



**D3.3**  
**Proposal for tools to**  
**improve data sharing and**  
**stakeholder engagement**  
**– French maritime spatial**  
**plans use case**  
September 2021



SIMAtlantic:  
Supporting implementation of maritime spatial planning in the Atlantic region

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## List of acronyms

**CEREMA:** Centre for Studies and Expertise on Risks, Environment, Mobility and Planning (FR)  
**CIMER:** Inter-ministerial Committee for the Sea (FR)  
**CMF:** Sea Basin Council (FR)  
**DG MARE:** Directorate-General for Maritime Affairs and Fisheries (EU)  
**DIRM:** Interregional Directorate of the Sea (FR)  
**DML:** Delegation to the sea and the coast (FR)  
**DSBM:** Maritime Basin Strategy document (FR)  
**DSF:** Sea Basin Strategy document (FR)  
**EC:** European Commission (EU)  
**EMODnet:** European Marine Observation and Data Network (EU)  
**GIMeL WG:** Working Group on Geo-information for Sea and Coastal Areas  
**H2020:** Horizon 2020 (EU)  
**IGN:** National Institute of Geography (FR)  
**INSPIRE:** Infrastructure for Spatial Information in Europe (EU)  
**MarSP:** Macaronesia Maritime Spatial Planning (PT)  
**MTES:** Ministry of Ecological and Solidarity Transition (FR)  
**MSP:** Maritime Spatial Planning  
**NAMO:** North Sea Atlantic-West Channel (FR)  
**OFB:** French Biodiversity Office (FR)  
**OGC:** Open Geospatial Consortium  
**OSPAR:** Convention for the Protection of the Marine Environment of the North-East Atlantic  
**PNLM:** National Portal for Maritime Limits (FR)  
**PSOEM:** Maritime Spatial Planning Status Plan (PT)  
**SA:** South Atlantic Sea (FR)  
**SEANSE:** Strategic Environmental Assessment North Seas Energy  
**Shom:** French national oceanography and hydrographic services (FR)  
**SIMAtlantic:** Supporting Implementation of Maritime Spatial Planning in the Atlantic  
**SIMCelt:** Supporting Implementation of Maritime Spatial Planning in the Celtic Seas  
**SIMM:** Marine Environmental Information System (FR)  
**SIMNORAT:** Supporting Implementation of Maritime Spatial Planning in the North Atlantic Region  
**SIMWESTMED:** Supporting Implementation of Maritime Spatial Planning in the Western Mediterranean region project  
**SNLM:** National Strategy for the Coastline and the Sea [FR]  
**SPA:** Special Protection Area (EU Birds Directive)  
**UCC:** University College Cork (IE)  
**URL:** Uniform Resource Locator  
**WFS:** Web Feature Service  
**WMS:** Web Map Service

# 1 Introduction

**The SIMAtlantic project aims to improve MSP cooperation at the international level whilst supporting national actions.**

The SIMAtlantic project (July 2019 – September 2021) aims to support the implementation of the EU's Maritime Spatial Planning (MSP) Directive (Directive 2014/89/EU) and to improve cross-border cooperation and skills transfer between Spain, France, Ireland, Portugal and the United Kingdom of Great Britain and Northern Ireland in the Atlantic. The partnership is composed of universities, public scientific institutions and national authorities in charge of maritime spatial planning. During the project, the consortium has carried out studies and concrete actions identified as useful for their national authorities and improved cooperation between States.

MSP is a holistic approach, 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 easily understood by stakeholders or authorities responsible for their enforcement.

A reflection on how to disseminate the content of a planning document to general public, at different scales (MPA or sea basins) has framed specific studies within the SIMAtlantic project.

## **Specific actions and studies for France**

Regarding France, the SIMAtlantic project has financed several concrete actions and studies completed by Cerema, OFB and Shom to support the dissemination of the two DSF (Sea Basin Strategy Documents) located in the Atlantic - the North Atlantic Sea-West Channel (NAMO) and the South Atlantic Sea (SA) – through a dedicated web portal to deliver MSP related information. All three public bodies undertake key roles in the implementation of MSP in France and are involved in the same tasks but pursue different and complementary objectives.

Cerema works on data processing (such as baseline data) to provide indicators (such as economic interests) and stakes which will in turn support decision making in specific marine spaces. OFB explains the decision chain for MSP in a specific natural parc of France the *Parc naturel marin Estuaire de la Gironde et de la mer des Pertuis* (Gironde Estuary and Pertuis Sea Marine Natural Park), supported by data analysis, and provides information to stakeholders and the public on the relationship between the components of the spatial plan<sup>1</sup>. Shom works on displaying, sharing and explaining baseline geographical data that supports MSP processes to encourage data sharing and enhance data interoperability across Member State boundaries.

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<sup>1</sup> Results of this study is available here: <https://plan-gestion.parc-marin-gironde-pertuis.fr/>

This report showcases the French approach namely: (i) a concise summary of the DSF targets, (ii) the methodology and interactive maps developed to support the understanding of socio-economic stakes and data availability for stakeholders at the DSF level and (iii) the initial steps taken to support the publication of the MSP plan on the French national portal for maritime limits (<https://maritimelimits.gouv.fr/>).

## 2 The Strategic Sea Basin Document (DSF): a planning and management tool for maritime waters.

In order to guarantee good ecological status and better economic and social development of the sea and coastline, the National Strategy for the Coastline and the Sea (*Stratégie nationale du littoral et de la mer* - SNLM) was adopted in February 2017 in France. This document states that for each of the 4 Sea Basins in mainland France (Eastern Channel - North Sea, North Atlantic Sea - Western Channel, South Atlantic Sea and Mediterranean Sea), a planning document, the Sea Basin Strategy Document (*Document stratégique de façade* - DSF), must specify the conditions for implementing the national strategy, taking account of local specificities. This spatial planning is presented in the form of a map of the uses (current and foreseen) of maritime areas. The DSF is drawn up by the State, in consultation with maritime and coastal stakeholders meeting within the Sea Basin Council (*Conseil maritime de façade* - CMF). The first two parts of the DSF (baseline and strategic objectives) were adopted by the Sea Basin coordinating prefects in 2019 following public consultation. The other two parts of the DSF (the assessment procedures and the action plan), which make up the so-called operational part, were drawn up and subject to public consultation in 2021.

The definition of the vocation zones is carried out in the second part of the DSF (strategic objectives) and has considered the zoning of ecological issues, in particular areas with governance and management defined by decree (national parks, natural marine parks). The cross-analysis of these zones with environmental data (collected as part of the MSFD), physical data, and the diagnosis of activities and socio-economic issues led to the delimitation of vocation zones, which are homogeneous zones with regard to strategic priorities of use.

The delimitation of the vocation zones are defined by representations on maps in the DSF, as an indication, as well as by their general literal description.

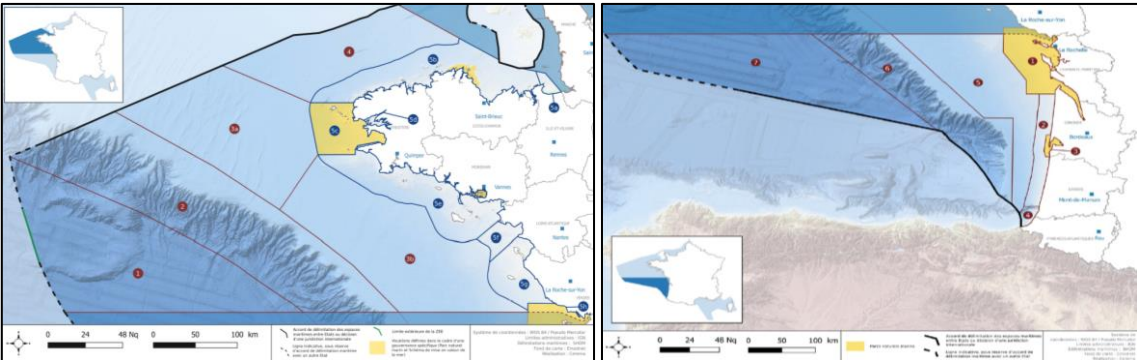


Figure 1: Vocation Zones of North Atlantic Sea – West Channel DSF (left) and South Atlantic Sea DSF (right)

These areas are associated with guidelines in terms of:

- Priority activities and uses,
- Environment, socio-economic and specific stakes,
- Local planning schemes to be articulated within the DSF,
- Strategic objectives to be achieved as a priority.

The application of the DSFs involves the analysis of information (permit application areas, existing management plans and schemes to be made consistent with the DSFs, etc.) with regard to the boundaries of the vocation zones, their associated stakes and requirements.

### **3 Interactive map of maritime uses' distribution and stakes**

One of the important issues for MSP is the accessibility of data for understanding planning processes. This accessibility is first and foremost the result of good "data traceability". The aim is to ensure a better genealogy of databases, whether in the "raw" creation of the data (investigation missions, measurements) or, when these raw data are discussed during public consultation. Data traceability ensures better long-term consistency in future iterations of local and national planning processes.

Accessibility to data is also necessary in an effort to provide tools that are understandable to all stakeholders. In fact, in planning processes which sometimes result in lengthy and technical reports, the maps (and in particular the summary maps of the issues) often represent an entry point for reading and helps to focus tensions and debates<sup>2</sup>. Good data traceability and the effort made to produce readable and visual maps will therefore foster stakeholder confidence in the consultation process and encourage participation and even the aggregation of new data held by these stakeholders<sup>3</sup>.

As part of the national planning processes, significant work must therefore be carried out to provide readable and accessible data, in particular through synthetic maps of socio-economic issues which represent a first translation of the interactions between activities and uses at sea for which Maritime Spatial Planning seeks to ensure compatibility. To achieve this objective, by drawing experiences from mapping exercises that have already been carried out in the first cycles of national planning processes, Cerema proposed, within the framework of the SIMAtlantic project, the production of a mapping tool, defined in these terms: "An exercise to explain specific aspects of spatial data related to the French Maritime Spatial Plans (DSF), for example, an interactive map linking major socio-economic interests underlined in the French MSP process and best available data. This interactive map will highlight cross-border issues that could be discussed with European partners. "

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2. As stated by the French authority DIRM Sud Atlantique during the Session 2B: Data sharing and stakeholder engagement of SIMAtlantic Final conference (15/09/2021)

3. Result of a participatory workshop during the session 2B: Data sharing and stakeholder engagement of SIMAtlantic Final conference (15/09/2021)

### **3.1 Methodology**

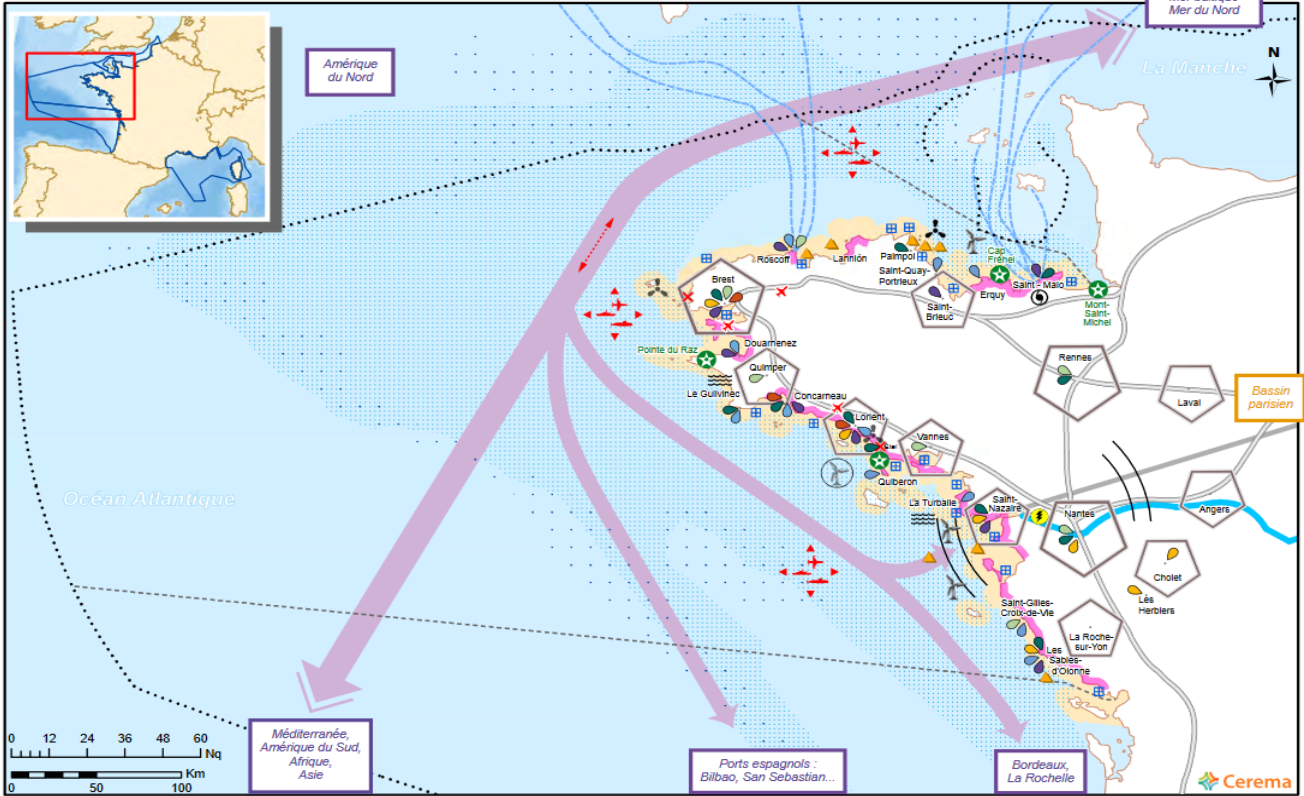
As part of the planning process in France, each “*Document Stratégique de Façade*” or Sea Basin Strategic Document has included the mapping of socio-economic stakes issues.

These maps (Figure 2 and Figure 3) as such do not allow users / project leaders to trace the source of the data. The idea of this project is therefore to implement a pilot cartographic tool that allows users to benefit from the genealogy of the data, upon which each socio-economic illustration is based. The interactive map is therefore not confined solely to a description of the information but is supplemented with links, sources, maps etc.

The objective of this task is also to highlight the important issues and the main current obstacles for the development of this type of sustainable tool which can then be adapted and updated according to future consultation needs.



## Synthèse des enjeux socio-économiques sur la façade maritime Nord Atlantique - Manche Ouest



Sources : DIRM NAMO, SHOM - Copyrights : Mapinfo Corporation - Réalisation : Cerema Normandie Centre - Date : 06/2018

Projection : RGF 93 / Lambert 93

### NAMO : une façade maritime à la périphérie de l'Europe

#### Enjeux économiques internationaux et transfrontaliers

- Axe de trafic mondial
- Principales dynamiques de flux économiques par voie maritime (accès aux grands ports maritimes)
- Pôle industrialo-portuaire Nantes - Saint-Nazaire
- Transport international de passagers vers l'Angleterre et l'Irlande
- Pôle touristique majeur (UNESCO et Grand site)
- Loire (UNESCO)
- Cohabitation des usages transfrontaliers (pêche)

#### Gouvernance, défense et sécurité maritime

- Zone économique exclusive
- Limite de façade maritime
- Activités de défense
- Base aéronavale
- Sécurité et sûreté maritime (Centre Régional Opérationnel de Surveillance et de Sauvetage)
- Dispositif de séparation du trafic

### Les spécificités économiques de l'interface terre-mer en NAMO

#### Gestion durable des ressources marines et littorales

- Pêches professionnelles (principaux secteurs)
- Aquaculture
- Extraction de granulats marins
- Attraits littoraux pour le tourisme et les loisirs : patrimoine (historique, paysager ou environnemental), espaces muséographiques, bases nautiques...

#### Énergies marines renouvelables - Énergies terrestres non renouvelables

(Site existant, projet ou à l'étude)

- Éolien flottant
- Éolien posé
- Hydrolien
- Houlomoteur
- Usine marémotrice
- Centrale thermique

#### Les filières maritimes de la façade maritime

- Pêche, aquaculture, transformation
- Filière nautique et navale
- Transports, industries, ports
- Formation maritime et pôle universitaire
- Recherche sur la mer et le littoral
- Défense

#### Les marchés de la façade maritime

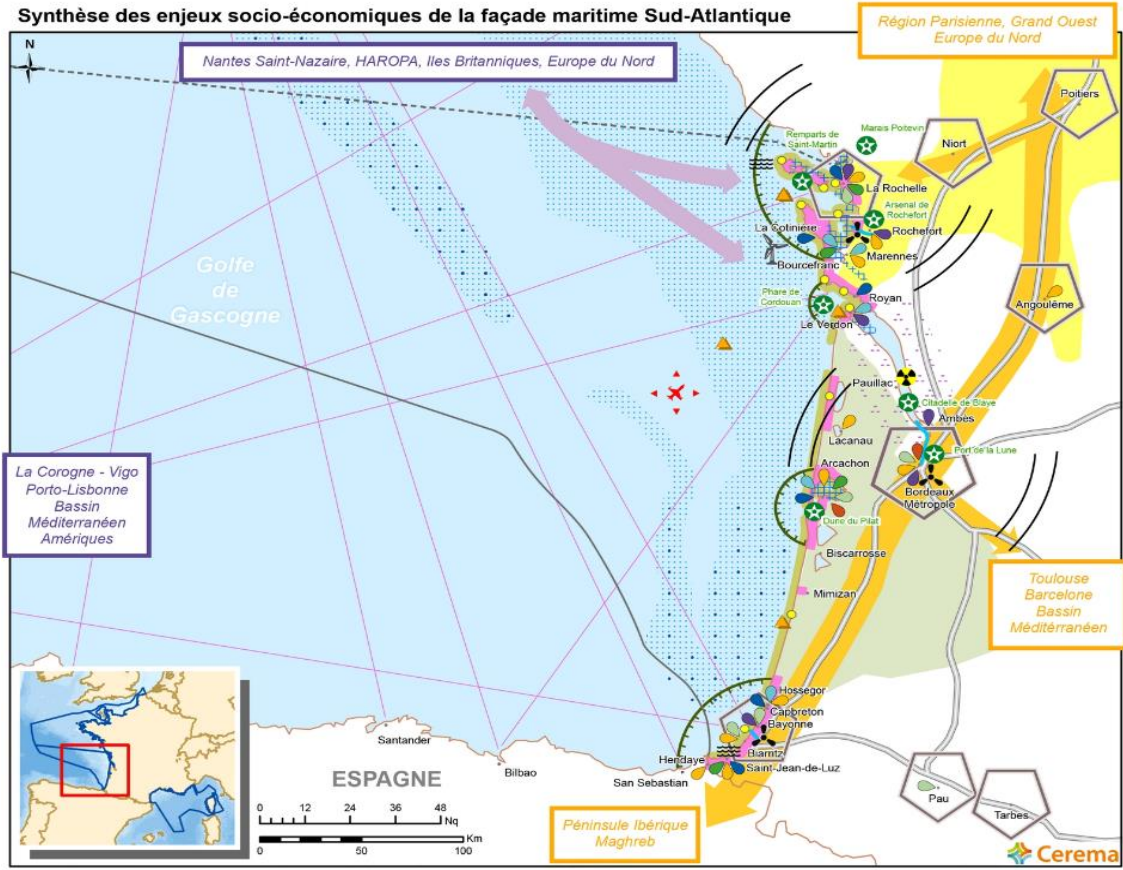
- Principales aires urbaines du littoral
- Principales aires urbaines de l'arrière-pays
- Espace littoral à forte fréquentation touristique

#### Les axes majeurs de la façade maritime

- Principaux axes de transport (fer, autoroute des estuaires, route)
- Oléoduc : Donges, Melun, Metz (DMM)

Figure 2: Map of socio-economic issues - DSF NAMO

### Synthèse des enjeux socio-économiques de la façade maritime Sud-Atlantique



Sources : DIRM SA, SHOM - Copyrights : Mapinfo Corporation - Réalisation : Cerema Normandie Centre - Date : 05/2018 - Projection : RGF 93 / Lambert 93

#### La façade Sud-Atlantique : le développement d'une économie bleue, respectueuse des équilibres écologiques

- Enjeux économiques internationaux et transfrontaliers**
- Principales dynamiques de flux économiques par voie maritime : accès aux grands ports maritimes de Bordeaux et La Rochelle
  - Flux maritimes transversaux
  - Grand port maritime relié à l'international - pôles industrialio-portuaires
  - Dynamiques économiques transfrontalières majeures par voie terrestre (partie Sud de l'Arc Atlantique)
  - Dynamiques économiques transversales majeures par voie terrestre
  - Zone de production agricole pour l'export par voie maritime (céréales)
  - Cohabitation des usages transfrontaliers (pêche)

- Patrimoine, tourisme et loisirs nautiques**
- Sites touristiques emblématiques (UNESCO et Grands sites)
  - Patrimoine littoral : frange côtière des communes littorales présentant des intérêts historiques, paysagers ou environnementaux
  - Principaux phares classés et en service
  - Espace littoral à forte fréquentation touristique
  - Bassin de navigation de plaisance

- Gouvernance et défense**
- Accord de délimitation des espaces maritimes entre états ou décision d'une juridiction internationale
  - Limite de façade maritime
  - Centre d'essais des Landes

#### Les spécificités économiques de l'interface terre-mer pour la façade Sud-Atlantique

- Gestion durable des ressources marines et littorales**
- Pêches professionnelles (principaux secteurs)
  - Conchyliculture
  - Extraction de granulats marins (en cours d'exploitation ou à l'étude)
  - Production viticole de l'écosystème estuarien (Médoc, Blayais, Bourgeais, Cognac, Pineau)
  - Zone forestière et sylviculture (pin maritime)
- Énergies marines renouvelables - Énergies terrestres non renouvelables**  
(Site existant, projet ou à l'étude)
- Éolien posé
  - Centrale nucléaire
  - Hydrolien
  - Houloporteur

- Les filières maritimes de la façade maritime**
- Pêche et transformation des produits de la mer
  - Aquaculture
  - Transports et industries
  - Filière nautique et filière glisse
  - Formation maritime
  - Pôle universitaire, formation, recherche sur la mer et le littoral
  - Défense

- Les marchés de la façade maritime**
- Principales aires urbaines du littoral
  - Principales aires urbaines de l'interland
  - Agglomération bordelaise, Grande métropole régionale

- Les axes majeurs de la façade maritime**
- Principaux axes de transport (fer, autoroute)
  - Accès fluviaux aux ports de commerce

Figure 3: Map of socio-economic issues - DSF SA

### 3.1.1 Summary of the available data

In this exercise, Cerema sought to rely as much as possible on the data collected to produce the summary maps of the North-Atlantic-Channel-West (NAMO) and South Atlantic (SA) DSFs. The aim is to keep the simplified representation of the activities as they are illustrated in the summary maps and suitable to offer an accessible vision of socio-economic issues on the Atlantic coast.

This description of the way in which the summary maps of the DSF SA and NAMO were constructed and, where possible, on the databases used, highlight some areas of improvement in the traceability of the data. It was found that for some themes, it was difficult to trace the origin of the data that was used in the summary maps of the DSF in 2018.

The tables below provide a quick inventory of the main datasets used to map economic stakes in the DSF.

- **Themes for which it was possible to collect the data used for the DSF, or direct updates of these databases:**

Themes	Data name	Data source
Professional fishing	Number of fishing vessels of all types of gear (Vms 1016/2017)	Geolittoral – Cerema <a href="http://www.geolittoral.developpement-durable.gouv.fr">http://www.geolittoral.developpement-durable.gouv.fr</a>
Shipping	Estimated number of vessels for different categories 2018	Geolittoral – Cerema <a href="http://www.geolittoral.developpement-durable.gouv.fr">http://www.geolittoral.developpement-durable.gouv.fr</a>
Extraction of marine aggregates	Marine aggregates exploitation areas (WMS Ifremer)	Ifremer <a href="https://sextant.ifremer.fr/Donnees/Catalogue#/metadata/2d51f1a2-65ec-421c-b6ab-d585aff01e06">https://sextant.ifremer.fr/Donnees/Catalogue#/metadata/2d51f1a2-65ec-421c-b6ab-d585aff01e06</a>
Marine Renewable Energies	Marine renewable energy production areas	<a href="https://cerema.maps.arcgis.com/apps/MapSeries/index.html?appid=354ccc3737fe4df78ed82e184713ee0c">https://cerema.maps.arcgis.com/apps/MapSeries/index.html?appid=354ccc3737fe4df78ed82e184713ee0c</a>

- **Themes for which databases exist and were used to produce the interactive map, but which were not those used for the DSF:**

Themes	Data name	Data source
Public scientific research	Quantitative and qualitative inventory of public resources in France with research activities in marine sciences and techniques.	Ifremer / IDM / SISMER - Scientific Information Systems for the SEA <a href="https://sextant.ifremer.fr/Donnees/Catalogue?#/metadata/70c77407-8bd2-46b4-9a69-a49de5579fa7">https://sextant.ifremer.fr/Donnees/Catalogue?#/metadata/70c77407-8bd2-46b4-9a69-a49de5579fa7</a>

- **Themes for which it was necessary to collect data via various sources due to their absence in database**

Themes	Data name	Data source
Maritime training / formation	Inventory of public maritime training establishments.	Cerema Technical Department- - Risk, Water and Sea – 2021 - own realization
Aquaculture	Survey to measure the volume and value of aquaculture production in mainland France for 2019	Agreste, SSP - Bureau des statistiques structurelles, environnementales et forestières, 2020, Enquête Aquaculture 2019  <a href="https://www.agreste.agriculture.gouv.fr/agreste-web/disaron/Chd2105/detail/">https://www.agreste.agriculture.gouv.fr/agreste-web/disaron/Chd2105/detail/</a>
Commercial and industrial ports	Inventory of decentralised ports in France.	Cerema- Département Ports et Navigations - 2021- own realization
Fishing ports	Sales data declared in fish markets in 2019	FranceAgriMer. 2020. Données de vente déclarées en halles à marée en 2019. Edition février 2020. <a href="https://www.franceagrimer.fr/fam/content/download/63706/document/bilan_HAM_2019.pdf?version=5">https://www.franceagrimer.fr/fam/content/download/63706/document/bilan_HAM_2019.pdf?version=5</a>

- **Themes not included in the DSF but which were added in this study:**
  - The "submarine cables" activity did not appear in the DSF summary maps. It has been added to correspond to the themes covered by the European project.

Themes	Data name	Data source
Submarine cables	Câbles et conduites sous-marines	<a href="https://diffusion.shom.fr/pro/ressources/bd-maritime-et-littoral/cables.html">https://diffusion.shom.fr/pro/ressources/bd-maritime-et-littoral/cables.html</a>

- **The themes for which operational databases could not be assembled or created within the framework of this project:**
  - Navigation basin (recreational boating)
  - Water sports and yachting sector
  - Marinas
  - Coastal areas with high tourist traffic

### 3.1.2 Selection of attributes to display in the new interactive summary map

The addition of attributes to the illustrated graphic elements represents another added value of the interactive summary map. These attributes, containing quantitative or qualitative information, should allow the reader to have information on the criteria that justify certain illustrative choices and, of course, to obtain information relating to the activities concerned in the designated areas. To define the information to be displayed in relation to the graphic elements of the map, benchmark work was carried out to identify the information commonly used in certain other interactive mapping exercises at sea. Several of these examples are available on [www.msp-platform.eu](http://www.msp-platform.eu).

The second important criterion for the selection of information was to maintain consistency with the data retained in the summary maps of the DSF. Indeed, as specified previously, certain databases used for producing the summary maps of the DSF are available, and as far as possible these data have been collected and updated where necessary.

Finally, in order to harmonise the final map, the data available for the two Sea Basins were prioritised.

## 3.2 Presentation of the interactive map

The interactive map web portal developed thanks to the SIMAtlantic project is available online at this address<sup>4</sup>:

<https://experience.arcgis.com/experience/b8374d1926424fbc9c2a3885c8a9e7a>

### 3.2.1 Home page

In order to allow intuitive use of the tool, the initial web page offers by default (Figure 4), a synthetic representation of the issues on the Atlantic coast and a window allowing the user to choose the layers to be displayed on the map.

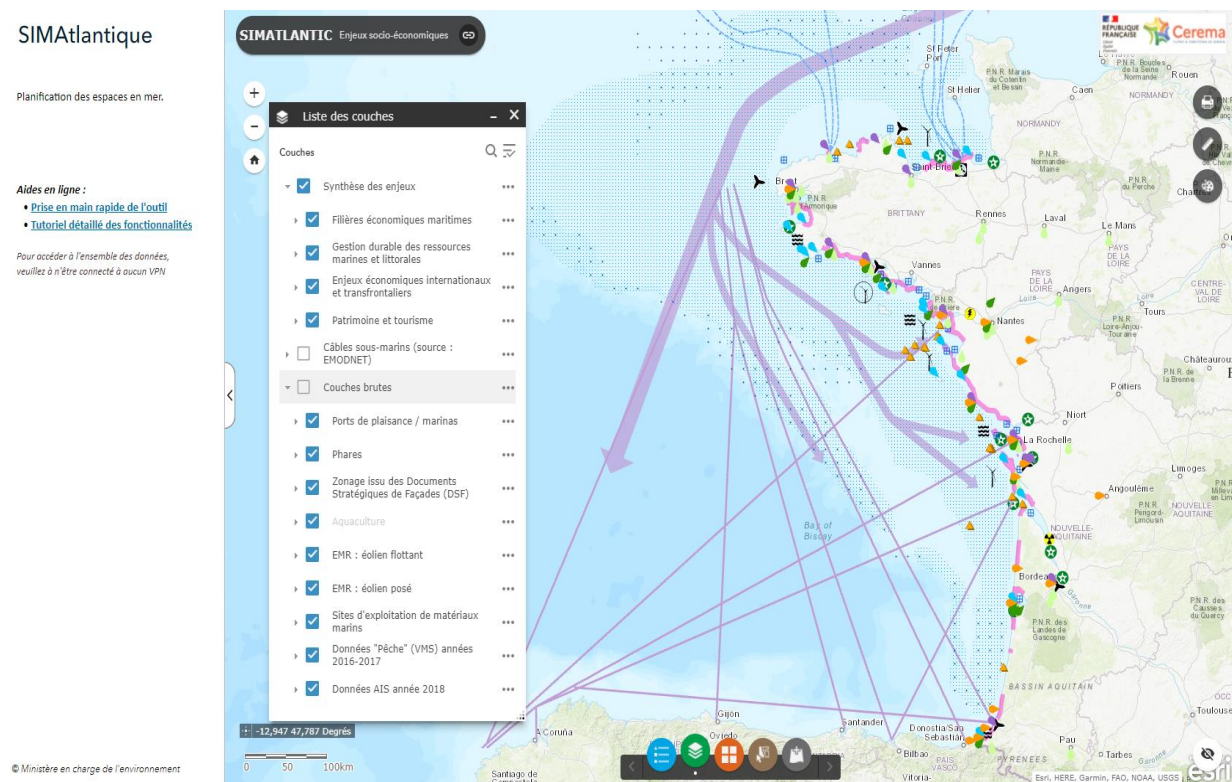


Figure 4: General organisation of the interactive map

4 Nota bene : this map is available in French only.

A menu at the bottom of the page allows the user to display other windows for managing the page allowing you to display (Figure 5):

- a caption (1),
- base map choices (2),
- a data download tool (3),
- a tool for adding new data (4), and organisation of the layers

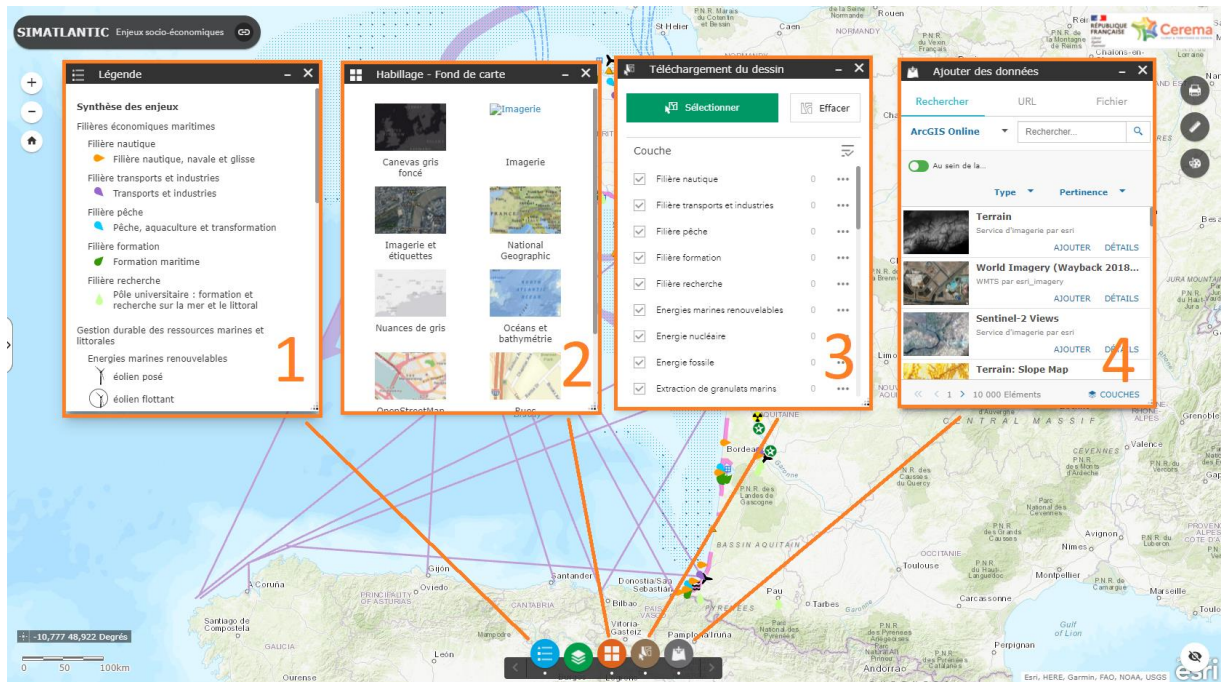


Figure 5: General organisation of the interactive map

From the home page, the interactive map allows the user to select the display of two types of information (Figure 6): the layers of summaries of the issues («couches de synthèses des enjeux») and the "raw" layers («couches brutes»), shown as number 1 in Fig.6. To display and navigate in one of these lists, the user must check the box (2) corresponding to one or the other of these categories and open the drop-down menu using the arrow (3) on the left of this box. The display on the map of a layer of one or the other of these categories is only possible if the corresponding "main" box (2) is checked.

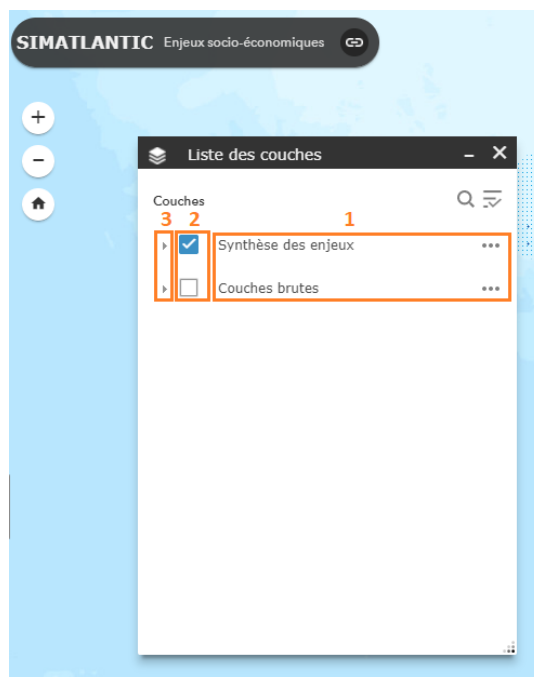


Figure 6: Organisation of layers

The category «*synthèse des enjeux* » offers a synthetic version of the stakes as they have been represented in the socio-economic stakes synthesis maps of the DSF. They consist of several simplified illustrations (Figure 7) which can be clicked to open an information table corresponding to the selected object (1).

Generally speaking, for the category of «*synthèse des enjeux* », activities at sea are represented by layers of zones or diagrams summarising the occupation of the marine space of the activity. Onshore activities are illustrated by coloured symbols representing the corresponding economic sectors in these regions. In the event that several establishments or sectors correspond to the same geographical area, the information window proposes to navigate from one of these objects to another via a menu located at the top of the window (2).

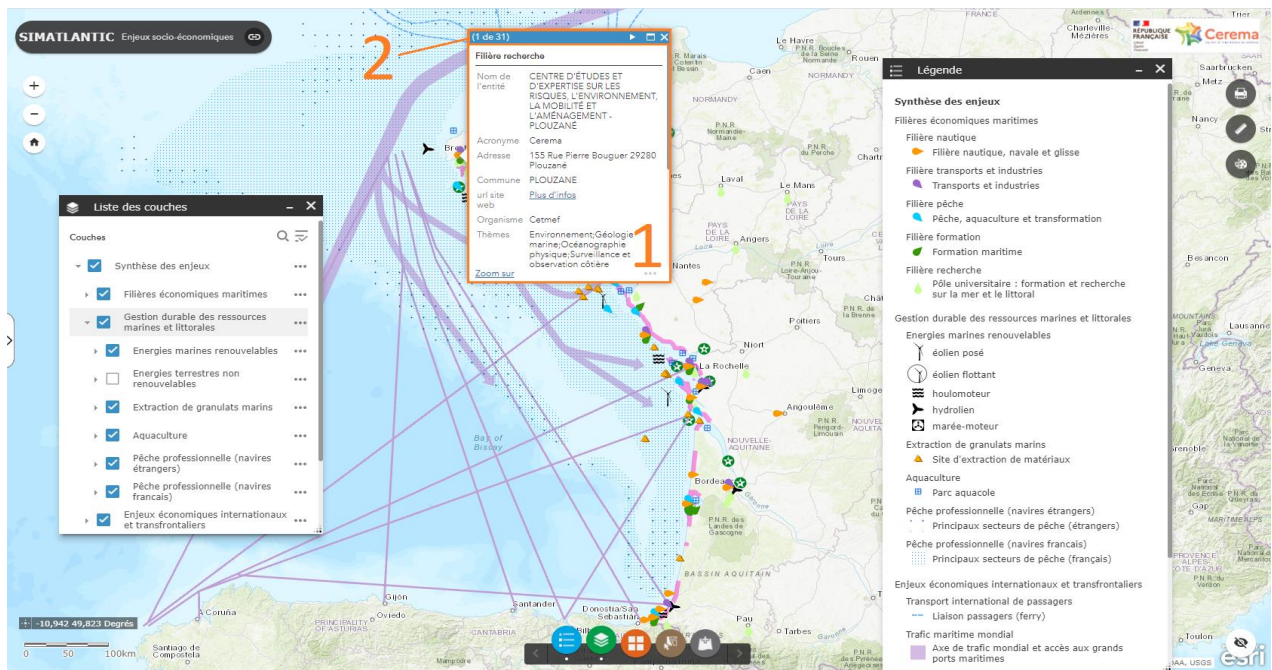


Figure 7: Organisation of information tables

The data proposed in the 'raw data' « *Données brutes* » category represent the spatial occupation of the current activities and uses by intensity data (e.g. fishing), or administrative zoning (e.g.: macro-zones of studies for offshore wind farms, marine aggregate exploitation sites) (Figure 8). This category allows users to go beyond the information presented for synthesis maps by observing the actual translation of activities in the marine space. In order not to hamper readability, some themes containing too many illustrations for a summary map have also been added in this category (ex: marinas, lighthouses, etc.).

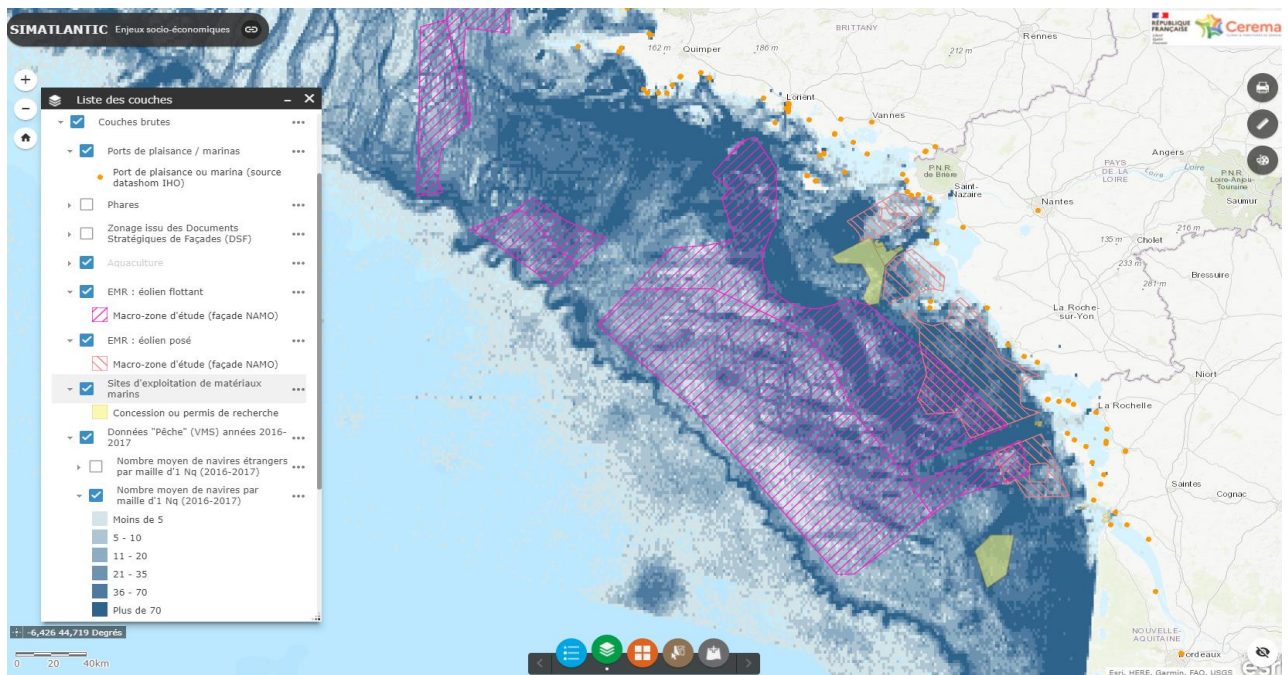


Figure 8: 'Raw data' or "Données brutes" layer



### **3.3 Some issues raised**

#### **3.3.1 Cross-border aspects**

For the realisation of this cartographic tool, the problems encountered for the representation of cross-border issues were twofold. First, for the geographic area selected, the number of activities affected by cross-border issues appeared limited in the two cross-border areas of the French Atlantic coast: the southern Bay of Biscay and the English Channel.

The other issue centred on the ability to find and collect viable data for the geographic area concerned within the allotted time. It seems, indeed, that the inter-compatibility of data between France and Spain, for example, can be improved because these two countries have started their respective work in the field of data processing at a national level without anticipating cross-border sharing<sup>5</sup>.

Finally, the problem of the representation of very localized issues must be taken into account to respect the primary objective of producing an accessible summary map.

In this context, for this exercise, only the fishing activities of Member States neighbouring France (Spain and the United Kingdom for the most part) have been retained at this stage. These data have already been processed for the DSF documents and are therefore available. They occupy 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.

#### **3.3.2 Some concepts are not commonly shared**

This question of commonly shared notions is indeed another issue raised by this interactive mapping exercise. At the subnational level, some of the issues represented for the summary maps were based on definitions that were sometimes slightly different depending on the DSF but which could have significant influences on the associated graphic representation. This is the case, for example, for the yachting activity for which a notion of "navigation basin" has been defined significantly differently for the two French Atlantic Sea Basins. In the summary maps of the DSF, the very notion of a marina meets specific criteria for each sea basin. French regulations do not in fact offer a common definition of a port and the DSF project leaders have therefore used their own criteria for the construction of the databases.

#### **3.3.3 "Internal" choices in the cartographic representation and the data used**

In addition to this problem of notions that are not shared, there are additional political dimensions that may influence how decision-makers choose to display or reporting an issue in the summary maps of the first cycles of the DSF. Thus, in these maps, the simplified representation of fishing activity based on several types of data (such as different fishing practices, time spent at sea, etc.) was then discussed with certain representatives from the

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<sup>5</sup> As stated by the French authority DIRM Sud Atlantique during the Session 2B: Data sharing and stakeholder engagement of SIMAtlantic Final conference (15/09/2021)

professional fishing community resulting in modifications whose source and criteria are impossible to trace.

Likewise, if data exists on tourist traffic for the coastal areas of the entire French Atlantic coast, the choice of these data and the criteria retained for the cartographic representation in the summary maps is not specified. It seems that for this theme too, the way to illustrate the intensity of this activity on the coast was discussed in a workshop, internally with the State services or with representatives of the sector. It is therefore difficult to trace the source of this data.

### 3.3.4 Discontinuities in the data available between SA and NAMO

Finally, the differences in terms of definitions given to the activities, in the choices of graphic representations and more generally, the absence of common reflection in the treatment of the data for the territorial diagnosis of uses at sea, results in strong discontinuities in the data available between the two maritime Sea Basins "*Sud Atlantique*" and "*Nord Atlantique Manche-Ouest* » and more generally, at the national level.

In addition to the difficulties that these inconsistencies can bring in terms of appropriation of maps by stakeholders and their confidence in the data presented, it is problematic to have two processes that are not consistent in terms of data and definitions shared in a territory which relates to a geographical unit: the Bay of Biscay. Thus, this type of viewer implemented at the scale of a Sea Basin or at the national scale, represents an opportunity to initiate a uniform update of the data by the definition of common procedures for collecting and processing information for each sectors of activity.

The tables below summarise some characteristics and areas of work for each of the sectors of activity explored.

<ul style="list-style-type: none"> <li>• "<u>Reliable</u>" data</li> </ul> <p><i>Data available in a uniform manner for the whole of the Atlantic coast (or at least for the SA or NAMO part). With a regular update following an identical procedure allowing a temporal follow-up based on identical criteria. Sometimes available since several years.</i></p>	
Professional fisheries	Existing database for all Sea Basins with common criteria. Work is needed to standardise the translation of these data into summary maps
Aquaculture	Existing databases. Theme and main measurement elements to be defined
Extraction of marine aggregates	Existing database
Marine Renewable Energies	Existing database
Shipping	Existing database
Fishing ports	Theme and main measurement elements to be defined
Commercial and industrial ports	Theme and main measurement elements to be defined
Public scientific research	Existing database

- Data to be confirmed

*Data that does not exist in the form of a database which therefore requires a specific census for this study; or a database which does not cover the entire study area or one or other of the Sea Basins (NAMO or SA); thematic for which the available databases refer to different criteria from one zone to another of the Sea Basin.*

Marinas	Inventory in progress
Nautical and sliding sectors	Database to initiate. Theme and main measurement elements to be defined.
Maritime training / education	Database to initiate. Theme and main measurement elements to be defined.
Navigation basin	Theme and main measurement elements to be defined in order to build common databases and standardise the translation of this data into summary maps
Coastal area with high tourist traffic	Theme and main measurement elements to be defined in order to build common databases and standardise the translation of this data into summary maps

Overall, additional work is necessary to define the main indicators and the main criteria to be retained and mapped for all uses / sectors of activity. Indeed, even for activities with solid, structured and regularly updated databases, the elements retained for the cartographic synthesis (and for the stake maps for each activity in general) vary according to the DSF.

## 4 Towards the publication of the DSF vocational areas for MSP dissemination

### 4.1 Contextual information for MSP data in the French context

#### French reference portals for the marine environment

Since 2018, the French State has put efforts into increasing the visibility of data regarding the marine environment and maritime activities through tools and portals at national level:

- the Marine Environment Portal (<https://www.milieumarinfrance.fr/>) aims to facilitate sharing and dissemination of data on the marine environment and its uses,
- the Geolittoral portal (<http://www.geolittoral.developpement-durable.gouv.fr>) provides access to a large amount of cartographic data,
- the National Portal for Maritime Limits (<https://maritimelimits.gouv.fr/>), provides users with reliable information on the legal boundaries of French maritime areas.

The French National Portal for Maritime Limits (PNLM – *Portail national des limites maritimes*) was established by Decree No. 2017-821 of 5 May 2017. Initially set up in a version publishing only limits of sovereignty and jurisdiction, measure n°77 of the CIMER (Inter-ministerial Committee for the Sea – *Comité interministériel de la mer*) of 2018 states this portal should be developed in order to increase visibility and facilitate access to the main regulations at sea.

The publication of the geospatial reference limits of the vocation zones would be relevant to the PNLM, among other French administrative and regulatory reference delimitations. The request of the PNLM Steering Committee of 26/11/2020 to Shom to study the integration of these data in the PNLM reflects this. The legal enforceability of the DSF, defined in Article L. 219-4 of the Environment Code, is as follows at sea: up to the limits of national jurisdiction, all uses made for the management of the marine area must be compatible or made compatible with the objectives and provisions of the DSF. Compatibility implies not contradicting the fundamental guidelines, in this case the strategic objectives and the use map.

The referencing and accessibility of the limits, also called publication, via the PNLM is conditioned by

- The assurance of controlled boundaries: the boundaries must be justifiable, and fair in relation to existing boundaries on which they are based.
- Recognition of the source and producer of the limits by the Steering Committee of the National Portal for Maritime Limits. This committee is currently made up of the General Secretariat for the Sea, the Ministry for Ecological Transition, the Ministry of the Armed Forces, the Ministry of Europe and Foreign Affairs, the Ministry for Overseas France and the Shom.

*For example: several versions of Natura 2000 areas are disseminated via separate web platforms. The Steering Committee of the PNLM has decided that the source of reference data to be used for publication on the portal is that of the OFB (French Biodiversity Office).*

## **A need for consistency at EU level on maritime spatial planning and management data**

Following its first year of work, the EU TEG (Technical Expert Group) on MSP data has issued recommendations for the use of three INSPIRE-compliant data models for publishing geospatial data for national MSP plans in 2021<sup>6</sup>. Regardless of which data model states choose, geospatial data from MSP plans will be presented on the EMODnet Human Activities portal using a data model compatible with the EMODnet data model, which is one of the three recommended models.

All three models (Basemap, INSPIRE MSP (from the MarSP project) and EMODNET MSP) are suitable for plans that define areas for the location of uses and activities. The possibility of using one of these models for the French DSF data layers to present the information associated with the vocation zones listed above though not considered in this consolidation study<sup>7</sup> is on-going within another EU funded project, MSP MED.

### **MSP plan data published on Geolittoral**

In France, the MSP data and the vocation zone limits are already available on the Geolittoral portal. However, it should be noted that this geospatial layer does not correspond exactly to the layers created by the DIRMs, who are the owner of the data. The limits of the vocation zones published at the moment are good for illustration of concepts but are not truly relevant in terms of geographic coordinates (not in full agreement with the legal maritime boundary for example, see §4.3). The data models used by the DIRM and Cerema are not fully consistent, nor correspond to, the models recommended by the EU.

An identification of the relevant information to be associated with the geospatial layer of the vocation zones has been carried out by Cerema and is presented on the Geolittoral portal. Available information includes:

- The area identifier,
- The name of the area,
- Social and economic priorities,
- Other guidelines, if any,
- Environmental protection elements, and
- Access to the detailed area sheet from the DSF.

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6 Proposal for making harmonized MSP plan data available across Europe – Results of the work of the Technical Expert Group (TEG) on MSP Data, September 2021, Publication office of the European Union

7 « WP3.4.1 : Study for the publication of the boundaries of the Mediterranean DSF vocation areas - Part 2: Analysis of the European data models and the Mediterranean DSF », Shom, On-going (to be available in both FR and EN)

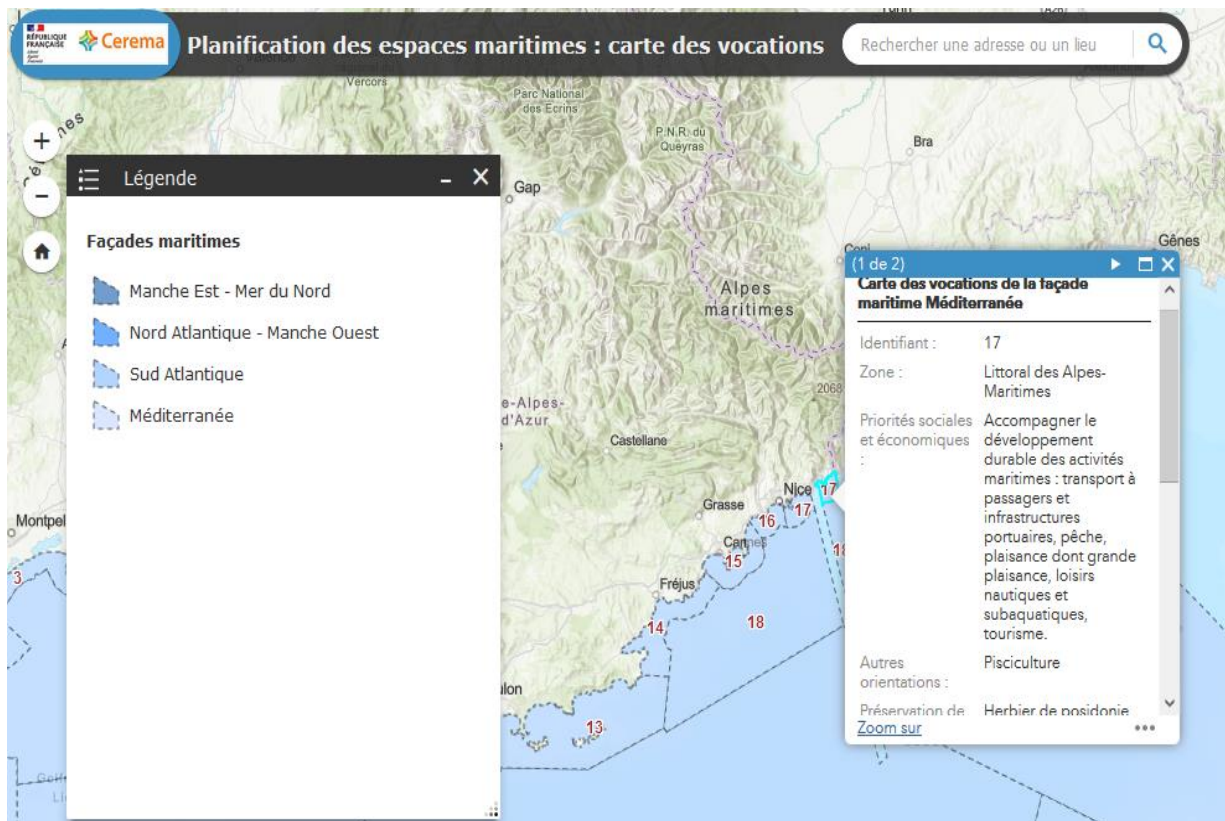


Figure 9: Available data published on Geolittoral portal

To this end, the consolidation consists of proposing adaptations to ensure that:

- Area boundaries can be defined by supporting points and connecting segments,
- Zone boundaries are accurate in relation to the existing boundaries on which they are based,
- The vocation zones are continuous with each other and between contiguous zones of two adjacent DSFs,
- The zones cover the geographic scope of the MSPD, and
- The zones are consistent with the description provided by the DSF.

In contrast to the process of defining zones through the DSF process, which describes zones through indicative maps and general literal descriptions, the consolidation of the definition of geo-spatial vocation zones result in a precise description of the delimitations. In doing so, however, this study does not prejudge any decisions that may be taken concerning the level of precision or scale at which the DSFs and associated vocation zones will be applied.

The analysis work and the collaborative work between DIRM NAMO, DIRM SA and Shom have made it possible to specify the majority of the existing boundaries on which the DSF designation zones are based.

## 4.2 Preliminary description of the vocation zones

### 4.2.1 Vocation zones of North Atlantic Sea – West Channel (NAMO) Strategic Sea Basin Document (DSF)

Based on the study of the sources of the co-existing vocation zones, and the additional information provided by DIRM NAMO, it was possible to establish a preliminary definition of the vocation zones, presented in the tables below.

#### Zone 1: Abyssal Plain

Limits	Description
North	/
East	/
West	Limit of maritime space claimed by France without agreement Outer EEZ limits (200 M)
South	Limit of competence of the regional prefects for the exercise of maritime fisheries

#### Zone 2: Continental slope

Limits	Description
North	Limit of maritime space claimed by France without agreement Maritime delimitation established by agreement between States
East	/
West	/
South	Limit of competence of the regional prefects for the exercise of maritime fisheries

#### Zone 3: Continental shelf

##### Zone 3a: North continental shelf

Limits	Description
North	Maritime delimitation established by agreement between States
North-East	/
East	Limits of the Iroise Marine Natural Park
West	/
South	/

##### Zone 3b: Central Continental Shelf

Limits	Description
North	/
East	Outer limit of the territorial sea Boundary of the Gironde Estuary and Pertuis Sea Marine Natural Park
West	Created during the DSF process from the integrating issue maps
South	Lateral limit of competence of the regional prefects for the exercise of maritime fishing

#### Zone 4: Western Channel

Limits	Description
North	Maritime boundary established by agreement between States
East	Lateral limit of competence of the regional prefects for the exercise of maritime fishing Maritime boundary established by agreement between States
West	/
South	Outer limit of the territorial sea

#### Zone 5: Territorial Sea

##### Zone 5a: Brittany-side Gulf of Normandy and Mont Saint-Michel Bay

Limits	Description
North	Lateral limit of competence of the regional prefects for the exercise of maritime fishing
East	Maritime boundary established by agreement between States
West	Special Protected Area (SPA) - Natura 2000 Chausey (N2000 FR2510037)
South	Inner limit of marine waters

##### Zone 5b: North Brittany

Limits	Description
North	Outer limit of the territorial sea
North-East	Lateral limit of competence of the regional prefects for the exercise of maritime fishing
East	Maritime boundary established by agreement between States SPA - Natura 2000 Chausey (N2000 FR2510037)
West	Limits of the Iroise Marine Natural Park
South	Inner limit of marine waters

##### Zone 5c: Iroise Marine Natural Park

Limits	Description
North	Limits of the Iroise Marine Natural Park
East	
West	
South	

##### Zone 5d: Rade de Brest

Limits	Description
North	Inner limit of marine waters
East	
West	
South	Limits of the Iroise Marine Natural Park



### Zone 5e: South Brittany

Limits	Description
North	Limits of the Iroise Marine Natural Park
East	Inner limit of marine waters
West	Outer limit of the territorial sea
South	/

### Zone 5f: Loire Estuary

Limits	Description
North	/
East	Inner limit of marine waters
West	Outer limit of the territorial sea
South	/

### Zone 5g: Bourgneuf Bay and Vendée coastline

Limits	Description
North	/
East	Inner limit of marine waters
West	Outer limit of the territorial sea
South	Outer limit of the territorial sea Boundary of the Gironde Estuary and Pertuis Sea Marine Natural Park

### Zone 5h: Gironde Estuary and Pertuis Sea Marine Natural Park

Limits	Description
North	Boundary of the Gironde Estuary and Pertuis Sea Marine Natural Park
East	
West	
South	Lateral limit of competence of the regional prefects for the exercise of maritime fishing Lateral limit of competence of the prefects for the administration of the submerged public maritime domain

## 4.2.2 Vocation zones of the South Atlantic Sea (SA) Strategic Sea Basin Document (DSF)

Based on the study of the sources of the co-existing vocation zones, and the additional information provided by DIRM SA, it was possible to establish a preliminary definition of the vocational zones, presented in the tables below.

### Zone 1: Gironde Estuary and Pertuis Sea Marine Natural Park

Limits	Description
North	Lateral limit of competence of the regional prefects for the exercise of maritime fishing Lateral limit of competence of the prefects for the administration of the submerged public maritime domain
East	Limit of the Gironde Estuary and Pertuis Sea Marine Natural Park (similar to the inner limit of marine waters)
West	
South	

## **Zone 2: Aquitaine sandy coast**

North	Limit of the Gironde Estuary and Pertuis Sea Marine Natural Park
East	Administrative limits from the French national geographic institute (IGN) Limit with the Parc Arcachon Basin Marine Natural Park
West	Outer limit of the territorial sea
South	Lateral limit of competence of the prefects for the administration of the submerged public maritime domain

## **Zone 3: Arcachon Basin Marine Natural Park**

North	
East	
West	Limit with the Parc Arcachon Basin Marine Natural Park
South	

## **Zone 4: Basque rocky coast, Adour estuary and Gouf de Capbreton**

North	Lateral limit of competence of the prefects for the administration of the submerged public maritime domain
East	Administrative limits from the French national geographic institute (IGN)
West	Outer limit of the territorial sea
South	Maritime boundary established by agreement between States

## **Zone 5: Continental shelf**

North	Lateral limit of competence of regional prefects for the exercise of maritime fishing
East	Limit of the Gironde Estuary and Pertuis Sea Marine Natural Park Outer limit of the territorial sea
West	Special Protected Area (SPA) - Celtic Seas - Bay of Biscay slope Extension of SPA - Cap Ferret canyon head
South	Maritime boundary established by agreement between States

## **Zone 6: Continental slope**

North	Lateral limit of competence of the regional prefects for the exercise of maritime fishing
East	Special Protected Area (SPA) - Celtic Seas - Bay of Biscay slope Extension of SPA - Cap Ferret canyon head
West	Special Protected Area (SPA) - Celtic Seas - Bay of Biscay slope Maritime boundary established by agreement between States
South	/

## **Zone 7: Abyssal Plain**

North	Lateral limit of competence of the regional prefects for the exercise of maritime fishing
East	SPA - Celtic Seas - Bay of Biscay slope
West	Limit of maritime space claimed by France without agreement
South	Limit of maritime space claimed by France without agreement Maritime boundary established by agreement between States

## **4.3 Suggestion for amendments**

### **4.3.1 Regulatory boundaries**

Some of the boundaries on which the DSF vocation zones are based are regulatory boundaries (maritime boundaries, lateral boundaries of the regional prefects for the exercise of maritime fishing, boundaries of marine nature parks, etc.). For the present analysis, the reference data for these regulatory boundaries were sought (legal texts and freely published geospatial boundaries).

Where discrepancies were observed between the current geospatial boundaries of the vocation zones and the regulatory boundaries on which they are based, a geographical adaptation of the position was proposed.

To be noted, the northern limit of the NAMO Sea Basin and the MEMN Sea Basin is unclear as the decree and the prefectural order differ.

### **4.3.2 Boundaries of areas with ecological issues**

Some boundaries correspond to Sectors with Ecological Issues (*Secteurs à enjeux écologiques*), defined by the OFB. For these boundaries, accuracy between the boundaries of the vocation zones and those of the OFB Sectors with Ecological Issues has not been sought.

These boundaries were described by the set of points and straight lines (loxodromes) produced by DIRM NAMO or DIRM SA

### **4.3.3 Boundaries not based on pre-existing boundaries**

Where the boundaries of the vocation zones are not based on existing boundaries, it has been proposed to define the boundaries by straight lines through points of defined geographical position.

### **4.3.4 Discontinuous boundaries**

Where discontinuities have been observed between the contiguous areas of the SA and NAMO DSFs, proposals have been made to the SA and NAMO DIRMs.

### **4.3.5 Inner limits of the DSF**

The MSPD (Maritime Spatial Planning Directive – 2014/89/EU), like the MSFD (Marine Strategy Framework Directive - 2008/56/CE), applies to national marine waters as defined in Article 3 of the MSFD and Article 2 of the Water Framework Directive (WFD - 2000/60/EC).

- Outer limits of the DSF therefore correspond to the boundaries of the maritime areas under national sovereignty and jurisdiction.
- Inner boundary of the DSF is therefore the inner boundary of French marine waters, corresponding to the inner boundary of the WFD coastal waters and extending to the outer boundary of the transitional waters as defined by Article 2, WFD.

Transitional waters are defined differently according to several factors: salinity, tidal range, mixing, percentage of the water body covered by the intertidal zone, flow rate, catchment area, estuary area and turbidity. The French water circular n° 2005-11 of 29/04/05 relating to the national typology of surface waters (rivers, water bodies, transitional waters and coastal waters) responds to the WFD request and sets the national typology for surface waters (rivers, water bodies, transitional waters and coastal waters).

Analysis of the most recent version of this data published on the French Administration Repository Services (SAR - *Service d'Administration des Référentiels*) website (vector data, Transitional Water Bodies - France Entière - Version État des Lieux 2019, updated to 9/06/2021) shows inconsistency between DSFs inner marine water limits and the coastal and transitional water boundaries published by Sandre (National Water Data and Repositories Administration Service – *Service d'administration nationale des données et référentiels sur l'eau*). Currently, the inland boundary applied to the DSFs is a coastline (DIRM data layer) or an administrative boundary published by the IGN (Géolittoral layer). Confirmation of the inland marine boundary to be used as a reference for application to the DSF is pending.

#### **4.4 Upgrading the data towards publication at French level**

In order to disseminate more widely the national maritime boundaries, it is necessary to consolidate the location of the vocation zone boundaries.

Initially, this will involve a review of the literal descriptions of the boundaries of the vocation zones made by the Shom and their validation by the DIRMs. In the interests of continuity and consistency, this study must also be carried out on the MEMN (North Sea-Eastern Channel) coastline, with which NAMO shares zone boundaries. This work has been identified and will be undertaken by Shom in 2022.

More broadly, the updating of the vocation zone maps, as geospatial reference data, requires several major decisions that concern all of the maritime and sea basin areas (including Outermost France):

- To decide on issues related to the production and adaptation:
  - The producer of this data
  - Updated data
  - The type of data to be produced (point and/or polygon layer)
  - The data model for the map of vocation zones in the light of EU requirements and with a view to consistency with other strategic documents for the coastline
  - The schedule (availability of reference layers, need for use, etc.)
- To rule on the issues related to dissemination:
  - The disseminator/publisher
  - Updated publication
  - Dissemination formats (shapefile, web service)
  - Define a scale for the dissemination of the digital vocation maps to avoid the aspect of a cadastre of the sea

Reflections must also be carried out to organise the work on undefined reference data. Some of this work is being undertaken by the French TEG GIMeL (Technical Expert Group of Geo-Information for the Sea and the Coastline) that is in charge of providing land-sea interaction limits. For example, it is necessary to decide on:

- The inner boundary of the DSFs to be used to consolidate the inner marine water points, and other issues as appropriate,
- The production and publication of a geographical reference layer for the lateral limit of competence of the regional prefects for the exercise of maritime fisheries,
- The production and publication of a geographical reference layer for the lateral limit of the jurisdiction of the prefects for the administration of the submerged public domain.

Finally, this evaluation of the definition of the nature of the boundaries of the two Atlantic DSF (North Atlantic-Western Channel and South Atlantic) zones does not presume the precision with which these layers will be used by the various users of the sea (customs, coastguards, maritime prefects, wind farm or aquaculture developers, etc.) but aims to clarify the references for the boundaries and to suggest initial improvement towards the interoperability of the various DSF at national and EU levels.

## 4.5 Publication at cross-border level

The ultimate goal of MSP at the EU and partner levels is to provide data that can be displayed across the region.

Though this task still needs to address barriers regarding interoperability of the data, the SIMAtlantic project and other EU co-funded projects recommend the use of a centralised data portal dedicated to MSP geographic information. This data portal should 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 re-use of the data.

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

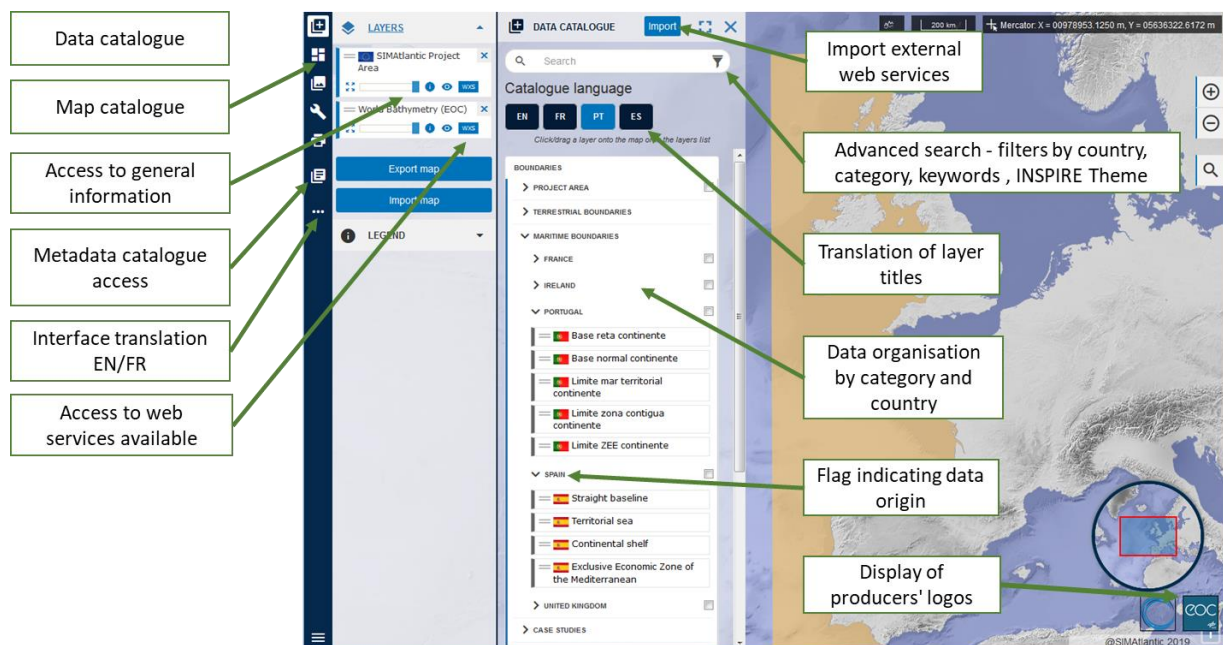


Figure 10: Data portal main recommendation for viewing MSP plans at EU level

## 5 Final observations / perspectives

Maritime Spatial Planning is a new process for most Member States (MS) of the European Union. Indeed, the trigger for this planning was the publication of the MSPD in 2014 requiring Member States to produce their own plan by March 2021. Sharing data, processes and tools cannot be done before having firstly defined such tools. Project participants first had to decide their own ways to implement the different steps (responsibilities, schedule, stakeholders' consultation means...) required by the Directive, meaning they decided and implemented what suited their country best at this time. That being said, efforts were made to share information at international level on the methodologies used parallel to the process itself.

The iterations and review cycle for MSP implementation (at least every 10 years) provides an opportunity to improve the outputs and methodologies from the first iterations, which mainly resulted in an initial organization of various stakeholders concerned and a 6-year strategic vision for the sea basins.

Based on the work carried out by Cerema and Shom, and the results of the workshops carried out during the final conference of the SIMAtlantic project, the main issues foreseen in addressing the challenges related to data use and sharing in the coming years are:

### **Consultation:**

- Combine different consultation approaches (apps, portals, workshops, conferences, etc.) to ensure good representativeness and participation of stakeholders.
- The upscaling of the consultation to a common aggregation of needs is not easy and would need validation method to justify the choices made in summary maps or maps specific to each sector of activity.
- The participatory process is inevitable and necessary but must be the subject of a more procedural method. This is particularly true in relation to feedback from the consultation process.
- It is therefore necessary to have data that are shared and made accessible in open format, with comprehensive representation.

### **Discontinuities:**

- Some of the limits that arose from the discussion with the stakeholders do not have a legal basis or the geographic translation at sea of defined land limits do not exist and require additional time of study/work to be fully operational.
- Discontinuities in the availability of data are not compatible with the management of shared issues at the scale of an ecosystem like the Bay of Biscay. Work to standardise data on socio-economic issues is necessary at the sub-national level (between the two DSF) and at the international level (between France and Spain).

### **Dissemination issues:**

- Data sharing is not easy at cross-border levels due to the lack of common / dedicated / known interlocutors.

- The need to formalise/standardise data, methodologies between the States but also as seen in the report above between different sub-national levels.

For the rest of the maritime spatial planning process, and the update of the first cycle of the DSF, it will be necessary to define a common site for data collection. This project should focus on:

- the main criteria to be included in the maps,
- a common definition of activities, anticipate the sharing of cross-border data, providing access to all MSP plans in a centralised viewer portal.

EU directives (the Maritime Spatial Planning Directive - 2014/89 / EU and the Marine Strategy Framework Directive - 2008/56 / EC) and their transposition by Member States in national spatial planning documents at sea by 2021 have enabled MS to produce significant amounts of geographic data on their marine spaces. The creation and processing of this GIS data is an essential factor in the development of knowledge of the environmental state of marine environments, the impacts of human activities on these environments and the development of management measures for the sea which had previously remained a relatively unexplored area.

As several Member States in the project are completing their first version of the MSP process, the SIMAtlantic project has provided important studies identifying areas of progress for the future updating of these national management documents. These observations show that although the data used suffer from a lack of formalisation for the time being, they already represent tremendous sources of information for managers and stakeholders, in many fields (social, environmental, meteorological, economic sciences, etc.) that were previously non-existent.

Web tools already exist to facilitate a general pooling of data at an EU scale (e.g.: EMODnet). Thus, by applying a greater level of standardisation of the data mobilised in these tools, these would represent adequate means of sharing information but would also be vectors for enabling a common understanding of the major issues affecting the marine areas of the different Member States and particularly cross-border areas.

Future EU projects following the “SIM” projects could propose concrete case studies, on the basis of these initial observations, to support the Member States progress towards common formalization processes promoting coherent management of the diverse issues observed in marine areas.