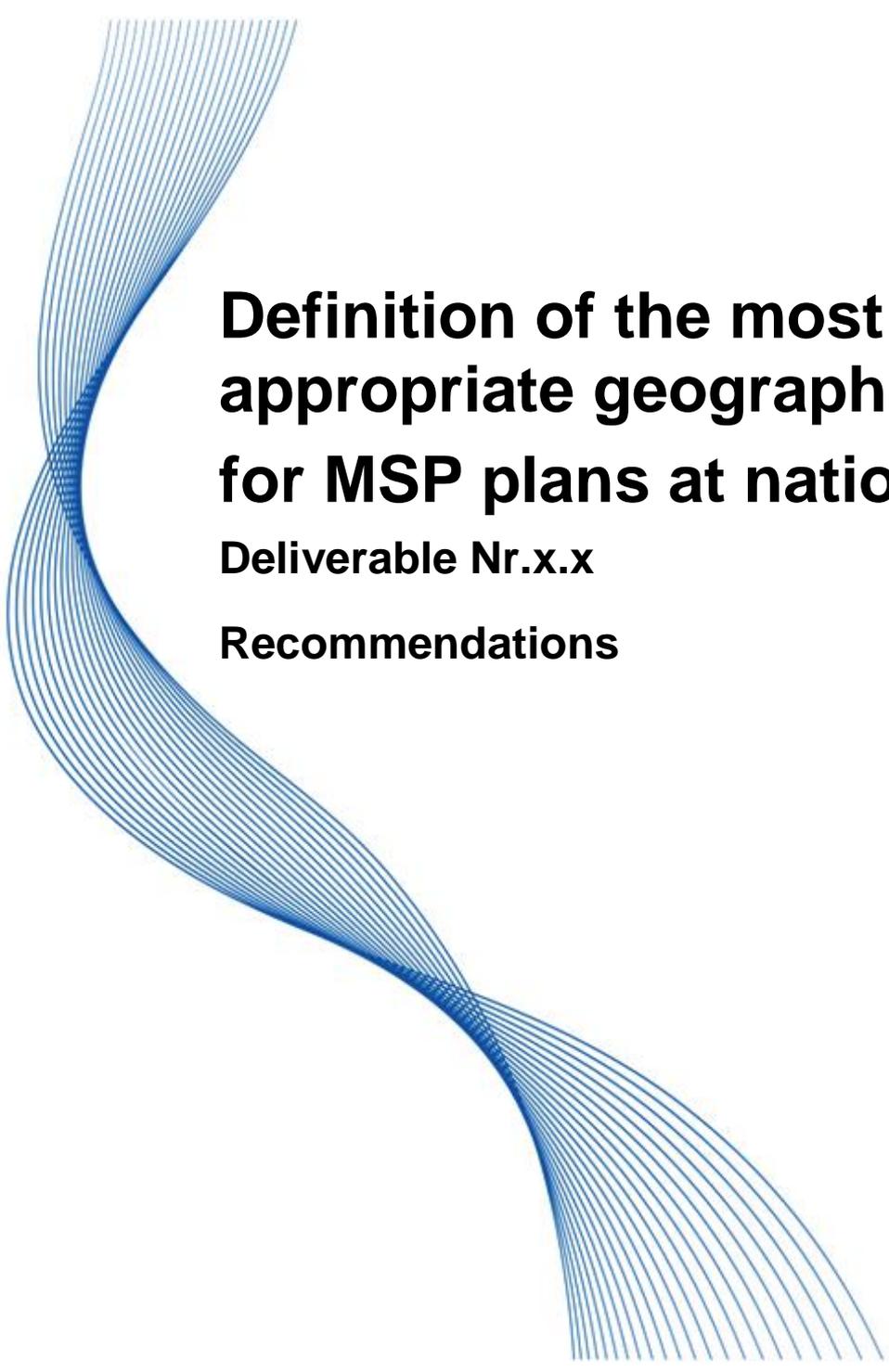




Supporting maritime spatial Planning
in the Eastern Mediterranean
(SUPREME)

A large, decorative graphic consisting of many thin, parallel blue lines that curve and flow from the top left towards the bottom right, framing the central text.

Definition of the most appropriate geographical scale for MSP plans at national scale

Deliverable Nr.x.x

Recommendations



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INDEX

1. Introduction

2. About Recommendations

- Purpose of the Recommendations
- Future users of the Recommendations
- How the Recommendations have been developed
- How to use the Recommendations

3. Recommendations contents

- Recommendation 1: *Recognize and map environmental resources and protections*
- Recommendation 2: *Recognize and map maritime uses and economic activities*
- Recommendation 3: *Recognize interferences between maritime uses/economic activities and environmental resources, and particularly impacts*
- Recommendation 4: *Assess, through a SWOT analysis, possible options for delimitation of planning units and their geographical scale*

4. Gaps

5. How to face the gaps

1. INTRODUCTION

Numerous attempts have been made to define the geographical scale of MSP Plans, but relatively few have discussed how to put it into practice. The Recommendations below aim to suggest an operational way to individuate the most appropriate geographical scale depending on the application context of the MSP Plan. Actually the definition of geographical scale is a core action in order to individuate the level of deepening and incisiveness of the Plan: in general a strategic level is more appropriate to provide general indications on a wide scale, while a management and planning level usually requires a smaller and more specific scale. Obviously the definition of the most appropriate scale depends on a complex evaluation of different factors, which can produce different possible scenarios and the final choice among these scenarios can only be up to the decision maker.

2. ABOUT RECOMMENDATIONS

Purpose of the Recommendations

The methodology from which the Recommendations are derived is functional to reach the goal of Task C 1.3.5, namely the "*Definition of the most appropriate geographical scales for MSP plans at national scale*". The choice of the geographical scale is very important because it will affect also the level of definition (strategic, planning, management) and the specific nature of the contents of the Maritime Plans. In the sea, important ecosystem processes and human activities have a various range of geographical scales. Therefore, the identification of the appropriate scale and its resolution of intervention is a complex decision, in the process of developing effective management plans that take into account ecological, economic and social processes. In order to define the boundaries for *planning units* (i.e. homogeneous areas on which to apply Maritime Plans) it is important to identify two different types of boundaries: boundaries for analysis and boundaries for management. Defining boundaries for analysis broader than boundaries for planning/management will enable us to identify sources of influence (e.g., sources of pollution) that have an

effect on our planning/management area as well as the authorities or institutions responsible for those sources, in the implementation of our spatial plans.

Starting from this point of view, the methodology proposes the use of a broader scale to define an analytical system (i.e. for testing on the *Case Study areas*), in order to develop a general framework for assessing the correct geographical scale functional to the delimitation of one or more *planning units*.

Potential future users of the Recommendations

These Recommendations could be a useful tool for *decision makers* at the international, regional, national, and sub-national levels, who have to manage policies effective to reach a balanced relationship between conservation of environmental resources and development of multiple maritime uses and activities.

How the Recommendations have been developed

Assuming that MSP has the objective of ensuring an integrated management of the multiple maritime activities without compromising the good environmental status of the sea, some criteria of analysis have been identified on which to base the methodological path.

Starting from the results of the Survey on *Marine Areas delimitation criteria and scale of interventions issues introduced by European Projects*, the methodology tries to identify the most used and appropriate criteria to analyze a marine area and delimitate possible *planning units*.

On the basis of the Survey feedbacks, these criteria result to be related mainly to: a) *environmental issues* (i.e. criteria finalized to map and compare different types of protection instruments in force); b) *economic issues* (i.e. criteria related to the uses of the sea such as fishing, tourism, transport, shipping, etc. aimed to map and analyze the different sea and coastal activities); c) *administrative issues* (i.e. criteria linked to the legal and political framework and to different existing maritime and coastal planning and management instruments).

In order to support the decision-making process in identifying the correct geographical scale to be attributed to the *planning units*, a Methodology has been set up, providing analytical and assessment parts.

The analytical part is aimed to recognize, on one side, environmental issues and, on the other side, maritime uses and economic activities and then to highlight impacts and overlaps between environmental instances and anthropic activities, specifically considering sectoral programs and policies acted by different institutional actors.

The assessment part suggests to use a SWOT Analysis for choosing among different possible options to delimitate the planning units, taking into account not only the environmental conflicts produced by different maritime activities, but also the evaluation of the peculiar political and institutional framework, in order to define geographical scale and level of intervention of the Plan in the most appropriate way.

This methodological path has been applied to all the Case studies by the SUPREME partners, who have been supported in this application through a *Tool - Kit* proposing some clarifications for general organization and some references useful to set up the outputs of different phases.

After the application to the Case studies, a specific format has been provided to all Project Partners, in order to collect their *Feedback* and, in case, use them to adjust Methodology.

How the Recommendations have been organized

The Recommendations derive from the aforementioned methodological path, which is divided into four phases:

1. Recognition and mapping of environmental resources and protections
2. Recognition and mapping of the maritime uses and economic activities
3. Recognition of interferences between maritime uses/economic activities and environmental resources, and particularly of impacts
4. Assessment, through a SWOT Analysis, of possible options for delimitation of *planning units*.

After being verified through the application to the Case Studies, each of these phases of the Methodology has been translated in Recommendation through the specification of four elements: Aim, Tips, Main references and Output.

How to use the Recommendations.

The Recommendations are written in distinct parts and they should be used possibly following the sequence of phases, because each of these provides useful elements for the development of the next. The first two analytical phases and the relevant recommendations (1. *Recognition and mapping of environmental resources and protections*, 2. *Recognition and mapping of the maritime uses and economic activities*) allow us to make an interpretation of the actual state in the third phase (3. *Recognition of interferences between maritime uses/economic activities and environmental resources and particularly of impacts*) and, subsequently, an evaluation in the fourth phase (4. *Assessment, through a SWOT Analysis, of possible options for delimitation of planning units*) useful to make the choice of the most appropriate geographical scale for the MSP Plan.

Setting up Recommendations

After having tested all the phases of the Methodology through the application on Case Studies, whose feedbacks have been useful to confirm it or adjust it, the set up Methodology has been transposed in Recommendations.

In particular, the analytical phases (1, 2 and 3) have been applied to wider areas (entire Case Studies areas), while the phase of assessment and proposal (4) generally has been applied to narrower areas (i.e. Focus areas).

RECOMMENDATION 1:

Recognize and map environmental resources and protections



RECOMMENDATION 2:

Recognize and map maritime uses and economic activities



RECOMMENDATION 3:

Recognize impacts and critical issues related to interferences between environmental resources and maritime uses/economic activities



RECOMMENDATION 4:

Assess, through a SWOT Analysis, possible alternatives for delimitation of *planning units* and their geographical scale.

3. RECOMMENDATIONS CONTENTS

RECOMMENDATION 1

Recognize and map environmental resources and protection levels

Aim

This recognition will allow to analyze distribution and possible overlaps of environmental resources and levels of protection. To this end, instruments for environmental protection (Maps of constraints, protected areas, etc.) as well as maps illustrating eco-systemic characteristics will be collected and analyzed. The analysis will allow to highlight also the presence of the main cross-border environmental aspects.

Tips

Depending on the peculiarity of Case Study, a choice has to be done on the most appropriate parameters useful to highlight the environmental issues of the analyzed area. These parameters include:

- *Uniqueness or rarity*
(areas containing either unique, rare or endemic species, populations or communities and/or rare habitats or ecosystem and/or unusual geomorphologic or oceanographic features)
- *Importance for threatened, endangered or declining species and/or habitat*
(areas containing habitats for the survival and recovery of endangered, threatened, declining species)
- *Vulnerability, fragility, sensitivity or slow recovery*
(areas containing a relatively high proportion of sensitive habitats, biotopes or species that are functionally fragile)
- *Biological productivity*
(areas containing species, populations or communities with comparatively higher natural, biological productivity)
- *Biological diversity*
(areas containing comparatively higher diversity of ecosystems, habitats, communities or species)
- *Naturalness*
(areas containing comparatively higher degree of naturalness as result of the lack of, or low level of human-induced disturbance or degradation).

In addition to the environmental status analysis, it has be done a recognition of the istitutional instruments finalized to ensure envirommental protection. All the existing Marine Protected Areas (MPAs)¹ will have to be mapped and the main existing planning/management tools regarding environmental protection will have to be collected and analyzed.

The main area-based management tools are referred to the specific MPAs categories listed below:

- *SAC (Special Area of Conservation)*

(Sites established throughout the European Union under the EU Habitats Directive. They are part of the Natura 2000 network and aim to provide conservation measures to European species and habitats of particular importance)

- *SPA (Special Protection Area)*

(Sites established throughout the European Union under the EU Birds Directive. They are part of the Natura 2000 network and aim to provide conservation measures to European species and habitats of particular importance)

- *EBSAs (Ecological or Biological Significant marine Areas)*

(Areas which, through scientific criteria, have been identified as important for the healthy functioning of our oceans and the services that they provide)

- *IMMAs (Important Marine Mammals Areas)*

(Important Marine Mammals Areas – IMMAs - are defined as “*discrete portions of habitat, important to marine mammal species, that have the potential to be delineated and managed for conservation*”. IMMAs consist of areas that may merit place-based protection and/or monitoring. IMMAs can be seen as a marine mammals layer indicative of biodiversity and potentially ecosystem health for consideration by governments, intergovernmental organisations, conservation groups, and the general public)

- *KBAs (Key Biodiversity Areas)*

(Sites contributing significantly to the global persistence of biodiversity. They represent the most important sites for biodiversity conservation worldwide, and are identified nationally using globally standardised criteria and thresholds)

¹ Marine Protected Areas are classified by IUCN (*International Union for Conservation of Nature*) in six types, depending on their targets:

- *Strict Nature Reserve/Wilderness Area* - protected area managed mainly for science or wilderness protection ;
- *National Park* - protected area managed mainly for ecosystem protection and recreation;
- *Natural Monument* - protected area managed mainly for conservation of specific natural features ;
- *Habitat/Species Management Area* - protected area managed mainly for conservation through management intervention;
- *Protected Landscape/Seascape* - protected area managed mainly for landscape/seascape conservation and recreation;
- *Managed Resource Protected Area* - protected area managed mainly for the sustainable use of natural ecosystems .

- *PSSAs (Particular Sensitive Sea Areas)*

(A Particularly Sensitive Sea Area is an area that needs special protection through action by IMO because of its significance for recognized ecological or socio-economic or scientific reasons and which may be vulnerable to damage by international maritime activities)

- *FRAs (Fisheries Restricted Areas)*

(Fisheries Restricted Areas – FRAs - are spatial management measures adopted under the general fisheries commission for the Mediterranean and Black Sea – GFCM- to regulate or restrict demersal fisheries in the high seas)

- *SPAMIs (Specially Protected Areas of Mediterranean Importance)*

(Through the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean - SPA/BD Protocol, the Contracting Parties to the Barcelona Convention established the List of Specially Protected Areas of Mediterranean Importance - SPAMI's List - in order to promote cooperation in the management and conservation of natural areas, as well as in the protection of threatened species and their habitats. The conservation of the natural heritage is then the basic aim of the the SPAMIs. The SPAMI's List may include sites which: a) are of importance for conserving the components of biological diversity in the Mediterranean; b) contain ecosystems specific to the Mediterranean area or the habitats of endangered species; c) are of special interest at the scientific, aesthetic, cultural or educational levels).

Main references:

Planning/management instruments for environmental marine protection
Planning/management instruments for environmental coastal protection

Outputs :

- *MAP OF THE ENVIRONMENTAL ISSUES*

RECOMMENDATION 2

Recognize and map maritime uses and economic activities

Aim

This phase will allow to analyze distribution and different levels of intensity of maritime uses and economic activities on the sea and the coastal territories. The mapping will also allow to identify any overlaps and possible interferences between co-existing uses and activities in the same area. To this end, sectoral Programs for each activity and Land-based Plans in force on the coastal areas will be collected and

analyzed. The mapping and analysis will also take into account the relevant cross-border aspects.

Tips

The sectors of activities to take into account are those mentioned in the art. 8 of MSP Directive (2014/89/EU), listed below:

- aquaculture areas,
- fishing areas,
- installations and infrastructures for the exploration, exploitation and extraction of oil, of gas and other energy resources, of minerals and aggregates, and for the production of energy from renewable sources,
- maritime transport routes and traffic flows,
- military training areas,
- nature and species conservation sites and protected areas,
- raw material extraction areas,
- scientific research,
- submarine cable and pipeline routes,
- tourism,
- underwater cultural heritage.

In order to facilitate visualization of possible conflicts (and synergies) we can use instruments set up and tested by previous experimentations². A dedicated GIS software is the most appropriate tool to analyse and visualise information on the location of the current and planned activities. It can address the following questions: 'Do overlapping activities exist?', 'Where to expect conflicts?' and 'How does a specific management result in a change of conflicts?'

Main references:

Sectoral Programs / Spatial Plans
Land Based Plans (e.g. ICZM Plans)

Outputs:

- *MAP OF THE USES OF THE SEA*
- *MATRIX OF COMPATIBILITY BETWEEN DIFFERENT USES*

² Cfr <http://www.msp-platform.eu/faq/cross-sector-integration>

RECOMMENDATION 3

Recognize interferences between maritime uses/economic activities and environmental resources, and particularly of impacts

Aim

The analytical part will provide a framework, geographically differentiated, based on the type and number of interferences, related to compatibility and potential conflicts between environmental protection and maritime activities. The identification of potential interferences can be supported by the analysis of the Environmental Reports produced by the SEA (Strategic Environmental Assessment) of the previously collected sectoral Programs and Plans. In this phase it will be important to consider with particular attention the areas of real or potential land/sea conflicts.

Tips

The table below is an example of tool aimed to synthesize the main interactions between key maritime economic activities and the environmental issues expressed by the 11QD (Quality Descriptors) of GES (Good Environmental Status) identified in the frame of the EU Marine Strategy Framework Directive (MSFD –2008/56/CE).

QD		Aquaculture	Shipping	Ports	Fisheries	Coastal and Maritime Tourism	Offshore Wind Energy	Wave Energy	Oil and Gas Extraction	Marine Aggregates and Mining	Cables and Pipelines
1	Biodiversity										
2	Non-indigenous species										
3	Commercial fish and shellfish										
4	Food Webs										
5	Eutrophication										
6	Seafloor integrity										
7	Hydrographical conditions										
8	Contaminants										
9	Contaminants in seafood										
10	Marine Litter										
11	Energy and Underwater noise										

Table of interactions between key maritime economic activities and the environmental issues

Main references:

- Strategic Environmental Assessment of Plans
- Strategic Environmental Assessment of Programs / Strategies

Outputs:

- *MAP OF INTERFERENCE BETWEEN MARITIME USES / ENVIRONMENTAL ISSUES*

RECOMMENDATION 4:

Assess, through a SWOT Analysis, possible options for delimitation of *planning units* and their geographical scale.

Aim

The assessment part is aimed to support the *Decision Maker* about the definition of geographical scale (wide or local), through the definition of one or more possible options for the delimitation of *planning units*. In order to define the most appropriate geographical scale, it is suggested to use a SWOT analysis to choose among different possibilities of delimitation, taking into account mainly three issues: 1) urgency related to the status of the conflicts between environmental protection and maritime activities; 2) institutional boundaries of the involved administrative bodies; 3) peculiar political and legal framework (comprehensive of the transboundary issues). *Strengths* and *Weaknesses* could be related mainly to the status of conflicts, to the environmental relevance and to economic issues; *Opportunities* and *Threats* could be related mainly to political framework and transboundary issues.

Tips

The status of interactions, synthesized in the table previously described, can be assessed through the SWOT analysis as endogenous factor, determining Strengths or Weaknesses; while institutional and administrative issues, in addition to the peculiar political framework, can be assessed through the SWOT analysis as exogenous factors, determining Opportunities or Risks.

In this phase, among all the stakeholders to involve, it is particularly important to listen to the subjects representing the institutional position of "Decision Maker" (as IMELS or MIT for Italy), which will be those primarily responsible for the strategic choice among different boundaries of the "units planning" and consequently for their geographical scale, taking into account not only the status of conflicts between

maritime activities and environmental issues, but also the peculiar political framework in place.

Main references:

- Strategic Plans and Programs
- Stakeholder feedback

Outputs:

- *SWOT ANALYSIS AIMED TO CHOOSE AMONG POSSIBLE OPTIONS FOR PLANNING UNITS DELIMITATION (definition of geographical scale)*

4. GAPS

If, from a methodological point of view, we have been able to set up some practical Recommendations to individuate the appropriate geographical scale for MSP Plans, however some gaps remain to solve, regarding more general aspects emerged from the feedback on the application of the Methodology to the Case Studies.

The feedback derived from Cases Studies for the phase of *Recognition and mapping of environmental resources and protections* highlights that the main gaps regard these aspects: identification of sources, lack of data on resources, comparability of data, lack of GIS data.

In particular, wide descriptions of environmental resources and protection tools sometimes lack of update, public and official documents and repositories. In addition to this, the spatial information on environmental features are often scattered and the lack of common repositories involves several responsible public entities that often don't share a common methodology on scales, metadata, data storage and publication.

The feedback derived from Cases Studies for the phase of *Recognition and mapping of maritime uses and economic activities* highlights that the main gaps regard these aspects: identification of sources, lack of data on maritime uses/economic activities, comparability of data and overlapping of geographical boundaries. The spatial information on MSP significant maritime uses in general lack of common and public repositories at National and Regional scale. This involves several responsible public entities that often do not share easily interoperable data, nor a common methodology on scales, metadata, data storage and publication.

The feedback derived from Cases Studies for the phase of *Recognition of interferences between maritime uses/economic activities and environmental resources, and particularly of impacts* highlights that, in some cases (i.e. Croatia), the gaps regard the lack of data on maritime uses and economic activities, in other cases (i.e. Greece) many data are available but they are not organized in a single geodatabase. In addition to these, other gaps have been highlighted: the difficulty to make a choice among different methods to

assess impacts and the difficult comparability of data, often linked to the lack of a global Geographical Information System (GIS).

5. HOW TO FACE THE GAPS

In general, we can say that lack and deficiencies of specific sectoral data could be faced through a Geoportal that would ensure data comparability. It is very important to strengthen the observational monitoring capacities, using advanced technological methodologies. Moreover, a common and public repository on data concerning environmental resources and MSP significant maritime uses (at national, regional or European level) and containing updated, public and official information, would be very useful. Moving in this direction, it would be very useful to implement the Directive 2007/2/EC INSPIRE establishing the infrastructure for spatial information in the European Union for the purposes of environmental policies and policies or activities that may have an impact on the environment.