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'Atlantic Vision' for MSP
Roadmap
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Table of Contents

1	Introduction	1
2	Background to the European Atlantic region	1
3	Building a vision for MSP	2
4	SIMAtlantic Vision for MSP in the Atlantic.....	4
5	Synthesis of outcomes from the SIMAtlantic project.....	6
5.1	Learnings' from "Governance" theme.....	6
5.1.1	Case study: Cross-border management guidance for Lough Foyle and Carlingford Lough, two areas at the borders between Ireland and the UK	7
5.2	Learnings' from "Cumulative effects within cross-border Strategic Environmental Assessment" theme	8
5.2.1	Case study: "A cross-border cumulative effects assessment for the north-western Iberian Peninsula in Portugal and Spain"	9
5.3	Learnings' from "Data use and sharing" theme	10
5.3.1	Case study "A web portal for MSP-related data and information covering the Marine Protected Area of the Gironde Estuary and Pertuis Sea in France"	12
5.4	Contributions from "Land-sea interactions in the context of MSP" theme.....	13
5.4.1	Case study "A study of land-sea interactions in the Irish Sea"	14
6	Conclusions.....	15
7	References	16
	Annex I – Current and future uses and needs of the European Atlantic region	19
	Annex II – Regional Level	22
	Annex III - Survey results of the webinar "Towards an Atlantic vision for MSP"	24
	Annex IV National Levels	25
	France	25
	Ireland	27
	Portugal.....	28

Spain	30
United Kingdom	32
England.....	33
Scotland.....	33
Wales	33
Northern Ireland	34
Summary scheme of National Visions	34
8 Annex References.....	35

1 Introduction

The **Supporting Implementation of Maritime Spatial Planning in the Atlantic (SIMAtlantic)** project sought to strengthen links between those working on Maritime Spatial Planning (MSP) in five Atlantic Sea basin countries: France, Ireland, Portugal, Spain and the United Kingdom. Project partners shared their knowledge to support the establishment and implementation of MSP, in line with the provisions of the European Union (EU) MSP Directive (EC, 2014) and national legislation, to address specific challenges and gaps identified by competent authorities and their supporting bodies: These centred upon governance and management dimensions.

The final substantive deliverable of the project – this document - is a ‘SIMAtlantic **Atlantic Vision**’. The purpose of this vision is to provide recommendations for a framework to better achieve coordination and coherency that supports the aspirations of the Atlantic Strategy 2.0 (EC, 2020), wider marine policy objectives and coherent transboundary MSP across the Atlantic Sea basin that, by extension, could be applicable to the wider Atlantic region and other EU sea basins.

The document text provides a concise summary of the findings of the project and how these have led to the formulation of a SIMAtlantic Vision that seeks to contribute to addressing the implementation challenge of developing coherence of MSP plans across neighbouring countries.

2 Background to the European Atlantic region

The Atlantic Ocean is the second largest of the world's oceans and marks the western boundary of the EU. The Atlantic area constitutes a significant contribution to the blue economy of the EU and according to the 2021 Blue Economy report (EC, 2021), the Atlantic Ocean is the largest sea basin in terms of Gross Value Added (GVA). According to this report, the ‘Blue Economy’ includes all marine-based or marine-related activities, that is not only established sectors (such as marine living resources, marine non-living resources; marine renewable energy, port activities, shipbuilding and repair, maritime transport and coastal tourism) but also emerging and innovative sectors. In the Atlantic area, the established sectors of the EU Blue Economy directly employed close to 4.5 million people and generated around €650 billion in turnover and €176 billion in gross value added.

Due to its significant role in the blue economy, a revised Atlantic Action Plan was published by the Commission in 2020 (EC, 2020a). The purpose of the Plan is to “unlock the potential of blue economy in the Atlantic area while preserving marine ecosystems and contributing to climate change adaptation and mitigation”. This action plan is structured around four pillars, which represent a practical way to make the common vision a reality. They are integrally interconnected and trans-regional by nature. These four pillars address key challenges and aim to foster sustainable blue growth and contribute to greater territorial cooperation and cohesion in the EU Atlantic area, but MSP is only acknowledged in relation to the goal relating to stronger coastal resilience, and specifically in relation to sharing best practice.

Alongside the need to unlock the blue economy, the environmental and ecological stability of all Europe's seas, including the Atlantic as the EU's largest regional ecosystem, needs to be safeguarded for future generations. The European Green Deal (EC, 2019) is part of the EU's strategy to recover and protect ecosystems and it aims to “*protect, conserve and enhance the EU's natural capital, and protect the health and well-being of citizens from environment-related*

risks and impacts". The European Green Deal stresses the central role of blue economy as a critical vector to achieve the objectives. The role of oceans in mitigating and adapting to climate change is increasingly recognised. The blue economy can contribute to the clean energy transition by growing the potential of offshore renewable energy and managing maritime space more sustainably. A new EU Biodiversity Strategy for 2030 was also adopted in 2020, with the purpose to protect nature and reverse the degradation of ecosystems. The strategy aims *"to ensure that Europe's biodiversity will be on the path to recovery by 2030 for the benefit of people, the planet, the climate and our economy, in line with the 2030 Agenda for Sustainable Development and with the objectives of the Paris Agreement on Climate Change"* (EC, 2020b). One of the targets of this strategy is to have by 2030 at least 30% of the land and 30% of the sea protected in the EU, with a coherent Trans-European network of protected areas. Maritime Spatial Planning, has a key enabling role in achieving these objectives and, specifically, the need for coordinated and coherent planning is critical to deliver on these ambitions.

3 Building a vision for MSP

Visions for MSP are developed as part of a process to take a forward-looking approach and prevent potential conflicts in strategic planning to enable cross-sectoral and multi-level activities. At a sea basin level, a vision can be useful towards building cross-border coherence and cooperation that better links MSP and coastal zone management objectives, as well as territorial development in general, whereby actions in one territory or space do not lead to contestation and conflict in others.

The purpose of MSP is to enable countries to manage their use of marine spaces more coherently and to ensure that human activities take place in an efficient, safe and sustainable way, whilst simultaneously protecting the marine environment. Coordinated action enables us to be more proactive, and should ultimately deliver better outcomes for the economy, the environment and the communities around marine spaces. Joined-up approaches are essential to achieving such balanced and sustainable results.

Integration is a challenge, particularly when thinking beyond traditional sectoral approaches and beyond national boundaries. Yet such transboundary cooperation is necessary when thinking about strategic outcomes. The role of a vision is to assist in this process of cooperative thinking and action. This can result in identifying certain priorities or common goals.

The SIMAtlantic "Atlantic Vision" is a contribution that seeks to be cognisant of, and recognise, the efforts being made by individual Member States of the project - France, Ireland, Portugal, Spain and the UK (including the devolved administrations of Scotland, Wales, and Northern Ireland) - in their approach towards implementation of the EU MSP Directive, national MSP legislation, as well as the work at various regional levels (e.g. OSPAR and the Atlantic Strategy and Action Plan) that address features connected to MSP (Figure 1).



Figure 2. Relationship and structure of the SIMAtlantic vision from project activity and other regional initiatives. Source: SIMAtlantic project - <https://www.simatlantic.eu/wp-content/uploads/2021/09/Session-1-AQ.pdf>.

To explore the governance and management of marine activities in transboundary marine space and develop a Vision that complements existing policy that applies to the Atlantic region and anticipate future development and changes, the SIMAtlantic project was organised according to four cross-cutting themes that are critical to marine management (Figure 2). Based on the findings from these individual themes, the project consortium was able to identify where additional effort is required in order to achieve coherent and cooperative MSP. It is this knowledge which forms the basis for this Vision document.

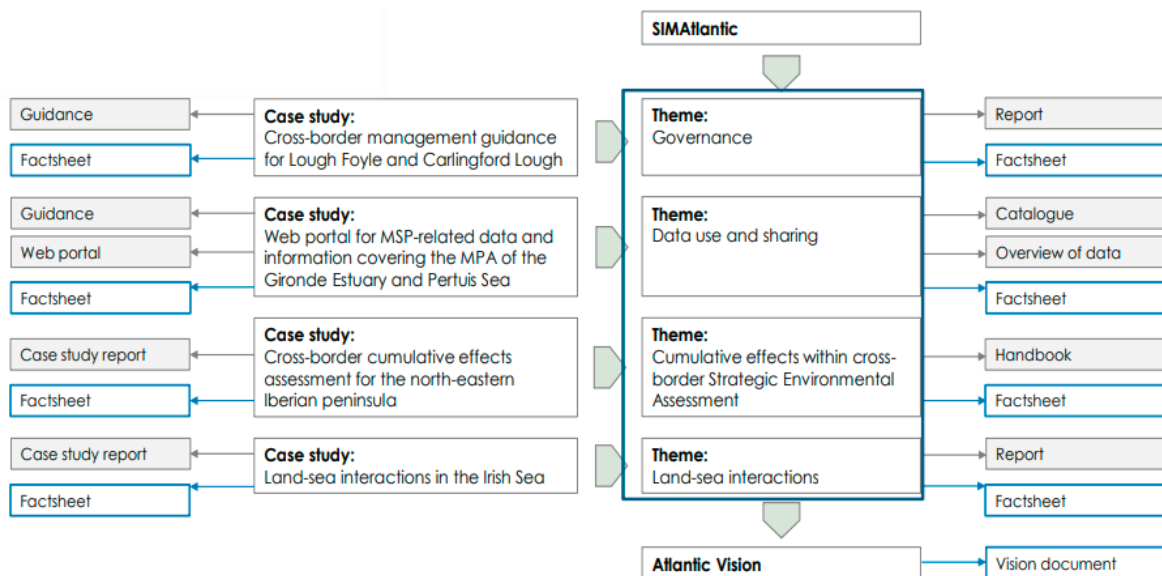


Figure 1. Schematic of SIMAtlantic contributions to an Atlantic Vision. SIMAtlantic project structure and principal elements focussed on 4 cross-cutting themes: Governance, Cumulative impacts and Strategic Environmental Assessment, Data use and sharing, and Land-Sea interactions. Source: SIMAtlantic project. Source: SIMAtlantic project.

Our approach in this SIMAtlantic Vision has been to focus on the key elements of the project and the findings to identify what is needed to achieve a vision for coherent and coordinated transboundary MSP that supports the higher-level vision of the Atlantic Action Plan.

4 SIMAtlantic Vision for MSP in the Atlantic

The SIMAtlantic project originated from experiences gained in previous MSP projects, especially SIMCelt its immediate predecessor, the findings of which emphasised the need for greater coherence and cooperation in the implementation of Maritime Spatial Planning in the Atlantic region. During the SIMAtlantic project development phase, partners in the project consortium were asked to identify aspects of MSP where they felt transboundary cooperation was most critical and where there was scope for research to provide assistance. This resulted in the identification of four key cross-cutting themes that then became the substantive work areas within the project – both at a strategic level and also at a more local, operational level through four specific case studies.

SIMAtlantic has demonstrated that whilst each country has made progress in terms of implementation of MSP in their respective national contexts, there is still some way to go in terms of achieving maritime spatial plans that are coherent and coordinated across the Atlantic region, in line with the MSP Directive. Accordingly, the SIMAtlantic Vision is intended to provide a framework to better achieve coordination and coherency based on the project findings across the four themes. The Vision does not represent a pre-defined future scenario or vision statement for MSP in the Atlantic region or any of its countries but rather seeks to highlight tools and approaches that address barriers identified and hence can be used to progress cooperation and coherence in a number of aspects.

SIMAtlantic focused on the areas of Governance, Cumulative impacts and Strategic Environmental Assessment, Data use and sharing, and Land-Sea interactions (LSI) (see Figure 3). Four associated case studies were developed during the project, enabling us to present the weaknesses / barriers associated with these approaches and identify what might need to be addressed or where additional effort is needed in order to deliver better coherency and cooperation in transboundary contexts. This information and knowledge is intended to assist planners, competent authorities and other relevant bodies in their design, implementation and monitoring of MSP – ensuring that the approach taken optimises support for a sustainable blue economy and healthy oceans.

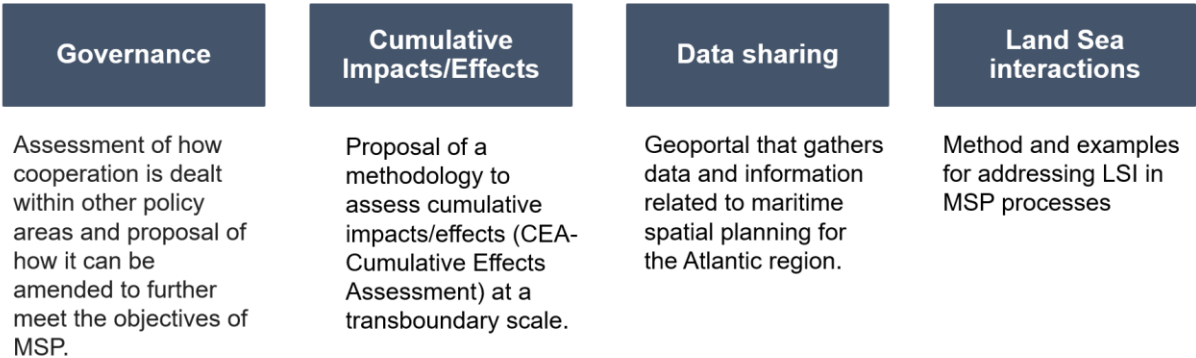


Figure 3. Actions taken by SIMAtlantic to answer the common requirements and gaps identified at project level. Source: SIMAtlantic project <https://www.simatlantic.eu/wp-content/uploads/2021/09/Session-1-AQ.pdf>.

The SIMAtlantic Vision seeks to provide a means to:

evolve a coherent approach towards addressing the connections between the various maritime uses / activities and users, and between the hinterland and the sea, that pose a particular set of challenges for continued and sustained cross-

border cooperation on MSP presented by transnational and transboundary settings for the EU Atlantic region.

These challenges are illustrated in Figure 4, with further detail provided in subsequent sections. It is anticipated that in this way the Vision can also support other, related policy objectives such as those deriving from the Integrated Maritime Policy (IMP) and most recently the European Green Deal. The Communication from the European Commission on a new approach for a sustainable blue economy in the EU, rather than presenting a set of actions to be taken, seeks to embed a new approach to deliver coherence across the blue economy sectors, facilitate their co-existence and looks for synergies in the maritime space, without damaging the environment.¹ MSP is the management approach necessary to deliver this in practice at national and transboundary scales.

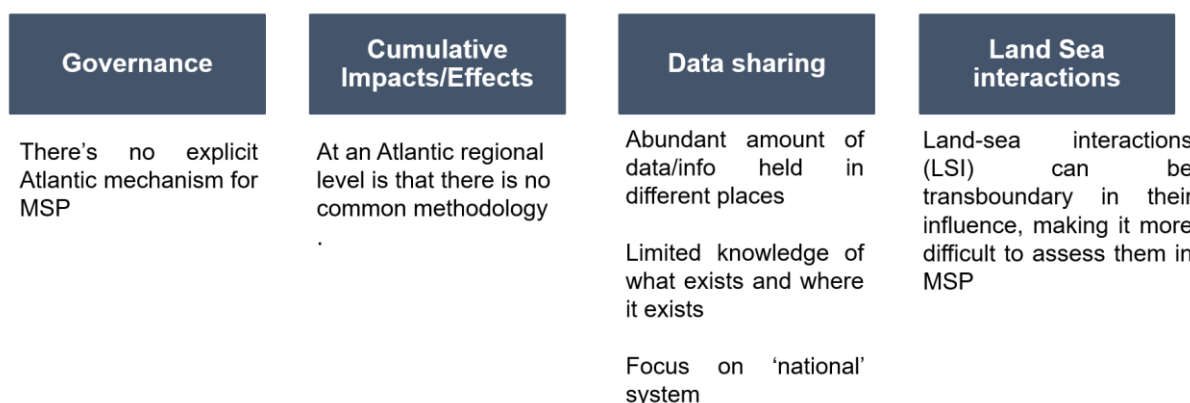


Figure 4. Identification of gaps within SIMAtlantic project themes that continue to act as possible barriers to successful transboundary and LSI management processes through MSP. Source: SIMAtlantic project <https://www.simatlantic.eu/wp-content/uploads/2021/09/Session-1-AQ>.

The SIMAtlantic Vision thereby identified that cooperation and coherence can be strengthened in the following areas:

Governance: a potentially critical gap is that there is no dedicated mechanism for MSP in the Atlantic where transboundary and LSI issues could be discussed, progressed or addressed cooperatively. A mechanism such as this could raise areas of mutual concern, identify and develop appropriate transboundary MSP tools and agree on a common monitoring and evaluation framework that would reflect transboundary issues.

Cumulative impacts and effects: there is no common methodology for their assessment at a transboundary scale. Multiple CIA/CEA methodologies exist but not all are suitable for transboundary contexts. The SIMAtlantic project proposes a methodology to assess cumulative impacts/effects (CEA-Cumulative Effects Assessment) across borders.

Data sharing: sharing of information and data between data networks and platforms, as well as between countries, is recognised as being essential for successful MSP delivery. The project

¹ Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on a new approach for a sustainable blue economy in the EU Transforming the EU's Blue Economy for a Sustainable Future (COM/2021/240 final), 17.05.2021, Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM:2021:240:FIN>

found that whilst there is an abundant amount of data/info held in different places, there is limited knowledge of what exists and where it exists and, usually, a focus on 'national' systems rather than transnational interoperability appears to dominate. The SIMAtlantic Vision proposes an architecture for a Geoportal that can gather data and information related to maritime spatial planning for the Atlantic region.

Land-sea interactions (LSI): can be transboundary in their influence, making it more difficult to assess them in MSP and to reconcile potential contestation across multiple activities, uses and users. The SIMAtlantic Vision proposes a series of approaches for use in a North East Atlantic context to address the effects of LSI which can be far reaching, often extending beyond regional and national borders, and can be environmental, social and economic in their nature.

5 Synthesis of outcomes from the SIMAtlantic project

The SIMAtlantic project focused on four cross-cutting Themes, relevant for the development and implementation of MSP: Governance, Cumulative impacts and Strategic Environmental Assessment, Data use and sharing, and Land-Sea interactions (Figure 2). This section provides a synthesis of the principle outcomes from each Theme and the case studies developed during the project that led to identifying approaches and tools that form the SIMAtlantic Vision. More detail on the findings from the SIMAtlantic project can be found in the Annexes to this report and on the project website (www.simatlantic.eu).

5.1 Learnings' from "Governance" theme

The objective of this theme was to examine and establish the extent to which other legal requirements interact with the design and implementation of MSP. Specifically, the other legal instruments considered were the Marine Strategy Framework Directive (MSFD), the Water Framework Directive (WFD) and the nature conservation legislation in the form of the Birds and Habitats Directives (including Natura 2000 sites). A secondary aim was to review the existing MSP governance structures at a transboundary level in the European Atlantic region and contrast this with other sea basin areas and also any transboundary mechanisms that exist under other legal instruments such as the Regional Seas Conventions, Water Framework Directive, etc.

Article 5 of the MSP Directive specifies that in developing their plans, Member States shall ensure transboundary cooperation between Member States in accordance with Article 11. The latter stipulates that the aim of cooperation is to ensure that maritime spatial plans are "*coherent and coordinated across the marine region concerned.*" In Article 11, however, it is stated that cooperation shall be pursued through (a) existing regional institutional cooperation structures such as Regional Sea Conventions; and/or (b) networks or structures of Member States' competent authorities; and/or (c) any other method that meets the cooperation requirements, for example those that operate in the context of sea-basin strategies.

Across the Atlantic area, there appears to be strong recognition of the potential that MSP has to assist in delivering sustainable development of marine and coastal areas, but the actual plans are less detailed on how this is can be achieved. It is possible that this can be attributed to the relatively early stage of MSP implementation in the Atlantic area. This early stage of implementation makes it difficult to ascertain with certainty the extent to which marine spatial plans are coherent both with other national policies and their objectives, and also with each other. This is likely to be addressed as implementation continues and plans are amended or refined.

Whole of government approaches to the implementation of MSP, whereby MSP is seen as a responsibility across all government organisations, are evident in all of the Atlantic area. Whilst MSP is usually 'led' by a central authority, there are mechanisms in place to ensure input from other relevant actors at different governance levels (national, regional, local). This changes rapidly and perhaps detrimentally at the regional level. Whilst the preceding sections show commonalities in terms of objectives and principles, structures for cooperation and coherence at the Atlantic regional level do not exist. The one exception to this is possibly the Marine Strategy Framework Directive, where most maritime spatial plans have explicitly considered it for MSP implementation purposes and related timelines. Some plans have gone further and specify how different maritime sectors can take MSFD objectives into account in their respective planning and management processes. There is also little clarity on what coherent MSP should look like and if/how it will be evaluated at EU level.

Another threat to cooperation, and especially coherency, is that there is no mention in existing maritime spatial plans of what happens when policy objectives are not complementary either between different sectors/activities or between plan jurisdictions, and how these types of situations will be addressed. It is possible that they could be dealt with when they arise, and on a case-by-case basis, but that approach may undermine coherency particularly if at a large scale with the potential for regional effects and impacts. The clear links between strategic and operational levels, processes and procedures are acknowledged at national scales but these are much less clear at regional or Atlantic area level.

The EC's Member States Expert Group on MSP is the only mechanism that currently exists to bring together representatives who work on MSP from all Member States to exchange information on progress, relevant studies and research. These meetings, which are open to registered observers who can present and pose questions, may not be wholly suited to progress more regional objectives and needs that could involve third countries because of an EU focus.

5.1.1 Case study: Cross-border management guidance for Lough Foyle and Carlingford Lough, two areas at the borders between Ireland and the UK

Carlingford Lough is one of two transboundary sea loughs located between the Republic of Ireland and Northern Ireland, one of the devolved areas of the United Kingdom. It is a sea lough at the mouth of the Newry (or Clanrye) River on the east coast of Ireland, bordering both the Republic of Ireland (County Louth) and Northern Ireland (Counties Down and Armagh). There is no formal, agreed international maritime boundary in the Lough, necessitating the development of a common approach to management of its shared marine resources where possible.

MSP has been a legal requirement under EU law since 2014 and for Northern Ireland, under UK law, since 2010, with additional Northern Ireland legislation enacted in 2013. Both the Republic of Ireland and Northern Ireland are currently working on the implementation of MSP in their respective marine areas. The full implications of the UK exit from the EU for implementation of MSP in the border region are still unknown. The Marine Plan for Northern Ireland (DAERA, 2018), will be used to inform and guide the regulation, management, use and protection of the Northern Ireland marine area. In the Republic of Ireland, the National Marine Planning Framework (DHLGH, 2021) covers the entire maritime area comprising internal waters, the territorial sea, Exclusive Economic Zone and continental shelf.

Carlingford Lough was selected as a case study area for the SIMAtlantic project because of its transboundary context and because it acts as an excellent example of the need to

operationalise ecosystem-based management. The objective of the guidance document developed as part of the case study is to provide information on activities within the Lough, their governing legislation and policy, and their responsible bodies in each jurisdiction. This provides clarity for regulators, marine actors and wider interested stakeholders who utilise the area, but because of the complex jurisdictional situation are unclear as to where responsibilities sit on either side of the Lough.

In a wider transboundary context, the Carlingford case study demonstrates the need to provide clear and concise information to a variety of audiences in order for the realities of MSP to be understood and complied with, but it also highlights the need for collaboration and cooperation in the development of such information. The production of the guidance document involved public and regulatory bodies in both jurisdictions who worked closely together, and with other project partners, to ensure data and information was accurate and cognisant of wider policy ambitions. The guidance document concludes with a section on recommendations for the further development of MSP tools, which are particularly important for activities such as aquaculture and conservation where joint planning remains a challenge, but impacts could be transboundary.

5.2 Learnings’ from “Cumulative effects within cross-border Strategic Environmental Assessment” theme

Cumulative effects/impacts assessment (CEA/CIA) and Strategic Environment Assessment (SEA) are challenging at any scale, but particularly challenging in transboundary locations. SEA can be strengthened through the integration of CEA/CIA in the marine ecosystems and the services they provide (Casimiro et al., 2021; Sands and Galizzi 2006). SEA complements the preparation process of MSP plans, providing a mechanism for the consideration of environmental effects, assessment of plan alternatives and potential development of mitigation measures. SEAs in MSP are potentially a valuable tool for the implementation of EBA and, as such, could be useful in addressing one of the objectives common to the whole Atlantic region (e.g. OSPAR Environment Strategy, MSFD). SEAs open possibilities to reasonable, environmentally sound planning solutions early in the planning process and assist in the avoidance and mitigation of adverse environmental effects. In addition, the SEA process fosters common understanding and communication across governance levels and borders and protect against unforeseen harm to ecosystems due to planning.

Cumulative effects (Hegmann et al., 1999) are a key aspect of SEA for MSP, given the broad scale and diversity of proposed development. The growing demand of activities and uses for the maritime space, requires a good understanding of how human and ecological components of the system interact, including the interaction between maritime uses (conflicts or synergies) and between uses and environment (pressures and impacts) (Gimard et al., 2018; Halpern et al., 2008, Scheffer et al., 2001, Halpern et al., 2019). The need to assess the pace of change requires the development of cumulative effects assessment (CEA) (OSPAR, 2019; Judd et al., 2015). CEA requires several data in order to identify and assess the direct and indirect interactions between multiple activities with multiple receptors (e.g. species) (Lonsdale et al., 2020). The EU has still little or no guidance on marine CEA, and since it is necessary under many legal requirements (SEA and EIA), this leads to different approaches and methodologies being used in different contexts (and different Member States). Having no ‘common’ approach to CEA is an obstacle for transboundary cooperation. CEA remains a complex challenges, however, there are some opportunities in implementing the application of SEA and CEA/CIA in ecosystem-based MSP (Judd et al., 2015; Lonsdale et al., 2020., Barbier, 2017; Lobos and Partidario, 2014). The study of Pinkau & Schiele (2021) revealed that in particular, ‘alternative

development’, ‘precaution’ and ‘adaptation’ require more specific actions. There is a need to state more explicitly what it takes to deliver environmental support in MSP to meet the demands of an EBA: to refine vague concepts, to operationalise principles and to advance in knowledge and on comparable and transparent methodologies. This study also identifies the “necessary premisses to unlock the potential of SEA to support the implementation of EBA in MSP” (Pinkau and Schiele, 2021).

The work developed in this theme of the SIMAtlantic project enable us to conclude that applying CEA and SEA to MSP is the best way to ensure that MSP takes into account all pressures. However, there is no common approach to CEA and this is an obstacle to transboundary cooperation. The report on SEA for MSP analyses some examples of SEA, CEA/CIA and ecosystem services related to MSP processes and identifies challenges and opportunities.

Identifying challenges and opportunities in a transboundary context enables proposal of common approaches to these issues for the European Atlantic region.

5.2.1 Case study: “A cross-border cumulative effects assessment for the north-western Iberian Peninsula in Portugal and Spain”

The case study “A cross-border cumulative effects assessment for the north-western Iberian Peninsula in Portugal and Spain” aimed to develop a methodology to assess cross-border cumulative effects for the north-western Iberian Peninsula in Portugal and Spain. The case study area is located at the northwest border between the North Region (Portugal) and South of the coast of Galicia (Spain). The framework was developed to explore the cause-effect relationships approach between activities-pressures-impacts and was divided into three main steps (Figure 5):

1. Phase one: Identification of baseline conditions,
2. Phase two: Identification of pressures and definition of their intensity, sensitivity and influence distance,
3. Phase three: Assessment of the Cumulative Effects.

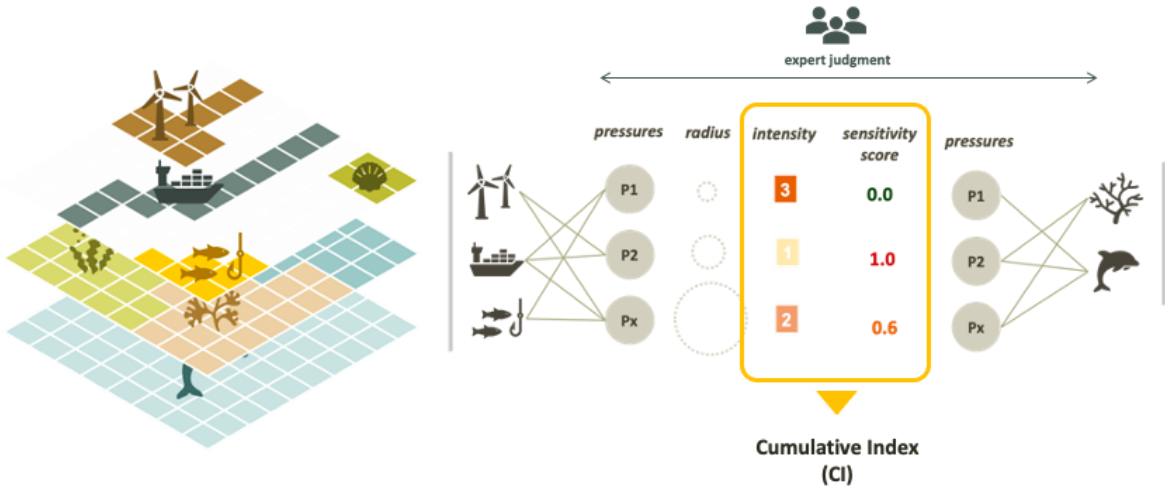


Figure 5. Summary of the methodology applied in the case study. Source: SIMAtlantic project.

Pressures caused by activities are defined by the MSFD. They were assigned an influence distance and an intensity score depending on the activity that produced it. The influence

distance (radius) and the sensitivity of each ecological component to each pressure were assessed by experts. A detailed questionnaire with defined categories and assessment criteria was distributed to and answered by experts, on an online expert consultation regarding ecosystem components sensitivity to pressures. The sensitivity of the species and habitats and the level of certainty of the experts were registered. The influence distance was also assessed in the questionnaire. The results of this questionnaire were discussed in the workshop.

The results show cumulative impacts in and around the study area from current activities in Portugal and Spain and potential activities in Portugal. The main benefits of this work were related to the process of developing the methodology itself. The transboundary nature of the case study necessitated the adoption of an approach that could encompass the specificities and peculiarities of both countries while providing standardised results. These conditioning factors influenced the development of a methodology that can be extrapolated to other regions and updated over time, with the later incorporation of new knowledge on ecological components and their sensitivities to pressures caused by activities.

The project team encountered some constraints in terms of obtaining appropriate information inputs to the methodology. Aspects of the methodology rely on expert opinion and there can be challenges ensuring enough views are collected across all the topic areas that need to be considered (e.g. cetaceans, seabirds, marine turtles and habitats) to allow robust statistical analysis to be carried out. Another constraint surrounds the limitations in providing appropriately detailed background information to experts to allow them to make a judgement in assessing the sensitivity of ecological components to pressures and determining any given pressure's radius of influence.

The case study provided an opportunity for further exploration of how to apply a CEA methodology to evaluate and analyse the pressures and impacts of maritime uses and activities in the study area, supporting an ecosystem-based management approach to MSP. Furthermore, a region like the European Atlantic could benefit from this kind of standardised methodology, not only at local level but also at sea basin level, to have an overall view of cumulative effects in order to take specific actions at the appropriate scales (Fernandes et al., 2021). This would contribute to the implementation of not only the MSFD at EU level but wider marine environmental objectives for the North-East Atlantic as documented in the OSPAR Environment Strategy.

5.3 Learnings' from "Data use and sharing" theme

Maritime Spatial Planning is a holistic approach that requires many inputs from different stakeholders to be incorporated into the process of planning, leading to the creation of large integrated plans. These plans often contain strategic objectives and targets at different scales, based on sectoral and environmental demands, along with the spatial organisation of maritime uses. With regards to these expectations, EU Member States are delivering comprehensive and complex documents that are not always easily understood by stakeholders or authorities responsible for their implementation and enforcement. A reflection on how to disseminate the content of a planning document to the general public, at different scales (MPA or sea basins), was one work stream of the SIMAtlantic project.

Firstly, a survey was directed towards the actors involved in the organisation and sharing of geospatial data for the implementation of the MSP Directive, in the different SIMAtlantic countries. This included representatives from competent authorities responsible for MSP, State administrations and operators, as well as operators of national geoportals dedicated to MSP.

The survey was designed to determine how geographical data is organised for MSP and the means and formats in which the national plans will be accessible for each of the countries of the SIMAtlantic project. These results provided useful feedback on the specificities of the countries, in particular useful tools for cross-border data sharing for MSP, with EMODnet Human Activities being mandated by the European Commission to create a "plans" data layer. This work also contributes to the objectives of the recently re-launched DG MARE Technical Working Group on Data for MSP, which includes experts from the SIMAtlantic project (UCC, IEO (CSIC) and Shom).

Information gathered through the consultation process is presented in the relevant report.

The work developed concluded that regarding specificities related to cross-border cooperation:

- ✓ Improving the sharing and use of data is a necessity and most countries are involved in steps or actions on data harmonisation with their neighbours.
- ✓ There is consensus on the need to share data on (i) Pressures and impacts, (ii) Maritime boundaries and (iii) Physical characteristics.
- ✓ Major constraint to data sharing is data ownership.
- ✓ Request for efforts to facilitate cross-border cooperation through (i) Establishing common methods, guidelines and tools for sharing data, (ii) Strengthen communication exchange and (iii) using available standards such as OGC (Open Geospatial Consortium).

It was also possible to identify, regarding the feasibility of an EU and/or Atlantic region geoportal that:

- ✓ Establishment of a Europe-wide geoportal is seen as a valuable tool for collaboration in cross-border areas.
- ✓ It should display at least (i) the boundaries of the plans, (ii) their zonings and management policies.
- ✓ Main challenge stressed by stakeholders is the identification of reference data.
- ✓ Specific features expected: (i) based on harvesting, (ii) quick access to metadata, (iii) access to web services and (iv) access to translation.
- ✓ Main issues foreseen were (i) access to metadata, (ii) development of a data centralization system, (iii) management and control of updates and (iv) agreeing spatial coverage and resolution.

From those requirements and based on the results from previous DG MARE-funded projects (SIMCelt, SIMNORAT, SIMWESTMED and SEANSE), a demonstrator geoportal was set-up. The main purpose of this data portal was to provide in a user-friendly manner (i) access to data and viewing capacities, (ii) identification of source and general information, (iii) information regarding the understanding and reuse of the data.

Recommended features are displayed on the figure below and can be found in the portal made for the SIMAtlantic project (<https://simatlantic.mspdata.eu/>).

An exercise to identify the sources and type of data, and to gather and centralise all data layers was performed. All in all, it comprises of 213 layers from the 6 states that were identified, based on 4 INSPIRE themes (Boundaries; Human activities; Physical, chemical and biological information; and Spatial policy) and from 52 data producers.

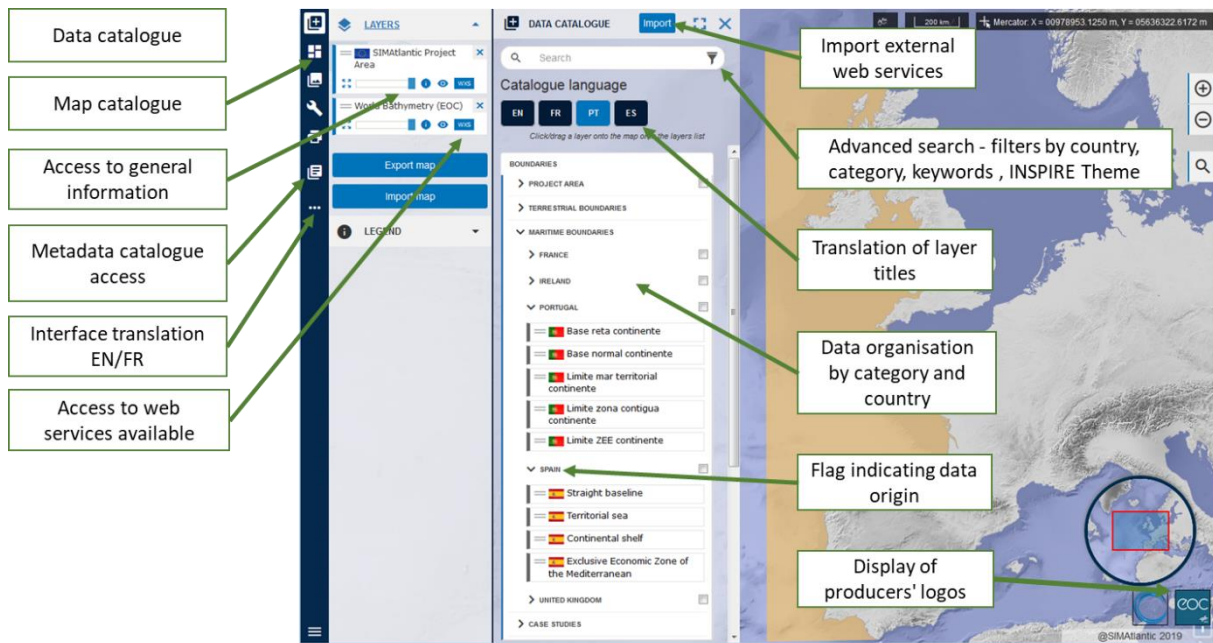


Figure 6. Data portal main recommendation for viewing MSP plan at EU-level. Source: SIMAtlantic project.

The limitations identified from this exercise are the need to clearly identify the data providers, data traceability and to ensure data is up-to-date and satisfies the MSP and governance system operational within each of the different countries. Another limitation is the lack of interoperability of the MSP data, and need for more reference to global standards.

This is particularly true for the representation of cross-border issues, it seems that fishing activities is the only economic activity that, at the time of the project, is easy to summarise for the Atlantic coast. It covers large areas of maritime space, thus agreeing with the scale used for the summary map. Finally, this issue has the advantage of having a common legal framework in the EU (the Common Fisheries Policy) which greatly facilitates the uniform processing of information in the sense that the concepts / practices and data are uniformly understood in available databases. The limitation here is that data is only recorded for certain types of vessels operating in certain maritime jurisdictional zones and hence it may not provide a wholly accurate view of the level and range of fishing activity in the region. This is a significant consideration for achievement of the MSFD objectives and wider regional marine environmental policy goals, as well as for cumulative effects/impacts assessment.

5.3.1 Case study “A web portal for MSP-related data and information covering the Marine Protected Area of the Gironde Estuary and Pertuis Sea in France”

A case study of the Marine Nature Park of the Gironde Estuary and Pertuis Sea has been performed with three objectives: to ensure nature conservation, promote sustainable maritime uses and raise public awareness.

The idea was to provide dynamic maps through a dedicated portal which would either display the stakes (ecological, social or economic), the objective of an area, related activity that could take place and the monitoring (activity or environmental parameters). This portal is available at <https://plan-gestion.parc-marin-gironde-pertuis.fr/>

The case study provided an opportunity to explore the most efficient and effective means to communicate to, and involve, different stakeholders to address the impact of activities to both specific activity sector and general public through the use of a data portal. Though the case

study addressed “the connections between the various maritime uses and users”, which is one aspect of the Atlantic Vision, the transnational aspect was not the main topic of this case study. A region like the European Atlantic could benefit from this kind of support tool to better disseminate results to supporting decision making, sharing knowledge and data on the MSP stakes and permitting process related to a specific area and raise general awareness on MSP.

5.4 Contributions from “Land-sea interactions in the context of MSP” theme

Land-Sea interactions are defined by the SIMAtlantic project as “*Interactions in which land-based natural phenomena or human activities have an influence or an impact on the marine environment, resources and activities, and interactions in which marine natural phenomena or human activities have an influence or an impact on the terrestrial environment, resources and activities. The influence of these phenomena and activities are not considered to be confined by economic, planning or national boundaries.*”

The coastal zone, covering areas of both land and sea, is used for particular types of employment, food production, land-sea transport links and recreational and cultural resources. Approximately 40% of the world’s population lives within 100km of the coast, and many of the world’s megacities are in coastal locations. Pressure on the coastal zone and its resources is increasing, driven by a rapidly expanding global population and recent advances in technology that have led to further use of marine resources such as offshore renewable energy. The recent 6th Assessment Reports of the Intergovernmental Panel on Climate Change² warns that these pressures will be increasingly exacerbated by sea level rises, increased frequency of extreme sea level events, increased severity and frequency of coastal flooding and erosion, and increased frequency of precipitation leading to greater run-off intensity. These interlinked changes will affect the impacts arising from LSI, which are not only confined to the coastal zone of a country, but can reach further inland or out to sea.

Main challenges

Assessing the implications of LSI in the context of MSP is challenging. For example, energy being supplied from offshore wind arrays being distributed to another country via cables, or agricultural run-off from farming impacting marine ecosystems beyond the source country’s own waters, highlight how far-reaching the impacts can be. Our case study conducting a value chain analysis of offshore wind in the Irish Sea seeks to investigate the transboundary footprint of this offshore activity and its LSI implications.

LSI concern many groups of stakeholders. Bringing together stakeholders with different goals and helping them understand impacts is key to making planning for LSI effective. Our case study on aquaculture and climate change in Carlingford Lough illustrates this.

Key findings

Many established techniques of assessing LSI are transferrable to an Atlantic context, such as the bow-tie analysis technique, value chain analysis and stakeholder-led approaches.

² See <https://www.ipcc.ch/assessment-report/ar6/> to access reports.

When investigating LSI, a ‘one size fits all’ approach cannot be taken. The scale and spatial implications of the LSI need to be taken into consideration; for example, offshore wind arrays may provide power for areas in a different jurisdiction or country. Similarly, the socio-economic benefits of an offshore wind array may be reaped far beyond the location of the array itself in areas where manufacturing and maintenance take place.

Issues such as aquaculture may have more localised implications and require a more stakeholder-led approach to encourage dialogue and resolve potential conflict. The project report on LSI in the European Atlantic outlines the different approaches that can be used to address LSI and provides examples and a step-by-step approach for addressing LSI throughout the marine planning process.

LSI cannot be addressed by MSP alone; cooperation with other land- and sea-focused departments is required to ensure a robust process for the management of LSI.

5.4.1 Case study “A study of land-sea interactions in the Irish Sea”

The case study component of the LSI work undertaken, focused on the Irish Sea basin, specifically those waters within the jurisdiction of Ireland and Northern Ireland and can be separated out into two mini-case studies which come together to form what is described here as the Irish Sea Pilot. The overall objective of the LSI work in general was to examine the different approaches which have been used elsewhere in Europe and assess their suitability for replication within the SIMAtlantic Project Area. With this in mind, with respect to the Irish Sea Pilot two very different approaches were selected for investigation which look at address two very different LSI activities from very different perspectives. Whilst both of these had been trialled in previous EU funded projects, neither had been tested within the SIMAtlantic project area until now.

The first of the two case studies examined the impacts of climate change and LSI on the shellfish aquaculture industry in Ireland and Northern Ireland. The second case study, examined offshore wind in Irish and Northern Irish waters.

Main challenges

- For both of the case studies within the Irish Sea Pilot adaptations to the proposed methodologies had to be made, in part due to the Covid-19 pandemic making face-to-face stakeholder engagement untenable and also to take into consideration personnel requirements each process would place upon MSP authorities.
- Both case studies have a strong transboundary element, shellfish aquaculture in Carlingford Lough a transboundary sea lough on the border of both countries and offshore wind, where the impacts and potential benefits will affect both countries.
- The common regulatory framework provided by the EU is no longer applicable since the UK's exit from the EU. Whilst with the existing legislation in place has remained largely consistent this may well change in the future, particularly in light of on-going discussions on the Northern Ireland Protocol.

Key findings

- Both methodologies would be suitable for replication in other areas within the European North-East Atlantic, particularly if the streamlining measures explored as part of this project are used.

- More communication is required between authorities, particularly between marine and land planning authorities
- With regards to the potential effects of climate change on shellfish aquaculture consistent regulation on invasive species should be enforced.
- The ability to make legislative changes more efficient should be sought in order to align with climate-related changes.
- In order to achieve the maximum benefit from offshore wind development in the Irish Sea, educational investment should be made in engineering sectors to ensure employment opportunities are not lost overseas. This is true for both Ireland and Northern Ireland.
- The importance of energy security for the Irish Sea region is now more important than ever. this may reduce the length of time within the project pipeline for many Irish offshore wind schemes leading to faster operationalisation.

6 Conclusions

Lessons learned and next steps:

- Review of marine policies from Ireland, France, Portugal, Spain and the UK shows that there are multiple objectives for the maritime space at different geographical levels and between individual states. This is likely to make the task of reaching transboundary common and / or compatible MSP objectives challenging.
- Certain objectives go beyond the legal scope of MSP (e.g. some sectoral objectives). Despite not being included in the list of MSP objectives, they should be considered in the frame of this policy.
- Obtaining SMART (Specific, Measurable, Achievable, Realistic, Time-bound) objectives requires firm commitment in setting a time frame for meeting objectives in maritime spatial plans.
- Participation by Competent Authorities in the SIMAtlantic project has shown awareness of both the challenges and opportunities that exist in transboundary cooperation.
- Whilst the project facilitated transboundary cooperation, there is perhaps a need for a more sustainable model for such cooperation as MSP moves further into the implementation phases.
- Future implementation of MSP is anticipated to occur at more regional and local levels, so it would be useful to foster a culture of cooperation beyond national boundaries so maximum coherency can be achieved.
- More localised implementation of MSP could present additional challenges for public participation and engagement in the process. This will require additional support in terms of human and financial resources and innovations in communication and technology.

The SIMAtlantic vision through the outcomes of the individual research elements of the project provides tools and pathways that can lead to and enable greater cross-sectoral and multi-level co-ordination between different authorities addressing sectors and issues, engaging stakeholders and capacity building, particularly where MSP is a new process. Such tools and pathways can help provide a long-term focus for MSP that may exceed political cycles and jurisdictional borders. Accounting for future uses of both existing and new uses, and achieving better land-sea integration of planning, is a key feature to achieve integrated transboundary MSP.

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Annex I – Current and future uses and needs of the European Atlantic region

One of the main goals MSP seeks to achieve is compatibility of activities and uses, reducing conflicts and fostering synergies in order to achieve the most efficient use of the space by identifying the best position on the sea where a human activity can be carried out according to ecological, economic and social variables (Cervera-Núñez et al., 2021). MSP also needs to consider the long-term co-existence of uses and activities, even with the arrival of new maritime activities and uses, considering also emerging sectors. Nowadays, we can consider that existing activities are:

Table A1 – Existing activities in the European Atlantic Region (consult: <https://www.simatlantic.eu/wp-content/uploads/2021/08/D1.2-Current-and-future-uses-and-needs-in-the-European-Atlantic-region.pdf>)

Activity/Use	Specific characteristics	Future perspectives
Fisheries	<p>Wide variety of fishing vessels, fishing techniques and large number of fish species targeted. Those different types of fisheries will be treated in common in this state of the art.</p> <p>General pattern of dominant small-scale fishing in the south and deep-sea fishing more important in the north.</p>	<p>Several elements could lead to a modification of the fishing zone for part of the fishing activities: the increase of restrictive measures to preserve important fish habitat as part of management policies (such as the CFP); a growing need for space sharing due to the rise of other activities; agreements between countries (such as Brexit agreement); climate change is expected to lead to more extreme weather conditions as well as rapid warming of waters and acidification which can lead to changes in fisheries stocks distributions.</p> <p>The reduction in the number of fleets, the implementation of sustainable fisheries management and the accelerated use of selective fishing is expected to have positive effect on European fish stocks in the medium term. It could lead to an increase in the gross value added (GVA) of the fishing sector and the possible extension into areas not utilised to date for fisheries.</p>
Shipping	<p>The sector depends more on fluctuations in economic markets.</p> <p>Mature sector of Europe's maritime economy, contributing to high levels of gross value added (GVA) and employment in Member States.</p> <p>Marine traffic routes are defined by international law (i.e. International Maritime Organization - IMO). In addition, the European Union introduced the concept of Motorways of the Sea in the White Paper on Transport in 2001.</p>	<p>The use of larger vessels and the effects of rerouting could affect the demand for space in the commercial transport sector, which is currently experiencing strong global growth in traffic and thus freight volume.</p> <p>Current transport policies advocating greater development of maritime transport in intra-European transport are opportunities for the development of short sea shipping, which also affects marine space.</p> <p>Climate change makes weather routing important, and the space needs to be available.</p> <p>Increased deployments of marine renewable energy devices may result in increased competition for port access and space, adding to pressures on coastal locations and space for shipping/transport.</p>
Marine aggregates	<p>The marine aggregates sector considers the exploration, exploitation and extraction of marine sediment from the seabed, mainly sand and gravel, for</p>	<p>Increasing demand for construction materials, maintenance of port activities. In addition, availability of aggregates resources becomes constrained on land.</p>

	<p>potential use in construction, beach nourishment/coastal protection or filling purposes. Agricultural soil improvement is a less common way.</p>	<p>Coastal defence: Because of climate change impacts and rising sea levels, demand for sediments is likely to increase in the next few years where most beach and coastal areas are experiencing increases in erosion.</p> <p>However, regulatory obstacles to obtaining new exploitation rights and the negative interactions with other activities are issues that may reduce the potential growth of the activity.</p> <p>The increasing scarcity of supply of raw and non-living materials, tends to push some countries (i.e., UK and France) out into deeper waters further offshore to look for new supply zones.</p>
Marine renewable energy	<p>This sector is represented mainly by offshore wind energy industrial developments as other kinds of offshore renewable energies in the region are in testing and research phases. Although southern countries in the project area have great potential, there is a clear difference with the more developed sector in the north.</p> <p>Bathymetry and swell criteria remain constraints for the development of the sector in the near future.</p> <p>Fixed platforms and cables present until decommissioning.</p>	<p>Offshore wind farm construction is largely driven by international commitments for carbon reduction, such as the Paris agreement. EU law and policy developments are also an important stimulus. A significant expansion of the production of offshore wind energy is therefore expected over the next decades, with an increasing number of offshore wind farms being built and planned.</p> <p>Technological advances (such as floating technologies) enable deeper water installations allowing OWFs to be sited further offshore and in previously inaccessible locations.</p> <p>Commercialisation of wave energy conversion technology could result in major spatial implications in areas where wave resource is present.</p> <p>In some countries there are difficulties relating to public acceptance of large-scale offshore wind developments. It is therefore important that stakeholders are engaged and participate early in the planning process.</p>
Oil and Gas	<p>Fixed platforms and pipelines present until decommissioning and may not be fully removed from the seabed.</p> <p>The attractiveness of the sector is influenced by a number of geo-political factors particularly crude oil price.</p> <p>The competition with other energy sources affects the oil and gas sector, in particular the development of renewable marine energies in a context of increasing emphasis on emission reductions</p>	<p>Demand for oil and gas is linked to the economic cycle. New environmental policies such as the Paris Agreement are calling for a reduction in European CO2 levels, compelling countries to turn to renewable energy resources such as offshore wind or tidal energy.</p> <p>With the combination of climate change policies and legislation, the Marine Strategy Framework Directive (MSFD) and the projected increase in MPAs, it is likely that oil and gas production will become less attractive due to new constraints.</p>
Aquaculture	<p>The presence of aquaculture activity varies widely across the SIMAtlantic project area. Most finfish aquaculture occurs in Scotland and Ireland, whereas aquaculture for shellfish is more widespread and is found mainly on the French and Spanish coasts.</p>	<p>Simplifying administrative procedures for aquaculture development: Under reforms to the Common Fisheries Policy, it is recommended that all European Member States produce Multiannual National Plans based around the themes of simplifying administrative procedures for aquaculture development.</p>

	<p>Within the project area, the main aquaculture species include Atlantic Salmon, which is the main product of Scottish aquaculture, and mussels in Ireland, Wales, Spain and France.</p>	<p>Growing demand for aquaculture products: Aquaculture production must increase within Europe in order to satisfy the increasing demand for seafood, coupled with reduced catches, decrease the dependence from importation, boost economic development and job creation, and reduce pressure on fish stocks</p> <p>As a result, the sector is likely to increase its spatial requirements in the coming years, including moving to more offshore areas. Offshore expansion could be facilitated by synergies with other offshore maritime sectors, in a multi-use context.</p>
Yachting & Maritime Tourism	<p>The analysis of the spatial demands for recreational and water sports is complex. Indeed, this element is mainly based on multiple practices carried out by individual boaters to which are added many federations and professional practitioners.</p> <p>The concept of navigation basins is complex and takes different forms depending on the practices and regions.</p> <p>In addition, the data of the sports federations, which regroup the licensees and the occasional practitioners (within the framework of the federations), bring only a partial light on the analysis of the practice of the nautical activities.</p>	<p>Forecasts indicate a significant increase in recreational boating associated with the growth of coastal tourism where tourism associated with nautical activities is expected to increase significantly over the next few years. The demand for additional infrastructure and services / activities is therefore likely to increase.</p> <p>Practices should turn more and more towards the use without possession of vessels with the development of leasing. These changes are reflected in particular in a reduction in the demand for moorings, which could lead to the gradual release of berths currently occupied by “stationary boats”, some ports are already anticipating these changes.</p> <p>These new forms of practice, moving towards a sort of “Uberization” of marine recreational uses, will increase the need to promote good practices towards new groups of users who are less aware of the interactions between uses and environmental issues.</p> <p>The technical evolutions (power of the engines, GPS, safety equipment) are susceptible to enlarge the area of navigation by ensuring a better security to the boaters.</p>
Cables and pipelines	<p>The activity includes the laying and maintenance of submarine cables immersed at depth, and generally buried, intended to carry communications or electrical power.</p> <p>In the study area, the bulk of submarine cables consist principally of telecommunication cables.</p> <p>The submarine cable markets are international, and the cable laying and maintenance service activity is provided by a small number of operators worldwide.</p> <p>About 99% of international telecommunication cables are owned by non-governmental entities. The energy interconnection projects are led by the State, which is the competent</p>	<p>The support of States for the installation of telecommunication cables should grow in view of the important challenges represented by its means of communication</p> <p>In the next few years, development of submarine electrical cabling would mainly be driven by offshore wind energy development. In this sense, the initiative of the European Super Grid needs to be highlighted.</p> <p>Technological advances in cables are expected to allow longer deeper and higher capacity cables to be laid.</p>

	authority to approve the route of the underwater cables.	
Scientific research	<p>Most of the scientific disciplines and fields of research constitute the marine sciences. Physicists, biologists, chemists, geoscientists, economists, lawyers or geographers apply their knowledge to the sea.</p> <p>This is to increase knowledge on ocean state, trends and functioning, and also to support knowledge on marine resources availability, both biotic and abiotic and increase understanding of the impacts of human activities.</p> <p>Distinction between research requiring permanent or long-term occupation of sea space, such as installation of research platforms or areas for testing new technologies and the research that can be done without reserving space, such as monitoring campaigns, surveys, scientific trawling.</p>	<p>As one of the cross-cutting policies of the IMP (Integrated Maritime Policy), together with the EU Sustainable Blue Economy strategy, it seems logical to think that research related to growing sectors will increase too.</p> <p>Legal requirements for ecosystem-based approach under MSFD, MSP and CFP will necessitate greater understanding of how ecosystems function; in turn, this will enhance the need for data and information.</p>

Annex II – Regional Level

The existence of regional strategies is essential for a more ambitious, open and effective cooperation in the Atlantic Ocean Area.

The Baltic Sea region is an example of a regional strategy, and has a long tradition of cooperation, as evidenced by the multiple networks and organisations in the region. Political changes at the beginning of 1990s stimulated the need for a long-term vision and transnational spatial planning of the Baltic Sea Region, so VASAB was founded in August 1992 at the Conference at Ministerial level. The BaltSeaPlan Vision shows how MSP processes would impact upon the planning of the Baltic Sea by 2030 especially in relation to shipping, fishery, offshore energy and environmental planning. It developed the principles, which should be applied by Baltic Sea states in any MSP process in the future; i.e. pan-Baltic thinking, spatial efficiency, spatial connectivity. These principles and transnational topics identified have from then on be leading principles for MSP processes throughout the Baltic Sea Region. Cross-border aspect: Transnational Baltic Sea wide

As an example, there's also the OSPAR Vision for the North-East Atlantic. The OSPAR Vision for the North-East is "a clean, healthy, and biologically diverse North-East Atlantic Ocean, which is productive, used sustainably and resilient to climate change and ocean acidification." Through the implementation of the Ecosystem Approach to manage human activities affecting the maritime area, the overall goal of the OSPAR Commission is to conserve marine ecosystems and safeguard human health and, when practicable, restore marine areas which have been adversely affected in the North-East Atlantic by preventing and eliminating pollution and by protecting the maritime area against the adverse effects of human activities.

The OSPAR vision for the North-East Atlantic is based on 12 strategic objectives grouped under four themes: T1. To achieve clean seas; T2. To achieve biologically diverse seas and

healthy seas; T3. To achieve productive and sustainably used seas; and T4. To achieve seas resilient to the impacts of climate change and ocean acidification

The first Atlantic Maritime Strategy was adopted in 2011 (EC, 2011), in response to repeated calls from stakeholders for a more ambitious, open and effective cooperation in the Atlantic Ocean Area and to support the sustainable development of blue economy in the EU Member States bordering the Atlantic. The strategy grouped the identified challenges and opportunities facing the Atlantic region under five main thematic headings: socially inclusive growth, implementing the ecosystem approach, reducing Europe's carbon footprint, sustainable exploitation of the Atlantic seafloor's natural resources and responding to threats and emergencies.

In 2013, the European Commission put forward an Atlantic Action Plan 2013-2020 (EC, 2013) to implement the strategy, setting out practical steps to be taken in the 5 Member States with Atlantic coasts (Ireland, France, Portugal, Spain and the UK) and their outermost regions in order to boost the Atlantic Ocean Area's sustainable blue economy by 2020. The action plan defined four priorities: 1) to promote entrepreneurship and innovation; 2) to protect, secure and enhance marine and coastal environment; 3) to improve accessibility and connectivity; and 4) to create a socially inclusive and sustainable model of regional development. Obviously, the full implementation of the Action Plan was impacted by the UK's decision to withdraw from the EU in 2016, almost halfway through its lifetime.

In 2020, the revised Atlantic Action Plan 2.0 (EC, 2020) was communicated by the European Commission and aims to unlock the potential of blue economy in the Atlantic area while preserving marine ecosystems and contributing to climate change adaptation and mitigation. The action plan is in line with the global commitments for sustainable development (SDGs - sustainable development goals of the United Nations 2030 Agenda) and are fully integrated in the European Commission's political priorities for 2019 - 2024, notably the European Green Deal, and an economy that works for people and a stronger Europe in the world.

The document introduces four pillars that represent a practical way to create a common vision in the Atlantic. All pillars are interconnected and address key challenges and opportunities to foster sustainable blue growth and transboundary cooperation in the EU Atlantic area. The pillars of the Action Plan 2.0 are:

- Pillar I: Ports as gateways and hubs for the blue economy,
- Pillar II: Blue skills of the future and ocean literacy,
- Pillar III: Marine renewable energy, and
- Pillar IV: Healthy ocean and resilient coasts.

The governance of the Atlantic Maritime Strategy rests with the Atlantic Strategy Committee (ASC), which is responsible for the strategic decision-making related to the review, operational coordination, and implementation of the Atlantic action plan.

These strategies defined the importance of cross-border cooperation and the need for the establishment of common objectives, visions and goals in the regions.

Annex III - Survey results of the webinar “Towards an Atlantic vision for MSP”

On the 18th May 2021, the SIMAtlantic project, the European MSP Platform and the Atlantic Action Plan, held a webinar “Towards an Atlantic vision for MSP”. The participants were asked how their sector would benefit from a vision for MSP in the European Atlantic region, what lessons or experiences they had from elsewhere that might be useful for vision development and input from MSP stakeholders more generally.

The event was part of the European Maritime Day ‘In My Country’ programme. EMD is an annual meeting point on maritime affairs and sustainable blue growth, engaging citizens across Europe through In My Country events, encompassing a variety of topics, such as the SIMAtlantic event on transboundary MSP.

From the results of a survey conducted during the event, the SIMAtlantic project team were able to understand how the various sectors and actors involved in MSP might benefit from an Atlantic vision for MSP. Even though we had over 120 participants, only 17 responded to the survey, with the Research and Government sectors having the highest levels of representation.

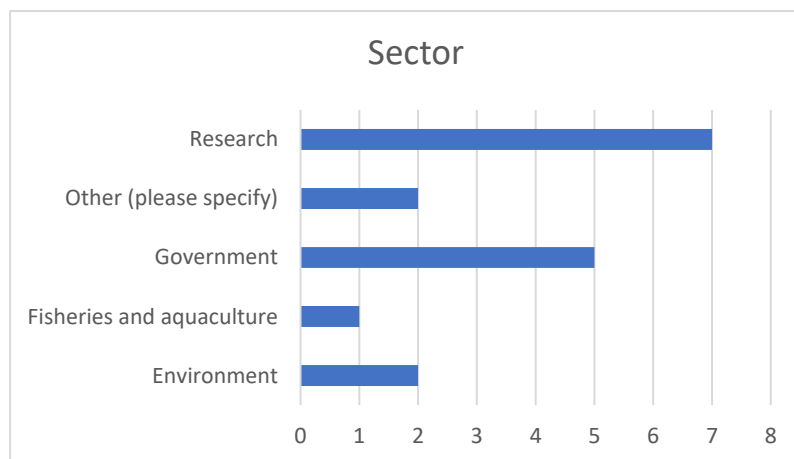


Figure A1. Graphic of sectors represented in the survey answers.

When asked “How might your sector or interest benefit from a common European Atlantic vision for MSP?” the benefits put forward were:

- Assessment of the lack of knowledge
- Identification of transnational issues of common concerns - to develop common transnational projects and priorities for European programmes for data collection at sea, for data standardization and for data modulization,
- Exchange lessons learned and sharing experiences,
- Collaboration between sectors to develop good practices,
- Ensuring a coherent strategy for a large area and further linking science to policy,
- How to apply transboundary concepts to national MSP,
- The creation of clear goals and a political-technical framework to guide and orient research needs,
- Similar objectives to adjacent administrations,

- Highlight the common interests of research to support MSP, promoting collaboration, avoiding duplications and generating more efficiency, and
- Understanding involvement of stakeholders and implementation success.

The survey also asked about possible priorities and targets for the Atlantic vision for MSP (“*What priorities or targets would you like to see represented in this vision?*”). Ideas put forward were:

- Simplification of procedures,
- Transnational cooperation,
- Assessment of lack of knowledge,
- Spatial targets for ecosystem restoration and marine protected areas (MPAs),
- Conservation,
- Monitoring and consenting processes that ensure sustainability,
- Cumulative impacts/effects,
- Data sharing,
- Offshore renewable energy,
- Effective and harmonized governance,
- Lessons learned and replicable experience,
- Promote the welfare of coastal communities and empower coastal community capacity to get involved in decision-making,
- Coherence between what ICES, OSPAR and MSFD are doing.

Annex IV National Levels

This analysis includes the National strategies and national visions for MSP of France, Ireland, Portugal, Spain and the United Kingdom (England, Scotland, Wales and Northern Ireland).

France

France has the second largest maritime space in the world, with nearly 11 million square kilometres under its national sovereignty or jurisdiction, 97% of which are located overseas. Present in all seas and oceans of the globe except the Arctic, France has a considerable heritage which makes it a great maritime nation. These spaces, having economic potential, play a major role in the development capacities of overseas departments and communities.

France has a coastline on the Atlantic Ocean/Channel, the North Sea and the Mediterranean Sea basin. For the operational implementation of the National Strategy for the Sea and Coast (“*Stratégie Nationale pour la Mer et le Littoral*”, SNML), adopted in February 2017, four maritime regions or “*façades maritimes*” were defined in accordance with the EU Marine Strategy Framework Directive (2008/56 EC) (MSFD) and implemented in mainland France as a “marine region or marine sub-region” (Ministère de la Transition Écologique, 2017). The SNML is therefore broken down into 4 specific strategic documents (DSF).

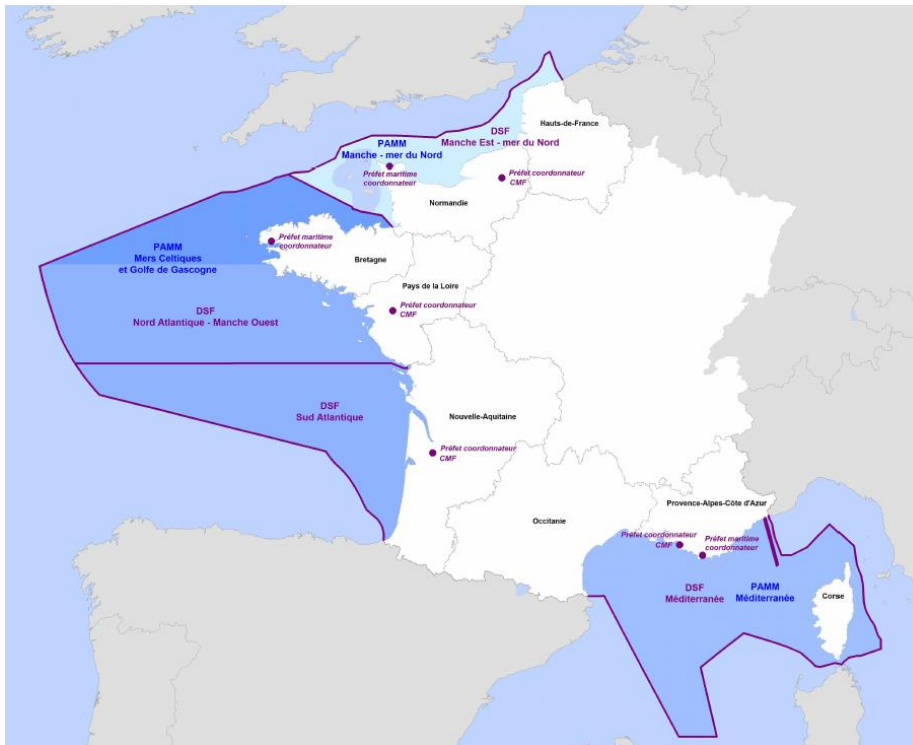


Figure A2. France, 4 maritime regions with their respective strategic document (DSF)

The SNML is responsible for providing a framework for public policy on the sea and coast. This includes the National Strategy for the Ecological Transition to Sustainable Development, the National Research Strategy and the National Biodiversity Strategy, all of which it contributes to, and of which it is the benchmark for the sea and coastline.

The SNML sets four complementary and inseparable long-term objectives:

- The ecological transition for the sea and coastline - The sea and the coastline are areas of seemingly contradictory challenges, facing a wide range of developments and pressures, to which France has chosen the path of ecological transition towards sustainable development.
- The development of the sustainable blue economy - The development of the blue economy must be a source of added value and employment, especially for coastal populations, and must provide strategic functions for the national economy in terms of raw material supplies, energy, transport and communication. At the territorial level, it aims to maintain and develop a productive economy that contributes to solidifying a dynamic and competitive economic, social and demographic base.
- The good environmental status of the marine environment and the preservation of an attractive coastline - is the objective that constitutes the environmental pillar of the strategy and responds to the need to protect the environment as a living environment as well as a source of goods and services and potential for the future.
- France's influence - influence as a maritime nation must be an objective and a consequence of its geostrategic involvement in the protection, sustainable management and use of the ocean as a channel of communication.

The strategy presents four strategic axes, to achieve the long-term objectives:

- Relying on knowledge and innovation.
 - Enhance the understanding of the Sea system
 - Innovate to value resources and develop a maritime economy
 - Structure the research area
 - Develop research and knowledge for and by the outermost territories
 - Raise awareness of the maritime stakes to the whole society
 - Pursue training efforts
- Develop sustainable and resilient maritime and coastal territories
 - Set-up a strategic planning...
 - ...with a spatial component
 - Develop territorial projects
 - Protect environment, resources, biologic and ecologic equilibrium; preserve sites, landscapes and heritage
 - Adapt coastal layout to climate change
 - Preserve national interest and mitigate sea hazards
- Support and optimise initiatives and remove obstacles
 - Support new activities
 - Support ongoing evolutions in historical activities
 - Pilot budgets and define a fiscal and financing strategy
 - Enhance the maritime jobs attractivity
 - Improve the governance and continue modernizing the public action
 - Mobilize a national observatory for the sea and coastal area, share data and information
- Promote a French vision at the heart of the European Union and in international negotiations, promoting national issues
 - Be an international player
 - Be an EU player

French law provides for a review of the SNML in 2023.

Ireland

The National Marine Planning Framework (NMPF), Ireland's first maritime spatial plan, was published on 1st July 2021 after an extensive period of public consultation [6]. The NMPF contains a vision, objectives and planning policies for all marine-based human activities. It outlines how these activities will interact with each other and key issues for sustainability. The NMPF is a key decision-making tool as all public bodies are legally required to comply with its objectives and policies. Earlier, a Marine Planning Policy Statement, had been published that set out a vision for marine planning as follows: "*A marine planning system with clear forward planning, development management and enforcement elements that promotes and sustains ocean health, and supports the sustainable (recreational) enjoyment, management and use of Ireland's marine resource*" (DHPLG, 2019). The MPPS also contains ten principles to guide all marine planning activity namely: forward planning, development management and enforcement. These principles informed the development of the plan, and the plan is stated to represent a spatial articulation of the MPPS. New associated legislation in the form of the Maritime Area Planning Act³ will strengthen the statutory basis for MSP in Ireland, including

³ <https://www.oireachtas.ie/en/bills/bill/2021/104/>

future marine planning policy statements. The NMPF also links with over-arching Sustainable Development Goals and circular economy objectives.

Portugal

Portugal has one of the largest maritime areas in Europe, and in April 2014, Law No. 17/2014 (Government of Portugal, 2014a) established the basis for spatial planning and management policy for the entire Portuguese maritime space, including the continental shelf beyond 200 nautical miles.

Portugal published the first vision for their national maritime space in 2006, when the first National Ocean Strategy (NOS) 2006-2016 (Government of Portugal, 2006) was approved by the resolution nº 163/2006 of the council of ministers. This document included a programme "Planning of space and maritime activities" with the aim to organize and plan the uses and activities of the maritime space, existing and potential, applying the principles of precaution and sustainability.

In 2014, sensing the need to adapt the NOS 2006-2016 to the new ambitions for the Portuguese sea and the changes in the European maritime policy, the National Ocean Strategy 2013-2020 emerged, through the Council of Ministers resolution no. 12/2014 (Government of Portugal, 2014b). NOS 2013-2020 presented a new model for the development of the ocean and coastal zones, responding to the challenges presented in the sea area, identifying areas of intervention, and presenting an action plan of the programs to be executed and developed for each area. Bringing together the objectives and measures presented in the Marine Strategy Framework Directive (MSFD, Directive 2008/56/EC) and the EU Blue Growth Strategy (EC, 2012), the national system of Protected Areas and other guidelines for the oceans and seas, NOS 2013-2020 presented action plans for the national maritime space. The main objective of NOS 2013-2020 was the economic, social, and environmental enhancement of the national maritime space through the execution of sectoral and intersectoral projects and national strategic plans.



Figure A3. Scheme of NOS Portugal 2021

In 2021 Portugal adopted a new National Ocean Strategy 2021-2030, which is the public policy instrument for the sustainable development of the economic sectors related to the ocean. A healthy ocean is a fundamental condition for a Portuguese society to reap all the benefits, including those of a sustainable, circular and inclusive blue economy. In a decade marked by climate change, loss of biodiversity and ecosystem integrity, as well as new ways of overcoming problems and ocean acidification, Portugal is called to play an active role in the search for global solutions. The sea has enormous potential to promote advances in scientific knowledge, and scientific research allows to identify ways to protect vulnerable species and ecosystems, safeguard cultural heritage and optimize economic activities, working as an engine for innovation, which is fundamental for economic development and job

creation. The security dimension is crucial to respond to threats, preventing and acting in situations that put the marine environment, economic activities and human life at sea at risk.

The Portuguese vision presents a new model of development of ocean and coastal areas that will allow Portugal to “promote a healthy Ocean as the only means to leverage sustainable blue development, further improve the wellbeing of Portuguese citizens, and consolidate Portugal’s position as a global leader in ocean governance supported by scientific knowledge” (Government of Portugal. NOS 2021-2030 is organized in 10 strategic goals, aligned with the objectives of the 2030 Agenda of the United Nations and with those of the European Green Deal:

1. **Fighting Climate Change and Pollution, Restoring Ecosystems** – “Portugal must face climate change, environmental protection, and biodiversity conservation as key challenges for the future. This recognition involves investing in science and technological solutions which will allow preventing impacts on ecosystems and developing regenerative solutions.”
2. **Employment and Circular and Sustainable Blue Economy** – “The development of a circular, inclusive, equitable and sustainable Blue Economy is one of the major goals of the decade. An economy capable of maintaining and creating jobs where the principles of reduction, replacement, reuse, recycling and reprocess of primary resources are the new normal”.
3. **Decarbonization, Renewable Energies and Energy Autonomy** – “Carbon neutrality is one of the country’s major challenges for the coming years. With a focus on ocean-based renewable energies, favouring blue carbon, and encouraging processes with a lower carbon footprint, the Sea can make a crucial contribution to this objective”.
4. **Food Safety and Sustainability** – “Sustainable and sustained food results from the sustainable exploitation of living marine resources, from the development of aquaculture and from zero waste in processing. It is important to monitor pollutants, combat fraudulent swap of species and seek greater autonomy in supplying the food chain”.
5. **Access to Drinking Water** – “The diverse growing consumption of water places a great stress on global water resources. In Portugal, with scenarios of prolonged drought, this pressure can aggravate, and it is essential to look for alternative sources of water and promote its efficient use”.
6. **Health and Wellness** – “From marine ecosystems that provide oxygen and trap carbon dioxide, through food and recreational opportunities, to the bioactive substances of marine organisms used in pharmaceuticals and beyond, the Ocean is closely linked to human health.”
7. **Scientific Knowledge, Technological Development and Blue Innovation** – “The production of scientific knowledge in support of public policies of the Sea should be a priority. It is important to retain and attract talent and investment to Portugal and enhance our science internationally, promoting collaborative environments with potential for innovation”.
8. **Education, Training, Culture and Ocean Literacy** – “The next decade should contribute to Portugal reinforcing its commitment to Ocean Literacy and improving its educational and training offer for all areas linked to the Sea. Entrepreneurship, innovation, specialization, job mobility and new skills should be encouraged”
9. **Reindustrialization, Production Capacity and Ocean Digitization** – “In both traditional and emerging sectors, the sea economy must play a decisive role in the country’s reindustrialization, based on an inclusive and efficient modern logic, integrating R&D, respecting environmental criteria, and based on a circular economy”.

10. **Security, Sovereignty, Cooperation and Governance** – “Due to its Atlantic and European dimensions, Portugal must promote the implementation of an Integrated Maritime Policy in all aspects, consolidating international cooperation, guaranteeing sovereignty in its maritime area, and security in areas of national and international interest”

In addition to the strategic objectives (SOs) of the decade, NOS 2021-2030 identifies priority intervention areas to support the realization of the SOs. The priority intervention areas represent sectors, or sets of sectors, and areas related to the sea, within which will be develop measures, incentives, and support so that they are strengthened and contribute to achieving the strategic objectives. The priority areas are:

1. Science and Innovation
2. Education, Qualification, Culture, and Ocean literacy
3. Biodiversity and Marine Protected Areas
4. Bioeconomy and Blue biotech
5. Fisheries, Aquaculture, Processing and Commerce
6. Robotic and Digital Technologies
7. Renewable Ocean Energy
8. Tourism, Recreational and Sea Sports
9. Ports, Maritime Transportation, Logistics and Communication
10. Shipyards, Shipbuilding and Ship Repair
11. Coastal Management and Infrastructures
12. Non-Living Resources
13. Safety, Defence and Maritime Surveillance

Portugal's focus on oceans depends on the implementation of this strategy based on knowledge and technological progress and on the size and geography of the emerged and submerged national territory, including the new extended dimension resulting from the submitted proposal to extend the continental shelf beyond 200 nautical miles. The strategy points to the importance of MSP in the development of a sustainable blue economy and the need to ensure compatibility between different existing and potential future activities that may take place, as key operations to the implementation of the Strategy and for creating the necessary conditions for sustainable growth within the maritime economy, alongside environmental and social development.

Spain

Spain does not have a vision or an integrated strategy for the sea formally approved, however, one of the measures of Spanish MSP plans is the elaboration of a marine /blue growth strategy at the national level. This document presents an analysis of these objectives and the legal framework in which they are established trying to discern a hierarchy as well as highlighting the most important aspects.

Regarding the legal framework, the Directive 2014/89/EU, of 23 July, establishing a framework for Maritime Spatial Planning was transposed into the Spanish legal system through the Royal Decree 363/2017, of 8th April, establishing a framework for Maritime Spatial Planning.

This Royal Decree for MSP is a policy development of the Law 14/2010, of 29th December, of protection of marine environment which transposed the Directive 2008/56/EU, of 17 June,

establishing a framework for Community action for marine environment policy (Marine Strategy Framework Directive).

This legal structure for the MSP process within the Marine Strategies legal framework provides the legal relation between Marine Strategies and MSP. In Spain, 5 Marine Strategies are defined for the 5 Marine Demarcations according to Spanish marine Regions and Subregions. MSP objectives are, therefore subordinated to Marine Strategies objectives as a Law has an upper hierarchy rank than a Royal Decree in the Spanish legal system, which means that MSP legal dispositions cannot, in any way, contradict dispositions stated by Marine Strategies framework.

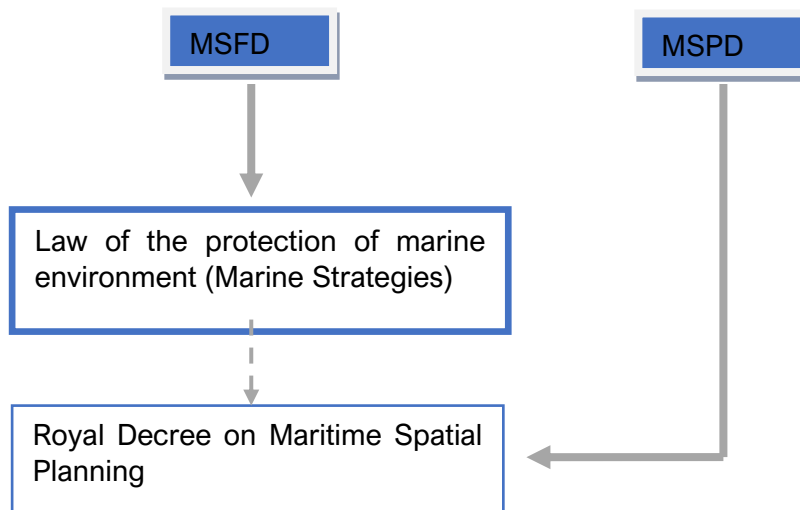


Figure A4. Legal structure of the framework in which MSP is implemented in Spain

Regarding objectives:

The Royal Decree on MSP establishes that MSP objectives, among other things:

- Will establish specific objectives in each of the 5 Marine Demarcations considering environmental objectives of marine strategies as well as sectoral planning objectives.
- Will support the sustainable growth and development of maritime sectors promoting coexistence of activities, especially those related to new technologies and innovation.
- Will contribute to the sustainable development of maritime sectors without detriment to the conservation, protection, and improvement of the marine environment.

In the process of elaborating the plans a first great effort was canalized to define these objectives. Aspects taken into account were:

- Horizontal aspects of general interests. Their objectives are a **priority** as they arise from public policies:
 - Marine environment, including MPAs, coastal environment and climate change
 - Sanitation, purification, and quality of bathing waters
 - National defence
 - Surveillance, control, and maritime security
 - Scientific research
 - Underwater cultural heritage
 - Water supply and desalination

- Economic sectors objectives, already established in the sectoral policies, both at national and regional level
- Environmental objectives from Marine Strategies

Finally, MSP objectives are derived in:

- One general planning objective
- Objectives for the aspects of general interest
- Multi-sectoral crosscutting objectives
- Sectoral objectives (for the different maritime sectors) (The definition of Objectives should take the existence of previous planning processes and the need of coherence between them into account)

The general objective of MSP is to facilitate sustainable development and growth of maritime sectors, generating a sustainable development of marine spaces and the sustainable use of marine resources. In order to achieve this, national MSP plans should:

- Establish a framework that facilitates the **sustainable development of maritime sectors** with the participation of the different public and private stakeholders.
- Be compatible with the consecution and maintenance of the good environmental status of the marine environment, its conservation, protection and improvement, including the resilience to climate change effects and to human health, through an ecosystem approach, as well as the safeguard of cultural underwater heritage.

Summary analysis

The main desirable output is the promotion of sustainable growth of maritime activities, with a clear prioritisation of aspects of general interest (mentioned above). Neither one aspect (economic sectors objectives) nor the other (general interest objectives) could go in detriment of the environmental objectives. This means that economic sector targets or general interest objectives are subordinated by the application of the ecosystem approach in order to not compromise the GES (which is considered an aspect of general interest too).

United Kingdom

The United Kingdom includes England, which is governed by the UK government, and Scotland, Wales and Northern Ireland, which each have different levels of delegated, or devolved, authority. The legislative framework for MSP (known as ‘marine planning’ in the UK) is provided by the Marine and Coastal Access Act 2009, the Marine (Scotland) Act 2010, and the Marine Act (Northern Ireland) 2013. All parts of the UK must follow over-arching policy, in the form of the Marine Policy Statement 2011 (MPS) (HM Government, 2011). Chapter 2 of the MPS outlines the overall vision for the UK marine area: “for ‘clean, healthy, safe, productive and biologically diverse oceans and seas” (HM Government, 2011). It also outlines the high-level approach to marine planning and general principles for decision making that will contribute to achieving this vision. It also sets out the framework for economic, social, and environmental considerations that need to be considered in marine planning. All marine plans developed in England and the three devolved administrations are required to be compatible with the MSP and meet its objectives. However, they have authority to create their own marine plans as outlined below.

England

English marine waters are divided into 11 specific marine regions which are addressed by 6 separate planning documents (five of the documents combine provisions for adjoining Inshore (internal and territorial waters) and Offshore (EEZ) areas). Reference is made to the vision outlined in the UK MPS 2011 in some of the plans that have been published to date but not all. For example the [East Inshore and Offshore Marine Plans](#) refer to the MPS at the beginning of Chapter 2, however the [South Inshore and Offshore Marine Plans](#) make no direct reference to the UK MPS in the context of Visions & Objectives in Chapter 2. The visions developed for all of the plan areas (inshore and offshore combined) are specific to that area and were created taking into account their unique features, the marine activities that are undertaken there and environmental and ecological considerations. The majority of the visions were developed following substantial public consultation exercises including stakeholder workshops which took place in coastal towns and cities within each region.

Links to other marine plans for England:

[North East Inshore and North East Offshore Marine Plan](#)

[South West Inshore and South West Offshore Marine Plan](#)

[South East Inshore Marine Plan](#)

[North West Inshore and North West Offshore Marine Plan](#)

Scotland

[Scotland's National Marine Plan](#) (The Scottish Government, 2015) which covers the management of both Scottish inshore waters (out to 12 nautical miles) and offshore waters (12 to 200 nautical miles) and is compatible with the UK MPS. Marine waters in Scotland are divided into 11 smaller marine regions where plans will be developed and implemented at a local level. **Chapter 3** of the National Marine Plan outlines the vision for the marine environment, i.e. "*Clean, healthy, safe, productive and diverse seas; managed to meet the long term needs of nature and people*". The vision for the marine environment is underpinned by a series of strategic objectives which are summarised in **Annex B** of the Plan.

Visioning examples also exist some of the regional marine plans which have been adopted to date. For example the [Shetland Marine Plan 2015](#) currently in its 4th edition outlines a vision for the marine environment which mirrors that of Scotland's National Marine Plan which is quoted above. The 5th edition of the Shetland Marine Plan which is currently under consultation maintains the vision used in previous editions.

Wales

[The Welsh National Marine Plan](#) (2019) covers all Welsh inshore and offshore waters under one plan. The vision and objectives for the plan are highlighted as part of the Introduction section. The vision is clear in its support of the overall UK vision as stated in the UKMPS adding its own vision specific to Welsh waters highlighting the value of the marine environment to cultural heritage and wellbeing and recognising the importance of Blue Growth to the economy indicating the alignment of the vision in the National Marine Plan with the [Wellbeing of Future Generations Act](#) (2015). The Act in itself forms a vision by putting in place 7 wellbeing goals.

Northern Ireland

The draft Marine Plan for Northern Ireland (MPNI) was published for consultation in April 2018 and closed in June 2018 (DAERA, 2018). The NI Marine Plan consists of an inshore and offshore region. The vision for the Plan sits within the wider UK MPS and is stated as a “*healthy marine area which is managed sustainably for the economic, environmental and social prosperity of present and future generations*”. This vision is supported by eight specific objectives. In 2021, a summary of responses to the consultation draft was published. This document collates, analyses and responds to the comments received and will be used to inform further work in developing marine planning in Northern Ireland. Following analysis of the representations received, with respect to the vision, the Department has stated that it intends to retain the Vision as set out in the consultation draft and will consider strengthening the linkages with the vision outlined in the UK MPS through supportive narrative and presentation. The MPNI will be adopted when the DAERA, with agreement of the Secretary of State with regard to retained functions and agreement of the Northern Ireland Executive as a cross-cutting issue, publish the plan.

Summary scheme of National Visions

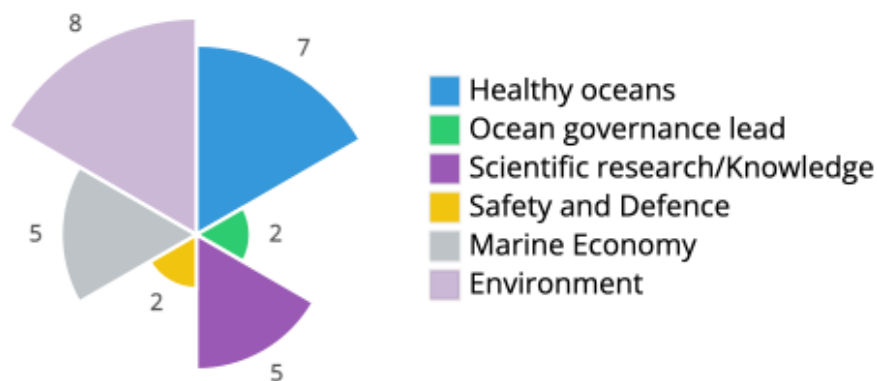


Figure A5. Common principles of National Visions from the countries participating in the SIMAtlantic project.

There are several common principles in the National visions, such as: 1) Apply the Ecosystem Approach; 2) Provide a means to articulate policies and activities; 3) Enable more efficient decision-making; 4) Provide a framework; 5) Embrace all existing and future marine uses; 6) Contain a hierarchy of spatial scales; 7) Create a more efficient and rational use of marine space; 8) Enable a better understanding of the cumulative effects; 9) Promote participation of stakeholders; 10) Facilitate co-ordination with and between other governance tools; 11) Be based on the best available information and evidence; and 12) Provide a strategic and efficient (and thereby cost-effective) approach to information.

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