Data report

Analysis on regional data and geoportal of interest for national MSP

June 2024

regina-msp.eu

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Abstract	The REGINA-MSP project aims to greater integrate regional and sub-regional needs, perspectives and stakeholders into Maritime Spatial Planning (MSP). The development and access to locally-relevant and up to date data is one important way to better engage regional actors in the elaboration and implementation of MSP action. Through its task 3.2 dedicated to data, the REGINA-MSP project engaged European case study regions to address their diverse data needs, tailored to their unique characteristics, through collaborative efforts. Building on the insights from previous European projects as well as workshops and online meetings conducted as part of the REGINA-MSP project with regional representatives, this reports explores the complex data landscape to address regional needs for MSP initiatives. This report also describes the various actions undertaken as part of this task 3.2 and their outcomes, such as the development of a platform for stakeholders to share insights, explore strategies, and identify opportunities for enhancing data accessibility and use in MSP. Presentations and discussions (including an interactive activity on exploring regional conflicts of use) also highlighted initiatives and tools supporting MSP processes, which are further illustrated in this report.

Regions to boost National Maritime Spatial Planning
REGINA-MSP
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SUMMARY

ABBREVIATIONS AND ACRONYMS

AIS: Automatic Identification System

AUTh: Aristotle University of Thessaloniki

AZA: Allocated Zones for Aquaculture

Cerema: Center for Studies and Expertise on Risks, Mobility, and Planning

CETMAR: Technological Center of the Sea

CNR-ISMAR: Italian National Research Center - Marine Science Institute

CoP: Community of Practice

CORILA: Consortium for the coordination of research related to the Venice lagoon system

CPMR: Conference of Peripheral Maritime Regions

DIRMM: Inter-regional Direction of the Mediterranean Sea

EBA-SBE: Ecosystem Based approach – Sustainable Blue Economy

EMODnet: European Commission's European Marine Observation and Data Network

eMSP-NBSR: European Maritime Spatial Planning Network and Blue Spatial Reference

EU: European Union

GEMAPI: Management of aquatic environments and flood prevention

GIS: Geographical Information System

IEO: Spanish Institute of Oceanography

Inspire: Infrastructure of Spatial Information in Europe

IMC: International Maritime Center

MaREI: Marine Renewable Energy Ireland

MPA: Marine Protected Area

MSFD: Marine Strategy Framework Directive

MSP: Maritime Spatial Planning

MSPdF: Maritime Spatial Planning Data Framework

PSSA: Particular Sensitive Sea Area

PUSPS: Panteion University of Social and Political Science

REGINA-MSP: Regions to boost National Maritime Spatial Planning

Shom: French Hydrographic and Oceanographic Service - *Service hydrographique et océanographique de la Marine*

SPAMI: Specially Protected Areas of Mediterranean Importance

TEG on Data for MSP: Technical Expert Group on Data for MSP

UCH: Underwater Cultural Heritage

WFD: Water Framework Directive

WP: Work Package

I. Introduction

REGINA-MSP is a two-year project running from the end of 2022 to the end of 2024. It aims to make it easier for regions, local authorities, and other groups to get involved in Maritime Spatial Planning (MSP). MSP is mostly carried out by national governments but regions have a more local level of governance that enable them to bring together the European, national, and local policies, considering each area's specific needs. Regions can implement MSP plans and make sure they are coherent with other marine and coastal policies, like those set in EU directive 2014/89/EU of the European Parliament and of the Council (4 and 7) establishing a framework for MSP and the European Green Deal of 2019 for a sustainable blue economy. By involving the regions more closely in the planning and implementation of MSP strategies and plans, REGINA-MSP hopes to foster the development of integrated actions to achieve the European Union's environmental and blue economy objectives.

REGINA-MSP adopts a two-level approach, by (i) looking at the big picture across Europe with WP2 and (ii) analysing deeper MSP processes in eight specific regions in five countries across two sea basins: the Atlantic and the Mediterranean Sea (WP3). These case study regions are: Galicia and Murcia in Spain, Sardinia in Italy, Provence-Alps-French-Riviera and Pays-de-la-Loire in France, Crete and Central Macedonia in Greece, and the County of Mayo in Ireland (see *Figure 1*).

The eight case studies highlight significant differences in their governance mode, the role of regions in MSP, and the environmental and socio-economic situations. To better understand the similarities and differences between the case study regions, WP3 uses common approach, divided into four tasks replicated for each use case study:

- Task 3.1 looks at the strategies and plans already in place along the coast and at sea, focusing on those that affect how the maritime space is planned and managed.
- Task 3.2 identifies what data is available and what data is needed for MSP at the regional level.
- Task 3.3 aims to facilitate the involvement of regional and local stakeholders in MSP.
- Task 3.4, based on the outcomes of tasks 3.1, 3.2 and 3.3 (like new opportunities, gaps, challenges, and needs), aims to identify the needs to get more input from the regional and local stakeholders into MSP.

This report marks the completion of task 3.2. In this task, we look into the databases and geoportals available at the regional level (in the studied areas), as well as how regional authorities might use other geoportals from national or international sources.

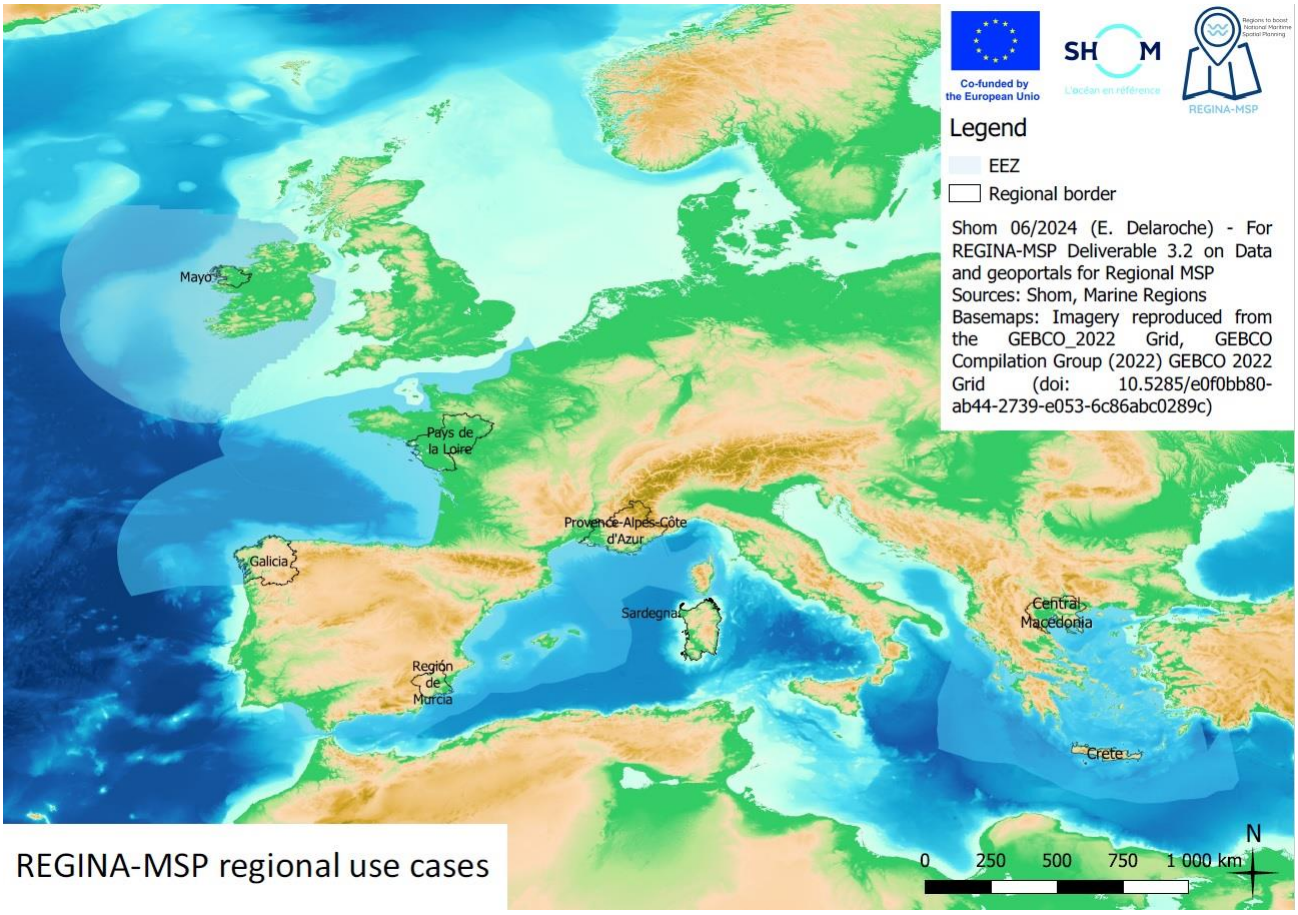

Figure 1: Distribution of REGINA-MSP case studies (Italian EEZ don't appear here as it has not yet been declared)

The objectives of this report are to:

- Create a list of all the different Geographical Information System (GIS) portals and data providers regionally available;
- Assess what data is needed for MSP at the regional level;
- Discuss the results of this assessment across the case studies, looking at data availability, and international work already existing on data, such as the work of the Technical Expert Group (TEG) on Data for MSP and the European Maritime Spatial Planning Network and Blue Spatial Reference's (eMSP-NBSR) project;
- Make a focus on data needed for monitoring and evaluating plans, with a zoom on the roles of regional and local authorities.

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This work was done by supporting exchanges between regional and national data providers and users through workshops and surveys launched at the EU level.

The interest in collecting so-called "regional" data for MSP (Region is identified here as level 2 units in the NUTS classification) and the effectiveness of marine plans responds to several concomitant challenges and objectives.

Firstly, although there is no precise definition of what constitutes regional data in terms of geographical scale[1], it has been identified as an objective ever since the MSP became the modern and holistic sea-use management system (3), in particular to provide reference input data for national plans and/or to aggregate regional plans at national level. The challenge, already well identified by land use planning systems since the 1970s, is to integrate data in theory with a fine spatial and temporal granularity (small-scale unit, long-term time series) into public policy planning, particularly at regional administrative scales (8). This is why data on operative maritime uses and activities should be collected from the local, and regional data providers, as they usually include the most updated and precise information (1).

Secondly, the EU Maritime Spatial Planning Directive 2014/89/EU (4) clearly states in its corpus and more specifically through Article 10 that "Member States shall organise the use of the best available data, and decide how to organise the sharing of information, necessary for maritime spatial plans". This objective of having the best available data naturally concerns the geographic scale. Efforts to make the wealth of marine data and observations currently stored in a myriad of national and regional databases within Europe more easily accessible via a central gateway and a series of thematic data portals are already underway as part of the European Commission's European Marine Observation and Data Network (EMODnet) long-term initiative.

II. Methodology

The methodology of the project was developed based on the requirements from the Grant Agreement of the project and the outputs of meetings where needs and expectations from the cases were made clear (Regional request at the project outset).

a) Regional request at the project outset

At REGINA-MSP project's outset (during the creation of the Grant Agreement of the project), each European case study Region expressed distinct data needs tailored to its specific

[1] Example of institutional data provided by regional administration or Regional Sea Conventions (RSCs) as OSPAR.

characteristics. To address effectively these varied requirements, we collaborated with representatives from each case study of REGINA-MSP to identify their unique dataset needs, basing our research upon the findings of the ongoing European MSP project eMSP-NBSR in which a list of Minimal Data Requirements for MSP (5) was compiled which is the Ecosystem Based approach – Sustainable Blue Economy (EBA-SBE) list of data (the list is available in B. Lequesne 2023a paper).

Furthermore, specific needs spotlighted by the representants of the Regions of REGINA-MSP project at the beginning of the project are outlined in *Table 1*. These specification serves as bases on data needs for each case study Region.

Case study region	Dataset needs
Murcia, Spain  **Coordinates:** 38°00'N 1°50'W **Area:** 11 313 km² (2.2% of national territory) **Coastline:** 73km (45mi) **Population:** 1 511 251 (3% of Spain)	- Minimal data requirements for MSP (based on checklist and clusters of data stated in the TEG on Data for MSP data framework document (1)) in terms of up-to-date and improvement of space-time accuracy for MSP - Maërl habitat distribution - Non-regulated anchorage zones - Data on: • Marine aquaculture • Underwater cultural heritage • Military uses • Other uses (recreational and professional) • Marine protected areas: Natura2000, marine reserves, SPAMI sites • Important habitats (seagrass meadows, coraligenous) • If relevant, sites of importance for protected species (cetaceans, birds, turtles)
Galicia, Spain  **Coordinates:** 42°48'N 7° 54'W **Area:** 29 574 km² (5.4% of national territory) **Coastline:** 1500km (1030 mi) **Population:** 2 691 213 (5,54% of Spain)	- Minimal data requirements for MSP (based on checklist and clusters of data stated in the TEG on Data for MSP data framework document (1)) in terms of up-to-date and improvement of space-time accuracy for MSP - Data on: • Tourism and recreational activities data • Aquaculture data – Current lack of zonal planning • Ports • Other uses (recreational and professional) • Marine protected areas: Natura2000, reserves, SPAMI sites

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Sardinia, Italy

Coordinates: 40°00'N 09°00'E
Area: 24 090 km² (8% of national territory)
Coastline: 1 849 km (1 149 mi)
Population: 1 628 384 (2,77% of Italy)

- Minimal data requirements for MSP (based on checklist and clusters of data stated in the TEG on Data for MSP data framework document (1)) in terms of up-to-date and improvement of space-time accuracy for MSP
- Any data used in sectoral plans
- Local applicability of existing datasets
- Tourism and recreational activities – impacts
- International data available in the Strait of Bonifacio (with Corsica) for MPA
- Data on:
  - Transport
  - Maritime trade – ports, traffic
  - Fisheries
  - Aquaculture
  - Safety and security at sea hotspots
  - Military uses
  - Marine protected areas (including Marine Mammal Sanctuary)
  - Cultural heritage sites

Pays de la Loire, France

Coordinates: 47°25'N 00°51'W
Area: 32 082 km² (5.7% of national territory)
Coastline: 450 km (279 mi)
Population: 3 853 999 (5,64% of France)

- Minimal data requirements for MSP (based on checklist and clusters of data stated in the TEG on Data for MSP data framework document (1)) in terms of up-to-date and improvement of space-time accuracy for MSP
- How to access the data collected at regional level?
- Gaps, discrepancies
- Data on:
  - Commercial ports, navigation, commercial traffic
  - Fishing (Small Scale Fishery data)
  - Aquaculture – Shellfish farming
  - Salt farming
  - Marine energy – Offshore windmill farming
  - Marine Protected Areas
  - Water quality

Provence-Alps-French-Riviera, France

Coordinates: 44°N 06°E

- Minimal data requirements for MSP (based on checklist and clusters of data stated in the TEG on Data for MSP data framework document (1)) in terms of up-to-date and improvement of space-time accuracy for MSP
- How to access the data collected at regional level?
- Data on:
  - Military activities
  - Trade ports, Shipbuilding areas
  - Maritime transport
  - Habitats (Littophylum, Posidonia, coraligenous)
  - MPAs

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Area: 31 400 km² (4.67% of national territory)
Coastline: 700 km (435 mi)
Population: 5 127 840 (7,5% of France)

- Marine energies
- Aquaculture

Crete, Greece

Coordinates: 35°12'N 25°00'E
Area: 8 336 km² (6.32% of national territory)
Coastline: 1 046 km (650 mi)
Population: 621 340 (5,93% of Greece)

- Minimal data requirements for MSP (based on checklist and clusters of data stated in the TEG on Data for MSP data framework document (1)) in terms of up-to-date and improvement of space-time accuracy for MSP
- Data on:
  - Zones of intense maritime transport
  - Ports and anchorage
  - Pipelines and cables
  - Fisheries
  - Aquaculture
  - Oil and gas extraction zones
  - Underwater cultural heritage and archaeological sites
  - Marine protected areas (Natural heritage)
  - Bathing beaches and zones of recreational activities
  - Military uses
  - Areas planned/considered for marine energies

Central Macedonia North Aegean Sea, Greece

Coordinates: 35°12'N 25°00'E
Area: 18 810 km² (6.32% of national territory)
Coastline: 1 046 km (650 mi)
Population: 621 340 (5,93% of Greece)

- Minimal data requirements for MSP (based on checklist and clusters of data stated in the TEG on Data for MSP data framework document (1)) in terms of up-to-date and improvement of space-time accuracy for MSP
- Identification of sub-regions in need of detailed and regulatory planning
- Conflicts between different uses, or between uses and environment
- Data on:
  - Transportation
  - Tourism: developments in marine tourism, existing activities in seaside
  - Fisheries
  - Aquaculture
  - Underwater cables
  - Marine protected areas and marine protected cultural heritage sites
  - Posidonia Oceanica habitats where mapped

County Mayo, Republic of Ireland

- Minimal data requirements for MSP (based on checklist and clusters of data stated in the TEG on Data for MSP data framework document (1)) in terms of up-to-date and improvement of space-time accuracy for MSP
- Data, tools for MSP as well as gaps.
- Data on:

Coordinates: 53° 54'N 9° 15'W
Area: 5 586 km² (7.95% of national territory)
Coastline: 1 168 km (726 mi)
Population: 137 231 (2,74% of Ireland)

- Potential in renewable energy
- Hydrocarbon deposits
- Maritime traffic
- Fishing vessels under 12 meters
- Aquaculture
- Fish farms
- Data cables
- Marine protected areas

Table 1: Expected datasets by Region

During workshops and online meetings organized for the task 3.2, we engaged with these regional representatives to understand the availability and accessibility of data within their areas. This process allowed us to gather insights into the diverse geoportals and data providers operating in each region, enabling a more comprehensive understanding of the data landscape and facilitating the fulfillment of regional data needs for MSP initiatives.

The main dataset needs specified in the *Table 1* are being answered in this report based on the work carried out as part of the task 3.2 (see *Figure 2*), described below:

- 3 online meetings on data organized by Shom
- 1 newsletter sent after each meeting
- 3 surveys sent on data and geoportal (first one presented in details in part III.b) of this report, the two others served to filled the part IV. c) on regional data access and VI on geoportal sharing MSP data for the use cases regions of the project)
- 1 face-to-face meeting with regional representants and partners in the project (see Minute of Meetings in *Annex 1* and participant list in *Annex 2*)
- A survey based on the geoportal self-assessment criteria developed by Shom
- A geoportal listing presented in this report
- A data base developed and filled for the project with the help of use case Region representants in the project. This data base is named Orca and it is Shom internal database for MSP.

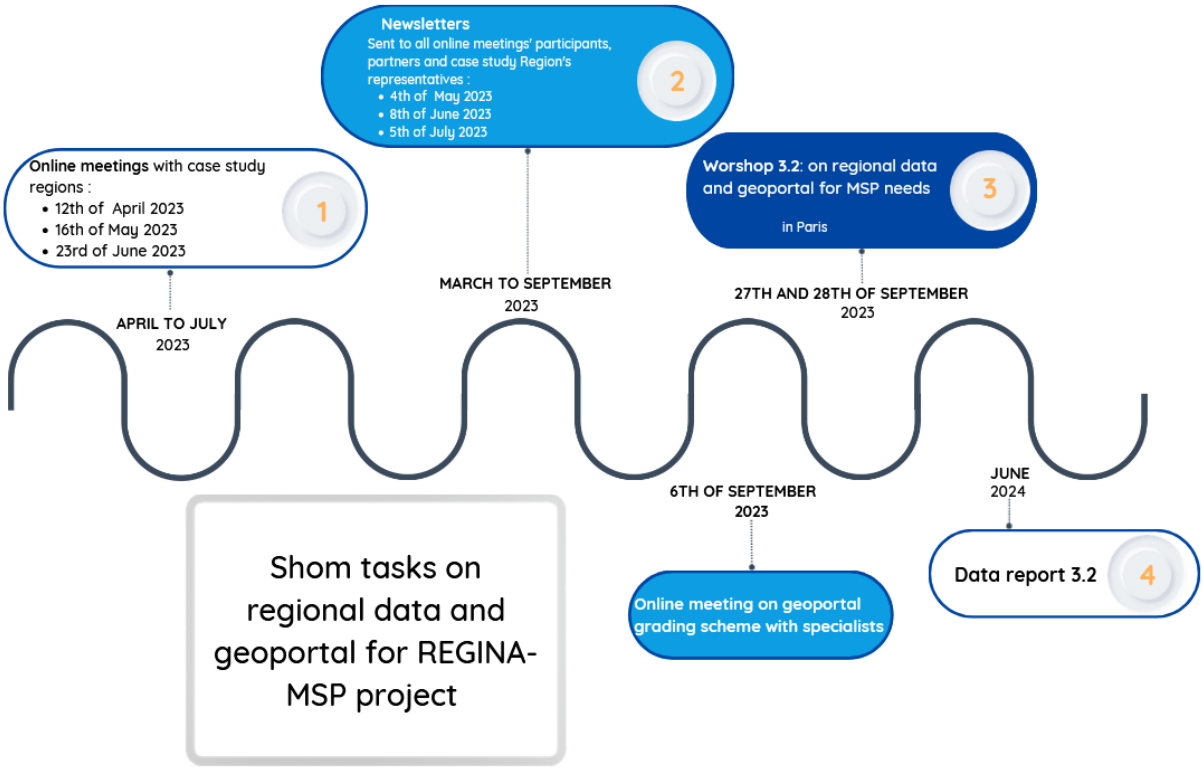


Figure 2: task 3.2 on data and geoportals actions timeline

The methodology applied to create these various tasks are presented in the following sections of this report.

b) Workshops

In this part we incorporate insights from both 3 online meetings on regional data and geoportal for national MSP organized by Shom during REGINA-MSP project timeline, as well as results from task 3.2 workshop held in Paris at the French Secretariat of the Sea (the official representant of France for the maritime domain which formulates and implements government policies regarding maritime affairs, encompassing environmental, economic, and geopolitical dimensions at both national and international levels). We will utilize the results obtained from Slido discussions (see *Figure 3*) done during these online meetings between regional and national data providers and users to inform our analysis and recommendations. By integrating the feedback and perspectives shared during these events we aim to ensure a comprehensive understanding of the current state and potential improvements in regional data usage for national MSP efforts. This collaborative approach underscores the importance of engaging

stakeholders and incorporating diverse viewpoints to optimize the effectiveness and relevance of our findings.

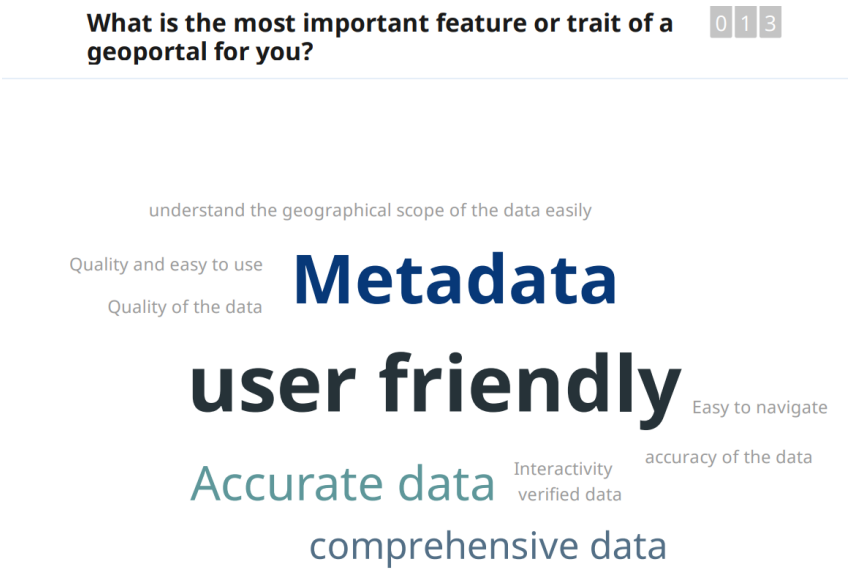


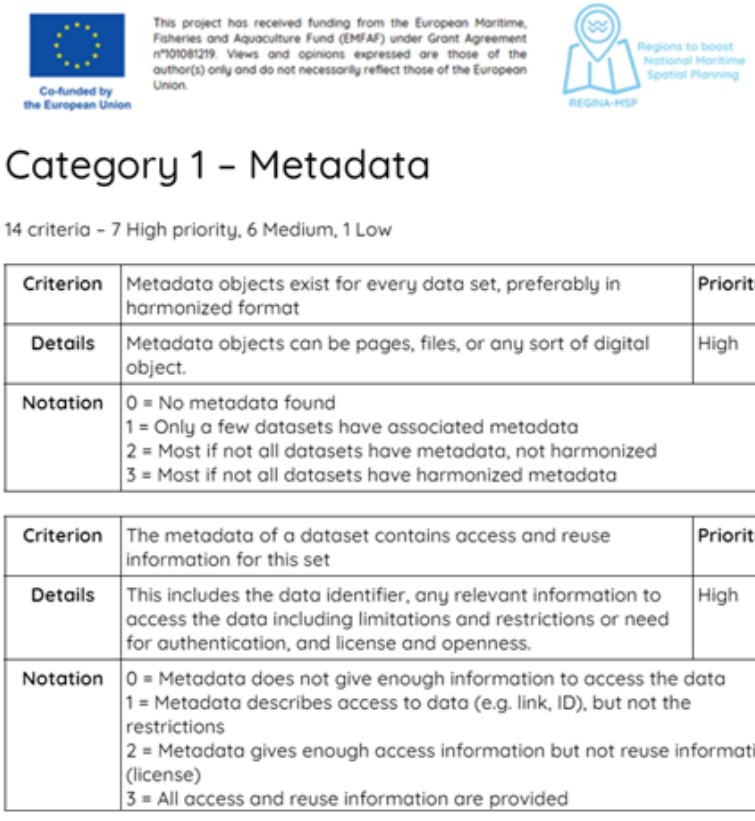
Figure 3: Results from Slido interaction during the regional data and geoportal for national MSP workshops

c) Surveys

For the Task 3.2 of REGINA-MSP project, Shom conducted three surveys aimed at collecting crucial information from use case regions, while the Conference of Peripheral Maritime Regions (CPMR) administered a comprehensive survey as part of Work Package 2. These surveys served as vital tools for gathering insights on data and geoportal-related aspects. The first survey focused on data, aligning with the TEG on Data for MSP framework directives (1). The second survey introduced a geoportal grading scheme, designed to evaluate the harmonization and effectiveness of data sharing practices across different regional and national geoportals Lastly, the third survey presented a template outlining the required data categories for MSP, derived from the eMSP-NBSR EBA-SBE (Ecosystem Based Approach – Sustainable Blue Economy) data list established by the project Community of Practice (CoP) on data (5) of this European project. Each case study representative within the project was tasked with completing this template. The findings from these surveys, along with the outcomes of our recent meetings, will serve as the foundation for the forthcoming sections of our report, facilitating a comprehensive analysis and informing strategic decisions moving forward.

d) Geoportal Assessment criteria and survey

After developing a list of Geoportal Assessment Criteria (see *Annex 4*) in cooperation with multiple project partners, Shom presented this list of criteria (see *Figure 4*) to the project partners during the Workshop on data and geoportal for task 3.2 for REGINA-MSP in Paris. It was then decided to organize a Geoportal Self-Assessment Survey (see *Annex 5*), during which project partners would use the Geoportal Assessment Criteria to self-assess the geoportals available in their own region, including those managed by their own institution. The self-assessment was open to European, national, regional geoportals, as well as geoportals covering an entire sea basin.



This project has received funding from the European Maritime, Fisheries and Aquaculture Fund (EMFAF) under Grant Agreement n°101081219. Views and opinions expressed are those of the author(s) only and do not necessarily reflect those of the European Union.

Category 1 – Metadata

14 criteria – 7 High priority, 6 Medium, 1 Low

Criterion	Metadata objects exist for every data set, preferably in harmonized format	**Priority**
Details	Metadata objects can be pages, files, or any sort of digital object.	High
Notation	0 = No metadata found 1 = Only a few datasets have associated metadata 2 = Most if not all datasets have metadata, not harmonized 3 = Most if not all datasets have harmonized metadata	

Criterion	The metadata of a dataset contains access and reuse information for this set	**Priority**
Details	This includes the data identifier, any relevant information to access the data including limitations and restrictions or need for authentication, and license and openness.	High
Notation	0 = Metadata does not give enough information to access the data 1 = Metadata describes access to data (e.g. link, ID), but not the restrictions 2 = Metadata gives enough access information but not reuse information (license) 3 = All access and reuse information are provided	

Figure 4: Geoportal Self-Assessment survey

A complete list of Geoportal Assessment Criteria was created comprising the 36 criteria developed by Shom (all criteria are presented in *Annex 4* of this report, to visualize the criteria please refer to this Annex). In the survey sent a few additional questions regarding the assessed geoportal and the background of the respondent was provided to the project partners, who were invited to: (i) assess the geoportals of their choice or (ii) transfer the survey to anyone they

thought could answer. This survey was launched on October 11th 2023. An initial deadline was provided around the end of October, but was then extended until the 13th of November in order to meet the requirement of gathering at least one reply from each country.

A total of 13 responses were received from every country involved in the project: France, Italy, Ireland, Spain, and Greece. One respondent participated more than one time (i.e. assessed several geoportals successively).
Participants were requested to estimate their level of knowledge of MSP in their country on a scale from 1 to 5. Most of the participants indicated a level of knowledge of MSP in their country of 4/5 or 5/5, with only one response at 3/5 (*Figure 5*). While "level of knowledge of MSP" was not explicitly defined in the survey, it was understood as a general knowledge of the MSP process and the legal framework in the respondent's country, its stakes and its challenges.

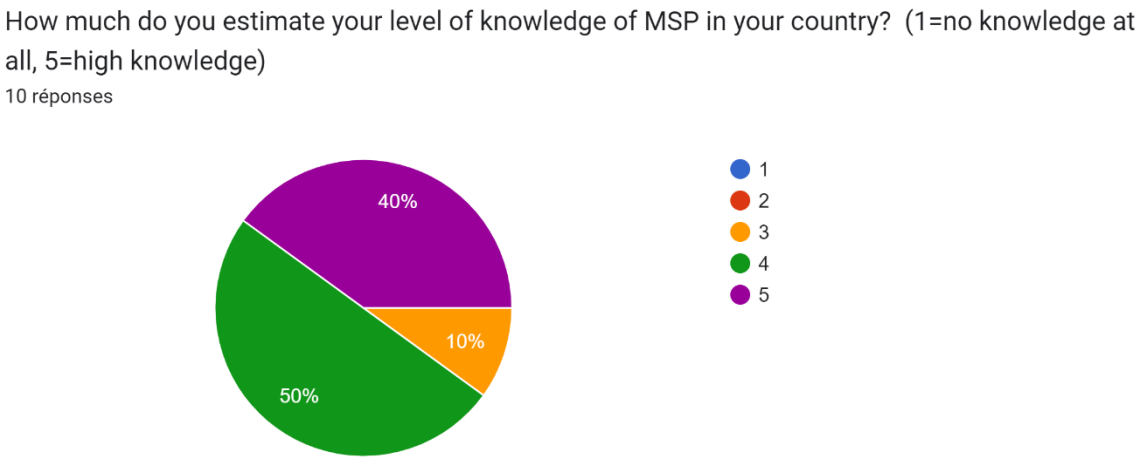


Figure 5: Self-estimation of knowledge on MSP in the participants' countries

Simple information on the respondents' activity and role in MSP was requested (respondents could indicate more than one activity). Among the respondents, 5 different respondents described themselves as Researchers, and 3 as GIS managers/geomatics officers or data managers (one of which was also a researcher). These activities were the most represented

(*figure* *6*).

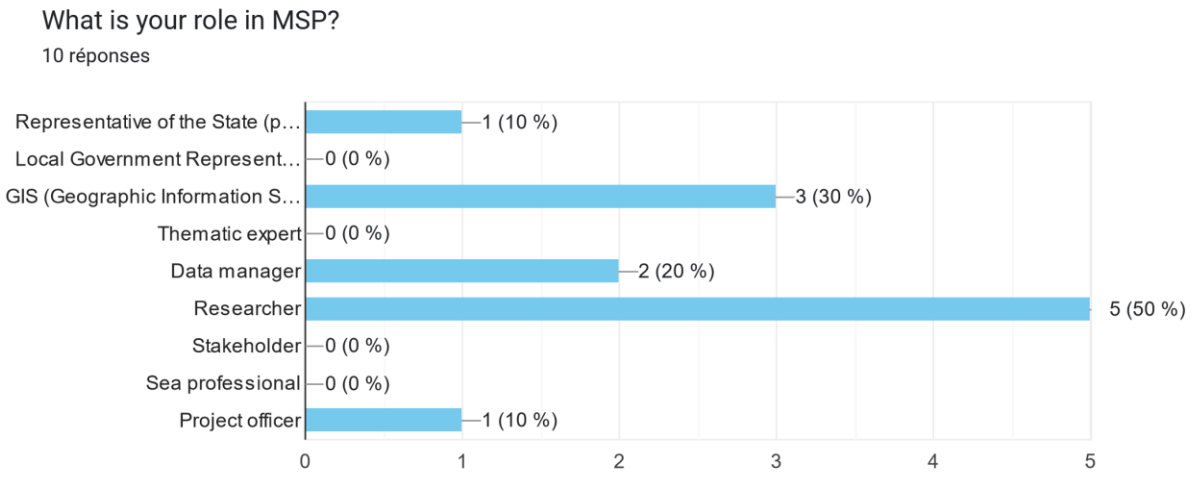


Figure 6: Participants' professional activities and role in the MSP process
Possible answers: Representative of the State (public services included); Local Government Representative; GIS (Geographic Information System) manager/geomatics officer; Thematic expert; Data manager; Researcher; Stakeholder; Sea professional; Other (incl. 1 answer as "Project officer").

III. Results

a) Results of the online meetings and workshop on data and geoportal

REGINA-MSP partners recognizing the importance of collaboration and knowledge exchange, initiated a series of three online meetings (see *Figure 7*) focused on data and geoportals for regional MSP discussions. These meetings provided valuable platforms for stakeholders to come together, share insights, and explore strategies to enhance data accessibility and usage in MSP efforts. Additionally, to further foster collaboration and facilitate meaningful exchanges, Shom organized a workshop in Paris. This workshop provided a conducive environment for fruitful interactions between regional and national data providers and users. Through these engagements, stakeholders were able to discuss challenges, share best practices, and identify opportunities to improve data accessibility and utilization in the context of regional MSP initiatives.

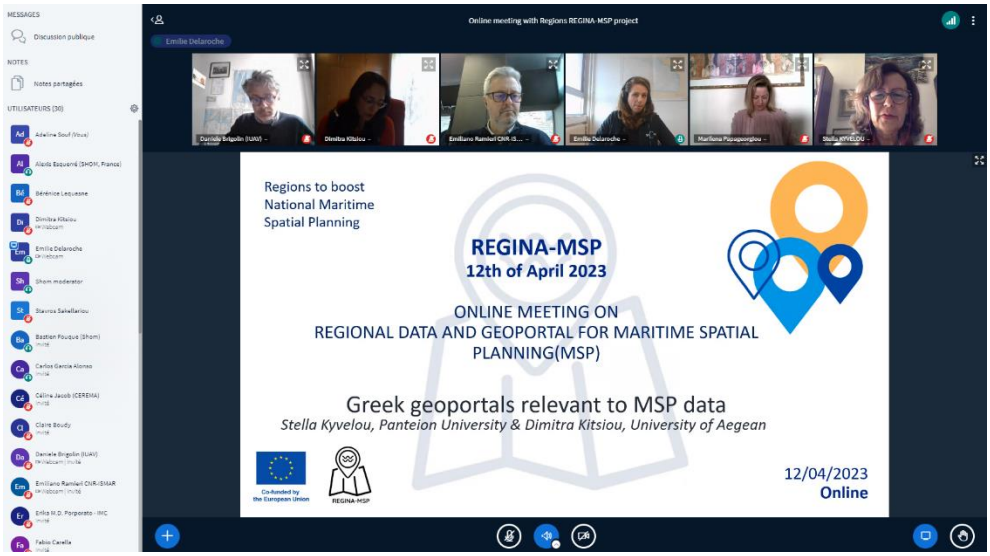


Figure 7: Online meetings on data and geoportal for regional MSP discussion

The list of the representatives of institutions who participated to the online meetings and workshops is given in this section (see *Table 2*). In total, 74 persons participated to at least one of the online meetings on Data and geoportal.

At least one Region per country of the REGINA-MSP project was represented at these online meetings (see *Figure 8*). In addition, 5 representants of the Conference of Peripheral Maritime Regions (CPMR) participated.

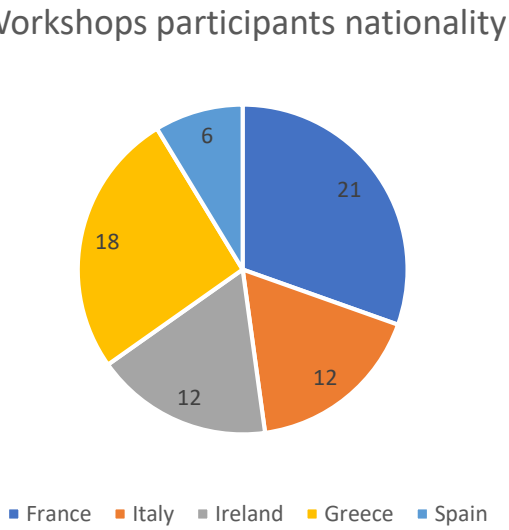


Figure 8: Data and geoportal online meetings participants nationality

Figure 9 represents the general type of institutions who participated in the online meetings on Data and geoportals.

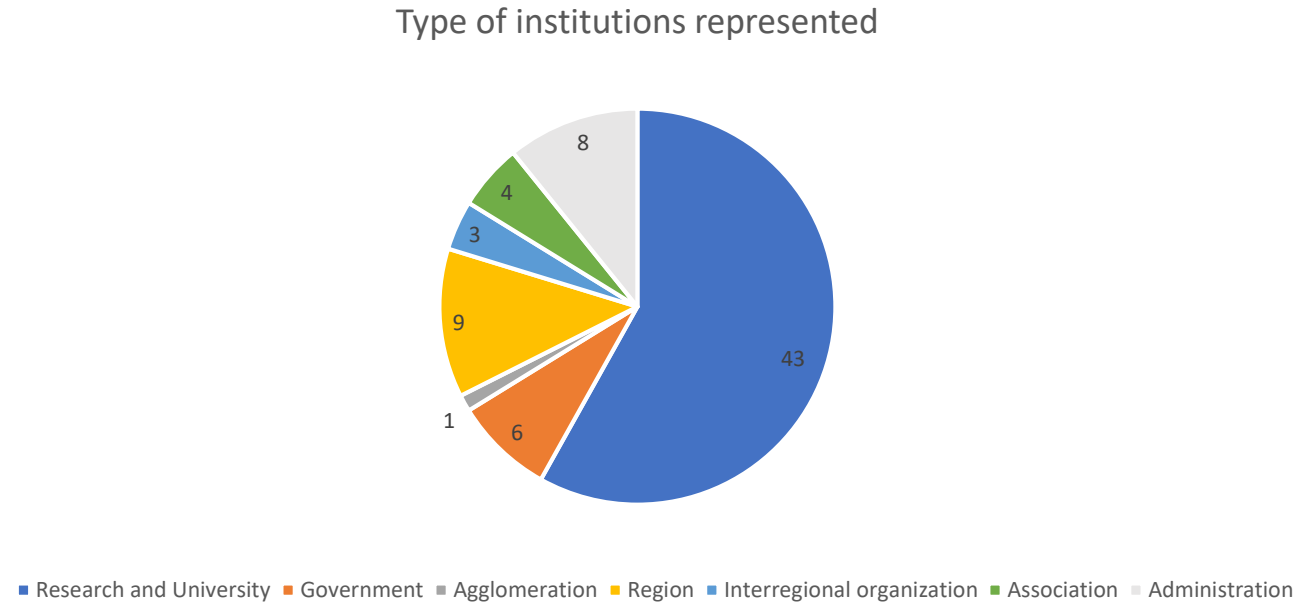


Figure 9: Type of institutions represented during Data and geoportal online meetings

Table 1 presents the details of the institutions which participated to these meetings per Region:

Pays de la Loire	• Maritime chair of Nantes University • Pays de la Loire Region (Management of numerical transformation)
Provence-Alps French-Riviera	• Interregional direction of the Mediterranean Sea • Provence Alps French-Riviera Region • Esterel French Riviera Agglomeration • Water Agency Rhone, Mediterranean Sea and Corsica
France (national scale)	• *Shom* • *Cerema*
County of Mayo	• MaREI, University College Cork • Marine Institute • Mayo county council • Department of Housing, Local Government and Heritage
Central Macedonia	• Aristotle University of Thessaloniki • Central Macedonia Region

Greece (national scale)	• *Panteion University* • *University of the Aegean, Department of Marine Sciences*
The Region of Murcia	• Servicio de Pesca y Acuicultura de la Comunidad Autonoma de la Region de Murcia
Spain (national scale)	• *Spanish Institute of Oceanography (IEO)*
Italy (national scale)	• *University IUAV di Venizia* • *CNR-ISMAR* • *Fondazione IMC Centro Marino Internazionale* • *CORILA*

Table 2: Institutions represented during the online meeting on Data and geoportal

A list of the exact position of each participant of at least one online meeting on Data and geoportal is given in *Annex 3*. An overview of their profile is given in *Figure 10.*

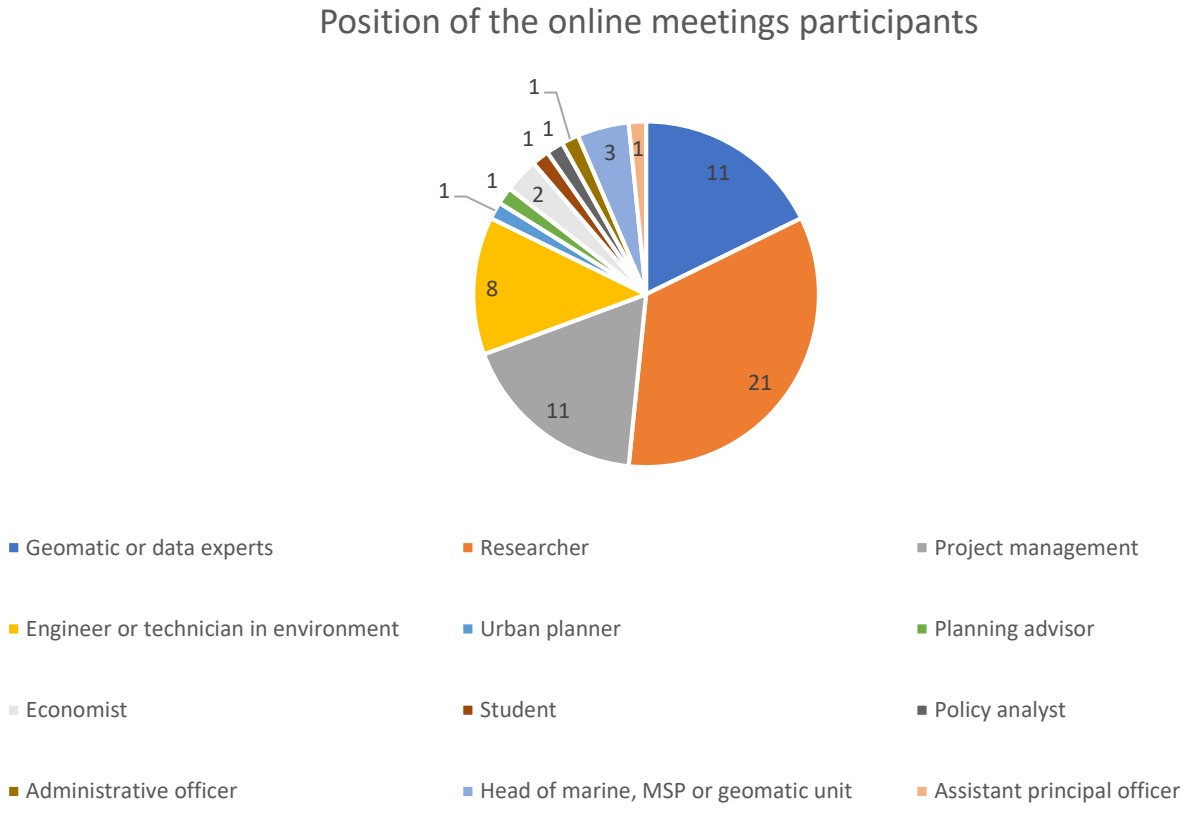


Figure 10: Position of the participants of the online meeting on Data and geoportal

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The profiles of participants in online meetings and workshops are diverse, ranging from users of regional and national geographic information systems to experts in geomatics and those who provide data for geographic information system.

The presentations across the three online meetings and the Paris workshop for task 3.2 provided a comprehensive overview of various initiatives and tools aimed at supporting MSP processes in different regions.

In the first online meeting focusing on Greece, presentations from Central Macedonia and Crete regions representants highlighted efforts to adapt national geodata to regional MSP needs, showcasing the national geoportal of the country geodata.gov and giving an overview of MSP regional projects such as THAL-CHOR 2 geoportal and ongoing HER SEA project.

The second online meeting featured insights from Sardinia Region (Italy), emphasizing data and tools required for the spatial planning of aquaculture. This effort is framed within the ongoing activities for the implementation of Allocated Zones for Aquaculture (AZA) concept in the Region, and closely connected with the national MSP process. In particular, researchers from the IMC (International Marine Centre) of Oristano, brought their experience concerning the use of data within the process of development of the AZA plan for the Region. The workshop also hosted a presentation of the Tools4MSP platform developed by CNR ISMAR; this is made of a geoportal and analytical tools aiming to support the MSP process.

The third online meeting, focused on France, included discussions on MonLittoral platform giving access to maritime information on the South Region and presentation on the implementation of INSPIRE directives and FAIR principles, underscoring the importance of data sharing and harmonization for effective MSP (10). The Inter-regional Direction of the Mediterranean Sea (DIRMM) presented an overview of what is provided on the elaboration of the sea basin strategy in France and more specifically for the Mediterranean Sea basin strategy emphasizing the French MSP process. With administrative introduction, detailing various aspects such as activities density, environmental hotspots, protected landscapes, risk areas, knowledge, research, training, and local planning, viewed through multiple lenses. It also covered ecological sectors, water masses, marine protected areas, local governance structures, socio-economic factors, as well as transversal elements crucial for effective MSP. The strategic objectives, requirements, recommendations, developments, risks, and environmental constraints were also discussed comprehensively. Additionally, the national tool, Geolittoral, a visualization tool of French maritime planification from Cerema, was presented, highlighting its significance in facilitating MSP initiatives with re-using reference data from official public structures in France (like the one from data.shom.fr) and ensuring efficient coastal management.

Finally, Paris workshop in face-to-face brought together perspectives from Ireland, Spain (case study of the Galician coast, and the Region of Murcia), highlighting initiatives like the national Irish geoportal Marineplan.ie for MSP geoportal, SIGREMAR in Galicia, and INFOMAR geoportal for the Spanish MSP process. All aimed at providing comprehensive marine data and tools to

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support MSP processes and address conflicts of use effectively. These presentations collectively underscored the diverse approaches and collaborative efforts underway to advance MSP across different regions.

The workshop concluded with an engaging activity centered on exploring the conflict of uses within each studied region of the REGINA-MSP project. The outcome of this activity is presented in the *Figures 11* to *16*. These figures featured a double-entry table detailing various marine activities along the coast and at sea. Through this comprehensive visualization, attendees gave valuable insights into the complexities and overlaps of different activities, providing a deeper understanding of the challenges and opportunities associated with MSP.

The main aspect of this activity showed that in general European case study regions needs new methods to get knowledge on specific aspects, like information on where boats anchor in non-regulated areas and it impact on the environment (on coral, maërl habitat and *Posidonia oceanica*) or on Underwater Cultural Heritage (UCH). There is also a need for artisanal fishing and recreational boating localization spatial data knowledge, especially for boats under 12 meters length (for example in metropolitan France small scale artisanal fishing fleet with boat length <12m represent 79% of the fleet). Respondent of the survey also pointing out the need for mapping birds and megafauna migration corridors as well as birds flight altitude for windfarm installation management.

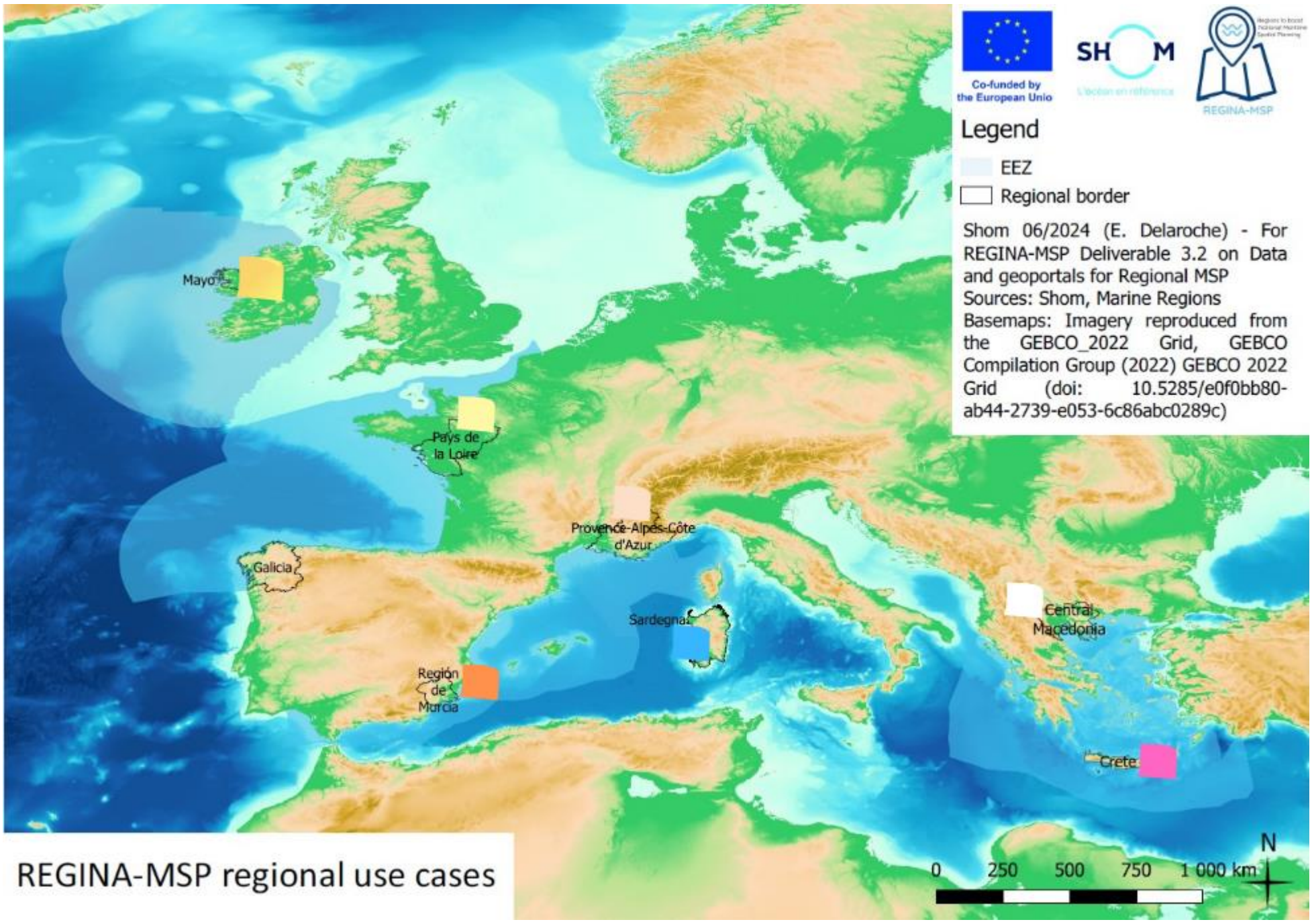

Figure 11: Map of the first group working on conflict of uses activity – one post-it colour correspond to a Region

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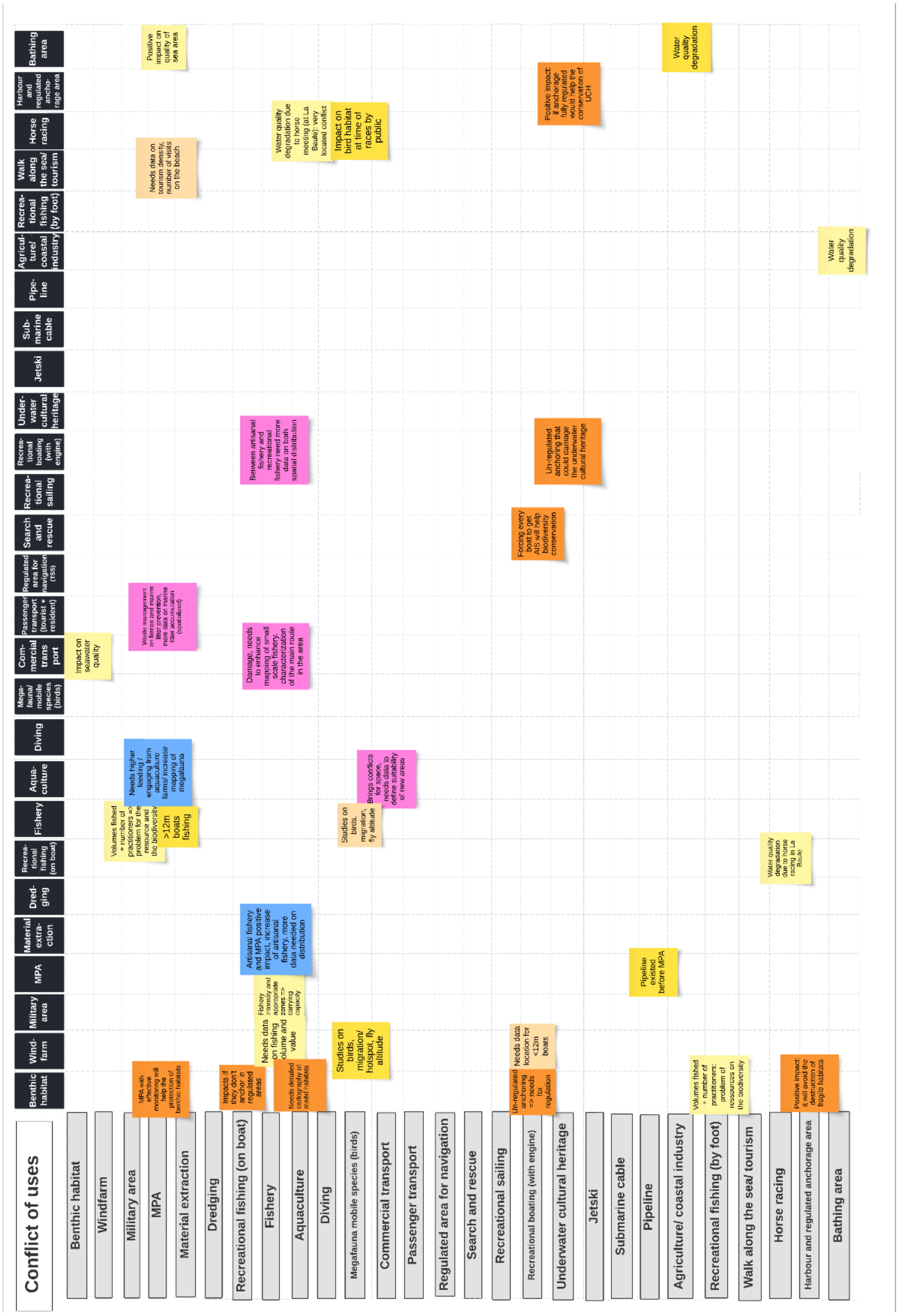

Figure 12: Double entry table of the first group working on conflict of uses activity

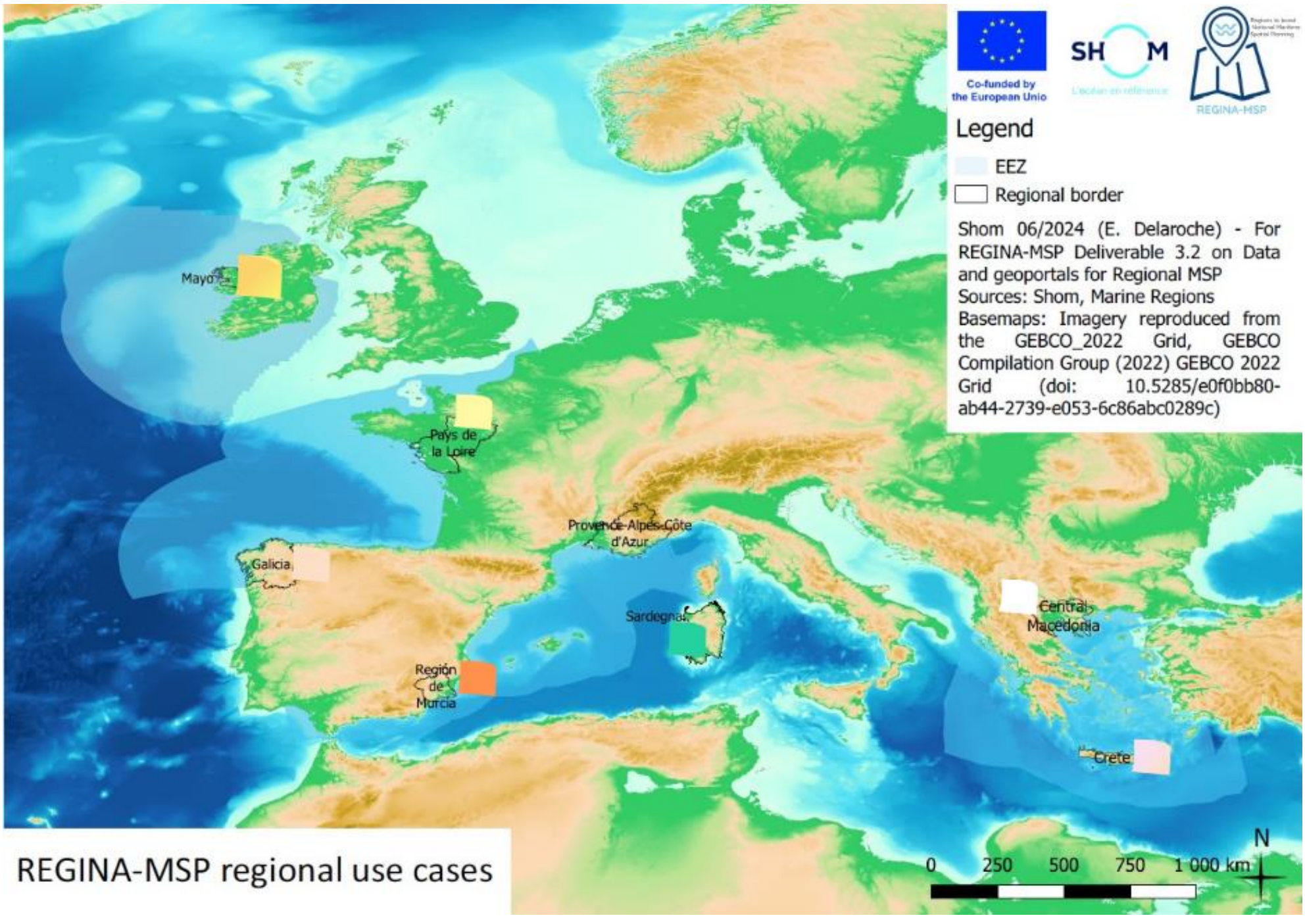

Figure 13: Map of the second group working on conflict of uses activity – one post-it colour correspond to a Region

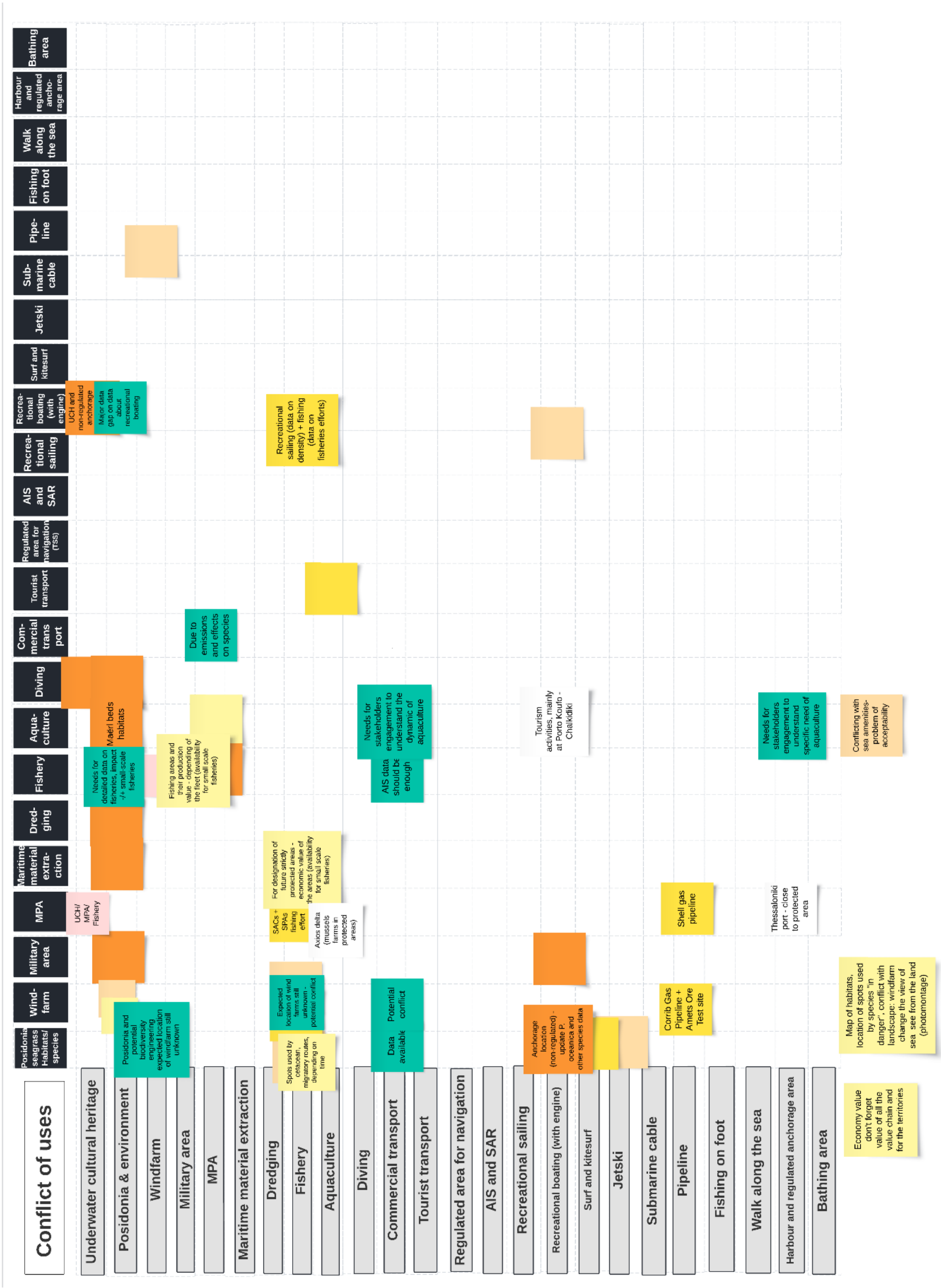

Figure 14: Double entry table of the second group working on conflict of uses activity

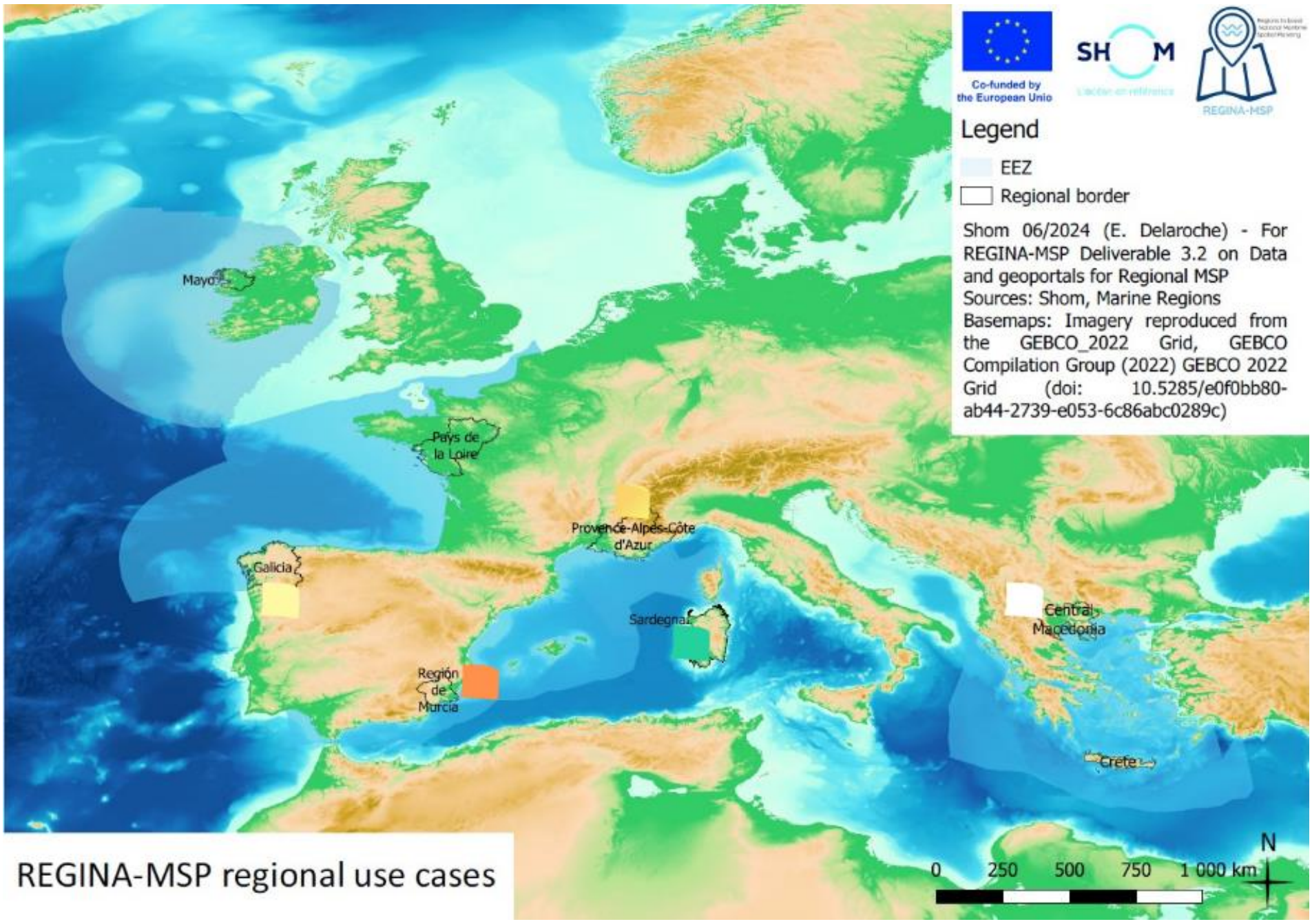

Figure 15: Map of the third group working on conflict of uses activity – one post-it colour correspond to a Region

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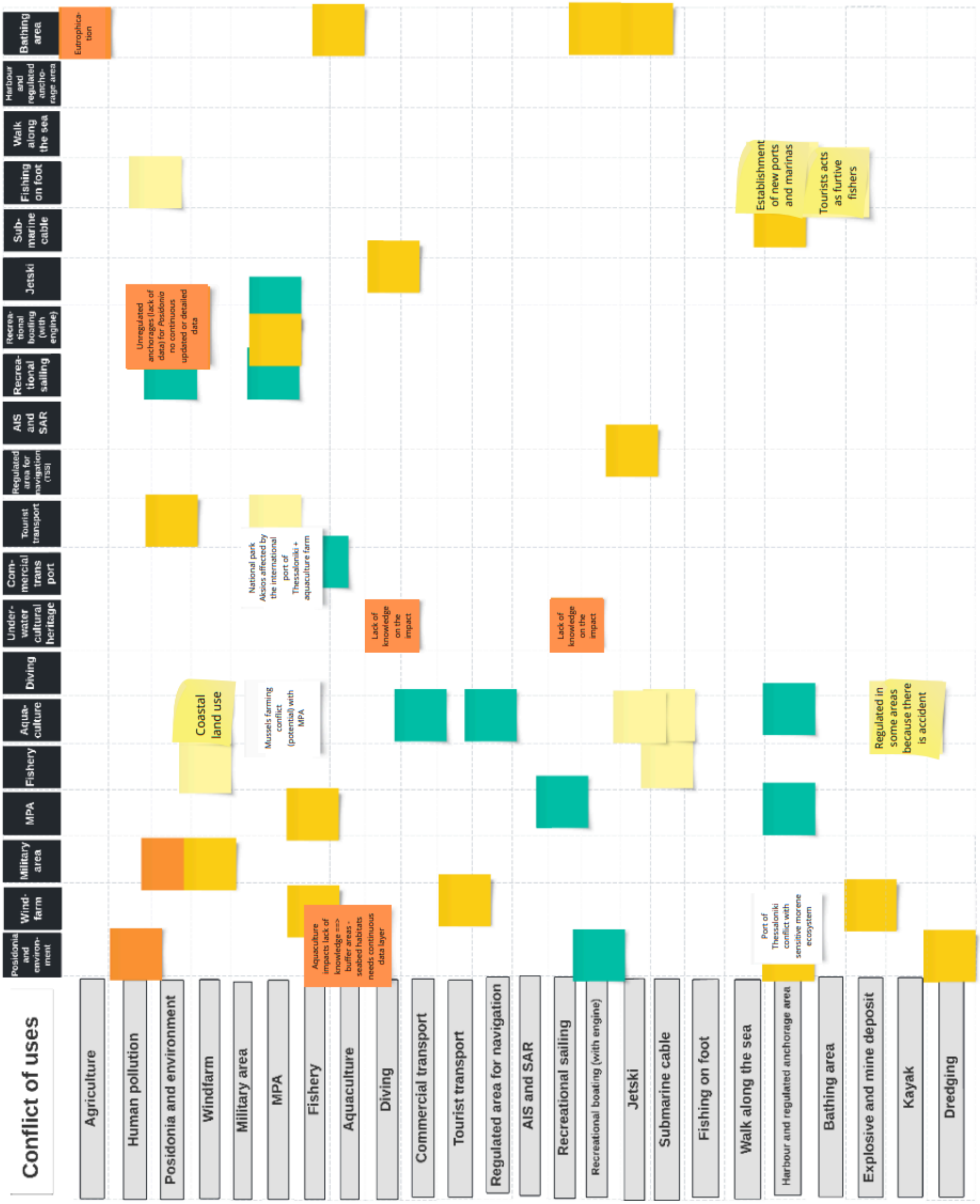

Figure 16: Double entry table of the third group working on conflict of uses activity

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During the workshop on data a second activity was proposed on data accessibility leverage of regional data collection for MSP, brake and obstacles to collect these data and the actions that can be undertaken to fill the gaps in the data for an efficient MSP.

All case studies representative added information on these three points. *Table 3* presents a summary of these results on data collection:

Leverage	Brake/obstacles	Actions
Support education (training) programs for new operators of the sector	Communication, channels between central administration and regions or even between departments in the same organizations and sectors	MSP data working groups at the regional level and across regions
Represent existing aquaculture facilities and potential areas for aquaculture mapped	Access to survey vessels (limited availability)	Improve / have regulation for boats <12m (fisheries, leisure, ⋯)
Help local governance and historical activities	Lack of formal recognition of research data (data validation)	Think about socio economic data in addition to environmental data ➔ needs yearly monitoring system
Research/ budget to collect data	Lack of data on socio-economy at the sector level and sub-regional scale, on the impacts of MSP (spatial data), on the benthic habitats, on small-scale fisheries and on recreational boating/activity	Monitor water quality and pollution frequently to have a compliance with the Water Framework Directive (WFD) and finer understanding with more samplings
EU regulation on statistic at different levels	Lack of spatialization in MSFD	Exploit remote data
Sharing data on EU-wide data sharing platforms (e.g. Copernicus, EMODnet, WISE marine, EUROSTAT)	Data actualization/availability (e.g. mooring, fishing data)	Campaigns to map seabed habitats and develop a methodology to map unregulated anchorages
On-going harmonization effort in EU	Willingness of artisanal fishing operators to share spatial knowledge about their activity	Need regulations via local, regional, national and European governance (at all levels) to protect the environment and need climate concrete actions
Existing good mechanisms on data flow/ transfer between national/regional administrator	Data available (e.g. seabed habitats layer) are sometimes not continuous ➔ difficulty on analyzing and monitoring the impact of aquaculture on sea bed habitats and the impact of vessels anchorage on sea bed (e.g. Posidonia) and UCH	Use of satellite and Automatic Identification System (AIS) data
Data collection help implementation of the Marine Strategy Framework Directive (MSFD)	"Big brother" sensitivity for fishermen (recalcitrant to give access to fishing position)	Improve coordination mechanisms on data collection between the national and regional levels
	Reluctance of sharing data	Revise the MSFD data collection to provide data for MSP
	Some regions don't have geoportal to share marine data	Develop regional geoportal fully accessible
	Lack of human resources and funding	Engage stakeholder to obtain proper data/information and share it

		Enhance help from citizen with biodiversity observation

Table 3: results of the activity on the leverage, brake/obstacles and actions to undertake to collect data for MSP

At the conclusion of each online meeting, we initiated a Slido interactive survey (see *Figure 17* to *Figure 21*) to gather insights and feedback from participants. The results of these surveys are presented below, offering a comprehensive overview of the discussions and perspectives shared during the sessions. Through the Slido platform, attendees were able to provide real-time responses to questions and prompts, enabling us to gauge the effectiveness of presentations, the relevance of topics discussed, and the overall satisfaction of participants with the meeting format and content. With these results, we gained valuable insights into the interests, concerns, and priorities of our audience, allowing us to tailor future meetings and workshops to better meet their needs and expectations. The utilization of Slido facilitated active engagement and collaboration among attendees, fostering a dynamic and interactive environment conducive to meaningful exchanges and collective learning.

Results of Slido questions are:

- on the question of *what is MSP for you in one word* mainly respondent stated tradeoff, planification, tool and coordination.
- on the question of *what is most important aspect of MSP in your Region*, respondent stated in first answer tourism, aquaculture and fisheries, followed by ecosystem protection and conflict of uses.
- on the question of *what type of data would you need regionally (linked to MSP)* participants answered socioeconomics data as first answer and after that small-scale fishery data.
- on the question of *what are the possible conflicts in their Region*, respondents answer conflict between transport and aquaculture at first and in second conflict between fisheries and high protection MPA, between tourism and aquaculture and between offshore wind and fisheries.

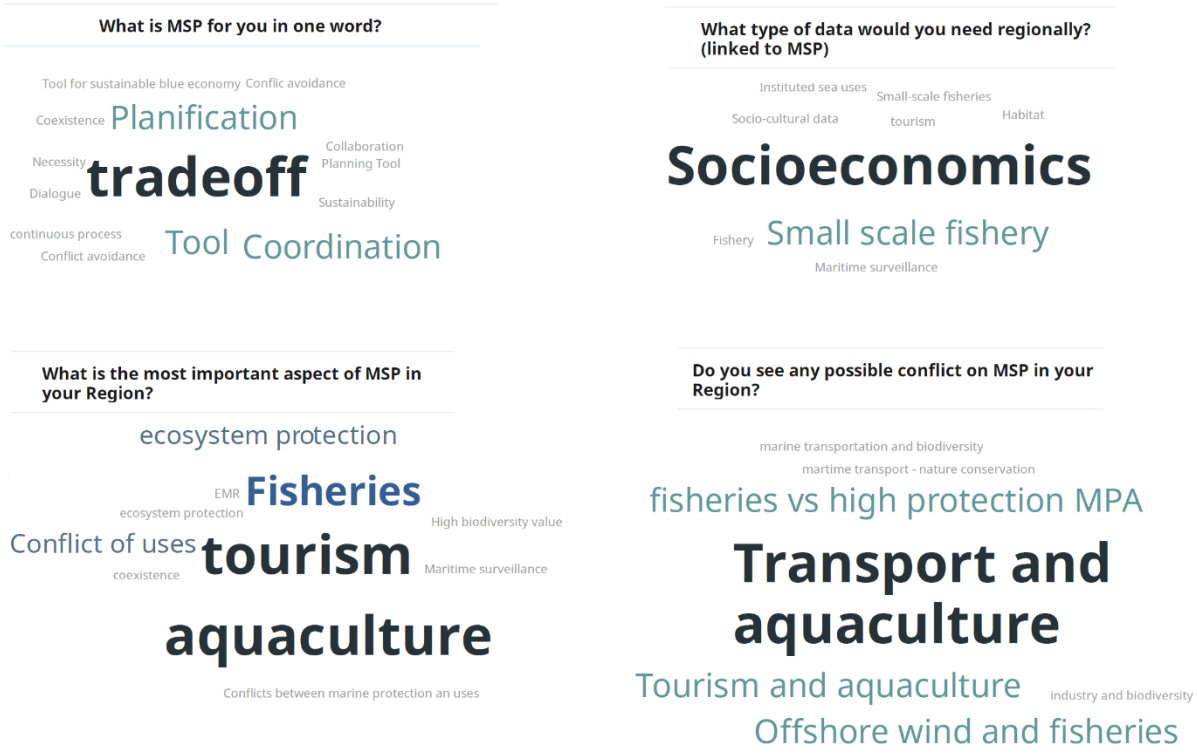

Figure 17: Slido questions/answers

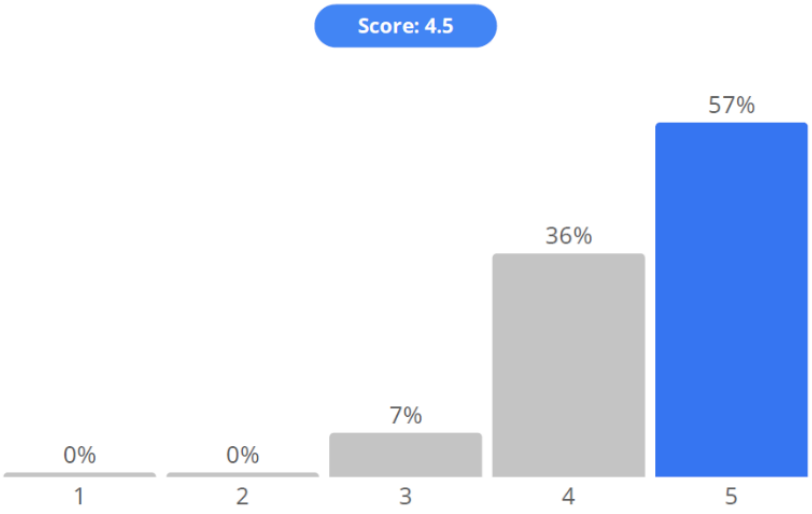

Figure 18: Question: How important or useful a regional geoportal is for your work? (from 1 not important, to 5 really important)

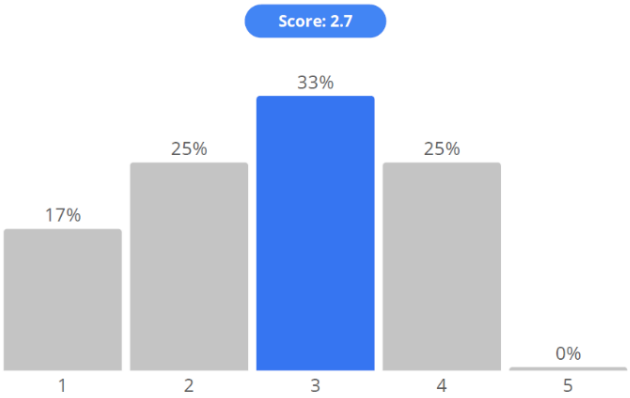

Figure 19: Question: Does the exchanges between your Region and people in charge of National MSP are sufficient?

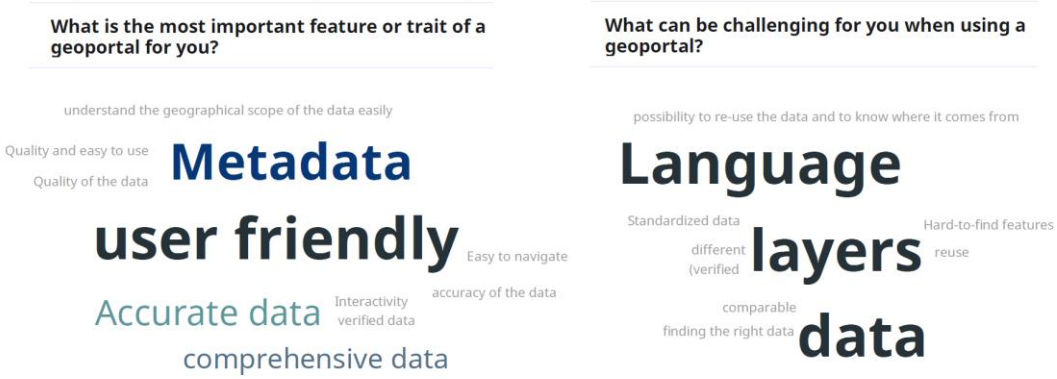

Figure 16: Slido questions/answers

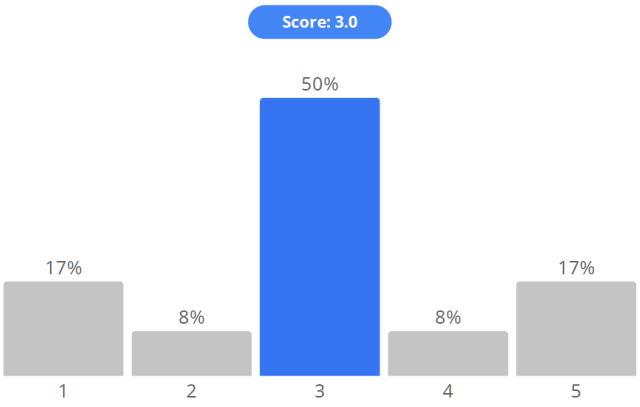

Figure 20: Question: Please rate how accessible the MSP data is in your Region?

Here is presented questions asked with Slido during the online meeting on Data and geoportal with free answers possibility:

1. What are the objectives to collect data for MSP?

- Facilitate engagement with stakeholders and citizens and favor coordination and cooperation with the administrator
- Enhance governance, planning and management – make plans using the best available data – decision making help
- Inform and permit to share knowledge
- Gives an interface between science and public policy
- Enable monitoring of environmental challenges
- Resolve conflicts

2. What are the challenges to collect these data?

- Problem of harmonization (format)
- Difficulty to identify agency who collect the official reference data
- Data not actualized
- Problem of ownership – not public data – classified as sensitive data
- No metadata - source unknown
- Problem of interoperability, consistency (not the same spatial scale)
- Lake of availability, temporality
- Not enough funds – difficult staff recruitment and retention

3. What is your target for using a geoportal?

- Obtain accurate data and information
- Have transparency in decision making
- Help decision making with the best data available
- Understand how is organized the data
- See spatially where activities are located
- Look at conflicts of uses or inconsistencies in the localization and implementation of new activities at sea
- Integrate data from different levels to manage MSP
- Gather data
- Study data
- Be the base for planned development

b) Results of the first survey on data

A comprehensive survey was distributed to use case study partners within the REGINA-MSP consortium to obtain information on data availability at regional and national

level pertinent to both national and European MSP endeavors. The data compilation presented herein stems from the MSP data framework established by the TEG on Data for MSP with cluster and checklist index in MSP data Framework document (1), with socio-economic data sourced from CETMAR (the Technologic Center of the Sea in Spain) for ReMAP project (Reviewing and Evaluating the Monitoring and Assessment of MSP) and surveillance and security data sourced from Shom (e.g. maritime safety data).

The primary objective of this survey was to gather essential information aimed at elucidating the extent to which MSP-relevant data is accessible and where there are data gaps across the REGINA-MSP use case regions including Sardinia, Pays-de-la-Loire, Galician Coast, Mayo, the Region of Murcia, Central Macedonia North Aegean Sea, Crete, and Provence-Alps-French Riviera (see *Figure 21*), as well as to identify the specific types of data required for MSP purposes.

The insights garnered from this survey will empower REGINA-MSP project partners and European policymakers with a comprehensive overview of regional data accessibility and needs essential for the effective implementation of MSP initiatives on both national and international scales.

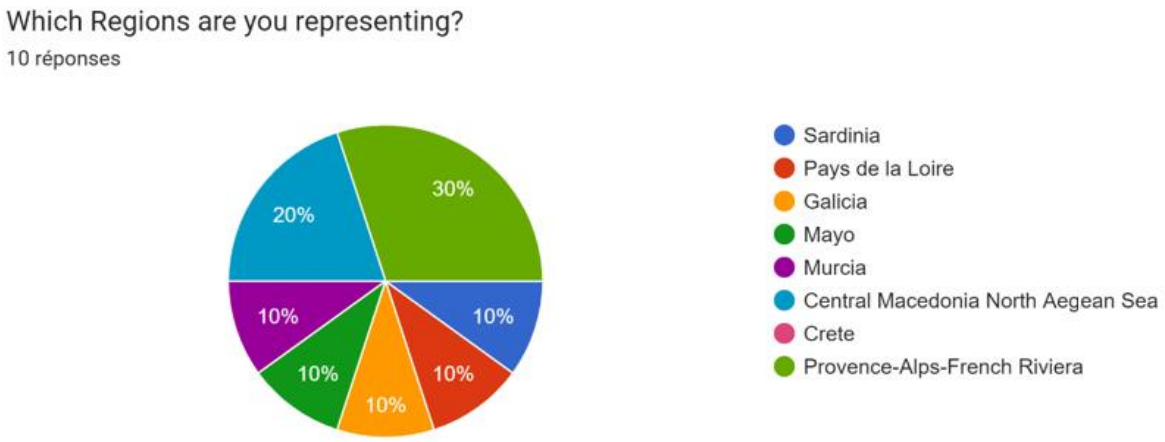

Figure 21: Survey respondents nationality

The survey results reveal notable discrepancies in the availability of specific types of data crucial for MSP initiatives (see *Figure 22*). Notably, surveillance and security data emerge as the most lacking category, with only 30% of respondents affirming their presence in regional and national geoportals. This deficit is followed closely by socio-economic, governance, oceanographic characteristics and climate information, where only 50% of respondents report their availability. Conversely, data related to coastal land use and planning exhibit a significantly higher prevalence, with 90% of respondents indicating their presence. This dominance is observed even before marine and coastal environmental data and information pertaining to marine and coastal conservation and designated sites.

Such insights underscore the need for concerted efforts to bolster the availability and accessibility of critical surveillance and security data (e.g. maritime safety data) alongside other essential datasets to foster more robust and comprehensive MSP frameworks.

Figure 22: Data clusters (from the Technical Expert Group on Data for MSP data framework document (1) and a category of data added on surveillance and security) representation in geoportals of REGINA-MSP use cases regions

The findings of this survey reveal a notable scarcity in geoportals sharing data related to marine food webs (see *Figure 23*). Only 11% of respondents reported the presence of such information in their regional or national geoportals. Similarly, a mere 22% indicated the availability of data related to marine litter, hydromorphological and hydrographical aspects in these platforms. However, a significant portion of respondents (67%) acknowledged the inclusion of biodiversity data in their regional or national geoportals. Moreover, these platforms were noted to contain extensive information on commercial species, contaminants, and sea floor integrity, suggesting a more comprehensive coverage in these areas.

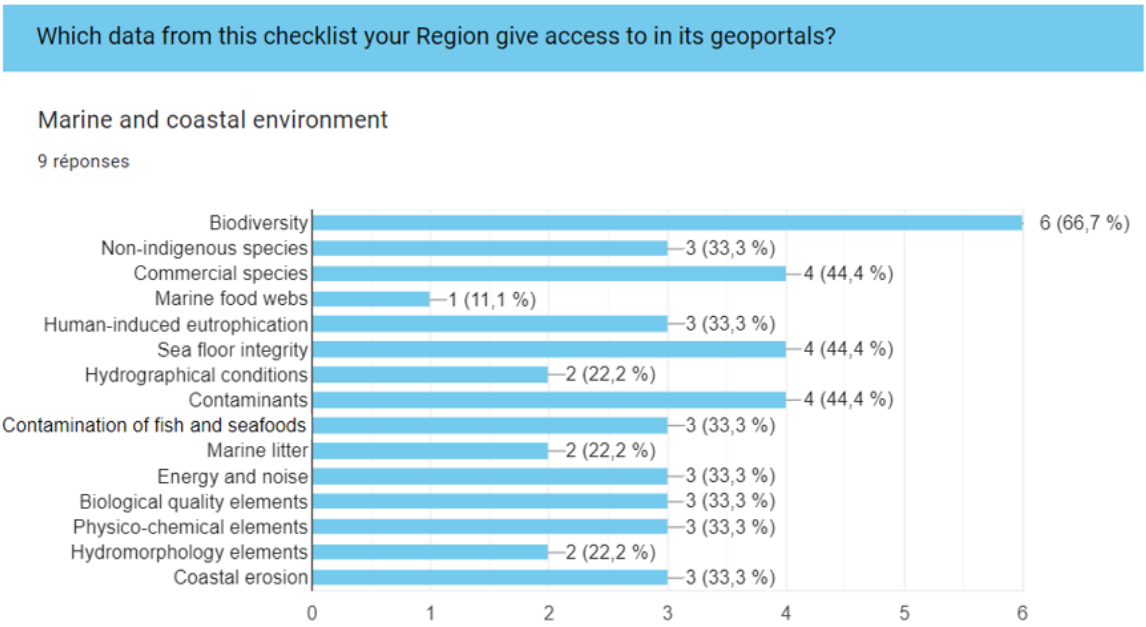

Figure 23: Data checklist for marine and coastal environment cluster (from Technical Expert Group on Data for MSP data framework document (1)) representation in geoportals of REGINA-MSP use cases

The analysis indicates that approximately half of the surveyed geoportals provide data pertaining to designated sites, encompassing conservation, security, safety, risk, and control information (see *Figure 24*). Conversely, marine and coastal Protected Areas appear to be particularly well-shared datasets, with 78% and 89% of respondents affirming their accessibility through regional and national geoportals, respectively. This highlights a considerable effort in ensuring the availability of crucial information regarding protected marine environments, underlining the importance of these platforms in facilitating conservation efforts.

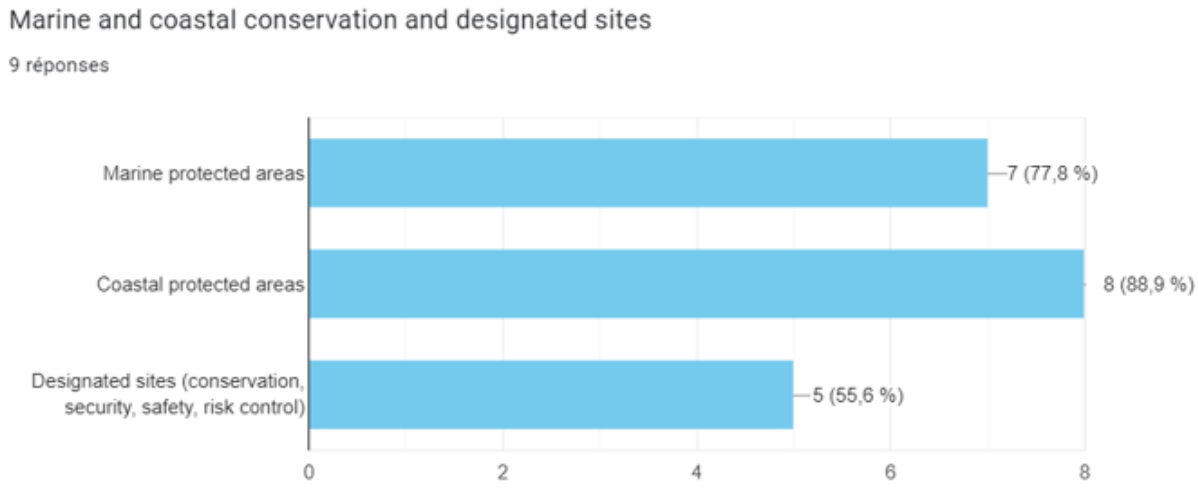

Figure 24: Data checklist for marine and coastal conservation and designated sites cluster (from Technical Expert Group on Data for MSP data framework document (1)) representation in geoportals of REGINA-MSP use cases

The part of the survey focusing on the cluster of operative maritime activities and planning reveal a distinct distribution of data availability across various sectors (see *Figure 25*). Notably, data pertaining to transport networks, logistics, and utilities emerge as robust resources, accessible nationally and regionally. Primary production follows closely behind, with a significant 67% of respondents affirming the availability of relevant data within these regions. However, a noticeable contrast arises when examining secondary and tertiary production, less represented, with only 33% of respondents acknowledging the accessibility of data for this checklist. This distribution underscores the importance of prioritizing data collection and dissemination efforts across all sectors to ensure comprehensive planning and informed decision-making within maritime activities.

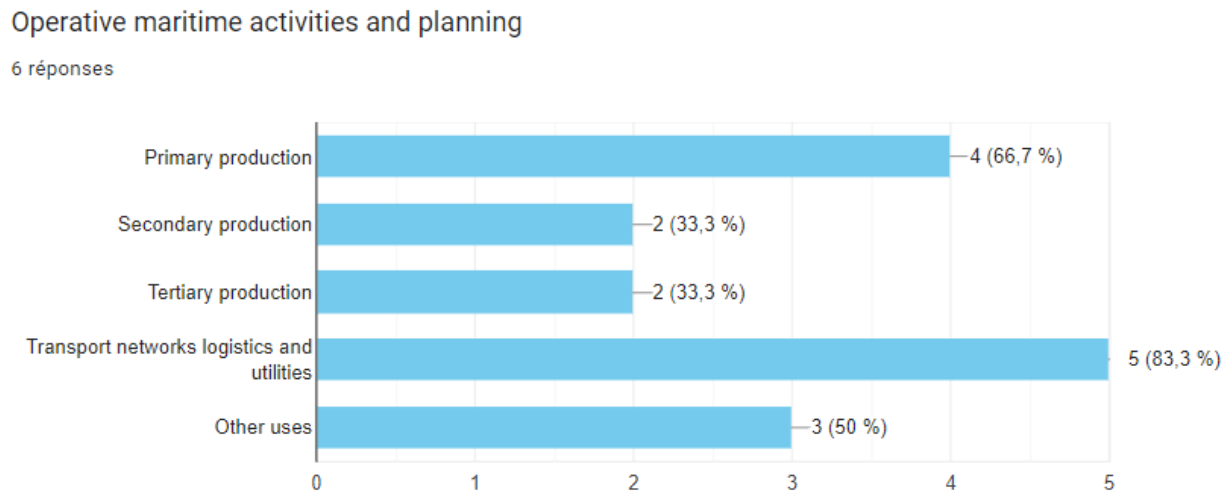

Figure 25: Data checklist for operative maritime activities and planning cluster (from Technical Expert Group on Data for MSP data framework document (1)) representation in geoportals of REGINA-MSP use cases

In the realm of coastal land use planning cluster, the majority of regional and national geoportals demonstrate a remarkable accessibility to relevant data, as highlighted by the 86% positive response rate for the accessibility of primary, secondary, and tertiary production sectors, as well as for transport networks, logistics, and utilities (see *Figure 26*). However, a notable disparity emerges concerning the availability of data for other uses within coastal land use planning, with only 43% of positive answer.

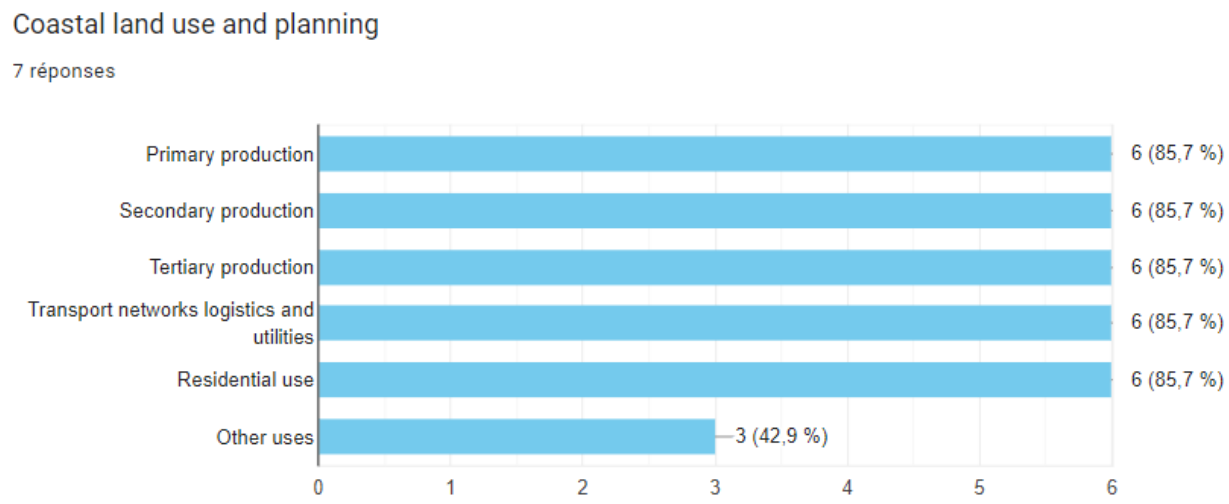

Figure 26: Data checklist coastal land use and planning cluster (from Technical Expert Group on Data for MSP data framework document (1)) representation in geoportals of REGINA-MSP use cases

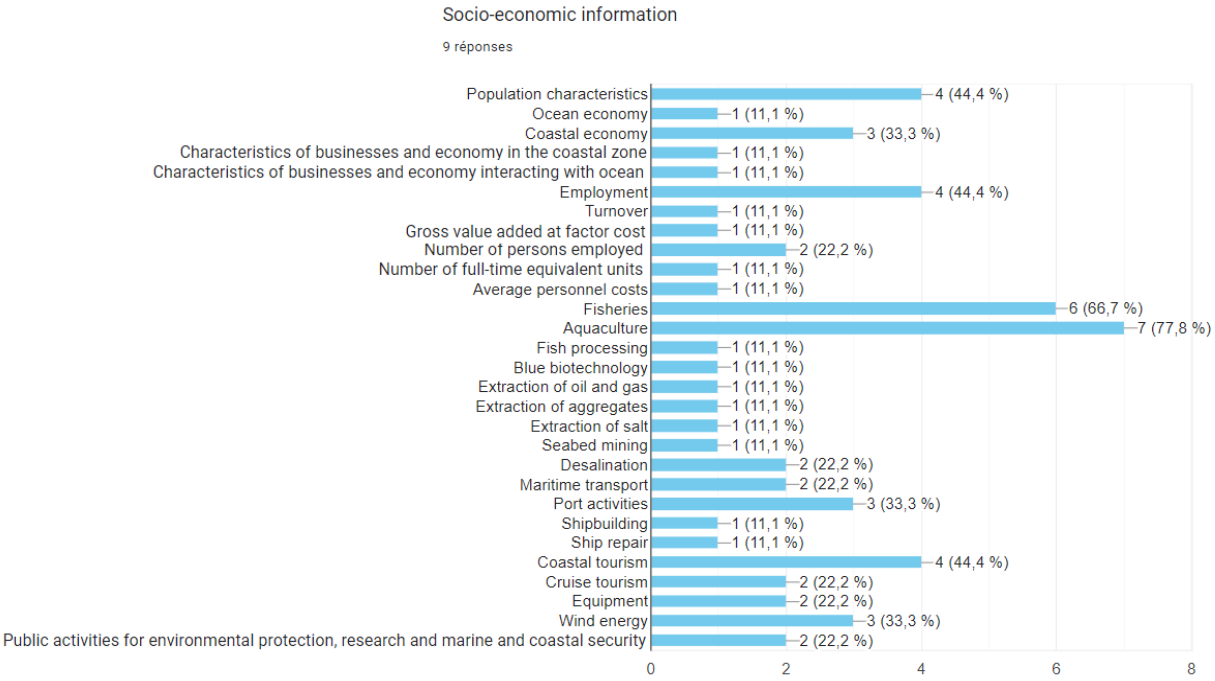

Figure 27: Data checklist for socio-economic information cluster (from Technical Expert Group on Data for MSP data framework document (1)) representation in geoportals of REGINA-MSP use cases

Examining the landscape of socioeconomic information data accessibility reveals a notable variance in outcomes, with certain sectors exhibiting significantly higher levels of accessibility than others (see *Figure 27*). The majority of the checklist items reflect a low positive result, standing at just 11%. However, within this spectrum, specific areas stand out with considerably higher percentages of positive responses. Notably, aquaculture leads the pack with an impressive 78% positive response rate, followed closely by fisheries at 67%.

Population characteristics, employment data, and insights into coastal tourism register a moderate level of accessibility, with a 44% positive response rate. Conversely, several aspects of socioeconomic data accessibility lag behind, with only 11.1% positive responses for checklist items concerning the number of persons employed, desalination, maritime transport, cruise tourism, equipment, and public activities related to environmental protection, research, marine, and coastal security. This nuanced assessment underscores the need for targeted efforts to bolster data accessibility across all facets of socioeconomic information, ensuring a more comprehensive understanding and effective planning within these domains.

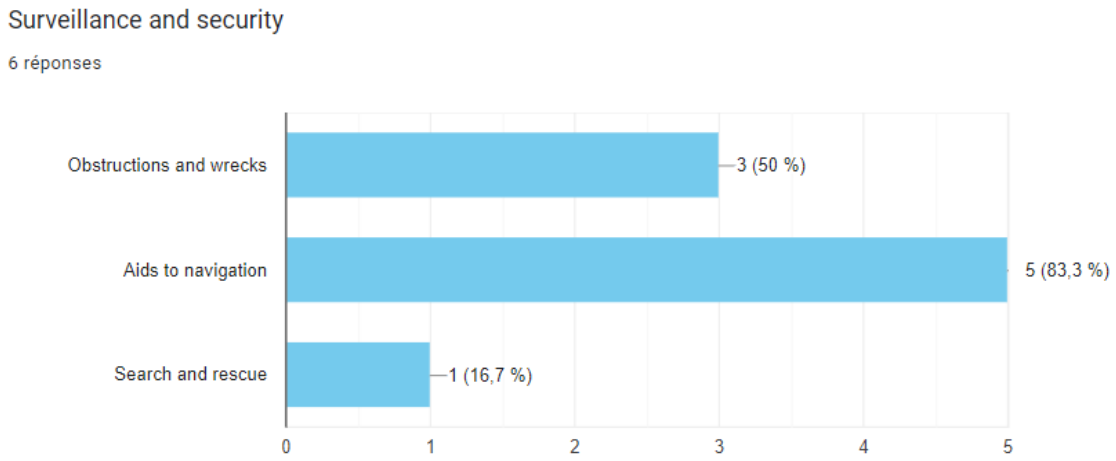

Figure 28: Data checklist for surveillance and security cluster (from Technical Expert Group on Data for MSP data framework document (1)) representation in geoportals of REGINA-MSP use cases

In the cluster focusing on surveillance and security, the connectivity between responses becomes evident when juxtaposed with the data availability for surveillance and security at the beginning of this survey are low (see *Figure 22*), standing at a mere 30% positive response rate for their availability in regional and national geoportal. However, delving into the specifics, the nuances of accessibility shed light on the intricacies of this domain. Notably, aids to navigation emerge as a prominent category (see *Figure 28*), albeit often inaccessible for free download or visualization across most European countries, except France. Obstruction and wrecks data display a slightly higher accessibility rate at 50%, whereas search and rescue data exhibit a considerably lower accessibility level, with only 17% of positive responses.

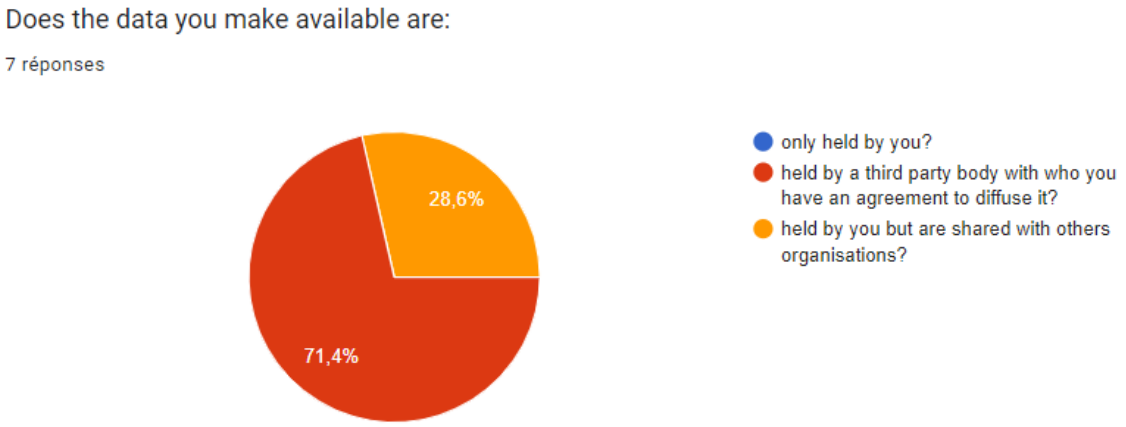

Figure 29: Who hold data in regional geoportals?

In the regional and national geoportal data accessibility graded in this survey, the data primarily reside with a third party, with whom there is an agreement for dissemination, accounting for 71.4% of responses, while only 28.6% of respondents own and share the data with other organizations (see *Figure 29*).

In conclusion, the survey conducted on data availability in regional and national geoportals for the REGINA-MSP case study regions has provided complementary valuable insights and highlighted several areas for improving data creation, data accessibility and monitoring. Respondents from various regions have articulated specific needs and requests, underscoring the diverse requirements within MSP initiatives. For instance, in Pays-de-la-Loire, there's a desire to enhanced access to fishing volume and value data, particularly focusing on small-scale fishery. Similarly, stakeholders in the South Region express a need for data pertaining to wave energy, cumulative maritime use effects, tourism density, and beach visitation numbers. Furthermore, the emphasis on offshore renewable energy, MPA data, and the creation of a digital twin of the ocean in Ireland's marine planning MSP geoportal showcases evolving priorities. Sardinia seeks more comprehensive data on marine litter accumulation and its spatial distribution, while Crete emphasizes the necessity for information regarding expected windfarm locations and fisheries impact.

Notably, across these regions, the availability of surveillance and security data appears to be insufficient in regional and national geoportals (e.g. maritime safety data). Additionally, maritime activities receive less attention compared to coastal activities, and economic information remains underrepresented. This survey underscores the imperative for concerted efforts to address these deficiencies, ensuring more comprehensive data access and utilization within MSP frameworks to foster sustainable maritime development.

In the next sections of this report will be presented as results of the survey launched for task 3.2 on data a data base given regional data access. And a list of the reference data providers developed and filled for the project with the help of use case Region representants in the project. It will also be presented a listing of the use cases regions geoportal (national, regional and local geoportal) and the results of the geoportal grading scheme created by Shom.

IV. Regional data

a) Catalogue of regional data for MSP

In this study, Shom has successfully developed its already existing comprehensive database, named Orca, indexing data from various European projects across diverse regions (see *Figure 30*). The database encompasses a wealth of valuable information, yet its accessibility has been limited to internal purpose at Shom. Recognizing the importance of facilitating widespread access to such crucial datasets, there is a need to share these data towards a unified EU data base open to public, that is EMODnet. This platform would enable seamless publication of official data, making it freely available online through a multitude of regional, national, European, and international geoportals.

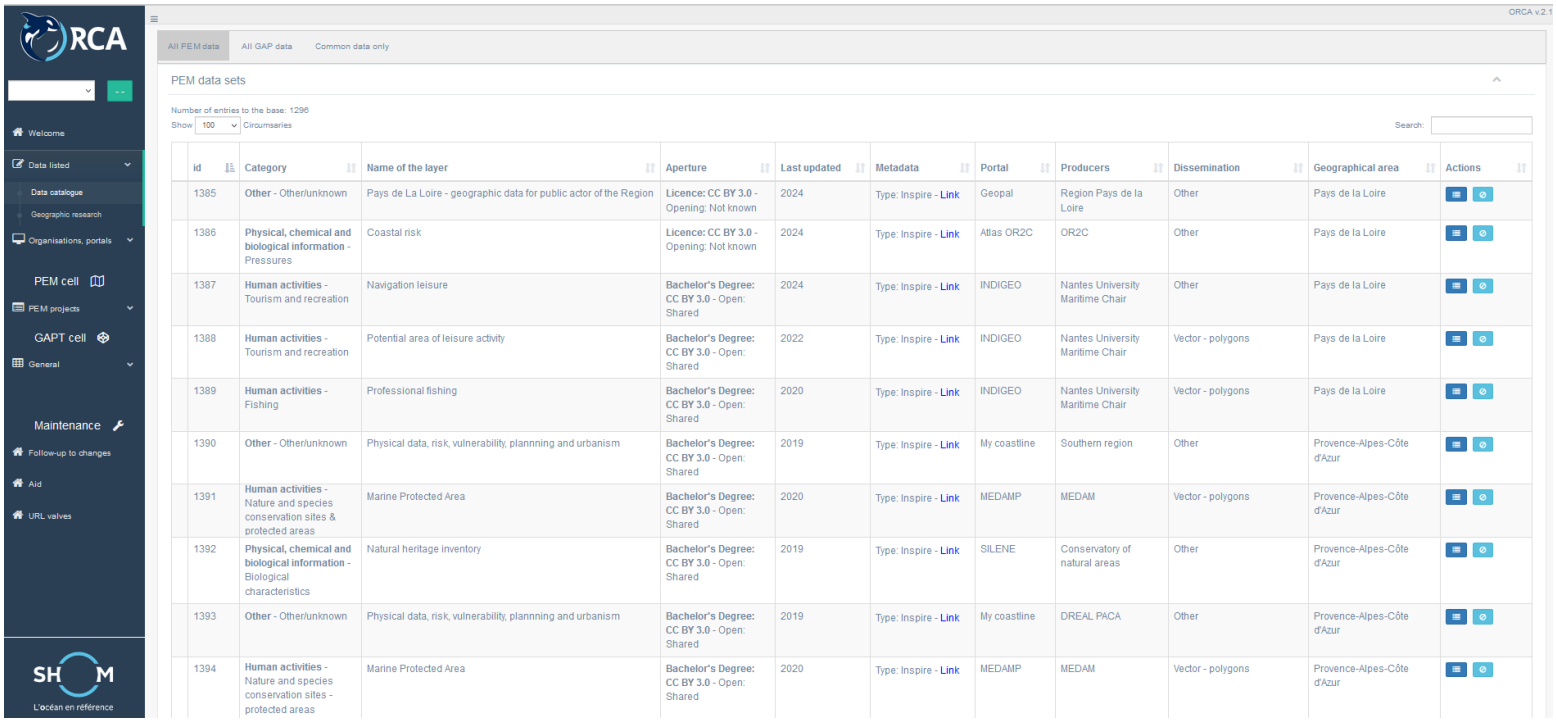

Figure 30: Orca data base regional data collection

In the next part is a summary (table-based) presentation of the main regional and national data providers exposed by our partners in REGINA-MSP project with a link to access directly their geoportal. This catalog of data providers is given Region per each Region in *Table 4* to *11*.

b) Regional and national reference data providers

Galicia

id	Name	Country	URL
10	Centro Tecnologico del Mar	Spain	http://www.cetmar.org/
39	INSTITUTO GEOGRAFICO NACIONAL	Spain	http://www.ign.es/web/ign/portal
56	MINISTERIO DE AGRICULTURA, PESCA Y ALIMENTACION (MAPA)	Spain	http://www.mapa.gob.es/es/
84	INSTITUTO ESPAÑOL DE OCEANOGRAFÍA	Spain	http://www.ieo.es/es/
86	Consejo Superior de Investigaciones Científicas	Spain	http://www.csic.es/
131	Insituto Hidrográfico de la Marina - Spain	Spain	https://armada.defensa.gob.es/
155	Centro de Estudios y Experimentación de Obras Públicas	Spain	http://www.cedex.es/CEDEX/lang-castellano/
242	Xunta de Galicia Consejeria do Mar Plataforma Tecnolóxica da Pesca	Spain	https://www.pescadegalicia.gal/
243	Instituto de Estudos do Territorio	Spain	https://cmatv.xunta.gal/organizacion/c/CMAOT_Instituto_Estudos_Territorio
244	Instituto Technoloxico para o control do medio marino de Galicia	Spain	http://www.intecmar.gal/
245	RAIA Observatorio Oceanografico Marxe Iberica	Spain	https://marnaraia.org/que-es-raia/
246	El Plan Territorial Contingencias por Contamin Marina Accidental de Galicia	Spain	https://www.plancamgal.gal/es/
259	Instituto Nacional de Estadistica	Spain	https://www.ine.es/en/
260	Sociedad Española de Cartografía, Fotogrametría y Teledetección	Spain	https://www.secft.es/
261	Spanish Association of Wholesalers, Importers, Exporters and Manufacturers of Fish and Aquaculture Products	Spain	https://www.conxemar.com/en/

Table 4: Official data producers and holders linked to MSP in Galicia

Regions to boost National Maritime Spatial Planning
REGINA-MSP
Co-funded by the European Union

The Region of Murcia

id	Name	Country	URL
10	Centro Tecnologico del Mar	Spain	http://www.cetmar.org/
39	INSTITUTO GEOGRAFICO NACIONAL	Spain	http://www.ign.es/web/ign/portal
56	MINISTERIO DE AGRICULTURA, PESCA Y ALIMENTACION (MAPA)	Spain	http://www.mapama.gob.es/es/
84	INSTITUTO ESPAÑOL DE OCEANOGRAFÍA	Spain	http://www.ieo.es/es/
86	Consejo Superior de Investigaciones Científicas	Spain	http://www.csic.es/
131	Insituto Hidrográfico de la Marina - Spain	Spain	https://armada.defensa.gob.es/
155	Centro de Estudios y Experimentación de Obras Públicas	Spain	http://www.cedex.es/CEDEX/lang-castellano/
245	RAIA Observatorio Oceanografico Marxe Iberica	Spain	https://marnaraia.org/que-es-raia/
259	Instituto Nacional de Estadistica	Spain	https://www.ine.es/en/
260	Sociedad Española de Cartografía, Fotogrametría y Teledetección	Spain	https://www.secft.es/
261	Spanish Association of Wholesalers, Importers, Exporters and Manufacturers of Fish and Aquaculture Products	Spain	https://www.conxemar.com/en/
266	Centro Regional de Estadistica de Murcia	Spain	https://econet.carm.es/

Table 5: Official data producers and holders linked to MSP in Murcia

Sardinia

id	Name	Country	URL
43	ISTITUTO SUPERIORE AMBIENTAL E RICERCA	Italy	http://www.isprambiente.gov.it/it
44	ITALIAN RESEARCH COUCIL	Italy	https://www.cnr.it/it
88	COISPA Tecnologia - Ricerca	Italy	http://www.sinab.it/istituto-ricerca/coispa-tecnologia-ricerca
89	Consorzio Nazionale Interuniversitario per le Scienze del Mare	Italy	http://www.conisma.it/it/
118	Servizio osservatorio del paesaggio e del territorio, sistemi informativi territoriali	Italy	http://www.sardegnageoportale.it
119	Instituto di Scienze Marine	Italy	http://www.ismar.cnr.it/
156	Italian Ministry of Transports	Italy	http://www.mit.gov.it/mit/site.php?p=cm&o=vd&id=1143
232	Sistema Informativo Regionale Ambiantale	Italy	https://www.sardegnasira.it/
233	International Marine Centre	Italy	https://www.fondazioneimc.it/en/
234	Ministero dell'ambiente e della sicurezza energetica	Italy	https://www.mase.gov.it/
235	Ministero dell'agricoltura, della sovranità alimentare e delle foreste	Italy	https://www.politicheagricole.it/
236	Consortium for coordination of research activities concerning the Venice lagoon system	Italy	https://www.corila.it/en/chi-siamo/
238	Università IUAV di Venezia	Italy	https://www5.iuav.it/homepage/index.htm
239	Dipartimanto meteoclimatic	Italy	https://www.sar.sardegna.it/
240	Ministero della cultura	Italy	https://www.beniculturali.it/
241	Unione Mondiale per la Conservazione della Natura	Italy	https://www.iucn.it/
262	National Institute of Oceanography and Applied Geophysics	Italy	https://www.ogs.it/en
263	Sardegna Ricerche	Italy	https://www.sardegnaricerche.it/
264	Advanced studies, Research and Development in Sardinia	Italy	https://www.crs4.it/
265	Agriculture and Forest regional research agency	Italy	https://www.sardegnaagricoltura.it/innovazionericerca/agris/
288	Ministero delle Imprese e del Made in Italy	Italy	https://www.mimit.gov.it/it/

Table 6: Official data producers and holders linked to MSP in Sardinia

Regions to boost National Maritime Spatial Planning
REGINA-MSP
Co-funded by the European Union

County of Mayo

id	Name	Country	URL
8	CENTRAL STATISTICS OFFICE	Ireland	https://cso.ie/en/index.html
12	COMMISSIONERS OF IRISH LIGHTS	Ireland	http://www.irishlights.ie/
16/	DEPARTMENT OF AGRICULTURE, FOOD AND THE MARINE	Ireland	https://www.agriculture.gov.ie/
17	Department of Communications, Climate Action and Environment	Ireland	https://www.dccae.gov.ie/en-ie/Pages/default.aspx
35	INFOMAR PROJECT	Ireland	http://www.infomar.ie/
42	IRISH COAST GUARD	Ireland	http://www.dttas.ie/maritime/english/irish-coast-guard-ircg
50	Centre for Marine and Renewable Energy - University College of Cork	Ireland	http://www.marei.ie/
52	MARINE INSTITUTE	Ireland	https://www.marine.ie/Home/home
211	Sea Fisheries Protection Authority	Ireland	
213	Environmental Protection Agency	Ireland	
214	Department of Housing, Planning and Local Government	Ireland	http://www.housing.gov.ie/
215	National Parks and Wildlife Service home page	Ireland	https://www.npws.ie/
217	Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs	Ireland	datadelivery@ahg.gov.ie
219	Irish Naval Service	Ireland	https://www.military.ie/en/who-we-are/naval-service/
220	Heritage Council	Ireland	https://www.heritagecouncil.ie/
222	Department of Culture, Heritage and the Gaeltacht	Ireland	https://www.chg.gov.ie/
223	Royal Irish Academy	Ireland	https://www.ria.ie/
224	Fáilte Ireland - National Tourism Development Authority	Ireland	http://www.failteireland.ie
226	Loughs Agency	Irlande et Irlando du Nord	https://www.loughs-agency.org/
229	Irish Spatial Data exchange	Ireland	http://isde.marine.ie/
231	Irish Aviation Authority	Ireland	https://www.iaa.ie/
289	Tailte Eireann: ordnance survey ireland	Ireland	https://www.tailte.ie/en/

Table 7: Official data producers and holders linked to MSP in the county of Mayo

Central Macedonia North Aegean Sea

id	Name	Country	URL
267	Ministry of Environment and Energy	Greece	https://ypen.gov.gr/
268	Municipality of Thessaloniki - Division of Geospatial Information	Greece	https://thessaloniki.gr/gis-4-2/?lang-en
269	Hellenic Centre for Marine Research	Greece	https://www.hcmr.gr/en/
270	Institute of Oceanography	Greece	https://io.hcmr.gr/
271	Hellenic Navy Hydrographic Service	Greece	https://www.hnhs.gr/en/
272	Hellenic Statistical Authority	Greece	https://www.statistics.gr/en/home
273	Hellenic National Meteorological Service	Greece	http://emy.gr/emy/en
274	National Archive of Monuments	Greece	https://nationalarchive.culture.gr/en/
275	Centre for Renewable Energy Sources and Saving	Greece	http://www.cres.gr/kape/index-eng.htm
276	Athena Research Center	Greece	https://www.athenarc.gr/en/home
278	Panteion Unviersity	Greece	https://www.panteion.gr/en/

Table 8: Official data producers and holders linked to MSP in Central Macedonia for the North Aegean Sea

Crete

id	Name	Country	URL
267	Ministry of Environment and Energy	Greece	https://ypen.gov.gr/
268	Municipality of Thessaloniki - Division of Geospatial Information	Greece	https://thessaloniki.gr/gis-4-2/?lang-en
269	Hellenic Centre for Marine Research	Greece	https://www.hcmr.gr/en/
270	Institute of Oceanography	Greece	https://io.hcmr.gr/
271	Hellenic Navy Hydrographic Service	Greece	https://www.hnhs.gr/en/
272	Hellenic Statistical Authority	Greece	https://www.statistics.gr/en/home
273	Hellenic National Meteorological Service	Greece	http://emy.gr/emy/en
274	National Archive of Monuments	Greece	https://nationalarchive.culture.gr/en/
275	Centre for Renewable Energy Sources and Saving	Greece	http://www.cres.gr/kape/index-eng.htm
276	Athena Research Center	Greece	https://www.athenarc.gr/en/home
278	Panteion Unviersity	Greece	https://www.panteion.gr/en/

Table 9: Official data producers and holders linked to MSP in Crete

Regions to boost National Maritime Spatial Planning
REGINA-MSP
Co-funded by the European Union

Provence-Alps-French-Riviera Region

id	Name	Country	URL
34	NATIONAL GEOGRAPHIC AND FOREST INFORMATION INSTITUTION	France	http://ign.fr/
37	Institut français de recherche de l'exploitation de la mer	France	https://www.ifremer.fr/
60	NATIONAL NATURAL HISTORY MUSEUM	France	http://www.mnhn.fr/
76	Shom	France	http://www.shom.fr/
95	etalab mission	France	https://www.etalab.gouv.fr
102	French MEDiterrannéennes. Inventory and impact of successful marine developments	France	http://www.medam.org/index.php/en/
105.	Centre for Studies and Expertise on Risks, Environment, Mobility and Planning	France	https://www.cerema.fr/en
116	Observatoire National des Zones Humides	France	https://www.zones-humides.org/
117	Regional Directorate for the Environment, Planning and Housing PACA	France	http://www.paca.developpement-durable.gouv.fr/
120	Departmental Directorate of the Territories	France	
127	Centre régional opérationnel de surveillance et de sauvetage	France	
128	Préfécture maritimes	France	
129	Ministère de la transition écologique et de la cohésion des territoires	France	https://www.ecologie.gouv.fr/
133	Service d'administration nationale des données et référentiels sur l'eau	France	http://www.sandre.eaufrance.fr/
134	Bureau de Recherche géologique et minière	France	http://www.brgm.fr/
142	Direction Générale de la prévention des risques	France	https://www.ecologie.gouv.fr/direction-generale-prevention-des-risques-dgpr
144	Direction générale des infrastructures, des transports et des mobilités	France	https://www.ecologie.gouv.fr/direction-generale-des-infrastructures-des-transports-et-des-mobilites-dgitm
145	Direction de l'eau et de la biodiversité	France	www.deb.developpement-durable.gouv.fr/

Regions to boost National Maritime Spatial Planning
REGINA-MSP
Co-funded by the European Union

id	Name	Country	URL
147	Office International de l'eau	France	https://www.oieau.fr/
151	DREAL Occitanie (Direction Régionale de l'Environnement, de l'Aménagement et du Logement Occitanie)	France	http://www.occitanie.developpement-durable.gouv.fr/
153	Ministère de l'économie des finances, de l'industrie et de la souveraineté industrielle et numérique (nom simplifié)	France	https://www.economie.gouv.fr/
181	DIRMM	France	https://www.dirm.mediterranee.developpement-durable.gouv.fr/?lang=fr
182	Direction Générale des affaires maritimes, de la pêche et de l'aquaculture	France	https://www.mer.gouv.fr/direction-generale-des-affaires-maritimes-de-la-peche-et-de-laquaculture-dgampa
184	Comité national des pêches maritimes et des élevages marins	France	http://www.comite-peches.fr/
187	ZAD nord et sud	France	sig.emr@developpement-durable.gouv.fr
189	Conservatoire de l'Espace Littoral et des Rivages Lacustres	France	http://www.conservatoire-du-littoral.fr/
191	Agence régionale de Santé	France	https://www.ars.sante.fr/
193	Electricité de France	France	https://www.edf.fr/groupe-edf/qui-sommes-nous/activites/recherche-et-developpement
195	Association pour l'étude et la conservation des sélaciens	France	http://www.asso-apecs.org/
197	Ligue pour la protection des oiseaux	France	https://www.lpo.fr/
199	Bureau d'études en ingénierie géomatique	France	https://www.sogefi-sig.com/presentation/
202	CEDRE	France	https://wwz.cedre.fr/
251	Région Sud Provence Alpes Côte d'Azur	France	https://www.maregionsud.fr/
253	Université Côte d'Azur	France	https://univ-cotedazur.fr/
255	Conservatoire d'espaces naturels Provence-Alpes-Côte d'Azur	France	https://cen-paca.org/

id	Name	Country	URL
279	Office Français de la Biodiversité	France	https://www.ofb.gouv.fr/
280	Météo France	France	https://meteofrance.com/
281	Direction régionale de l'Environnement, de l'aménagement et du logement de Provence-Alpes-Côte d'Azur	France	https://www.paca.developpement-durable.gouv.fr/?lang=fr
282	Centre de Ressource et d'Information Géographique Provence-Alpes-Côte d'Azur	France	https://www.crige-paca.org/
283	Tour du Valat	France	https://tourduvalat.org/
284	Ecoseas laboratory	France	http://ecoseas.unice.fr/
298	Observatoire des énergies de la mer	France	https://merenergies.fr/
299	Institut National de la Statistique et des Etudes Economiques	France	https://www.insee.fr/fr/accueil
300	Observatoire Portuaire des Alpes-Maritimes	France	https://www.observatoire-portuaire.fr/

Table 10: Official data producers and holders linked to MSP in Provence-Alps-French-Riviera Region

Regions to boost National Maritime Spatial Planning
REGINA-MSP
Co-funded by the European Union

Pays de la Loire

id	Name	Country	URL
34	NATIONAL GEOGRAPHIC AND FOREST INFORMATION INSTITUTION	France	http://ign.fr/
37	Institut français de recherche de l'exploitation de la mer	France	https://www.ifremer.fr/
60	NATIONAL NATURAL HISTORY MUSEUM	France	http://www.mnhn.fr/
76	Shom	France	http://www.shom.fr/
95	etalab mission	France	https://www.etalab.gouv.fr
105.	Centre for Studies and Expertise on Risks, Environment, Mobility and Planning	France	https://www.cerema.fr/en
116	National Observatory of Wetlands	France	https://www.zones-humides.org/
117	Direction Régionale de l'Environnement, de l'aménagement et du logement de Pays de la Loire	France	https://www.pays-de-la-loire.developpement-durable.gouv.fr/
120	Departmental Directorate of the Territories	France	
127	Centre régional opérationnel de surveillance et de sauvetage	France	
128	Préfécture maritimes	France	
129	Ministère de la transition écologique et de la cohésion des territoires	France	https://www.ecologie.gouv.fr/
133	Service d'administration nationale des données et référentiels sur l'eau	France	http://www.sandre.eaufrance.fr/
134	Bureau de Recherche géologique et minière	France	http://www.brgm.fr/
142	Direction Générale de la prévention des risques	France	https://www.ecologie.gouv.fr/direction-generale-prevention-des-risques-dgpr
144	Direction générale des infrastructures, des transports et des mobilités	France	https://www.ecologie.gouv.fr/direction-generale-des-infrastructures-des-transports-et-des-mobilites-dgitm
145	Direction de l'eau et de la biodiversité	France	www.deb.developpement-durable.gouv.fr/

id	Name	Country	URL
147	Office International de l'eau	France	https://www.oieau.fr/
153	Ministère de l'économie des finances, de l'industrie et de la souveraineté industrielle et numérique	France	https://www.economie.gouv.fr/
181	Direction Interrégionale de la Mer Nord Atlantique Manche Ouest	France	https://www.dirm.nord-atlantique-manche-ouest.developpement-durable.gouv.fr/?lang=fr
182	Direction Générale des affaires maritimes, de la pêche et de l'aquaculture	France	https://www.mer.gouv.fr/direction-generale-des-affaires-maritimes-de-la-peche-et-de-laquaculture-dgampa
184	Comité national des pêches maritimes et des élevages marins	France	http://www.comite-peches.fr/
187	ZAD nord et sud	France	sig.emr@developpement-durable.gouv.fr
189	Conservatoire de l'Espace Littoral et des Rivages Lacustres	France	http://www.conservatoire-du-littoral.fr/
190	Groupement d'Intérêt scientifiques VALPENA	France	https://valpena.univ-nantes.fr/accueil-du-gis-valpena-1427390.kjsp
191	Agence régionale de Santé	France	https://www.ars.sante.fr/
193	Electricité de France	France	https://www.edf.fr/groupe-edf/qui-sommes-nous/activites/recherche-et-developpement
195	Association pour l'étude et la conservation des sélaciens	France	http://www.asso-apecs.org/
197	Ligue pour la protection des oiseaux	France	https://www.lpo.fr/
199	Bureau d'études en ingénierie géomatique	France	https://www.sogefi-sig.com/presentation/
202	CEDRE	France	https://wwz.cedre.fr/

id	Name	Country	URL
249	Région Pays de la Loire	France	https://www.paysdelaloire.fr/
250	Chaire maritime Nantes Université		https://chairemaritime.univ-nantes.fr/
279	Office Français de la Biodiversité	France	https://www.ofb.gouv.fr/
280	Météo France	France	https://meteofrance.com/
286	GEOPAL	France	https://www.geopal.org/accueil
297	OR2C Observatoire Régional des Risques Côtiers	France	https://or2c.univ-nantes.fr/
298	Observatoire des énergies de la mer	France	https://merenergies.fr/
299	Institut National de la Statistique et des Etudes Economiques	France	https://www.insee.fr/fr/accueil

Table 11: Official data producers and holders linked to MSP in Pays de la Loire Region

c) Regional data of interest for MSP

The effective monitoring and evaluation of national plans for MSP hinge upon access to pertinent data, with a particular emphasis on the involvement of regional and local authorities. In this context, the utilization of categories outlined in the EBA-SBE framework and the maritime surveillance data list from the eMSP-NBSR data CoP (5) emerges as crucial. To gather comprehensive insights, a survey was meticulously crafted and distributed to regions representative of the REGINA-MSP project. Responses were obtained from all regions, here is the presentation of these answers and the access to some of the data highlighted in the survey for each Region in *Figure 31* to *50*:

Galicia

- **PELACUS data** from oceanographic campaign shared in the Spanish Institute of Oceanography (IEO) data catalogue.

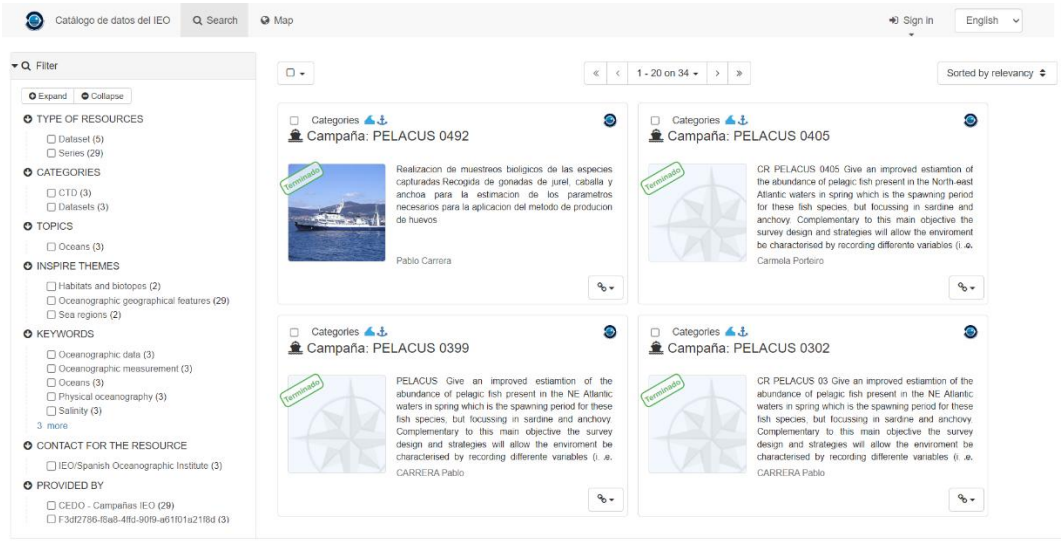

Figure 31: PELACUS campaigns data on IEO data catalogue

- **RADIALES:** marine water biological (zooplankton and phytoplankton) data from oceanographic campaign shared in the Spanish Institute of Oceanography (IEO) data catalogue.

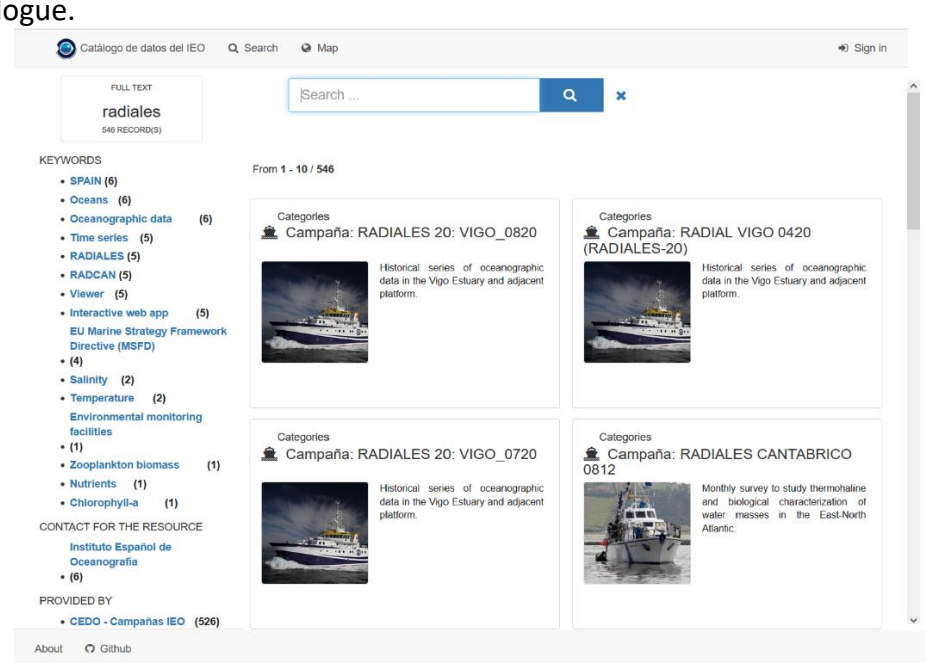

Figure 32: RADIALES campaigns data on IEO data catalogue

- **Risk of flooding:** shared on Mapas Xunta de Galicia on the map for civil protection data access of Galician Region.

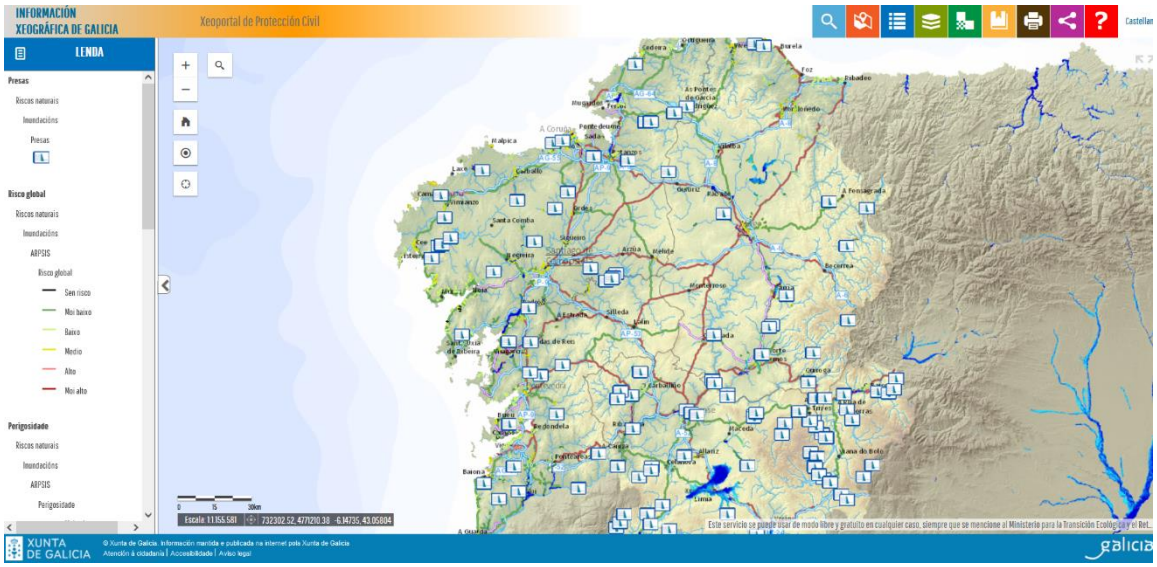

Figure 33: flooding risk data on Mapas Xunta de Galicia geoportal

- **Landscape visualization** with pictures, some pictures of the seafront can be used to see the impact of windfarm on the landscape and help taking a decision about their implantation location. Pictures shared on Mapas Xunta de Galicia on the map of pictures taken from bike.

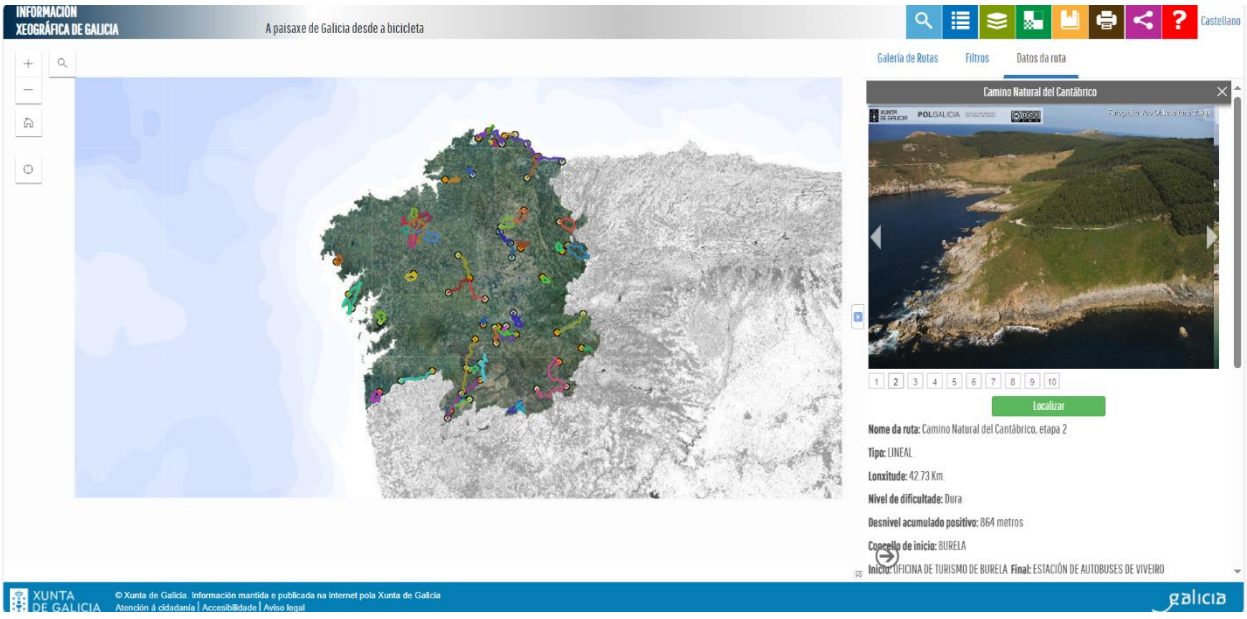

Figure 34: landscape picture of Galician coast on Mapas Xunta de Galicia geoportal

- **Statistical data:** shared on the Galician Institute of Statistics website.

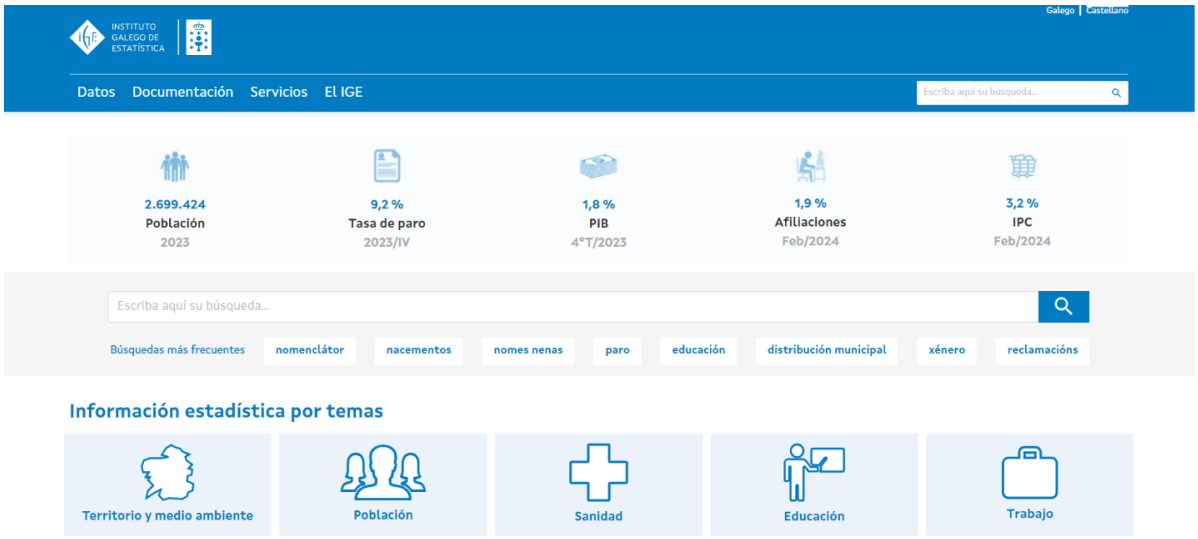

Figure 35: statistical data of Galicia on Galician Institute of Statistics website

- **Fishery data:** accessible in pesca de Galicia geoportal for fishery, managed by the Sea Council and the Technologic Institute for the Control of Marine medium de Galicia (INTECMAR) and funded by Xunta de Galicia.

Figure 36: fishery data on pesca de Galicia web site

- **Water management data:** accessible in augas de Galicia geoportal managed by the infrastructure and mobility council of Xunta de Galicia.

Figure 37: water management data on pesca de Galicia web site

- **Ports location:** accessible on IDEPO the geoportal of the provincial council of Pontevedra in Galicia Region.

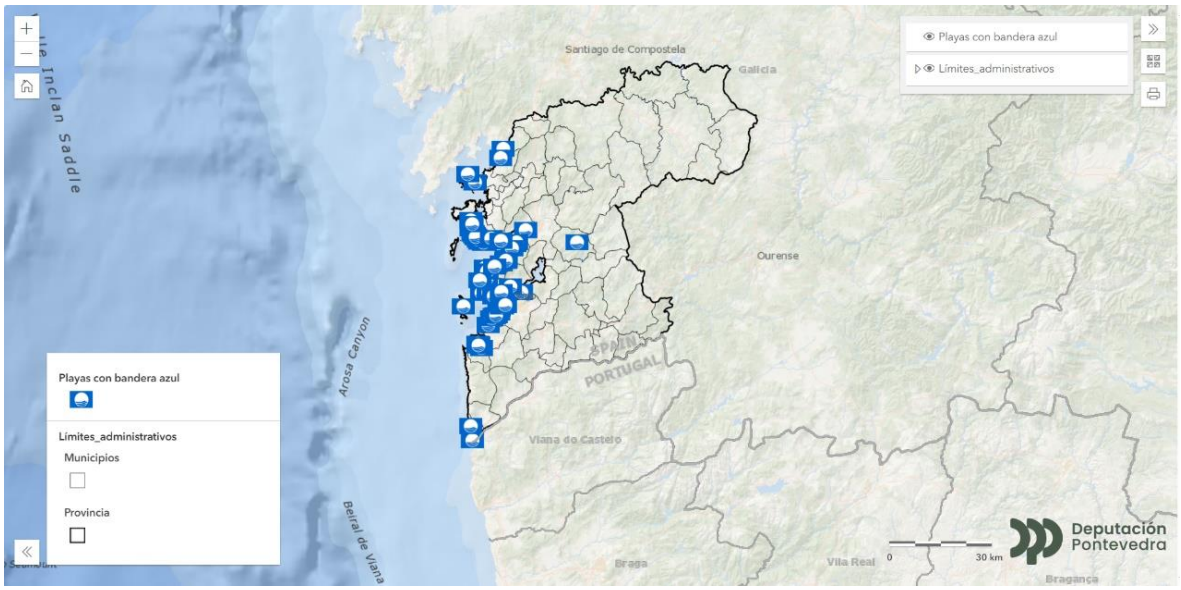

Figure 38: ports location shared in IDEPO geoportal

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The Region of Murcia

- **Area with a risk of flooding event and more data on Murcia Region:** accessible on the Spatial Data Infrastructure of the Region of Murcia IDERM geoportal the infrastructure for spatial data in Murcia.

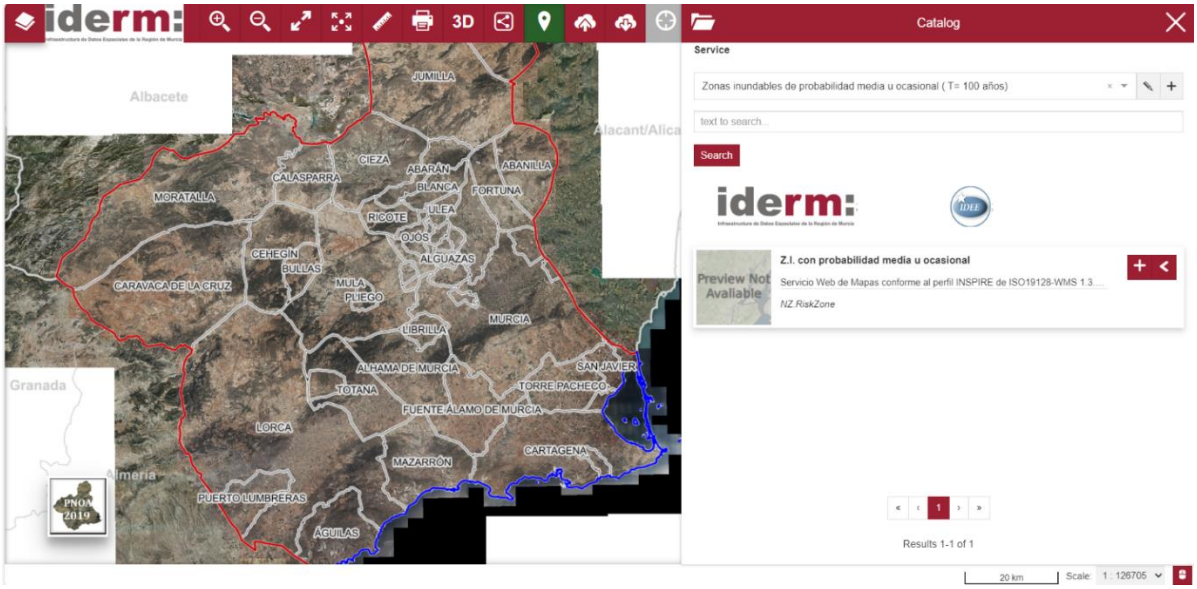

Figure 39: area with risk of flooding event on IDERM geoportal

Sardinia

- **Hydrogeological data** in the regional geoportal of Sardinian Region

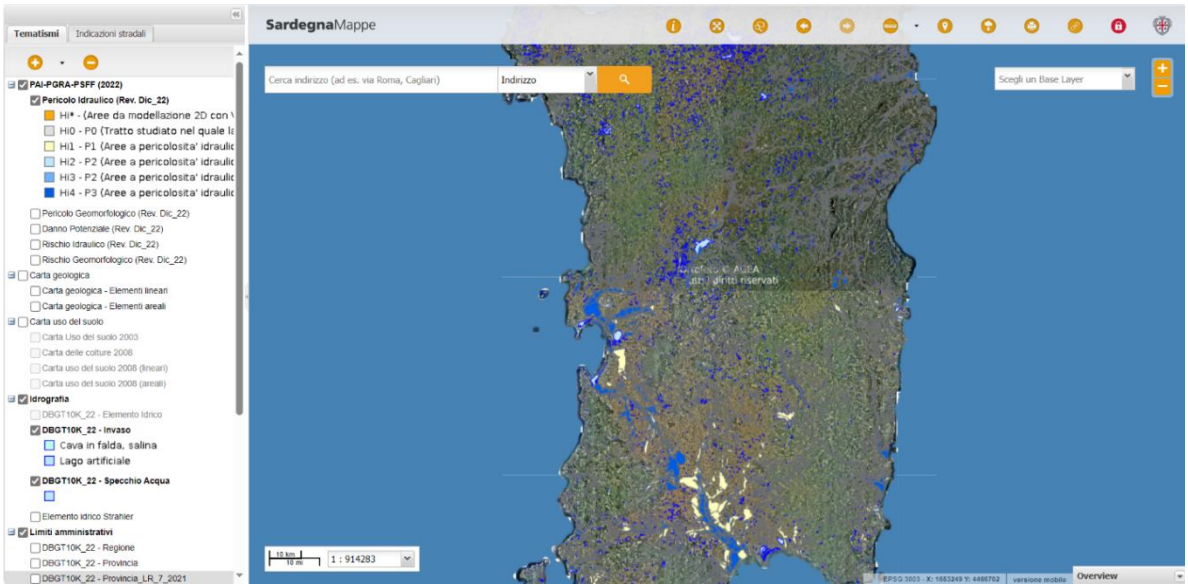

Figure 40: hydrogeological data shared on Sardegna mappe geoportal

- **ARPAS:** meteorological data base of the Regional Agency for the Environmental Protection of Sardinia. It gives access to data from the meteorological and agrometeorological network of ARPAS stations.

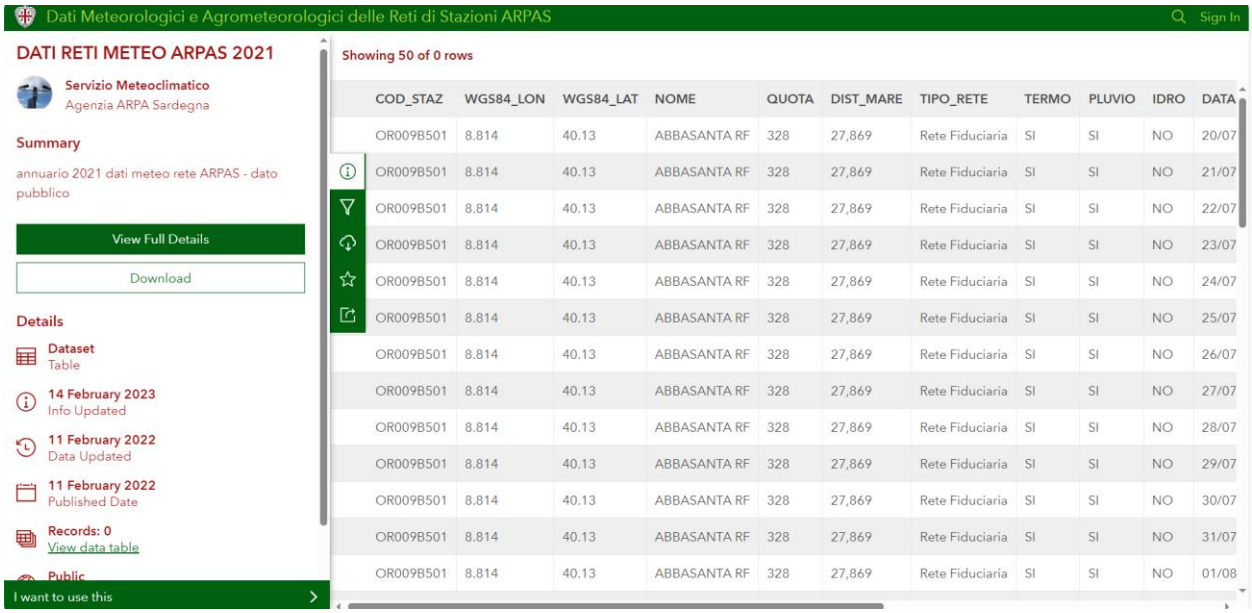

Figure 41: meteorological data from ARPAS network stations for Galicia shared on ARPAS data base

Central Macedonia North Aegean Sea

Monthly measurements of various seawater parameters: accessible in Open data Thessaloniki the official geoportal of Thessaloniki gives access to oceanographic data on seawater parameters

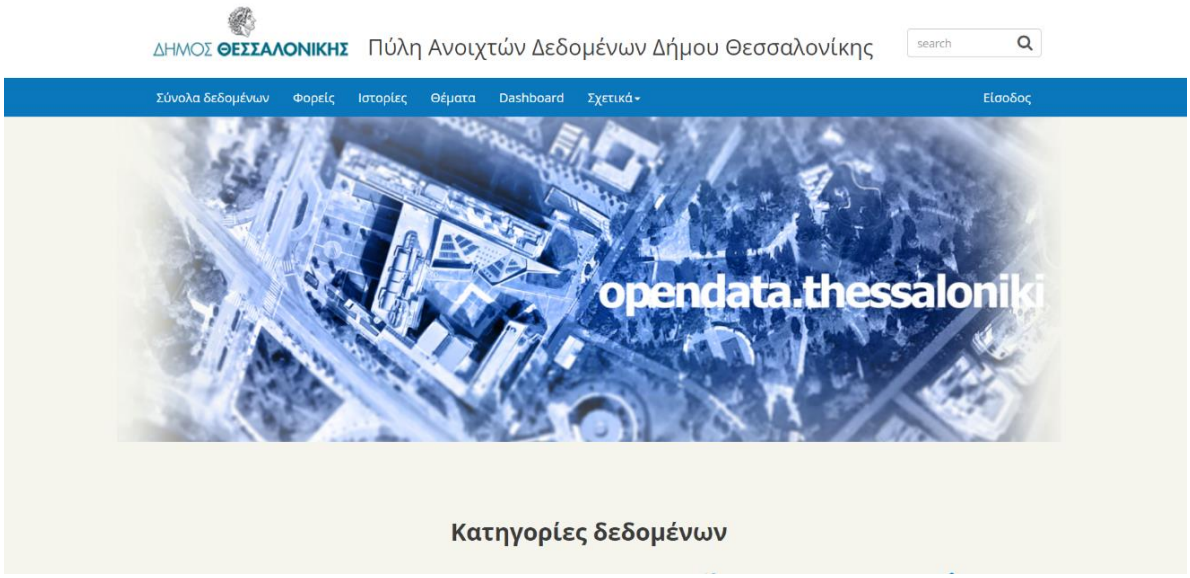

Figure 42: open data Thessaloniki geoportal

Provence-Alps-French-Riviera Region

- **Data Sud:** this data catalog references habitat, harbor, slipway, patrimony, ecosystem, MPA and biodiversity data coming from French public institutes.

Figure 43: example of marine data shared in Data Sud database

- **Inventory and impact of construction on maritime domain for the Mediterranean Sea:** shared in MEDAM geoportal of Ecoseas Unice (Science faculty of French Riviera specialized on sea observation and the National Research Center of Sciences -CNRS)

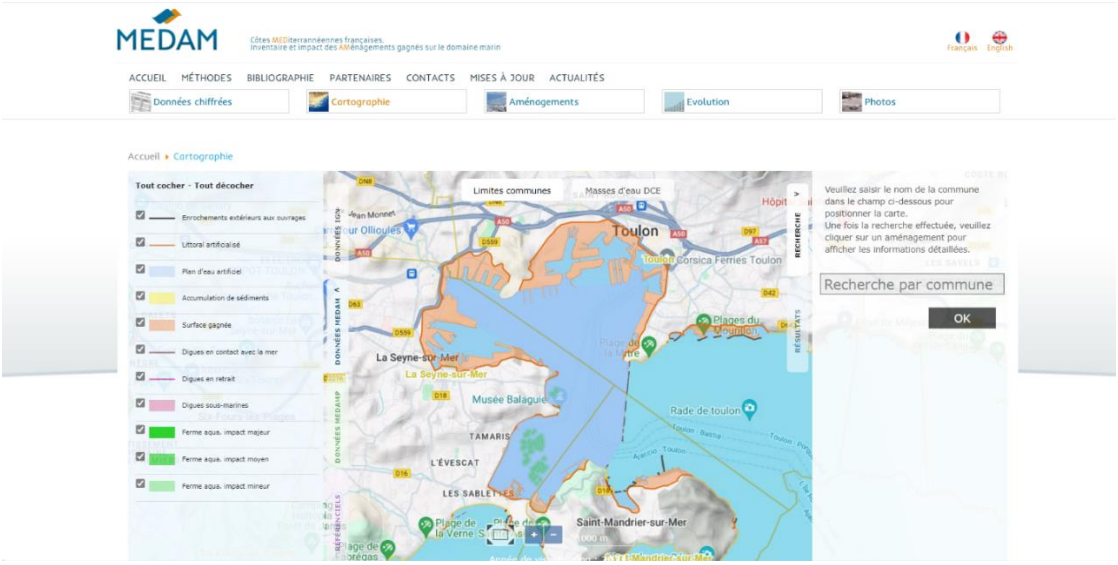

Figure 44: impact of construction on maritime domain for the Mediterranean Sea in MEDAM geoportal

- **Natural heritage inventory:** shared in Silene, the South Region expert database of the Information System for the Inventory of Natural Heritage (SINP) which is a national program financed by the Ministry of the Environment.

Figure 45: natural heritage inventory shared on SILENE data base

- **Golfe de Saint-Tropez maritime observatory:** the geoportal of Saint Tropez municipality with data shared on benthic habitats and marine species.

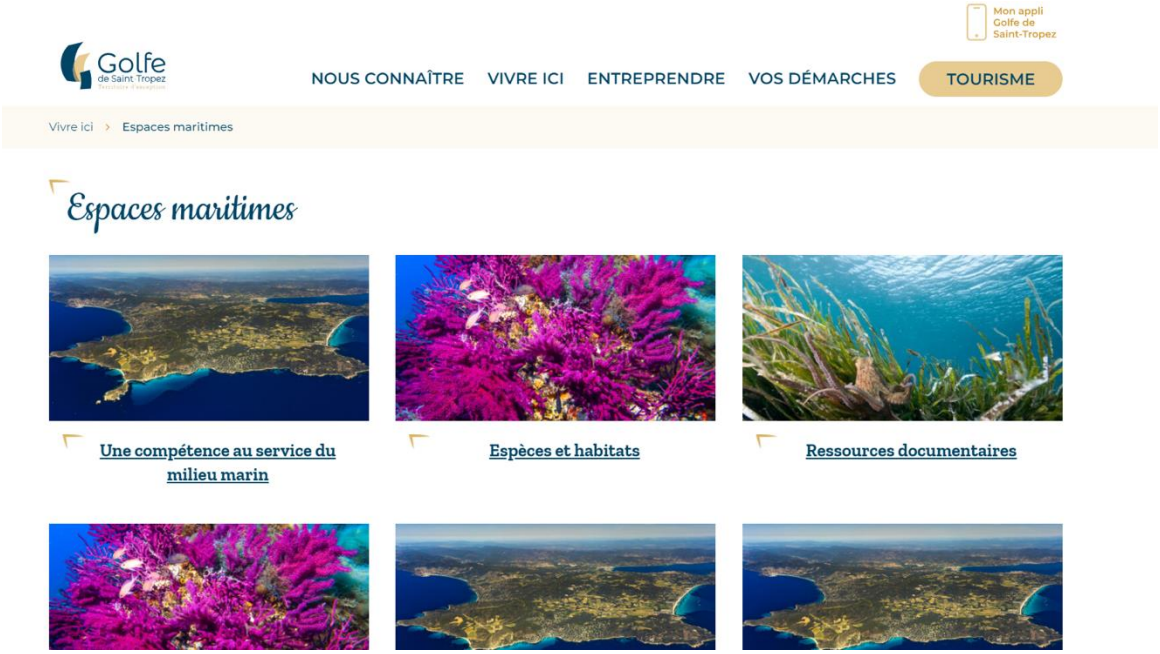

Figure 46: Golfe de Saint Tropez maritime observatory

Pays de la Loire

- **Location of cultural heritage:** shared on Geopal the official geographic portal of Pays de la Loire.

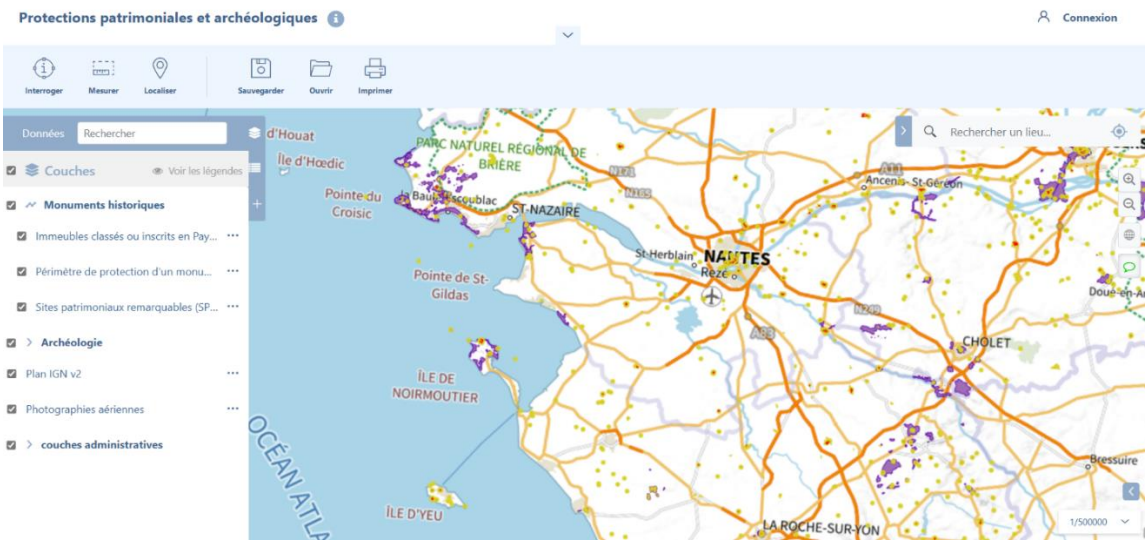

Figure 47: UCH data shared in Geopal

- **Economic data on tourism:** accessible in solutions pro tourism website, funded by Pays de la Loire Region.

Figure 48: economic data on tourism shared on solutions pro tourism web site

- **Saint Nazaire windfarm environmental data:** on the landscape, tourism, maritime birds, ocean movement, marine mammal species, fishery resources and sea floor species.

Figure 49: Saint Nazaire windfarm website

County of Mayo

- **Aquaculture:** website for Ireland which covers aquaculture financed by the Department of Agriculture, Food and the Marine.

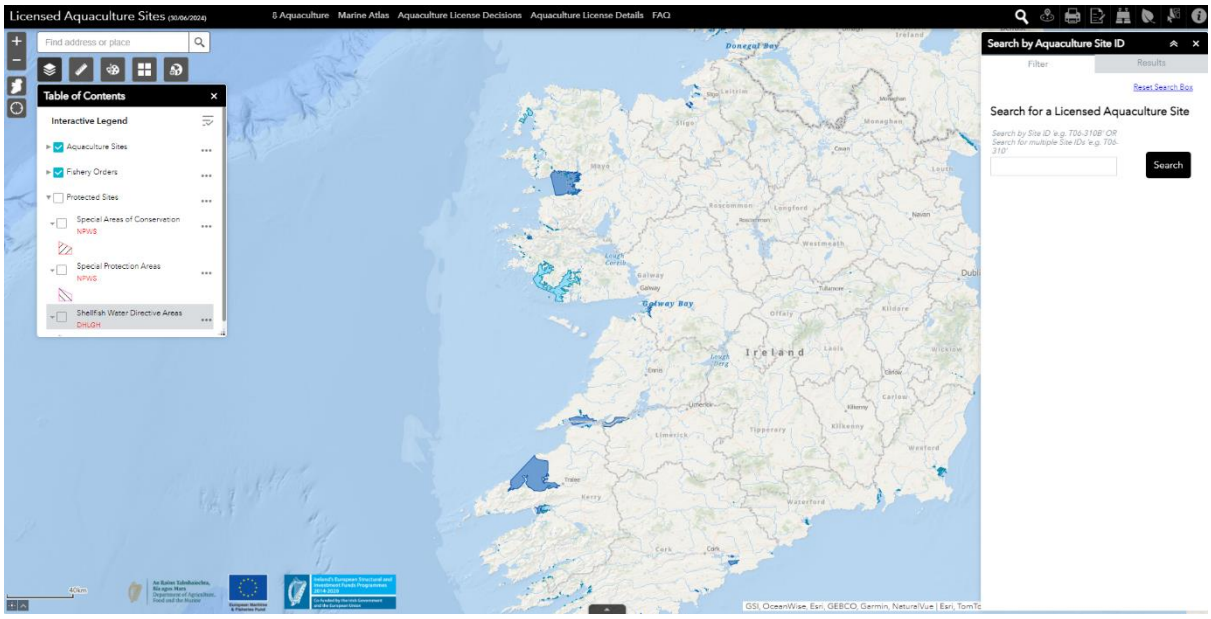

Figure 50: Irish website on aquaculture covers

V. Knowledge and diagnosis of regional geoportals for MSP needs

a) Results of the geoportal self-assessment survey

- Assessed geoportals

The respondents were asked to indicate the level (national, regional, etc.) of the geoportal they chose to assess. The distribution of regional and national geoportals in the replies was roughly equal (*Figure 51*), with only 1 more national geoportal, but no European or sea basin wide geoportal was evaluated.

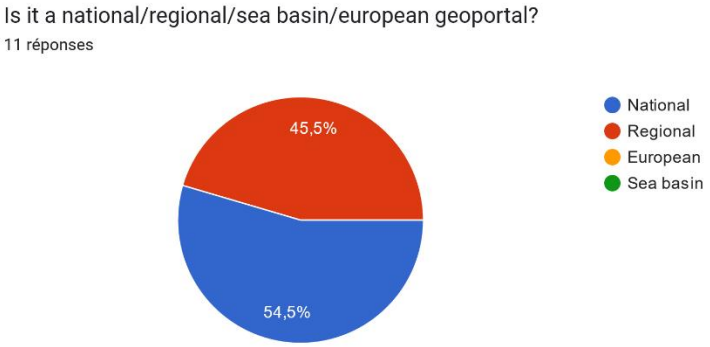

Figure 51: Proportion of geoportal types in the survey replies

After the survey, the organizers visited the assessed portals in order to get a better idea of the functions and purposes of the portal. It was found that most of the geoportals were either specifically dedicated to MSP or at least focused on marine data, but more generic portals were assessed as well.

During the survey, two geoportals were assessed twice each, by different respondents: the regional-level geoportal Geopal in Pays de la Loire and the national-level Marineplan in Ireland.

- Uses and added value for MSP

In the survey, respondents were asked to detail the added values of geoportals to the MSP process. National portals were described as data hubs hosting all the necessary information and data for MSP as well as other Marine Environment directives (e.g. MSFD, Birds directive, Habitats directive). As such, several benefits to MSP were attributed to national geoportals by respondents. Most of them were well-known characteristics of national geoportals (MSP-related or not), such as the availability of existing plans and policies, the diversity of official, validated data at national level, including data regarding other directives and policies (e.g. MSFD), knowledge sharing, in particular in the field of MSP and regarding ocean management, and the harvesting and sometimes aggregating of various data sources nationwide. It was also mentioned that some national geoportals offered data that would not be available at the regional level (e.g. data created by ministries and governmental agencies).

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In comparison, the main added values of regional geoportals mentioned by respondents can be categorized under three main types:

(i) data not available elsewhere,
(ii) higher data granularity, resolution or accuracy, and
(iii) tools to assist the MSP process, often considers the local specificities.

Exclusive data can indeed be found on regional and local geoportals, through various means. Additional research by the survey organizers showed that such data can include, for instance, environmental data (species distribution, benthic habitat, etc.), socio-economic data (tourism, activities and uses, including land uses that can be retrieved for land-sea interaction analyses), and more. For instance, in the case of the Data Sud portal, which harvests data produced at the local or regional levels by various services and entities in the South Region (France), scientific data from universities in this region are made available on this portal. Similarly, some regional portals (e.g. SIGLoire or Geopal) harvest or provide data made by state services at regional level or regional administrations. Other portals provide socio-economic data, environmental data, facilities and infrastructures, etc.

In a similar way, data found on local and regional portals often has a higher precision, granularity, or resolution than national data. In other words, while in many cases, this kind of data is findable on national portals, it is often aggregated and therefore the high accuracy is lost. Mentioned instances of such data were, for instance, pressures on the environment, environmental risks and mitigation plans and measures. Raw monitoring data, sometimes available at the national level, is also provided on such portals.

Finally, decision support tools were mentioned by multiple respondents. For instance, two regional portals provided users with tools developed for MSP: Water Spatial Planning (Sardinia) and Tools4MSP (Sardinia). Such tools can include Cumulative Effects Assessment, which can be used to assess the impacts of a sum of activities on the marine environment, in order to support an ecosystem-based approach to MSP by identifying pressures and impacts. Other tools include maps on conflicting uses of maritime space, oceanographic models, etc. While such tools can also be found on certain MSP-related geoportals at the national level, the regional geoportals often provide tools better suited to local specificities. For instance, a third portal (MonLittoral, in South Region) also provides planners with planning tools such as a coastline variation tool, but these are specifically tailored to the shores of the South of France. In a similar way, the same portal provides access to real-time wave data, as well as all the relevant documentation. All of this is definitely site-specific by nature, and is not available to that extent on national geoportals.

- Criteria (refer to *Annex 2* of the report to see the whole list of criteria)

Criteria in general were very well followed. In general, for each criterion, the majority of the geoportals received top grades (i.e. best possible grade for a given criterion). A few criteria were notably less respected:

- **P2 (High priority)** on the existence of easily accessible data services, received a majority of 2/3, indicating the existence of download services and/or data

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webservices such as WMS/WFS, but no data transformation services for interoperability.

- **P5 (High priority)** on the availability of dataset titles in English received a majority of 0/3 and 1/3, for either no English at all, or only main portal tools and functions in English, but nothing in the data.
- **M10 (Medium priority)** on metadata persistence, received a majority of 1/2 (describing the metadata of formerly available data as available but not referenced)
- **M15 (Low priority)** on data and metadata referencing other data and metadata, received a majority of 1/3 and 2/3, indicating the infrequent existence of references.
- **P10 (Low priority)** on associating data producers' logos to the displayed layers, received a majority of 1/2 for the availability of the logos, without any association with the corresponding layers.

Differences could be identified between geoportals as well: for a slight majority of criteria, the averages of regional geoportals' grades were greater than the averages of national geoportals' grades. The same observation was made when considering only criteria with a high priority. No prominent explanation was found.

Finally, some of the replies ignored a few scant criteria. Reasons were not given by participants, but hypotheses are proposed in the discussion.

b) Analysis of the survey results

The Geoportal Self-Assessment Survey produced various notable results. The general conclusion is that all assessed portals, either national or regional, performed really well in the Survey, using the Geoportal Assessment Criteria. No negative remark was provided regarding the criteria or a failure to cover essential parts of planners' needs in the MSP process. It can therefore be concluded that the criteria are mostly achievable and balanced.

In detail, while the surveyors anticipated an overall better performance from national portals, in part due to funds and the existence of specialized national institutions, regional portals were found to perform as well as national ones in general, and even better than national portals on average in several criteria (M1, M5, M9, M10, M13, D1, D2, D3, D4, D7, P2, P3, P7, P9, P11 and P12). No significant pattern was found in the description of the criteria that could explain this better performance: the distribution of MSP-related and not-related portals was similar in regional and national geoportals, there was no overrepresentation of regional portals compared to national ones, and so on.

One of the highlights of the survey is the added value of regional portals. As illustrated by their performances, regional geoportals are suitable for use in the MSP process, in particular in input data collection. Besides, several added values were presented during the study which illustrates the complementing role of regional geoportals: for example, they can offer data from local authorities or research data that is not always available on national portals. Similarly, and due to the aggregation process used to produce national data, regional geoportal data can be more accurate than the data found on national hubs.

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However, five of the criteria were not well-followed by the assessed geoportals (on average): P2 (High priority) on data transformation services (i.e. tools to export data from a format to another), P5 (High priority) on English availability, M10 (Medium priority) on metadata persistence, even for removed data (i.e. the continued or prolonged existence of metadata records, including for currently removed or inaccessible data), M15 (Low priority) on data and metadata referencing other data and metadata and P10 (Low priority) on the presence of data producers' logos associated with the relevant layers.

Several explanations for the lower results for these five criteria are proposed. For the two criteria with high priority (P2 and P5, i.e. data transformation services and English availability), it could be explained by technical difficulties. Alternately, it is possible that such services are considered uncommon enough, or used scarcely enough to not merit attention. It would suggest that geoportal managers, both at the regional and local levels, do not consider the possibility that international MSP planners (and other users) may be interested in the data they provide.

The low grades obtained in criterion M10 (metadata persistence) can be explained by two reasons: catalog clarity and storage space. Geoportal managers (specifically metadata catalog managers) may wish to avoid confusion regarding which data is currently available on their portal by removing metadata related to discontinued datasets. Besides, outdated metadata can take up significant storage space, and can be considered not relevant enough to justify the expense.

The low grades in the last two criteria (M15 and P10, i.e. data and metadata referencing other data and metadata, and data producers' logos) can be explained by a lack of interest of portal managers. While cross-referencing can increase findability by relating datasets to similar datasets, it can be considered unnecessary by portal managers if the metadata catalog is sufficient to ensure findability. Similarly, if the producers of a dataset are listed in its associated metadata, geoportal managers may consider it enough to reference data origin and choose not to include data producers' logos.

Finally, it was noted that a few replies left some criteria blank. While no particular trend was observed, it is possible that some criteria may be less relevant in some cases (e.g. if there is no map viewer in the geoportal, then the question regarding map legend may be left blank by the respondent).

On the topic of geoportals' usefulness and added value to the MSP process, the survey concluded that while national geoportals could be used to obtain necessary data for MSP, share general knowledge and even link the MSP process with other initiatives, the features of regional portals could make them equally useful by providing users with precise, detailed, local data otherwise unavailable or aggregated at the national level, as well as tools designed specifically for the area of activity.

c) Comparison with similar research

Regardless of the national or regional level, it was found that geoportals evaluated during this survey could be categorized under three major types:

(i) MSP-focused portals,
(ii) general data harvesting portals,
(iii) institutional portals or expert thematic portals.

MSP-focused portals, such as INFOMAR (Spain), Marineplan (Ireland) or MonLittoral (South Region, France) among others, provide access to MSP plans and other policies and plans, as well as a wide array of relevant documents and resources. Such portals often provide users with tools related to MSP or decision support (e.g. the coastline variability tool on MonLittoral).

General data harvesting portals (e.g. GEOPAL in Pays de la Loire region or Data.gouv.fr in France) are not specifically dedicated to MSP. Rather these platforms are gathering many different types of data (socio-economic, administrative, or environmental data, etc.) from various services and entities: state services, governmental bodies, administrations, etc. While such portals are not necessarily dedicated to MSP or to the maritime domain, they can be useful, especially by providing socio-economic data.

One of the main cautions with this kind of portal is data quality: as many types of data come from several different sources, it may be difficult to validate it. Metadata can also be incomplete, as the geoportal managers are usually not involved in its production. A useful tool to counter this effect was found on one of the portals: a metadata completion gauge on Data.gouv.fr. This simple tool provided users with a visual representation of how complete metadata was. On this portal, further investigation on incomplete metadata records shows exactly which information is missing from the metadata, which enables users to decide whether the associated data is suitable for their purpose.

Finally, expert thematic portals including institutional portals (e.g. Data Shom), while also not focused on MSP in most cases, are usually centered on a particular field of the maritime domain (e.g. hydrography, environmental protection, fisheries, and so on). Unlike data harvesting platforms, expert thematic geoportals usually have at least some level of control on the production of metadata and the validation of data. These portals are often managed by institutions responsible for producing official data, which makes them a reliable source of data for the MSP process.

The results of a study published by Davret et al. (2023) on geoportals not focusing on Regions and unrelated to the REGINA-MSP project were coincidentally published (2) just after the completion of the geoportal self-assessment. A comparison was then performed between the findings of Davret et al. (2023) and the conclusions of the self-assessment.

Several differences were found between the geoportals targeted by the two studies. Primarily, Davret et al (2023) targeted geoportals from the whole world, linked to an MSP initiative. As such, they did not include several geoportals (e.g. Data Shom in France or INFOMAR in Spain) containing various datasets important in MSP, such as the datasets listed in the Reference Data Lists for MSP created in the framework of the eMSP-NBSR project, e.g. bathymetry, hydrography, chemical composition (4 and 5), since these portals were not directly linked with MSP initiatives.

In contrast, the Geoportal Assessment Criteria were tailored for any geoportal hosting data with a potential use in MSP, in line with the goal of evaluating whether certain geoportals (chiefly, but not only, regional portals) have an added value to the MSP process. Furthermore, the scope of the Geoportal Grading Criteria is restricted to EU portals, and the Self-Assessment survey was only distributed to the 8 case study regions of the 5 countries participating in the REGINA-MSP project. Davret et al. (2023) also mentioned that the worldwide scope of the study resulted in larger discrepancies between geoportals. Going into detail, the study also frequently grouped European portals together when discussing results, illustrating more homogeneous trends in Europe than what is identified in the whole world. This explains the more homogeneous results obtained in the Geoportal Self-Assessment Survey.

The evaluation criteria were also different. In their study, Davret et al (2023) chose a mixed-methods approach (combining qualitative and quantitative): they derived 8 functionalities of MSP geoportals from literature and assessed whether the corpus of geoportals they identified for the study possessed those functionalities or not. The functionalities were as follows:

Table 12: Categorized geoportal functionalities (Davret et al., 2023)

Group	Functionality
"Catalog functionalities" designed to help users "see and know"	1 – Access to metadata storage
	2 – Visualize geographic information
	3 – Visualize the MSP plans
Self-engagement functionalities designed to help users participate and engage with MSP	4 – Import external data for personal use
	5 – Leave comments online
Collaborative functionalities designed to allow intervention and action to stakeholders or the public	6 – Propose alternative plans
	7 – Post collaborative data on the portal
	8 – Use the portal as a decision support tool

Of all these functionalities, only three of them (functionalities 1, 2, and 4) were already directly included in the Geoportal grading scheme used for the Self-Assessment. While consulting the existing MSP plans (functionality 3) would indeed be useful for planners, the geoportals targeted by the Geoportal Assessment Criteria were (implicitly) supposed to be any that could potentially serve as input data sources (i.e. data used to help planners draft or update MSP plans). Due to the diversity of MSP input data, it seemed unlikely that such portals would all provide access to MSP plans, especially portals at regional scale. For similar reasons, functionalities 5 to 8, which are all centered on interactions with stakeholders and the public, were also not relevant for the Geoportal Assessment Criteria.

Among them, functionality 7 is a particular case, as it concerns the uploading of collaborative data on a portal. The possibility to obtain, and use, data produced by collaborative initiatives

was simply not considered during the construction of the Geoportal Assessment Criteria. In any case, such data is not distinct from institution-produced data, as long as its origin and quality are well-described in the metadata.

Interestingly, some of the conclusions of the survey were similar to the findings of Davret et al. (2023). For instance, despite focusing on portals linked to MSP initiatives, they observed that few portals actually show marine plans. This is in line with the geoportals assessed during the survey: only a few of them showed MSP plans.

Furthermore, Davret et al. (2023) observed that data visualization was present on a majority of studied portals, much like access to metadata, with a strong correlation between the two, especially at European level. Similarly, in the survey results, the criteria related to metadata and data access and visualization received almost exclusively top grades.

d) Further analysis of the Geoportal Assessment Criteria

The survey launched first showed that the Geoportal Assessment Criteria developed during the REGINA-MSP project were balanced and appropriate to detect the potential usefulness of a portal in the MSP process. However, a majority of the respondents are partners from the REGINA-MSP project, and there is not a large diversity of activities among them. The questions on the respondents' profiles (e.g. activities, understanding of MSP, etc.) were also superficial, and the small number of responses does not allow significant statistical analyses. As the participants chose which geoportal to evaluate, the list of evaluated geoportals does not contain European-level geoportals such as EMODnet. As such, it would be interesting to launch a second survey with a deeper assessment of participants' activities and profiles, and to try to target a larger group of respondents, in order to cover more geoportals, including European ones. To help in this regard, it would be useful to have an inventory of existing geoportals related to the MSP process, or providing useful data for the MSP process. Such an inventory was partially completed in the REGINA-MSP project, but it is limited to the 8 study case regions and 5 participating countries in the project. For an inventory with a wider scope, the EMODnet platform could be adapted to host it, which would also strengthen its usefulness.

As the results show, a few criteria were not followed by a majority of portals, which could be explained by several reasons ranging from technical constraints or digital storage space to lack of interest or perceived usefulness of a criterion. Nonetheless, the list of criteria will not change, as some portals did follow those specific criteria. Besides, few of the assessed geoportals display the current MSP plans (which would be useful for planners), due to the fact that most of the assessed geoportals were not specifically dedicated to MSP. Furthermore, while this function is not included in the geoportal assessment criteria, the collaborative tools presented by Davret et al. (2023) could be a very useful and interesting addition to geoportals.

VI. An interactive map to index regional data flows on regional geoportals

a) The interactive map

In an effort to enhance accessibility to regional and national geo-catalogues listed within the REGINA-MSP project, Shom has developed an interactive map of the geoportal (see *figure 52*). This map serves as a user-friendly platform for easily accessing and navigating these geo-catalogues. By indexing these resources, stakeholders can efficiently retrieve crucial spatial information pertinent to MSP processes.

Figure 52: An interactive map representing national and regional geoportals for each case study Region in REGINA-MSP project -developed by Shom

Furthermore, the subsequent section of this report provides a comprehensive list of geoportals and databases housing valuable data essential for both national and European MSP endeavors. Through these initiatives, the REGINA-MSP project aims to streamline access to vital geospatial data, fostering informed decision-making and effective MSP implementation. A focus point on each of these geoportals is presented in the next session for each Region in the project (link to the geoportal is accessible when clicking on the figure of the report).

b) Regional and national geoportals and data catalogue useful for MSP

SPAIN

- **INFOMAR:** The Directorate General for the Coast and the Sea, which is the competent authority for MSP in Spain, has created an information system called INFOMAR and developed by the Centre for Ports and Coastal Studies (CEDEX), which brings together all the information generated by the public administrations in the field of the application of European directives (mainly the MSFD, but also the Marine Spatial Planning Directive, the WFD, and the Habitats and Birds Directives). This INFOMAR system is made up of several components, one of which is a geographic viewer. All the geographical information on which maritime spatial planning is based, as well as the resulting zoning, can be consulted in the INFOMAR geoportal,

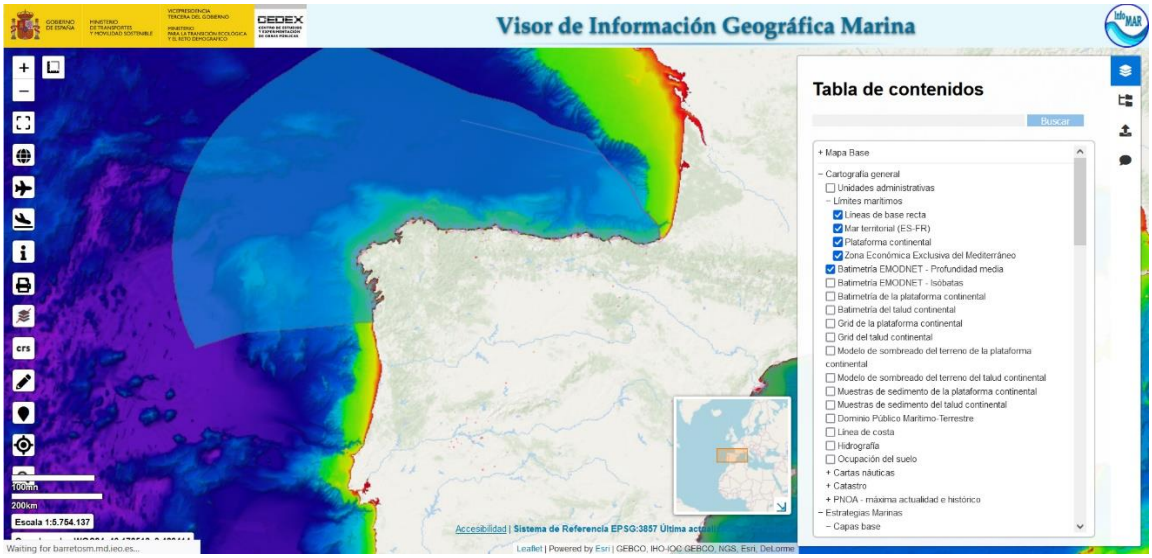

Figure 53: INFOMAR geoportal

- **MITECO:** The Ministry for the Ecological Transition and the Demographic Challenge has developed different geoportals of the official Spanish government related to the environment. This national geoportal gives access to all geographic data of Spain from the environmental topics, such as: water; biodiversity and forest; quality and environmental assessments; coast and marine environment; and demographic challenge.

Figure 54: MAPAMA geoportal

- **IDEO:** geoportal from the Spanish Institute of Oceanography (IEO) gives access to data on oceanographic properties, administrative units, MPAs, navigation regulation, Digital Elevation Models (DEM), Marine Strategy Framework Directive implementation in Spain and benthic habitats.

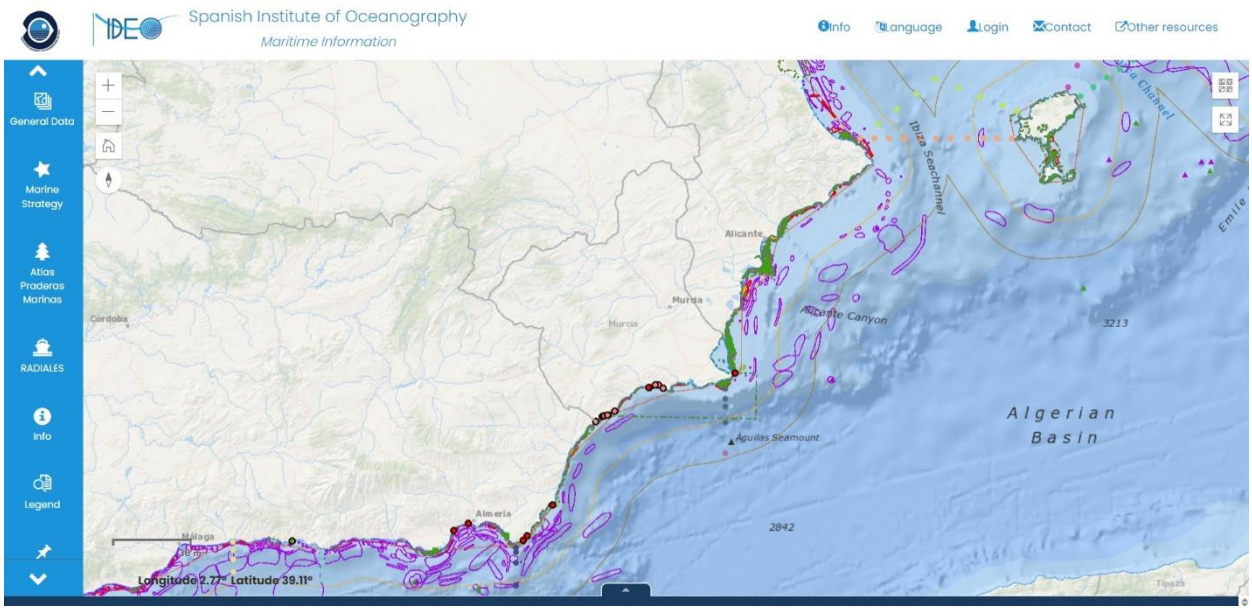

Figure 55: IDEO geoportal

- **Ports geoportal:** national data portal of Spanish harbors, gives access to physical parameter like wind, to meteorological prediction and historical meteorological data.

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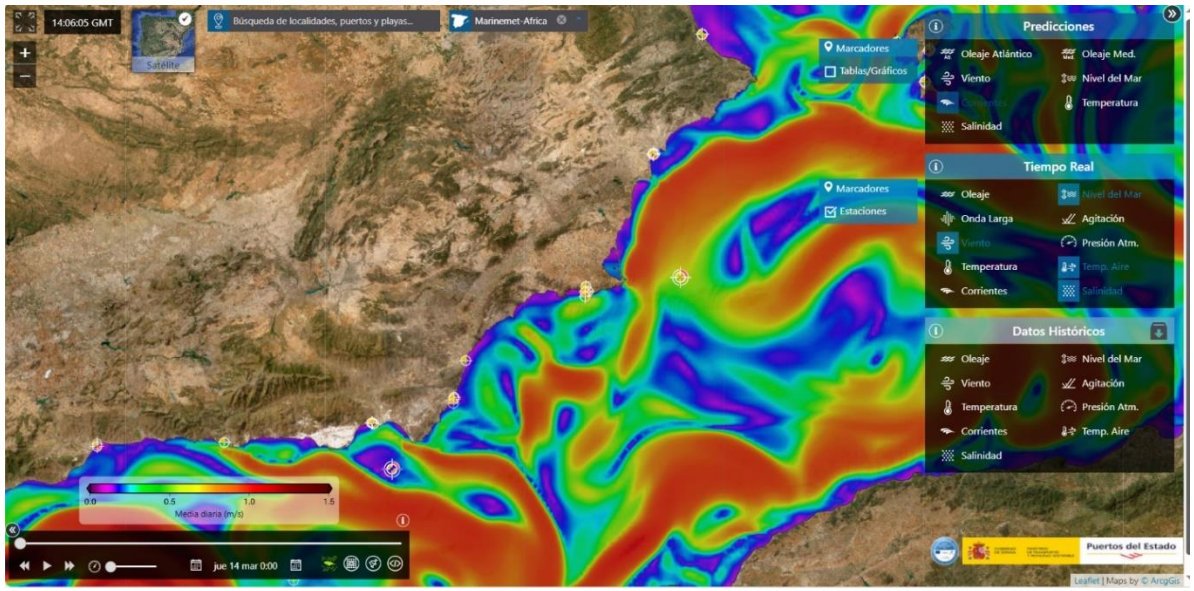

Figure 56: Spanish ports geoportal

- **IDEE:** The Spatial Data Infrastructure of Spain (IDEE) is the website that integrates on the web the data, metadata and geographic services produced in Spain, which comply with the norms, standards and recommendations that allow their interoperability. It is not only a geoportal it is the Spatial Data Infrastructure of Spain, it aggregates all spatial data, metadata, geoportals, etc. of Spain

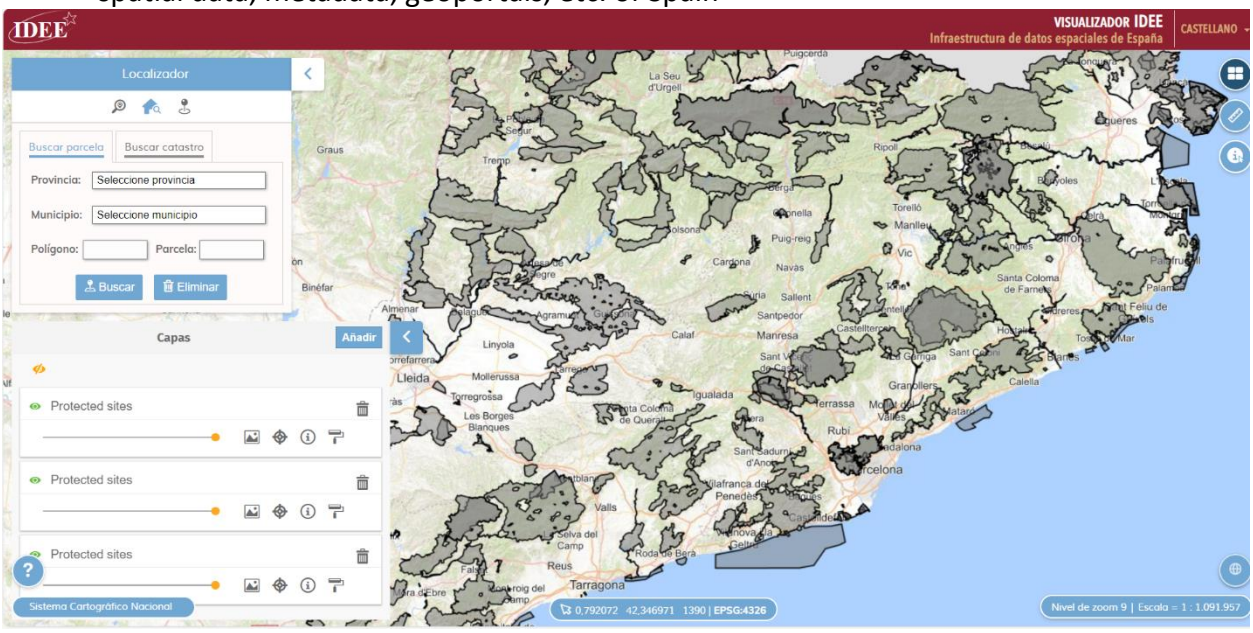

Figure 57: IDEE geoportal

- **Acuivisor:** geoportal of the Ministry of Agriculture, Fisheries and Food of Spain focused on aquaculture information. This viewer enables users to visualize the location and consult descriptive information on aquaculture establishments; obtain information on

the Mollusc Production Zones and Zones of Interest for aquaculture declared in Spain. The Zones of Interest, classified into 4 categories depending on the type of zone and its administrative situation, represent a first approximation to the future spatial planning of aquaculture in each Autonomous Community.

Figure 58: Acuivisor geoportal

Galicia

- **RAIA:** oceanographic observatory for the Iberian sea transborder between Galicia and North of Portugal. The data shared are maritime currents information, meteorological and hydrodynamic model output and Sea Surface Temperature (SST).

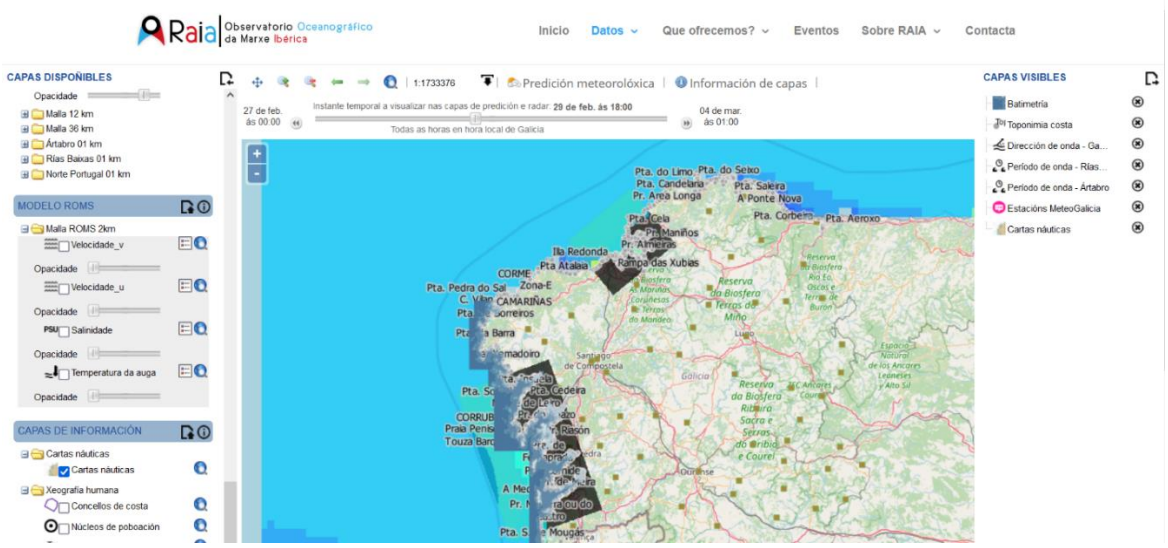

Figure 59: RAIA geoportal

The Region of Murcia

- **SIOM:** The Oceanographic Information System of the Region of Murcia-SIOM, is provided by the Fisheries and Aquaculture Service and IMIDA of the Regional Government of Water, Agriculture, Livestock and Fisheries. This portal is focused on fisheries and aquaculture management in the Region of Murcia.

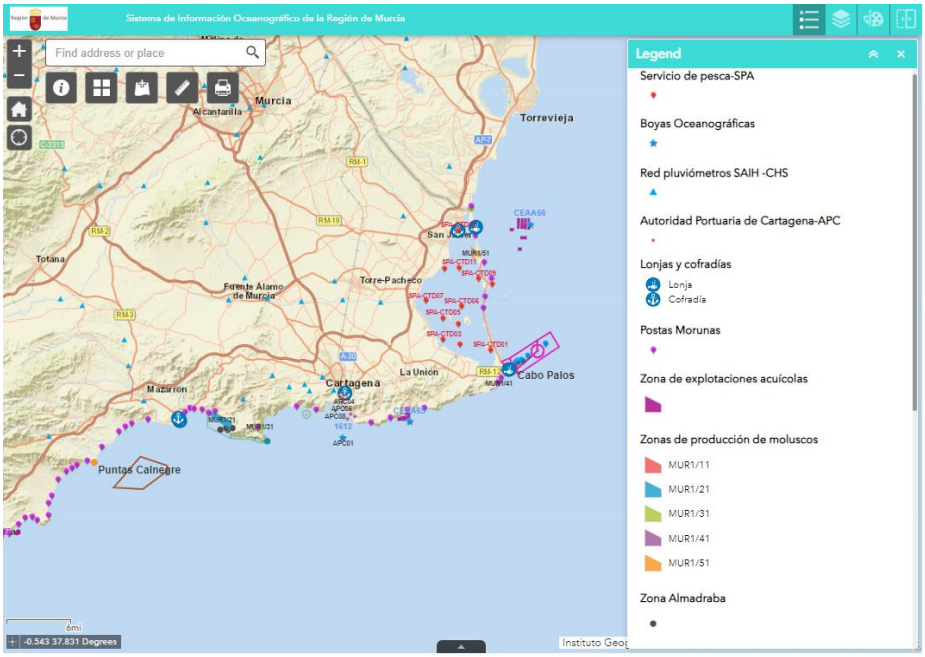

Figure 60: SIOM geoportal

- **SITMURCIA:** This website corresponds to the Spatial Data Infrastructure of the Region of Murcia. The spatial data infrastructure of the Region of Murcia, through the sitmurcia: geoportal, is the technological solution developed by the Territorial Information Unit (UIT) to facilitate access to information at any point in the territory of the Region. The ITU is responsible for organizing the production, obtaining and processing of territorial documentation, as well as disseminating territorial information related to the geographical space of the Region of Murcia.

Figure 61: SITMURCIA geoportal

Ireland

The Irish government possess only national geoportal on maritime data and a geoportal especially for MSP no regional geoportal will be presented for County of Mayo Region. Here you can find the national geoportal which share data for MSP:

- **Marine plan:** official Irish geoportal for MSP financed by the Department of Housing, Local Government and Heritage.

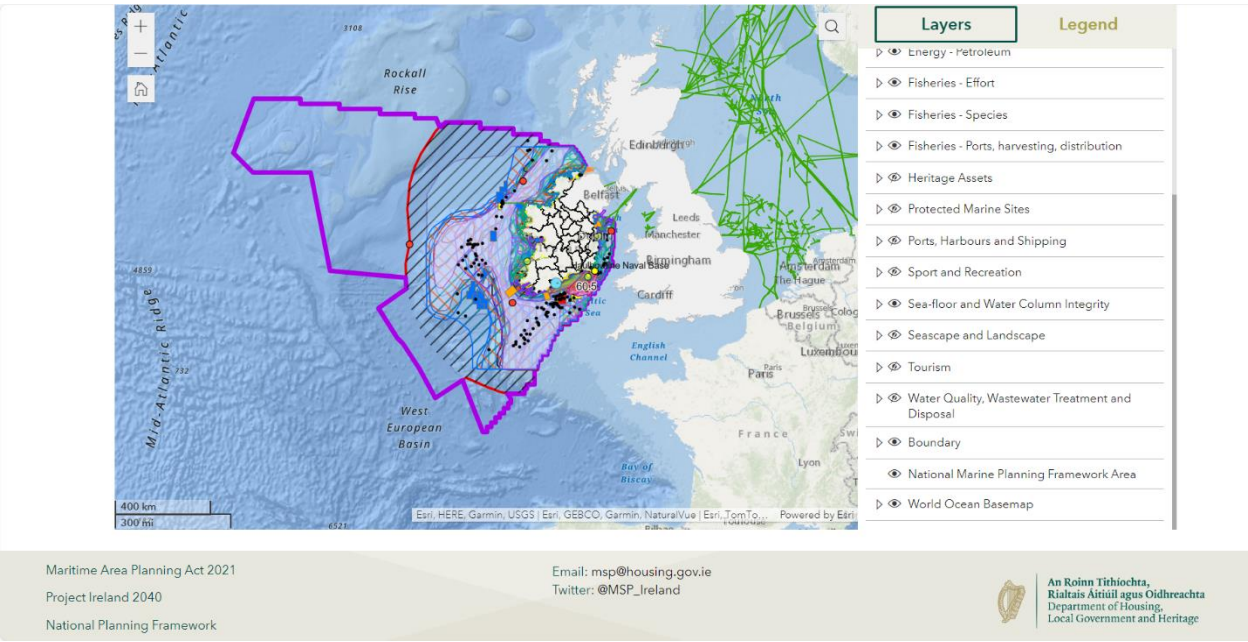

Figure 62: Marineplan.ie geoportal

- **Ireland's Marine Atlas:** National atlas on marine data from the marine institute the State agency responsible for marine research, technology development and innovation in Ireland.

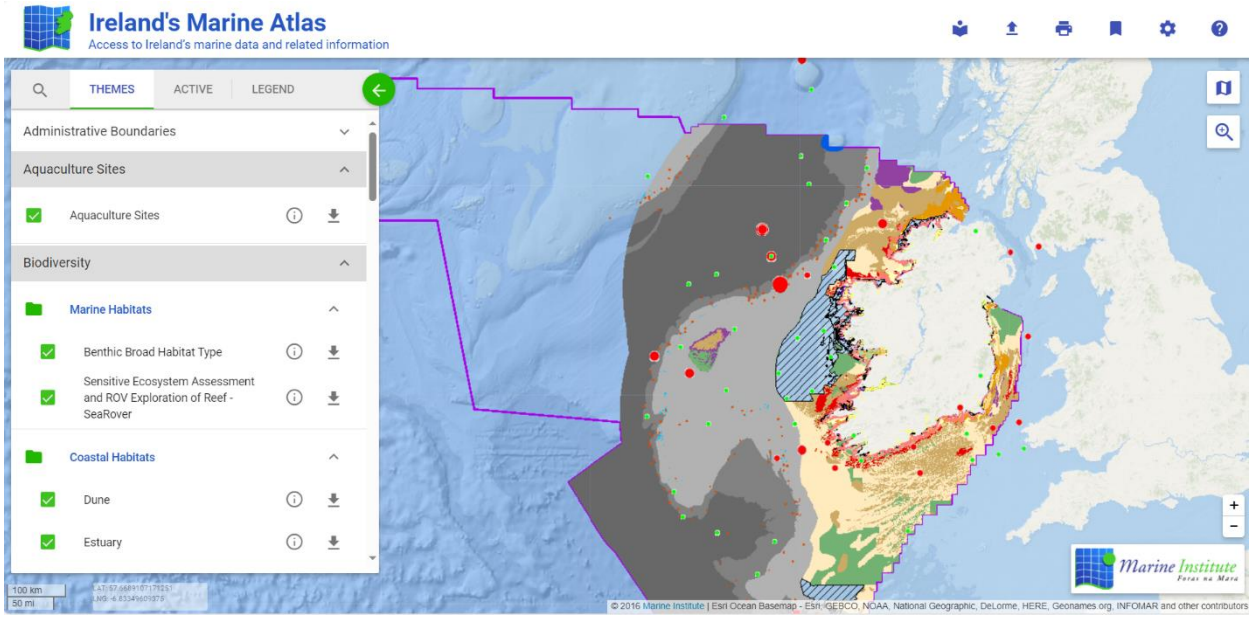

Figure 63: Ireland's Marine Atlas

Greece

- **National geoportal:** geodata.gov.gr gives access to MPA location.

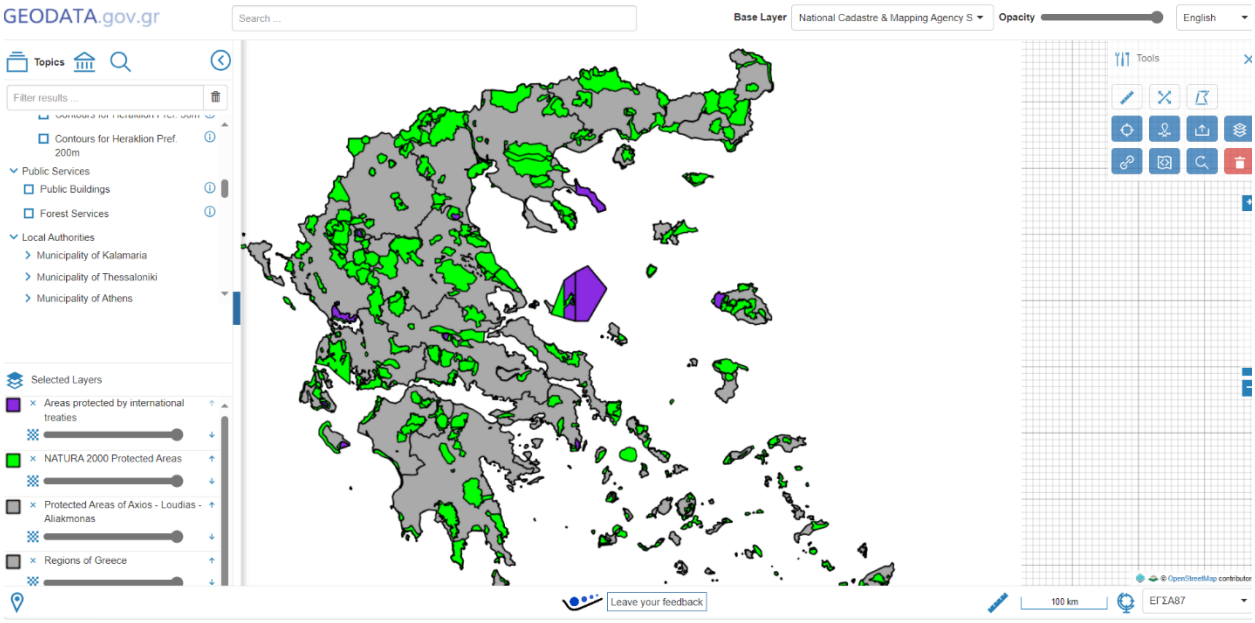

Figure 64: geodata.gov.gr Greek geoportal

- **THALCOR2 geoportal**

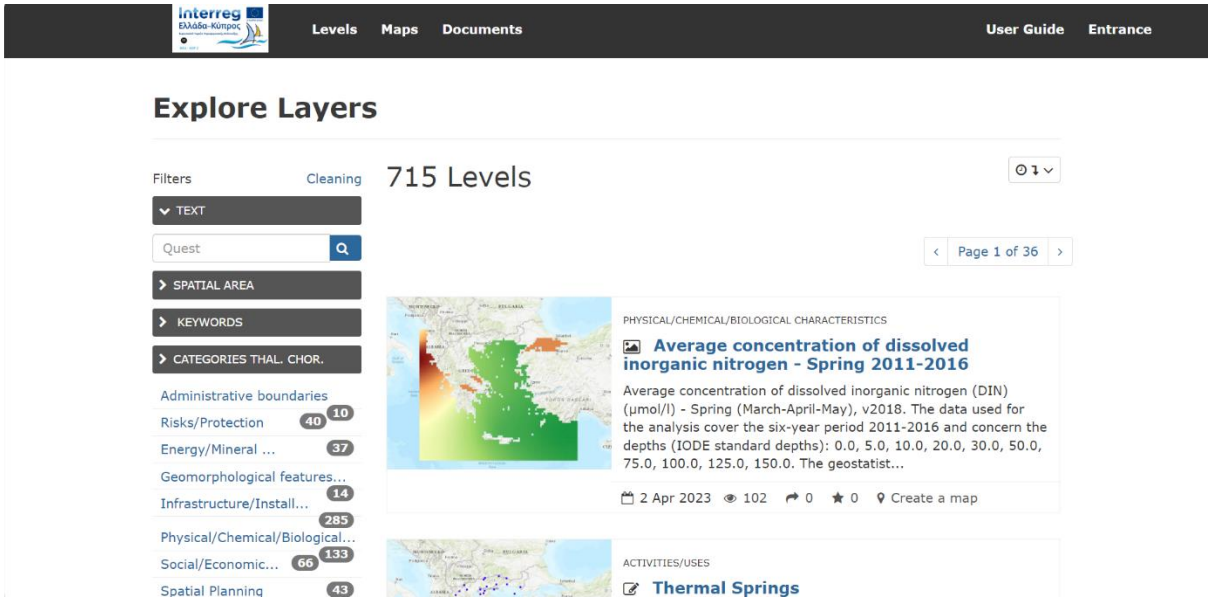

Figure 65: THALCHORE2 geoportal

Crete

- **Geoportal of the Decentralized Administration of Crete**

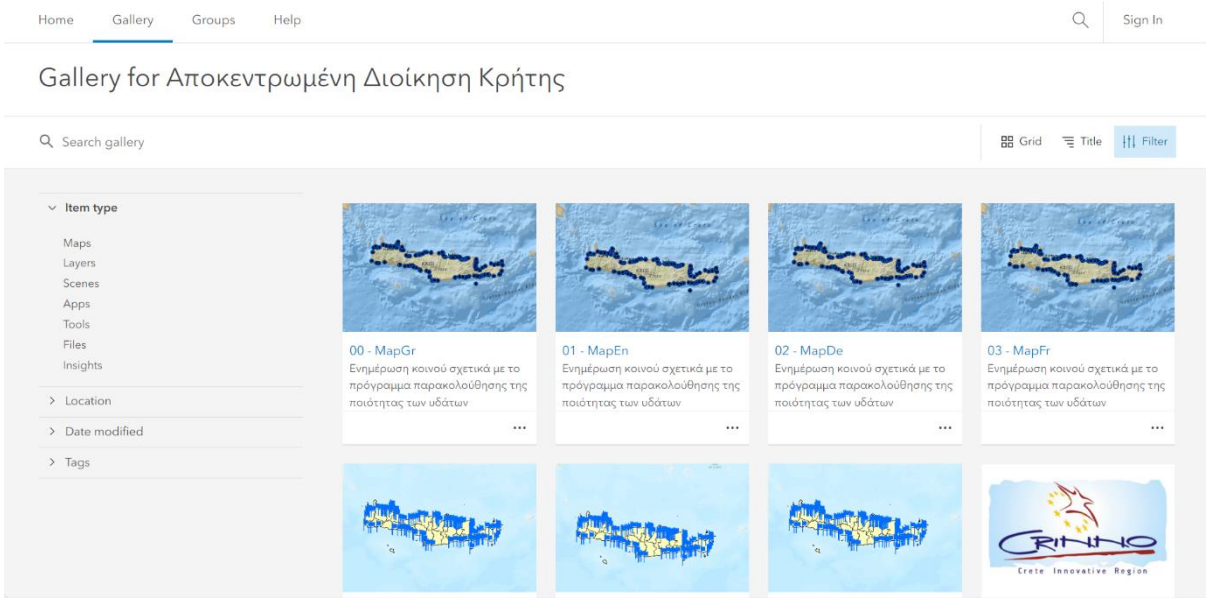

Figure 66: geoportal of the Decentralized Administration of Crete

France

- **Data Shom:** the French Hydrographic and Oceanographic Services (Shom) national geoportal gives access to MSP data framework with physical maritime environment data, official sovereignty maritime boundaries and national maritime security. Data

list: Electronic Nautical Charts (ENC), regulation for navigation, maritime boundaries, oceanographic information (sedimentology, altimetry, bathymetry, tide, currents), aids to navigation, wrecks and obstruction, port information, sub-marine cable and pipeline and sea level.

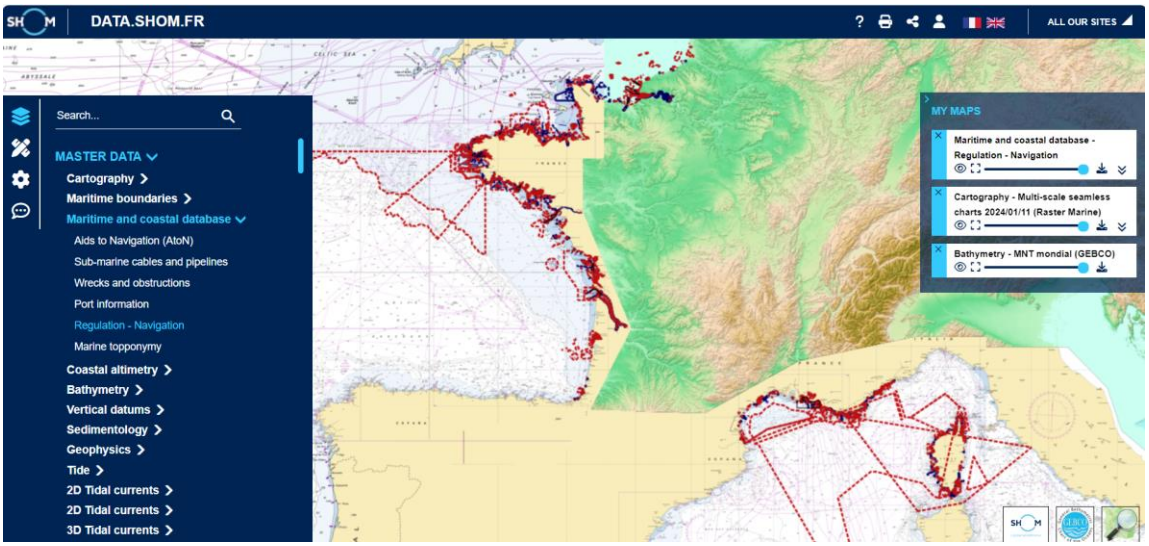

Figure 67: Shom geoportal

- **Geolittoral:** this geoportal from Cerema is a data visualization geoportal giving access to data created by other reference French organism and shared on this platform for MSP purpose. It gives access to coastal and sea planification data from diverse French organization. Data shared are: data on aquaculture, chemical and physical data, eco-systemic data, population density along the coast, regulation data, maritime uses, coastal erosion, vocation map, coastal planning, coastline movement, sediment, species distribution, MPA, habitat, tourism, windfarm location, anchoring area, dredging area, marine traffic and professional fishing data.

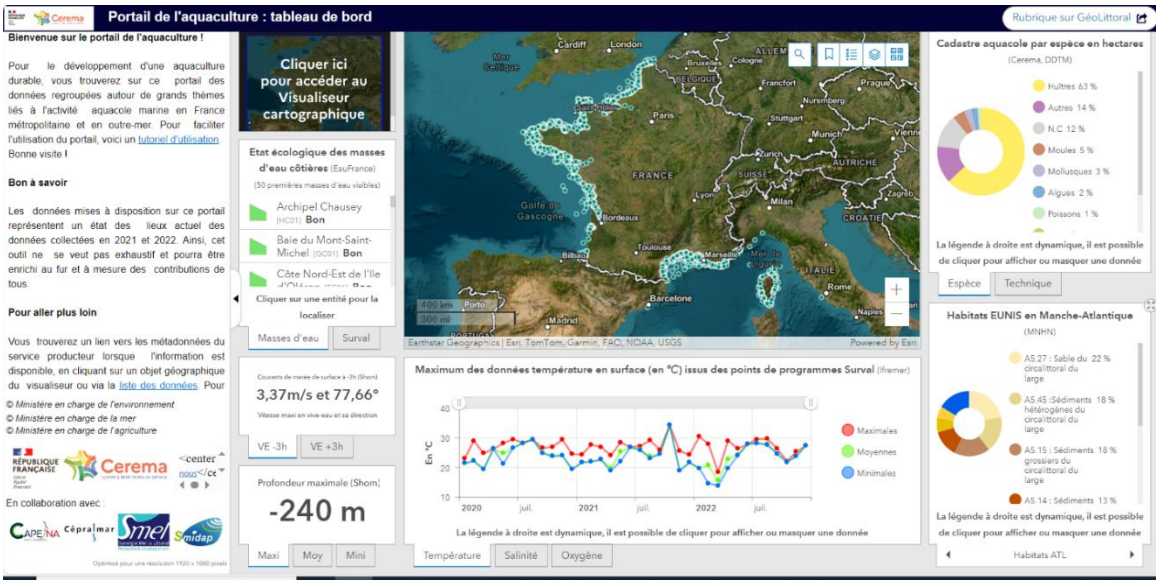

Figure 68: Cerema geoportal

- **data.gouv.fr:** the official national data base which gives access to spatial data from diverse French public structures not only maritime data. Maritime data shared are: maritime lines of transport, maritime area of reference for fishing and for aquaculture, maritime heritage, harbors, fishing right (quota and license), radiomaritime data, professional ship register, cargo transport in tonnage, statistical data on fishing control, museum on cultural maritime heritage.

Figure 69: Data.gouv geoportal

Provence-Alps-French-Riviera Region

- **MEDAM:** the geoportal of Ecoseas Unice (Science faculty of French Riviera specialized on sea observation and the National Research Center of Sciences -CNRS). Gives access to inventory of fishing restriction, Marine Protected Area, inventory and impact of construction on maritime domain for the Mediterranean Sea.

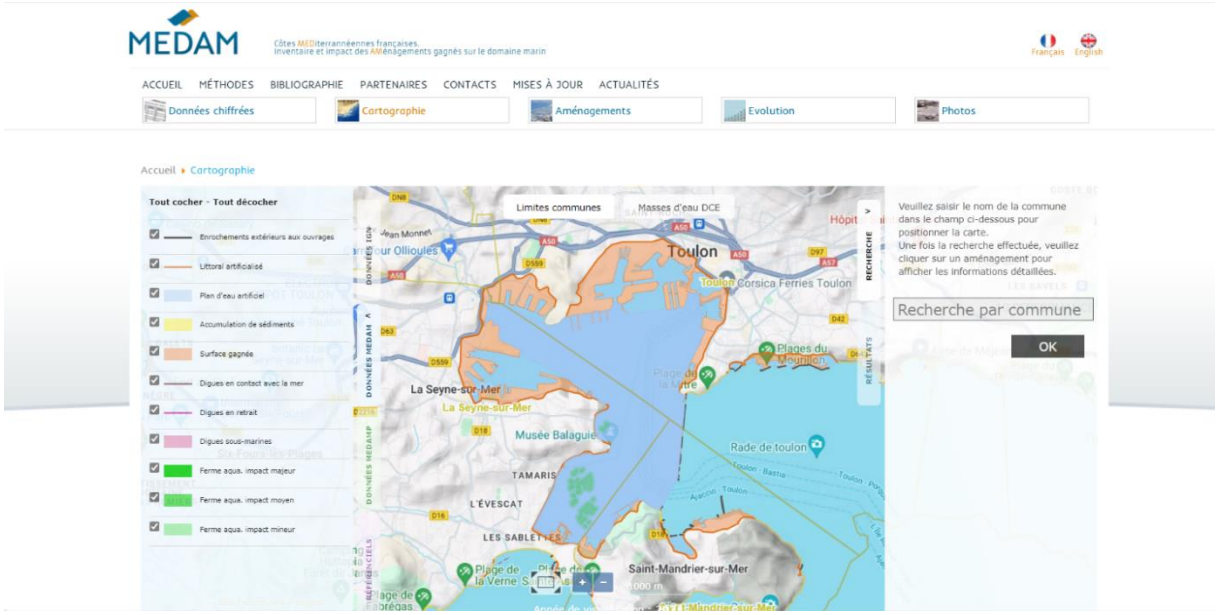

Figure 70: MEDAM geoportal

- Mon littoral: an observatory of Provence-Alps-French-Riviera littoral. It gives access to physical data, risk and vulnerability information, planning and urbanism data.

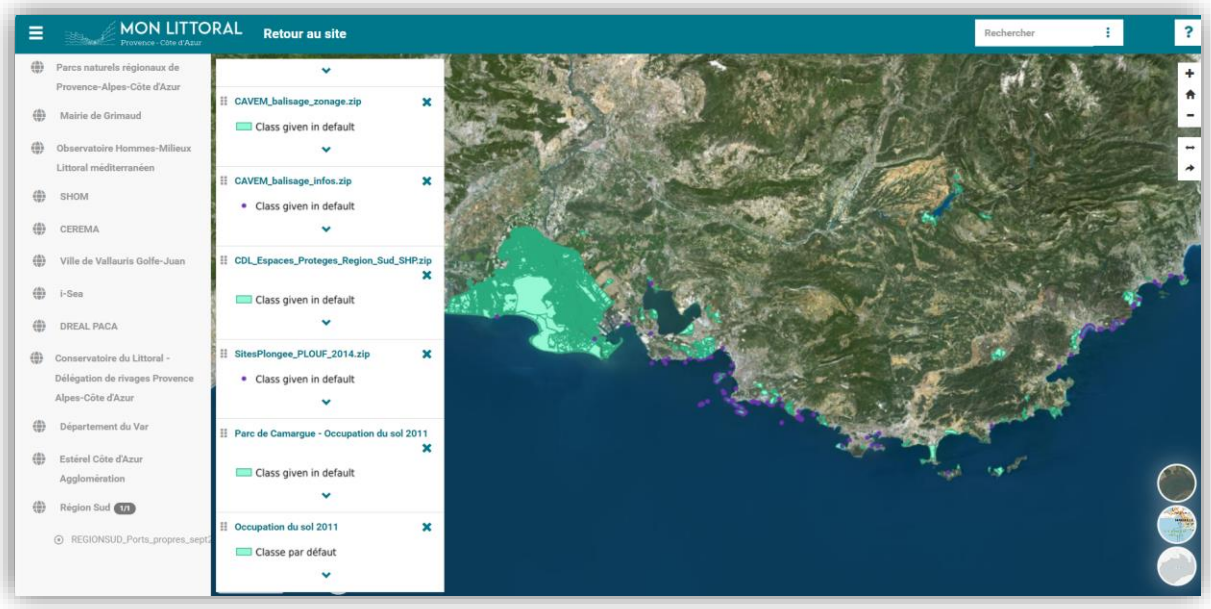

Figure 71: MonLittoral geoportal

Pays de la Loire

- **Geopal:** official geoportal of geographic data for public actor of the Region. Gives access to all geographic data of Pays de la Loire Region not only maritime geographic data.

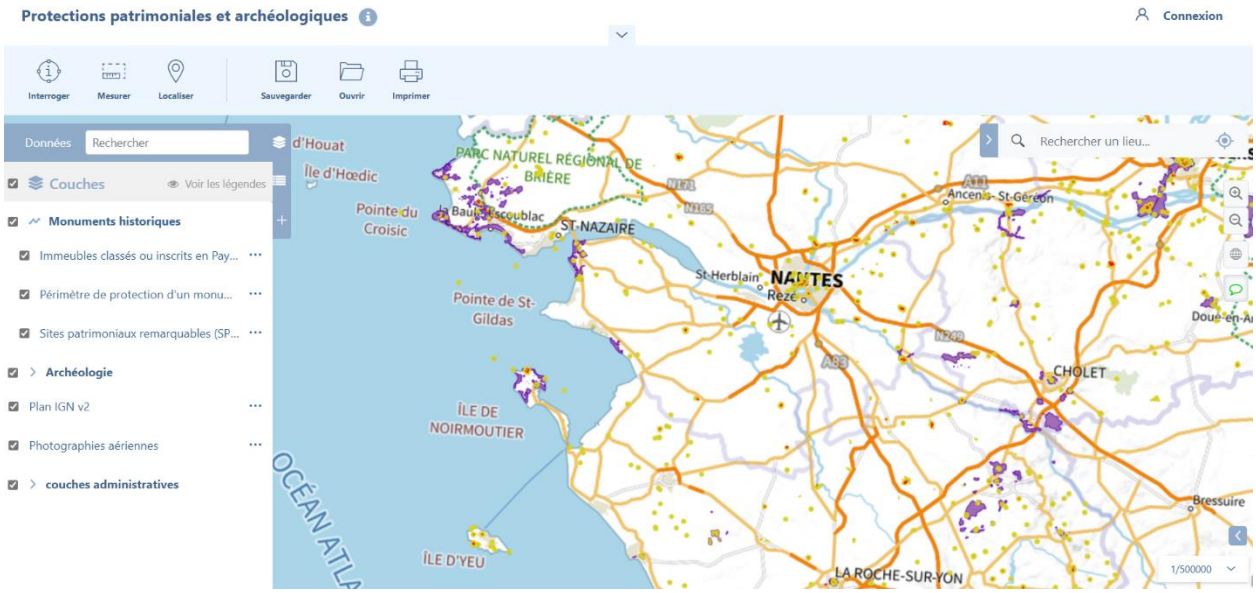

Figure 72: Geopal Pays de la Loire geoportal

Italy

- **SID:** the Italian geoportal for marine data of the ministry of the infrastructure and transport

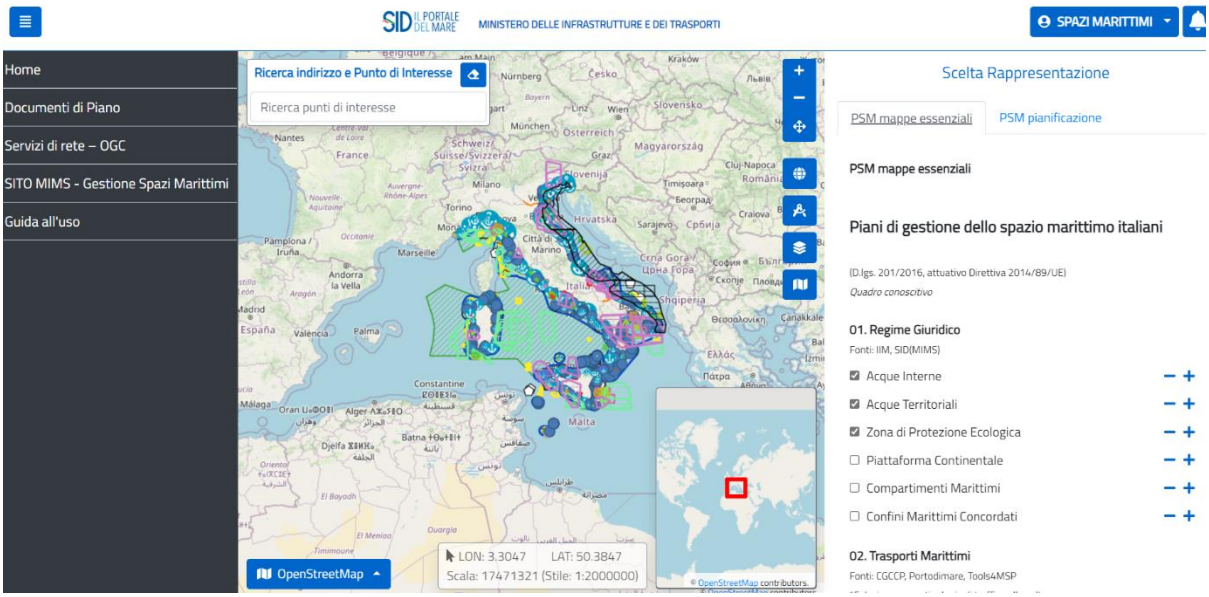

Figure 73: SID the maritime geoportal of Italy

- **Tools4MSP Geoplatform:** Italian geoportal that specializes in sharing comprehensive data for MSP in Italy and additionally, provides a selection of data of international MSP

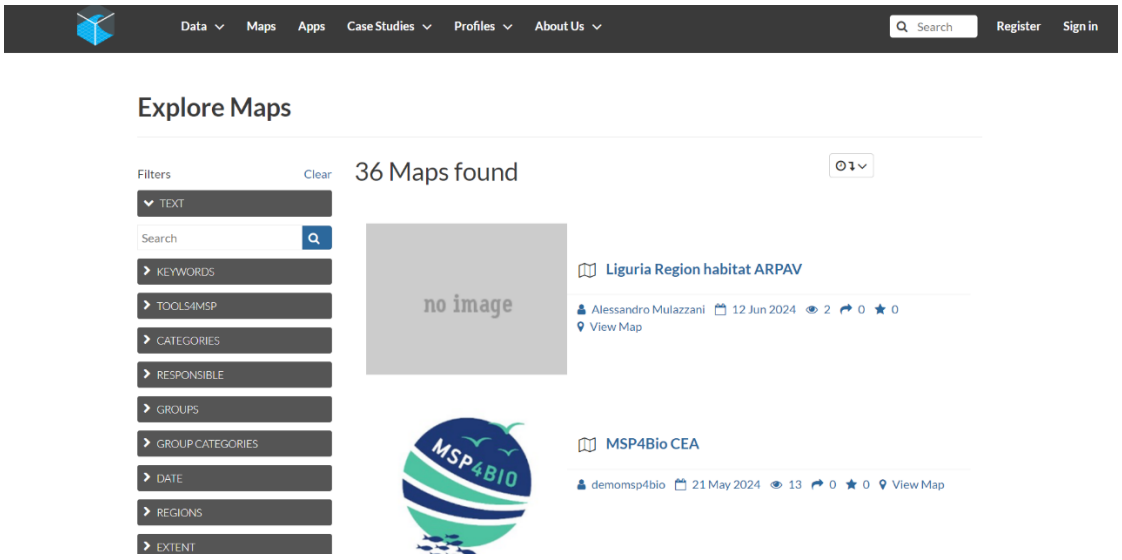

Figure 74: Tools4MSP Italian geoportal for MSP

Sardinia

- **Sardegna Geoportale**

Figure 75: Sardegna Geoportal

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- **SIRA data portal**

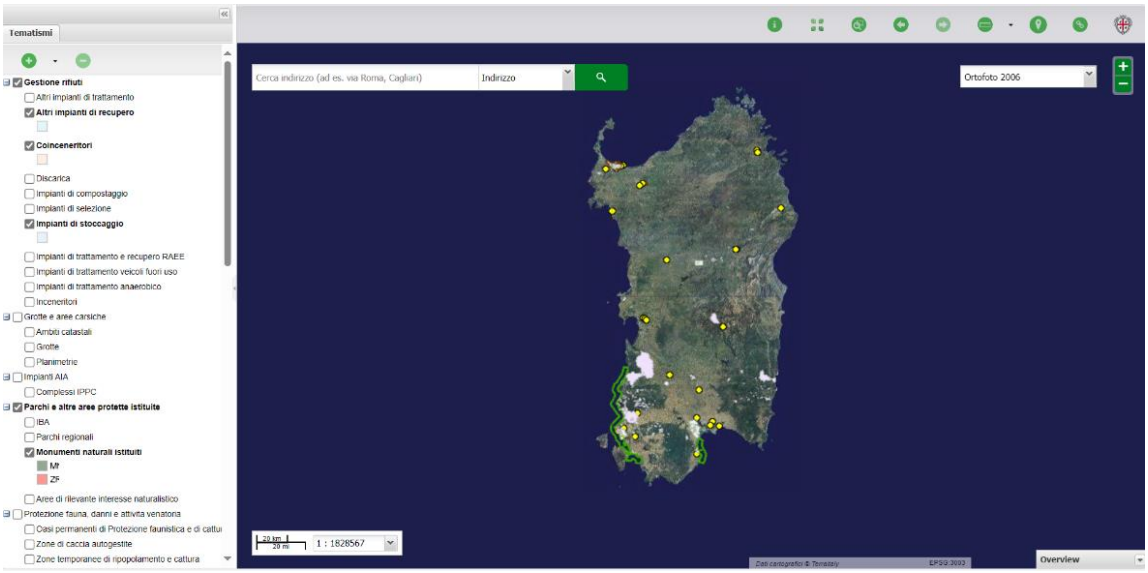

Figure 76: SIRA data portal

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Conclusion

In summary, the REGINA-MSP project embarked on a collaborative journey with European case study regions to address their diverse data needs, tailored to their unique characteristics. Leveraging insights from the eMSP-NBSR project and TEG on Data for MSP research and work task and engaging regional representatives through workshops and online meetings, we navigated the complex data landscape to effectively address regional data needs for MSP initiatives. These engagements provided a platform for stakeholders to share insights, explore strategies, and identify opportunities for enhancing data accessibility and utilization in maritime spatial planning efforts. Through presentations and discussions across various online meetings and workshops, initiatives and tools supporting MSP processes in different regions were showcased, highlighting the collaborative efforts underway. This work, including an interactive activity on exploring conflicts of use within each studied region, provided valuable insights into the challenges and opportunities associated with MSP. Additionally, the Slido interactive surveys conducted at the conclusion of each session provided a comprehensive overview of discussions and perspectives shared, facilitating active engagement and collaboration among participants. Looking ahead, these insights will inform future meetings and workshops of stakeholders as we continue our journey towards sustainable marine management.

Surveys conducted as part of task 3.2 of the REGINA-MSP project, along with the comprehensive survey administered for the WP2 by CPMR, have provided valuable insights into data availability and geoportal-related aspects across the use case regions. These surveys, focusing on data and geoportal grading schemes, aimed to identify data gaps and requirements for MSP initiatives. The findings highlight significant discrepancies in the availability of specific data types crucial for MSP, with surveillance and security data being particularly lacking. More specifically, the maritime safety data sub-category can provide essential information at regional level on the status of existing geo-regulation at sea in order to plan future activities.

The surveys also revealed diverse regional needs and priorities within the MSP initiatives. Stakeholders from various regions articulated specific data requirements, underscoring the importance of addressing these diverse needs to enhance MSP frameworks effectively. Furthermore, the surveys emphasized the imperative for concerted efforts to bolster the availability and accessibility of critical data like benthic species mapping, boat anchorage localization, small fleet and recreational boat spatial distribution, and the impact of these activity on the marine environment, to foster more robust and comprehensive MSP frameworks. Indeed, this category of data have the advantage of providing a fine spatial and temporal granulometry and therefore integrate regional level decision-support into national MSP process.

The Geoportal Self-Assessment tool conducted as part of the project provided further insights into the functionalities and added values of regional and national geoportals. While both

national and regional portals performed well overall, regional portals were found to be really useful in providing precise, detailed, and locally relevant data. However, certain criteria, such as data transformation services and English availability, were not well-followed across assessed geoportals, indicating areas for improvement.

However, the main conclusion from this survey is the potential of regional geoportals to be used in the MSP process, as possible data sources for MSP planners. Regional geoportals were found to be suitable for use in the MSP process, as they followed the assessment criteria as well as, and sometimes better than, national portals. Furthermore, their role was found to be complementary to national portals, thanks to their unique features, area-specific tools and the highly detailed or otherwise unavailable data they provide: local sea level variation, precise location of local features, etc.

Finally, beyond the distinction between national and regional geoportals, a classification of portals was established, distinguishing between MSP portals, data harvesting platforms and expert thematic geoportals from an extrapolation of the assessed geoportals. The advantages and weaknesses of each type were identified, allowing for a better understanding of their possible role in the MSP process.

Efforts to enhance accessibility to regional and national geocatalogues, such as the development of an interactive map by Shom, aim to streamline access to reference geospatial data, thereby fostering informed decision-making and effective MSP implementation.

Overall, the findings from the surveys and assessments conducted within the REGINA-MSP project task 3.2 provide valuable insights for policymakers and stakeholders as:

- European case study regions require new methods to gain knowledge on boat anchorage impacts and recreational boating, especially for small boats under 12 meters.
- There is a significant need for mapping birds and megafauna migration corridors, as well as birds' flight altitudes, to manage windfarm installations effectively.
- Challenges in data collection include issues with harmonization, data ownership, lack of metadata, and insufficient funding, while geoportals are essential for obtaining accurate data, ensuring transparency, and facilitating decision-making., facilitating the development of more robust and comprehensive MSP frameworks at both national and European levels.

In conclusion, a key perspective of task 3.2 within the REGINA-MSP project involves the production of a policy brief on data and geoportals that not only summarizes the findings presented in this report but also offers a comprehensive analysis and reflection on these conclusions, thereby providing a roadmap for future action and policymaking in the field of maritime spatial planning.

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Annex 1

Attendance list 28.09.2023
- Workshop Data & geoportals for regional MSP
- Preparation to the Steering Committee

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CAMPILLOS	MONICA	Spain (Madrid)	IEO	
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CHANGEANT	AURELIA	France	CEREMA	
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ESQUERRE	ALEXIS	France	SHOM	
FERNANDEZ	Marisa	Spain (Galicia)	CETMAR	
FITZGERALD	KARINA	Ireland (Dublin)	DHLGH	
FITZPATRICK	JULIET	Ireland (Dublin)	DHLGH	
GOMEZ	LUIS	Spain (Galicia)	CETMAR	
GUENNAL	LISE	France (Nantes)	CPMR	
GUTIERREZ RUIZ	ELENA	Spain (Madrid)	IEO	
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KERNINON	ALICE	France	CEREMA	
KYRIAZI	ZALHARIULA	Ireland (Cork)	UCC	
KYVELOU	STELLA	Greece (Athens)	PANTEION UNIV.	
LAROUSSINIE	OLIVIER	France	CEREMA	
POMPONATO	ERIKA	Italy (Messina)	IMC	
RAMIERI	EMILIANO	Italy (Roma)	CNR	
SAKELLARIOU	STAVROS	Greece	ARISTOTLE UNIVERSITY	
SEITANIDIS	SOKRATIS	Greece	REGION OF CENTRAL MACEDONIA	
SOFFIETTI	FOLCO	Italy (Venice)	IUAV	
SOUF	ADELINE	France	SHOM	
PAOLA	DE MARTINO	Italy (Venice)	IUAV	
PAPAGEORGIOU	Marilena	Greece (Macedonia)	AUTH	

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Attendance list 27.09.2023
- Coordination meeting
- Workshop Data & geoportals for regional MSP

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PAOLO	DE MARTINO	Italy (Venice)	IUAV	
PAPAGEORGIOU	Marilena	Greece (Macedonia)	AUTH	

Annex 2

WS3.2 on regional data and geoportals for MSP needs

Minutes of Meeting

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I. Day 1

A. Words of welcome

From Dounia Khallouki the project manager in maritime planification and territorial development who represents the State Secretariat of the Sea:

DGAMPA (General Directorate of Maritime Affairs, Fisheries, and Aquaculture) is very interested in the project outcomes, and notably in the work on wind farms and conflicts of use.

Dounia Khallouki informed the participants that the French MSP, centered on a National Strategy for the Sea and Coast, is now undergoing a second cycle: the 2nd version of the National Strategy will be issued by the end of fall. It will contain an ambitious development plan of marine renewable energies, more detailed and advanced than it was in the first Strategy.

B. Agenda and timeline for T3.2

Presentation to open the WS3.2 from Emilie Delaroche (powerpoint: 230927T3.2_word_of_welcome_vf.pptx).

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AGENDA

Wednesday 27.09

2.00 - 5.00 Data workshop

2.00 - 2.30	Words of welcome
2.30 - 2.50	**Galician region initiatives and tools to support MSP process** - Luis Gómez, Centro Tecnológico del Mar
2.50 - 3.10	**Regional data of Murcia integrated in InfoMAR national geoportal** - Cristina Cervera-Núñez, Instituto Español de Oceanografía
3.10 - 3.20	Q&A
3.20 - 3.35	Coffee break
3.35 - 3.55	**Marineplan.ie, first Ireland's MSP geoportal** - Juliet Fitzpatrick & Karina Fitzgerald, Department of Housing, Local Government & Heritage
3.55 - 4.05	Q&A
4.05 - 5.00	**Presentation & discussion on regional data & geoportals** - Shom

Thursday 28.09

9.00-11.30 Task 3.2 data workshop

9.00 - 9.15	**Presentation of the activity** from Shom
9.15 - 10.30	**Group discussion**: possible conflicts of use in each case study
10.30 - 11.00	**Restitution** from each group discussion
11.00 - 11.30	**Conclusions words**

SHOM L'océan en référence

www regina-msp.eu

Shom is responsible for the T3.2, our goal is to make a focus on regional/national data and geoportal for Maritime Spatial Planning (MSP) in the Case Study regions we are working on for REGINA-MSP project (Galicia, Murcia, Mayo, Pays de la Loire, South Region, Sardinia, Crete and Central Macedonia North Aegan sea).

The objectives of this task is to answers these questions :

- Which data Regions use for MSP?

- Which data would they want to use, but can't? (doesn't exist, unavailable, not advertised)

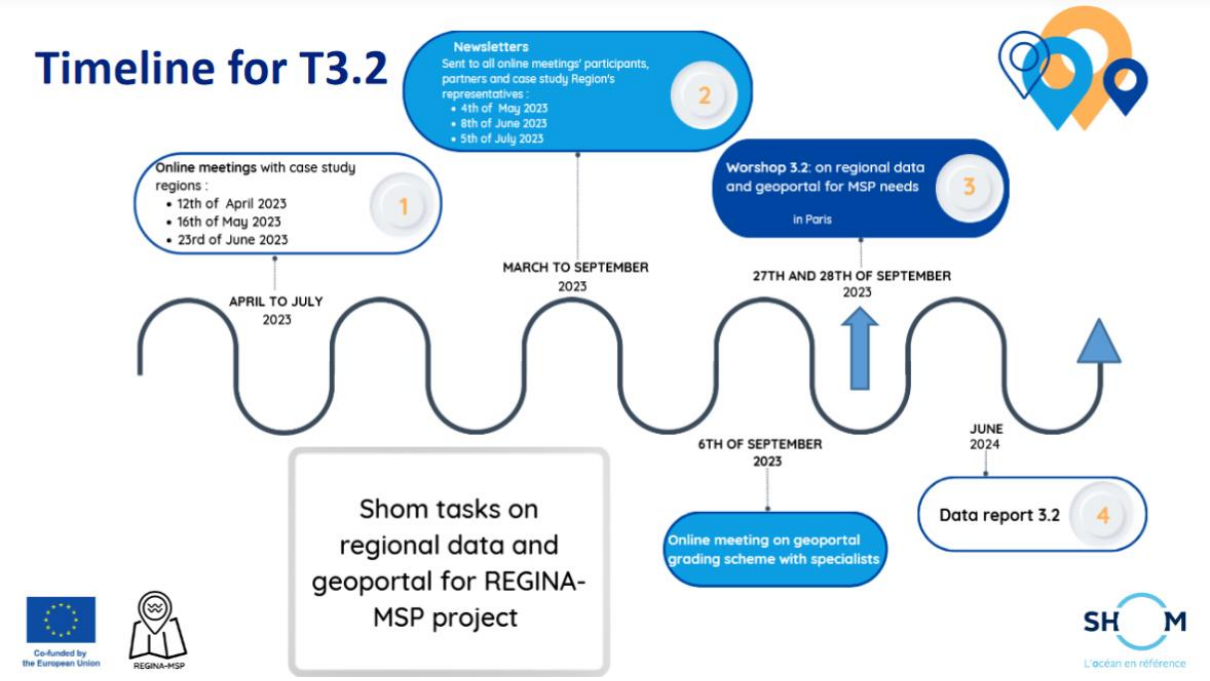
- Do Regions collect data themselves?

- Do local institutions provide access to their data?

- Do Regions and institutions report their data at a national level?

- To advice on the most efficient: regional data diffusion and regional geoportal accessibility and ergonomy for MSP use

This is the timeline for our T3.2 :



The goal of the WS3.2 organized these two days at the State Secretariat of the Sea by Shom for the T3.2 is to close the work made during the 3 onlines meetings Shom already done online, with the last presentation of each of the partner in the region of the project on their geoportal and on the data used for regional MSP needs. It is also the moment for Shom to launch is geoportal self-assessment tool and to explain the next steps which will be put in place during the year 2023 and 2024 to implement the report D3.2 Shom has to write on regional data and geoportal for MSP needs due for June 2024. This workshop will also be the moment for the partners to exchange around activities to speak about regional MSP needs organized by Shom.

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C. Presentations

1. Galician region initiatives and tools to support MSP process

Presentation from Luis Gomez on Galician region initiatives and tools to support MSP Process (powerpoint: REGINA-MSP_CETMAR_Geoportals_Galicia.pdf).

Galicia has a legacy of maritime activities, and with its rougher coastline, represents 50% of Spanish coasts in total. Galicia has a total of more than 4000 registered boats.

There are two types of zones in the Spanish MSP: Zones of Primary Use, in which one type of activity is dominant, and Zones of High Potential. All territorial waters around Galicia were classified as "High Potential" for aquaculture. Then it had to be sorted which areas were actually suitable for aquacultural development.

As a region (Autonomia), Galicia administration has jurisdiction on activities such as aquaculture, etc. However, there are no clear relationship between national who is in charge of the EEZ and the local in charge of coastal area (estuaries).

Regional Geoportals:

- Xunta Galicia is a portal for the Ministries of Infrastructure and of the Sea (mapas.xunta.gal) ➔ nature conservation and biodiversity.
- Sigremar is the portal of the Intecmar (Galician institute)➔ galician aquaculture and shellfish gathering information with environmental / aquaculture / shellfish / marine toxins
- Portos de Galicia ➔ portal for locating 122 ports and harbors depending of the regions of Galicia
- Augas de Galicia ➔ portal for everything around the topic of water in Galicia.
- Provincia de Pontevedra
- Mar plan for tools for decision makingMapas xuntas from the Galician Ministry of the Environment, for the topics of nature conservation, coastal management plan, and a catalog of landscapes

Regional observatory:

- RAIA observatory ➔ observatory oceanographic data covering Portugal and Spain

Local geoportal:

- visoriderm.carm.es : for cultural heritage area/MPA/

<u>Questions:</u>

Daniele – Are there discussions between the Region and the Government?

==> Spain is a "team of Regions". In all cases, Infomar centralizes information and so they should have a global vision: most national data comes from a gathering of

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regional data. For example, see geoportal Acuivisor: which reference the aquaculture area in Spain.

2. Data and geoportals for regional MSP Spanish MSP geoportal

Presentation on INFOMAR from Monica Campillos Llanos: DATA & GEOPORTALS FOR REGIONAL MARITIME SPATIAL PLANNING Spanish MSP geoportal (powerpoint: REGINA-MSP_IEO_InfoMar_Murcia.pdf).

Monica presents the data flow:

All starts with the MSFD (Marine Strategy Framework Directive). When the MSFD was installed in Europe, an Interministerial Committee was created in Spain to apply it, along with 5 Sea Basin Committees (Demarcaciones).

When MSPD (Maritime Spatial Planning Framework Directive) arrived, the structure already in place was adapted to include MSP in their work, alongside ad-hoc working groups for specific topics.

Infomar contains all the marine data, for MSPD and MSFD, and also the Habitats and Birds directives.It also has tools for administration of data including the capacity to get new data pushed in by external administration. All of it is used for decision support in MSP.

In the Murcia case study, there is a rich biodiversity, and underwater cultural heritage areas of importance. All this data was sent to Infomar (at the national level)

SIOM (Sistema de informacion Oceanografico de la region de Murcia) is the Murcia portal for the oceanographic information of the Region.

Questions:

Adeline – About data entry capacity: how often is it used? By promoters to provide data?
==> There are structured forms with INSPIRE models, they have to fill it in and send it
Alexis – Does it mean all the relevant data should be on the national geoportal and the other way around?
==> Yes, in theory it should be available as a WFS layer

3. Marineplan.ie MSP geoportal Ireland

Presentation from Irish partners on marineplan.ie MSP geoportal Ireland by Karina Fitzgerald and Juliet Fitzpatrick (powerpoint: REGINA-MSP_DHLGH_Mayo.pdf).

Marineplan.ie was released alongside the Irish MSP plans. In comparison with the multiple geoportals and agencies that exist on land, they wanted only one for maritime activities.

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The portal is full of information about MSP in Ireland (with the actual document of the plan available on the portal directly in PDF Format). MSP in Ireland a local level is either geographically made or sectorial.

For example, one can browse the Activities Map, which contains a diversity of information on various maritime activities, complete with a legend.

The portal gives access to the overarching policies at first and second level. A drawing tool allows the user to only see what policies and regulations apply in a given area of the Irish EEZ.

The portal also contains information surrounding the "SeafoodORE" program, which focuses on the conflicts of use between seafood (fisheries in that case) and ORE (offshore renewable energies). The program was aiming at fostering discussion around these topics in a less tense environment.

At the subnational level, plans and policies can be found by sectoral type or geographical area

For example, on the South Coast, there is a plan-led development of MREs.

On the other hand, in County Mayo, there is an extensive Conservation Area. As the depth increases quickly (-80m in less than 10km), there can be no fixed offshore wind turbines.

Finally, 3 key points:

- All data on the portal is open
- All data is checked and certified by the Irish Marine Institute prior to publication
- The portal has all the latest updates and newsletters for any agency working on maritime planning and more data will be added as the needs appear.

<u>Questions:</u>

Adeline – How is the data certified by the Marine Institute?

==> The Institute checks the formatting, the accuracy, and has a protocol for data cleansing.

Céline – Are there any socio-economic data?

==> Not really, that would depend on other ministries, but they are looking into it. An Ocean economic portal exist as a separate geoportal. It is not yet unified but this might be done in the future.

Daniele – Are there indicators to characterize each category? Who decides which data will be included in a category?

==> Data mostly comes from governmental bodies and some NGOs. As for deciding which data is important for what use, there is a stakeholder advisory group.

Daniele – Are there facilities on the map viewer to combine or analyze layers and data?

==> Not yet. The best it can do so far is to display layers on top of each other.

4. Geoportal self-assessment criteria

Presentation by Shom's geomatics officer on REGINA-MSP project Alexis Esquerré, on the **geoportal self-assessment criteria** (REGINA-MSP_Shom_Grading_Scheme.pdf)

As requested in the Grant Agreement of REGINA-MSP project Shom has to diagnose existing database and geoportal at the regional level (in the case study areas). To answer this request and that was supported by our partners in the first online meeting a geoportal grading scheme has been developed. This grading scheme will not be just for the project but recommendations for geoportals outside of the projects. The idea is also for REGINA-MSP to see which of the geoportals listed during the online meetings of the T3.2 are useful and contain the best available data for MSP.

This survey will be sent to Case Study partners in the project, and the deadline for partners answer will be the 30th of October 2023.

Questions:

Martina : could we change the name of the Geoportal grading scheme -> need to think about changing its name to geoportal self-assessment criteria
Stella: in this framework, would it not be possible to create a unique geoportal to harmonize all the data?
Alexis: it is difficult to harmonize all the geoportal, as every geoportal has is specificity, it will not be possible to do so because regions had their own geoportal
Adeline: the project cannot propose this kind of unique geoportal
Emiliano: colleagues on ReMAP can have a look on the self-assessment tool, for him prioritizations are fine. It will be nice to give the possibility for the user to change the prioritization
Céline: we need to know who are the data providers and the portals, and what is the added value of regions to have their own geoportals and their complementarity with the nationals as well as the added-value of those regional and local data. The answer to the questioner launched for data needs for T3.2 will give in which direction case study regions want to go.
Fabio: In MSP Med they also gave a description of geoportal, it can be the continuity of this last European project. The partners were nearly the same.
Adeline: it is nice to have the last presentation from our partners that we didn't have in our last online meeting on data and geoportal for T3.2. and the assessment tool was made after the request of the partners in the project to assess their regional/national geoportal. We will look at the continuity with other projects REMAP as well.

D. Other topics and discussions

Céline – What is the added value of regions regarding data?

==> Regional data has the potential to complete and complement data collected at national level, or provide context.

Example of the regional MedTrix portal, which contains more detailed and localized information on seagrass meadows and patches.

=> Erica reacts and mentions that it is important to have updated data. Therefore, in Sardinia in particular, the data related to aquaculture with a license are found on the regional geoportal. The national geoportal is not as often updated and contains outdated data. She gives an example of aquaculture concessions in Sardinia, which were asked using a map that was not up to date, leading to confusion among authorities and farmers alike.

E. Pictures

II. Day 2: Activities around the conflict of uses related to sea space and data collection

A. Introduction

For the second day of this WS partners worked on 3 posters prepared by Shom. One map to present their regions of study, one table to present the conflict of uses related to sea space in their Region and a last table to define the leverage, brake and actions they can encounter in their Region to collect data for MSP.

B. Pictures

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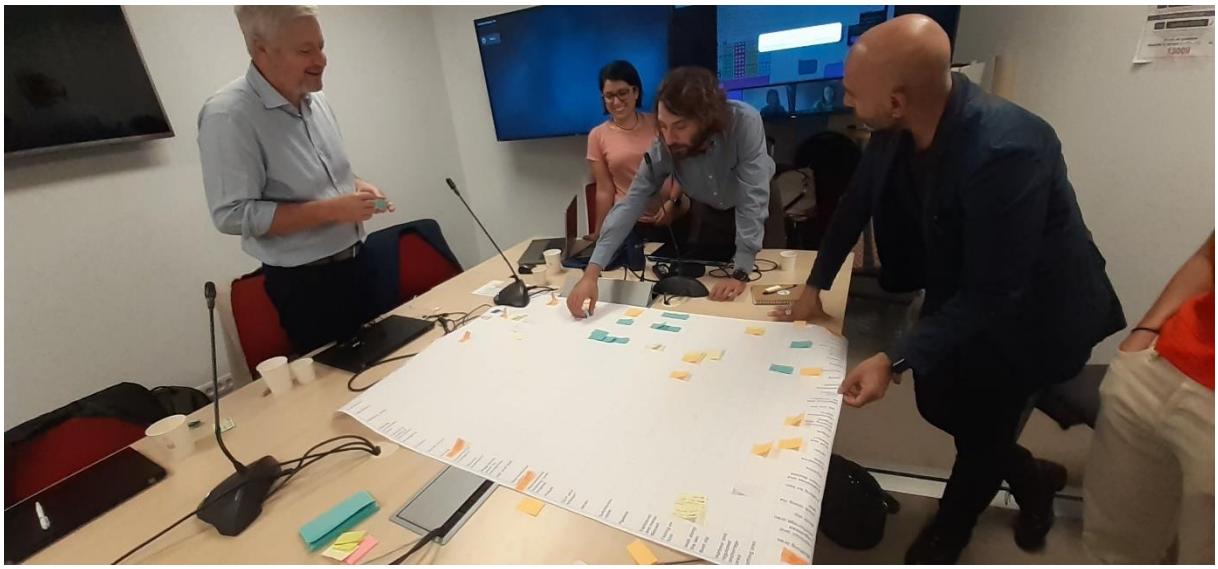
Conflict of uses

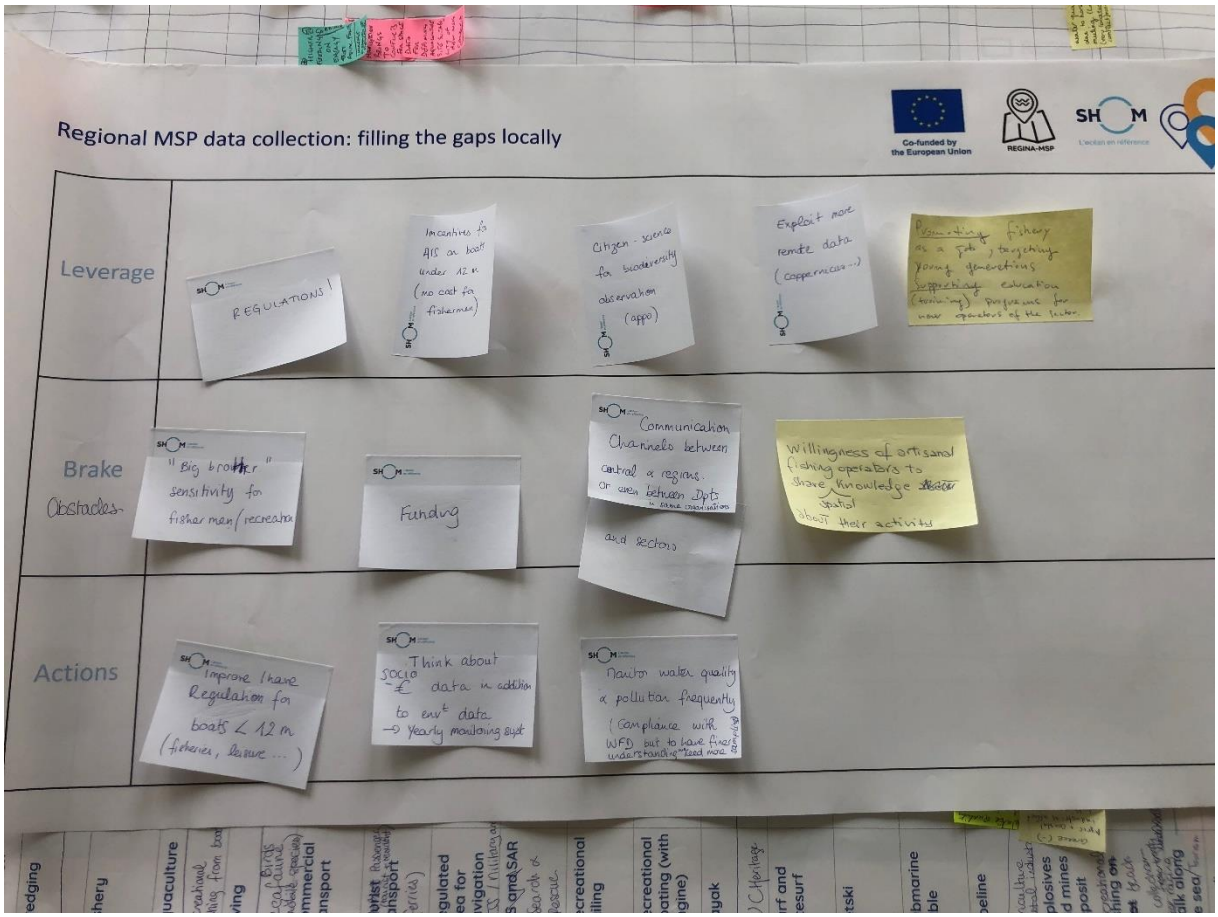
	Bathing area	Harbour and regulated anchorage area	Boat slip	Walk along the sea	Fishing on foot	Explosives and mines deposit	Pipeline	Submarine cable	Jetski	Surf and kitesurf	Kayak	Recreational boating (with engine)	Recreational sailing	AIS and SAR	Regulated area for navigation	Tourist transport	Commercial transport	Diving	Aquaculture	Fishery	Dredging	Maritime material extraction	Maritime protected area	Military area	Windfarm	Posidonia
Posidonia																										
Windfarm																										
Military area																										
Marine protected area																										
Maritime material extraction																										
Dredging																										
Fishery																										
Aquaculture																										
Diving																										
Commercial transport																										
Tourist transport																										
Regulated area for navigation																										
AIS and SAR																										
Recreational sailing																										
Recreational boating (with engine)																										
Kayak																										
Surf and kitesurf																										
Jetski																										
Submarine cable																										
Pipeline																										
Explosives and mines deposit																										
Fishing on foot																										
Walk along the sea																										
Boat slip																										
Harbour and regulated anchorage area																										
Bathing area																										

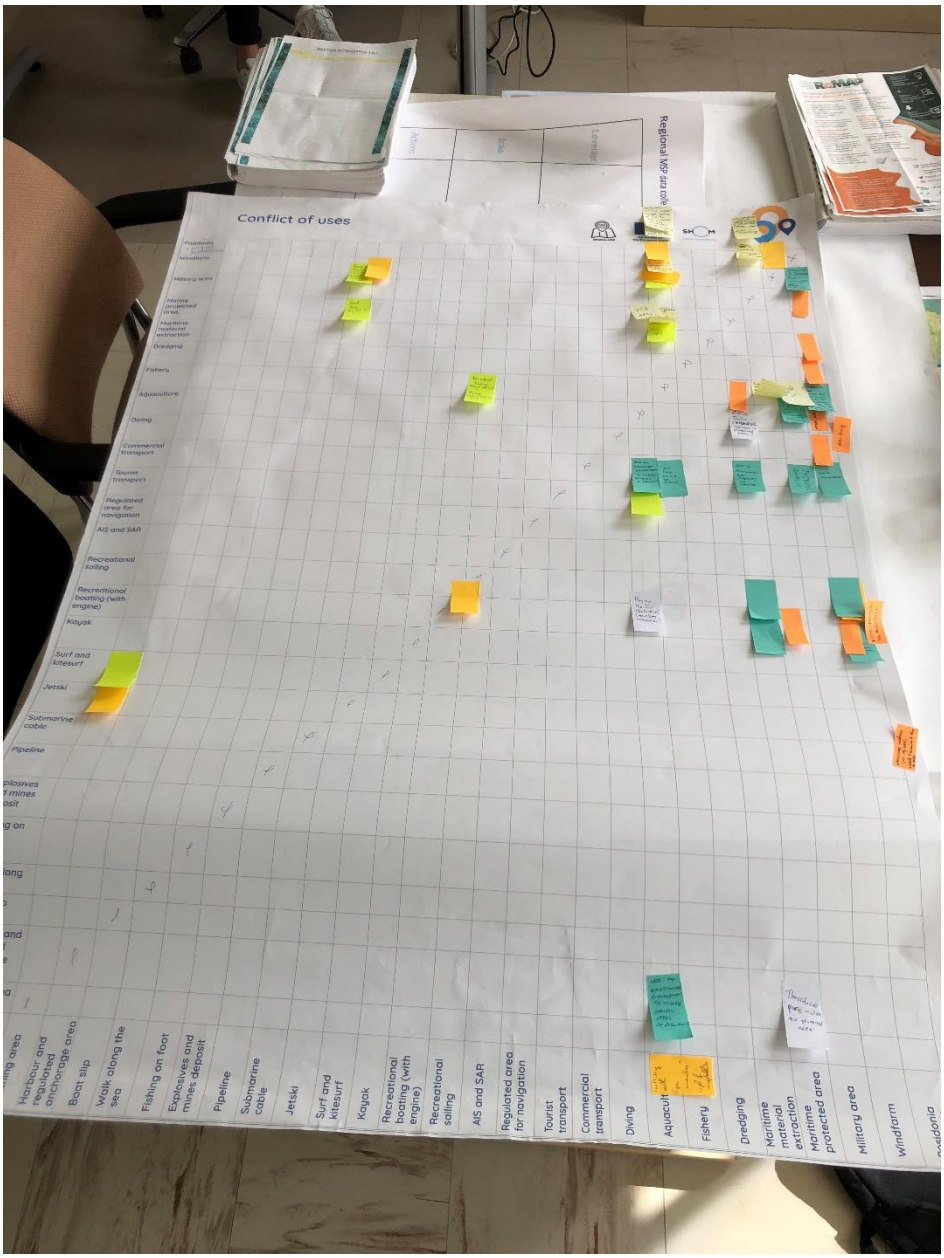
Regional MSP data collection: filling the gaps locally

Leverage	
Brake	
Actions	




County Mayo
Pays.de la Loire
Provence-Alps-French Riviera
Galicia
Central Macedonia
Sardinia
Murcia
Crete
250 500 km
100 200 NM
N
REGINA-MSP Case study regions
EEZ of REGINA-MSP countries
Shom 09/2023 - For the Workshop 3.2 on Data and Geoportals for Regional MSP
Sources: Shom, Marine Regions, national open data portals from France, Spain, Italy, Greece and Ireland.
Basemap: © Open Street Map


Regional MSP data collection: filling the gaps locally
Leverage
Brake
Obstacles
Actions
REGULATIONS !
Incentives to AIS on boat under 12 m (no cost for fishermen)
Citizen - science for biodiversity observation (appli)
Exploit more remote data (copernicus...)
Fishery as a job, targeting young generations
"Big brother" sensitivity for fisher men/recreation
Funding
Communication Channels between central & regions. Or even between Dpts
Willingness of artisanal fishing operators to share knowledge about their activity
Improve/have Regulation for boats < 12 m (fisheries, leisure ...)
Think about socio £ data in addition to env^t data → yearly monitoring syst
Monitor water quality & pollution frequently (Compliance with WFD but to have finer understanding + lead mon



C. Group restitution

<u>Emilie group: (focus on the county of Mayo)</u>

First activity on the poster of conflict of use:

- Conflict between aquaculture and tourism:

Aquaculture represented in Marineplan.ie, in west port activities aquaculture and tourism

Tourism: layer on the activity, where the tourism data is focus on the Atlantic way

Mayo has a lot of tourism, don't have number of tourist and number of people on the beaches, don't have the amount of people visiting

Don't have data on kayaking, diving, surfing and jet skiing, if they have the data can't see the conflict there.

There is a lot of surfing spot. They have to know where touristic beaches are, also marinas, surf spot. They have these data.

- Another conflict of use is between sailing and aquaculture.

There is also surfing spot where there is aquaculture because both are on flat beaches

In marineplan.ie geoportal it is possible to overlay the data and see the area of conflict.

- Conflict between windfarm and marine protected area

2nde activity on the poster with data collection break, leverage, hindrance:

Marine institute supplied the data, for each data set policy are relevant.

Data from the marine institute need policy for marineplan.

Data are already given in xms by the maritime institute (research laboratory, association, etc).

Policy map for each data (for the dataset): now automatic

Tags and search the group

Challenge to collect the data from other institute than the public one, like private enterprise.

Not everyone wants the windfarm: some organization are upset about giving application, data link on windfarm, because it is a sensitive subject in the Region.

A conclusion word:

Mapping the data for MSP: it is really good to work on it for kids and to educate people on MSP.

<u>Adeline group:</u>

First activity on the poster of conflict of use:

In this group they found other category than the one provided in the table: benthic habitat instead of Posidonia, they split the fisheries with recreational fishing from boat, they added megafauna and birds, passenger transport and not tourist transport because it also transports resident on ferry

Marilena: there is special service for resident people for Island connexion in Greece.

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They made a connexion with conflict of use and positive association of activities.

2nde activity on the poster with data collection break, leverage, hindrance:

Data collection: need more information on regulation and on the sailing of the boat of less than 10m

Database at the level Copernicus, think more about younger education, fisherman to support ocean literacy, big brother sensitivity, operators not fan of providing their location, obstacles on funding, obstacle on connexion channel, fishing place are not given by fisherman and recreational fishers. Boat under 12m don't have to be compliant with AIS, maybe regulation to come soon on this point. Need more socioeconomic data, need frequent monitoring on water quality and pollution, difficult to know from where the pollution is coming from.

Group Alexis:

First activity on the poster of conflict of use:

Emiliano: numerous activities are on the same area as marine habitats, as fishing and aquaculture and there is an expansion of these activities.

There is various form of tourism.

For windfarm there will be conflict to manage when these activities will be developed at sea.

2nde activity on the poster with data collection break, leverage, hindrance:

Data collection:

There is some availability of fund but also a lack.

Importance of the EU to give standard to provide the data for them to be interoperable and to be shared at different level. In Spain they have well establish mechanism, between region and state, there is a common understanding.

Breaks and obstacle:

For Irish: availability of vessels survey, a lake of human resources, lot of data coming from research: miss validation on these data for MSP, no regional geoportal no formal institution on MSP

Good data on economic value, but difficult to have negative and positive socio-economic effect information.

Need to use remote senses data, AIS technologies

Example of Spain: between the state level and regional level the data are shared really well (MSFD) they have very low-resolution scale

Produce native indicator, MSP data group at regional, cross regional data exchange

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Group Alice:

First activity on the poster of conflict of use:

General: added categories Posidonia to a general category of environment -> it is an enlargement to biodiversity. Also added agriculture, eutrophication and urbanization.

Sardinia: long history of aquaculture. Main challenge: have aquaculture data, main focus, two regulated areas, activities of luxury yachts and tourism, a bit of fishery and commercial transport

Murcia: recreational activities and biodiversity with sea bed habitats, conflict between agriculture, aquaculture and natural habitat, anchoring and underwater cultural heritage.

PACA: issue between biodiversity and tourism (especially anchoring), fishery and coastal activity

Central Macedonia: conflict between urbanization and tourism and aquaculture (mussels culture mainly), and between commercial transport and oil extraction

Galicia: aquaculture, big stake on tourism and transport, capacity exceeded on tourism and transport, lot activities around mussels and aquaculture, a little strike between cable and tourism

Stella: will send a little paragraph on the conflict between activities later but can already say that there is conflict between offshore wind farm and extraction with the traditional activities of Crete Region.

Leverage and breaks: problem in Greece, centralism, they cannot have data if the state doesn't want to decentralize, give a voice to local society, participating to MSP in general, lake of clarity, everything comply with European legislation but consultation is sometimes not really interesting for the regions of EU.

Lack of possibility to have fund to have the tools and the data.

Specificities and lack due to regional contents if we can map these interaction, visual representation of what has been say today, it is a good opportunity to have this meeting and activity.

One of the main points we don't have to forget is underwater cultural heritage.

III. Conclusion

For the end of Workshop 3.2 on Regional Data and Geoportals for Maritime Spatial Planning, Shom expressed is sincere gratitude to all of the participant for their active participation and engagement in these face-to-face sessions in Paris. It has been productive and enlightening and filled with group activities, discussions, and valuable insights into REGINA-MSP project.

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Throughout this workshop and the online meeting and survey launched by Shom, we achieved a milestone by identifying the data providers and geoportals in our Case Study regions. Now it is clearer what are the resources available for MSP regionally. Next steps will be crucial in determining the added value of regions having their own geoportals and how they complement national efforts. Need also to explore the significance of regional and local data in this context.

The questionnaires that have been launched to understand the data needs for T3.2 will guide us in making informed decisions about the direction the Case Study regions wish to take. The input and feedback from CS regions will shape the path forward, ensuring that the project aligns with the specific needs and aspirations of each region.

In the coming weeks, we will take further steps towards T3.2 goals. Shom will initiate a survey on geoportal self-assessment criteria, a key aspect of evaluating the effectiveness of our efforts. Additionally, there will be an analyze of the results of the poster from today's activities, which have showcased the innovative ideas and contributions from WS3.2 participants.

Moreover, interviews will be done with representatives from each of the Case Study regions to gain deeper insights into their perspectives and expectations.

To conclude this workshop, see that there is a need to carry the spirit of collaboration and knowledge sharing forward in this project. In these face to face meeting together, we are making great strides in advancing the field of Maritime Spatial Planning. We are looking forward to our continued work together and the positive impact REGINA-MSP will have on the regions represented these 2 days.

Thanks to all the partners and participants of the workshop and for those who followed the meeting online.

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Annex 3

List of the online meetings on Data and geoportal position participants:

- Head of decisional and GIS service
- Head of MSP unit
- GIS analyst
- Spatial Data Analyst
- Geomatics, Sea and Coastal Studies Manager
- MSP Technician
- Geomatic officer
- GIS responsible
- GIS manager
- Geomatic research officer on coastal and sea
- Research officer on data and GIS
- Project manager in geomatic
- Data Manager
- Head of geomatic unit
- Senior research fellow: marine & coastal governance
- Senior researcher
- Research consultant
- Engineer on Coastal risks
- Responsible of Sea, Energies and coast group
- Task officer on MSP
- Coordination task officer on sea activities sustainable development
- Head of Marine, Senior Executive Engineer
- Engineer in scientific valorization
- Assistant Professor, Principal Investigator of REGINA-MSP for AUTh
- Urban and regional planner
- Team Lead, Policy Support & Socio-Economics
- Economist
- Research Fellow
- Senior project and policy officer
- Research Associate
- REGINA-MSP coordinator
- Professor, Coordinator for the REGINA-MSP Project
- REGINA project partner
- Associate Professor
- Post-doctoral
- Researcher
- Blue economy expert
- Assistant Principal
- Assistant Professor

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- Student
- Project and Policy Officer
- Policy Analyst, GIS
- Planning Advisor
- PhD Candidate

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Annex 4

Geoportal assessment criteria

This assessment checklist serves as a reference document to evaluate certain types of geoportals.

Construction and sources: This list was built using the FAIR principles, and in particular the criteria used by the Research Data Alliance to evaluate the FAIRness of data and metadata; the recommendations and suggestions of previous MSP-centered European project; recommendations and directives from the European Union, in particular the INSPIRE directive and the data model recommendations.

Specificities: This checklist was built including references to directives and recommendations from the European Union. As such, some of the criteria are specifically tailored to describe best practices for European portals, and can be ignored for any portal outside of European Union, particularly if the local recommendations are different. For instance, EU recommends specific data models for all national geoportals. A regional geoportal located in EU would not have to comply with those recommendations, but it would be better if they did, at least for harmonization and interoperability reasons. However, a non-European geoportal can disregard the criterion of EU-recommended data models, even more so if different models are recommended/mandatory locally.

Contents and scope:

We could have decided to restrict the evaluation to the accessibility and user-friendliness of the geoportal, which ultimately was redefined as the third category of criteria. However, it was decided to include the assessment of the data and metadata available on the portal into this list as well, since the quality of data and metadata is also relevant to determine the quality of a geoportal.

The data and metadata parts only concern the data emitted by the institution managing the portal.

Priorities were attributed not following the FAIR principles, but rather according to user experience during a Shom meeting organized with geoportal users of various profiles (geomatics officers, occasional users, frequent users, geoportal managers). Priorities were defined as follows:

- High priority are essential features for the use of the portal, especially in the field of MSP

- Medium priority are any features whose lack will not render the data or portal unusable, e.g. if the data is only manually accessible (i.e. a user has to manually access the portal), it may significantly lower the time needed to make maps, but it will still be usable

- Low priority are features which only improve the ease of use of the portal or the data, or features with little interest in MSP.

Category 1 – Metadata

14 criteria – 7 High priority, 6 Medium, 1 Low

Criterion	Metadata objects exist for every data set, preferably in harmonized format	**Priority**
Details	Metadata objects can be pages, files, or any sort of digital object.	High
Notation	0 = No metadata found 1 = Only a few datasets have associated metadata 2 = Most if not all datasets have metadata, not harmonized 3 = Most if not all datasets have harmonized metadata	

Criterion	The metadata of a dataset contains access and reuse information for this set	**Priority**
Details	This includes the data identifier, any relevant information to access the data including limitations and restrictions or need for authentification, and licence and openness.	High
Notation	0 = Metadata does not give enough information to access the data 1 = Metadata describes access to data (e.g. link, ID), but not the restrictions 2 = Metadata gives enough access information but not reuse information (license) 3 = All access and reuse information are provided	

Criterion	Metadata of datasets contains information on data quality	**Priority**
Details	Such information includes quality and precision of data, validity, and conformity with local rules on the implementation on European directives	High
Notation	0 = Metadata contains no information on data quality 1 = Metadata is implemented in conformity with local rules but other necessary information is missing 2 = Metadata contains all necessary information on data quality, precision, validity	

Criterion	Metadata of datasets contains time frame information	**Priority**
Details	Metadata describes which periods of time are covered by the data, including versions and updates, update frequency, and time of last update.	High

Notation	0 = No time information available 1 = Complete or incomplete time information available only for a few datasets 2 = All datasets have incomplete time information (e.g. only the date of last update) 3 = All datasets have complete time information

Criterion	Metadata can be accessed manually	**Priority**
Details	Self-explanatory	High
Notation	0 = Manual access impossible 1 = Manual access possible	

Criterion	Metadata can be accessed through a standardized, free-access protocol	**Priority**
Details	Common metadata access protocols: HTTP, WS-MetadataExchange...	High
Notation	0 = No metadata can be accessed through a standardized, free access protocol 1 = The protocol used is an international standard 2 = The protocol is a free access international standard	

Criterion	Metadata of datasets contains information on data origin	**Priority**
Details	Such info includes whether the data is considered reference data, the authorities or providers in charge of establishing, managing, maintaining and distributing the data, and data provenance (how, by who it was collected and processed) in community standard and cross-domain formats.	High
Notation	0 = No information on origin available 1 = Information largely incomplete for a majority of data sets 2 = Information mostly complete for a majority of data sets 3 = Every data set has all the required information in its metadata	

Criterion	Metadata objects have a persistent, globally unique identifier	**Priority**
Details	Self-explanatory. Well-known examples include URI, DOI, etc.	Medium
Notation	0 = No persistent and unique identifier 1 = Identifiers are unique but not persistent, or persistent but not unique 2 = Persistent and unique identifiers, but not for all metadata 3 = All metadata properly identified	

Criterion	Metadata itself is persistent, even after the data is no longer available	**Priority**
Details	If possible, it should also indicate when the data was no longer available,	Medium

	and why.	
Notation	0 = Metadata of formerly available data no longer exists 1 = Metadata of formerly available data is available but not referenced 2 = Metadata of formerly available data is fully available and findable	

Criterion	Metadata identifiers resolve to a metadata record.	**Priority**
Details	"Resolving to X" means "can be the input in a request that returns X". For instance, an URL can be the input in a browser to return a webpage, an identifier can be the input in a catalog search tool to return an entry, etc.	Medium
Notation	0 = Identifiers cannot be used in a query (e.g. "Page 55 of the manual") 1 = Only a few identifiers resolve to a record 2 = All identifiers resolve to a record	

Criterion	Metadata can be harvested and indexed	**Priority**
Details	Self-explanatory	Medium
Notation	0 = Harvesting and indexing impossible 1 = Harvesting and indexing possible	

Criterion	Metadata objects can be accessed automatically, and metadata is machine-understandable in a community standard	**Priority**
Details	Machine-understandable: readable and interoperable for machines without any requirement ("translation") or human interaction	Medium
Notation	0 = Manual access only 1 = Automated access to the metadata object is possible, but the object is not machine-understandable (e.g. object is the JPG scan of a page, words cannot be read) 2 = Automated access to a machine-understandable object is possible	

Criterion	Metadata is described in a FAIR-compliant vocabulary and compliant with community standards	**Priority**
Details	FAIR-compliant vocabulary is documented in a machine-understandable object identified by globally unique and persistent identifiers, i.e. findable, accessible, interoperable and reusable dictionary, thesaurus or glossary.	Medium
Notation	0 = Metadata is not described in a FAIR-compliant vocabulary 1 = Metadata written in FAIR-compliant vocabulary, but not in community standards 2 = Metadata complies with community standards and uses FAIR vocabulary	

Criterion	Data and metadata reference other data and metadata	Priority
Details	According to FAIR principles, a dataset should reference (e.g. by providing a link to) other relevant data or metadata, and the metadata of a dataset should reference other relevant data or metadata. Ideally, references should be qualified: they should include an explanation on the relevance and relationship between the data.	Low
Notation	0 = No referencing 1 = Occasional referencing 2 = Frequent referencing (whenever appropriate) 3 = Frequent referencing (whenever appropriate) with qualified references	

Category 2 - Data

8 criteria – 3 High priority, 4 Medium, 1 Low

Criterion	Data sets have a persistent, globally unique identifier	Priority
Details	Self-explanatory.	High
Notation	0 = No persistent and unique identifier 1 = Identifiers are unique but not persistent, or persistent but not unique 2 = Persistent and unique identifiers, but not for all data sets 3 = All data sets identified	

Criterion	Data can be accessed manually	Priority
Details	Self-explanatory	High
Notation	0 = Manual access impossible 1 = Manual access possible	

Criterion	Data is categorized using the INSPIRE themes	Priority
Details	Some portals apply several sets of categories separately (i.e. every dataset is categorized under one or several INSPIRE themes, but also under one or several themes from another set)	High
Notation	0 = INSPIRE themes are not used 1 = Not all datasets are categorized under an INSPIRE theme 2 = All datasets are categorized under at least one INSPIRE theme	

Criterion	Data identifiers resolve to a digital object	Priority
Details	"Resolving to X" means "can be the input in a request that returns X". For	Medium

	instance, an URL can be the input in a browser to return a webpage, an identifier can be the input in a catalog search tool to return an entry, etc.	
Notation	0 = Identifiers cannot be used in a query 1 = Only a few identifiers resolve to a digital object 2 = All identifiers resolve to a digital object	

Criterion	Data conforms to international data community standards and EU recommended data models, and uses FAIR vocabulary	**Priority**
Details	FAIR-compliant vocabulary is documented in a machine-understandable object identified by globally unique and persistent identifiers, i.e. findable, accessible, interoperable and reusable dictionary, thesaurus or glossary.	Medium
Notation	0 = Data does not conform to any international standards 1 = Data uses the EU-recommended data models 2 = Data conforms to international community standards and uses EU models 3 = Data conforms to international and EU recommendations and uses FAIR vocabulary	

Criterion	Data can be accessed through a standardized, free-access protocol	**Priority**
Details	Common data access protocols: HTTP, FTP, JSON-RPC... Protocol can include authentication if necessary.	Medium
Notation	0 = No data can be accessed through a standardized, free access protocol 1 = The protocol used is an international standard 2 = The protocol is a free access international standard	

Criterion	Data can be accessed automatically, and is machine-understandable	**Priority**
Details	Self-explanatory (Community standard means any standard used and recognized by a community of data users)	Medium
Notation	0 = No automatic access possible 1 = Automated access to the data is possible, but it is not machine-understandable (e.g. object is a WMS service that cannot be interrogated) 2 = Automated access to machine-understandable data	

Criterion	Data license is a standard, machine-understandable license	**Priority**
Details	Standard open licenses include Creative Commons, Open License, etc. The data license does not have to be open to respect this criterion.	Low
Notation	0 = The license is not a standard license (or no license is indicated) 1 = The license is a standard license	

	2 = The license is a standard license and is machine-understandable

Category 3 – Geoportal

11 criteria – 5 High priority, 3 Medium, 3 Low

Criterion	The (geo)portal gives access to datasets and associated metadata	**Priority**
Details	This is about the access to data and metadata, not the map viewing feature.	High
Notation	0 = No access to data or metadata 1 = Access to data only but not metadata 2 = Access to data and metadata	

Criterion	Portal has easily accessible data services	**Priority**
Details	Such services include data download and webservice links (WFS, WMS, etc.), and data transformation services for interoperability. Authentication and paywalls are not to be considered in this criterion.	High
Notation	0 = No download/webservice 1 = Download and webservices are not easy to find 2 = Easy to find download and webservices (e.g. for displayed layers) 3 = Transformation services for interoperability are available	

Criterion	Portal has a map viewer able to display and view the data	**Priority**
Details	Self-explanatory	High
Notation	0 = No map viewer 1 = Data from the portal can only be viewed separately (with or without external data) 2 = A map viewer allows all the data to be displayed together	

Criterion	The portal has an advanced search tool with filters	**Priority**
Details	Filters can include themes, categories, areas, tags and keywords, or others.	High
Notation	0 = No search or filtering tool. Users must find data by reading the complete list. 1 = Simple search tool 2 = Advanced search tool with filters	

Criterion	The portal, data titles and metadata titles can be displayed in English	**Priority**

Details	A full English version of the data is not required, only the (meta)data titles	High
Notation	0 = No English at all 1 = Only the portal (categories, structure, buttons) is in English 2 = Some dataset titles and/or metadata titles are displayed in English 3 = All data and metadata titles are displayed in English	

Criterion	Portal is user-friendly with important ease-of-use and accessibility features	**Priority**
Details	The structure of the page is intuitive and well-designed, pages and features are easily accessible, a clear help page is available, accessibility features are included. Ease-of-use features are those whose absence makes the portal significantly more impractical.	Medium
Notation	0 = Unintuitive portal 1 = Intuitive portal, but no ease-of-use features 2 = Intuitive, well-designed portal with ease-of-use and accessibility features 3 = Intuitive, well-designed portal with ease-of-use and accessibility features and a clear help page	

Criterion	The portal has data and metadata catalogs organized by category	**Priority**
Details	Self-explanatory	Medium
Notation	0 = No data or metadata catalogs 1 = Only a data catalog or list, no categories 2 = Data catalog with categories 3 = Data catalog and metadata catalog using categories	

Criterion	Portal allows the user to import external data and metadata through webservices or local access	**Priority**
Details	Self-explanatory	Medium
Notation	0 = No import of external data, or it cannot be viewed alongside data from the portal 1 = Imported external data can be viewed alongside data from the portal	

Criterion	The vocabulary and symbology used on the portal are clear and easy to understand with no possibility of misunderstanding	**Priority**
Details	Button icons are well-chosen; tool names, category and layer titles are clear and descriptive with no ambiguous synonyms	Medium
Notation	0 = Icons, titles, tools are confusing or non-homogeneous	

	1 = The symbology and vocabulary are clear for an expert 2 = The symbology and vocabulary are clear and understandable in layman's terms

Criterion	There are easily found, well-identified legends for all visible layers	**Priority**
Details	The legend is a list of all symbols used in the layer and what they represent	Medium
Notation	0 = No legend is available 1 = The legends are poorly identified (i.e. it is difficult to link a legend to its layer) or hard to find (e.g. only the top layer legend is shown, or some legends are on a side panel while others are found under their respective layers, etc.) 2 = The legends are easy to find (combined together or found for each layer in a similar location) and well-identified	

Criterion	The portal displays data producers' logos	**Priority**
Details	Self-explanatory. Does not concern co-financing agreements.	Low
Notation	0 = No logos (beyond the organization managing the portal) 1 = Producers' logos available in general 2 = Relationship between a logo and the producer of a dataset can be identified	

Criterion	The portal has low-priority ease-of-use features	**Priority**
Details	Features that do not significantly impact ease of use when not implemented, such as background map catalog, general information such as dataset title and link to metadata displayed when clicking on the layer, quick access to catalogs and data imports (or other portal features), etc.	Low
Notation	0 = The portal does not have any of these features 1 = The portal only has a few ease-of-use features 2 = The portal has several advanced ease-of-use features	

Criterion	The portal is easily identifiable at any moment (welcome message, logo...)	**Priority**
Details	The user must be able to tell in a glance which portal they are visiting	Low
Notation	0 = Portal hard to identify at a glance compared to other portals 1 = Portal easily identified at first access 2 = Portal easily identified at all times	

Annex 5

Rubrique 1 sur 5

Geoportal self-assessment survey

The French National Hydrographic and Oceanographic Services (Shom) is launching a survey regarding the self-evaluation of regional and national geoportals in the context of the REGINA-MSP European project. Case Study Leaders and project partners are invited to fill in a self-evaluation of MSP-related geoportals in their case study Region and/or MSP-related geoportal at national level if no regional geoportal exists at the regional scale.

The purpose of this survey is to assess the current state of regional/sub basin/national and european geoportals in order to highlight their potential use in MSP.

For more information on the geoportal assessment criteria, please find a detailed document at: https://docs.google.com/document/d/12Dm5vcOzbhYnOLfCeitcok81DZqrnqP74wfyKk0kbbE/edit?usp=sharing (Google Docs, reading mode only).

REGINA-MSP website: regina-msp
Organised by Shom (French Hydrographic and Oceanographic Services)
Deadline the 13th of November 2023
Contact us at alexis.esquerre@shom.fr or emilie.delaroche@shom.fr if you have any question.

Adresse e-mail *

Adresse e-mail valide

Ce formulaire collecte les adresses e-mail. Modifier les paramètres

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Protection of personal data: *

We process your personal data in accordance with Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016.

☐ I accept the processing of my data for the purpose of sending news on workshops.

Please indicate your name and/or the name of your organisation?

Réponse courte

What is your role in MSP? *

☐ Representative of the State (public services included)

☐ Local Government Representative

☐ GIS (Geographic Information System) manager/ geomatic officer

☐ Thematic expert

☐ Data manager

☐ Researcher

☐ Stakeholder

☐ Sea professional

☐ Autre...

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How much do you estimate your level of knowledge of MSP in your country (1= no knowledge at all, 5= high knowledge)

- ○ 1
- ○ 2
- ○ 3
- ○ 4
- ○ 5

Which database or geoportal(s) are you evaluating? Please indicate the URL address.

Réponse courte

Is it a national/regional/sea basin/european geoportal? *

- ○ National
- ○ Regional
- ○ European
- ○ Sea basin

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Rubrique 2 sur 5

Part 1 - Metadata

Link to the geoportal self-assessment document:
https://docs.google.com/document/d/12Dm5vcOzbhYnOLfCeitcok81DZqrnqP74wfyKk0kbbE/edit?usp=sharing

Criterion M1 (High)

Metadata objects exist for every data set, preferably in harmonized format

Metadata objects can be pages, files, or any sort of digital object.

	0	1	2	3	
No metadata found	○	○	○	○	Most if not all datasets have harmonized metadata

Criterion M2 (High)

The metadata of a dataset contains access and reuse information for this set

This includes the data identifier, any relevant information to access the data including limitations and restrictions or need for authentication, and license and openness.

	0	1	2	3	
Metadata does not give enough information to access the data	○	○	○	○	All access and reuse information are provided

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Criterion M3 (High)

Metadata of datasets contains information on data quality

Such information includes quality and precision of data, validity, and conformity with local rules on the implementation on European directives

	0	1	2	
Metadata contains no information on data quality	○	○	○	Metadata contains all necessary information on data quality, precision, validity

Criterion M4 (High)

Metadata contains keywords describing the data and contents.

Self-explanatory

- ○ 0 = No keywords in the metadata
- ○ 1 = Keywords describe the data and its contents

Criterion M5 (High)

Metadata of datasets contains time frame information

Metadata describes which periods of time are covered by the data, including versions and updates, update frequency, and time of last update.

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	0	1	2	3	
No time information available	○	○	○	○	All datasets have complete time information

Criterion M6 (High)

Metadata can be accessed manually

Self-explanatory

- ○ 0 = Manual access impossible
- ○ 1 = Manual access possible

Criterion M7 (High)

Metadata can be accessed through a standardized, free-access protocol

Common metadata access protocols: HTTP, WS-MetadataExchange...

	0	1	2	
No metadata can be accessed through a standardized, free access protocol	○	○	○	The protocol is a free access international standard

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Criterion M8 (High)

Metadata of datasets contains information on data origin

Such info includes whether the data is considered reference data, the authorities or providers in charge of establishing, managing, maintaining and distributing the data, and data provenance (how, by who it was collected and processed) in community standard and cross-domain formats.

	0	1	2	3	
No information on origin available	○	○	○	○	Every data set has all the required information in its metadata

Criterion M9 (Medium)

Metadata objects have a persistent, globally unique identifier

Self-explanatory. Well-known examples include URI, DOI, etc.

	0	1	2	3	
No persistent and unique identifier	○	○	○	○	All metadata properly identified

Criterion M10 (Medium)

Metadata itself is persistent, even after the data is no longer available

If possible, it should also indicate when the data was no longer available, and why.

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	0	1	2	
Metadata of formerly available data no longer exists	○	○	○	Metadata of formerly available data is fully available and findable

Criterion M11 (Medium)

Metadata identifiers resolve to a metadata record.

"Resolving to X" means "can be the input in a request that returns X". For instance, an URL can be the input in a browser to return a webpage, an identifier can be the input in a catalog search tool to return an entry, etc.

	0	1	2	
Identifiers cannot be used in a query	○	○	○	All identifiers resolve to a record

Criterion M12 (Medium)

Metadata can be harvested and indexed

Self-explanatory

- ○ 0 = Harvesting and indexing impossible
- ○ 1 = Harvesting and indexing possible

Criterion M13 (Medium)

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	0	1	2	
Manual access only	○	○	○	Automated access to a machine-understandable object is possible

Criterion M14 (Medium)

Metadata is described in a FAIR-compliant vocabulary and compliant with community standards

FAIR-compliant vocabulary is documented in a machine-understandable object identified by globally unique and persistent identifiers, i.e. findable, accessible, interoperable and reusable dictionary, thesaurus or glossary.

	0	1	2	
Metadata is not described in a FAIR-compliant vocabulary	○	○	○	Metadata complies with community standards and uses FAIR vocabulary

Criterion M15 (Low)

Data and metadata reference other data and metadata

According to FAIR principles, a dataset should reference (e.g. by providing a link to) other relevant data or metadata, and the metadata of a dataset should reference other relevant data or metadata.

Ideally, references should be qualified: they should include an explanation on the relevance and relationship between the data.

	0	1	2	3	
No referencing	○	○	○	○	Frequent referencing (when appropriate) with qualified references

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